

# Submission on “Measuring What Matters”

31 January 2023

By Michael Vardon, Associate Professor, Environmental Accounting  
Fenner School of Environment and Society, The Australian National University  
[michael.vardon@anu.edu.au](mailto:michael.vardon@anu.edu.au)

## Key points

- The government is to be congratulated for considering the economy in the broader context of “wellbeing” and “progress” as part of the annual budget process. The many complexities and dimensions of wellbeing and its measurement are clearly recognised in the October 2022-23 Budget Paper 4
- If we are to go from *Measuring What Matters* to *Managing What Matters*, then a conceptual framework is needed, and it must be supported by a well-resourced, ongoing, coherent, and timely information system
- The existing wellbeing measurement frameworks and indicator initiatives, including the OECD’s, are an indicator “grab-bag”, using the available data, not the needed data, and lack a clear conceptual underpinning of how the individual indicators are connected.
- The indicator grab-bag perpetuates a siloed view, with individual areas promoting their own policies with their own data, paying little if any attention to the connections between the different dimensions of wellbeing and progress. An integrated information system and policy process is needed to allow the impact, both past and future, of different policies for achieving wellbeing and progress to be assessed
- The System of Environmental-Economic Accounting (SEEA) provides a conceptual framework based on stocks and flows (e.g., wealth and income) and the interactions between the economy, society, and the environment. Ecosystem services and ecosystem extent and condition as defined in SEEA provide far better indicators of the both the contribution of the environment to wellbeing and also to progress towards environmental goals (protecting biodiversity and mitigating climate change)
- The SEEA provides both an alternative source of indicators and a framework for management, enabling the assessment of trade-offs and synergies between the different dimensions of wellbeing and progress
- The development and implementation of SEEA in Australia has been problematic with little emphasis on the economic side of SEEA. Treasury should take an active role in the use of the SEEA for measuring and managing wellbeing and progress. The Treasury should also coordinate the use of SEEA in the development of policies and programs to improve wellbeing within other government departments and to ensure the resourcing, regular and timely delivery of accounts by information agencies.
- The number of endangered species is a very poor metric for assessing environmental progress. It is dependent on administrative processes and not based on regular or comprehensive data sources

## About me

The comments provided are based on my knowledge and experience of the preparation and use of environmental statistics and SEEA-based accounting gained over more than three decades. This experience includes being the Director of the Centre of Environmental and Energy Statistics at the Australian Bureau of Statistics, where I was responsible for the production of environmental statistics and accounts, contributions to Measures of Australia’s Progress<sup>1</sup>, and being an advisor to the United Nations and World Bank. I have assisted governments and researchers in more than 30 countries with environmental accounting and statistics. Since 2014 I have been an academic at the Australian National University with a focus on the development and application of SEEA-based accounting<sup>2</sup>.

---

<sup>1</sup> <https://www.abs.gov.au/ausstats/abs@.nsf/mf/1370.0>

<sup>2</sup> <https://www.researchgate.net/profile/Michael-Vardon>

## Introduction

The Treasury is to be congratulated on the decision to develop a *Measuring What Matters* Budget Statement for 2023 and for the consultation process initiated. Statement 4 of the October 2022-23 Budget shows a clear understanding of the challenges of measuring wellbeing and progress across multiple dimensions, drawing on past Australian<sup>3</sup> and international experience (e.g., Italy, New Zealand, UK and OECD).

A feature of much of the work on measuring wellbeing and progress is the reliance on what I will call the “indicator gab-bag”. In the Statement the number of indicators by country is noted in Table 4.2. Italy tops the list with 153 indicators. There are plenty more indicators to choose from with 900+ Beyond-GDP indicators identified.<sup>4</sup> A part of the reason for the proliferation of indicators for wellbeing and progress is that the frameworks use the indicators we have, rather than the indicators we need. Compounding the problem is that the indicators are not integrated into an overarching conceptual framework. Table 4.1 of Statement 4<sup>5</sup> shows a list of indicators by domains, but there is no indication of how they are interrelated in the table or in the text.

Table 4.1 is interesting and highlights both the problem and the actual and potential links between indicators. The Future Wellbeing indicators all have “capital” in their names, which is conceptually useful. There is also the link between the Current Wellbeing indicator “Income and Wealth” and the Future Wellbeing indicator Economic capital<sup>6</sup>. The links of the other “capitals” to indicators of current wellbeing are not apparent but could be made. This is important, if the information used for *Measuring What Matters* is to be useful for *Managing What Matters*. With a comprehensive information system, actions aimed to achieve wellbeing and progress goals can be designed, implemented, monitored and revised.

The development of the *Measuring What Matters*, provides the Treasury with an opportunity to develop an overarching conceptual framework and a matching information system that could support government and private sector decision making. With an overarching framework, Treasury can begin to populate it with existing data, identify data gaps and deficiencies and work with information agencies to collect the information needed to not only fully populate the framework but also to provide the information necessary to measure *and* manage what matters.

### What are we measuring?

Three objectives of progress frameworks are identified in the October 2022-23 Budget Statement 4 (p. 124): living standards, quality of life and opportunity and meaning. An overall definition of wellbeing is not presented. There is a reference to the ABS “Measuring Well-being, Frameworks for Australian Social Statistics”.<sup>7</sup> A clear definition of wellbeing and progress is needed. With this, suitable metrics to measure the definition, and different components of the definition, can be identified. Different notions of wellbeing, the constituent components of wellbeing and what constitutes progress towards wellbeing were a feature of the discussions in the development of the ABS Measures of Australia’s Progress between 2001 and 2013.

A general measurement framework is presented in the consultation document (Fig. 4.1). The framework does not attempt to account for the different and possibly competing or conflicting policy areas shown in Table 4.1. Indicators are shown as one element of a linear chain and not as part of information system. With

---

<sup>3</sup> E.g., ABS (2013) Measures of Australia’s Progress <https://www.abs.gov.au/ausstats/abs@.nsf/mf/1370.0>

<sup>4</sup> Hoekstra (2019) Replacing GDP by 2030: Towards a Common Language for the Well-being and Sustainability Community (Cambridge Univ. Press, 20).

<sup>5</sup> The source of the table is given as National agencies; Centre for Policy Development (2022), ‘Redefining Progress’

<sup>6</sup> It is interesting that income and wealth have been combined and conceptually they should be split

<sup>7</sup> ABS (2001) Measuring Wellbeing – Frameworks for Australian Social Statistics [https://www.ausstats.abs.gov.au/ausstats/free.nsf/0/D609B8E54F0EDCA8CA256AE30004282D/\\$File/41600\\_2001.pdf](https://www.ausstats.abs.gov.au/ausstats/free.nsf/0/D609B8E54F0EDCA8CA256AE30004282D/$File/41600_2001.pdf)

this representation the policy areas can be viewed as multiple, siloed chains (or in this case pipes, since they are shown horizontally) with associated siloed (piped) information systems.

### **Integration is needed**

An integrated approach to policy and information is needed. This is to avoid the trap of each policy area using information it already has to support its own existing objectives (i.e. the status quo), making little if any attempt to gather more information or integrate existing information into a new system to help recognise, reconcile and manage different aspects of wellbeing and progress. Going into this trap would mean the view from Treasury and Prime Minister and Cabinet would be little changed – each area competing for attention and resources with little ability to fully understand the linkages and integrated nature of progress toward wellbeing. It also means integrated assessments of past policies or the likely effectiveness proposed policies from different areas for achieving higher levels of wellbeing across the different dimensions cannot be assessed.

An annual statement without information integration would at least consolidate the available information and may improve raise awareness of broader issues in the community, public and private sectors. While to my knowledge the impact of the ABS' Measures of Australia's Progress was not assessed, it certainly raised media interest when it was released each year. This interest may also have raised awareness in the community.

With integrated information you can move from awareness, to understanding and ultimately to the design of policies to increase wellbeing.

### **What to measure?**

The characteristics of good indicators are shown in Box 4.1. The list is a good starting point, but it is missing some important practical characteristics, most importantly timeliness, frequency of data and independence of data providers. What makes Gross Domestic Product (GDP), a good indicator is that it produced quarterly, soon after the reference period and by an independent information agency, the Australian Bureau of Statistics. What is not generally recognised or known is that GDP comes from a complete system, the System of National Accounts, which is a rich data source and able to be unpacked by analysts and managers in the public and private sectors. This is known within Treasury, some part of Australian Government, economic commentators, and academics, but not by the general public. A large part of what makes GDP such a good and widely used indicator is that it comes from a large and coherent information system and is not an isolated indicator.

The situation is very different for other indicator sets. For example, compare GDP to the State of Environment Reporting. A five-yearly report, never done the same way twice, with a suite of different indicators and must be approved by a Minister for release.

### **Climate change, the environment and wellbeing**

Box 4.4 is a short summary of how the environment relates to wellbeing. The focus is on emission reductions in the economy and on cultural heritage and recreation. These are useful indicators but the broader condition of the environment and the direct dependence of the economy on the environment is missing and the full impacts of the economy on the environment (e.g. solid waste, water pollution) are missing. A more comprehensive picture is needed but missing. Accounting for natural capital (as in the list of OECD future indicators) and the natural resources and ecosystem services that are derived from natural capital would provide a comprehensive picture of the environment and the risks to the economy and wellbeing more generally of environmental decline.

## **The System of Environmental-Economic Accounting (SEEA) as an alternative measurement and management framework for wellbeing**

The System of Environmental-Economic Accounting (SEEA)<sup>8</sup> is an international statistical standard that systematically links multiple sources of environmental and economic information. It is based on a comprehensive model of stocks and flows which are measured in physical (litres, hectares, tonnes, parts per million, etc.) and monetary terms (i.e., AUD). SEEA directly links to the System of National Accounts (SNA)<sup>9</sup> and the macro-economic indicators, like GDP, that emerge from it. It incorporates natural capital, ecosystem services and environmentally damaging pollution.

SEEA-based indicators theoretically meet all of the “good indicator” criteria specified in Box 4.1. Where there is a current short-fall is that a full set of accounts has never been produced, the accounts produced, with the exception of water accounts, are sporadic, published by a range of different agencies and stuck in an experimental phase.<sup>10</sup>

The SEEA and its links to the SNA can provide a large number of indicators relevant to the measurement and management of wellbeing and progress. In particular, it allows a comprehensive view of the use of natural resources and ecosystem services by industries and households and the pollution (e.g. greenhouse gas emissions) from by industries and households. It also records environment protection and resource management expenditure, which in combination with ecosystem extent and condition accounts can show where the biggest conservation bang-for-buck has been achieved and where money spent has yielded poor results. Through the use of models the information from the accounts can be used to test the impacts of different policy options – pollution taxes and other market-based instruments or tighter regulation.

How an information system, with basic data, accounts and modelling, can be used in all parts of a typical public policy cycle is shown in the Figure 1 below. While the policy cycle in Figure 1 uses “green recovery” as the example, the information at its core would be relevant to every policy, since every policy requires a choice on if to spend, and if to spend, how much, where and when to spend.

SEEA-based accounts can also be used to monitor thresholds and become the basis for a new way of recognising the importance of natural capital and for managing society’s impact on natural capital and the ecosystem services and natural resources on which we depend.<sup>11</sup>

---

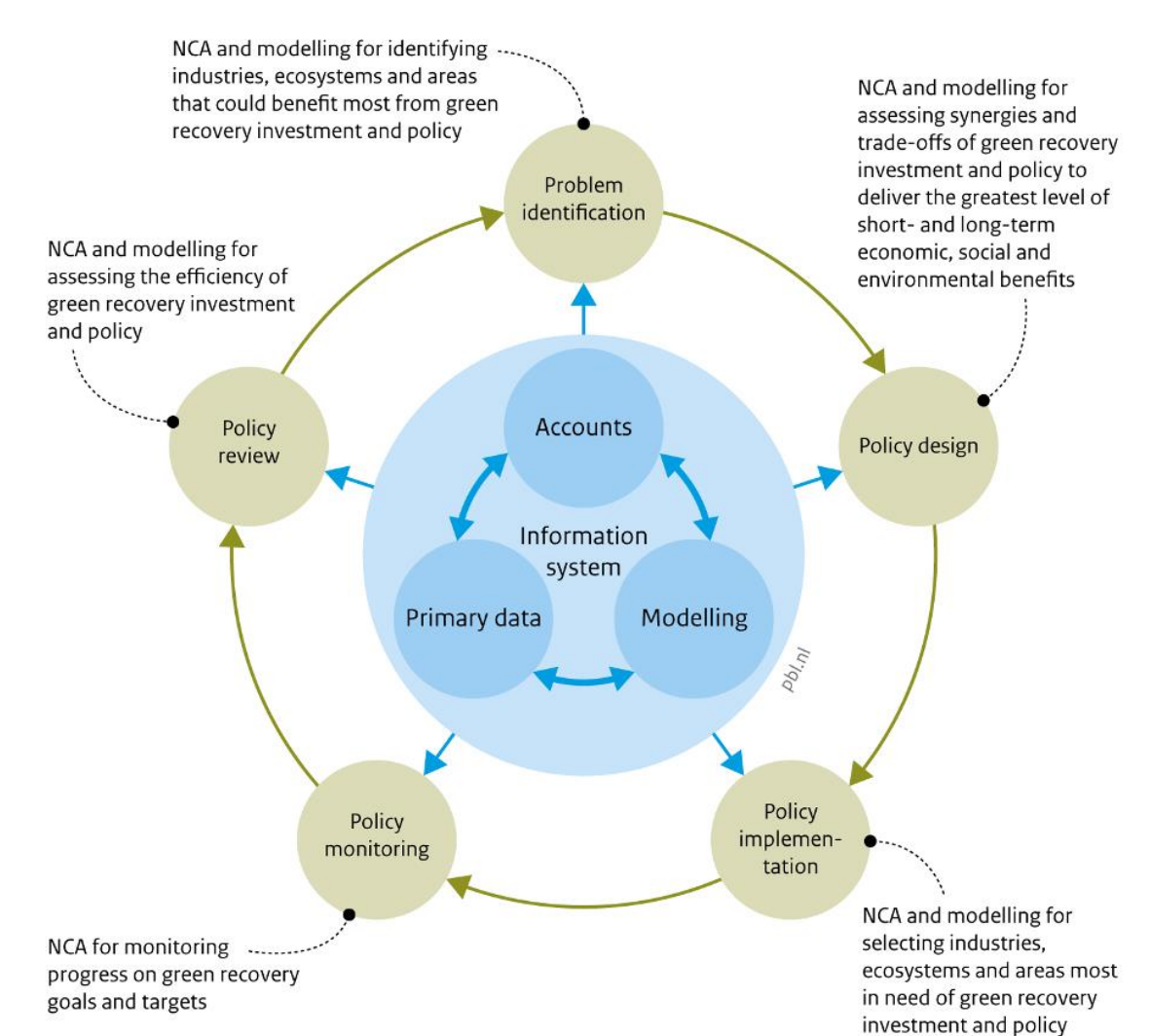
<sup>8</sup> System of Environmental-Economic <https://seea.un.org/>

<sup>9</sup> System of National Accounts <https://unstats.un.org/unsd/nationalaccount/sna.asp>

<sup>10</sup> Vardon and Burnett (2021). Environmental accounting’ could revolutionise nature conservation, but Australia has squandered its potential. The Conversation <https://theconversation.com/environmental-accounting-could-revolutionise-nature-conservation-but-australia-has-squandered-its-potential-163661>

<sup>11</sup> Vardon et al. 2021. From natural capital accounting to natural capital banking. Nature Sustainability. <https://www.nature.com/articles/s41893-021-00747-x>

**Figure 1.** An information system and policy cycle using accounts



Source: Vardon et al. (2022). From COVID-19 to Green Recovery with natural capital accounting. *Ambio*  
<https://link.springer.com/article/10.1007/s13280-022-01757-5>

### The Treasury should take an active role in the development, implementation and use of the SEEA

A range of announcements have been made by the Albanese Government on the development of environmental information, including environmental accounts, to support policy, including environmental and agricultural programs for market-based instruments.<sup>12</sup> The government has also formed a partnership with the USA to advance environmental accounting.<sup>13</sup> The government is certainly saying the right things.

However, to date investment in information and accounting has been limited and the focus has been on the scientific not economic components of SEEA. The Treasury should ensure resourcing of the information is

<sup>12</sup> Nature Positive Plan: better for the environment, better for business

<https://www.dcceew.gov.au/sites/default/files/documents/nature-positive-plan.pdf>

<sup>13</sup> The Hon Tanya Plibersek MP. Media statement: Australia and the United States to work together on measuring the economic value of nature. <https://minister.dcceew.gov.au/plibersek/media-releases/media-statement-australia-and-united-states-work-together-measuring-economic-value-nature>

adequate and that sufficient attention is given to the development of the economic information needed for spatially-referenced accounting.

### **Independence**

Regular production of SEEA-based accounts should be by information agencies, and not tied directly to the environment. The government's "Nature Positive Plan"<sup>14</sup>, makes the preparation of the accounts a joint effort between a new Data Division within the department of environment and the ABS (p. 5). This does two things: (1) makes the accounts focused on the environment rather than economic side of SEEA, and (2) means the ABS is not independent and the release of accounts, like the release of the State of Environment Report, requiring ministerial sign-off. The national accounts and GDP are published regularly on pre-determined dates without needing ministerial sign-off and the Treasury is not involved in the preparation of accounts.

### **Endangered species as an indicator**

The number of endangered species is a very poor metric. Some of its limitations are recognised on p. 136 of Statement 4. By the criteria outlined in Box 4.1 of the Measuring What Matters Budget Statement and by the additional criteria I have suggested (timeliness, frequency of data and independence of data providers). Taking each of the criteria in turn:

*Relevant:* If the policy priority is the condition of the environment, then to the degree to which the number of endangered species represents the condition of the environment, then it is relevant. Since biodiversity is only one part of environmental condition,<sup>15</sup> then it probably not relevant. The relationship of the status of species to wellbeing is uncertain. No of endangered species fails the "relevant" test.

*Complete:* It is unclear if the species listed as endangered adequately represent the status of all species (there are thousands of invertebrates, few on endangered species, although some almost certainly should be<sup>16</sup>) or are an indication of the state of environment. There is little on-going monitoring of any species. It fails the "complete" test

*Measurable:* Distribution and abundance of all species can be measured, at least in theory. Meets the "measurable" test, although in practice few species are measured.

*Comparable:* Each country has different numbers of species due to country area and number of ecosystems present. Number of endangered species is not amenable to international comparison. Fails this test.

*Reliable:* Data are not obtained from systematic sources and listing is dependent on administrative process requiring expert interpretation.

*Understandable:* more endanger species is understood by decision-makers and key stakeholders as a "bad thing" for the environment, so meets this test.

---

<sup>14</sup> Nature Positive Plan: better for the environment, better for business

<https://www.dcceew.gov.au/sites/default/files/documents/nature-positive-plan.pdf>

<sup>15</sup> King et al. (2021). Linking biodiversity into national economic accounting. Environmental Science & Policy.

<https://doi.org/10.1016/j.envsci.2020.10.020>

<sup>16</sup> Bond and Vardon (2022). Biodiversity accounts for the butterflies of the Australian Capital Territory. Conservation Science and Practice <https://conbio.onlinelibrary.wiley.com/doi/10.1111/csp2.12869>

*Timeliness:* Listing of species as endangered (or not) is an administrative process, lagging many years the actual status of species. Fails this test.

*Frequency:* Lists are updated as species are added or removed, so in theory meets the “frequency” test. However, since few species are actively monitored it fails practically.

*Independence:* IUCN Red List is independent so passes this test. Listing of species under Australian Law requires Ministerial approval, so would fail the test if based on the species listed under the EPBC Act.

A better indicator of progress in environmental condition would be SEEA-based ecosystem extent and condition accounts and a better indicator of the environment's contribution to wellbeing would be SEEA-based ecosystem service accounts.

## **Conclusion**

A clear definition of wellbeing needs to be agreed and conceptual framework for integrating the different dimensions of wellbeing is needed. At present the examples from around the world are lacking this – they are a grab-bag of disconnected indicators. An accounting framework, based on stocks and flows measured in physical and monetary terms, could form the basis of a general framework for measuring wellbeing.

The System of Environmental-Economic Accounting is an alternative and better framework to measure progress in environmental condition and the contributions of the environment to wellbeing. The SEEA also enables the integration of data and would help align the information from different policy areas and understanding the trade-offs and synergies of different policy options.

Regular production of comprehensive accounts will require investment and time but is essential if we are to move from an indicator grab-bag to *Measuring and Managing What Matters*.