Water Accounting in Australia
London Group Meeting, Denmark
September 2004

Michael Vardon and Stuart Peevor
Presentation Overview

• Background
• Results
• Problems
• Improvements
• Water Information Development Plan
• Use
• Forward Work Plan
Mean annual runoff
387000 GL
Drought in Australia

Rainfall Deficiencies: 36 Months
1 August 2001 to 31 July 2004

Distribution Based on Gridded Data
Product of the National Climate Centre

http://www.bom.gov.au

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ID code: DCDTHAU.Z2001030120044781.png
Issued: 12/6/2004
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 supply and use in Australia
Water use in Australia, 2000-01

- Total water extracted – 72,431 GL
- Water used in-stream (almost all for hydro-electricity) – 48,039 GL
- Water consumption – 24,909 GL
  - 67% by agriculture
  - 9% by households
  - 7% by electricity and gas industry
  - 7% by water supply industry (includes system losses)
  - 4% by manufacturing
  - 2% by mining
  - 3% by all others
Water consumption by state – 2000-01

Australia 24,909 GL (100%)
- NSW/ACT – 9,425 GL (37%)
- Vic. – 7,140 GL (29%)
- Qld – 4,711 GL (19%)
- SA – 1,647 GL (7%)
- WA – 1,409 GL (6%)
- Tas. – 417 GL (2%)
- NT – 160 GL (<1%)
Water consumption – Victoria compared to Australia, 2000-01

<table>
<thead>
<tr>
<th>Proportion</th>
<th>Victoria</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri.</td>
<td>0.6</td>
<td>0.6</td>
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<tr>
<td>Mining</td>
<td>0.01</td>
<td>0.01</td>
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<td>Manu</td>
<td>0.02</td>
<td>0.02</td>
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<tr>
<td>Elec.</td>
<td>0.1</td>
<td>0.1</td>
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<tr>
<td>Water</td>
<td>0.05</td>
<td>0.05</td>
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<tr>
<td>House</td>
<td>0.04</td>
<td>0.04</td>
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<tr>
<td>Other</td>
<td>0.03</td>
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</table>
Agriculture water use in Australia, 2000-01

Total water use by agriculture – 16,660 GL

- Cotton – 2,908 GL (17%)
- Dairy – 2,834 GL (17%)
- Rice – 1,951 GL (12%)
- Sugar – 1,311 GL (8%)
- Fruit – 803 GL (5%)
- Grapes – 729 GL (4%)
- Vegetables – 556 GL (3%)
- Other – 5,568 GL (33%)
Agriculture water consumption in Victoria compared to Australia, 2000-01

Proportion

Victoria
Australia

0.5
0.4
0.3
0.2
0.1
0.0

Other
Dairy
Veg.
Fruit
Grapes
Sugar
Cotton
Rice
Water supply industry, 2000-01

- 479 water providers
- Supplied 12,784 GL
- 1,769 GL of system water losses
- 1,837 GL of regulated discharge (62% of this to ocean)
- Very important to understand the industry
Source of mains water, 2000-01

- NSW/ACT
- Vic.
- Qld
- SA
- WA
- Tas.
- NT

GL

Surface water
Groundwater
Desalination
Water providers by type, 2000-01

Type of provider
- Metropolitan
- Non-Major Urban
- Irrigation/Rural
- Other (a)
Extra information

• The Australian water account contains a range of information to assist with interpretation and understanding of data
Irrigation areas in Australia, 2000-01
Water consumption in Australia, 1996-97 compared to 2000-01
Comparisons between 1996-97 and 2000-01

The data in the two editions of the water account are not strictly comparable because of differences in:

- Climate
- Data sources
- Metering of water use
- Methods and definitions
Tables

• 1.3 Water consumption, employment and IGVA.
• 9.8 Rainwater tanks
• 10.9 Surface water stocks
Problems

- A 100 or more data sources
- Dozens of agencies
- Different classifications/definitions
- Still a need to rely on modelling to fill some cells
- A regular source for data on water stocks is not apparent
- Need to be careful about double counting
Total Water Supply?

SEQld Reports: 237,355 (includes 72,937 supplied THROUGH Brisbane Water 6,248 - they get Sales) 243,603

Brisbane Reports: 72,937 * because owns infrastructure 164,418 237,355
Next edition on the Water Account

Next account in respect of 2004-05
Then four yearly

Content similar in to 2000-01 but with some improvements . . . .
Planned improvements (1)

- Reduced time between reference period and publication
- Data for river basins/water catchments
- More industry splits, especially for the “other agriculture” category
- More information on economics/finance (but not necessarily a monetary account)
- More ABS survey data
## Survey Coverage

<table>
<thead>
<tr>
<th>SURVEYS</th>
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<td>Agriculture Survey</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>
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<tr>
<td>Electricity and Gas Industry Survey</td>
<td>6.8</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>94.8</strong></td>
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</table>

### Water Consumption

| Sector                        | Economic ($
Consumption Mains Self - Reuse Regulated | Water (ML) |
<table>
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<tr>
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<tbody>
<tr>
<td>% total</td>
<td>Mains Water</td>
<td>Self - Extracted</td>
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<tr>
<td>Agriculture</td>
<td>66.9</td>
<td>AS</td>
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<tr>
<td>Livestock, pasture, grains &amp; other</td>
<td>33.4</td>
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<tr>
<td>Dairy farming</td>
<td>17</td>
<td>AS</td>
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<td>Vegetables</td>
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<td>Sugar</td>
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<td>AS</td>
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<tr>
<td>Fruit</td>
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<td>AS</td>
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<td>Grapes</td>
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<td>Rice</td>
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<td>Services to agriculture</td>
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<tr>
<td>Services and administration</td>
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<td>Households</td>
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<td>WPS</td>
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<td>Environment</td>
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<td>WPS</td>
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<td><strong>Total Water Consumption</strong></td>
<td><strong>100</strong></td>
<td>WPS</td>
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The table above shows the breakdown of water consumption by sector, with economic values indicated in dollars. The surveys and their respective coverage percentages are also listed.
Planned improvements (2)

Better coordination and understanding of data suppliers and data users
# Water Information Development Plan – matching data suppliers to data users

<table>
<thead>
<tr>
<th>Data providers</th>
<th>Data Users</th>
<th>ABS</th>
<th>NLWRA</th>
<th>BRS</th>
<th>DAFF</th>
<th>DEH</th>
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SoE Water Ac. Theme reports
## Water Information Development Plan – assessing current data suppliers area of activities

<table>
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<th>ANCID</th>
<th>BoM</th>
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<td></td>
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<tr>
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<td>x</td>
<td>x</td>
<td>x</td>
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<td>Households</td>
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<tr>
<td>Physical resource</td>
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</tbody>
</table>
Who is using the water account and how is it being used?
Use of ABS water accounts

Governments
- Australian (national) government
- Various state governments and their agencies
- National Land and Water Resources Audit (Mk 1)
- Bureau of Rural Sciences

Industry groups
- ANCID, WSAA, AWA
- Individual water authorities
- Academics/researchers
Government Water Policy
Securing Australia’s Water Future

Last week (13 September 2004) the Prime Minister announced a range of water initiatives that the government would implement if re-elected in October.

If re-elected the government will invest $200 million over 5 years to support:

• Water accounting
• Strategic groundwater assessment
• Working with local communities to improve the conservation of high environmental value water systems.
• Water efficiency labelling

Policy on on Water Accounting

“Water accounting: a nationally consistent system for collecting and processing water-related data is needed to create confidence in decisions by investors in the water market and the water industry more broadly, and to improve the setting of sustainable flow levels in rivers. Such a system would involve automated data collection at monitoring stations, national standards for water accounting and metering, and improved hydrologic modelling of priority water sources”

Sophisticated users of ABS water accounts

Analytical work


- Centre for International Economics (2004) - *Implications of water reforms for the national economy*

- 30% of Australia’s water use was devoted to domestic food production and a further 30% to food exports.
- If by 2050 Australia’s population grows to 25 million people and per-capita expenditure doubles, the annual water requirement for Australia may more than double to 50,000 GL per annum.
• Irrigation contribution to the economy is $12.4 billion (2.3 per cent of Australia’s GDP)
• Irrigation directly and indirectly contributes around 171 000 employee (2.6 percent of total employment)
• Reducing water use in the Murray-Darling Basin by 10% (=540 GL) is estimated to result in the loss of 400-900 jobs and $88 million to GDP
Environment and Energy Statistics
Forward Work Plan for Water

• A subset of a larger work plan
• Few resources for expansion of work in 2004-05, but more scope in 2005-06.
• Centre for Environment and Energy Statistics will advise ABS on overall priorities (more later about this)
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