



# MEASURING NATURAL CAPITAL IN THE 2025 SNA

ANNUAL SEMINAR ON NATIONAL ACCOUNTS FOR  
LATIN AMERICA AND THE CARIBBEAN: TOWARDS THE 2025

BRAM EDENS, PH.D.



## Outline

---

- Main changes in 2025 SNA regarding natural capital
- OECD Expert Group on Natural Capital
- Progress made in developing the handbook



# MAIN CHANGES REGARDING NATURAL RESOURCES IN NEW SNA



# Main changes regarding natural resources

---

- Important changes in the 2025 SNA regarding natural capital, including:
  - Recording depletion as a cost of production
  - Explicit recognition of renewable energy resources such as solar, hydro, wind, geothermal as economic assets requiring valuation
  - Changes in the treatment of single-use biological resources
  - Split ownership of natural resources between Government and private sector
  - Various changes in the classifications pertaining to natural capital
- Why? These changes are important
  - Improve the analytical usefulness and relevance of the accounts in responding to the pressing policy needs of our time (climate change; energy transition)
  - Fit well with the broader scope of the 2025 SNA which supports well-being and sustainability



# Changes in asset classification for natural capital

## 2008 SNA

<b><i>Produced non-financial assets</i></b>
<i>Fixed assets</i>
Cultivated biological resources Animal resources yielding repeat products. Tree, crop and plant resources yielding repeat products
<i>Inventories</i>
Work-in-progress on cultivated biological resources
<i>Valuables</i>
<b><i>Non-produced non-financial assets</i></b>
<i>Natural resources</i>
Land
Mineral and energy resources
Non-cultivated biological resources
Water resources
Other natural resources
<i>Contracts, leases and licenses</i>
Permits to use natural resources

## 2025 SNA

<b><i>Produced non-financial assets (excluding natural capital)</i></b>
<i>Fixed assets</i>
<i>Inventories</i>
<i>Valuables</i>
<b><i>Non-produced non-financial assets (excluding natural capital)</i></b>
<i>Contracts, leases and licenses*</i>
<i>CAWLMS**</i>
<i>Purchased goodwill and marketing assets</i>
<b><i>Natural capital (produced and non-produced assets)</i></b>
<i>Natural resources</i>
Land
Mineral and energy resources
Biological resources Biological resources yielding repeat products Biological resources yielding once-only products Work-in-progress on cultivated biological resources
Water
Other



# Asset classification – natural capital

AN.3 Natural capital

AN.31 Natural resources

AN.311 Land

AN.312 Mineral and energy resources

AN.3121 Non-renewable mineral and energy resources

*AN.31211 Oil resources*

*AN.31212 Natural gas resources*

*AN.31213 Other mineral and energy resources*

AN.3122 Renewable energy resources

*AN.31221 Wind energy resources*

*AN.31222 Solar energy resources*

*AN.31223 Water energy resources*

*AN.31224 Geothermal energy resources*

*AN.31224 Other renewable energy resources*

AN.313 Biological resources

AN.3131 Biological resources yielding repeat products

*AN.31311 Animal resources yielding repeat products*

*AN.31312 Tree, crop and plant resources yielding repeat products*

AN.3132 Biological resources yielding once-only products

*AN.31321 Migrating biological resources yielding once-only products*

*AN.31322 Non-migrating biological resources yielding once-only products*

*AN.31323 Work-in-progress on non-migrating biological resources.*

AN.314 Water resources

AN.315 Radio spectra and other natural resources

AN.3151 Radio spectra

AN.3152 Other

AN.32 Ecosystem assets



# Depletion as cost of production (1)

---

- Depletion of mineral and energy resources and of biological resources recorded as a cost of production instead of other changes in volume
  - Consequently, net aggregates (NDP, NNI, net savings) will not only be affected by consumption of fixed capital, but also by depletion of natural capital
- Depletion (2025 SNA 7.283)
  - *In physical terms, represents the decrease in the quantity or value of the stock of a non-produced natural resource over an accounting period that is due to the extraction of the natural resource by economic units occurring at a level greater than that of regeneration;*
  - *In monetary terms, it corresponds with the decline in future income, due to extraction, that can be earned from a resource, the value of which is based on the physical flows of depletion using the price of the natural resource in situ. (based on SEEA Central Framework 2012)*
- Important change as:
  - ***Net measures are conceptually preferred*** as they are more reflective of the actual costs borne in production (2025 SNA 21.109)



## Depletion as cost of production (2)

---

- Cost of depletion will be partitioned between extractor and government (legal owner)
- The attribution of depletion costs will be as follows:
  - Depletion in full recorded in production/ generation of income account of extractor
  - Depletion borne by government recorded via distribution of income account (through a negative rent which offsets the rent payment)
    - As a result, no change to GDP, only to net measures





# Renewable energy assets

- Recognize and clearly define renewable energy resources as an asset, to be classified in a separate asset category
- Renewable energy asset: only those resources viable in economic production under prevailing technological + economic conditions
- Examples:
  - Only solar radiation captured by existing panels is an asset
  - A remote river without hydroelectric generation is not an asset
- Stock (at a point in time): cumulative quantity of renewable energy resources harvestable by the commercial renewable energy projects at that time
- Valuation based on Net Present Value of future resource rents
- Main impact is on net worth

[AN.312 Mineral and energy resources](#)

[AN.3121 Non-renewable mineral and energy resources](#)

*AN.31211 Oil resources*

*AN.31212 Natural gas resources*

*AN.31213 Other mineral and energy resources*

[AN.3122 Renewable energy resources](#)

*AN.31221 Wind energy resources*

*AN.31222 Solar energy resources*

*AN.31223 Water energy resources*

*AN.31224 Geothermal energy resources*

*AN.31224 Other renewable energy resources*



## Biological resources (1)

---

- Changes to biological resources yielding once-only products (e.g. timber; fish)
  - Distinction between cultivated / non-cultivated biological resources will be defined slightly differently:
    - Resources where the control, responsibility and management does not go beyond the establishment of quota regimes (e.g. migrating wild animals and fish in open waters) versus resources where one can observe a continuum from intensive to extensive forms of control, responsibility and management (e.g., the growth of trees for timber production)
  - Timber treated categorically as cultivated, aquatic resources as non-cultivated
- The asset boundary itself for biological resources will not be changed
  - Timber in remote / non-logged areas of Amazon is not an asset



## Biological resources (2)

---

- Regarding timber, distinction made between underlying asset (e.g. forest land) + standing timber (inventories)
- Terminology:
  - Positive changes in inventories are labelled natural growth, while negative changes are referred to as extractions
  - For the underlying asset, the terms regeneration and depletion are used
- Accrual recording of output (work-in-progress):
  - Natural growth -> additions to inventories; at the moment of harvest, a withdrawal from inventories
  - Measure output as percentage of natural growth expected to be exploited in the foreseeable future
- Record depletion as cost of production, net regeneration as negative depletion (tbc)
- Possible impact on GDP, impact on net aggregates and net worth



## Split-asset approach

---

- 2025 SNA: split the value of natural resources (mineral and energy resources; biological resources), in line with the appropriation of resource rent by both the legal owner (reflected as receipts of rents) and the extractor (reflecting the residual value of the resource rent).
  - In many cases this entails using the Residual Value Method for measuring resource rent
  - Estimate part of the resource rent appropriated by government
- Apply Net Present Value method to obtain the respective asset values
- In doing so, it is recommended to record transfers of parts of the resources as other changes in the volume of assets and liabilities, and not as capital transfers
- Impact on accumulation accounts and balance sheets (sectoring)



# OECD EXPERT GROUP ON NATURAL CAPITAL



# Expert Group on Natural Capital

---

- The ISWGNA asked the OECD to lead a new task team to address practical implementation challenges of the changes: **Expert Group on Natural Capital (EG NC)**
  - The EG NC is one of 3 new task teams set up in 2023 as part of the SNA update process to assist countries with implementation of the 2025 SNA
- Objectives:
  - Provide **practical guidance** to countries on methods to implement changes relating to natural capital in the 2025 SNA in the form of a handbook (working title Natural Capital Compilation Guide)
  - Enhance **international comparability** of the national accounts
- The handbook will be developed over the coming months with initial draft for wider consultation planned for November 2024, aiming for release by early 2025



# Membership and process

---

## Expert Group members

- Austria, Bulgaria, Canada, **Chile, Colombia, Costa Rica**, Egypt, Germany, France, Japan, Korea, **Mexico**, Norway, Sweden, South Africa, United Kingdom, United States, Indonesia
- Eurostat, IMF, IPSASB, UNECE, UNSD, World Bank, UNECA
- UNCEEA, GFS, OECD/UNECE Seminar
- International experts in relevant fields

## Process

- Topical subgroups have been formed that meet regularly
- Role of the EGNC itself to discuss outcomes of the subgroups as well as cross-cutting issues
- In several instances clarifications sought from the SNA editorial team



# HANBDOOK ON NATURAL CAPITAL





# Guide: draft outline

---

## **Title: Measuring natural capital in the national accounts: a compilation guide**

1. Introduction
2. Measuring natural capital
3. Valuing natural capital
4. Mineral and energy resources
5. Biological resources
6. Recording natural capital

References

Annexes

## Specific features

- Distinguish between different Tiers to address differences in data availability between countries
- Accompanying workbooks for educational purposes and to facilitate compilation
- Country examples
- Materiality thresholds
- (Global) data sources



# Cross-cutting issues and recommendations (1)

---

- Discounting, agreed to:
  - A common, stable discount rate which serves as central rate and could also be applied by countries that wish to use this discount rate (2% real)
  - For countries wish to select their own rate(s), recommendations on acceptable methods for selecting rates
  - If choosing a different rate, countries would need to do sensitivity analysis in relation to the common rate
  - Common rate to be reviewed every 5 years under auspices of ISWGNA
- Rate of return of fixed capital for deriving resource rent
  - Recommend “economy wide minus natural resource activities” rate as default, with activity specific rate of return as advanced method



## Cross-cutting issues and recommendations (2)

---

- Constant price / volume terms estimates
  - Capital has two sides: role of assets as store of value versus role of assets in production.
  - When deflating, the former is best served by using a common price deflator, the latter (which will be recommended for the SNA) by constructing a volume index based on the evolution of physical volumes.
- Split asset approach
  - Agreement to use following elements for estimating government share:
    - Specific taxes less subsidies on products, specific taxes less subsidies on production; rent (royalties); specific taxes on income
  - Support to average over same number of years as used in smoothing of resource rents.



# Topic specific issues and recommendations

---

For each of the 4 topics – guidelines will cover:

- What to include in the national accounts
- Compilation stages
  - Identifying types of assets
  - Collecting physical data
  - Valuation (flows and stocks)
  - Integration in sequence of accounts
- Additional compilation issues
- Modifications to the standard approach
  - Basic and advanced methods



## Next steps towards finalisation

---

- First comprehensive draft ready by 13 Sept
- October – November
  - 7-8 October: 4<sup>th</sup> EG NC meeting
  - EG NC review -> develop revised draft
- December 2024 to early Jan 2025
  - Wider consultation including to OECD WPNA, ISWGNA and AEG, and the UN Committee of Experts on Environmental-Economic Accounting
- February 2025
  - (Interim) version ready (as white cover – prior official editing) in time for UNSC
- Later in 2025
  - Global consultation
  - Final sign-off by AEG
  - Publication final version