

Introduction to Measuring the Environmental Dimension of the SDGs: The case of Afghanistan

UN Environment

[INSIDE COVER]

Disclaimer – Acknowledgements:

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Authors: Jillian Campbell (UN Environment); Michael Bordt (ESCAP)

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United Nations Environment Programme (UN Environment)

UN Environment is the lead environmental branch of the UN and, since 2002, has taken an active role in laying the environmental foundations for sustainable development in Afghanistan. The Sustainable Development Goal Data and Information Unit of UN Environment aims at playing a leading role in supporting the coherent follow-up and reporting of the environmental dimension of the 2030 Agenda for Sustainable Development at the national, regional and global levels. UN Environment Statistics provides expertise and global stewardship for environmental statistics, indicators, resource accounting and natural capital valuation. Specifically this includes developing methodologies and global data collection and reporting mechanisms for the Follow-up and Review for of environment-related Sustainable Development Goals and Global Reporting on SDGs - UNEP UN Environment is the custodian agency for 26 SDG indicators; and providing capacity support for Member States in environment statistics, including for SDG monitoring and review, natural capital accounting and shared environment information management systems.

The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) is the regional development arm of the United Nations for the Asia-Pacific region. ESCAP works to overcome some of the region's greatest challenges by providing results oriented projects, technical assistance and capacity building to member States. This includes supporting national statistical systems in implementing priority economic, social and environmental statistics for national planning.

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ACRONYMS

A-SDGs – Afghanistan Sustainable Development Goals

ESCAP – UN Economic and Social Commission for Asia and the Pacific

FDES – Framework for the Development of Environment Statistics

SEEA – System of Environmental Economic Accounting

SDG – Sustainable Development Goal

UN – United Nations

UNDAF – UN Development Assistance Framework

UN Environment – UN Environment Programme

INTRODUCTION

Since the adoption of the Sustainable Development Goal framework in 2015, many countries have made efforts to nationalize the implementation and monitoring of the SDGs. In the case of Afghanistan, the Government has developed the Afghanistan SDGs (a-SDGs) and attempted to align the SDGs with national development plans. Additionally, there is an ongoing effort to develop a central repository for SDG data and to institutionalize the regular monitoring of the A-SDGs.

As part of the exercise to nationalize the SDGs, the Afghanistan mapped the SDGs to the UNDAF priorities to identify key gaps in terms of implementation. In terms of the environmental aspect of sustainable development, a few of the key issues noted included natural resource management (including water, land, energy and minerals) and understanding climate change and disasters. In particular, the linkage between natural resources and economic development and access to basic services were noted as priority issues.

Understanding the environment through monitoring environment statistics underpins the capacity of policy makers to make balanced policy choices in pursuit of sustainable development. The SDG Indicator framework provides examples of environment indicators, but in order to monitor these indicators relies on statistics grounded by an international statistical methodology. The Framework for the Development of Environment Statistics (FDES) and the System of Environmental Economic Accounting (SEEA) provide the internationally agreed statistical framework for addressing data gaps.

The object of this training is to provide an overview of the environment-related SDG indicators and some examples of how improving national environment statistics could improve SDG monitoring in the case of Afghanistan.

Examples of potential opportunities which may be useful for Afghanistan may include: using the existing geospatial data and other data to develop land accounts for tracking land use over time (linked to SDG 2, 6 and 15), using a water or energy accounting framework to track water use and efficiency (linked to SDG 6 and 7), using a mineral or forest account to better understand depletion of resources in the context of national accounts (linked to SDG 8, 12 and 15). This training aims to provide examples of statistical methodologies which the Government of Afghanistan might use to improve the evidence base for including environmental dimensions into decision making.

MODULE SUMMARY

Session and Content	Materials Available
<p>1. An overview of the environment related SDGs and the statistical standards related to compiling environment statistics (2 hours)</p> <ul style="list-style-type: none"> • General overview of the SDG process • A summary of the environment-related SDG indicators • General concepts and statistical guidance in the area of environment statistics 	<ul style="list-style-type: none"> • Pre-training quiz • Lecture • Group discussion
<p>2. Land accounting: an example (2 hours)</p> <ul style="list-style-type: none"> • Overview of climate change impacts on water, agriculture, and biodiversity. • Mapping of climate change risks to vulnerable sectors • What is a land account? • How are land accounts used to influence policy? • The link between land accounts and SDG indicator 6.6.1 on freshwater ecosystem extent, SDG indicator 15.3.1 on desertification and other SDG indicators. • What does a land account say about climate change and vulnerability? 	<ul style="list-style-type: none"> • Lecture • Case study
<p>3. Water accounts: an example (2 hours)</p> <ul style="list-style-type: none"> • The structure of a water account • Why is a water account useful? • The linkage between a water account and the SDGs • How an accounting structure can be used to measure other forms of natural capital 	<ul style="list-style-type: none"> • Lecture • Student exercise
<p>4. How Afghanistan could move forward with improving environments statistics and environment SDG monitoring (3 hours)</p> <ul style="list-style-type: none"> • Conclusions and discussion 	<ul style="list-style-type: none"> • Lecture • Group discussion

1. MODULE #1

- 1.1. TITLE: An overview of the environment related SDGs and the statistical standards related to compiling environment statistics
- 1.2. TIME NEEDED: 2 hours
- 1.3. OUTLINE: This module will provide an overview of the SDG process and how it links to statistical standards. In September 2015 World Leaders committed to an ambitious global agenda ‘Transforming our World: The 2030 Agenda for Sustainable Development’ through the adoption of General Assembly Resolution 70/1. Governments underscored that a “robust, voluntary, effective, participatory, transparent and integrated follow-up and review framework will make a vital contribution to implementation”. The 2030 Agenda recognized the importance of national, regional and global monitoring of the SDGs. In terms of global monitoring an official SDG indicator list was developed and was endorsed by the General Assembly in June 2017 at the 71st session of the UN General Assembly.

Monitoring the SDGs at the national level will require robust statistics on the environment. In the case of Afghanistan these statistics should be clearly linked to the national development plan. A few of the key issues of key importance to Afghanistan include natural resource management (including water, land, energy and minerals) and understanding climate change and disasters. In particular, the linkage between natural resources and economic development and access to basic services are priority issues.

The SDG indicator methodologies, the Framework for the Development of Environment Statistics (FDES) and the System of Environmental Economic Accounting all provide information related to compiling policy relevant indicators. However, compiling all indicators in these frameworks would require enormous human and financial resources. Thus Afghanistan should be careful to select the indicators that are most relevant and will provide the best value in terms of an investment in improving the statistical system. An environment statistics diagnostic tool is useful for conducting such an assessment.

1.4. LEARNING OBJECTIVES:

- Students understand the basic SDG indicator process and the environmental dimension of the 2030 Agenda
- Students understand the purpose of the FDES and the SEEA
- Students begin considering the priorities, needs and gaps in terms of environment statistics

1.5. KEY DISCUSSION POINTS:

- What environmental issues are most important for Afghanistan?
- What data and statistics currently capture these priority issues? Which issues have very little data and statistics?
- Where do participants see the greatest need for improvement?

1.6. TEACHING RESOURCES:

- Pre-training assessment questionnaire (Annex 1)
- Lectures (3 parts): *Overview of the environment related SDGs and the statistical standards related to compiling environment statistics*
- Environment statistics diagnostic tool (Annex 2)

1.7. MODULE GUIDANCE:

- Step 1. Provide students with an overview of the course structure and deliver pre-training assessment questionnaire to gauge baseline level of knowledge.
- Step 2: Present lecture #1: *Overview of monitoring the environmental dimension of the SDGs*
- Step 3: Present lecture #2: *Methodologies and statistical standards related to environment statistics*
- Step 4: Present lecture #3: *Presentation from Government on environment statistics in Afghanistan*
- Step 5: Group Discussion: Provide students will copies of the Environment Statistics Diagnostic Tool to facilitate a discussion on priority issues, needs and gaps in the field of environment statistics

1.8. KEY REFERENCES

- UN Statistical Commission Resolution for adoption by the Economic and Social Council on the SDG indicators (from <https://unstats.un.org/unsd/statcom/48th-session/documents/Report-on-the-48th-session-of-the-statistical-commission-E.pdf> page 6-33).
- Framework for the Development of Environment Statistics (FDES) 2013 (from <https://unstats.un.org/unsd/environment/FDES/FDES-2015-supporting-tools/FDES.pdf>).
- System of Environmental Economic Accounting Central Framework 2012 (from https://unstats.un.org/unsd/envaccounting/seeaRev/SEEA_CF_Final_en.pdf).
- System of Environmental Economic Accounting Experimental Ecosystem Accounting 2012 (from https://unstats.un.org/unsd/envaccounting/seeaRev/eea_final_en.pdf).
- SDG indicator metadata (from <https://unstats.un.org/sdgs/metadata/>).
- Transforming our World: The 2030 Agenda for Sustainable Development General Assembly Resolution 70/1 (from <https://sustainabledevelopment.un.org/post2015/transformingourworld>).
- User friendly version of the SDG text, targets and indicators (from <https://sustainabledevelopment.un.org/sdgs>).

2. MODULE #2

2.1. TITLE: Land accounting: an example

2.2. TIME NEEDED: 2 hours

2.3. OUTLINE: A land account is an accounting structure for measuring the stocks of different land types (cover) and changes in land use and land cover. Additionally, a land accounting layer can be overlaid with other geospatial information related to property types, population, protected areas, land management, climate change and disaster vulnerability, etc. The use of such a gridded accounting structure for measuring land cover and other land attributes directly links to a number of SDG targets:

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetland, rivers, aquifers and lakes

15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with the obligations under international agreements

15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world

15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development

15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

These targets are important for protecting the ability of Afghan citizens to use and benefit from natural ecosystems and the ecosystem services that they provide: A land account provides information useful for evaluating the potential of ecosystems to sustain water bodies and provide water purification services toward improving water quality; for assessing climate change adaptive capacity and changes in land cover due to climate change and disasters; for analyzing the impacts of population on ecosystems.

2.4. LEARNING OBJECTIVES:

- Participants understand the structure of a land account.
- Students are able to evaluate the usefulness of a land accounting or similar land classification structure in Afghanistan.
- Students understand how land accounting relates to analysis of climate change and population expansion.

2.5. KEY DISCUSSION POINTS:

- What are the current relevant geospatial data points in Afghanistan.
- What do global land cover products include and what validation should be done nationally?
- Is there potential for using global earth observation for strengthening the understanding of land cover in Afghanistan?

2.6. TEACHING RESOURCES:

- Lecture #4: *Land accounting: an example*
- Demo: ~~Global surface water explorer~~ Climate change initiative land cover and other global products
- Group exercise on creating indicators from land cover products

2.7. MODULE GUIDANCE:

- Step 1. Present lecture #4: *Land accounting: an example*
- Step 2: Demo
- Step 3: Group exercise

2.8. RELEVANT REFERENCES:

- Example of land account in Australia for reference (from <https://unstats.un.org/unsd/envaccounting/seeaRev/meeting2013/EG13-1-Australia.pdf>)
- Global Surface Water Explorer (from <https://global-surface-water.appspot.com/>)
- MODIS Land Cover (from <https://modis-land.gsfc.nasa.gov/>)
- European Environment Agency CORINE Land Cover example (from <http://land.copernicus.eu/pan-european/corine-land-cover>)

3. MODULE #3

3.1. TITLE: Water accounting: an example

3.2. TIME NEEDED: 2 hours

3.3. OUTLINE: Water is essential for life. Tracking the stock and use of water within a country can provide information on water use by different activities, water efficiency, water supply issues, future water demand and water constraints.

The SEEA Central Framework provides a structure for measuring stocks and flows of natural capital. This is similar to how national accounts are compiled, but the SEEA links the monetary measures to physical measures of stock and flows. This module will review the SEEA physical water asset account and the physical water supply and use account. It will describe the data sources and the structure of the account. Additionally, the use of the account will be discussed.

3.4. LEARNING OBJECTIVES:

- Students will understand the concepts of physical flow accounting and the design and use of water physical stock and flow account
- Students will discuss the relevance of either using a water account or a similar accounting structure for other relevant assets.

3.5. KEY DISCUSSION POINTS:

- What decision-making processes in Afghanistan could water accounts be used to influence?
- What are the key issues for water policy for which statistics are necessary
- What potential do participants see in water accounting? What about other similarly structured accounts (energy, forest products, materials, etc.)?

3.6. TEACHING RESOURCES:

- Lecture #5: *Water accounting*
- Exercise print out (Annex 4)

3.7. MODULE GUIDANCE:

- Step 1: Present lecture #5: *Water accounting*
- Step 2: Exercise on compiling a water account

3.8. RELEVANT REFERENCES:

- SEEA Central Framework Chapters 3.2 (The Physical Flow Accounting Framework) 3.5 (Physical Flow Accounts for Water) and 5.11 (Asset Accounts for Water Resources) (from https://unstats.un.org/unsd/envaccounting/seeaRev/SEEA_CF_Final_en.pdf).
- Water Account example from South Africa (from <http://www.statssa.gov.za/publications/D0405/D04052000.pdf>)

4. MODULE #4

4.1. **TITLE:** How Afghanistan could move forward with improving environments statistics and environment SDG monitoring?

4.2. **TIME NEEDED:** 3 hours

4.3. **OUTLINE:** In order to improve the environmental statistics in Afghanistan requires careful prioritization of statistical and high level policy support. Additionally, the underlying institutional mechanisms for data sharing and collaboration are essential. This interactive module will discuss how SDG monitoring will be developing over time, data sharing mechanisms, priorities in Afghanistan, potential areas where additional technical assistance is required and the conclusions for the miss.

4.4. **LEARNING OBJECTIVES:**

- Students will lead the discussion with the aim to understand the next steps and their role in improving environmental monitoring.
- Students will determine how they see the needs in terms of data sharing and data use.

4.5. **KEY DISCUSSION POINTS:**

- What are the priorities in terms of environment statistics?
- Is there data that already exists that can be used as a first step?
- How is data shared? Do the mechanisms for data sharing work well?
- What are some actions moving forward?

4.6. **TEACHING RESOURCES:**

- Lecture #6: *Shared Environment Information Systems*
- Lecture #7: *Summary and next steps*
- Discussion
- Module evaluation form (Annex 3)

4.7. **MODULE GUIDANCE:**

- Step 1: Present lecture #6: *Shared Environment Information Systems*
- Step 2: Present lecture #7: *Summary and next steps*
- Step 3: Lead group discussion around the key discussion points

4.8. **KEY REFERENCES:**

- UN Environment Indicator Reporting Information System (IRIS) presentation example (from https://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.33/2016/mtg2/6.5_UNEP_Indicator_Reporting_Information_System-IRIS.pdf).

Annex 1: Pre-training quiz

*Workshop title: Introduction to Measuring the Environmental Dimension of the SDGs:
The case of Afghanistan*

	Strongly agree			Strongly disagree	
	1	2	3	4	5
1. I am aware of the SDG process	1	2	3	4	5
2. I am familiar with the global SDG indicator list	1	2	3	4	5
3. I am familiar with the FDES and its use	1	2	3	4	5
4. I am familiar with the SEEA and its use	1	2	3	4	5
5. I use environment statistics on a regular basis	1	2	3	4	5
6. My role is best described as (circle one):					
Statistician					
Policy analyst					
Environment specialist					
Other: _____					
7. My expectations for this course include					

Thank you!

Annex 2: Environment Statistics Diagnostic Tool

Environment Statistics: Diagnostic Tool for Strategic Planning

Version 1.1, July 4, 2016 (Draft)

Michael Bordt¹, Regional Adviser on Environment Statistics, UNESCAP

WHAT IS THE PURPOSE OF THIS DIAGNOSTIC TOOL?

This Diagnostic Tool focuses on strategic planning for implementing environment statistics. It is intended to guide early-stage, structured conversations among stakeholders. The tool assists with identifying policy priorities, foundational information, stakeholders and institutional mechanisms necessary to develop a national work plan for improving environment statistics. When using this tool, it is important to include potential *producers*, *users* and *supporters* in the conversation.

The Diagnostic Tool is organised along seven steps of strategic planning:

1. STATEMENT OF STRATEGY AND POLICY PRIORITIES: Document **national visions and priorities** related to the environment, biodiversity, sustainable development and green economy, including managing natural assets and flows of services from them.
2. INSTITUTIONS: Identify the **stakeholders** including producers and users of related information (government agencies, academia, NGOs, international agencies), but also other groups such as civil society that can benefit from improved information. As well, identify relevant **institutional mechanisms** currently in place.
3. KNOWLEDGE: Identify **key national data sources** that can be used as a basis for further development.
4. PROGRESS: Understand **what progress has already been made in developing environment statistics**.
5. CONTEXT: Identify **related statistical development activities** that could benefit (and benefit from) environment statistics initiatives.
6. PRIORITIES: Determine the **priorities for action** to develop selected environment statistics.
7. CONSTRAINTS AND OPPORTUNITIES: Assess (a) **constraints to implementing** specific environment statistics and (b) opportunities for **immediate actions** to address these constraints.

The Diagnostic Tool has been designed for use in a workshop setting. However, iteration will be required to achieve consensus. For example, a small core group may draft initial responses and then present them to a larger group for discussion and revision.

Since achieving consensus is an iterative process, the steps in this diagnostic can be taken in any order. Also, if any sections require more deliberation to answer, it is acceptable to leave these blank.

Experience has shown that environment statistics implementation works best when:

- Producers and users of information collaborate to define their needs and opportunities,
- Organisations actively link the production and use of information to reporting and monitoring policy priorities,

¹This Diagnostic Tool was originally developed by the author to support the SEEA-CF under funding by World Bank WAVES program. It was inspired by the IIED/UNEP/WCMC Mainstreaming Biodiversity Rapid Diagnostic Tool. It was further adapted to support the SEEA-EEA by Michael Vardon. This version integrates the SEEA-CF, SEEA-EEA and FDES.

- Organizations are prepared to change the way they do things to provide better information and to use it effectively, and
- Statistical activities across the National Statistical System are well coordinated.

The international community has developed extensive guidance documents and training materials to support technical capacity building on the selected priority topics. See **Appendix 1** for links to related materials.

WHAT ARE ENVIRONMENT STATISTICS?

Environment statistics provide information about environmental conditions, the quality and availability of natural resources, and the impacts of human activities and natural events. They also provide information about the social actions and economic measures that societies take to avoid, mitigate or adapt to these impacts. Also included are actions taken to restore and maintain the capacity of the environment to provide services that are essential for life and human well-being.

Environment statistics cover a wide range of information and are thus interdisciplinary. They originate from many institutions that use numerous methods to compile them. Environment statistics, therefore, requires appropriate frameworks and standards to guide their development, coordination, measurement, organization and integration into the National Statistical System.

There are two main international frameworks for guiding the development of environmental statistics:

- The Framework for the Development of Environmental Statistics (FDES), and
- The System of Environmental Economic Accounting (SEEA)

The FDES provides guidance on a core set of environmental indicators that has proven beneficial to inform policy. It is designed to assist all countries in articulating environment statistics programmes by: (i) delineating the scope of environment statistics and identifying its constituents; (ii) contributing to the assessment of data requirements, sources, availability and gaps; (iii) guiding the development of multipurpose data collection processes and databases; and (iv) assisting in coordination and organization across institutions.

The SEEA, an international statistical standard, provides a coherent and integrated framework for collecting, organizing, analysing, presenting environmental data and relating it to economic and social data. It adheres to the principles of the **System of National Accounts (SNA)**, and expands its scope by:

- taking an accounting approach to record the stocks and flows of natural inputs into the economy,
- providing standard terminology, definitions, methods and classifications,
- adding measures and classifications of:
 - physical stocks of natural capital (including ecosystems) and their monetary values,
 - physical resource flows (land, metals and minerals, timber, energy, water, fish) into the economy
 - residual flows from the economy (air emissions, water effluents, solid waste) into the environment
 - environmental activities such as protection expenditures, taxes and subsidies,
 - ecosystems and their services, including biodiversity and carbon sequestration, and
- linking economic activities (producers and consumers) to societal benefits.

Together, FDES and SEEA can address many of the requirements for monitoring and reporting on progress towards national and international environmental, sustainable development, biodiversity and green economy priorities. These requirements include addressing the demand for information in support of integrated policies of the 2030 Agenda for Sustainable Development.

Most FDES and SEEA indicators and accounts have been implemented in many national contexts. Since national institutional arrangements, environmental contexts and priorities

and capacities differ, the guidance on implementation is flexible and modular. This allows countries to select priority information and adapt the guidance to their individual requirements.

POLICY PRIORITIES AND POLICY TOOLS AVAILABLE OR PLANNED

“We are determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations.” Transforming our world: the 2030 Agenda for Sustainable Development

There are many different pathways for progress towards the Sustainable Development Goals depending on national priorities and contexts. Elements common to many include low-carbon development, climate resilience, disaster risk reduction, resource efficiency, conserving natural heritage, social equity and protection, gender equality, poverty reduction, and decent green job creation.

Environment statistics can support a variety of related policy priorities including:

- Making informed decisions about trade-offs between conservation and development,
- Improving access to and equitable distribution of natural resources and ecosystem services,
- Managing supply and demand for natural resources and ecosystem services,
- Improving the state of the environment and managing the impacts of development,
- Mitigating risks of extreme events and adapting to them, and
- Coordinating and streamlining efforts in research, data collection, reporting and decision making.

Within the scope of your national vision, what are your country’s sustainable development policy priorities? (Please note the source.)

What related policy tools (e.g. laws, strategies, regulations, taxes/subsidies, and education initiatives) are in place or are planned? (Please note the source.)

Please describe the role of the National Statistical Office in monitoring and reporting on progress towards achieving national sustainable development priorities.

KNOWLEDGE

DATA SOURCES

What are the main data sources and what is their availability and quality? Depending on the policy priorities, these could include (among others):

- **Making informed decisions about trade-offs between conservation and development:**
 - National Accounts (natural resource inputs, value added, resource productivity)
 - Business and government finance (environmental protection expenditures; environmental taxes and subsidies)
 - International trade statistics (imports and exports of natural resources)
- **Improving access to and equitable distribution of natural resources and ecosystem services:**
 - Spatially-detailed socio-economic statistics (population, gender, dwellings, income, industry of work, access to clean water, sanitation and energy)
 - Agriculture, forestry and fisheries statistics (locations, extraction quantities and value)
 - Water stock, supply and use statistics (sources, quality, abstraction, distribution and use)
 - Tourism statistics (visitors, expenditures)
- **Managing supply and demand for natural resources and ecosystem services:**
 - Energy statistics (stock, supply and use)
 - Land taxes, ownership and management regimes (e.g., private, conservation, exploitation)
 - Environmental goods and services sector
- **Improving the state of the environment and managing the impacts of development:**
 - Emissions inventories (air, water, greenhouse gases, solid wastes, hazardous wastes)
 - Air, water and soil quality statistics
 - Basic spatial boundaries (national and state/provincial boundaries, topographic, hydrological, digital elevation models, bio-regions, etc.)
 - Land cover, land use and land use planning data (remote sensing, administrative data on ownership and designated use);
 - Protected area locations and protected species lists
- **Mitigating risks of extreme events and adapting to them:**
 - Incidence and location of extreme events and disasters
 - Population at risk of extreme events
 - Mitigation and adaptation activities (expenditures, programs)
- **Coordinating and streamlining efforts in research, data collection, reporting and decision making:**
 - Activities and expenditures on research, data collection, reporting and decision making

Please describe any key documents and research initiatives that are related to the policy priorities. (Please note the source.)

PROGRESS

EXISTING NATIONAL COMPILATIONS

The SEEA Central Framework (SEEA-CF) accounts include:

- Asset accounts:
 - Mineral and energy resources (physical and monetary²)
 - Land cover and land use (physical and monetary)
 - Soil resources (physical)
 - Timber resources (physical and monetary)
 - Aquatic resources (fish and crustaceans) (physical and monetary)
 - Other biological resources (e.g., wild game) (physical and monetary)
 - Water resources (physical)
- Physical flow accounts:
 - Economy-wide material flow accounts
 - Supply and use for water
 - Supply and use for energy
 - Supply and use for timber
 - Emissions to water
 - Emissions to air
 - Wastes
- Monetary flow accounts (environmental activities)
 - Environmental protection expenditure accounts (EPEA)
 - Resource use and management accounts (RUMEA)
 - Environmental goods and services sector (EGSS)
 - Environmentally related payments to and by government (taxes and subsidies)

SEEA Experimental Ecosystem Accounts (SEEA-EEA) include spatially-detailed accounts for:

- Ecosystem extent and condition
- Water; Carbon; Biodiversity
- Ecosystem services supply and use

The FDES includes several sets of unique indicators that do not feed directly into SEEA accounts:

- Extreme events and disasters (including technological disasters)
- Human settlements and environmental health
- Environmental protection, management and engagement (governance and regulation, extreme event preparedness and disaster management, environmental information and awareness)

Which of the priority accounts and indicators above been piloted or produced as official statistics?

² Physical accounts record the volumes of the stocks and flows. Monetary accounts record their values.

PRIORITIES

PRIORITY ACCOUNTS

Given the policy priorities, availability of knowledge and stakeholder interest, which accounts and indicators are of the highest priority to begin implementation?

CONSTRAINTS

FEASIBILITY

Of the priority accounts, what are the constraints to implementing them as ongoing statistical activities?

Some accounts may have few constraints and are ready to test. Others may require a combination of capacity building (training, guidance documents), data development (improving source data) and institutional coordination (establishing or adapting mechanisms, securing funding).

READY TO TEST

Accounts/Indicators:

Constraints:

NEED CAPACITY BUILDING

Accounts/Indicators:

Constraints:

NEED DATA DEVELOPMENT

Accounts/Indicators:

Constraints:

NEED INSTITUTIONAL COORDINATION, FINANCING

Accounts/Indicators:

Constraints:

OPPORTUNITIES

PRIORITY ACTIONS

What are immediate actions that can be taken to overcome the constraints to begin implementing priority accounts? (Please consider budget cycles for national development planning that may provide funding opportunities).

Accounts/Indicators:

Actions:

Accounts/Indicators:

Actions:

APPENDIX 1: LINKS TO OTHER INTEGRATED ENVIRONMENT STATISTICS MATERIALS

SEEA website: <http://unstats.un.org/unsd/envaccounting/seea.asp>

- SEEA Central Framework (SEEA-CF):
http://unstats.un.org/unsd/envaccounting/seeaRev/SEEA_CF_Final_en.pdf (Also available in [Arabic](#), [Chinese](#) (draft), [French](#) (draft), [Russian](#) (draft) and [Spanish](#) (Draft))
 - Briefing Note: <http://unstats.un.org/unsd/envaccounting/Brochure.pdf>
 - Briefing Note: <http://unstats.un.org/unsd/envaccounting/SEEA-Brochure-SC-2013.pdf>
- SEEA Experimental Ecosystem Accounting (SEEA-EEA):
http://unstats.un.org/unsd/envaccounting/seeaRev/eea_final_en.pdf
 - Briefing Note:
http://unstats.un.org/unsd/envaccounting/workshops/int_seminar/note.pdf
- SEEA Applications and Extensions:
http://unstats.un.org/unsd/envaccounting/ae_white_cover.pdf
- SEEA Energy: <http://unstats.un.org/unsd/envaccounting/energy.asp>
 - International Recommendations for Energy Statistics (IRES):
http://unstats.un.org/unsd/energy/ires/IRES_Whitecover.pdf
- SEEA Water: <http://unstats.un.org/unsd/envaccounting/water.asp>
 - International Recommendations for Water Statistics (IRWS):
<http://unstats.un.org/unsd/envaccounting/irws/>
 - Compilation Guidelines: <http://unstats.un.org/unsd/envaccounting/WCG14.pdf>
- SEEA-Agriculture, Fisheries and Forestry (Draft, SEEA-AFF):
<http://unstats.un.org/unsd/envaccounting/aff/chapterList.asp>
- SEEA-EEA country examples:
 - Canada:
 - Human Activity and the Environment 2013: Measuring Ecosystem Goods and Services: English: <http://www.statcan.gc.ca/pub/16-201-x/16-201-x2013000-eng.htm>; French: <http://www.statcan.gc.ca/pub/16-201-x/16-201-x2013000-fra.htm>.
 - Human Activity and the Environment 2014: Agriculture in Canada: English: <http://www.statcan.gc.ca/pub/16-201-x/16-201-x2014000-eng.htm>; French: <http://www.statcan.gc.ca/pub/16-201-x/16-201-x2014000-fra.htm>
 - Australia:
 - Land and Ecosystem Accounting:
<http://www.abs.gov.au/ausstats/abs@.nsf/Products/4655.0.55.002~2013~Main+Features~Chapter+6+Land+and+ecosystem+accounting?OpenDocument>
 - Completing the Picture - Environmental Accounting in Practice, May 2012
<http://www.abs.gov.au/ausstats/abs@.nsf/mf/4628.0.55.001>
 - Victoria, Australia: Experimental Ecosystem Accounts:
https://ensym.dse.vic.gov.au/cms/index.php?option=com_content&view=article&id=60&Itemid=71

CICES V4.2 (The Common International Classification of Ecosystem Services: <http://cices.eu>).

CBD (Convention on Biological Diversity) Aichi Targets: <http://www.cbd.int/sp/targets/>

FDES (Framework for the Development of Environmental Statistics):
<http://unstats.un.org/unsd/environment/fdes.htm>

- ESStat (Environment Statistics Self-assessment Tool)
<http://unstats.un.org/unsd/environment/FDES/essat.htm>

International Monetary Fund Data Quality Assessment Framework (IMF DQAF):
http://dsbb.imf.org/images/pdfs/dqrs_factsheet.pdf

SNA 2008 Implementation Strategy: <http://unstats.un.org/unsd/nationalaccount/imp.asp>.

SDGs (Sustainable Development Goals) Open Working Group:
<http://sustainabledevelopment.un.org/owg.html>

Paris21 National Statistical Development Strategy (NSDS): <http://www.paris21.org/NSDS>.

OECD Environmental Country Reviews: <http://www.oecd.org/env/country-reviews/oecdenvironmentalperformancereviews.htm>.

Annex 2: Environment Statistics Diagnostic Tool

We appreciate your feedback. Please return this form to the organizer at the end of the workshop. Thank you.

*Workshop title: Introduction to Measuring the Environmental Dimension of the SDGs:
The case of Afghanistan*

- | | Strongly agree | | | Strongly disagree | |
|--|--|---|---|-------------------|---|
| 1. The content was well presented | 1 | 2 | 3 | 4 | 5 |
| 2. The workshop was applicable for Afghanistan | 1 | 2 | 3 | 4 | 5 |
| 3. The allocation of time was well balanced | 1 | 2 | 3 | 4 | 5 |
| 4. The instructor was a good communicator | 1 | 2 | 3 | 4 | 5 |
| 5. The material was presented in an organized manner | 1 | 2 | 3 | 4 | 5 |
| 6. The instructor was knowledgeable on the topic | 1 | 2 | 3 | 4 | 5 |
| 7. I would be interested in attending a follow-up, more advanced workshop on this same subject | 1 | 2 | 3 | 4 | 5 |
| 8. Given the topic, was this workshop:
Too long | <input type="checkbox"/> a. Too short <input type="checkbox"/> b. Right length <input type="checkbox"/> c. Too long | | | | |
| 9. In your opinion, was this workshop:
Advanced | <input type="checkbox"/> a. Introductory <input type="checkbox"/> b. Intermediate <input type="checkbox"/> c. Advanced | | | | |
| 10. What was most relevant about the course? Any suggestions for improvement? | | | | | |

Thank you!

Annex 4: Exercise example on water accounts

EXERCISE EXPERIMENTAL WATER ACCOUNTS FOR AFGHANISTAN

1. INTRODUCTION

The System of Environmental Economic Accounts (SEEA) is the only agreed international statistical framework for compiling environment statistics. It is based on the concepts and definitions in the System of National Accounts (SNA) and uses an accounting framework for integrating environmental and economic data into accounts that are useful for producing indicators and informing policy decisions. The SEEA is available online at:

<http://unstats.un.org/unsd/envaccounting/seea.asp>

The SEEA Central Framework (SEEA-CF) provides a consistent approach to all accounts. These examples are based on the SEEA-CF.

The SEEA-Water is fully compliant with the SEEA and provides more detailed technical information on compiling water accounts (available from

<http://unstats.un.org/unsd/envaccounting/seeaw/>).

2. STRUCTURE OF THE TABLES

Figure 1 below is a diagram showing the stocks of water in a country and how that stock changes. Table 1 .

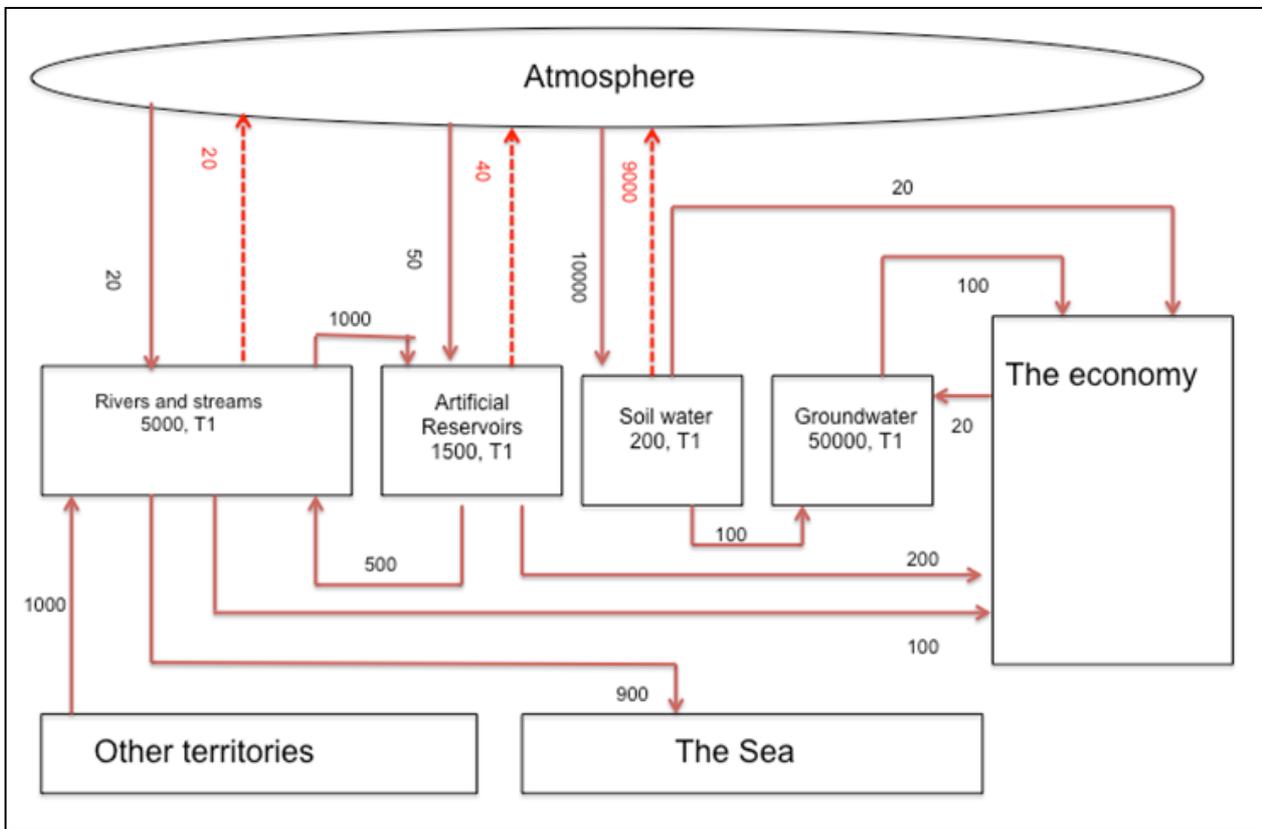


Figure 1 Stock and flow diagram for water (m³)

Table 1 Physical asset account for water (m³)

	Type of water resources				Total
	Surface water		Groundwater	Soil water	
	Artificial reservoirs	Rivers and streams			
(A) Opening stock					
Additions to stock					
(B) Returns (from Economy)					
(C) Precipitation					
(D) Inflows from other territories					
(E) Inflows from other inland water					
(F) Discoveries of water in aquifers					
<i>(G) Total additions to stock</i>					=B+C+D+E+F
Reductions in stock					
(H) Abstraction (to Economy)					
(I) Evaporation and evapotranspiration					
(J) Outflows to other territories					
(K) Outflows to the sea					
(L) Outflows to other inland water					
<i>(M) Total reductions in stock</i>					=H+I+J+K+L
Closing stock					=A + G - M

Instructions: (1) Transcribe Opening Stock and flows from Stock and Flow Diagram

(2) Calculate Totals and Closing Stock

Note: (E) and (L) are transfers among Rivers & Streams, Artificial Reservoirs, Groundwater and Soil Water

Figure 2 Water supply and use diagram (m³)

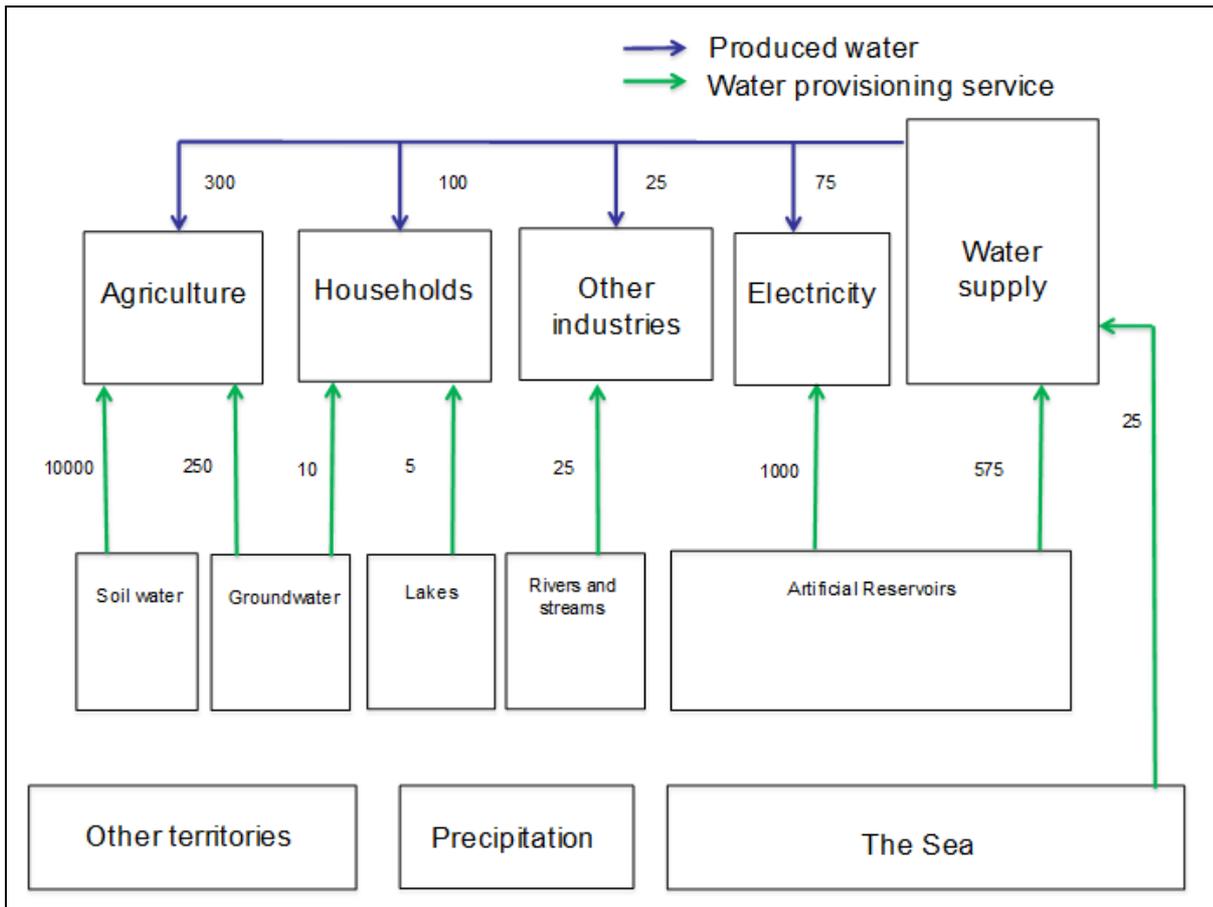


Table 2: Physical supply and use table for water (m³)

	Use of water					Total use
	Agriculture, forestry and fishing	Electricity, gas, steam and air conditioning supply	Water collection, treatment and supply	Other industries	Households	
Sources of abstracted water						
Inland water resources						
(A) Surface water						
(B) Groundwater						
(C) Soil water						
(D) Sea water						
(E) Total abstracted water						=A+B+C+D
Abstracted water						
(G) Distributed water (to other economic units)						
(H) Use of water (from other economic units)						
(I) Own use						
Total use of water (abstracted and distributed water)						=H+I

Note: Surface water = (Lakes + Rivers and Streams + Artificial Reservoirs)

Note: Own use for Water collection, treatment and supply = Abstracted - (total distributed)

Instructions: (1) Transcribe values for Distribution and Abstraction from Water Use diagram

(2) Calculate Total Use (column and row)

3. DATA NEEDS

For discussion, some data needs are described below and can be used to think through Tables 1 and 2.

Estimates of these can be initiated using a few key sources:

- Is there existing information on water and supplied to households and industry? Is there existing information on wastewater produced?
- What about information related to who is covered by a water or waste water system?
- Could a business survey be used to understand water supplied to industry by the water supply industry?
- Are there key companies that have licenses to abstract water? Or for large water users, like the extractives industry, is any information available on water abstraction?
- Census or other estimates of the population and agriculture
 - Can the census or household surveys tell us how many people are covered by a formal water supply and how many are not. The water use per person could be estimated based on the national context if this information is available.
 - If livestock estimates exist, the standard figures could be applied to estimate water use by livestock. The daily water requirement for livestock is below. Then we can multiply the number of livestock by the water requirements.

Livestock	Daily water requirement used ¹
	Litres
Cattle	75 ²
Horses	45
Pigs	23
Chickens	0.30
Sheep and goats	18

¹FAO AGRI FACTS Water Requirements for Livestock (Upper limit)

http://www.fao.org/prods/gap/database/gap/files/1342_WATER_REQUIREMENTS_LIVESTOCK.PDF

²Beef cattle requirement used.

- Are statistics available on the quantities of water used for irrigation?
- Water use by energy sector
 - Is there information on both the water used in hydro power generation and by fossil fuels
 - For hydropower plants if the average water use per kWh and the kWh per year is known then the total water used for hydropower can then be calculated by multiplying the total kWh produced by the average amount of water used.
 - Additionally, what is the size of cooling tanks for the diesel power plants? How long can these tanks be used without replenishing?

On waste water:

- What is available?

- For example, are there statistics on the amount of municipal wastewater treated and untreated?

