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Sustainable Development Policies  
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# The SEEA in support of the monitoring framework of the Global Biodiversity Framework

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# Outline

- The need for Natural Capital Accounting and the SEEA, and policy applications
- The SEEA as an international statistical standard
- The SEEA and the GBF monitoring framework
- Why is an accounting approach useful for these indicators
- Examples of ecosystem extent and ecosystem services flow accounts from South Africa

# The need to account for the Environment

- Nature and the services it provides support almost every aspect of human well-being
- But headline indicators like GDP, the unemployment rate and inflation do not capture the full economic contributions of nature
- Traditional accounts don't help us understand how the depletion of natural resources and degradation of the environment affect the economy and wellbeing
- The System of Environmental Economic Accounts (SEEA) fills that gap
- SEEA integrates information on the economy and the environment showing their interrelationship complementing the System of National Accounts



# Growing interest in Natural Capital Accounting



*A historic step towards transforming the way how we view and value nature.*

António Guterres  
UN Secretary General



*this new statistical framework moves beyond GDP and takes better account of biodiversity and ecosystems in national economic planning.*

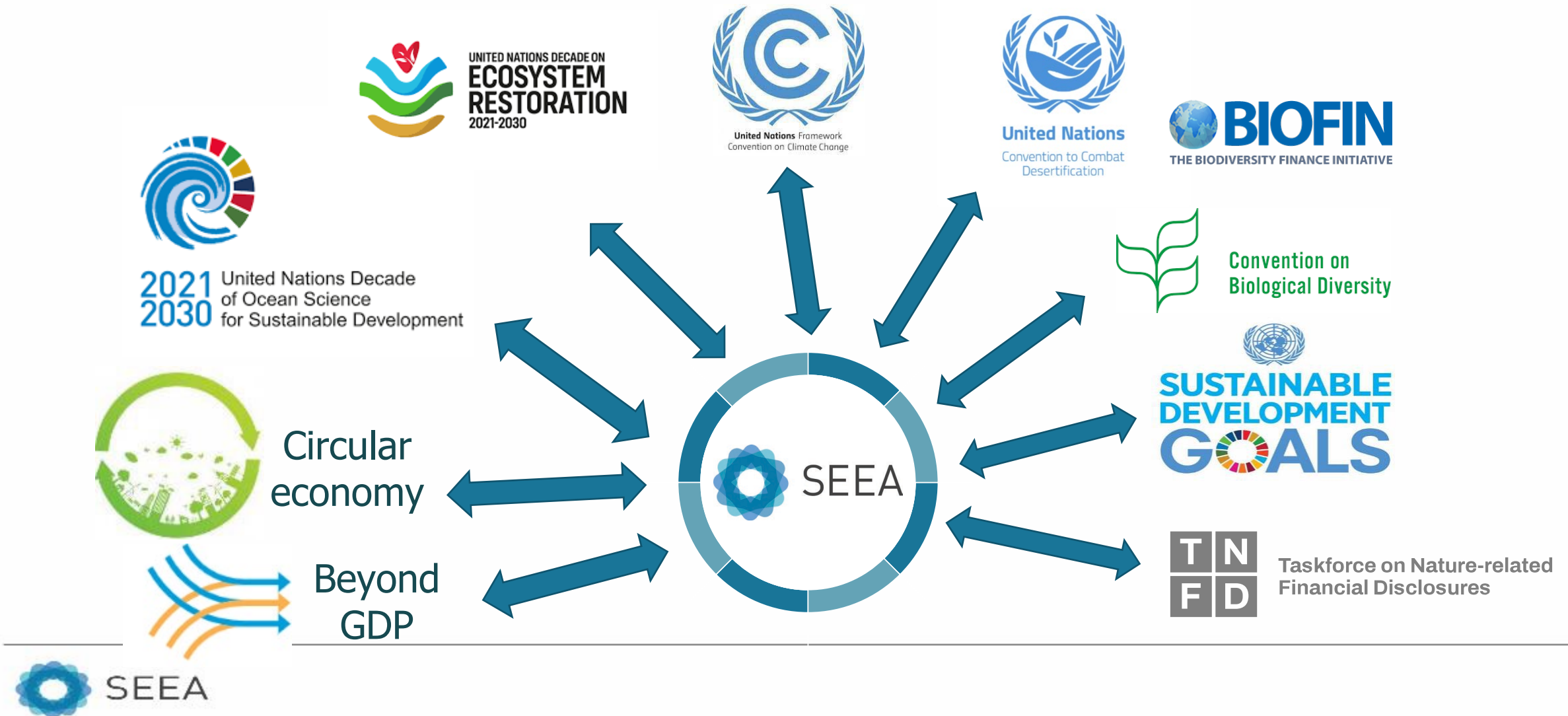
Frans Timmermans  
VP European Commission



Monitoring framework for the GBF (COP 15 decision 15/5) :

- “Notes the value of aligning national monitoring with the United Nations **System of Environmental-Economic Accounting statistical standard** in order to mainstream biodiversity in national statistical systems and to strengthen national monitoring systems and reporting as appropriate and according to their national priorities and circumstances;”
- “Invites the Statistical Commission,..... and other relevant organizations to **support the operationalization of the monitoring framework** for the Kunming-Montreal global biodiversity framework;”
- “When possible, **indicators are aligned with existing intergovernmental processes under the Statistical Commission**, such as the SDGs, the FDES or the SEEA”

# The SEEA supports multiple ongoing initiatives



# SEEA – a statistical standard for the environment



Adopted in 2012



Adopted in 2021



Brings together environmental and economic data using the same accounting principles of the SNA



Credibility, reliability, replicability of data



Consistency over time and space



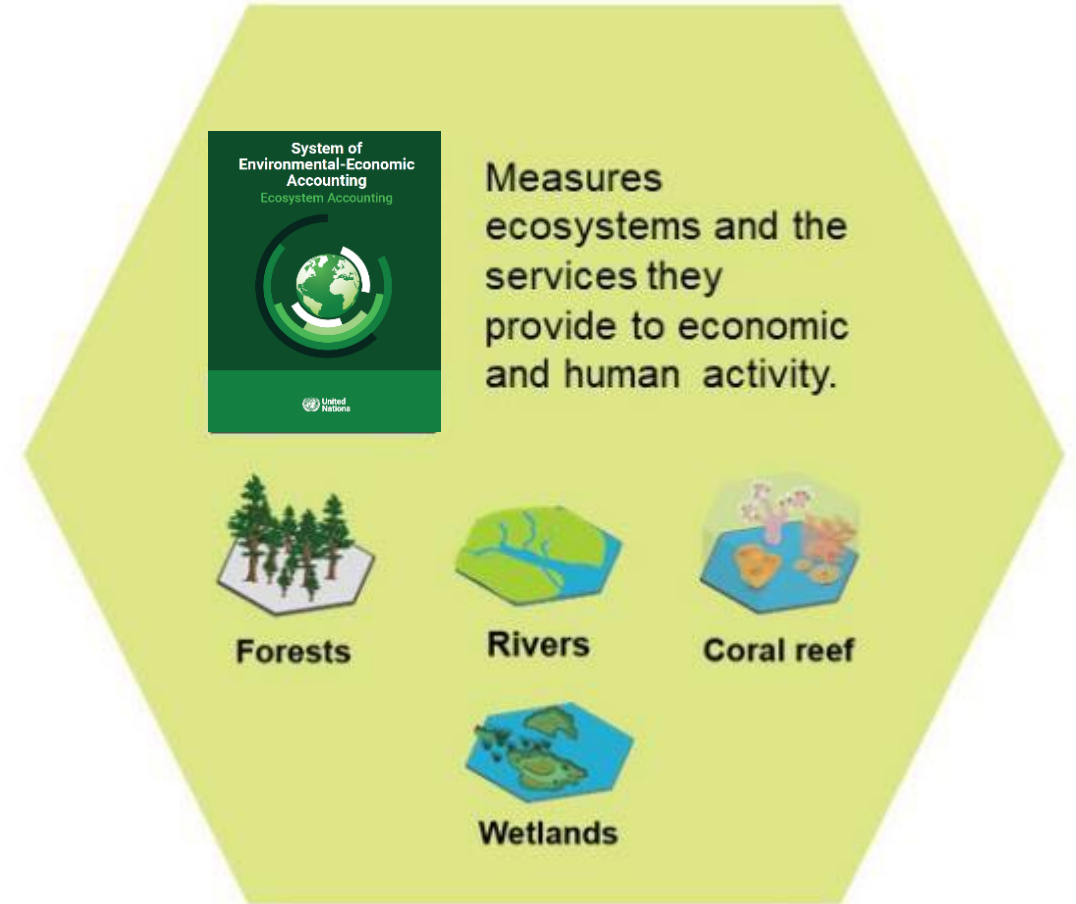
Common language between different communities



Breaks down silos and fosters collaboration

# SEEA Central Framework and SEEA Ecosystem Accounting

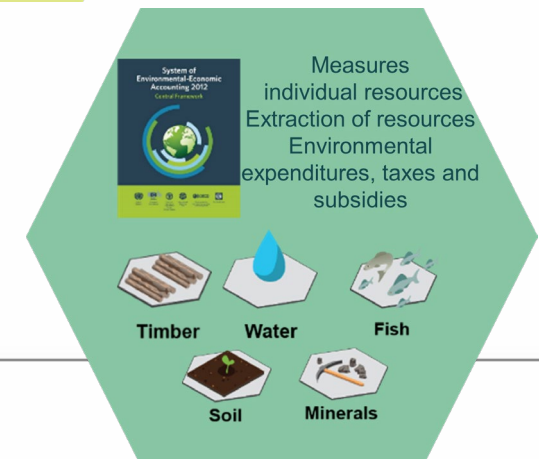
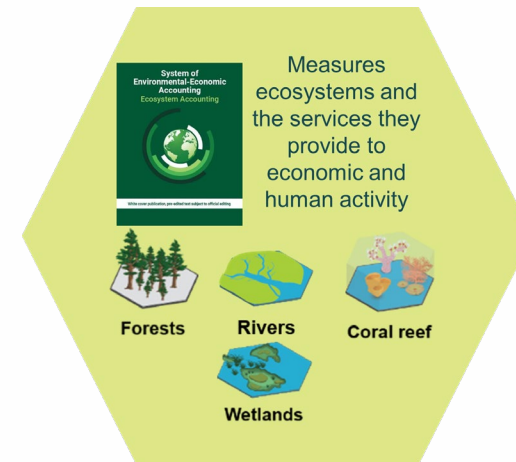
– Two sides of the same coin



# SEEA-related indicators in the GBF

Headline indicators were adopted to monitor each Goal and Target. Indicators related to the SEEA:

- **Extent of natural ecosystems (Goal A)**
  - **Services provided by ecosystems (Goal B and Target 11)**
  - Sustainable Management of Wild Species (Target 9)
  - [Integrating Biodiversity in Decision-Making (Target 14)]
- 
- Domestic public funding, and private funding on conservation and sustainable use of biodiversity and ecosystems (Goal D and Target 19)





# GBF Goal A: Protect and Restore

## Three elements:

## Headline indicators:

Ecosystems

The integrity, connectivity and resilience of all **ecosystems** are maintained, enhanced, or restored, *substantially increasing the area of natural ecosystems by 2050*;



A.1 Red List of Ecosystems  
**A.2 Extent of natural ecosystems**  
(based on SEEA Ecosystem Accounting)

Species

Human induced extinction of known threatened **species** is halted, and, by 2050, the extinction rate and risk of all species are reduced tenfold and the abundance of native wild species is increased to healthy and resilient levels;



A.3 Red List Index for Species

Genetic diversity

The **genetic diversity** within populations of wild and domesticated species, is maintained, safeguarding their adaptive potential.



A.4 The proportion of populations within species with an effective population size > 500

# GBF Goal B: Prosper with Nature

Biodiversity is sustainably used and managed and nature's contributions to people, including ecosystem functions and services, are valued, *maintained and enhanced, with those currently in decline being restored*, supporting the achievement of sustainable development for the benefit of present and future generations by 2050.

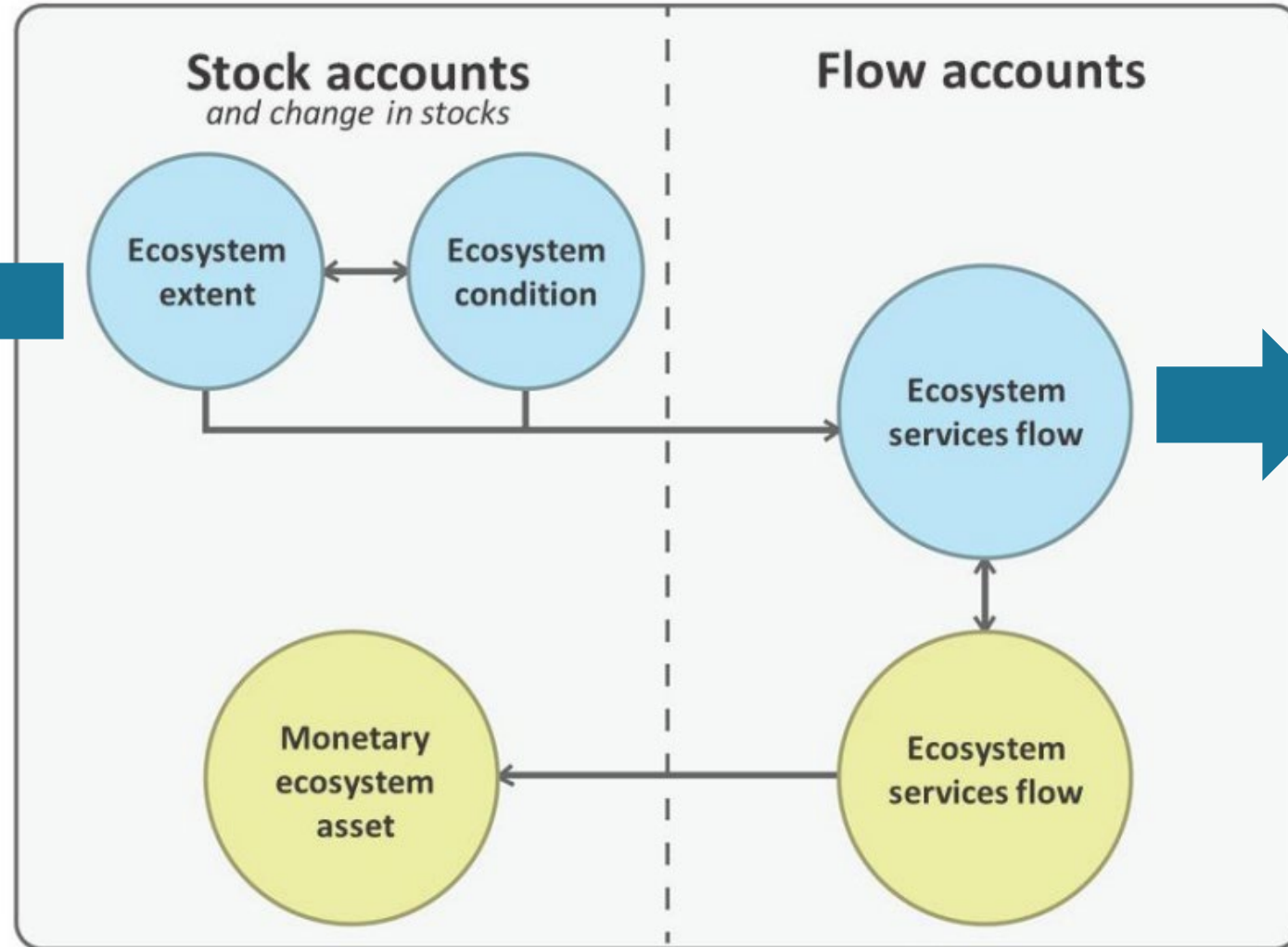
## Headline indicator

### B.1 Services provided by ecosystems

(based on SEEA Ecosystem Accounting)

# SEEA Ecosystem Accounting – core accounts and the GBF

Ecosystem extent account provides the basis for **Indicator A.2 Extent of natural ecosystems**



Ecosystem services account (physical) provides the basis for **Indicator B.1 Services from ecosystems**

# Why is an accounting approach useful for these indicators?

- Accounting tables have a standard **structure** and are based on standard **definitions** and **classifications**
  - Provides consistent information that allows for comparison across time periods and between countries
  - Use of IUCN Global Ecosystem Typology and other relevant classifications
- **Consistency** between measurement of ecosystems and ecosystem services
- Organising **spatial data in an accounting framework** allows consistency from local to national to global levels
  - > Supports coherence in planning and decision-making across different scales
- Allows for **integration** of information about ecosystems with information about the economy

# Ecosystem extent account example: South Africa's terrestrial ecosystems, summarized by biome

Natural or semi-natural biomes

Intensively modified biomes

| Biomes   | Albany Thicket | Desert  | Forest   | Fynbos      | Grassland    | IOCB      | Nama-Karoo | Savanna     | Succulent Karoo | Azonal vegetation | Cultivated* | Built-up* | Water-bodies** | TOTAL       |
|--|----------------|---------|----------|-------------|--------------|-----------|------------|-------------|-----------------|-------------------|-------------|-----------|----------------|-------------|
| <b>Historical extent</b>                           | 3 531 231      | 626 207 | 462 518  | 8 165 366   | 33 090 325   | 1 171 284 | 24 936 548 | 39 418 522  | 7 821 579       | 2 742 873         | -           | -         | -              | 121 966 453 |
| <b>Additions to extent</b>                         | 0              | 0       | 0        | 0           | 0            | 0         | 0          | 0           | 0               | 0                 | 16 156 026  | 3 003 883 | 2 096 528      | 21 256 437  |
| <b>Reductions in extent</b>                        | 230 091        | 8 237   | 70 673   | 2 253 375   | 11 330 606   | 619 656   | 420 995    | 5 396 119   | 251 373         | 675 312           | -           | -         | -              | 21 256 437  |
| <b>Net change in extent</b>                        | (230 091)      | (8 237) | (70 673) | (2 253 375) | (11 330 606) | (619 656) | (420 995)  | (5 396 119) | (251 373)       | (675 312)         | -           | -         | -              |             |
| <i>Net change as % of historical</i>               | -6,5%          | -1,3%   | -15,3%   | -27,6%      | -34,2%       | -52,9%    | -1,7%      | -13,7%      | -3,2%           | -24,6%            | -           | -         | -              |             |
| <b>Closing extent 1990</b>                         | 3 301 140      | 617 970 | 391 845  | 5 911 991   | 21 759 719   | 551 628   | 24 515 553 | 34 022 403  | 7 570 206       | 2 067 561         | 16 156 026  | 3 003 883 | 2 096 528      | 121 966 453 |
| <b>Opening extent 1990</b>                         | 3 301 140      | 617 970 | 391 845  | 5 911 991   | 21 759 719   | 551 628   | 24 515 553 | 34 022 403  | 7 570 206       | 2 067 561         | 16 156 026  | 3 003 883 | 2 096 528      | 121 966 453 |
| <b>Additions to extent</b>                         | 44 432         | 1 142   | 24 900   | 241 184     | 1 444 446    | 75 114    | 146 910    | 1 160 055   | 38 422          | 189 954           | 1 991 959   | 597 238   | 288 754        | 6 244 510   |
| <b>Reductions in extent</b>                        | 36 008         | 1 260   | 7 689    | 196 035     | 1 180 183    | 63 783    | 78 038     | 885 303     | 33 631          | 58 021            | 2 339 226   | 400 503   | 964 606        | 6 244 286   |
| <b>Net change in extent</b>                        | 8 424          | (118)   | 17 211   | 45 149      | 264 263      | 11 331    | 68 872     | 274 752     | 4 791           | 131 933           | (347 267)   | 196 735   | (675 852)      |             |
| <i>Net change as % of opening</i>                  | 0,3%           | 0,0%    | 4,4%     | 0,8%        | 1,2%         | 2,1%      | 0,3%       | 0,8%        | 0,1%            | 6,4%              | -2,1%       | 6,5%      | -32,2%         |             |
| <b>Net change in relation to historical extent</b> | (221 667)      | (8 355) | (53 462) | (2 208 226) | (11 066 343) | (608 325) | (352 123)  | (5 121 367) | (246 582)       | (543 379)         | -           | -         | -              |             |
| <i>Net change as % of historical</i>               | -6,3%          | -1,3%   | -11,6%   | -27,0%      | -33,4%       | -51,9%    | -1,4%      | -13,0%      | -3,2%           | -19,8%            | -           | -         | -              |             |
| <b>Closing extent 2014</b>                         | 3 309 564      | 617 852 | 409 056  | 5 957 140   | 22 023 982   | 562 959   | 24 584 425 | 34 297 155  | 7 574 997       | 2 199 270         | 15 808 759  | 3 200 618 | 1 420 676      | 121 966 453 |

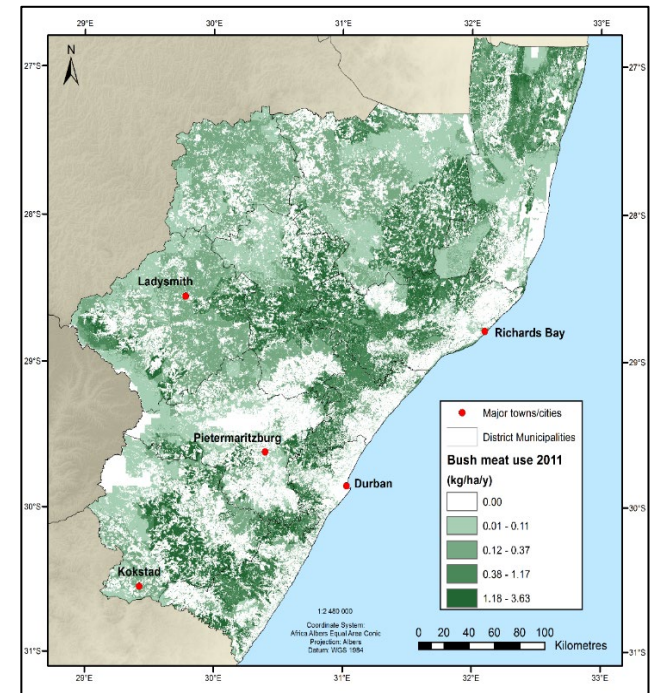
\* Cultivated areas, built-up areas and waterbodies are treated as biomes for the purpose of the ecosystem extent account table. There is no reliable spatial information on the historical extent of waterbodies, subsistence cultivation or habitation.

\*\* The large net decrease in the extent of waterbodies reflects primarily that 1990 was a much wetter year than 2014. Waterbodies include both natural and artificial water bodies (such as dams).

# Ecosystem services account example: South Africa (KwaZulu-Natal province)

Note range of **different units of measurement**, such as:

- Cubic metres (e.g. of wood, water)
- Tonnes (e.g. of sediment, crops)
- Tg Carbon
- Large Stock Units (number of animals)



Supply table for 2005, summarised by biome (Use table not shown)

| Resource                                  | Biome | Freshwater ecosystems | Grassland | Indian Ocean Coastal Belt | Savanna | Forests | Estuaries | Cultivated | Urban green space | Total      |
|---|-------|-----------------------|-----------|---------------------------|---------|---------|-----------|------------|-------------------|------------|
| Wood products (m <sup>3</sup> )           |       | 3 523                 | 695 638   | 235 125                   | 787 294 | 267 047 | 169       |            |                   | 1 988 796  |
| Non-wood products (tonnes)                |       | 834                   | 46 494    | 11 489                    | 34 952  | 2 911   | 38        |            |                   | 96 718     |
| Livestock production (LSU)                |       | 1 716                 | 684 698   | 52 162                    | 289 663 | 2 010   | 340       |            |                   | 1 030 589  |
| Crop production (tonnes)                  |       |                       |           |                           |         |         |           | 43 305 781 |                   | 43 305 781 |
| Experiential value (R millions)           |       | 14                    | 237       | 179                       | 218     | 55      | 24        | 85         | 885               | 1 698      |
| Carbon storage (Tg C)                     |       | 5                     | 512       | 61                        | 348     | 33      | 0         | 279        |                   | 1 237      |
| Pollination (R millions)                  |       | 0                     | 12        | 6                         | 31      | 2       | 0         |            |                   | 51         |
| Flow regulation (million m <sup>3</sup> ) |       | 78                    | 3 315     | 421                       | 2 198   | 634     | 36        |            |                   | 6 682      |
| Flood attenuation (R millions)            |       |                       |           |                           |         |         |           |            | 31                | 31         |
| Sediment retention (million tonnes)       |       | 2                     | 45        | 6                         | 27      | 18      | 2         |            |                   | 99         |
| Water quality amelioration (tonnes P)     |       | -                     | 3 829     | 525                       | 5 394   | 97      | 6         |            |                   | 9 850      |

# THANK YOU

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