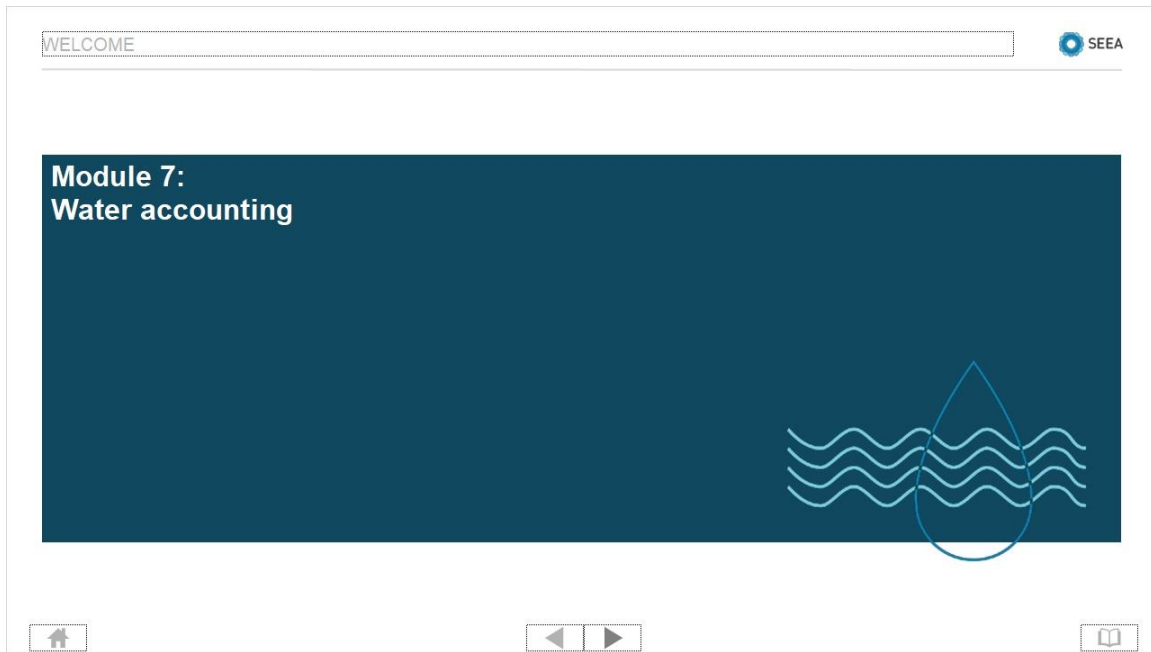


1. Module 1 - Introduction


1.1 Welcome



Notes:

1.2 Module units

MODULE 7: WATER ACCOUNTING, UNIT 1: WATER ACCOUNT

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Module units

The Water Accounting module will take you through four units, as listed below. We recommend completing these units in order.

**Unit 1:
Water account**

- What is it?
- Why do we need it?
- What does it look like?
- Expertise and data required

**Unit 2:
Compilers**





- Main water accounting concepts and the basics for compiling water accounts

**Unit 3:
Data providers**

- Water cycle and ecosystem processes
- Data options, examples and issues


**Unit 4:
Review**

- Quiz
- Summary



1.3 Module objectives

MODULE 7: WATER ACCOUNTING, UNIT 1: WATER ACCOUNT

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Module objectives

After completing the SEEA Water Accounting module you will be able to:





Understand why water accounting is important!

Understand how water accounting is considered in the SEEA.

Follow the steps to compile a water account.

Understand the basics of water cycle.

Understand water accounting data options and sources.



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1.4 What is Water Accounting?

MODULE 7: WATER ACCOUNTING, UNIT 1: WATER ACCOUNT

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What is water accounting?


Water accounting is a way to provide detailed data on all water stocks, sources, users and their related ecosystems.





In **SEEA EEA**, the water accounts are displayed in a spatially-detailed version that captures inter-ecosystem flows of water (SEEA EEA, Section 4.62), water quality, and supply/use for ecosystems

It is important to note that water is also an **ecosystem service** since clean water requires less treatment to use. Water systems also provide filtration and water regulation services.

It is important to note that the SEEA EEA water account can be built on an existing SEEA Central Framework (**SEEA CF**) water account. It also includes water quality and ecosystems as users.

Hover above the abbreviations to learn more.





Explanation 1 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 1: WATER ACCOUNT

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What is water accounting?


Water accounting is a way to provide detailed data on all water stocks, sources, users and their related ecosystems.





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Hover above the abbreviations to learn more.





Explanation 2 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 1: WATER ACCOUNT

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What is water accounting?


Water accounting is a way to provide detailed data on all water stocks, sources, users and their related ecosystems.

In [SEEA EEA](#), the water accounts are displayed in a spatially-detailed version that captures inter-ecosystem flows of water (SEEA EEA, Section 4.62), water quality, and supply/use for ecosystems





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It is important to note that the SEEA EEA water account is an existing SEEA Central Framework ([SEEA CF](#)) water account. It also includes water quality and ecosystems as users.

Hover above the abbreviations to learn more.




SEEA CF
System of Environmental Economic Accounting
Central Framework



1.5 Importance of Water Accounting

MODULE 7: WATER ACCOUNTING, UNIT 1: WATER ACCOUNT


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Importance of water accounting

Creating water accounts is important since water plays a vital role in the environment and the economy.

Water accounts can be created for the following purposes:

- To develop policies on water security, water quality and impacts of water abstraction on ecosystems
- To connect to other accounts like biodiversity and water (condition, services supplied & use)
- To build the required water accounts in the SEEA CF
- To serve as indicators for local water supply/use and quality. In addition, they can provide an indication of the variability in supply and trends (droughts, floods) in a specific location.





1.6 Water Accounting Representation

MODULE 7: WATER ACCOUNTING, UNIT 1: WATER ACCOUNT

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SEEA

Water accounting representation

After the water cycle components are understood, **water accounts** can be represented using maps and tables that contain **spatial units, classifications, biophysical modelling and socio-economic data**.

A corresponding water assets table would link these accounts to the ecosystem types that provide and use the water.

The water account provides spatial details for data on:

- stock
- supply and
- use, including soil moisture and groundwater

In addition, the table illustrates water quality measures (and their contribution to **condition accounts**).

Maps

Use

Rainfall

Hydrology

Tables

	Accounting for water use	Accounting for water supply	Accounting for water quality	Accounting for water quantity	Accounting for water condition	Accounting for water security	Accounting for water equity	Accounting for water efficiency	Accounting for water resilience	Accounting for water sustainability
Water use										
Water supply										
Water quality										
Water quantity										
Water condition										
Water security										
Water equity										
Water efficiency										
Water resilience										
Water sustainability										

Spatial units
Classifications
Biophysical modelling
Socio-economic data

1.7 Water Account Data and Expertise Requirements

MODULE 7: WATER ACCOUNTING, UNIT 1: WATER ACCOUNT

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SEEA

Water account data and expertise requirements

Compiling water accounts requires information from the **ecosystem extent account** and **SEEA CF water account**, along with data and expertise.

To learn more about these requirements, please take a look at the figure.

Click on each section to learn more

Ecosystem
Extent
Account

SEEA CF
Water Account
(national level)


Water
Account

Expertise

Data

Explanation 1 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 1: WATER ACCOUNT

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Water account data and expertise requirements




Compiling water accounts requires information from the **ecosystem extent account** and **SEEA CF water account**, along with **data** and **expertise**.

To learn more about these requirements, please take a look at the figure.

Click on each section to learn more


An **ecosystem extent account** presents an opening and closing area (ecosystem asset) by type of ecosystem, together with information on additions and reductions in area.





Explanation 2 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 1: WATER ACCOUNT

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Water account data and expertise requirements

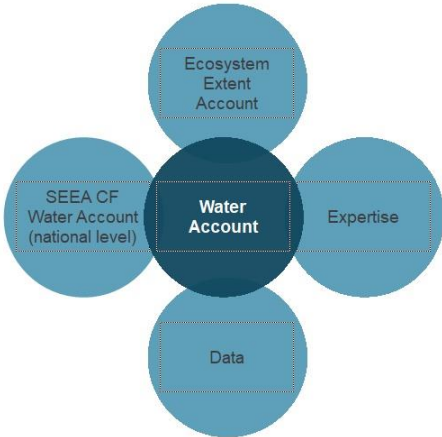
Compiling water accounts requires information from the **ecosystem extent account** and **SEEA CF water account**, along with **data** and **expertise**.




To learn more about these requirements, please take a look at the figure.

Click on each section to learn more

Data

- Spatially-detailed supply (rainfall, transfers)
- Use (abstraction, inter-ecosystem transfers)
- Water quality measures





Explanation 3 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 1: WATER ACCOUNT

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SEEA

Water account data and expertise requirements

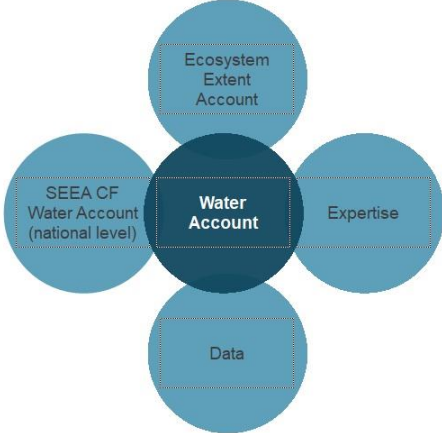
Compiling water accounts requires information from the **ecosystem extent account** and **SEEA CF water account**, along with **data** and **expertise**.

To learn more about these requirements, please take a look at the figure.

Click on each section to learn more

Expertise

- Geographers (GIS and remote sensing)
- Hydrologists
- Ecologists
- Climatologists



Home

Navigation

Bookmarks

Explanation 4 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 1: WATER ACCOUNT

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SEEA

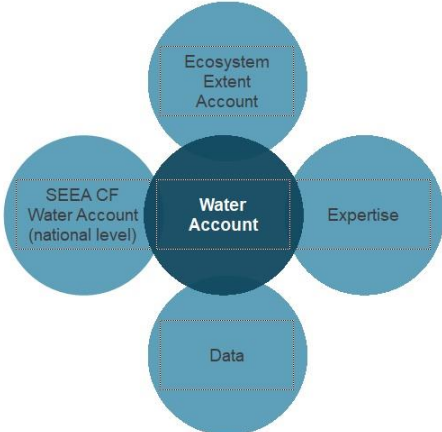
Water account data and expertise requirements

Compiling water accounts requires information from the **ecosystem extent account** and **SEEA CF water account**, along with **data** and **expertise**.

To learn more about these requirements, please take a look at the figure.

Click on each section to learn more

The SEEA CF Physical Supply and Use Tables (PSUT) for water supply the conceptual foundations and contents for water flow accounts.



Home

Navigation

Bookmarks

1.8 Module units

MODULE 7: WATER ACCOUNTING




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SEEA

Module units

The Water Accounting module will take you through four units, as listed below. We recommend completing these units in order.

Unit 1: Water account <ul style="list-style-type: none">• What is it?• Why do we need it?• What does it look like?• Expertise and data required	Unit 2: Compilers <ul style="list-style-type: none">• Main water accounting concepts and the basics for compiling water accounts	Unit 3: Data providers <ul style="list-style-type: none">• Water cycle and ecosystem processes• Data options, examples and issues	Unit 4: Review <ul style="list-style-type: none">• Quiz• Summary
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1.9 Beginning of Unit 2

MODULE 7: WATER ACCOUNTING, UNIT 2: COMPILERS

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SEEA

Unit 2: Compilers


In this unit, we will learn about why water accounts are important and how they connect to policy. We will also learn the basic concepts surrounding water accounts and their compilation.




First, why should we concern ourselves with water and ecosystem accounts? Well, there is an increasing manmade pressure on water and ecosystems caused by:

- abstracting water
- polluting water
- degrading and depleting ecosystems, which changes the water balance

Therefore, gathering and understanding a comprehensive set of information on water and ecosystems will **benefit** us greatly.

Hover the blue term with your cursor to learn more about the benefits.





Explanation 1 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 2: COMPILERS

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SEEA

Unit 2: Compilers

In this unit, we will learn about why water accounts are important and how they connect to policy. We will also learn the basic concepts surrounding water accounts and their compilation.

First, why should we concern ourselves with water accounts?

Well, there is an increasing manmade pressure on water resources:


- abstracting water
- polluting water
- degrading and depleting ecosystems,

Therefore, gathering and understanding a country's water and ecosystems will benefit us greatly.

Hover the blue term with your cursor to learn more about the definition.

Benefits - Comprehensive information on water and ecosystems will make it easier to assess:

- Changes in vegetation cover and land use on water stocks and water provisioning and filtration services
- Policies for managing water and ecosystems in the economy:
 - e.g., restricting human activity in catchments used for water supply
 - e.g., limiting the amount of water available for extraction by industry (e.g. agriculture).



1.10 Accounts and Data

MODULE 7: WATER ACCOUNTING, UNIT 2: COMPILERS

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SEEA

Water accounts and data

Did you know that water **accounts** provide a framework for arranging water data? They enable the integration of water data from different sources. Gaps and deficiencies in primary data sources can also be identified and addressed through them.

“Lack of integrated water data is a systematic impediment to informed decision making related to the sustainable use of water resources. Data are needed to provide information not just about water quantity, both on the surface and underground, but also about its quality, social and economic relations as well as environmental dimensions.”

Quoted from: Session 6.4 “Data for All” of the 5th World Water Forum (2009)



1.11 Water Policy Issues and Ecosystems

MODULE 7: WATER ACCOUNTING, UNIT 2: COMPILERS

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SEEA


Water policy issues and ecosystems





For water accounts, ecosystem accounting is relevant for all four (4) areas of water policy that improve water governance.

The four (4) areas of water policy are:

- Improving access to drinking water and sanitation services
- Managing water supply and demand
- Improving the condition and services provided by water related ecosystems
- Adapting to extreme events

Click on each area in the figure to learn more.





Explanation 1 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 2: COMPILERS

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SEEA


Water policy issues and ecosystems





For water accounts, ecosystem accounting is relevant for all four (4) areas of water policy that improve water governance.

The four (4) areas of water policy are:

- Improving access to drinking water and sanitation services
- Managing water supply and demand
- Improving the condition and services provided by water related ecosystems
- Adapting to extreme events

Click on each area in the figure to learn more.






Improving access to drinking water and sanitation services.

I. For the provision of drinking water and sanitation services to households, water accounts provide information on the following: the amount of water supplied to households; and the amount of wastewater generated and either collected by sewerage systems, or discharged directly to the environment. Combined with economic information from the water supply industry, water accounts can show the water production cost. This could also be extended through modelling to estimate the cost of providing water and sewerage services to a greater proportion of the population. Combined with information from relevant ecosystem accounts, information can be provided on the extent and condition of water-related ecosystems. Information can also be provided on the subsequent quality of ecosystem services, such as drinking water, sanitation (e.g. water filtration/purification), water availability and disaster risk reduction.

Explanation 2 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 2: COMPILERS

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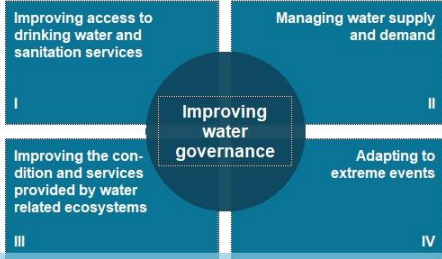
Water policy issues and ecosystems

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The four (4) areas of water policy are:

- Improving access to drinking water and sanitation services
- Managing water supply and demand
- Improving the condition and services provided by water related ecosystems
- Adapting to extreme events

Click on each area in the figure to learn more.




Managing water supply and demand
II. For managing water supply and demand, the water accounts include information on: the total water available, how much water is being abstracted and used in the economy and by what parts of the economy (e.g. in agriculture, in manufacturing, for drinking water). Information on water price and physical use can be matched and combined with measures of economic performance. This would provide indicators of physical water-use intensity and economic productivity and efficiency. Such information can help inform decisions about investment in water supply infrastructure, as well as assess alternative water pricing regimes. In areas with marked temporal fluctuations, this can be combined with information from relevant ecosystem accounts on water regulation (including retention) as an ecosystem service. This information is also important for ecosystems providing a water filtration service.



Explanation 3 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 2: COMPILERS

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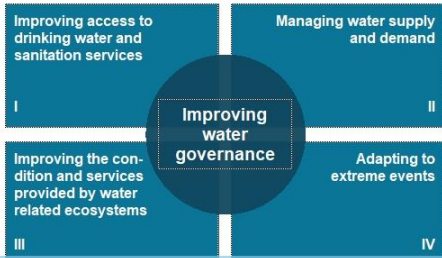
Water policy issues and ecosystems

For water accounts, ecosystem accounting is relevant for all four (4) areas of water policy that improve water governance.





The four (4) areas of water policy are:

- Improving access to drinking water and sanitation services
- Managing water supply and demand
- Improving the condition and services provided by water related ecosystems
- Adapting to extreme events


Click on each area in the figure to learn more.



Improving the condition and services provided by water related ecosystems
III. For improving the condition and services provided by water-related ecosystems, the accounts, and in particular the ecosystem accounts, provide biophysical information. This information is necessary for tracking the changes in extent and condition of water-related ecosystems, as well as for measuring the ecosystem services provided (e.g. water filtration, regulation or retention). The accounts can be used to identify water-related ecosystems declining in quality. As economic and other uses depend on them, investment in remediation may be targeted to achieve the greatest overall benefit. This can include policy tools such as ecosystem conservation and restoration, payments for ecosystem services or the polluter pays principle.



Explanation 4 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 2: COMPILERS Page 11 / 52  SEEA

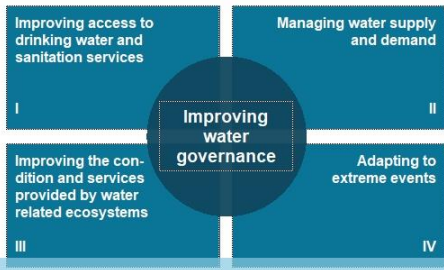
Water policy issues and ecosystems

For water accounts, ecosystem accounting is relevant for all four (4) areas of water policy that improve water governance.





The four (4) areas of water policy are:

- I. Improving access to drinking water and sanitation services
- II. Managing water supply and demand
- III. Improving the condition and services provided by water related ecosystems
- IV. Adapting to extreme events.


Click on each area in the figure to learn more.



Adapting to extreme events
IV. For adapting to extreme events, the water and ecosystem accounts can show the impacts on economic production, mortality and asset losses of droughts and floods. A broader set of ecosystem accounts can show benefits from the services of flood protection, drought mitigation and water flow regulation. Further changes in the condition and services provided by water-related ecosystems can be linked to extreme events and climate change over the long term.

1.12 Concepts - Water Cycle

MODULE 7: WATER ACCOUNTING, UNIT 2: COMPILERS Page 12 / 52  SEEA

Concepts – the water cycle

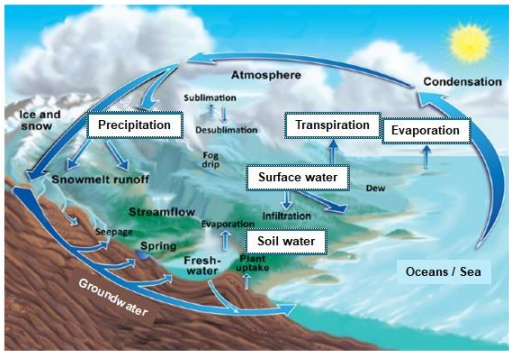
There are two general **concepts** to be considered in the water accounts:





- water cycle
- water stocks, supply, abstraction, and use.

The **first concept** addresses the water cycle, also known as the hydrological cycle. There are several components of the water cycle. The main ones are listed here:

- Water storage in sea/oceans
- Evaporation
- Sublimation
- Transpiration
- Water in the atmosphere
- Precipitation (rain, snow, hail, sleet, mist, dew)
- Infiltration
- Water storage in ground, lakes, rivers, wetlands, streams and glaciers

Click the highlighted terms in the figure to learn more.



Evaporation (Slide Layer)

Concepts – the water cycle

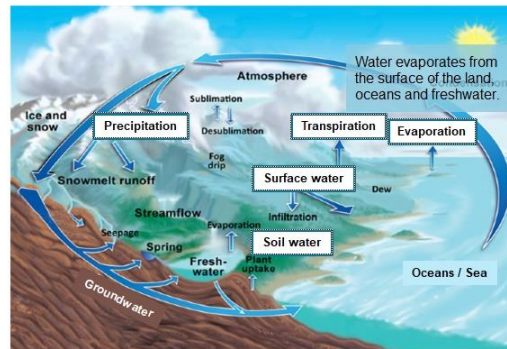
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- Infiltration
- Water storage in ground, lakes, rivers, wetlands, streams and glaciers

Click the highlighted terms in the figure to learn more.



Transpiration (Slide Layer)

Concepts – the water cycle

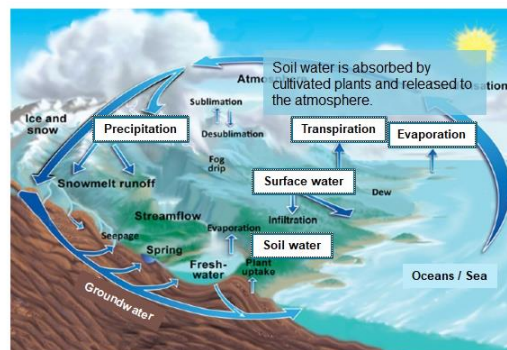
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Click the highlighted terms in the figure to learn more.



Percipitation (Slide Layer)

Concepts – the water cycle

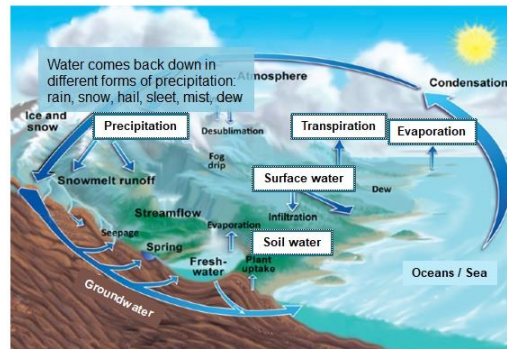
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- Infiltration
- Water storage in ground, lakes, rivers, wetlands, streams and glaciers

Click the highlighted terms in the figure to learn more.



Flows downstream (Slide Layer)

Concepts – the water cycle

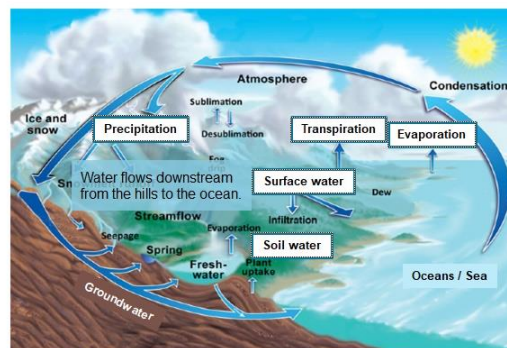
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- Water in the atmosphere
- Precipitation (rain, snow, hail, sleet, mist, dew)
- Infiltration
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Click the highlighted terms in the figure to learn more.



Soil (Slide Layer)

Concepts – the water cycle

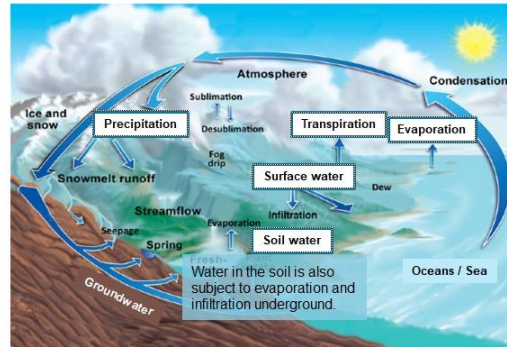
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Click the highlighted terms in the figure to learn more.



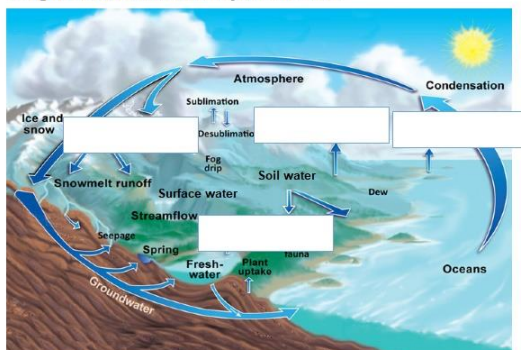
1.13 Concepts - Water Cycle

(Drag and Drop, 10 points, 1 attempt permitted)

Concepts – the water cycle

Great, you've made it through the concept of the water (hydrological) cycle. Let's explore what you have learned so far. Try to match the components to their proper position in the figure!

Drag the boxes and check your answer.



Infiltration

Precipitation

Transpiration

Evaporation

OK

Drag Item	Drop Target
Infiltration	Rectangle 8
Precipitation	Rectangle 5
Evaporation	Rectangle 6
Transpiration	Rectangle 7

Drag and drop properties
Snap dropped items to drop target (Stack random)
Delay item drop states until interaction is submitted

Correct (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 2: COMPILERS
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SEEA

Concepts – the water cycle

Great, you've made it through the concept of the water (hydrological) cycle. Let's explore what you have learned so far. Try to match the components to their proper position in the figure.

Drag the boxes and check your answer.

Very good!

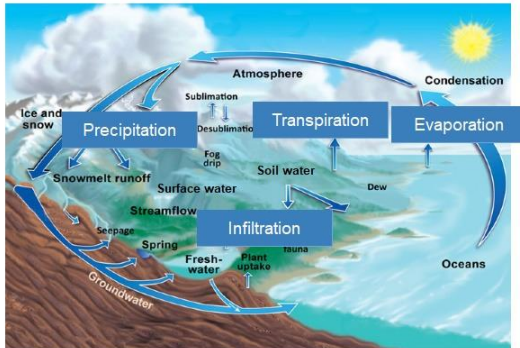
Continue

Incorrect (Slide Layer)

Concepts – the water cycle

Great, you've made it through the concept of the water (hydrological) cycle. Let's explore what you have learned so far. Try to match the components to their proper position in the figure.

Drag the boxes and check your answer.



Not quite right.
Take a look at the solution!

Continue

1.14 Concepts - Water stocks & flows

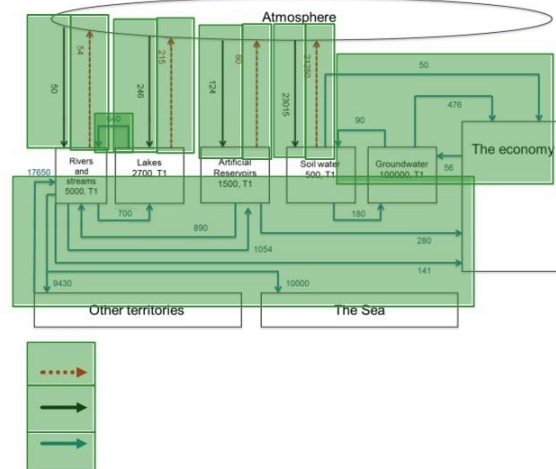
Concepts – water stocks & flows

The second concept for water accounting addresses water stocks, supply, abstraction, and use.

Water stocks and flows diagram

The concept codifies all the flows of water in a stock and flow diagram. As shown in the diagram, amounts in million cubic meter (Mm^3) are being transferred from one sphere to another. The direction of the arrows shows the direction of the flow.

Explore the colored flows to find out more!



rot (Slide Layer)

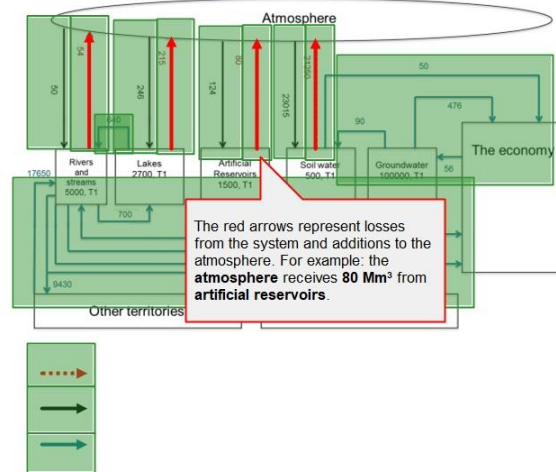
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schwarz (Slide Layer)

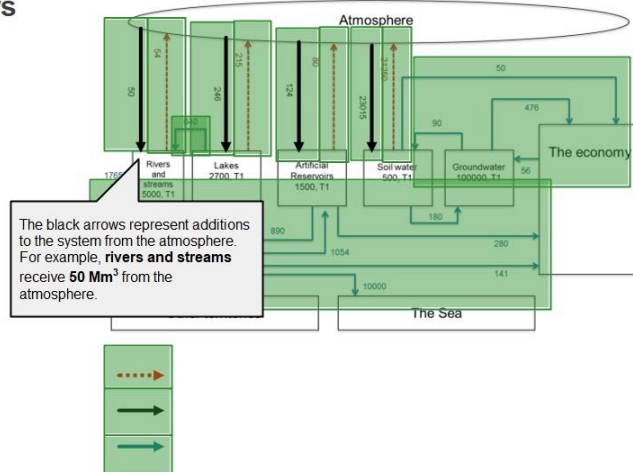
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Explore the colored flows to find out more!



blau (Slide Layer)

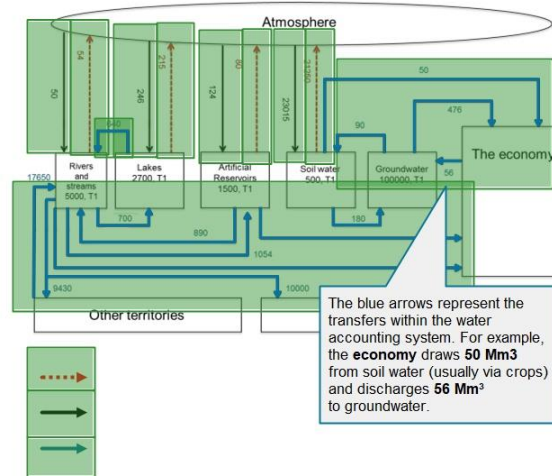
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Water stocks and flows diagram

The concept codifies all the flows of water in a stock and flow diagram. As shown in the diagram, amounts in million cubic meter (Mm^3) are being transferred from one sphere to another. The direction of the arrows shows the direction of the flow.

Explore the colored flows to find out more!



1.15 Concepts - Water stocks & flows

Concepts – water stocks & flows

After we've examined the **flow diagram**, we're ready to transfer the values of additions, reductions and transfers into a **water asset account table**.

Click the grey arrow to see the water asset account table.

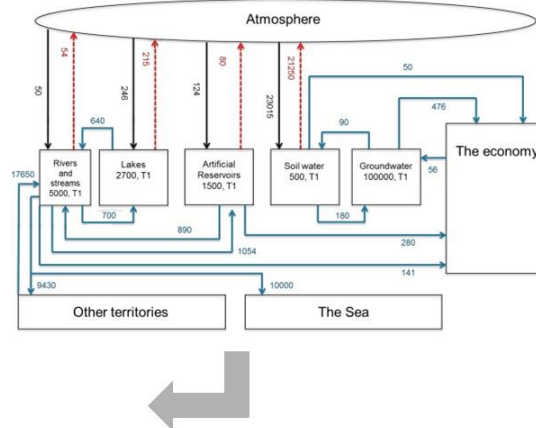


Table (Slide Layer)

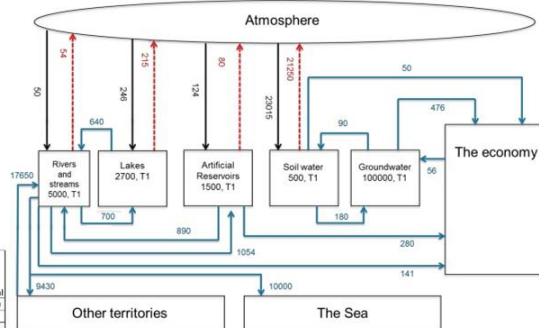
Concepts – water stocks & flows

After we've examined the **flow diagram**, we're ready to transfer the values of additions, reductions and transfers into a **water asset account table**.

Click the grey arrow to see the water asset account table.

The **water asset account table** contains opening and closing stocks for each type of water resource and illustrates the amount of water additions and reductions for each type.

	Type of water resources						Total
	Artificial reservoirs	Lakes	Rivers and streams	Glaciers, snow and ice	Groundwater	Soil water	
(A) Opening stock	1,500	2,700	5,000	-	100,000	500	109,700
Additions to stock							
(B) Returns (from Economy)	-	-	-	-	56	-	56
(C) Precipitation	124	246	50	-	-	23,015	23,435
(D) Inflows from other territories	-	-	17,650	-	-	-	17,650
(E) Inflows from other inland water	1,054	700	640	-	180	90	2,664
(F) Discoveries of water in aquifers	-	-	-	-	-	-	-
(B) Total additions to stock	1,178	946	18,340	-	236	23,105	43,805
Reductions in stock							
(G) Abstraction (to Economy)	280	-	141	-	476	50	947
(H) Evaporation and evapotranspiration	80	215	54	-	-	21,250	21,599
(I) Outflows to other territories	-	-	9,430	-	-	-	9,430
(J) Outflows to the sea	-	-	10,000	-	-	-	10,000
(K) Outflows to other inland water	890	640	1,754	-	90	180	3,554
(L) Total reductions in stock	1,250	855	21,379	-	566	21,480	45,530
Closing stock	1,428	2,791	1,961	-	99,670	2,125	107,975



1.16 Concepts - Water stocks & flows

Concepts – water stocks & flows

As we mentioned earlier, the **water asset account table** contains opening and closing stocks, along with the water additions and reductions, for each type of water resource.

Click on the highlighted fields to learn more.

	Type of water resources						Total
	Artificial reservoirs	Lakes	Rivers and streams	Glaciers, snow and ice	Groundwater	Soil water	
Opening stock	1,500	2,700	5,000	-	100,000	500	109,700
Additions to stock							
Returns (from Economy)	-	-	-	-	56	-	56
Precipitation	124	246	50	-	-	23,015	23,435
Inflows from other territories	-	-	17,650	-	-	-	17,650
Inflows from other inland water	1,054	700	640	-	180	90	2,664
Discoveries of water in aquifers	-	-	-	-	-	-	-
Total additions to stock	1,178	946	18,340	-	236	23,105	43,805
Reductions in stock							
Abstraction (to Economy)	280	-	141	-	476	50	947
Evaporation and evapotranspiration	80	215	54	-	-	21,250	21,599
Outflows to other territories	-	-	9,430	-	-	-	9,430
Outflows to the sea	-	-	10,000	-	-	-	10,000
Outflows to other inland water	890	640	1,754	-	90	180	3,554
Total reductions in stock	1,250	855	21,379	-	566	21,480	45,530
Closing stock	1,428	2,791	1,961	-	99,670	2,125	107,975

Explanation 1 (Slide Layer)

Concepts – water stocks & flows

As we mentioned earlier, the **water asset account table** contains opening and closing stocks, along with the water additions and reductions, for each type of water resource.

Click on the highlighted fields to learn more.

Here are the returns to groundwater from the economy (56 Mm³).

	Type of water resources						Total
	Artificial reservoirs	Lakes	Rivers and streams	Glaciers, snow and ice	Groundwater	Soil water	
Opening stock	1,500	2,700	5,000	-	100,000	500	109,700
Additions to stock							
Returns (from Economy)	-	-	-	-	56	-	56
Precipitation	-	-	50	-	-	23,015	23,435
Inflows from other territories	-	-	17,650	-	-	-	17,650
Inflows from other inland water	1,054	700	640	-	180	90	2,664
Discoveries of water in aquifers	-	-	-	-	-	-	-
Total additions to stock	1,178	946	18,340	-	236	23,105	43,805
Reductions in stock							
Abstraction (to economy)	280	-	141	-	476	50	947
Evaporation and evapotranspiration	80	215	54	-	-	21,250	21,599
Outflows to other territories	-	-	5,430	-	-	-	5,430
Outflows to the sea	-	-	10,000	-	-	-	10,000
Outflows to other inland water	890	640	1,754	-	90	180	3,554
Total reductions in stock	1,250	855	21,879	-	566	21,480	45,530
Closing stock	1,428	-	1,061	-	99,670	2,125	107,975

Explanation 2 (Slide Layer)

Concepts – water stocks & flows

As we mentioned earlier, the **water asset account table** contains opening and closing stocks, along with the water additions and reductions, for each type of water resource.

Click on the highlighted fields to learn more.

The shaded areas are items for which no flow is possible. For example, precipitation does not go directly to groundwater. It has to become soil water first.

	Type of water resources						Total
	Artificial reservoirs	Lakes	Rivers and streams	Glaciers, snow and ice	Groundwater	Soil water	
Opening stock	1,500	2,700	5,000	-	100,000	500	109,700
Additions to stock							
Returns (from Economy)	-	-	-	-	56	-	56
Precipitation	134	246	50	-	-	23,015	23,435
Inflows from other territories	-	-	17,650	-	-	-	17,650
Inflows from other inland water	1,054	700	640	-	180	90	2,664
Discoveries of water in aquifers	-	-	-	-	-	-	-
Total additions to stock	1,178	946	18,340	-	236	23,105	43,805
Reductions in stock							
Abstraction (to economy)	280	-	141	-	476	50	947
Evaporation and evapotranspiration	80	215	54	-	-	21,250	21,599
Outflows to other territories	-	-	5,430	-	-	-	5,430
Outflows to the sea	-	-	10,000	-	-	-	10,000
Outflows to other inland water	890	640	1,754	-	90	180	3,554
Total reductions in stock	1,250	855	21,879	-	566	21,480	45,530
Closing stock	1,428	-	1,061	-	99,670	2,125	107,975

Explanation 3 (Slide Layer)

Concepts – water stocks & flows

As we mentioned earlier, the **water asset account table** contains opening and closing stocks, along with the water additions and reductions, for each type of water resource.

Click on the highlighted fields to learn more.

	Type of water resources						Total
	Artificial reservoirs	Lakes	Rivers and streams	Glaciers, snow and ice	Groundwater	Soil water	
Opening stock	1,900	2,700	5,000	-	100,000	500	109,700
Additions to stock							
Returns (from Economy)	-	-	-	-	50	-	50
Precipitation	124	246	50	-	-	23,015	23,435
Inflows from other territories	-	-	17,650	-	-	-	17,650
Inflows from other inland water	1,054	700	640	-	180	90	2,664
Discoveries of water in aquifers	-	-	-	-	-	-	-
Total additions to stock	1,178	946	18,340	-	230	23,105	43,805
Reductions in stock							
Abstraction (to economy)	280	-	141	-	476	50	947
Evaporation and evapotranspiration	90	215	54	-	-	22,250	23,509
Outflows to other territories	-	-	5,430	-	-	-	5,430
Outflows to the sea	-	-	10,000	-	-	-	10,000
Outflows to other inland water	890	640	1,754	-	90	180	3,554
Total reductions in stock	1,250	855	15,924	-	566	21,480	45,530
Closing stock	1,428	2,781	1,961	-	99,670	2,125	107,925

The abstraction of soil water by the economy (50 Mm³).

1.17 Concepts - Water stocks & flows

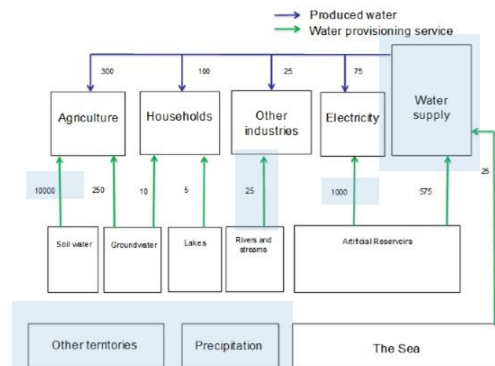
Concepts – water stocks & flows

In a similar process to how we turned the flow diagram into the water asset account table, we can take a **water use diagram** and create a **physical water use table**.

The **water use diagram** shows the different users/providers of water and the flows of water among them.

All flows shown are included in the SEEA Physical Supply and Use Table (PSUT) for water. You can find more information in the SEEA CF, Section: 3.5 Physical flow accounts for water – page 70.

Hover the highlighted areas to learn more about the water use diagram.



→ The blue arrows represent the **water produced**

→ The green arrows represent the **water provisioning service**

Explanation 1 (Slide Layer)

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Concepts – water stocks & flows

In a similar process to how we turned the flow diagram into the water asset account table, we can take a **water use diagram** and create a **physical water use table**.

The **water use diagram** shows the different users/providers of water and the flows of water among them.

All flows shown are included in the SEEA Physical Supply and Use Table (**PSUT**) for water. You can find more information in the **SEEA CF**, Section: 3.5 Physical flow accounts for water – page 70.

Hover the highlighted areas to learn more about the water use diagram.

The water supply industry takes water from the sea and artificial reservoirs and distributes it to users.

Legend:
 → The blue arrows represent the **water produced**
 → The green arrows represent the **water provisioning service**

Explanation 2 (Slide Layer)

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Concepts – water stocks & flows

In a similar process to how we turned the flow diagram into the water asset account table, we can take a **water use diagram** and create a **physical water use table**.

The **water use diagram** shows the different users/providers of water and the flows of water among them.

All flows shown are included in the SEEA Physical Supply and Use Table (**PSUT**) for water. You can find more information in the **SEEA CF**, Section: 3.5 Physical flow accounts for water – page 70.

Hover the highlighted areas to learn more about the water use diagram.

In this example, agriculture abstracts 10,000 Mm³ from soil water. Electricity abstracts 1,000 Mm³ from artificial reservoirs.

Legend:
 → The blue arrows represent the **water produced**
 → The green arrows represent the **water provisioning service**

Explanation 3 (Slide Layer)

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Concepts – water stocks & flows

In a similar process to how we turned the flow diagram into the water asset account table, we can take a **water use diagram** and create a **physical water use table**.

The **water use diagram** shows the different users/providers of water and the flows of water among them.

All flows shown are included in the SEEA Physical Supply and Use Table (PSUT) for water. You can find more information in the SEEA CF, Section: 3.5 Physical flow accounts for water – page 70.

Hover the highlighted areas to learn more about the water use diagram.

Green arrows are the ecosystem service of water provisioning. Water filtration in another ecosystem asset (vegetation cover) takes place before this service.

→ The blue arrows represent the **water produced**

→ The green arrows represent the **water provisioning service**

Explanation 4 (Slide Layer)

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Concepts – water stocks & flows

In a similar process to how we turned the flow diagram into the water asset account table, we can take a **water use diagram** and create a **physical water use table**.

The **water use diagram** shows the different users/providers of water and the flows of water among them.

All flows shown are included in the SEEA Physical Supply and Use Table (PSUT) for water. You can find more information in the SEEA CF, Section: 3.5 Physical flow accounts for water – page 70.

Hover the highlighted areas to learn more about the water use diagram.

Imports from other territories are considered produced water and therefore not an ecosystem service. Collection of precipitation (e.g. by household from rooftops), however is an ecosystem service.

→ The blue arrows represent the **water produced**

→ The green arrows represent the **water provisioning service**

1.18 Concepts - Water stocks & flows

Concepts – water stocks & flows

After we've examined the **water use diagram**, we're ready to transfer the water flow values for users and providers into additions, reductions and transfers in a **physical water use table**.

Click the arrow to see the physical water use table.

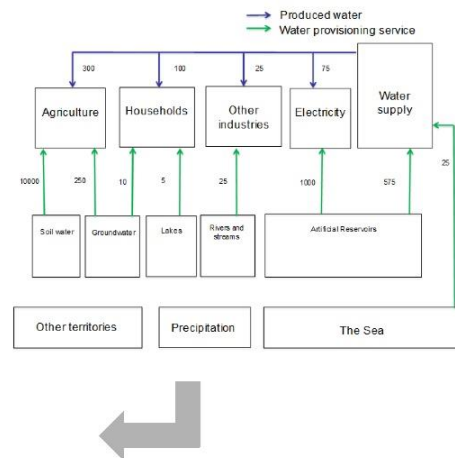


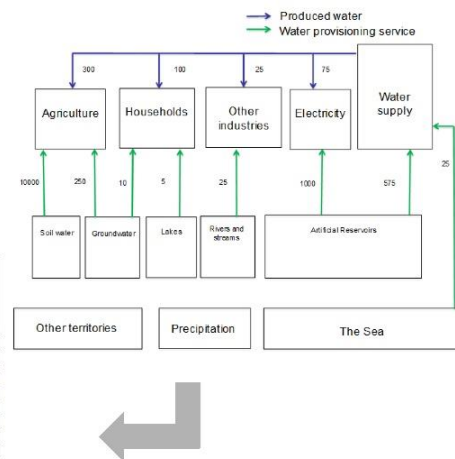
Table (Slide Layer)

Concepts – water stocks & flows

After we've examined the **water use diagram**, we're ready to transfer the water flow values for users and providers into additions, reductions and transfers in a **physical water use table**.

Click the arrow to see the physical water use table.

	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						
Surface water	-	1,000	575	25	5	1,605
Groundwater	250	-	-	-	10	260
Soil water	10,000	-	-	-	-	10,000
Sea water	-	-	25	-	-	25
Total abstracted water	10,250	1,000	600	25	15	11,890
Abstracted water						
Distributed water (to other economic units)	-	-	500	-	-	500
Use of water (from other economic units)	300	75	-	25	100	500
Own use	10,250	1,000	100	25	15	11,390
Total use of water (abstracted and distributed water)	10,550	1,075	100	50	115	11,890



1.19 Concepts - Water stocks & flows

Concepts – water stocks & flows

As mentioned earlier, the **physical water use table** contains information regarding users and providers of water.

Click the highlighted fields to learn more.

	Agriculture, forestry and fishing	Electricity, gas, steam and air conditioning supply	Use of water			Total use
			Water collection, treatment and supply	Other industries	Households	
Sources of abstracted water						
Inland water resources						
Surface water	-	1,000	575	25	5	1,605
Groundwater	250	-	-	-	10	260
Soil water	10,000	-	-	-	-	10,000
Sea water	-	-	25	-	-	25
Total abstracted water	10,250	1,000	600	25	15	11,890
Abstracted water						
Distributed water (to other economic units)	-	-	500	-	-	500
Use of water (from other economic units)	300	75	-	25	100	500
Own use	10,250	1,000	100	25	15	11,390
Total use of water (abstracted and distributed water)	10,550	1,075	100	50	115	11,890

Explanation 1 (Slide Layer)

Concepts – water stocks & flows

As mentioned earlier, the **physical water use table** contains information regarding users and providers of water.

Click the highlighted fields to learn more.

The use of abstracted water is the physical use of the ecosystem service of water provisioning (the **green** arrows in the water use diagram)

	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						
Surface water	-	1,000	575	25	5	1,605
Groundwater	250	-	-	-	10	260
Soil water	10,000	-	-	-	-	10,000
Sea water	-	-	25	-	-	25
Total abstracted water	10,250	1,000	600	25	15	11,890
Abstracted water						
Distributed water (to other economic units)	-	-	500	-	-	500
Use of water (from other economic units)	300	75	-	25	100	500
Own use	10,250	1,000	100	25	15	11,390
Total use of water (abstracted and distributed water)	10,550	1,075	100	50	115	11,890

Explanation 2 (Slide Layer)

Concepts – water stocks & flows

As mentioned earlier, the **physical water use table** contains information regarding users and providers of water.

Click the highlighted fields to learn more.

	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						
Surface water	-	1,000	575	25	5	1,605
Groundwater	350	-	-	-	10	260
Soil water	10	-	-	-	-	10,000
Sea water	-	-	-	-	-	25
Total abstracted water	10	-	-	-	15	11,890
Abstracted water						
Distributed water (to other economic units)	-	-	-	-	-	-
Use of water (from other economic units)	300	75	-	25	100	500
Own use	10,250	1,000	100	25	15	11,390
Total use of water (abstracted and distributed water)	10,550	1,075	100	50	115	11,890

It should be noted that when creating a physical water use account, the total abstracted water = total use of water

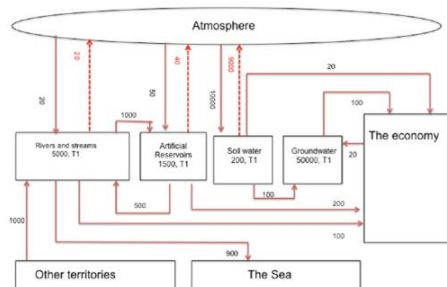
It should be noted that when creating a physical water use account, the total abstracted water = total use of water

1.20 Water Asset Account and Water Use Table Exercise

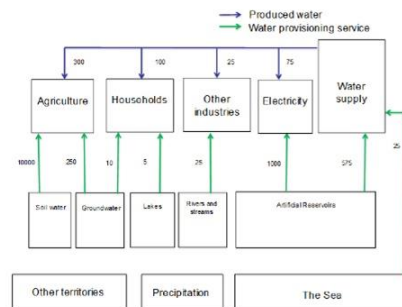
Water asset account and water use table exercise

Let's go further into compiling a **water asset account** and **water use table** by using a stock and flow diagram and a water use diagram. The main goal of this exercise is to identify the main **water use** from the diagrams given.

Stock and flow diagram (all units in m³)



Water use diagram (all units in m³)



1.21 Water Asset Account and Water Use Table Exercise

Water asset account and water use table exercise

To compile the water asset account, we will need a water use table (Table 1). In addition, to compile the water use table, we will an asset account for water resources (Table 2).

All right, let's get started!

	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						
(E) Sea water						
(F) Total abstracted water						
Abstracted water						
(G) Distributed water (to other economic units)						
(H) Use of water (from other economic units)						
(I) Total use						
Total use of water (abstracted and distributed water)						

	Type of water resources				Total
	Artificial reservoirs	Surface water	Rivers and streams	Groundwater	
(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					
(G) Total additions to stock					
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					
(M) Total reductions in stock					
Closing stock					

1.22 Untitled Slide

Water asset account exercise

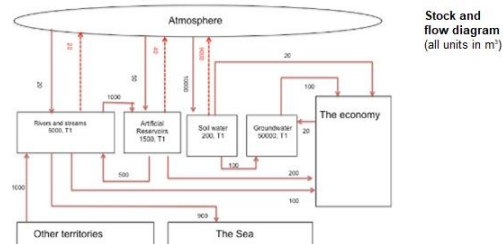
To compile the stock account in the water asset account, follow these two steps:

- 1) Transfer opening stock and flows from stock and flow diagram
- 2) Calculate totals and closing stock (columns and rows)

Note:

- The water stocks are artificial reservoirs, rivers and streams, groundwater, and soil water.
- (E) and (L) are transfers among rivers and streams, artificial reservoirs, groundwater and soil water.
- The shaded areas mean there are no flows from or within these stocks.

Learn more about how to compile the water asset account in the next slide.



	Type of water resources				Total
	Surface water				
	Artificial reservoirs	Rivers and streams	Groundwater	Soil water	
(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					
(G) Total additions to stock					
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					
(M) Total reductions in stock					
Closing stock					

1.23 Untitled Slide

Water asset account exercise

To compile the stock account in the water asset account, follow these steps:

- 1) Transfer opening stock and flows from stock and flow diagram

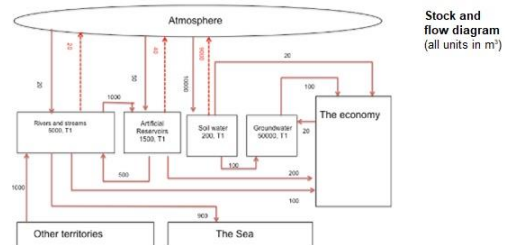
Here you can see how the data from the diagram are being transferred to the appropriate cell in the table.

Click on each example below:

Opening stock for groundwater of 50,000 m³

An addition from the atmosphere to soil water of 10,000 m³

A reduction of 900 m³ coming out of the rivers and streams to the sea.



Stock and flow diagram (all units in m³)

	Type of water resources				Total
	Surface water	Artificial reservoirs	Rivers and streams	Groundwater	
(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					
(G) Total additions to stock					
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					
(M) Total reductions in stock					
Closing stock					

1.24 Drag and Drop

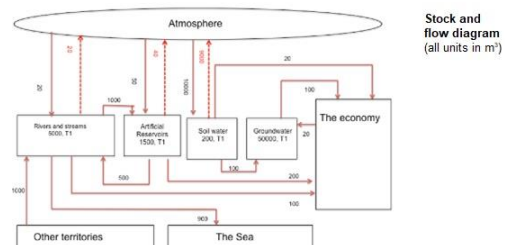
(Drag and Drop, 10 points, 1 attempt permitted)

Water asset account exercise

To compile the stock account in the water asset account, follow these steps:

- 1) Transfer opening stock and flows from stock and flow diagram

Drag these numbers to their correct positions (in the white fields) and hit "OK".



Stock and flow diagram (all units in m³)

	Type of water resources				Total
	Surface water	Artificial reservoirs	Rivers and streams	Groundwater	
(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					
(G) Total additions to stock					
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					
(M) Total reductions in stock					
Closing stock					

OK

Drag Item	Drop Target
500	Rectangle 2
1,000	Rectangle 1
9,000	Rectangle 3

Drag and drop properties
Snap dropped items to drop target (Stack random)
Delay item drop states until interaction is submitted

Feedback when correct:

Continue to see the full picture.

Feedback when incorrect:

Continue to see the full picture.

Very good. (Slide Layer)

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SEEA

Water asset account exercise

To compile the stock account in the water asset account, follow these steps:

- 1) Transfer opening stock and flows from stock and flow diagram

Drag these numbers to their correct positions (in the white fields) and hit "OK".

	Type of water resources				Total
	Surface water Artificial reservoirs	Rivers and streams	Groundwater	Soil water	
(A) Opening stock			50,000		
Additions to stock					
(B) Returns (from Economy)				10,000	
(C) Precipitation					
(D) Inflows from other territories					
(E) Inflows from other inland water					
(F) Discoveries of water in aquifers					
(G) Total additions to stock					
Reductions in stock					
(H) Abstraction (to Economy)					
(I) Evaporation and evapotranspiration					
(J) Outflows to other territories					
(K) Outflows to the sea		900			
(L) Outflows to other inland water					
(M) Total reductions in stock					
Closing stock					

Atmosphere

Rivers and streams 5000, T1

Other territories

Stock and flow diagram (all units in m³)

Very good.

Continue to see the full picture.

Continue

Not quite right. (Slide Layer)

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SEEA

Water asset account exercise

To compile the stock account in the water asset account, follow these steps:

- 1) Transfer opening stock and flows from stock and flow diagram

Drag these numbers to their correct positions (in the white fields) and hit "OK".

	Type of water resources				Total
	Surface water Artificial reservoirs	Rivers and streams	Groundwater	Soil water	
(A) Opening stock			50,000		
Additions to stock					
(B) Returns (from Economy)				10,000	
(C) Precipitation					
(D) Inflows from other territories					
(E) Inflows from other inland water	1,000	500			
(F) Discoveries of water in aquifers					
(G) Total additions to stock					
Reductions in stock					
(H) Abstraction (to Economy)					
(I) Evaporation and evapotranspiration				9,000	
(J) Outflows to other territories					
(K) Outflows to the sea		900			
(L) Outflows to other inland water					
(M) Total reductions in stock					
Closing stock					

Atmosphere

Rivers and streams 5000, T1

Other territories

Stock and flow diagram (all units in m³)

Not quite right.

Continue to see the full picture.

Continue

1.25 Untitled Slide

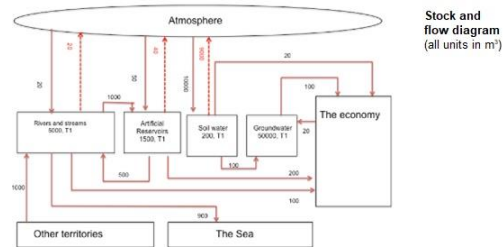
Water asset account exercise

To compile the stock account in the water asset account, follow these steps:

- 2) Calculate totals and closing stock (columns and rows)

Great! Now you have all the data needed to calculate the totals and closing stocks. Lets start by calculating the totals.

Click the highlighted boxes in the table to learn more about calculating the totals.



	Type of water resources				Total
	Artificial reservoirs	Rivers and streams	Groundwater	Soil water	
(A) Opening stock	1,500	5,000	50,000	200	56,700
Additions to stock					
(B) Returns (from Economy)	-	-	20	-	20
(C) Precipitation	50	20	-	10,000	10,070
(D) Inflows from other territories	-	3,000	-	-	3,000
(E) Inflows from other inland water	1,000	500	100	-	1,600
(F) Discoveries of water in aquifers	-	-	-	-	-
(G) Total additions to stock	1,050	3,520	120	10,000	14,690
Reductions in stock					
(H) Abstraction (to Economy)	200	100	100	20	420
(I) Evaporation and evapotranspiration	40	20	-	9,000	9,060
(J) Outflows to other territories	-	-	-	-	-
(K) Outflows to the sea	-	900	-	-	900
(L) Outflows to other inland water	500	3,000	-	100	3,600
(M) Total reductions in stock	740	2,020	200	9,120	11,980
Closing stock	1,810	5,500	50,120	180	57,610

1.26 Untitled Slide

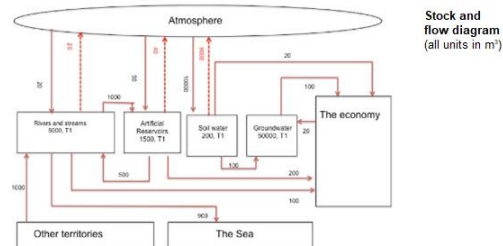
Water asset account exercise

To compile the stock account in the water asset account, follow these steps:

- 2) Calculate totals and closing stock (columns and rows)

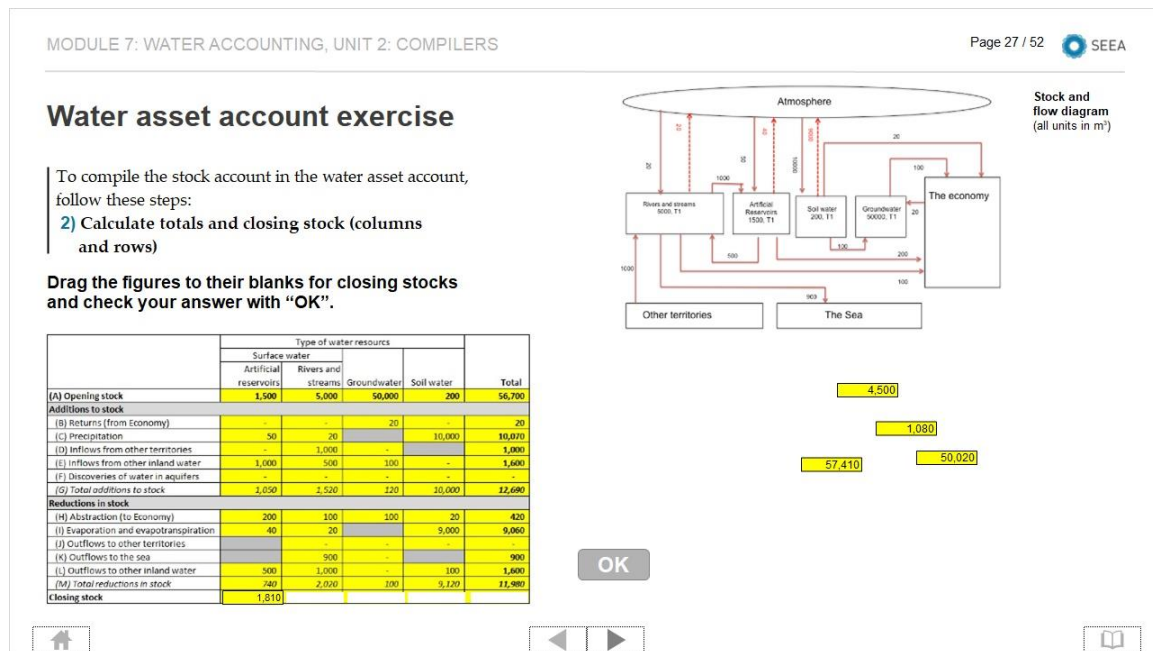
Very good! Now you have all the data required to calculate the closing stock.

Click on the highlighted box to learn more about calculating the closing account.



	Type of water resources				Total
	Artificial reservoirs	Rivers and streams	Groundwater	Soil water	
(A) Opening stock	1,500	5,000	50,000	200	56,700
Additions to stock					
(B) Returns (from Economy)	-	-	20	-	20
(C) Precipitation	50	20	-	10,000	10,070
(D) Inflows from other territories	-	3,000	-	-	3,000
(E) Inflows from other inland water	1,000	500	100	-	1,600
(F) Discoveries of water in aquifers	-	-	-	-	-
(G) Total additions to stock	1,050	3,520	120	10,000	14,690
Reductions in stock					
(H) Abstraction (to Economy)	200	100	100	20	420
(I) Evaporation and evapotranspiration	40	20	-	9,000	9,060
(J) Outflows to other territories	-	-	-	-	-
(K) Outflows to the sea	-	900	-	-	900
(L) Outflows to other inland water	500	3,000	-	100	3,600
(M) Total reductions in stock	740	2,020	200	9,120	11,980
Closing stock	1,810	5,500	50,120	180	57,610

(Drag and Drop, 10 points, 1 attempt permitted)



Drag Item	Drop Target
4,500	Rectangle 1
50,020	Rectangle 2
1,080	Rectangle 3
57,410	Rectangle 4

Drag and drop properties
Snap dropped items to drop target (Stack random)
Delay item drop states until interaction is submitted

Feedback when correct:

Continue to see the whole picture.

Feedback when incorrect:

Continue to see the whole picture.

Very good. (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 2: COMPILERS

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SEEA

Water asset account exercise

To compile the stock account in the water asset account, follow these steps:

- 2) Calculate totals and closing stock (columns and rows)

Drag the figures to their blanks for closing stocks and check your answer with "OK".

	Type of water resources				Total
	Artificial reservoirs	Rivers and streams	Groundwater	Soil water	
(A) Opening stock	1,500	5,000	50,000	200	56,700
Additions to stock					
(B) Returns (from Economy)	-	-	20	-	20
(C) Precipitation	50	20	-	10,000	10,070
(D) Inflows from other territories	-	3,000	-	-	3,000
(E) Inflows from other inland water	3,000	500	100	-	3,600
(F) Discoveries of water in aquifers	-	-	-	-	-
(G) Total additions to stock	3,050	3,520	120	10,000	12,690
Reductions in stock					
(H) Abstraction (to Economy)	200	100	100	20	420
(I) Evaporation and evapotranspiration	40	20	-	9,000	9,060
(J) Outflows to other territories	-	-	-	-	-
(K) Outflows to the sea	-	900	-	-	900
(L) Outflows to other inland water	500	3,000	-	100	3,600
(M) Total reductions in stock	740	2,020	100	9,120	11,880
Closing stock	1,810				

Stock and flow diagram (all units in m³)

Very good.

Continue to see the whole picture.

Continue

Not quite right. (Slide Layer)

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Water asset account exercise

To compile the stock account in the water asset account, follow these steps:

- 2) Calculate totals and closing stock (columns and rows)

Drag the figures to their blanks for closing stocks and check your answer with "OK".

	Type of water resources				Total
	Artificial reservoirs	Rivers and streams	Groundwater	Soil water	
(A) Opening stock	1,500	5,000	50,000	200	56,700
Additions to stock					
(B) Returns (from Economy)	-	-	20	-	20
(C) Precipitation	50	20	-	10,000	10,070
(D) Inflows from other territories	-	1,000	-	-	1,000
(E) Inflows from other inland water	1,000	500	100	-	1,600
(F) Discoveries of water in aquifers	-	-	-	-	-
(G) Total additions to stock	1,050	1,520	120	10,000	12,690
Reductions in stock					
(H) Abstraction (to Economy)	200	100	100	20	420
(I) Evaporation and evapotranspiration	40	20	-	9,000	9,060
(J) Outflows to other territories	-	-	-	-	-
(K) Outflows to the sea	-	900	-	-	900
(L) Outflows to other inland water	500	1,000	-	100	1,600
(M) Total reductions in stock	740	2,020	100	9,120	11,880
Closing stock	1,810	4,500	50,020	1,080	57,410

Stock and flow diagram (all units in m³)

Not quite right.

Continue to see the whole picture.

Continue

1.28 Drag and Drop

(Drag and Drop, 10 points, 1 attempt permitted)

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Water asset account exercise

Perfect! Now you've successfully compiled a water asset account using a stock and flow diagram.

To learn more about the table results, click on the highlighted boxes.

	Type of water resources				Total
	Artificial reservoirs	Rivers and streams	Groundwater	Soil water	
(A) Opening stock	1,500	5,000	50,000	200	56,700
Additions to stock					
(B) Returns (from Economy)	-	-	20	-	20
(C) Precipitation	50	20	-	10,000	10,070
(D) Inflows from other territories	-	1,000	-	-	1,000
(E) Inflows from other inland water	1,000	500	100	-	1,600
(F) Discoveries of water in aquifers	-	-	-	-	-
(G) Total additions to stock	1,050	1,520	120	10,000	12,690
Reductions in stock					
(H) Abstraction (to Economy)	200	100	100	20	420
(I) Evaporation and evapotranspiration	40	20	-	9,000	9,060
(J) Outflows to other territories	-	-	-	-	-
(K) Outflows to the sea	-	900	-	-	900
(L) Outflows to other inland water	500	1,000	-	100	1,600
(M) Total reductions in stock	740	2,020	100	9,120	11,880
Closing stock	1,810	4,500	50,020	1,080	57,410

Drag Item

Drop Target

Drag and drop properties

Snap dropped items to drop target (Stack random)

Delay item drop states until interaction is submitted

1.29 Untitled Slide

MODULE 7: WATER ACCOUNTING, UNIT 2: COMPILERS

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Water use table exercise

To compile a water use table using a water use diagram, follow these steps:

- 1) Transfer the data from the diagram to the appropriate cell in the table.
- 2) Calculate totals (columns and rows)

Note:

- For water supply, the amount for "own use" can be calculated by (abstracted – total distributed).
- For other sectors, own use is the amount abstracted.

Continue to learn more about more how to compile the water use table.

Water use diagram (all units in m³)

Diagram illustrating water use flows (all units in m³):

- Sources of abstracted water:** Other territories (1000), Precipitation (250), The Sea (95).
- Use of water:** Agriculture (200), Households (190), Other industries (25), Electricity (75), Water supply (25).
- Services:** Produced water (250), Water provisioning service (95).

Sources of abstracted water	Use of water					total use
	Agriculture, forestry and fishing	Electricity, gas, steam and air conditioning supply	Water collection, treatment and supply	Other industries	Households	
Inland water resources						
(A) Surface water						
(B) Groundwater						
(C) Soil water						
(F) Sea water						
(F) Total abstracted water						
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)						

1.30 Untitled Slide

MODULE 7: WATER ACCOUNTING, UNIT 2: COMPILERS

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Water use table exercise

To compile a water use table using a water use diagram, follow these steps:

- 1) Transfer the data from the diagram to the appropriate cell in the table.

Here you can see how the data from the diagram are being filled into the table.

Click on each example below

Electricity abstracts (use) 1.000 m³ from the artificial reservoirs.
Note that Surface Water (A) = (Lakes + Rivers and Streams + Artificial Reservoirs)

The agriculture, forestry, and fishing abstract (use) 10,000 m³ from soil water (C).

Households use 100 m³ from the water supply (provisioning services).

Sources of abstracted water	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	10,000					
(F) Sea water						
(I) Total abstracted water						
Abstracted water						
(G) Distributed water (to other economic units)						
(H) Use of water from other economic units						
(I) Total use						
Total use of water (abstracted and distributed water)						

1.31 Drag and Drop

(Drag and Drop, 10 points, 1 attempt permitted)

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Water use table exercise

To compile a water use table using a water use diagram, follow these steps:

- 1) Transfer the data from the diagram to the appropriate cell in the table.

Drag the numbers to their corresponding fields and click "OK".

Sources of abstracted water	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	10,000					
(F) Sea water						
(I) Total abstracted water						
Abstracted water						
(G) Distributed water (to other economic units)						
(H) Use of water from other economic units						
(I) Total use						
Total use of water (abstracted and distributed water)						

500

25

575

OK

Drag Item	Drop Target
575	Rectangle 1
25	Rectangle 2
500	Rectangle 3

Drag and drop properties
Snap dropped items to drop target (Stack random)
Delay item drop states until interaction is submitted


Feedback when correct:

Continue to see the full picture.

Feedback when incorrect:

Continue to see the full picture.

Very good. (Slide Layer)

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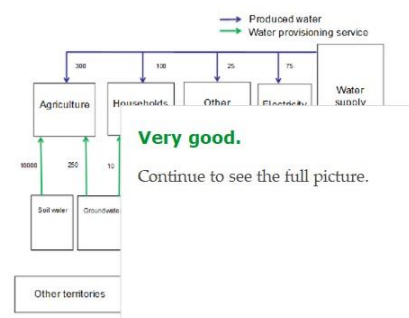
Water use table exercise

To compile a water use table using a water use diagram, follow these steps:

- 1) Transfer the data from the diagram to the appropriate cell in the table.

Drag the numbers to their corresponding fields and click "OK".

	Use of water					Households: total use
	Agriculture, forestry and fishing	Electricity, gas, steam and air conditioning supply	Water collection, treatment and supply	Other industries		
Sources of abstracted water						
Inland water resources						
(A) Surface water		1,000				
(B) Groundwater						
(C) Soil water	10,000					
(D) Sea water						
(F) Total abstracted water						
Abstracted water						
(G) Distributed water (to other economic units)						
(H) Use of water (from other economic units)					100	
(I) Other use						
Total use of water (abstracted and distributed water)						




Very good.

Continue to see the full picture.

[Continue](#)

Not quite right. (Slide Layer)

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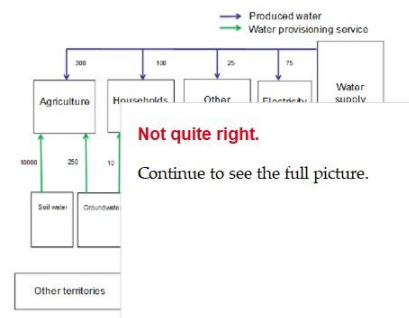
Water use table exercise

To compile a water use table using a water use diagram, follow these steps:

- 1) Transfer the data from the diagram to the appropriate cell in the table.

Drag the numbers to their corresponding fields and click "OK".

	Use of water					Households: total use
	Agriculture, forestry and fishing	Electricity, gas, steam and air conditioning supply	Water collection, treatment and supply	Other industries		
Sources of abstracted water						
Inland water resources						
(A) Surface water		1,000	575			
(B) Groundwater						
(C) Soil water	10,000					
(D) Sea water			25			
(F) Total abstracted water						
Abstracted water						
(G) Distributed water (to other economic units)			500			
(H) Use of water (from other economic units)					100	
(I) Other use						
Total use of water (abstracted and distributed water)						



Not quite right.

Continue to see the full picture.

[Continue](#)

1.32 Untitled Slide

Water use table exercise

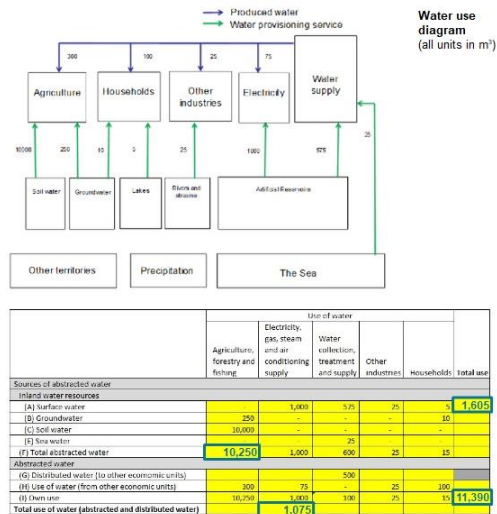
To compile a water use table using a water use diagram, follow these steps:

2) Calculate totals (column and rows)

Great! Now you have all the data required to calculate the totals.

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

Click the highlighted fields to learn more about the calculations of totals.



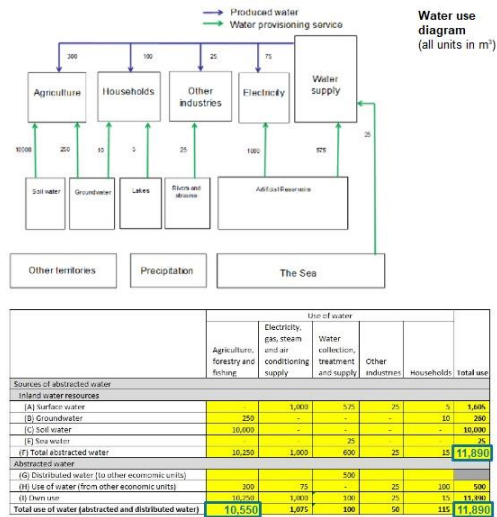
1.33 Untitled Slide

Water use table exercise

Perfect! Now you've successfully compiled a water use table using the water use diagram.

Note: For water collection, treatment and supply, the total use of water (abstracted and distributed water) is only 100 m³.

To learn more about the table results, click on the boxes. Then move on to learn about water data in Unit 3.



1.34 Module units

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Module units

The Water Accounting module will take you through four units, as listed below. We recommend completing these units in order.

**Unit 1:
Water account**

- What is it?
- Why do we need it?
- What does it look like?
- Expertise and data required

**Unit 2:
Compilers**

- Main water accounting concepts and the basics for compiling water accounts

**Unit 3:
Data providers**

- Water cycle and ecosystem processes
- Data options, examples and issues

**Unit 4:
Review**

- Quiz
- Summary

1.35 Data sources

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Data sources

In this unit, we will explore different data sources and methods used for compiling water accounts.

It is important to note that data for water accounting can be divided according to two categories:

- **Types** of water data (stock, supply, use, water quality)
- **Sources** for national and global water data

Next, we will go through data sources according to type of water data.

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Explanation 1 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 3: DATA PROVIDERS

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Data sources

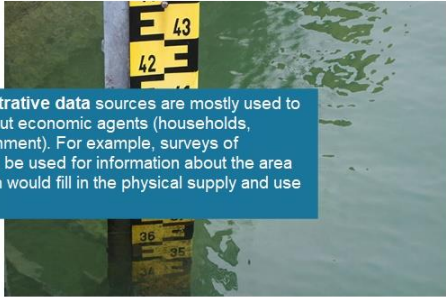
In this unit, we will explore different data sources and methods used for compiling water accounts.

It is important to note that data for water accounting can be divided according to two categories:

- **Types** of water data (stock, supply, use, water quality)
- **Sources** for national and global water data

Next, we will go through data sources according to type of water data.

Surveys and administrative data sources are mostly used to gather data from or about economic agents (households, businesses, and government). For example, surveys of agriculture industry may be used for information about the area of irrigated crops, which would fill in the physical supply and use table.



Explanation 2 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 3: DATA PROVIDERS

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Data sources


In this unit, we will explore different data sources and methods used for compiling water accounts.

It is important to note that data for water accounting can be divided according to two categories:

- **Types** of water data (stock, supply, use, water quality)
- **Sources** for national and global water data

Next, we will go through data sources according to type of water data.

Hydrological/Meteorological Data And Research Data are used mostly to produce data items related to water resources, and stocks and flows in an asset account.



Explanation 3 (Slide Layer)

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Data sources


In this unit, we will explore different data sources and methods used for compiling water accounts.

It is important to note that data for water accounting can be divided according to two categories:

- Types of water data (stock, supply, use, water quality)
- Sources for national and global water data

Next, we will go through data sources according to

Research data are typically collected and compiled by universities, research agencies or NGOs. These organizations may have a number of water-related research projects and programs, associated with agriculture, earth sciences, economics, engineering and environmental studies.



Explanation 4 (Slide Layer)

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Data sources

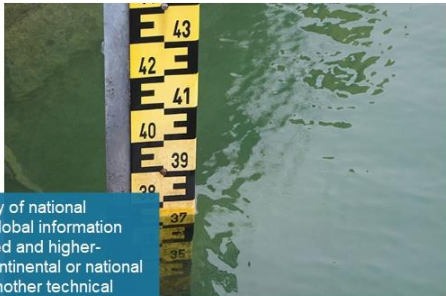
In this unit, we will explore different data sources and methods used for compiling water accounts.

It is important to note that data for water accounting can be divided according to two categories:

- Types of water data (stock, supply, use, water quality)
- Sources for national and global water data

Next, we will go through data sources according to

Land cover data are available from a variety of national sources as well as international sources of global information (e.g. GLOBCOVER GLC2000). More detailed and higher-resolution data are usually available at the continental or national levels. These data sources are covered in another technical note and are mentioned here for the sake of completeness.



1.36 Data sources

MODULE 7: WATER ACCOUNTING, UNIT 3: DATA PROVIDERS

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Data sources

There are different types of water data and each type has its own sources.

The **data sources** that you can refer to are listed below:

- **Survey data** (e.g. agricultural surveys)
- **Administrative data** (e.g., water consumption)
- **Hydrological/meteorological data** (e.g., rainfall)
- **Research data** (e.g., case studies)
- **Land cover data**
- **Water quality data**

You can hover over the blue terms to learn more about their data source.



Explanation 1 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 3: DATA PROVIDERS

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Data sources

There are different types of water data and each type has its own sources.

The **data sources** that you can refer to are listed below:

- **Survey data** (e.g. agricultural surveys)
- **Administrative data** (e.g., water consumption)
- **Hydrological/meteorological data** (e.g., rainfall)
- **Research data** (e.g., case studies)
- **Land cover data**
- **Water quality data**

You can hover over the blue terms to learn more about their data source.



Surveys and administrative data sources are mostly used to gather data from or about economic agents (households, businesses, and government). For example, surveys of agriculture industry may be used for information about the area of irrigated crops, which would fill in the physical supply and use table.

Explanation 2 (Slide Layer)

MODULE 7: WATER ACCOUNTING, UNIT 3: DATA PROVIDERS

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Data sources





There are different types of water data and each type has its own sources.

The **data sources** that you can refer to are listed below:

- **Survey data** (e.g. agricultural surveys)
- **Administrative data** (e.g., water consumption)
- **Hydrological/meteorological data** (e.g., rainfall)
- **Research data** (e.g., case studies)
- **Land cover data**
- **Water quality data**

You can hover over the blue terms to learn more about their data source.

Hydrological/meteorological data are used mostly to produce data items related to water resources, and stocks and flows in an asset account.



Explanation 3 (Slide Layer)

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Data sources





There are different types of water data and each type has its own sources.

The **data sources** that you can refer to are listed below:

- **Survey data** (e.g. agricultural surveys)
- **Administrative data** (e.g., water consumption)
- **Hydrological/meteorological data** (e.g., rainfall)
- **Research data** (e.g., case studies)
- **Land cover data**
- **Water quality data**

You can hover over the blue terms to learn more about their data source.

Research data are typically collected and compiled by universities, research agencies or NGOs. These organizations may have a number of water-related research projects and programs, associated with agriculture, earth sciences, economics, engineering and environmental studies.



Explanation 4 (Slide Layer)

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Data sources





There are different types of water data and each type has its own sources.

The **data sources** that you can refer to are listed below:

- **Survey data** (e.g. agricultural surveys)
- **Administrative data** (e.g., water consumption)
- **Hydrological/meteorological data** (e.g., rainfall)
- **Research data** (e.g., case studies)
- **Land cover data**
- **Water quality data**

You can hover over the blue terms

Land cover data are available from a variety of national sources as well as international sources of global information (e.g. GLOBCOVER GLC2000). More detailed and higher-resolution data are usually available at the continental or national levels. These data sources are covered in another technical note and are mentioned here for the sake of completeness.



1.37 Data sources

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Data sources

In addition to data sources by type, **data sources may be organized by governance**.

There data could be from:

- **Government agencies** responsible for:
 - water, meteorology, hydrology, statistics, agriculture, environment, energy (especially hydro-power), planning, finance, geology
 - at the national, state/provincial or local government level
- **Water suppliers and wastewater treatment**
- **Water research organizations** (e.g. government agencies, universities)
- **Non-governmental organizations (NGOs)** (e.g. water industry associations, farmers associations, conservation groups etc.)

Hover over the blue term to learn more about the data source.



Explanation 1 (Slide Layer)

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Data sources





In addition to data sources by type, data sources may be organized by governance.

There data could be from:

- **Government agencies** responsible for:
 - water, meteorology, hydrology, statistics, agriculture, environment, energy (especially hydro-power), planning, finance, technology
 - at the national, state/provincial or local government level
- **Water suppliers and wastewater treatment**
- **Water research organizations** (e.g. government agencies, NGOs)
- **Non-governmental organizations (NGOs)** (e.g. water and farmers associations, conservation groups etc.)

Government administrative processes are often set up to monitor and enforce legislation and regulations. These sometimes include compiling a register of economic units. These registers may cover households or establishments and also contain a variety of data about these units. For statistical purposes, most administrative data are received from government agencies. However, administrative data may also come from NGOs, such as industry associations.

Hover over the blue term to learn more about the data source



1.38 Data sources

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Data sources





Sometimes data on water and land cover must be gathered from **international agencies or research organizations** as a starting point for countries wishing to compile sources.

The following data are a good start:

- **FAO (Aquastat)** <http://www.fao.org/nr/water/aquastat/main/index.stm>
- **WHO World Climate Data and Monitoring Program (WCDMP)** http://www.wmo.int/pages/prog/wcp/wcdmp/index_en.php
- **WMO World Hydrological Cycle Observing System (WHYCOS)** <http://www.whycos.org/whycos/>

Please note that national data sources are preferred, but these international data sources also indicate availability at a national level. Familiarity with them will help inform discussion between various agencies within countries.

You can hover over the blue terms to learn more about their data source. Clicking the light blue links will lead you to the corresponding websites.



Explanation 1 (Slide Layer)

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Data sources





Sometimes data on water and land cover must be gathered from **international agencies or research organizations** as a starting point for countries wishing to compile sources.

The following data are a good start: **Aquastat** is FAO's global water information system, developed by the Land and Water Division.

- **FAO (Aquastat)** <http://www.fao.org/nr/water/aquastat/main/index.stm>
- **WHO World Climate Data and Monitoring Program (WCDMP)** http://www.wmo.int/pages/prog/wcp/wcdmp/index_en.php
- **WMO World Hydrological Cycle Observing System (WHYCOS)** <http://www.whycos.org/whycos/>

Please note that national data sources are preferred, but these international data sources also indicate availability at a national level. Familiarity with them will help inform discussion between various agencies within countries.

You can hover over the blue terms to learn more about their data source. Clicking the light blue links will lead you to the corresponding websites.



Explanation 2 (Slide Layer)

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Data sources

Sometimes data on water and land cover must be gathered from **international agencies or research organizations** as a starting point for countries wishing to compile sources.





The following data are a good start:

- **FAO (Aquastat)** <http://www.fao.org/nr/water/aquastat/main/index.stm>
- **WHO World Climate Data and Monitoring Program (WCDMP)** http://www.wmo.int/pages/prog/wcp/wcdmp/index_en.php
- **WMO World Hydrological Cycle Observing System (WHYCOS)** <http://www.whycos.org/whycos/>

WCDMP is a sub-program of the World Climate Programme (WCP), and provides international coordination of the WMO Climate System Monitoring.

Please note that national data sources are preferred, but these international data sources also indicate availability at a national level. Familiarity with them will help inform discussion between various agencies within countries.

You can hover over the blue terms to learn more about their data source. Clicking the light blue links will lead you to the corresponding websites.



Explanation 3 (Slide Layer)

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Data sources

Sometimes data on water and land cover must be gathered from **international agencies or research organizations** as a starting point for countries wishing to compile sources.





The following data are a good start:

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You can hover over the blue terms to learn more about their data source. Clicking the light blue links will lead you to the corresponding websites.

WHYCOS is a framework programme from the World Meteorological Organization. It's dedicated to improving basic observation activities, strengthening international cooperation and promoting the free exchange of data in the hydrology field.



1.39 Data sources

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Data sources





Here is an example of how to incorporate water quality data when compiling water accounts.

In this example, the three different indicators for water quality are as follows:

- **Nutrient levels and pollution loads** (e.g., N, P, K levels, heavy metals and pesticides)
- **Sediment load** (e.g., small particles in the water resulting from soil erosion)
- **Species richness and abundance** (e.g., the number or type of species in the water, like vascular plants, invertebrates and fish)


Click on the column headers to see how these indicators can affect water quality and ecosystem conditions.

Indicator	Water Quality	Ecosystem Condition
Nutrient levels and pollution loads		
Sediment load		
Species richness and abundance		



Explanation 1 (Slide Layer)

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Data sources





Here is an example of how to incorporate water quality data when compiling water accounts.

In this example, the three different **indicators** for water quality are as follows:

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- **Species richness and abundance** (e.g., the number or type of species in the water, like vascular plants, invertebrates and fish)


Click on the column headers to see how these indicators can affect water quality and ecosystem conditions.

Indicator	Water Quality	Ecosystem Condition
Nutrient levels and pollution loads	Higher levels mean lower water quality. This limits possible uses for the water.	
Sediment load	Higher loads mean lower water quality. This limits possible uses for the water.	
Species richness and abundance	Particular species or groups are sensitive to changes in nutrient levels or sediments loads. Therefore species richness and abundance is a proxy for water quality.	



Explanation 2 (Slide Layer)

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Data sources





Here is an example of how to incorporate water quality data when compiling water accounts.

In this example, the three different **indicators** for water quality are as follows:

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Click on the column headers to see how these indicators can affect water quality and ecosystem conditions.

Indicator	Water Quality	Ecosystem Condition
Nutrient levels and pollution loads		Can lead to a change in the composition of the aquatic species (e.g., fish kills)
Sediment load		Can lead to a change in the nature of downstream flow (e.g., siltation of rivers and impact on marine ecosystem)
Species richness and abundance		Biodiversity is an indication of ecosystem condition.

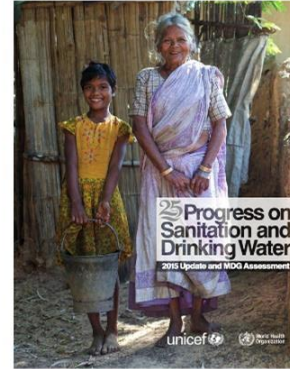


1.40 Data collection

Data collection

It's important to take note of the **guidelines** for water data collection methods. Some of them are listed and linked below:

- International Recommendations for Water Statistics ([IRWS](#))
- Guide to Meteorological Instruments and Methods of Observation ([CIMO Guide](#))
- Guidelines on the Role, Operation and Management of National Hydrological Services ([NMS](#))
- International Benchmarking Network for Water and Sanitation Utilities ([IBNET](#))
- A System of Integrated Agricultural Censuses and Surveys (by [FAO](#))
- ISO (e.g. ISO 19115 for geographic information) ([Standards catalogue](#))
- Statistical Data and Metadata Exchange ([SDMX](#))
- World Meteorological Organisation Core Metadata Standard ([WMO Metadata Standard](#))
- Infrastructure for Spatial Information in the European Community ([INSPIRE](#))
- Global Annual Assessment of Sanitation and Drinking Water ([GLAAS](#))
- Sustainable Development Goals ([SDGs](#)) metadata for water management and sanitation



1.41 Common issues

Common issues

When compiling water accounts, a few problems and **challenges** may come up. Some of the more frequent ones are listed below:

- **Classifying units to industry**, especially those engaged in multiple activities (e.g. water supply, sewerage and hydro-electricity generation)
- In most countries national accounts do not separate the **water supply and sewerage industries**
- Recording **losses in distribution** and the flows for water use in **hydro-electricity** and water for **cooling**
- Determining the boundary between the **environment and the economy**, especially for artificial reservoirs
- **Spatial referencing** – economic data refers to administrative boundaries, while hydrological data refers to river basins
- **Confidentiality** of business data
- **Quality** of collected/measured data
- **Scale** of data (national level data may hide regional variation)
- **Seasonality**: annual averages may hide seasonal variation and extremes (e.g., floods and droughts)



1.42 Common issues

Common issues

Additionally, some conceptual issues may present themselves, such as:

- **Inter-ecosystem flows:** Since ecosystems are suppliers and users of water
- **Treatment of rivers, coasts, marine areas** (in terms of spatial units in the water account): Where a coherent spatial database is needed to analyze flows from these sources
- **Treatment of snow and permafrost** as they may or may not be included as stocks.
- **Large stocks:** These could be difficult to measure (e.g., in Canada there are over one million lakes)



1.43 Global and Country Examples

Global and country examples

The next slides present a couple of global and country examples for water accounting.

We begin with a composite map of global ecosystem assets made by UNEP-WCMC. Next we'll take a look at a water accounts case study from Australia. A freshwater supply and demand example from Canada will close out this section.

Let's move on and check out these examples!

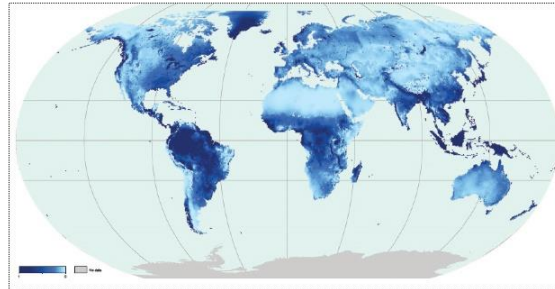


1.44 Global and Country Examples

Example 1: composite map of global freshwater resources

This first example comes from the United Nations Environment Programme – World Conservation Monitoring Centre (UNEP-WCMC). Their map illustrates global freshwater resources.

Click on the map for more information.



Explanation 1 (Slide Layer)

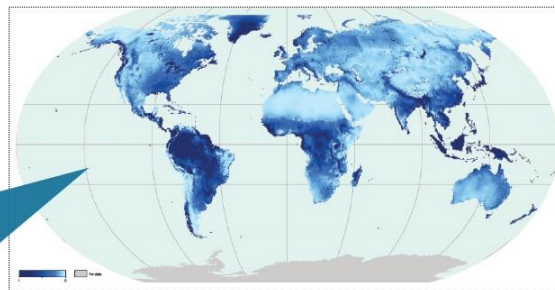
Example 1: composite map of global freshwater resources

This first example comes from the United Nations Environment Programme – World Conservation Monitoring Centre (UNEP-WCMC). Their map illustrates global freshwater resources.

Click on the map for more information.


This map of global freshwater resources includes renewable water resources that are replenished annually through the global hydrological cycle. It also includes fresh water stored in large lakes, which takes years to decades to renew.

Annual water balance is estimated as the difference between precipitation and evapotranspiration, measured over 50 and 10 years, respectively (Hijmans et al., 2005, Mu et al., 2011). Lake volumes are estimated using global data on the depth of over 13000 large freshwater lakes (Kourzenova et al., 2012).



1.45 Global and Country Examples

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Example 2: Australia's water accounts

The second example provides background information on water accounting in Australia. Australia is known to be a water-poor country and needs to track its water supply and demand carefully. Therefore, water accounting helps them understand their water stocks' status, along with additions and reductions.

Source: Australian Bureau of Statistics (2014). Water Account, Australia, 2012-13


[Click here to learn about the rainfall status.](#)

[Click here to learn about the change in water consumption.](#)

1.46 Global and Country Examples

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Global and country example 3: Canada

Canada's freshwater supply and demand

The third example shows how fresh water is distributed in Canada and how it compares to other places in the world.

[Click here to see the freshwater distribution in Canada.](#)

[Click here to see how the fresh water in Canada compares to the world.](#)

1.47 Module units

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Great!

Great! You have now completed Units 1, 2, and 3. Let's move on to the **quiz section (unit 4)** to review the water accounting knowledge you've learned in this module.

Unit 1:
Water account

- What is it?
- Why do we need it?
- What does it look like?
- Expertise and data required

Unit 2:
Compilers

- Main water accounting concepts and the basics for compiling water accounts

Unit 3:
Data providers

- Water cycle and ecosystem processes
- Data options, examples and issues

Unit 4:
Review

- Quiz
- Summary

1.48 Pick Many

(Pick Many, 10 points, 1 attempt permitted)

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Quiz 1

What could be a main water issue in different countries?

Check all the answers you think are correct!

☐ Flooding

☐ Drought

☐ Water quality

☐ Water ecosystems

☐ Water supply

OK

Correct	Choice
X	Flooding
X	Drought
X	Water quality
X	Water ecosystems
X	Water supply


Feedback when correct:

All answers are correct.

Feedback when incorrect:

All answers would have been correct.

Very good! (Slide Layer)

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Quiz 1

What could be a main water issue in different countries?

Check all the answers you think are correct!

☐ Flooding
☐ Drought
☐ Water quality
☐ Water ecosystems
☐ Water supply


Very good!

All answers are correct.

Continue

Not quite right. (Slide Layer)

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Quiz 1

What could be a main water issue in different countries?

Check all the answers you think are correct!

☐ Flooding

☐ Drought

☐ Water quality

☐ Water ecosystems

☐ Water supply

Not quite right.


All answers would have been correct.

Continue

1.49 Pick Many

(Pick Many, 10 points, 1 attempt permitted)

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Quiz 2

What measures should be taken into account when facing the water challenges below?

Check all the answers you think are correct!

Flooding / drought	Water quality	Water ecosystem
<input type="checkbox"/> Water yield (e.g., rainfall)	<input type="checkbox"/> Sedimentation	<input type="checkbox"/> Species diversity
<input type="checkbox"/> Water consumption / use	<input type="checkbox"/> Nutrients and pollution	<input type="checkbox"/> Habitat/ecosystem types (e.g., invasive species)
<input type="checkbox"/> Ecosystems / Land cover (e.g., wetlands, forests)	<input type="checkbox"/> Water discharges by industry and households	<input type="checkbox"/> Variability of water supply

OK



Correct	Choice
X	Water yield (e.g., rainfall)
X	Water consumption / use
X	Ecosystems / Land cover (e.g., wetlands, forests)
X	Sedimentation
X	Nutrients and pollution
X	Water discharges by industry and households
X	Species diversity
X	Habitat/ecosystem types (e.g., invasive species)
X	Variability of water supply

Feedback when correct:


All answers are correct.

Feedback when incorrect:

All answers would have been correct.

Very good! (Slide Layer)

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Quiz 2

What measures should be taken into account when facing the water challenges below?

Check all the answers you think are correct!

Flooding / drought	Water quality	Water ecosystem
<input type="checkbox"/> Water yield (e.g., rainfall)	<input type="checkbox"/> Sedimentation	<input type="checkbox"/> Species diversity
<input type="checkbox"/> Water consumption / use	<input type="checkbox"/> Nutrients and pollution	<input type="checkbox"/> Habitat/land use (e.g., invasive species)
<input type="checkbox"/> Ecosystems / Land cover (e.g., wetlands, forests)	<input type="checkbox"/> Water discharges by industry and households	<input type="checkbox"/> Variability


Very good!

All answers are correct.

Continue

Not quite right. (Slide Layer)

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Quiz 2

What measures should be taken into account when facing the water challenges below?

Check all the answers you think are correct!

Flooding / drought	Water quality	Water ecosystem
<input checked="" type="checkbox"/> Water yield (e.g., rainfall)	<input checked="" type="checkbox"/> Sedimentation	<input checked="" type="checkbox"/> Species diversity
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<input checked="" type="checkbox"/> Ecosystems / Land cover (e.g., wetlands, forests)	<input checked="" type="checkbox"/> Water discharges by industry and households	<input checked="" type="checkbox"/> Variability

Not quite right.

All answers would have been correct.

Continue

1.50 Pick Many

(Pick Many, 10 points, 1 attempt permitted)

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Quiz 3

You've learned about different types of data organized by source. Can you mark those types that belong to this category?

Check all the answers you think are correct!

☐ Research data

☐ Land cover data





☐ Survey data

☐ Administrative data

☐ Hydrological / meteorological data

☐ Water quality data

OK



Correct	Choice
X	Research data
X	Land cover data
X	Survey data
X	Administrative data
X	Hydrological / meteorological data
X	Water quality data

Feedback when correct:


All answers are correct.

Feedback when incorrect:

All answers would have been correct.

Very good! (Slide Layer)

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Quiz 3

You've learned about different types of data organized by source. Can you mark those types that belong to this category?

Check all the answers you think are correct!

- ☐ Research data
- ☐ Land cover data
- ☐ Survey data
- ☐ Administrative data
- ☐ Hydrological / meteorological data
- ☐ Water quality data


Very good!

All answers are correct.

Continue

Not quite right. (Slide Layer)

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Check all the answers you think are correct!

- ☒ Research data
- ☒ Land cover data
- ☒ Survey data
- ☒ Administrative data
- ☒ Hydrological / meteorological data
- ☒ Water quality data


Not quite right.

All answers would have been correct.

Continue

1.51 Data sources

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Summary

Now that you've reached the end of this module, you're prepared to:


- Understand why water accounting is important and how it can address a range of policies related to:
 - Improving access to drinking water and sanitation services
 - Managing water supply and demand
 - Improving the condition of and services provided by water-related ecosystems
 - Adapting to extreme events (floods and droughts)
- Understand how water accounting is considered in the SEEA
- Understand the basics of water cycle and the steps for compiling a "water account"
- Identify national and global data sources for water accounting

Further Information:
System of Environmental-Economic Accounting - Experimental Ecosystem Accounting ([SEEA EEA](#)) 2012.
System of Environmental-Economic Accounting - Central Framework ([SEEA CF](#)) 2012.



1.52 Data sources

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