Water Accounting
Australia's Experience

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Presentation outline

• Why are water accounts needed
• What accounts have been produced
• How are they produced
• Improvements being considered
Why are water accounts needed in Australia?

- Australia is a dry nation. Mean Annual Runoff is 387,000 GL.
- Where it is wet the population is.
- Australia regularly experiences droughts (e.g. 2001 - 2004)

Rainfall Deficiencies 2001 - 2004
**Why are water accounts needed in Australia?**

- Demand for water is increasing
- Water is of such national significance that it is high on the agenda of all Governments in Australia

**What water accounts have been produced in Australia?**

- Australia has been producing reports which have a lot in common with SEEA for four decades
- Reports have been called Water Resource Assessments and have been produced by water resource management authorities
- Since 2000, the ABS has been producing National Water Accounts consistent with SEEA
What water accounts have been produced in Australia?

- 1963 Review of Australia’s Water Resources (AWRC 1965)
- 1975 Review of Australia’s Water Resources (AWRC 1977)
- 1995-96 Water in the Australian Economy (AATSE 1999)
- 2000 Australian Water Resource Assessment (NLWRA 2001)
- 2000-01 Water Account, Australia (ABS 2004)

Forthcoming
- 2004-05 Water Account, Australia (ABS, November 2006)

Water Accounting at the ABS

2000-01 Water Account
- Released May 2004
- 11 Chapters
- Mostly water supply and use in the economy
- Plus some information on water stocks, “environmental” flows and water trading
- Data for Australia and for each of the Australian states (except NSW and ACT are combined)
- Previous edition released in 2000
**Water accounting - ABS**

**ECONOM**

**WATER PROVIDERS**
Water supply, sewerage and drainage service industry
Some Mining and Electricity and gas supply businesses

**WATER USERS**
Agriculture
Mining
Manufacturing
Household
Other industries
Also includes use by Water Providers

**SELF-EXTRACTED WATER**
12,784 GL

**ENVIRONMENT**

**Sewage and other wastewater (not quantified)**

**REUSE WATER**
517 GL

**REGULATED DISCHARGE**
50,136 GL
(Includes In-stream use 48,039 GL e.g. Hydro-electricity generation)

**Unregulated Discharge**
(not quantified)

**Environmental Flows**
459 GL

**Self-extracted water**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Self-extracted(b)</th>
<th>Mains water(c)</th>
<th>Reuse water(d)</th>
<th>In-stream(e)</th>
<th>Water consumption(a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture: Livestock, pasture, grains &amp; other</td>
<td>3 471 109</td>
<td>1 905 485</td>
<td>161 879</td>
<td>—</td>
<td>5 568 474</td>
</tr>
<tr>
<td>Dairy farming</td>
<td>1 210 701</td>
<td>1 571 883</td>
<td>51 855</td>
<td>—</td>
<td>2 834 418</td>
</tr>
<tr>
<td>Vegetables</td>
<td>422 008</td>
<td>117 033</td>
<td>16 870</td>
<td>—</td>
<td>585 711</td>
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<tr>
<td>Sugar</td>
<td>555 668</td>
<td>753 129</td>
<td>1 875</td>
<td>—</td>
<td>1 310 671</td>
</tr>
<tr>
<td>Fruit</td>
<td>491 250</td>
<td>296 657</td>
<td>14 825</td>
<td>—</td>
<td>802 622</td>
</tr>
<tr>
<td>Grapes</td>
<td>345 371</td>
<td>264 190</td>
<td>19 576</td>
<td>—</td>
<td>729 127</td>
</tr>
<tr>
<td>Cotton</td>
<td>2 502 002</td>
<td>404 050</td>
<td>2 095</td>
<td>—</td>
<td>2 908 178</td>
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<tr>
<td>Rice</td>
<td>133 986</td>
<td>1 892 674</td>
<td>124 501</td>
<td>—</td>
<td>1 951 150</td>
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<tr>
<td>Total</td>
<td>9 132 095</td>
<td>7 105 022</td>
<td>423 264</td>
<td>—</td>
<td>16 660 381</td>
</tr>
<tr>
<td>Services to agriculture; hunting &amp; trapping</td>
<td>2 770</td>
<td>1 027</td>
<td>104</td>
<td>—</td>
<td>3 901</td>
</tr>
<tr>
<td>Forestry &amp; fishing</td>
<td>378 389</td>
<td>5 245</td>
<td>7 145</td>
<td>367 765</td>
<td>23 022</td>
</tr>
<tr>
<td>Mining</td>
<td>479 635</td>
<td>49 196</td>
<td>5 441</td>
<td>127 430</td>
<td>400 622</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>295 825</td>
<td>533 700</td>
<td>16 536</td>
<td>—</td>
<td>866 061</td>
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<tr>
<td>Electricity &amp; gas(f)</td>
<td>49 116 399</td>
<td>122 937</td>
<td>4 691</td>
<td>47 543 867</td>
<td>1 687 778</td>
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<tr>
<td>Water supply, sewerage &amp; drainage services(g)</td>
<td>12 767 205</td>
<td>1 768 650</td>
<td>23 056</td>
<td>—</td>
<td>1 793 953</td>
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<tr>
<td>Construction</td>
<td>3 414</td>
<td>14 685</td>
<td>—</td>
<td>—</td>
<td>18 079</td>
</tr>
<tr>
<td>Wholesale &amp; retail trade</td>
<td>852</td>
<td>81 249</td>
<td>265</td>
<td>—</td>
<td>82 346</td>
</tr>
<tr>
<td>Accommodation, cafes &amp; restaurants</td>
<td>5 283</td>
<td>45 784</td>
<td>734</td>
<td>—</td>
<td>51 811</td>
</tr>
<tr>
<td>Transport &amp; storage</td>
<td>3 846</td>
<td>50 660</td>
<td>250</td>
<td>—</td>
<td>54 756</td>
</tr>
<tr>
<td>Finance, property &amp; business services</td>
<td>852</td>
<td>85 437</td>
<td>56</td>
<td>—</td>
<td>86 345</td>
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<tr>
<td>Government administration</td>
<td>4 200</td>
<td>50 895</td>
<td>1 279</td>
<td>—</td>
<td>56 374</td>
</tr>
<tr>
<td>Education</td>
<td>10 955</td>
<td>34 826</td>
<td>719</td>
<td>—</td>
<td>46 000</td>
</tr>
<tr>
<td>Health &amp; community services</td>
<td>2 611</td>
<td>35 105</td>
<td>64</td>
<td>—</td>
<td>46 840</td>
</tr>
<tr>
<td>Cultural, recreational &amp; personal services</td>
<td>131 327</td>
<td>231 230</td>
<td>32 492</td>
<td>—</td>
<td>295 049</td>
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<tr>
<td>Household</td>
<td>95 512</td>
<td>2 085 758</td>
<td>167</td>
<td>—</td>
<td>2 181 447</td>
</tr>
<tr>
<td>Environment</td>
<td>—</td>
<td>459 393</td>
<td>—</td>
<td>—</td>
<td>459 393</td>
</tr>
<tr>
<td>Total</td>
<td>72 451 152</td>
<td>12 783 858</td>
<td>516 563</td>
<td>48 039 054</td>
<td>24 904 659</td>
</tr>
</tbody>
</table>
How are water accounts produced in Australia?

- Data sources and methods used in the ABS water accounts have changed over time.
- First done with information supplied from water management authorities and limited data from non-ABS surveys as well as the ABS Agricultural Census data on irrigated area.
- Second used these sources again along with additional information from the ABS mining and manufacturing surveys.
- Third will use the sources from the 1st and 2nd accounts along with information from ABS Agriculture and Water Supply Surveys on volume of water used.

ABS survey coverage for 2004-05 Water Accounts = 99.9% of total consumption

<table>
<thead>
<tr>
<th>Surveys</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Agriculture Survey</td>
<td>66.9</td>
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<tr>
<td>Water Provider Survey</td>
<td>17.8</td>
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<tr>
<td>Service Industry Surveys</td>
<td>3.3</td>
</tr>
<tr>
<td>Electricity and Gas Industry</td>
<td>6.8</td>
</tr>
<tr>
<td>Min and Man Survey</td>
<td>5.1</td>
</tr>
<tr>
<td>Total</td>
<td>99.9</td>
</tr>
</tbody>
</table>
Other data sources

- Government agencies
  - Bureau of Meteorology
  - Bureau of Rural Sciences
  - CSIRO
  - State government water management departments
- Industry associations
- ABS Household Surveys
- University researchers

Review process

- Review process is integral to the production of the Australian Water Accounts
- Estimates are reviewed twice - preliminary and 2nd estimates are reviewed before estimates are finalised (ie final estimates)
- This gives the ABS and end users confidence in the results
Improving the ABS Water Accounts

Process
- ABS Water Statistics User Group
- National Water Initiative Expert Advisory Panel of Water Accounting
- Advisory Board for ABS' Centre of Environment and Energy Statistics

Planned improvements for 2004-05
- Addition of monetary accounts
- More geographic detail
  - State/Territory and Surface Water Management Areas
- Incorporation of water trading and allocation/entitlement information
- "Mini" Water Account for 2002-03
- (possibly) water emission accounts
Final Comments

- ABS continues to build expertise and experience in producing Water Accounts using SEEA
- Continual improvement and extension
  - coverage of stocks
  - regional level
  - monetary
  - frequency
- Well received by policy makers
  - integral to Australian Water Resource Assessments