

IN PARTNERSHIP WITH



LAND USE FUTURES | NATURAL CAPITAL INVESTMENT INITIATIVE

Phase 1 Report

AUGUST 2021

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1. Executive Summary

Globally, there is increasing recognition of the importance of protecting and restoring nature in order to mitigate climate change impacts. With this recognition, calls have risen for the development of systems to measure and value nature, enabling businesses, governments and investors to prioritise nature and the environment in decision-making. The ability to measure natural capital at the property level is critical to the development and operation of these systems and delivery of sustainability outcomes more broadly.

The Natural Capital Investment Initiative (NCII), led by ClimateWorks Australia and supported by NAB, was established to address two key priorities for measuring and valuing natural capital; the need for:

1. Comparable measurement systems covering all key aspects of natural capital.
2. Public and private incentives for land managers at all scales to regularly measure and report on natural capital.

In Phase 1 the NCII addressed these priorities through the development of an open-source Natural Capital Measurement Catalogue (NCMC), which outlines a comprehensive set of natural capital measures and metrics at the property level. In Phase 2, the initiative aims to test and pilot the NCMC through measurement and incentive programs across government, financial institutions, and food supply chains.

Phase 1 of the NCII delivered a number of key outcomes, including:

1. An overarching framework for measuring natural capital at scale.
2. A proof-of-concept Natural Capital Measurement Catalogue.
3. Support from the NCII Advisory Group including endorsement of the NCMC and identified pilot opportunities.

This progress report presents these outcomes in more detail and outlines the next phase of the Initiative.

2. Introduction

2.1 PURPOSE OF THIS REPORT

The purpose of this report is to:

1. Articulate the case for why nationally consistent farm-scale measures of natural capital and incentives are important.
2. Capture the outcomes from Phase 1 of the Natural Capital Investment Initiative, and learnings to inform Phase 2.

This report is intended for stakeholders with an interest in measuring natural capital in order to improve environmental outcomes, particularly the members of the NCII Advisory Group. It is intended to document outcomes from early engagement and inform the direction of future work.

2.2 BACKGROUND AND CONTEXT

Globally, there is increased recognition of the need to reduce carbon emissions to mitigate the impacts of climate change. Governments, corporations and financial institutions are making pledges and setting net-zero targets to show their commitment to climate change outcomes. There is also a growing recognition of the importance of investing in natural capital to improve environmental outcomes, assure security of production of food, fibre and beverages, and mitigate climate change impacts. These same governments, corporations and financial institutions are looking to become 'nature positive' by showing their commitment to protecting and restoring nature. There are now increasing calls for the development of systems to measure and value nature: enabling businesses, governments and investors to prioritise nature and the environment in decision-making.

This momentum is demonstrated by the recent launch of the Taskforce for Nature-related Financial Disclosures (TNFD) which follows the model of the Taskforce for Climate-related Financial Disclosures. The TNFD recognises that the world's economy is highly dependent on nature and that nature loss presents high risk to corporate and financial stability.

To protect and restore nature and leverage global momentum on measuring natural capital, Australia needs to be market-ready. Part of this readiness includes having consistent and standardised methods for measuring and valuing nature. While there are a growing number of sustainability frameworks and certification programs in Australia across industries and land use types, they lack consistent measures and methods. This has led to fragmentation and confusion within the sector. Greater consistency is needed to ensure the development of environmental markets at scale, that can both safeguard nature and secure Australia's leadership in global agricultural markets.

2.3 OVERVIEW OF THE NATURAL CAPITAL INVESTMENT INITIATIVE (NCII)

ClimateWorks recognises the importance of measuring natural capital in improving sustainability outcomes and mitigating climate change impacts. The Land Use Futures program, established in early 2019, is defining what a sustainable food and land use system could look like in Australia and the possible pathways to achieving it. The Land Use Futures program identified the measurement of natural capital as

a key priority for achieving national sustainability goals, and convened a Natural Capital Summit in June 2019. This summit brought together over 150 leaders in agriculture, forestry, natural resource management, conservation, policy, finance, research and government to explore barriers and opportunities for measuring and valuing natural capital in Australia. The outcomes of the Summit were summarised in the [Natural Capital Roadmap](#) which outlines nine priorities for improving natural capital measurement and valuation.

The Natural Capital Investment Initiative (NCII), led by ClimateWorks Australia and supported by NAB, was established to address two key priorities in the Natural Capital Roadmap; the need for:

1. Comparable measurement systems covering all key aspects of natural capital.
2. Public and private incentives for land managers at all scales to regularly measure and report on natural capital.

The NCII aims to address these priorities through the development and implementation of an open-source Natural Capital Measurement Catalogue (NCMC), which outlines a comprehensive set of natural capital measures and metrics at the property level. It also aims to explore, test and pilot different incentive programs from across government, financial institutions and food supply chains.

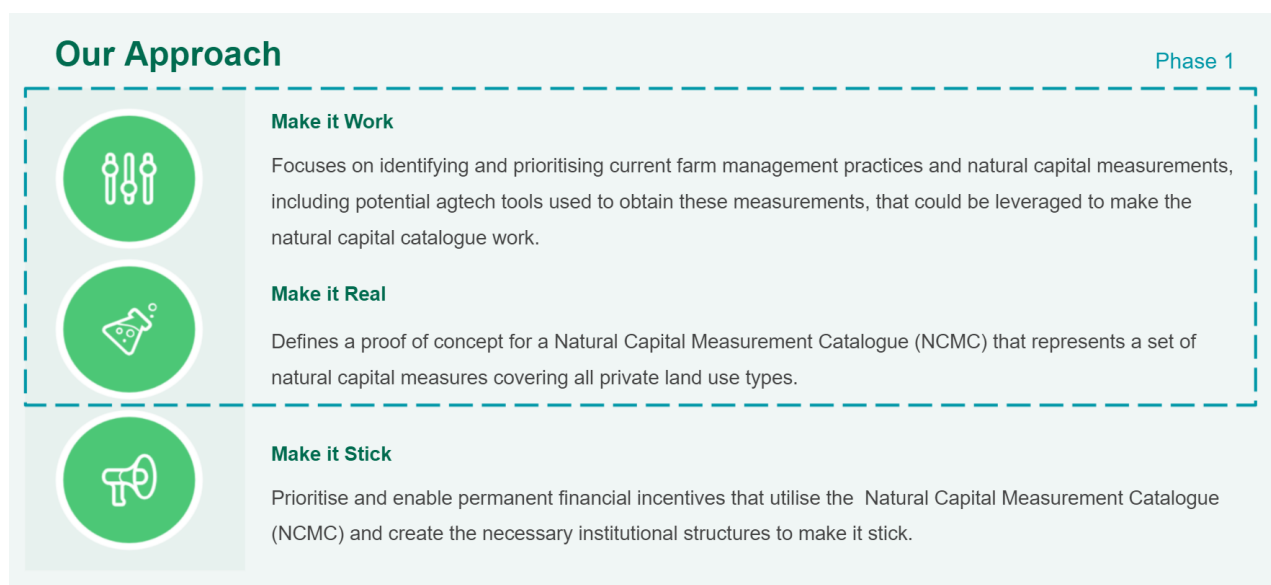
The NCMC aims to create an overarching framework that incorporates and aligns with existing international and national measurement frameworks and industry sustainability standards. It takes a comprehensive and open-source approach that reflects the aspiration for a common set of natural capital measures to be used by a variety of land management, government, finance and business stakeholders. The open-source approach ensures the measures are publicly available and able to be refined and adapted as the NCMC is used and tested. This approach contributes to the convergence of natural capital measurement approaches and is an enabler for the creation of new environmental markets that reward land managers for good environmental stewardship.

Both the Land Use Futures program and the NCII support greater action towards a more sustainable food and land use system in Australia. The Land Use Futures program has created a shared national level vision for the future, and is now modelling pathways to achieve that vision. It has also defined a set of outcomes and corresponding indicators that define how we understand sustainability across the food and land use sectors. The NCII complements Land Use Futures by taking a bottom-up approach and supporting natural capital measurement at the property level to enable measuring and tracking of progress towards sustainability goals.

3. Phase 1 Methodology

Phase 1 of the NCII focussed on the development of the NCMC, while Phase 2 will focus on piloting and testing the NCMC through incentive programs (priority #2 above). Three work streams were identified to ensure the project has relevance to existing sustainability frameworks and certification programs, is informed by the latest research, and develops outputs that are widely understood and adopted. These three work streams are outlined in Figure 1 and detailed in this section.

FIGURE 1: THREE WORK STREAMS OF THE NATURAL CAPITAL INVESTMENT INITIATIVE



3.1 MAKE IT WORK

This work stream focussed on identifying current farm management practices and measures in use on the ground. It sought to understand how these practices and measures correspond with varying levels of engagement in natural capital management by farmers and land managers.

A draft Natural Capital Maturity Model was created for mixed cropping and livestock farmers to demonstrate the varying levels of engagement. The model was tested through interviews with farmers, farm consultants and agronomists. Feedback was provided on the model which was then updated and incorporated into the Make it Real work stream.

3.2 MAKE IT REAL

This work stream focussed on creating the proof-of-concept NCMC and testing it with diverse stakeholders. The project team, consisting of ClimateWorks Australia and delivery partners Integrated Futures and AgThentic, worked together to develop the proof-of-concept NCMC. The NCMC is presented in Section 4.2 of this report and available on the project website.

This work stream focussed on understanding the current context to inform the shape and design of the NCMC. It included a literature review, review of existing natural capital frameworks and programs, and

consultation with subject matter experts. The table below outlines the different inputs into each of these key engagement areas:

TABLE 1: ENGAGEMENT AREAS AND INPUTS INTO THE DESIGN OF NCMC

Academic literature review	Existing natural capital frameworks and programs	Consultation
<ul style="list-style-type: none"> + Ecology & Biodiversity, Lifecycle Assessment including measurement and monitoring methods + Agro-ecology including relationships between land monitoring, management practice, land condition and pollution + Pasture management (native & improved) + Agro-economics including relationships between profitability and land condition 	<ul style="list-style-type: none"> + UN SEEA EEA (2021) + TEEB AgriFood (Capitals Coalition) + Agricultural Best Management Practice + Land to Market + Accounting for Nature + Agricultural Sustainability Certifications and Frameworks including Unilever, Responsible Wool, Sustainawool, Beef Sustainability etc. + Sustainability reporting including EP&L, GRI, SASB (2020), IRIS + Farm Print + FullCam + Emerging frameworks including Biodiversity Protocol, Agriculture Stewardship Package 	<ul style="list-style-type: none"> + Biodiversity (CSIRO, BHA, LTU) + Pasture condition assessment (CSIRO, NT DPIFF, DAFWA) + Soil health measurement (CSIRO, WA Chemcentre, NSW DPI) + Farmers + Agronomists + Property valuers + Farm consultants

The project team synthesised content across these three areas to inform both the overall context and framing of the project, as well as the development of the NCMC.

The proof-of-concept NCMC was presented to the NCII Advisory Group, a group of 38 participants representing:

- + Land managers
- + Industry bodies
- + Financial institutions
- + Supply chain
- + Research
- + Technology
- + Government
- + Certification and verification programs.

The full list of Advisory Group organisations can be found in Appendix A.

Four meetings were held with the Advisory Group in March 2021 where members provided overarching feedback and guidance on the project objectives and more specific feedback on the NCMC. The Advisory Group meetings covered the following topics:

Meeting 1: Overview of the Natural Capital Investment Initiative

Meeting 2: Building blocks of natural capital measurement at scale

Meeting 3: Deep dive into the Natural Capital Measurement Catalogue

Meeting 4: Feedback on the Natural Capital Measurement Catalogue and next steps

3.3 MAKE IT STICK

This work stream is the focus of Phase 2 of the NCII, which will test and pilot the NCMC through measurement and incentive programs across government, financial institutions, and food supply chains, as well as develop institutional arrangements to ensure the NCMC has a clear owner and process for staying live and up-to-date.

4. Phase 1 Outcomes

Phase 1 delivered a number of outcomes, including:

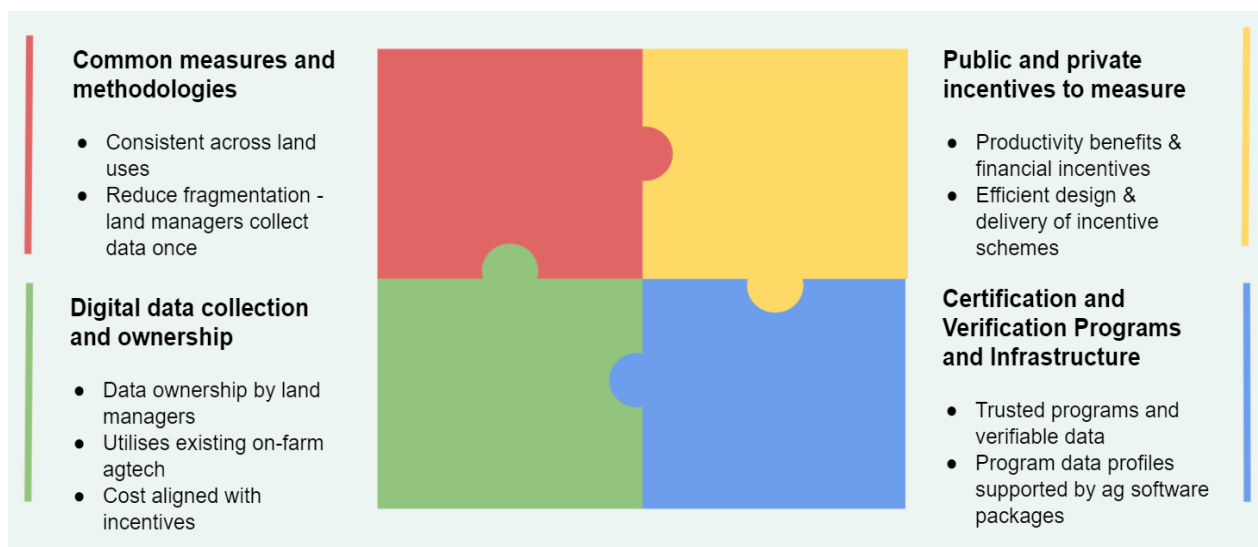
1. An overarching framework for measuring natural capital at scale
2. A proof-of-concept Natural Capital Measurement Catalogue
3. Support from the NCII Advisory Group including endorsement of the NCMC and identified pilot opportunities

These outcomes are detailed in the sections below.

4.1 MEASURING NATURAL CAPITAL AT SCALE

A key objective of the NCII is to enable natural capital measurement at scale. Natural capital measurement is beginning to gain traction in Australia, however there are still only a small number of examples. These are often limited to specific objectives (such as biodiversity or carbon) or specific industries. Measurement is not yet happening consistently across Australia or across all elements of natural capital. The NCII team identified four 'building blocks' that need to be established in order to enable natural capital measurement at scale (Figure 2).

FIGURE 2: 'BUILDING BLOCKS' FOR MEASURING NATURAL CAPITAL AT SCALE



These 'building blocks' were presented and validated in the Advisory Group meetings, harnessing support for what is needed to be established more broadly in the sector. In Phase 1, the NCII is has initially focussed on 'Common measures and methodologies' and in Phase 2 will focus on 'Public and private incentives to measure'.

4.2 NATURAL CAPITAL MEASUREMENT CATALOGUE

This section outlines the proof-of-concept Natural Capital Measurement Catalogue (NCMC), its structure, and how it is intended to be used. The full proof-of-concept NCMC is available to download as a companion document via the project website. A list of the detailed measures can be found in Appendix B.

4.2.1. Overview and purpose

The NCMC is the key output of Phase 1 of NCII. The objective of the NCMC is to:

Provide an open-source set of natural capital measures to help a wide range of stakeholders understand how natural capital can be measured at property level across all land use types.

The NCMC aims to:

- + Act as a foundation for consensus building, standardisation and information interchange.
- + Quickly deliver information to users about how to measure natural capital given their context (location, object and purpose of measurement, incentive to measure).
- + Help designers of programs for incentives, certification, verification and natural capital research select measures appropriate to their objective and the level of engagement of participants.
- + Help providers of scientific methodology and technology solutions to identify opportunities to improve ways of measuring and collecting data.
- + Ensure efficiency for farmers to be able to measure natural capital and use the data in many ways.
- + Ensure data can be aggregated regionally and nationally.

The NCMC is currently a proof-of-concept. It is being tested and refined with industry partners to inform the next iteration. It is currently in a Microsoft Excel format, with user-friendly web tools being explored for future use.

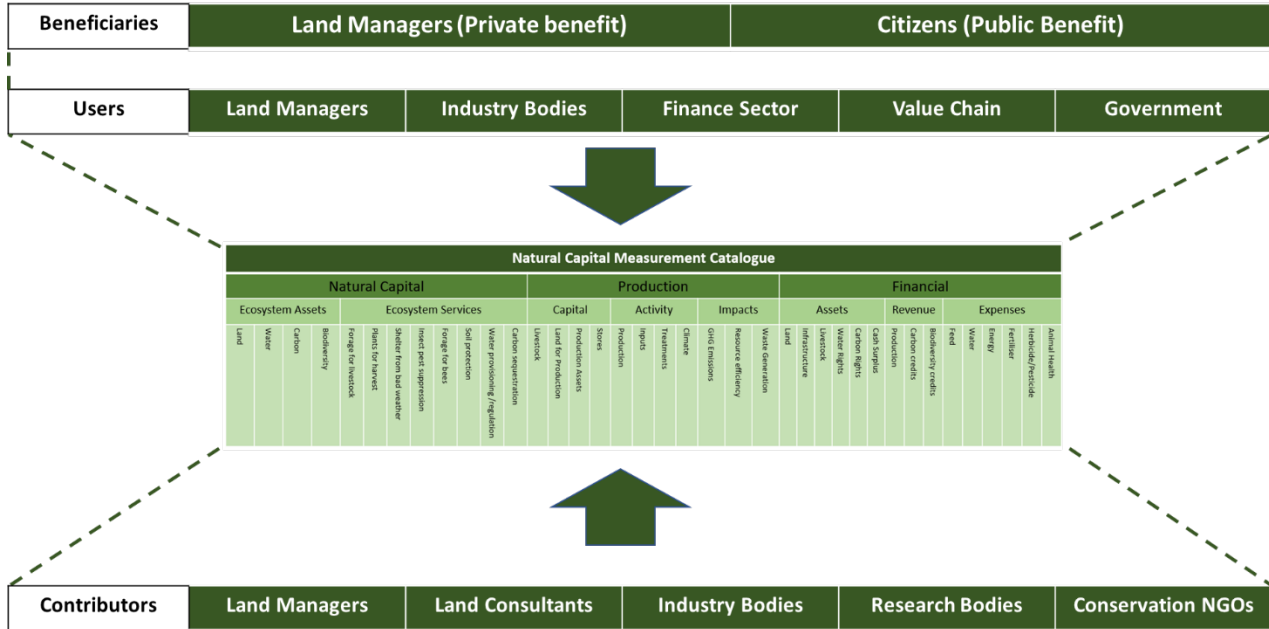
The NCMC currently covers agricultural land uses (broad-acre cropping and grazing) with other land use types being considered for future iterations (such as forestry). It covers natural capital, production and financial measures, demonstrating linkages and the need to balance outcomes across all three areas.

TABLE 2: THREE TYPES OF MEASURES ARE INCLUDED IN THE NCMC

Natural Capital	Measures of ecosystem assets and services, consistent with the United Nations System of Environmental Economic Accounting.
Production	Measures of capital, inputs, treatments and impacts more likely to be currently captured by land managers that can provide proxies for natural capital measures.
Financial	Measures that reflect the financial outcomes of improved natural capital management.

Figure 3 below outlines the stakeholder groups that would use and benefit from the NCMC. It also outlines the stakeholder groups that would contribute to the ongoing development of the NCMC.

FIGURE 3: CONTRIBUTORS, USERS AND BENEFICIARIES OF THE NCMC



4.2.2. Structure of the NCMC


The NCMC organises 171 measures into a measurement taxonomy. For a full list of measures including subcategories, see Appendix B. It is first broken down across the types of capital (natural, production and financial), and then into categories and subcategories. Each measure has a unique identifying number (e.g. N11214) that allows for easy reference. While the structure has been generally endorsed by the Advisory Group, a number of suggested alterations will be trialled and implemented in the next phase of the program.

FIGURE 4: EXAMPLE OF THE NCMC STRUCTURE INCLUDING CATEGORIES AND SUBCATEGORIES

Category	Subcategory 1	Subcategory 2	Subcategory 2	Subcategory 3	Subcategory 3	Measure
Natural Capital	Ecosystem Assets	Land	Land	Rangelands	Rangelands	Area of Property
		Water		Pasturelands		Pasture Condition
		Carbon		Croplands		Pasture Biodiversity
		Biodiversity		Shelterbelts		Area Contributing to Production
		Forage for livestock		Riparian Zones		Waste management
	Ecosystem Services	Plants for harvest		Wetlands	Water loss mitigation	
		Shelter from bad weather		Insectaries		
		Insect pest suppression		Non-productive reserves		
		Forage for bees		Culturally sensitive lands		
		Soil protection		Natural waterways		
		Water provisioning /regulation	Water storage – above ground			
		Carbon sequestration	Water storage – below ground			
		Cultural/Traditional Amenity	Water licence/entitlement			
			Culturally sensitive waterways			


For each measure, the NCMC identifies up to three different metrics according to natural capital engagement levels. Three engagement levels – curious, enthusiast and guru – were developed to recognise that farmers and land managers are at different stages of engagement with natural capital concepts (Figure 5). The NCMC suggests metrics that align the level of natural capital engagement with the time/cost required to measure and consequent level of confidence in the data. The NCMC then continues to identify the method, methodology, practice, source, and frequency for each metric.

FIGURE 5: ENGAGEMENT LEVELS FOR THE NCMC




CURIOUS

Farmers that are not necessarily familiar with the term natural capital, but are measuring and improving certain aspects at own cost and risk, due to performance or efficiency benefits. Are intrigued about being recognized and rewarded.



ENTHUSIAST

Farmers that are somewhat familiar with the term natural capital (or related terms). May receive some extra incentive for measuring and improving certain aspects. Want to learn more and be more recognized and rewarded for improvement.



GURU

Farmers that are actively implementing and measuring best practice farm management activities to improve natural capital. Are either deliberately seeking or already receiving recognition and a financial reward for doing so.

4.2.3. Using the NCMC

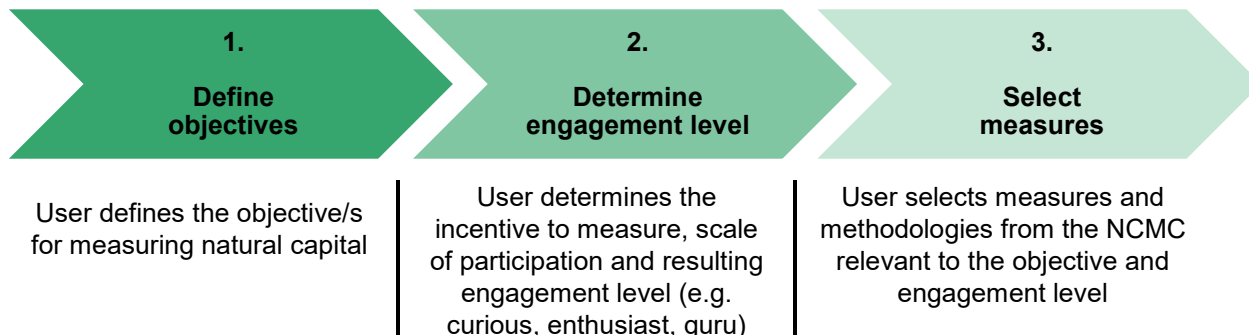
The NCMC is designed to be comprehensive and cover all elements of natural capital that can be measured at the property level, for all land use types. It is intended to be used by businesses, financial institutions, and governments as they develop ways to measure and improve their natural capital impacts and encourage their suppliers and customers to do the same. The NCMC does not suggest users measure

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ALL natural capital measures – but rather, to first identify their objective and then the corresponding measures. The process for using the NCMC is outlined in Figure 5 below.

FIGURE 6: THE NCMC PROCESS



4.3 NCII ADVISORY GROUP SUPPORT AND FEEDBACK

In addition to the outputs listed above, Phase 1 of NCII delivered a number of process and engagement outcomes. While the Advisory Group represented diverse perspectives across a range of sectors, there was broad support for delivering NCII objectives and agreement that this work is needed to enable better natural capital measurement. The diversity of perspectives also helped ensure that feedback and input into NCII was representative of multiple sectors and organisation types, and not limited to the experiences and knowledge of one sector.

The Advisory Group also provided feedback on the proof-of-concept NCMC, which will be incorporated in Phase 2 of NCII. This feedback included:

- + Inclusion of more detailed user guidance and links to methodologies
- + Expansion to include additional land use types (such as forestry)
- + Inclusion of natural capital risk assessment
- + Further alignment with United Nations System of Environmental Economic Accounting Ecosystem Accounting (UN SEEA EA)
- + Exploration of different options for structure
- + Grouping of measures for different objectives (such as measures that can be achieved with remote sensing)
- + Reviewing the use of engagement levels.

Some feedback on specific wording of measures has already been incorporated in this version of the NCMC.

Through the Advisory Group, a number of programs and initiatives were identified that the NCMC could contribute to or align with, which are listed in Appendix C. These connections are important to ensure the NCMC remains relevant and embedded in other natural capital measurement programs. It also helped begin to identify options for piloting and testing the NCMC in the next phase of work.

5. Conclusion and next steps

The first phase of NCII was successful in gaining support for the project objectives and beginning to define common natural capital measures. It has progressed a number of key priorities identified in the Natural Capital Roadmap that are critical for enabling natural capital measurement at scale. There was broad acknowledgement from diverse organisations that this work is needed, and that the sector should adopt these measures to create more consistent natural capital measurement and to align with global markets and momentum.

While Phase 1 focussed on getting support for the NCII objectives and developing a proof-of-concept NCMC, Phase 2 will focus on adoption and impact. A key element of Phase 2 will be testing and demonstrating how the NCMC can be used to support natural capital measurement on farms, and how measurement can be linked to financial incentives. Phase 2 will also focus on setting up the necessary institutional arrangements to ensure the NCMC remains live and up-to-date. The ClimateWorks team will continue to stay aware of and involved in external programs and initiatives, and will leverage other ClimateWorks' teams and expertise to ensure system-level impact is achieved.

Appendix A – NCII advisory group members

ORGANISATION	NAME
Accounting for Nature	Adrian Ward
Agforce	Greg Leach
Australian Land Management Group	Tony Gleeson
Australian Farm Institute	Richard Heath
Bush Heritage	Rebecca Spindler
Cibo Labs	Phil Tickle
Cotton Australia	Jennifer Brown Adam Jay
CSIRO	Becky Schmidt
Dairy Australia	Alison Kelly
Department of Agriculture, Water and Environment	Anthony Bennie Heather McGilvray Terry Hills Fay West
Food Agility CRC	Madeline Mitchell
Frontier Impact Group	Jennifer Lauber Patterson
Integrity Systems Company	Andrew Skinner
Kilter Rural	David Heislars
Independent Consultant	Fransico Ascui
Integrity Systems Company	Andrew Skinner
Land to Market	Tony Hill
Landcare	Mick Taylor
Meat and Livestock Australia	Renelle Jeffrey Jacob Betros
NAB	Sasha Courville
National Farmers Federation	Warwick Ragg Oscar Pearse
The Nature Conservancy	Stephanie Russo
New Forests	Radha Kappalli
NRM Regions	Kate Andrews
NSW Department of Planning, Industry and Environment	Antony Sprigg
Pollination Foundation	Jane Hutchinson Laura Waterford
Rabobank	Lachlan Monsbourgh
Sustenance Asia (Cotton Australia, Grain Growers)	Chris Cosgrove
Woolworths Group	Hollie Baillieu Anna Playfair-Hannay

Appendix B – Natural Capital Measurement Catalogue – Summary of Measures

The following table outlines the Natural Capital, Production and Financial measures that are outlined in the Natural Capital Measurement Catalogue (NCMC). For the full NCMC, refer to the project website.

Natural Capital Measures

Subcategory 1	Subcategory 2	Subcategory 3	Subcategory 4	Subcategory 5	Reference	Measure
1 Ecosystem assets	11 Land	111 Rangelands	1111		N11111	Area of property
					N11112	Pasture condition
					N11113	Pasture biodiversity
					N11114	Percentage that contributes to production
		112 Pasturelands	1121 Native pasture		N11211	Area of property
					N11212	Soil condition
					N11213	Pasture condition
					N11214	Pasture biodiversity
			1122 Exotic perennial pasture		N11221	Area of property
					N11222	Soil condition
					N11223	Pasture condition
			1123 Exotic annual pasture		N11231	Area of property
					N11232	Soil condition
					N11233	Pasture condition
		113 Croplands	1131		N11311	Area of property
					N11312	Soil subsurface condition
					N11313	Soil surface condition
		114 Shelterbelts	1141		N11411	Area of property
					N11412	Capacity to provide shelter
		115 Riparian zones	1151		N11511	Area of property
	N11512			Vegetation Quality		
	N11513			Protection		

Subcategory 1	Subcategory 2	Subcategory 3	Subcategory 4	Subcategory 5	Reference	Measure
		116 Wetlands	1161		N11611	Area of property
		117 Insectaries	1171		N11711	Area of property
		118 Biodiversity conservation reserves	1181		N11811	Area of property
					N11812	Ecosystem Condition
	12 Water	121 Natural waterways	1211		N12111	Harvestable right
					N12112	Water Quality
		122 Water storage - above ground	1221		N12211	Water quality
					N12212	Storage type
					N12213	Total Capacity
					N12214	Current volume - estimated
					N12215	Current volume - measured
		123 Water storage - below ground	1231		N12311	Water quality
					N12312	Bore depth
					N12313	Flow Rate
					N12314	Offtake license
		124 Water license/entitlement	1241		N12411	Security
					N12412	Volume
					N12413	Tenure
					N12414	Allocation
				N12415	Source Water Scheme	
	13 Carbon	131 Carbon store - above ground	1311		N13111	Mass of CO2e - Direct
					N13112	Mass of CO2e - Modelled
					N13113	Mass of CO2e - Inferred
		132 Carbon store - below ground	1321		N13211	Mass of CO2e - Direct
					N13212	Mass of CO2e - Modelled
					N13213	Mass of CO2e - Inferred
	14 Biodiversity	141	1411		N14111	Landscape context: ecological connectivity, permeability, comparability that affects the biodiversity potential and value of the farm
					N14112	Abundance/diversity of species

Subcategory 1	Subcategory 2	Subcategory 3	Subcategory 4	Subcategory 5	Reference	Measure	
					N14113	Habitat for species of interest	
					N14114	Diversity of ecosystem types	
					N14115	Area of native vegetation	
2 Ecosystem services	21 Forage for livestock	211	2111		N21111	Production	
	22 Plants for harvest	221	2211		N22111	Production	
	23 Shelter from bad weather	231	2311		N23111	Shelter from bad weather	
	24 Insect pest suppression	241	2411		N24111	Integrated Pest Management	
	25 Forage for bees	251	2511		N25111	Forage for bees	
	26 Soil protection	261 Grazing		2611		N26111	Ground coverage
		262 Cropping		2621		N26211	Ground coverage
	27 Water	271 Water provisioning				N27111	Water shedding to storage
						N27112	Filtration
		272 Water regulation		2721 Infiltration	Runoff	N27211	Infiltration
				2722 Soil storage (water holding capacity)		N27222	Soil moisture
					N27223	Soil temperature	
					N27224	Soil EC	
	28 Carbon sequestration	281 Carbon sequestered above ground		2811 Change to stocks of carbon		N28111	Modelled
						N28112	Measured
282 Carbon sequestered below ground			2821 Change to stocks of carbon		N28211	Measured	
		N28212		Modelled			
		N28213		Inferred			

Production Measures

Subcategory 1	Subcategory 2	Subcategory 3	Subcategory 4	Subcategory 5	Reference	Measure	
7 Produced capital	71 Livestock	711 Sheep	7111		P71111	NLIS	
		712 Cattle	7121		P71211	NLIS	
	72 Land for production	721 Productive Area	7211			P72111	Soil map
						P72112	Farm Map
	73 Production assets	731 Machinery	7311			P73111	Asset Details
						732 Fences	7321
	74 Stores	741 Water storage - above ground	7411			P74111	Water quality
						P74112	Storage type
						P74113	Total Capacity
						P74114	Current volume - estimated
						P74115	Current volume - measured
		742 Grain	7421			P74211	Capacity
		743 Seed	7431			P74311	Capacity
		744 AgChem	7441				P74411
	P74412						Manufacturer
P74413	Volume						
745 Feed	7451				P74511	Capacity	
8 Activity	81 Production	811	8111		P81111	Crop production	
					P81112	Pasture growth	
					P81113	Livestock natural increase	
	82 Inputs	821 Electricity use	8211			P82111	Renewable
						P82112	Non-renewable
		822	8221			P82211	Fossil fuel use
		823	8231			P82311	Supplementary feed purchased
		824	8241			P82411	Livestock purchased
		825	8251			P82511	Seed purchased
		826	8261			P82611	Agchem purchased
827 Water	8271				P82711	Water Source	

Subcategory 1	Subcategory 2	Subcategory 3	Subcategory 4	Subcategory 5	Reference	Measure				
	83 Treatments				P82712	Source water scarcity				
					P82713	Water purchased				
		831 Animal treatments	8311 Movement to shelter			P83111	Frequency			
						8312 Veterinary treatment			P83121	Product
									P83122	Application
		832 Crop treatments	8321 Water applied		Water use	P83131	Provision			
						Watering method	P83211	Volume applied		
							P83212	Water source		
						8322 Cover cropping			P83213	Pivot
									P83214	Sprinkler
									P83215	SSD
			P83216	Flood						
			8323 Weed management			Herbicide application	P83221	Crop Type		
							P83222	Area		
							8324 Pest management			IPM
			Pesticide application	P83232	Application rate					
				P83233	Area					
			833 Land treatments	8331			P83241	IPM plan		
							P83242	Product		
			834 Soil treatment	8341 Nutrient applied		Manure use	P83243	Application rate		
		Fertilizer use					P83244	Area		
							P83411	Product		
							P83412	Product		
							P83413	Application rate		
		8342				P83414	Area			
						P83415	Treatment method			
						P83421	Stubble retention			
		8343 Soil disturbance				P83431	Area of land disturbance			
						P83441	Product			

Subcategory 1	Subcategory 2	Subcategory 3	Subcategory 4	Subcategory 5	Reference	Measure		
		834 Soil functional improvement	8344	Microbial Treatment	P83442	Application rate		
					P83443	Area		
				835 Waste management	8351 Effluent treatment		P83511	
		8352 Disposal			P83512			
		8353 Recycling			P83413			
		836 Water loss mitigation	8361			Evaporation mitigation	P83611	Tank cover
							P83612	Dam cover
						Leakage	P83613	Lining
		84 Climate	841 Weather conditions	8411			P84111	Rainfall
	P84112						Temperature	
	P84113						Radiation	
	P84114						Wind	
	P84115						Humidity	
	842 Fire	8421				P84211	Controlled burn	
						P84212	Uncontrolled burn	
9 Footprint	91 GHG flows	911 GHG emissions	9111		P91111	Embedded emissions		
					P91112	Generated emissions		
	92 Resource Efficiency	921	922 Water use efficiency	9221 Water footprint		P92111	Nutrient use efficiency	
						P92211	Green water footprint	
						P92212	Blue water footprint	
						P92213	Grey water footprint	
						P92221	Farm water plan	
		9223 Estimated water demand		P92231	Responsiveness			
	93 Waste generation	931	9311			P93111	Landfill	
	94 Pollution	941	9411			P94111	Air pollution	
P94112						Water pollution		

Financial Measures

Subcategory 1	Subcategory 2	Subcategory 3	Subcategory 4	Subcategory 5	Reference	Measure
3 Assets	31 Land	311 Property valuation	3111		F31111	Going concern real estate valuation
					F31112	Standing instructions valuation
	312	3121			F31211	Infrastructure
					F31212	Livestock
					F31213	Water rights
					F31214	Carbon rights
					F31215	Cash surplus
4 Revenue	41	411	4111		F41111	Production
					F41112	Carbon credits
					F41113	Biodiversity credits
5 Expenses	51	511	5111		F51111	Feed
					F51112	Water
					F51113	Fertiliser
					F51114	Herbicide/Pesticide
					F51115	Animal health
					F51116	Energy
6 Financial performance	61	611	6111		F61111	Profit
	62	621	6211		F62111	Credit Rating

Appendix C – Alignment with related programs

The following table outlines a number of programs and initiatives identified through the Advisory Group and other engagement activities that are aligned with the objectives and activities of the NCII. The NCII team is engaging with these programs and initiatives to ensure alignment of outputs and messaging, to influence one another, and to share learnings across programs.

PROGRAM / INITIATIVE	ORGANISATION	DESCRIPTION
Australian Agriculture Sustainability Framework (AASF)	Australian Farming Institute and National Farmers Federation	The AASF is an overarching framework that connects and verifies current and emerging programs. It is designed to be a meta-standard to enable verification of farm sustainability schemes. This program is delivered as part of the Department of Agriculture, Water and Environment's Biodiversity Stewardship Package.
Accounting for Nature Framework	Accounting for Nature	A verifiable and certifiable environmental accounting framework to inform better investment, policy and management decisions in natural capital.
AgCarE	AgForce	A natural capital certification for landscape resilience methodology that acknowledges and rates property performance for building natural capital.
Australian Beef Sustainability Framework	Meat and Livestock Australia	A framework that defines what 'sustainable beef production' looks like in practice and annually tracks how the industry is performing over a series of indicators.
Australian Dairy Sustainability Framework	Dairy Australia	A framework that defines what sustainability in the dairy industry looks like in practice and annually tracks how the industry is performing.
Australian Grains Industry Sustainability Framework	Grain Growers	A framework that defines what sustainability in the grains industry looks like in practice and annually tracks how the industry is performing.
Carbon + Biodiversity Pilot	Australian National University	The Carbon + Biodiversity pilot will develop a market-based mechanism to reward farmers for increasing biodiversity. This program is delivered as part of the Department of Agriculture, Water and Environment's Biodiversity Stewardship Package.
Certified Land Management	Australian Land Management Group	Certification process comprising of planning processes and on-ground activities in relation to improving productivity, risk management, and environmental and animal welfare outcomes.
Ecological Outcome Verification	Land to Market	Verification program measuring the health of soil, biodiversity, and ecosystems

EU Taxonomy	European Union	A classification system establishing a list of environmentally sustainable economic activities for companies, policymakers and investors.
Farming for the Future	PWC and Macdoch Foundation	The Farming for the Future project is researching how different land management strategies and practices (e.g. regenerative agriculture) can contribute to financial and production benefits. The research program is specifically looking at the link between natural capital and productivity.
Farm-scale Natural Capital Accounts	Latrobe University	The Natural Capital Accounting project will measure and communicate farm-scale environmental performance and natural capital management. It will work with 50 farmers across NSW, VIC, and TAS to integrate financial, farm management and environmental data into farm-scale natural capital accounts.
Landcare Benchmarking Project	Landcare	National training workshops, SWOT analysis and group action plans for 500 enterprises to understand opportunities for further investment to support better sustainability reporting.
Marketplace for Nature	Hosted by Pollination	Explore and create opportunities for the creation of a voluntary biodiversity/natural capital market
myBMP	Cotton Australia	Demonstrates the Australian cotton industry's improved farming practices and management of natural resources
Recognising Natural Capital	NSW Department of Planning, Industry and Environment	A national initiative which aims to identify and test how natural capital can be recognised on the balance-sheet and in standard financial processes and practices.
System of Environmental Economic Accounting Ecosystem Accounting	United Nations	An integrated and comprehensive statistical framework for organising data about habitats and landscapes, measuring the ecosystem services, tracking changes in ecosystem assets, and linking this information to economic and other human activity.
Taskforce for Nature-related Financial Disclosures (TNFD)	N/A	The TNFD will deliver a framework for organisations to report and act on evolving nature-related risks, to support a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes.
Farming for the Future	Australian Farming Institute and National Farmers Federation	The AASF is an overarching framework that connects and verifies current and emerging programs. It is designed to be a meta-standard to enable verification of farm sustainability schemes. This program is delivered as part of the Department of Agriculture, Water and Environment's Biodiversity Stewardship Package.



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