

Implementation of International frameworks

David Skutenko

Assistant Director
Water Statistics Team
Australian Bureau of Statistics



Outline of presentation

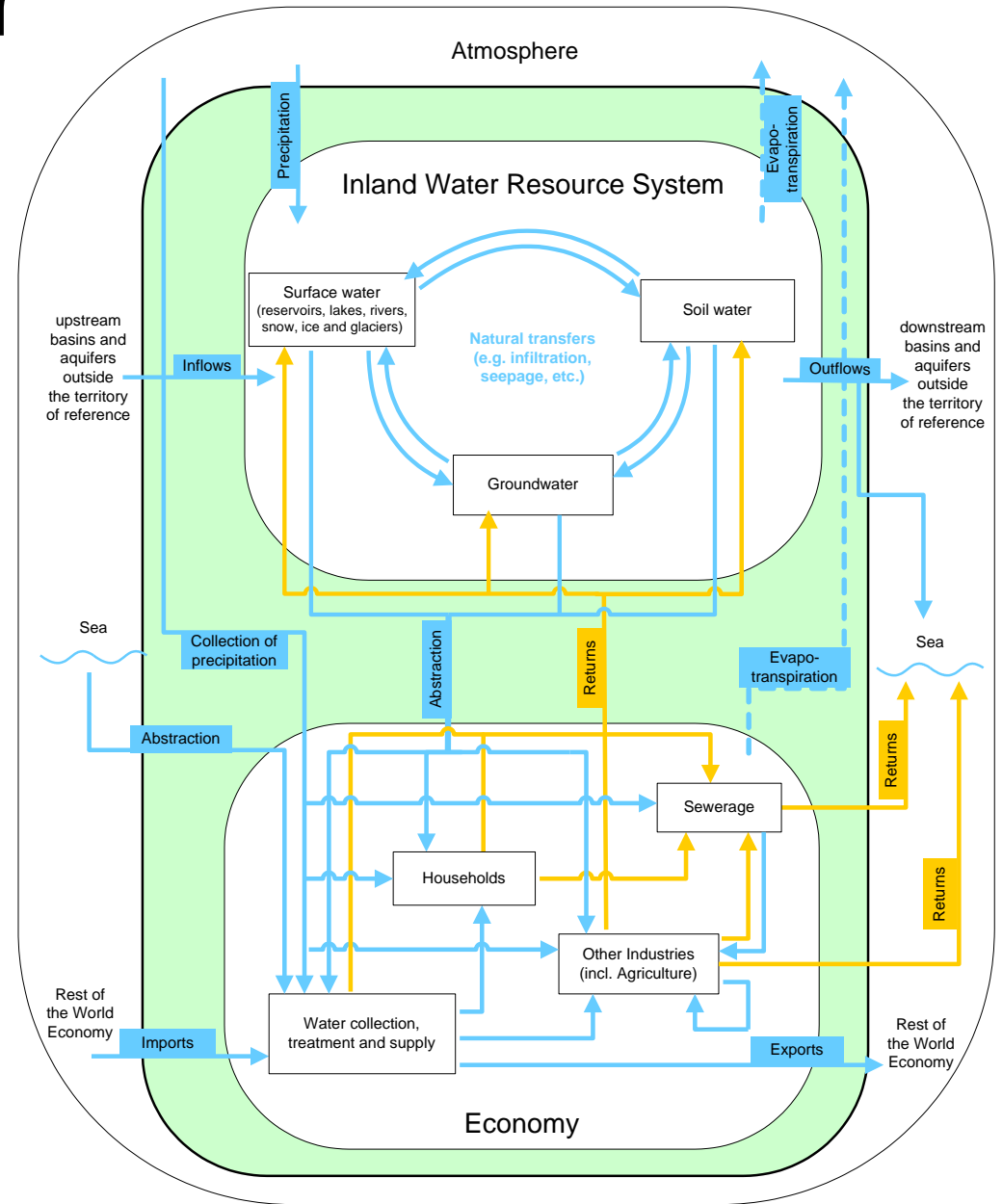


SEEA-W Australian Adoption

- Water accounts framework
- Physical water supply and use tables
- Hybrid accounts (partial)
- Stock Account (partial)

SEEA-Water

- Economy and environment
- Stocks and flows
- Monetary and physical
- Pollution
- Water quality



Standard physical water supply & use tables – SEEA-W

Physical use table

		Industries (by ISIC categories)						Physical units			
		1-3	5-33, 41-43	35	36	37	38,39, 45-99	Total	Households	Rest of the world	Total
From the environment	1. Total abstraction (=1.a+1.b=1.i+1.ii)										
	1.a. Abstraction for own use										
	1.b. Abstraction for distribution										
	1.i. From water resources:										
	1.i.1 Surface water										
	1.i.2 Groundwater										
	1.i.3 Soil water										
	1.ii. From other sources										
	1.ii.1 Collection of precipitation										
	1.ii.2 Abstraction from the sea										
Within the economy	2. Use of water received from other economic units										
3. Total use of water (=1 + 2)											

Physical supply table

		Industries (by ISIC categories)						Physical units			
		1-3	5-33, 41-43	35	36	37	38,39, 45-99	Total	Households	Rest of the world	Total
Within the economy	4. Supply of water to other economic units <i>of which:</i>										
	4.a. Reused water										
	4.b. Wastewater to sewerage										
To the environment	5. Total returns (=5.a+5.b)										
	5.a. To water resources										
	5.a.1. Surface water										
	5.a.2. Groundwater										
	5.a.3. Soil water										
	5.b. To other sources (e.g. sea water)										
6. Total supply of water (=4+5)											
7. Consumption (=3-6)											

Note: Grey cells indicate zero entries by definition.

Standard Hybrid water use table – SEEA-W

Billions currency units, Millions cubic metres

	Intermediate consumption of industries (by ISIC categories)								Actual final consumption					Capital formation	Exports	Total uses at purchaser's price
	1-3	5-33, 41-43	35		36	37	38,39, 45-99	Total industry	Households			Government	Total			
			Total	of which: Hydro					Final consumption expenditures	Social transfers in kind from Government and NPISHs	Total					
1. Total intermediate consumption and use (Billions currency units)	72.9	419.4	9.9	1.1	1.1	1.7	157.8	664.0	321.4	131.4	452.8	53.6	506.4	146.0	403.0	1719.4
<i>of which:</i>																
1.a Natural water (CPC 1800)	0.2	0.3	0.02	0.0	0.0		0.2	0.8	0.6	0.4	1.0	-	1.0	0.0	0.0	1.8
1.b Sewerage services (CPC 941)	0.4	2.4	0.1	0.0	0.03		1.0	3.9	2.4	2.4	4.9	-	4.9		0.0	8.8
3. Total use of water (Millions cubic metres)	159.1	200.2	408.1	300.0	428.7	527.2	53.4	1776.7			250.3		250.3		0.0	2027.0
3.a (U1) Total Abstraction	108.4	114.5	404.2	300.0	428.7	100.1	2.3	1158.2			10.8		10.8			1169.0
<i>of which:</i> 3.a.1- Abstraction for own use	108.4	114.6	404.2	300.0	23.0	100.1	2.3	752.6			10.8		10.8			763.4
3.b - Use of water received from other economic units	50.7	85.7	3.9	-	0.0	427.1	51.1	618.5			239.5		239.5		0.0	858.0

Note: Grey cells indicate zero entries by definition.

Standard Stock Account table – SEEA-W

	EA.131 Surface water				EA.132 Groundwater	EA.133 Soil water	Total	Physical units
	EA.1311 Artificial Reservoirs	EA.1312 Lakes	EA.1313 Rivers	EA.1314 Snow, Ice and Glaciers				
1. Opening Stocks								
Increases in stocks								
2. Returns								
3. Precipitation								
4. Inflows								
4.a. From upstream territories								
4.b. From other resources in the territory								
Decreases in stocks								
5. Abstraction								
6. Evaporation/Actual evapotranspiration								
7. Outflows								
7.a To downstream territories								
7.b To the sea								
7.c To other resources in the territory								
8. Other changes in volume								
9. Closing Stocks								

Note: Grey cells indicate non relevant or zero entries by definition.

SEEA-W - Overview

- Current Australian adoption
 - Physical Supply and Use tables (Chapter 3)
 - Flow locations and volumes most important water issues
 - Volumes presented at sub-industry level (e.g. Ag, Min, Man)
 - In-stream and regulated discharge added to structure
 - Hybrid and Economic Accounts (Chapter 5)
 - Monetary figures follow SEEA-W guidelines
 - Hybrid tables tailored to ABS needs, not SEEA-W's
 - Valuation of Water Resources (Chapter 8)
 - Skirmish report released early 2011
 - Gross operating surplus basis valuation

SEEA-W - Overview

- Current Australian adoption – cont.
 - Water Emissions Account (Chapter 4)
 - Not a pressing issue as water scarcity
 - Dependent on availability of resources
 - Water Asset Accounts (Chapter 6)
 - Compiled by the Bureau of Meteorology
 - Scientific organisation well suited for collection
 - Water Quality Accounts (Chapter 7)
 - Not a pressing issue as water scarcity
 - Dependent on availability resources

SEEA-W - Overview

- Current Australian adoption – cont.
 - Physical Supply and Use Tables (*returns to the environment*)
 - Water discharges by purpose
 - Distributed water use by the environment
 - Currently unmeasurable (i.e. Ag run-offs)
 - Physical Supply and Use Tables (*split between Water Supply and Sewerage industry*)
 - Currently unable to split

SEEA-W Capturing data – supply side

Water supply by industry

- Survey vehicle – Water Supply and Sewerage Services
- Sample - @ 400 Water service providers
- Data item (volumes reported by state)

5 What was the volume of water extracted from each source between 1 July 2008 and 30 June 2009?

Note

- Please provide **only** the total volume of water actually extracted from these sources, **not** the amount that this organisation may have been entitled to extract.

Excluding

- Reuse water (report in Part 4)
- Water obtained from other water suppliers (include in Questions 2 and 3)

(a) Inland surface water

Including

- Dams
- Lakes and rivers

Excluding

- Sea or ground water

Volume
(Megalitres)

(b) Ground water

Including

- Saline ground water for desalination
- Ground water extracted as a result of 'Aquifer Storage and Recovery'

Excluding

- Inland surface water or sea water
- Dams
- lakes and rivers

(c) Sea water for desalination

Including

- Water extracted from estuaries

Excluding

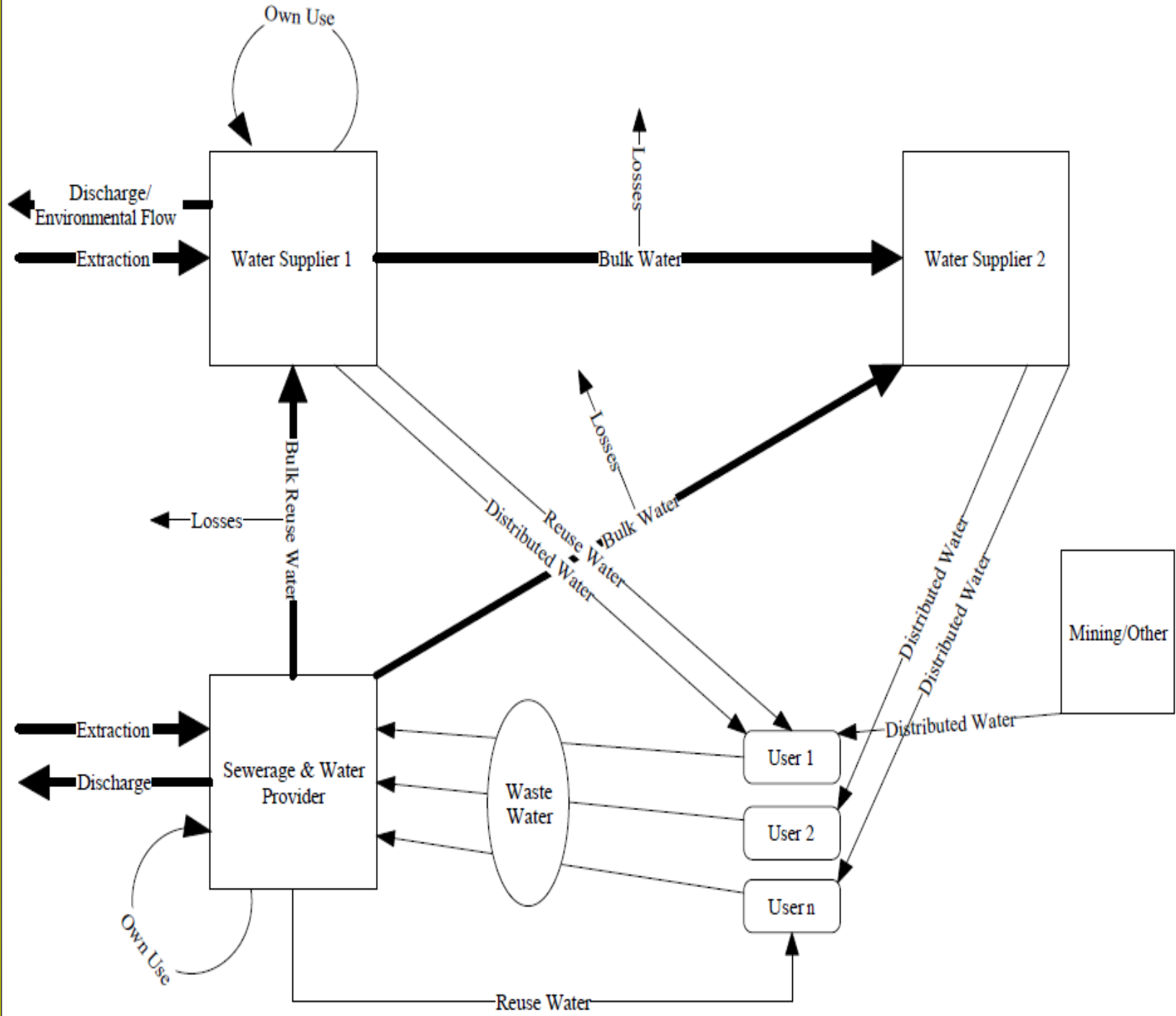
- Inland surface water or sea water
- Dams
- lakes and rivers

(d) Other sources

(e) Total volume extracted (sum of (a) to (d))

Reporting units – supply side data quality issues

- Making sense of supply relationships
- Making sense of customer relationships
- Metering issues – drainage and stormwater
- Unit level water balance
- Unit coverage (administrative data)
- Reporting water losses



SEEA-W Applying standard statistical processes

- **Revise the section – standard statistical cycle**
- Weights applied and estimates produced by survey management area
- Unit record file and suite of estimates supplied to Environmental Accounts team
- Significance based editing strategy – Internal and time series coherence tested
- Output at industry and sub-industry level for National, State/Territory level and regional areas (i.e. NRM)

SEEA-W Capturing data – use side

Water use by industry

- Survey vehicle – Energy Water and Environment Survey (EWES)
- Sample - @14,000 excludes micro, non-employed units
- Data item (volumes reported by state)

2 Please identify the volume (in Kilolitres, kL) and source of water intake by this business during the reporting period – (continued)

(b) Self sourced water

Definition

- **Self sourced water** is water extracted directly from the environment for use.
- **Mine dewatering** is the process used to remove excess runoff and groundwater seepage into mines.
- **Produced formation water** is the naturally occurring water that exists within oil and gas reservoirs.
- Water used from groundwater includes mine dewatering, produced formation water, pit dewatering and water from bores, springs, wells etc.

(i) No self sourced water intake by this business Go to Question 3

(ii) State breakdown of self sourced water

Surface water (from rainfall capture, dams, rivers and lakes) Kilolitres (kL)	Groundwater (from produced formation water, mine dewatering, bores, springs and wells etc.) Kilolitres (kL)
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Institutional arrangements

- Administrative arrangements
- Scope and coverage
- Data substitution (*complete units*)
- Data substitution (*partial units*)

Common problems – Supply side

Measurement (i.e. not metered)

● Problem

- Water supplied to remote properties
- Stormwater, drainage water
- Discharges to the environment
- Self-extracted water

● Solution

- Imputation strategy using specific models, substitution, donor units and water balances

Reporting errors

● Problem

- Allocations versus actual deliveries
- Bulk received versus self-extracted
- Own-use versus supplied to customers
- Kilotres versus Megalitres

● Solution

- Data editing strategy

Common problems – Supply side

Partial or non-responses

- Problem
 - No meter – no data
 - Environmental manager versus Financial manager
 - System failure to provide data (i.e. ABNs. Industry split)
- Solution
 - Imputation strategy using specific models, substitution, donor units key ratios and water balances

The information on this form will be used to compile a water account for Australia which shows the physical flows of water from the environment through the economy. In preparing the water account, environmental accounting principles are applied to the information provided. In particular, the information provided will be used in two theoretical water balance equations — distributed water and recycled (reuse) water — where the source and supply side of the equations should theoretically balance (that is, equal zero). You may find it helpful to transcribe your responses to the questions throughout the form into the balance equations given below. There are spaces for you to provide comments relating to imbalances in the water balance equations.

1. Distributed water balance equation

Question:

Distributed water sources:

Water received from other water suppliers

(a) Water received **Q. 10**

Self extracted water:

(b) Inland surface water **Q. 12a**

(c) Groundwater **Q. 12b**

(d) Sea water for desalination **Q. 12c**

(e) Other sources **Q. 12d**

(f) Total distributed water sourced (sum of (a) to (e))

Distributed water supply:

(g) Supplied to other water suppliers **Q. 14**

(h) Supplied to domestic or residential customers **Q. 16a**

(i) Supplied to non-residential customers **Q. 16b**

(j) Used by own organisation **Q. 18**

(k) Supplied for environmental flows **Q. 22e**

(l) Water losses **Q. 36d**

(m) Total distributed water supplied (sum of (g) to (l))

(n) Distributed water balance ((f) minus (m))

(o) Comments on distributed water balance for this organisation.

2. Reuse water balance equation

Question:

Recycled (reuse) water sources:

(a) Recycled (reuse water) received from other water suppliers **Q. 24**

(b) Wastewater/sewage collected **Q. 26a**

(c) Other wastewater collected **Q. 26b**

(d) Stormwater collected **Q. 26c**

(e) Drainage water collected **Q. 26d**

(f) Total recycled (reuse) water sourced (sum of (a) to (e))

Recycled (reuse) water supply:

(g) Supplied to other water suppliers **Q. 30a**

(h) Supplied to domestic or residential customers **Q. 30b**

(i) Supplied to non-residential customers **Q. 30c**

(j) Used by own organisation **Q. 32**

(k) Supplied for environmental flows **Q. 22e**

(l) Wastewater/drainage discharged to the environment **Q. 34d**

(n) Total recycled (reuse) water supplied (sum of (g) to (m))

(n) Distributed water balance ((f) minus (n))

(o) Comments on recycled (reuse) water balance for this organisation.

Issues encountered but not clearly specified in SEEA-W

- Non-reservoir storage
 - Water extracted for groundwater replenishment or storage purposes (i.e. aquifer recharge)
 - Classification (?)
- Dam spill-overs
 - Spilled-over water from dams yet not used
 - Classification – discharge water, environmental flows, in-stream use
- Specific environmental flows
 - Rules based /environmental provisions
- ABS resolution

Thank you – Questions?