Report on the
Natural Capital Accounting and Valuation of Ecosystem Services Project
NCA National Forum in South Africa

10-11 July 2019

Statistics South Africa Auditorium

ISIbalo House, Koch Street, Salvokop, Pretoria

Background to this document

Statistics South Africa (Stats SA), in partnership with the South African National Biodiversity Institute (SANBI), convened the first National NCA Forum on 10 and 11 July 2019. It was supported by DEA. UNSD, UN Environment and European Union. This document contains a record of the event.

The objectives of the National NCA Forum were to:

1. Explore linkages and alignment of NCA to the National Development Plan, Sustainable Development Goals, National Statistical System, amongst others,
2. Present early highlights from South Africa's work on ecosystem accounting
3. Strengthen a growing network of people involved along the NCA value chain,
4. Promote learning on NCA through dialogue, sharing experiences and case studies,
5. Build support for NCA nationally, including through eliciting input into the development of a strategy for advancing NCA in South Africa.

The event gathered 131 public and private sector participants representing 24 institutions involved across the NCA value chain, including policy and decision-makers interested in evidence for policy making and sustainable development. Participants included representatives from, but not limited to:

1. The Presidency, the National Planning Commission (NPC), National Treasury, Stats SA, Departments of Planning, Monitoring and Evaluation (DPME), Environmental Affairs (DEA)[1], Rural Development and Land Reform (DRDLR), Water and Sanitation (DWS), Agriculture, Forestry and Fisheries (DAFF), Science and Technology (DST).
2. Research institutions such as the Water Research Commission (WRC) and CSIR.
3. Civil society and private sector organisations.
6. International bodies such as the EU Delegation to South Africa, UNSD, and UN Environment.

Stats SA and SANBI appreciate the support provided by:

- The Natural Capital Accounting and Valuation of Ecosystem Services (NCAVES) Project, funded by the EU, and led globally by the United Nations Statistics Division (UNSD) and United Nations Environment Programme (UN Environment), including the Projects' Reference Group members from the Delegation of the European Union to South Africa, UNSD, UN Environment, and DEA. This Forum is an activity in NCAVES Project.

- Individuals from a range of institutions who supported the successful execution of the Forum through planning, chairing, making presentations, facilitation, note-taking, photography, communications and media liaison, coordination and catering, printing and registration, set-up lighting and other support.

- Participants of the workshop for their active and engaged participation.

- The Ecological Infrastructure for Water Security (EI4WS) Project, which is funded by the Global Environment Facility (GEF), implemented by the Development Bank of Southern Africa (DBSA) and executed by SANBI in partnership with a range of private and public partners. The project supported through facilitation and presentations. One of the thematic areas discussed in Session 4 will be also furthered through this project.

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[1] Note that DEA subsequently was changed to Department of Environment, Forestry, and Fisheries (DEFF)

Contents

Programme

Wednesday 10 July		
10:00	Registration and coffee	
	SESSION 1: Opening ceremony – South Africa at the forefront of a global movement	Chair: Wadzi Mandivenyi, DEA
11:00	Welcoming remarks by • Stats SA Deputy Director General • SANBI Chief Executive Officer • Department of Environmental Affairs Deputy Director General • Deputy Head of Delegation of the European Union to South Africa • United Nations representative	Mr Joe de Beer Dr Moshibudi Rampedi Mr Shonisani Munzhedzi Mr Raul De Luzenberger Mr Bram Edens
12:00	Lunch	
	SESSION 2: NCA to support national priorities	Chair: Ndileka Mohapi, DWS
13:00	Keynote: Natural Capital Accounting - what is it and how can it add value?	Mandy Driver, SANBI
13:30	Panel discussion: How does natural capital accounting support national development priorities? *Facilitated panel discussion guided by audience's questions on the keynote address*	Moderated by: Kristal Maze, SANParks Panellists: Mukondi Masithi, DPME Joe de Beer, Stats SA Wadzi Mandivenyi, DEA Cecilia Njenga, UN Environment
14:30	Coffee break	
15:00	*Panel discussion continues*	
16:00	South Africa's new national land and ecosystem asset accounts: a quick look	Rob Anderson, Stats SA
16:30	Close of day 1	
16:30	Coffee and networking	

Thursday 11 July		
8:00	Registration and coffee	
	SESSION 3: Building natural capital accounts: experience, lessons and challenges	Chair: Henry Roman, DST
9:00	South Africa's national land and ecosystem asset accounts: your questions answered	Rob Anderson and Xaven Pillay, Stats SA; Thuli Mahlangu, SANBI
9:30	Keynote: Implementing NCA – experiences, lessons and challenges from other countries	Bram Edens, UNSD
10:00	Emerging opportunities for NCA and related initiatives in South Africa	
	1. Why do we need NCA when we have State of Environment Reporting?	Peter Lukey, DEA
	2. Accounting for ecosystem services and values in South Africa	Jane Turpie, Anchor Research & Monitoring
	3. Embedding natural capital in responsible investment practices	Libby Dreyer, DBSA
	4. The Biological Diversity Protocol: accounting framework for business to report on biodiversity impacts	Joel Houdet, EWT
11:00	Coffee break	
	SESSION 4: Advancing NCA in South Africa	
11:30	Advancing NCA in South Africa: facilitated discussions around key thematic areas	Facilitators:
	1. *Accounting for water, catchments & water-related ecosystems*	Jenifer Zungu, SANBI
	2. *Ocean accounting*	Prideel Majiedt, SANBI
	3. *Accounting for ecosystem services, including valuation*	Jane Turpie, Anchor Research & Monitoring
	4. *Towards a strategy for advancing natural capital accounting in South Africa*	Gerhardt Bouwer, Stats SA, & Mandy Driver, SANBI
13:00	Lunch	
	SESSION 5: Shaping a mandate for moving forward together	Chair: Mukondi Masithi, DPME
14:00	Towards a strategy for advancing NCA in South Africa:	Aimee Ginsburg
	• Recommendations from Assessment Report	Facilitators from thematic areas
	• Feedback from key thematic areas	
	• Steps for advancing NCA in South Africa and identification of champions to give guidance	
16:00	Closing remarks	Joe de Beer, Stats SA
	Vote of thanks	Bram Edens, UNSD
16:30	Coffee and networking	

Summary of Forum proceedings

SESSION 1: Opening ceremony- South Africa at the forefront of a global movement

The opening ceremony was chaired by Ms Wadzi Mandivenyi (DEA Chief Director: Biodiversity Specialist Monitoring and Services). She commented on the project partners working collaboratively together on this innovative area of work in her opening remarks.

Ms Wadzi Mandivenyi (DEA Chief Director: Biodiversity Specialist Monitoring and Services) thanked Stats SA for providing the venue for the first-ever Natural Capital Accounting (NCA) Forum. The Natural Capital Accounting Forum, which is the first of its kind to be held in South Africa, is a joint venture by the Statistics South Africa (Stats SA), the South African National Biodiversity Institution (SANBI), the Department of Environmental Affairs (DEA) and their international partners in this venture, namely the United Nations Environmental Programme and the European Union.

Joe de Beer (Stats SA Deputy Director General: Economic Statistics) opened the National NCA Forum on behalf of the Statistician General, Risenga Maluleke. He thanked all the delegates that had come to the first-ever National NCA Forum in South Africa. Stats SA along with our collaborators in this venture, namely, SANBI, DEA, UNSD, UN Environment and the EU are proud to host this meeting. On behalf of Stats SA, he extended his gratitude for the invaluable support provided by all the partners towards this joint venture of advancing NCA in South Africa.

Dr Moshibudi Rampedi (SANBI CEO) thanked Stats SA for hosting the Forum and acknowledged all the distinguished quests and representatives from the projects partners. She highlighted that SANBI's mandate is in line with the aims of the NCA venture. She noted that NCA will provide systematic and comprehensive information to help us fully understand the contribution that our natural resources make to the economy and how vital it is that we conserve them so that we can realise the United Nations Sustainable Development Goals (UN SDG 2030). SANBI is proud to be part of this partnership in developing and mainstreaming natural capital accounts in the biodiversity sector.

Mr Shonisani Munzhedzi (DEA Deputy Director General: Biodiversity and Conservation) welcomed all delegates and experts to the NCA Forum. He highlighted the statistics released by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) that showed the alarming loss of biodiversity. He is hoping that the new findings of the soon to be released National Biodiversity Assessment (NBA) report detailing the state of the SA's current biodiversity will prompt negotiation of a new deal for nature and people, cementing the notion that social, natural and economic aspects are interlinked. He went on to mention that there are a lot of nature-based jobs that can be created and there are several policies that are under review by the government that are going to do just that. All that is needed is data about the environment, data that will be translated to information to inform policies and governance. He suggests that NCA is the right tool to do just that and that NCA will work better when it is embedded into policy as a means of formalising it into a more concrete way of operating.

Mr Raul De Luzenberger (Deputy Head of the European Union to South Africa) welcomed all delegates from the partnered organisations. He noted that the NCA project comes at the height of the fight against climate change and that the NCA project has the potential to provide data and information that will contribute to policy analysis. This will inform policy choices by shedding the light on the impact of those choices made. He emphasised the importance of Economic Statistics in laying the groundwork for the project. The concept of the NCA does not indicate nature as wealth but instead indicates that nature is part and parcel of a country's means of production- that nature is a means of creating wealth and jobs.

Mr Bram Edens (United Nations Representative: Senior Statistician) was honoured to be at the first NCA Forum in South Africa. He emphasised that NCA is gaining ground on a global scale as there is a realisation the GDP is lacking in accounting for the environment's role in contributing to the economy of a country. South Africa is at the forefront in NCA and in implementing the System of Environmental-Economic Accounting (SEEA). The NCA project aims to develop biodiversity and ecosystem accounts that will contribute to a statistical standard. These accounts will provide statistically valid information to policy-makers about environmental issues, more especially now at the height of the fight against climate change.

The session was closed with the showing of the video titled "*African countries lead on natural capital accounting*".

SESSION 2: Natural Capital Accounting to support national priorities

Session 2 was chaired by Ndileka Mohapi from DWS who welcomed Mandy Driver from SANBI to deliver the keynote address. The keynote address was followed by a panel discussion facilitated by Kristal Maze of SANParks. The panellists discussed the question "*How does natural capital accounting support national development priorities?*" and were also asked questions from the audience. The day closed with a presentation from Rob Anderson of Stats SA that provided an overview of initial results emerging from South Africa's new national land and ecosystem assets accounts.

Mandy Driver (SANBI Director: Biodiversity Policy Advice) gave the key note address titled "*Natural Capital Accounting – what is it and how can it add value?*" Mandy gave a brief introduction to what NCA is and she highlighted that for sustainable development you need three sets of indicators and statistics including environmental (NCA & SEEA), demographic (population census) and economic (National Accounts & SNA). The demographic and economic statistics and indicators are well developed but we are not as advanced in environmental indicators and statistics and we have ad hoc measurements. This is where the SEEA provides a standardised way of measuring the environment and can be comparable over time and with other countries.

There is a call for evidence-based policy making through the Presidency's policy framework for the Government-wide monitoring and evaluation system (GWM&ES), National Treasury's Framework for Managing Programme Performance Information which requires financial, economic and environmental sustainability performance information and the National Development Plan (NDP) calls for environmental indicators to inform decision-making.

South Africa is at the forefront of a global movement on natural capital accounting. Natural Capital Accounting (NCA) is a growing field of work globally and in South Africa. Stats SA has developed natural capital accounts for water, minerals, energy and fisheries, starting with water in the early 2000s. Stats SA and SANBI are now building on this with ecosystem accounts. Ecosystem accounts build on decades of biodiversity science and a long history of detailed population census data.

Panel discussion: How does natural capital accounting support national development priorities?
A facilitated panel discussion guided by audience's questions on the keynote address was held. The panel discussion was facilitated by Kristal Maze from SANParks.

Rob Anderson (Stats SA Director: GIS) presented on "*South Africa's new national land and ecosystem assets accounts: a quick look.*" Rob gave a brief introduction to the national land and ecosystem extent accounts and how the basic spatial unit (BSU) was developed to assist in the accounting approach (see [Appendix on the BSU](#)). He listed the data sources which included, national land cover, terrestrial vegetation types, census data, socio-economic data and Stats SA geography information frame. Then he presented on some of the preliminary outputs in land cover change between 1990 and 2013/14. Finally, he invited the audience to write down questions on cards that the team would try to provide some answers for the next morning.
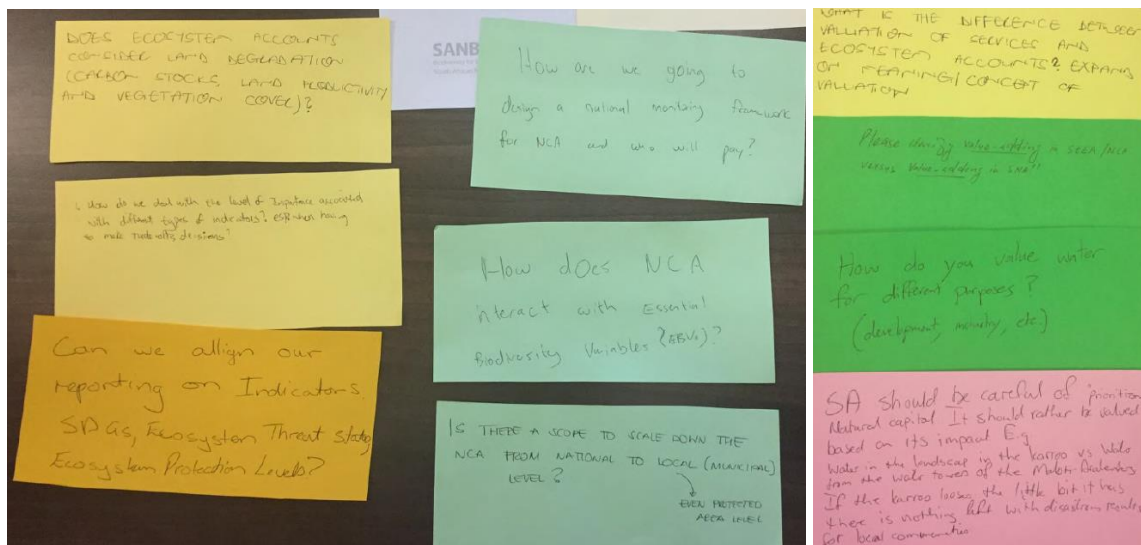
SESSION 3: Building natural capital accounts: experience, lessons and challenges

Session 3 chaired by Henry Roman from Department of Science and Technology (DST).

The session consisted of various experts in the related NCA fields on work done directly for the NCAVES project or related subject matter to NCA.

South Africa's land and ecosystem asset accounts: your questions answered

Rob Anderson, Xavier Pillay (Stats SA) and Nokuthula Mahlangu (SANBI) gave a joint presentation. This presentation was a follow-on from the presentation given in Session 2 "*South Africa's new national land and ecosystem assets accounts: a quick look.*" The team answered questions that came from the audience during session 2. These questions were answered through the presentation in case study format with practical examples presented.

Case Study 1: City of Tshwane Metropolitan Municipality. Highlighted an initial analysis at the local municipality level, the results of the land accounts looking at the change of built up are shown with population data that was derived from a sub-place level.

Case Study 2: Amathole District Municipality. The analysis looked at what has happened to land cover given decreases of population density in the region. Population is decreasing in rural areas. Moving towards small centres, villages and small towns closer to transportation routes and service centres.

Case Study 3: Mpumalanga Province. The analysis looked at provincial levels of change in land cover, the impact of mining in the Emalahleni Local Municipality and where the strategic water source areas (the 10% of the land area that delivers 50% of our water).

Closing statements were:

- NCA allows us to interrogate change across sectors, monitor across land, water and marine ecosystems.
- Because the data is all spatial, we can integrate different data layers in a synergistic and systematic way. "Data stacking". It is clear how good time series data of population, economy and environment is important to monitoring
- NCA can challenge assumptions about how the economy, people and environment interact.
- NCA supports South Africa's ability to make evidence-based decisions

Key note speech: Implementing NCA – experiences, lessons and challenges from other countries

Bram Edens (UNSD) presented on implementing NCA were he presented on the following:

- Global context of NCA: Gave an explanation of National accounts and how they do not cost depletion or degradation against measure of production or income. SEEA is the measurement framework for NCA and consists of the SEEA Central framework and the SEEA Experimental Accounting which is complementary to the SEEA Central Framework.
- Policy demand: NCA attempts to bring diverse data sources together – by confronting these data sources you get to resolve differences and improve quality.
- Experiences: He presented on some practical country examples of how NCA has being implemented, coordinated and the accounts compiled.
- Lessons learned: he shared some of the lessons learned as well as the challenges encountered while assisting countries to implement NCA.

Emerging opportunities for NCA and related initiatives in South Africa

3.1 Why do we need NCA when we have Stats of Environment Reporting?

Mandy Driver presented on behalf of Peter Lukey (DEA). She made the connection between NCA and State of Environment Reporting (SoE) – they are complementary. NCA can provide consistent and rigorous environmental statistics and indicators that could feed into the SoE. DEA have the mandate to interpret the information (StatsSA does not the mandate to interpret, only to publish and be objective) and to design policy and advocate.

3.2 Accounting for ecosystem services and values in South Africa

Jane Turpie (Anchor Environmental Consultants) presented on ecosystem service valuation in South Africa. She explained that extent and condition are the building blocks, then we describe the ecosystem services in physical and monetary terms and ultimately their contribution to economic and human welfare. She highlighted that ecosystems have distinct structure and organisations which produce differences in productivity, which yield ecosystem services including provisioning, regulating and cultural services. In SA, we have over 100 studies on valuing ecosystem services. Some of it synthesised on a national scale study in 2017. She highlighted a few challenges:

- Consistency – both definitions and methodologies. Different disciplines involved speaking different languages and hard to find common ground.
- Data – missing high-quality high resolution spatial data – this is linked to national monitoring schemes.
- Capacity – need econometrics, biophysical modellers and GIS skills.

3.3 Embedding natural capital in responsible investment practices

Libby Dreyer (DBSA) presented on embedding NCA into responsible investment practices. She said that the DBSA is responsible for sustainable infrastructure development that is strongly aligned to national, regional and global development plans. She highlighted that the DBSA have a new development position, which gives a mandate to consider natural capital within investment process. This is seen as a mechanism to a greener economy. DBSA are participating in the pilot project, Advancing Environmental Risk Management Project (AERM) with South Africa, Columbia and Peru leading the global approach to embed natural capital in the finance sector. This project consists of phases as listed below:

- Phase 1: Develop methodologies and frameworks to incorporate natural capital into finance sector risk management frameworks;
- Phase 2: Integrate natural capital risk management into banking risk processes; and
- Phase 3: Competitive edge in managing emerging risks and realising opportunities.

She also mentioned the Natural Capital Finance Alliance (NCFA), which includes 75 financial institutions who promote natural capital in financial decision-making through the Natural Capital declaration. The United Nations Environment Programme Finance Initiative (UNEP FI) & the Global Canopy Programme (GCP) act as the NCFA Secretariat. She closed off by saying that NCA provide a tool for reporting consistently. The DBSA are looking at embedding this approach at all levels of their organisation.

3.4 The Biological Diversity Protocol: accounting framework for business to report on biodiversity impacts

Dr. Joël Houdet from the Endangered Wildlife Trust (EWT) presented on the biological diversity protocol project. The biological diversity protocol project is designed as a comprehensive biological diversity accounting and reporting framework that can help produce credible and unbiased information needed for various biodiversity-related applications, especially disclosure. The goal is to provide an accounting framework to measure biodiversity impact at the company-level. The project want to identify biodiversity impact inventory, net impact for a given time period, validate and verify environmental impact assessments (EIAs). He listed the following assessment boundaries:

- Scope 1: Direct operations (gate-to-gate), which covers activities over which your business holds ownership or control;
- Scope 2: Upstream (cradle-to-gate), which covers the activities of suppliers; and
- Scope 3: Downstream (gate-to-grave), which covers activities linked to the purchase, use, reuse, recovery, recycling, and final disposal of your business' products and services.

He closed his presentation with an example of the biodiversity accounting framework.

SESSION 4: Advancing natural capital accounts in South Africa

Session 4 involved the delegates breaking up into four different groups across four thematic areas:

- Thematic area 1: Accounting for water, catchments and water-related ecosystems.
- Thematic area 2: Ocean accounting.
- Thematic area 3: Accounting for ecosystem services, including valuation.
- Thematic area 4: Towards a strategy for advancing NCA in South Africa

Each group held facilitated discussions relevant to each thematic area.

Thematic area 1: Accounting for water, catchments and water-related ecosystems.

Water security is a key development issue in South Africa, as highlighted in the National Water and Sanitation Master Plan. NCA can help to provide regular, reliable information to inform policy and management, including on the supply and use of water across the water value chain, as well as the health of the ecosystems and ecological infrastructure that underpin the provision of water. Several water-related NCA projects have already been undertaken in South Africa, including national water accounts (led by Stats SA), national river ecosystem accounts (a partnership between SANBI, CSIR, DWS and Stats SA), and catchment-level water resource accounts (led by UKZN CWRR). Accounts for Strategic Water Source Areas and for ecological infrastructure in two catchments (Greater uMngeni and Berg-Breede) are planned as part of the Ecological Infrastructure for Water Security (EI4WS) Project. The Water Research Commission (WRC) has played a key role in funding water-related NCA to date in South Africa.

This thematic group introduced participants briefly to existing and planned water-related natural capital accounts, and then focused on opportunities and priorities for strengthening the production and use of water-related accounts going forward.

The facilitator for this group was Jenifer Zungu, Project Leader of the EI4WS Project. The following presentations were given:
- Water Resource Accounts – David Clark, Centre for Water Resource Research: UKZN;
- Ecological Infrastructure for Water Security - Jenifer Zungu, SANBI; and
- DWS work on PES system used in river condition account - Ndileka Mohapi, DWS

Thematic area 2: Ocean accounting.

South Africa is working to grow its ocean economy, in relation to both GDP and jobs created, through Operation Phakisa. NCA provides a potential tool for measuring progress towards these objectives as well as highlighting the role of healthy ecosystems in the ocean economy, thereby providing information to support evidence-based policy and decision making. NCA can also inform Marine Spatial Planning, currently underway in South Africa, and can support monitoring and reporting on South Africa's progress toward Sustainable Development Goal 14, "Conserve and sustainably use the oceans, seas and marine resources for sustainable development". South Africa has the information to support different aspects of ocean accounting, including accounting for extent and condition of marine ecosystems and estuarine ecosystems.

This thematic group provided an overview of what is happening in relation to ocean accounting broadly, including the development of an international framework for ocean accounting, and then

focused on opportunities and priorities for strengthening the production and use of ocean-related accounts going forward.

The facilitator for this group was Prideel Majiedt, SANBI Marine Scientist.

The following presentations were given:

- Marine Accounts – Prideel Majiedt, SANBI Marine Scientist;
- Ocean Accounts – Ken Findlay, CPUT;
- Experimental ecosystem accounting for South Africa's estuaries – Lara van Niekerk, CSIR.

Figure 1. Visual gathering of notes from discussion on ocean accounting

Current users of accounts	Future users (5 year time frame)
Institution / group, specific person (if available)	*Institution / group, specific person (if available)*
Government (all spheres) including conservation agencies for regulation, compliance and enforcement	Marine Spatial Plans
	Protected Area Expansion
	Phakisa working group initiatives
	International protocols.
	OCIMS (Oceans and Coastal Information Management System) – Lauren Williams – Project Director
	Community

What is still needed?	What are the gaps in existing work?	What are the opportunities to fill gaps?
e.g. different types of accounts, glossary of terms, specific partnerships	*e.g. additional datasets, methodologies, partners*	*e.g. new projects coming online, policy windows, funding opportunities*
Glossary of terms	Species data – charismatic species data and commercial data	Model scenarios. Ground-truth to see if our models are accurate.
Gap analysis? Where don't we have good data? Need to make a clear distinction between species and ecosystems data.	Mining data	Can use NBA data to create dummy accounts.
Condition is inferred from level of use. Need to update pressure layer.	**There are questions around how data is collected, stored, managed etc. What data is needed and who will collect this?**	**Government agencies are more likely to give data to Stats SA for the NCA, than they are to give data to SANBI**
		Petroleum Agency of South Africa – industry has money

Notes (left box):
- We need to link accounts to climate change data.
- **What about stocks within extent? Flows between systems?**
- We need to do more research into tipping points and thresholds of ecosystems. We need to communicate this to industry.
- There is a lot that can be done through modelling scenarios. We just need to verify or ground-truth or outputs.
- Must also remember that provisioning services impact regulating services.
- National Coastal Assessment should include Melanie Luck-Vogel.
- Need to include the State of Ocean report into marine accounts.
- Contact Ashley Naidoo about data.
- Ken Findlay has a MSC student (Nicole Durant) that can assist with research.
- **Many universities have datasets that aren't available on MIMS (Marine Information Management System) http://data.ocean.gov.za/**
- Stats SA has data on marine species information.
- Risk accounts are incredible and they are easy to do. They should be included in ocean accounts.
- A glossary is required. The current NCA has a terrestrial flavour, that doesn't work for the marine world. There is also some confusion about how the environmental sector understands terms used by economists.
- **Need to be clear about social impacts and the value of estuaries to humans.**

Champions of action	
Lara van Niekerk from CSIR	Nicole du Plesis from SAEON
Millicent from DEA	Patrick Vorster from NGI
Ken Findlay from CPUT	Ocean Phakisa Secretariat
Prideel Majiedt from SANBI	Port Authority

Thematic area 3: Accounting for ecosystem services, including valuation.

The social, ecological and economic values of biodiversity assets and ecosystem services can be quantified in various ways, some of which involve monetary valuation. Economic valuation, specifically focused on monetary valuation, is intended to provide economic values for biodiversity and ecosystem services so that they can be more easily compared to other factors during decision-making and development of appropriate policy. As such, some aspects of biodiversity or ecosystem services will be more important to value than others. For instance those ecosystem services that must compete for attention with other activities that are strongly market-driven, such as provisioning services related to raw materials and food. Approaches for ecosystem valuation have been evolving for several decades, and while there are still shortcomings in methods and data requirements for valuation studies, a range of valuation tools exist. Numerous ecosystem service valuation studies have been done in South Africa, which provide a good basis to compile some accounts for ecosystem services in monetary terms.

This thematic group provided more information about pilot accounts for ecosystem services, including valuation, that are being developed in KZN as part of the NCAVES Project, before looking ahead at opportunities and priorities for ecosystem service accounts and valuation going forward. The facilitator for this group was Jane Turpie (Anchor Environmental Consultants).

The following presentations were given:

- Natural Capital and TEEB– Dr Salman Hussain, UNEP TEEB;
- Development of pilot monetary ecosystem accounts for KwaZulu-Natal – Jane Turpie (Anchor Environmental Consultants).

Figure 2. Visual gathering of notes from discussion accounting for ecosystem services, including valuation

Started with a summary on what valuation is.
- [ ] No agreed definition for natural capital – a concept who's meaning is still under discussion. Subject to national jurisdiction. Price vs non-monetary value.
- [ ] Avoiding commodification in some countries

Property rates actually very useful. Too much environmental lingo. Difficulty at national-level and blurrier.
In Zambia – economy-wide impact of forestry wide impacts → and impacts on various other sectors.
Better NRM management where economy grows. Partnership for Green Economy – green investment which are linked back to employment generation.
The UNEP strategy was taken up at the G20 – requires effective packaging and communication.

Priority areas for strategy development	Rationale
DEA want increased valuation work to be integrated.	Embed the work within environmental reporting framework for more widescale uptake.
Monitor critical points and thresholds of ecosystem services and provisioning.	Key for identifying priorities
Clear messaging	Wider understanding and acknowledgement of ecosystem services work and valuation methodology and its urgency in policy.
Further ground-truthing of data sources	Higher quality data for various uses, both within and outside the NCA scope.

Actions needed	Champions of action
Mark, SAEON – error-propagation needs to be built-in.	Group of experts
Messaging in a story that is digestible and clear and quickly. Advocacy, packaging. TEEB tries to produce policy briefs > get to outcomes and modifications. Set up a system for policy. Must be digestible.	Treasury, DPME or DST Maybe link to climate change strategy.
Modify EIA process to include this across the board as part of SEA process	DEA
Demonstrate ability of use within the private sector (i.e. value of invasive clearing and stewardship)	Task team or conservation agencies
Statistics on livestock numbers, headcounts, crop production etc.	Stats SA

Current users of ecosystem valuation	Future users (5 year time frame)
Common Lands (living lands) at a project-level (more local)	
eThekwini (Metro SEA)	More municipalities
SANParks – Addo MPA fishery evaluation and effect on fishery.	More protected areas for use in expansion plans
Ryan, CSIR – Ecological Investment Framework (David Le Maître) – where to invest in restoration – what could be gained based on water provisioning and prioritising areas – link to climate. JT – need to add in other benefits from same area.	Catchment management agencies, SWSAs?
Saku (??), SANBI – Green Book for climate change modelling – 2020/30/40 scenarios – how they can use these – target audience: local government.	Modelling effects of climate on ecosystem service capacity – definitely a gap to be filled.
Mark, SAEON – little projects – bioenergy atlas and other single resource atlases – not quite use of ecosystem valuation but similar methods.	

What is still needed?	What are the gaps in existing work?	What are the opportunities to fill gaps?
Manual based on valuation guidelines (in SEA context) and changes in human and social context.		Production of a manual for users
Demonstrating importance of valuation (using NCA as a justification) and what it really means. (Sam, Treasury)	Financing due to budget cuts in government mean there is likely to be little uptake of valuation	Advancement of NCA in some aspect of global economic scenario needed.
Better or country-specific models	Models are not always the best fit and require refining.	An expert-team team to develop more suitable models for valuation of ecosystem services.
Capacity – human and financial		
Uptake in protected area expansion	Not used by conservation agencies but great interest	Training of relevant persons to use ecosystem service valuation in planning.

Thematic area 4: Towards a strategy for advancing NCA in South Africa

A strategy for advancing NCA in South Africa will be developed over the course of 2019 and early 2020 as part of the NCA&VES project. An Assessment Report was developed in 2018 through the NCA&VES project to inform the development of a strategy for advancing NCA in South Africa. One of the recommendations of the Assessment Report was that such a strategy should be led and published by Stats SA as the national statistical office, and part or all of it should be integrated into the environmental pillar of the National Strategy for the Development of Statistics (NSDS), the development of which is underway.

The strategy is intended to support the building of statistical and institutional mechanisms that will strengthen statistical systems and statistical production processes and enable South Africa to produce natural capital accounts into the future, in order to support evidence-based policy and decision-making for sustainable development. South Africa has a range of policies and frameworks that relate to strengthening national statistics and improving information on sustainable development, and a range of organisations responsible for their implementation. The strategy for advancing NCA should link to these policies, frameworks and responsible institutions across the NCA value chain.

This thematic group provided an overview of recommendations for a strategy for advancing NCA in South Africa that emerged from the Assessment Report, considered some of the challenges faced by Stats SA in producing natural capital accounts, and discussed how best to take forward the development of a strategy for NCA in South Africa. The facilitator for this group was Mandy Driver (SANBI) and Gerhardt Bouwer (Stats SA).

The following presentations were given:

- Assessment report and its recommendations for a strategy on advancing NCA in SA – Aimee Ginsburg (independent consultant);
- Environmental-Economic Accounts: Lessons Learned– Robert Parry (Stats SA); and
- Components of Natural Capital – Mandy Driver (SANBI).

Figure 3. Visual gathering of notes from discussion around recommendations for a national strategy

	Comment	Response
VISION	Develop a strong vision for the kind of society and state we want to live in – not just be a passive supplier. • The vision should incorporate how these accounts influence a change in the policy space of where south Africa is going…. i.e. Demand for who? What is our end state with NCA. How do we influence the type of state in which we want to live.	Co-created vision with multi-sectoral SAG
	What is the role of the youth? How do we capacitate the youth so that they are interested in NCA.	

	Comment	Future users (5-yrs)
NEEDS ASSESSMENT	Conduct a user needs assessment to develop the NS (Christo Marais) • Who are the users (clients)? They need to express their needs and develop the strategy out of that. E.g. Christo only interested in EI and ES, but there are other aspects of NC that could be considered. Wants to see where there is overlap in demand and produce strategy from that.	Investment perspective – seeking avenues into the green economy
	Rapid round of where NCA fits into your institution	DPME
	• Christo: Nat NC accounts is an aggregate of smaller accounts down to individual pieces of land & thus the private sector in terms of valuing land. If we want private sector to invest we must show them the money but they are not interested at nat scales. We need to start looking at capital as the state of natural systems on the land. E.g. bush encroachment led to a reduction of grazing capacity by 80% in an area around the Pilansberg. This worked in the SWSA as people started seeing value. We need to develop tools to assess yield of ES at local scales.	Protected area managers for PA accounts Community tribal authorities
	• Comment on BES nodes: NCA would make a good layer to encourage and strategies government investment. From Biodiversity Evaluation and Monitoring perspective need to understand how to use NCA to benefit people. Must also look at NCA in terms of biodiversity economy indicators. When we define NCA we must look at it from impacts on the ground.	Research and Development of the Green Economy
	• Spatial planning department: when we develop this work, we must ensure that the strategy provides guidance on its own application. I.e. DDPs or case studies on use.	Municipal land use mngt reporting
		SADC regional bodies

	Comments	Response
PRIVATE SECTOR	involve the banking associations and treasury and develop values that can be folded into corporate governance (Willem Prinsloo) • James Blignaut did a NCA on a game farm and yet we have got this down to rands and cents and involve the banking institutions. Should get financial institutions and association and treasury involved today. Must get a figure so that this can be included in the corporate rating system. • Kiruben adding: lot of information sitting in private sector. Needs to be a mechanism to harness that data. Need to bring the private sector on board.	
	Stats SA: How and when to involve private sector? The best way to involve the private sector is to incorporate NCA into land evaluation processes to better reflect market value. • We all agree that private sector should be on board but when? Financial institutions respond to policy, they shouldn't set policy. E.g. competition laws. NCA might not be mature enough for their involvement – we need to develop the rules of engagement. • Statistics serves the public good – should not let this be co-opted by private interests. The valuation process of setting land value must incorporate NCA and then all other market mechanisms will align.	
	• We must define our indicators well. If there are indicators that have implications for the private sector and haven't engaged them in time, we might miss an opportunity. Reiterates that statistics are for the common good, thus in our engagement in the private sector we have that hat but use their data to generate the indicators. • If we have valuation of ecosystem services we can have some concrete numbers that we can bring to the **valuer general**?	

	What is still needed? What are the gaps in existing work?	RESPONSE
MORE ON UNDERSTANDING NEEDS	Valuing more ecosystems to get financial estimates	
	People are part of the ecosystem – how do we account for the impact on people	
	Attracting private investment at local scales using NCA as a valuation tool.	
	Biodiversity Economy Strategy node development and investment into pilot projects. • Must also look at NCA in terms of biodiversity economy indicators	
	Should establish a Steering Committee	
	Should establish a data infrastructure similar to SASDI	
	Establish an outcomes communication strategy – how do we use the output of the account to create demand and receive funding to setup virtuous cycles. • Develop guidelines on using the accounts – i.e. case studies.	
	What is the quality of the data to come out of this? Will it be official statistics? Also, what are the governance arrangements? Who will oversee and enforce this?	
	Community engagement – we assume NGOs work there but need to involve them directly both as beneficiaries and contributors (e.g. indigenous knowledge). Can work through tribal authorities.	
	M+E system – what and how are we going to monitor and resource the monitoring	
	Articulating skills gap is not coming out strongly enough – how do we fill this?	
	How does this fit into SPLUMA and municipal manager protocol – they are both users and producers of data.	

Figure 4. Visual gathering of results of voting exercise for different types of accounts

Priority accounts to be developed	Vote
Grasslands	4
Cultural services	4
Renewable energy	4
Freshwater ecosystems	4
Wetlands	3
Protected Areas	3
Reg & maint of climate and river flow	3
Ecosystem assets	3
Pollination (ecosystem service flows)	3
Provisioning services	3
Priority species account	2
Soil	2
Water resources	2
Waste water treatment	2
Carbon	2
Natural forests	2
Rivers	2
Urban parks (green space)	2
Croplands	2
Food security (including pollination and pest control)	2
Water (including disaster management)	2

Accounts that received no votes

Wildness (ES)
Solar account
Ocean accounts (priority marine species)
Peat
Business impact
Regulation and maintenance of air quality
Ecosystem assets, rivers, lakes and wetlands
Ecosystem assets – forests, grasslands
Clean air

Ecotourism
Sustainable use
Ground water
Biodiversity open spaces
Ecosystem service flows
Marine ecosystems
"Open Future"
Indigenous land cover

SESSION 5: Shaping a mandate for moving forward together

Session 5 was chaired by Mukondi Masithi, DPME. Aimee Ginsburg gave a presentation on the Recommendations from the Assessment report. The facilitators provided feedback on each thematic theme. This was followed by a panel discussion facilitated by Aimee Ginsburg in which the facilitators and the audience were asked to give insight into lessons learned during the NCA Forum.

The audience taking away from these two days.
- The NCA community should develop a strategy that looks at how to communicate the information to various audiences. Not everyone is interested in reading technical documents or policy briefs.
- There is power in bringing the right people into the room and having these conversations. Working in silos often means that we are rebuilding the wheel. But by placing individuals in the same room together, we can learn from each other. There is value in coming together.

- How do you get a seat at the table, and who do you lobby to get a set at the table, and who will the political champion be?
- The environmental and conservation sector needs to gain a better understanding of economic terms and phrases used. There needs to be consistency regarding definitions, data collection and technical capacity. There are lots of opportunities for this community to link the accounts to various global challenges e.g. climate change.
- Data is very important, collection of datasets and size of datasets are important. Have a form of storage. Servers are expensive and need space. There is infrastructure element needed. Also need human capacity, need a lot of data scientists.
- Implementation has often been a stumbling block for conservationists and we need to put this in our strategy.
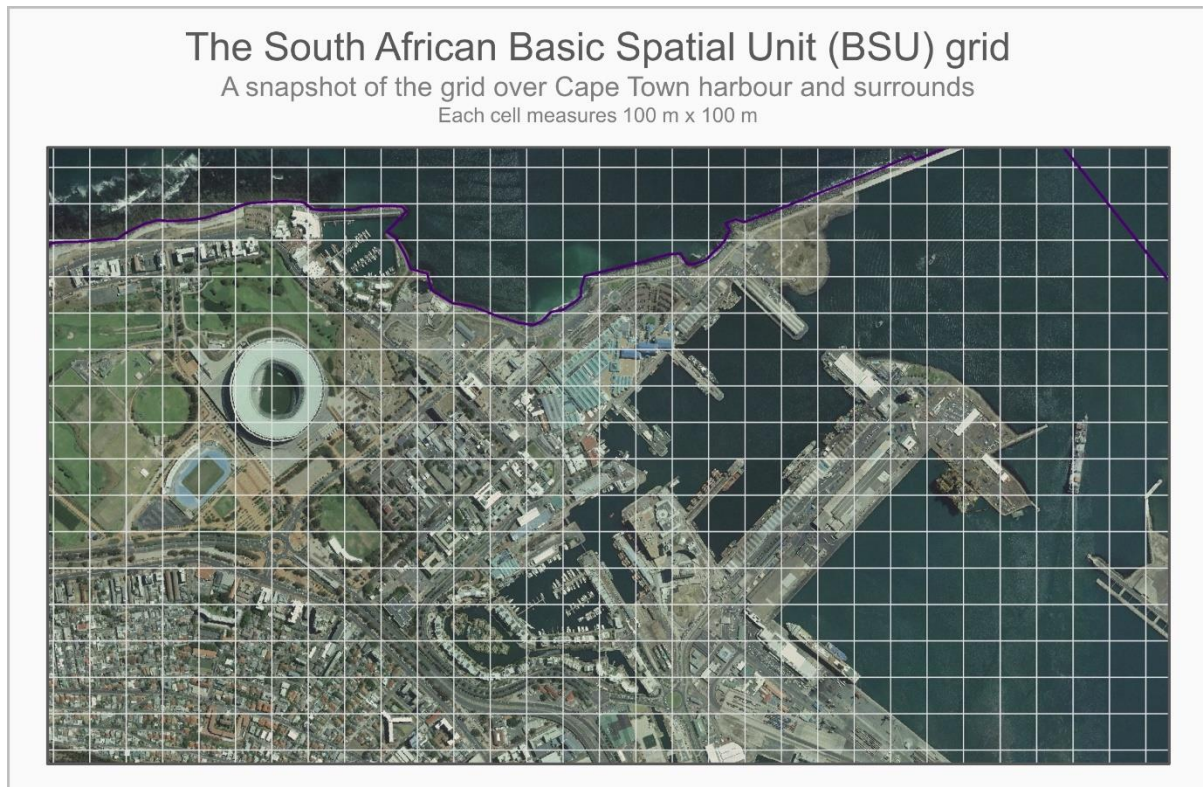
Joe de Beer, Stats SA gave the closing remarks and Bram Edens, UNSD gave a vote of thanks.

Appendices

BSU data story: 728 million stories, waiting to be told

Wherever you go, you transform the landscape. Imagine living the entirety of your life in the map below. Your daily routine might resemble a zig-zagging pattern as you move across the square cells of the grid. Where you choose to live, work, commute, shop, socialise and play – you influence the economic, social and environmental makeup of each cell you touch.

The South African Basic Spatial Unit (BSU) grid
A snapshot of the grid over Cape Town harbour and surrounds
Each cell measures 100 m x 100 m

Moulded by millions of actions taken by people and institutions alike, each cell in the map can be seen as having a unique personality. The development of the Basic Spatial Unit (BSU) frame, the grid shown in the map above, is a first step in shedding new light on the complexity of the South African landscape and seascape.

A technical team from Stats SA, the South African National Biodiversity Institute (SANBI), and the National Geo-spatial Information (NGI) component of the Department of Rural Development and Land Reform (DRDLR), recently developed the BSU frame as a way to begin spatially harmonising different datasets. The project was initiated as part of the System of Environmental-Economic Accounting (SEEA), an international framework that measures interrelationships between the economy and the environment.

The map above, covering the Cape Town harbour and surrounds, shows what the grid looks like. Every cell in the BSU frame is exactly the same size, measuring 100 m by 100 m (or 1 hectare). That's about the same area covered by a full-sized international rugby field.

Spanning the entire country, the layer consists of a whopping 728 million cells (or rugby fields, if you like). The Prince Edward Islands and South Africa's exclusive economic zones in the marine environment are also covered, as well as the river drainage basins shared with neighbouring countries to the north.

The technical team have already begun experimenting. By analysing available satellite data using the BSU grid, the team have been able to assign one of three broad land-use types (natural and semi-natural vegetation, cultivated areas and built-up areas) to every cell. Data from 1990 and 2014 have been used, allowing the team to identify those cells that have experienced a change in land use over time.

This is the first step on a much longer road. Eventually, other datasets will be "snapped" to the BSU grid. The population census, for example, provides a wealth of data on demographics, employment, income, housing and services – often at street-block level. Data are available for the years 1996, 2001 and 2011, with the next census planned for 2021.

By incorporating census data, researchers will be able to start examining possible interrelationships between people and the natural environment. For example, if we find that households in a specific cell are directly dependent on rivers for their daily water supply, can we examine the impact of water quality on those households?

In time, economic datasets might also be included. If a large mine begins operating in a particular cell, will it eventually correlate with a rise in income and employment in surrounding cells? What impact will a new mine have on water quality?

The BSU grid forms the foundation on which large, location-rich data can be spatially harmonised, allowing analysts and policymakers to make meaningful comparisons across datasets and over time. Every decision we make as a country to solve our most pressing issues may have both good and bad consequences. Determining what the consequences are will help us make decisions that carry the most benefit.

Contributors: Kevin Parry, Rob Anderson, Mandy Driver

Participant evaluation

Evaluations forms were provided to the delegates to fill in. The evaluation forms were used as a way to better gauge the performance of the NCA Forum and to monitor if the NCA Forum has served its purpose and to possibly improve on any future workshops.

Three questions were asked. A summary of responses is presented below.

Question 1. What was the highlight of the Forum for you? What did you like about the event?

- The networking opportunities with people from different disciplines.
- Cross-sectional participation allowing discussion from multiple perspectives.
- Gaining a greater understanding of NCA.
- Understanding the need for closer collaboration and breaking the silos.
- Breakaway session were valuable.
- Presents and involvement of international partners was encouraging.
- Enjoyed the technical presentations.
- Liked the venue and the organisation of the Forum.
- Good government and international support.
- Being open about the fact that lead are still learning and things can change. Accounts do not have to be perfect at this stage.

Question 2. What was the lowlight of the Forum for you? What did you like least and do you have suggestions on how it could be improved?

- Some of the presentations were too technical.
- Programme did not allow more time for engagement.
- Give presentations in the morning and use the afternoon for engagement with the presenters.
- GIS presentation confusing and fragmented but very important.
- Bram's Keynote should have being presented on the first day.
- Need the evening event.
- More time to comment on the outputs from Rob/teams presentation.
- Opportunity to being able to attend/contribute to more than one parallel session.
- Repetition from previous NCA engagements and not clear "so what".

Question 3. Is there anything that you would wish to see included in the next NCA Forum?

- Present more case studies (actual completed accounts being applied).
- What is the roll of financial institutions? And how do we involve them and when?
- Update on which strategic partnerships have being developed with NCA users and how it addresses the key needs.
- More detail on the terrestrial accounts and more technical presentations.
- Involvement of more higher education institutes along with younger researchers.
- More representation from the National Treasury and discussion lead by economists.

- Information on how ecosystem condition will be assessed on a regular basis.
- Land cover is not a good measure of change i.e. the way the KZN study is being done.
- More engagement with the business sector specifically insurance and risk sectors.
- Short synopsis of progress made and new partnerships.
- Include an evening event to facilitate more opportunities for networking.
- Increase the length of the Forum to about 3 days.
- Add more thematic areas during parallel sessions.
- Include a thematic parallel session on the technical aspects, touching base on the methods and best practices.
- Present on pros and cons of using monetary values for NCA. Debate them.
- Presentation on how to communicate technical results into digestible pieces.
- More engagement at local and provincial level.
- Practical example of NCA for greenbelts in urban areas.
- More on urban areas and the relationship with the environment.
- Costings and translations of the accounts into monetary terms so as to able to speak the same language as the economists.
- More technical treatment of interrelationship between economics and environment and the linking to the IFRS (International Financial Reporting Standards) and the accounting process involved in business accounting.
- Include more metros (Local authorities).