



Australia's National
Science Agency

CSIRO submission to the Treasury consultation on Sustainable Finance Strategy

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Introduction

CSIRO welcomes the opportunity to provide input to the Treasury's consultation on Australia's Sustainable Finance Strategy.

As Australia's national science agency, CSIRO has research and capabilities that could contribute to the delivery of the Sustainable Finance Strategy. Our comments below relate to the following priorities where we have relevant expertise, research and/or solutions:

- Establish a framework for sustainability-related financial disclosures (priority 1)
- Technical screening criteria for a sustainable finance taxonomy (priority 2)
- Support credible net zero transition planning (priority 3)
- Sustainable investment product labelling (priority 4)
- Modelling of climate risks and opportunities to support identification of systemic financial risks (priority 6)
- Addressing data and analytical challenges (priority 7)
- Issuing Australian sovereign green bonds (priority 9)
- Catalysing sustainable finance flows and markets (priority 10)
- Supporting Australia's position as a global leader in sustainable finance and global climate mitigation and adaptation (priority 12).

CSIRO would be happy to have further discussions with the Treasury about work referred to in this submission.

CSIRO expertise relevant to the priorities

Priority 1: Establish a framework for sustainability-related financial disclosures

CSIRO works on science and technology solutions to quantify, reduce and capture emissions from our energy, agriculture and other industries. This includes methane, carbon and nitrous oxide emissions as well as developing methods and guidelines for offshore carbon capture and storage monitoring. CSIRO also undertakes lifecycle work that includes Scope 3 emissions. We have interest in methodologies for measuring Scope 3 emissions in a robust and repeatable way that does not require large amounts of bespoke data.

CSIRO is working with the Australian Accounting Standards Board (AASB), which is tasked with developing Australian Climate Disclosure Standards (AASB Sustainability Reporting Exposure Draft

released October 2023)¹. AASB has been seeking scientific perspectives from CSIRO as they modify the International Sustainability Standards Board (ISSB) International Financial Reporting Standards (IFRS) S2 Climate-related Disclosures standard for the Australian context. We have interest in exploring how this work could be extended to other sustainability reporting requirements.

CSIRO has released a *Natural Capital Handbook*², aimed at supporting corporates to disclose their nature-related risks. We are also involved in natural capital accounting and disclosures pilots with forestry, agricultural and mining organisations and we are looking at pathways to make interpreted data products available to corporate entities for this type of reporting. Further information on CSIRO's most recent projects and outputs is available at our *natural capital accounting and assessment webpage*³.

Priority 2: Develop a Sustainable Finance Taxonomy

CSIRO is a member of the Taxonomy Technical Expert Group (TTEG) supporting the Australian Sustainable Finance Institute's work to develop a sustainable finance taxonomy. We would be happy to contribute our expert advice to the Treasury as well.

Priority 3: Support credible net zero transition planning

CSIRO has undertaken work to understand the potential impacts of climate change and how they are influenced by drivers such as policy settings, financial markets, demographic and economic growth and atmospheric emissions. Our 2022 report *Exploring Climate Risk in Australia*⁴ may be useful in assisting government and corporates to understand transition risks and how these may be taken into account in their planning.

CSIRO's report *Pathways to Net Zero Emissions – An Australian Perspective on Rapid Decarbonisation*⁵, published in December 2023, provides modelling and analysis focused on the high emissions sectors of the economy to develop transition pathways across energy, transport, building and heavy industry (including steel, cement and aluminium), alongside agriculture.

CSIRO undertook work in 2022 with the University of Technology (Sydney) to review the skills shortage in sustainable finance. The work, published in the report *Advancing climate skills in the Australian Finance System*⁶, identified crucial skills gaps for supporting the transition to net zero

¹ Australian Sustainability Reporting Standards. (2023). Disclosure of Climate-related Financial Information. https://www.aasb.gov.au/admin/file/content105/c9/AASBED_SR1_10-23.pdf

² CSIRO. (2023). The Natural Capital Handbook. <https://www.csiro.au/en/research/natural-environment/natural-resources/natural-capital-accounting/handbook>

³ CSIRO. (2023). Natural capital accounting. <https://www.csiro.au/en/research/natural-environment/natural-resources/Natural-capital-accounting>

⁴ Whitten S, Verikios G, Kitsios V, Mason-D'Croz D, Cook S, Holt P (2021) Exploring Climate Risk in Australia: The economic implications of a delayed transition to net zero emissions. CSIRO, Australia.

⁵ Brinsmead, T.S., Verikios, G., Cook, S., Green, D., Khandoker, T., Kember, O., Reedman, L., Rodriguez, S. and Whitten, S. (2023). *Pathways to Net Zero Emissions – An Australian Perspective on Rapid Decarbonisation*, CSIRO, Australia. <https://www.csiro.au/en/research/environmental-impacts/decarbonisation/pathways-for-Australia-report>

⁶ Atherton A, Noble G, Nagrath K, Cunningham R, Gooley G (2022) Advancing climate skills in the Australian financial system. Sydney: University of Technology Sydney

and figuring climate change into planning, and provided recommendations for addressing this problem and developing a sustainable finance learning ecosystem.

Priority 4: Develop a labelling system for investment products marketed as sustainable

CSIRO is the program operator for the labelling of a number of products, setting the product categories and standards for assessment. A CSIRO Impact Mark, such as the CSIRO low-carb-diet or super high oleic safflower, indicates that CSIRO's innovation played a significant role in the product or service⁷. CSIRO is currently exploring the possible external need for a red meat credentialing program. The design would likely prioritise key principles, including affordability, attainability, adherence to scientific principles, transparency, and a progressive approach. This would aim to ensure alignment with existing practices and technology, remaining adaptable to future changes. It will also be important to consider harmonising the design with domestic and global approaches, to reduce the complexity of the sustainability labelling environment and leverage commonalities.

Priority 6: Identifying and responding to potential systemic financial risks

CSIRO is involved in a *National Partnership for Climate Projections* led by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) involving government and universities⁸. This work will provide more consistent and best practice approaches to climate projections. From this work, the Australian Climate Service (ACS) will deliver climate projections to government and CSIRO will provide them to other end users.

Priority 7: Addressing data and analytical challenges

CSIRO collects, analyses and share information across a range of relevant areas that can assist in addressing data challenges. For example:

- We are a partner, with the Bureau of Meteorology, Australian Bureau of Statistics and Geoscience Australia in the Australian Climate Service (ACS), which has been established to provide improved data, intelligence and expert advice on climate risks and impacts to support and inform decision-making⁷.
- We have developed a unique combination of capabilities, tools and processes that can help diverse stakeholders implement *climate adaptation and development strategies*⁹.
- We *conduct research* to understand how our coastal marine environment has changed, and will change in the future, that allows partners and end-users to identify risks and opportunities for

⁷ CSIRO. CSIRO Impact Marks. <https://www.csiro.au/en/work-with-us/Impact-Marks>

⁸ Australian Climate Service. (2023). Future Climate Change. <https://www.acs.gov.au/pages/future-climate-change>

⁹ CSIRO. (2021). Adaptation pathways: meeting the challenges of global change. <https://www.csiro.au/en/research/environmental-impacts/climate-change/Adaptation-pathways>

the sustainable use of the coastal environment, including consideration of sea level change, coastal extremes and ocean energy¹⁰.

- We collect and analyse data on aerosols, greenhouse and ozone-depleting gases, particulate matter and chemical processes of the atmosphere, and have expertise in the transport and chemical modelling required to interpret these data¹¹.
- Our Conformal Cubic Atmospheric Model (CCAM) is helping Australian sectors to mitigate and adapt to climate change impacts by providing high-resolution climate information¹².
- We are developing national-scale foundational datasets and models that will lower the barrier to entry for natural capital reporting, including ecosystem accounts and biodiversity assessment. Key models that are combined to create these data products are:

- i. AusEcoModels¹³
- ii. the Habitat Condition Assessment Model (HCAS)¹⁴
- iii. a suite of macroecological biodiversity indicator models¹⁵

These approaches have been used to quantify the biodiversity co-benefits of carbon farming (LOOC-B) and we are currently creating workflows specifically for natural capital accounting and nature-related disclosures.

Priority 9: Issuing Australian sovereign green bonds and Priority 10: Catalysing sustainable finance flows and markets

CSIRO would note in the context of this priority that there is a challenge in relation to effective governance of risk, and in particular models that demonstrate the shifts in profitability of restored or maintained natural capital supporting systems over existing approaches. This is currently difficult to distil from existing models and data, and an opportunity for further exploration.

Priority 12: Position Australia as a global sustainability leader

Australia is a regional hub for climate-related data collection and analysis, which provides opportunity for Australia to position itself as a global sustainability leader. Specifically, CSIRO's data, analysis, infrastructure and expertise are used in a number of regional and global initiatives, for example:

¹⁰ CSIRO. Marine information for a sustainable future. <https://research.csiro.au/slrwavescoast/>

¹¹ CSIRO. Atmospheric Composition and Chemistry. <https://research.csiro.au/acc/>

¹² CSIRO. (2021). High-resolution regional climate and weather modelling. <https://www.csiro.au/en/research/environmental-impacts/climate-change/CCAM>

¹³ CSIRO. The Australian Ecosystems Models Framework. <https://research.csiro.au/biodiversity-knowledge/projects/models-framework/>

¹⁴ CSIRO. (2023). Priority improvements to the Habitat Condition Assessment System for Australia. <https://www.csiro.au/en/research/natural-environment/natural-resources/Natural-capital-accounting/Habitat-Condition-Assessment-System>

¹⁵ CSIRO. Indicators: tracking progress for biodiversity. <https://research.csiro.au/macroecologicalmodelling/bilbi/bilbi-outputs-and-applications/indicators-tracking-progress-for-biodiversity/>

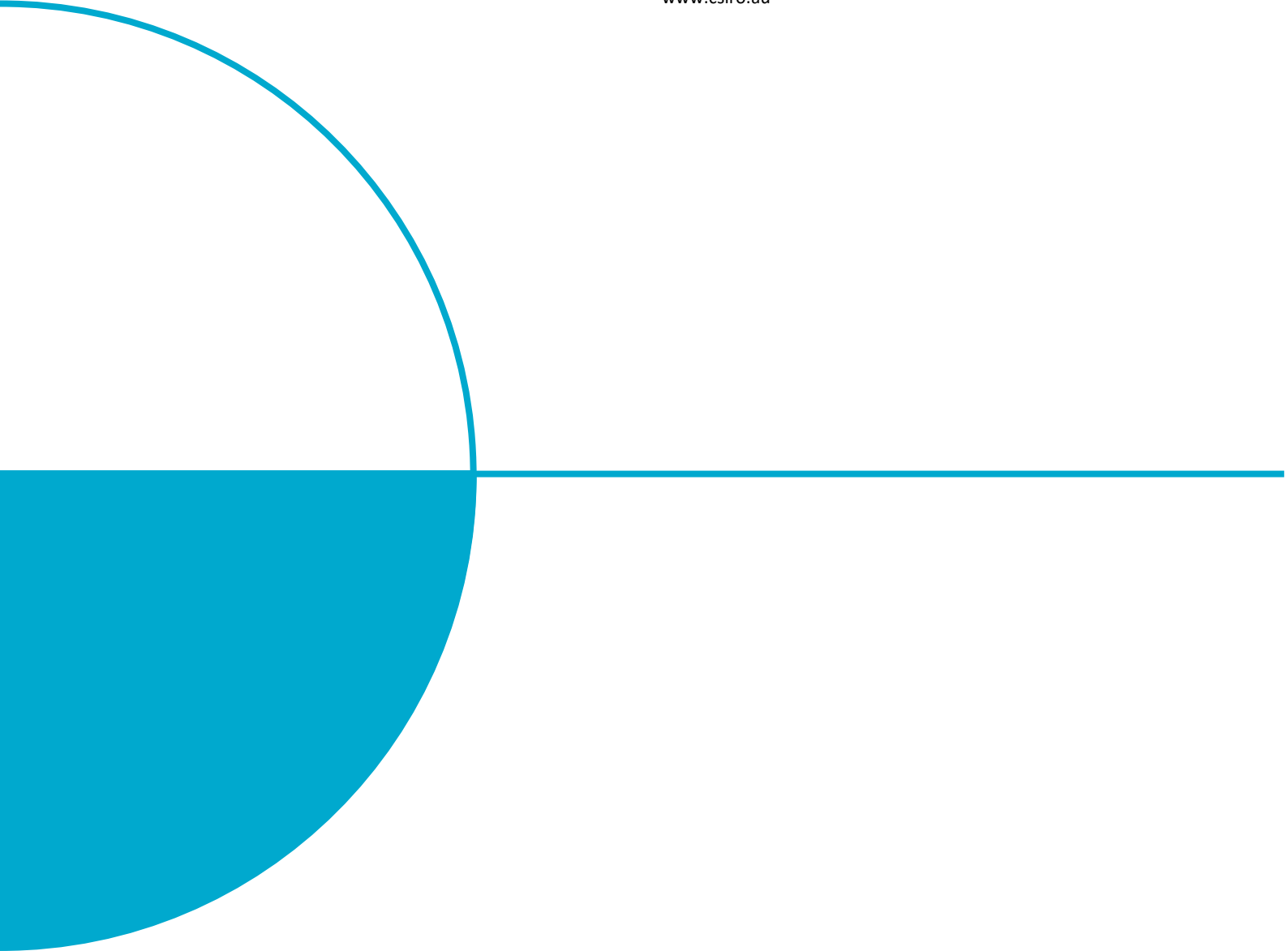
- CSIRO, through CCAM, has international partnerships for developing regional climate modelling in Africa, Southeast Asia, New Zealand and South America¹¹.
- We helped develop a climate data and information portal for the Asia-Pacific - the [Regional Climate Consortium for Asia and the Pacific \(RCCAP\)](#) climate change data portal. It provides ready access to climate science, impacts and adaptation information for stakeholders across the region¹⁶.
- We are working with [partners in the Pacific](#) to enhance the capacity of Pacific nations to incorporate climate change science into decision making and adapt to the challenges of a changing climate¹⁷.
 - This includes the Next Generation Climate Projections for the Western Tropical Pacific project, delivered in partnership with the Secretariat of the Pacific Regional Environment Programme (SPREP) and funded by the Australian Government through the Australia-Pacific Climate Partnership.
- CSIRO is proud to lead and contribute to the [Global Carbon Project's global budgets for three key greenhouse gases](#) (carbon dioxide, methane and nitrous oxide), in addition to hosting the International Global Carbon Project Office¹⁸.
 - These budgets provide up-to-date information about the sources and sinks of these important contributors to global warming.
- The [Kennanook/Cape Grim Baseline Air Pollution Station](#), a joint responsibility of CSIRO and the Bureau of Meteorology, is one of three premier Baseline Air Pollution Stations in the World Meteorological Organization-Global Atmosphere Watch (WMO-GAW) network¹⁹.

¹⁶ CSIRO. (2020). Regional Climate Consortium for Asia and the Pacific. <https://www.csiro.au/en/research/environmental-impacts/climate-change/Regional-climate-consortium>

¹⁷ CSIRO. (2021). Climate change information for the Pacific. <https://www.csiro.au/en/research/environmental-impacts/climate-change/Pacific-climate-change-info>

¹⁸ CSIRO. Global greenhouse gas budgets. <https://www.csiro.au/en/research/environmental-impacts/emissions/Global-greenhouse-gas-budgets>

¹⁹ CSIRO. Kennanook/Cape Grim Baseline Air Pollution Station. <https://research.csiro.au/acc/capabilities/cape-grim-baseline-air-pollution-station/>



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