

Background to the water statistics program in Australia

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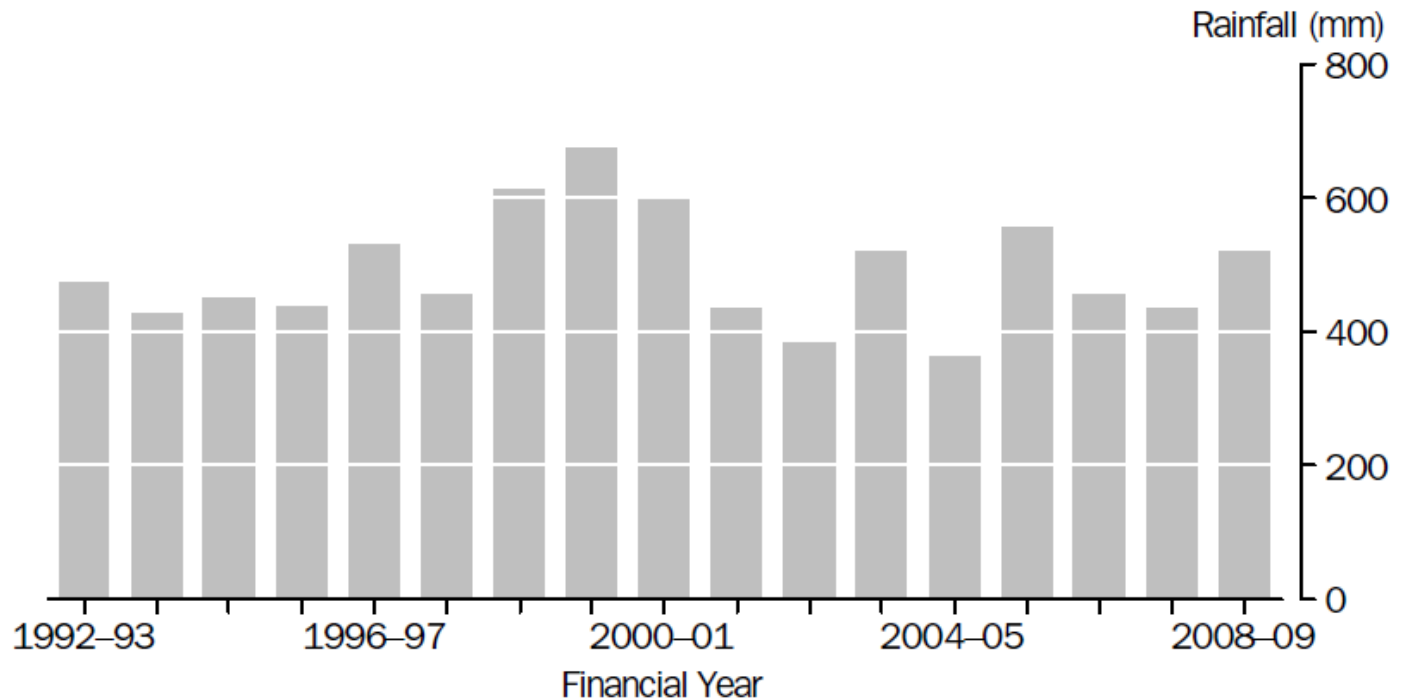
Outline of presentation

- Economy, society, Climate & Geography
- Policy Concerns
- Institutional arrangements
- Statistical infrastructure
- Water Account Australia
- Input collections
- Production process
- Results

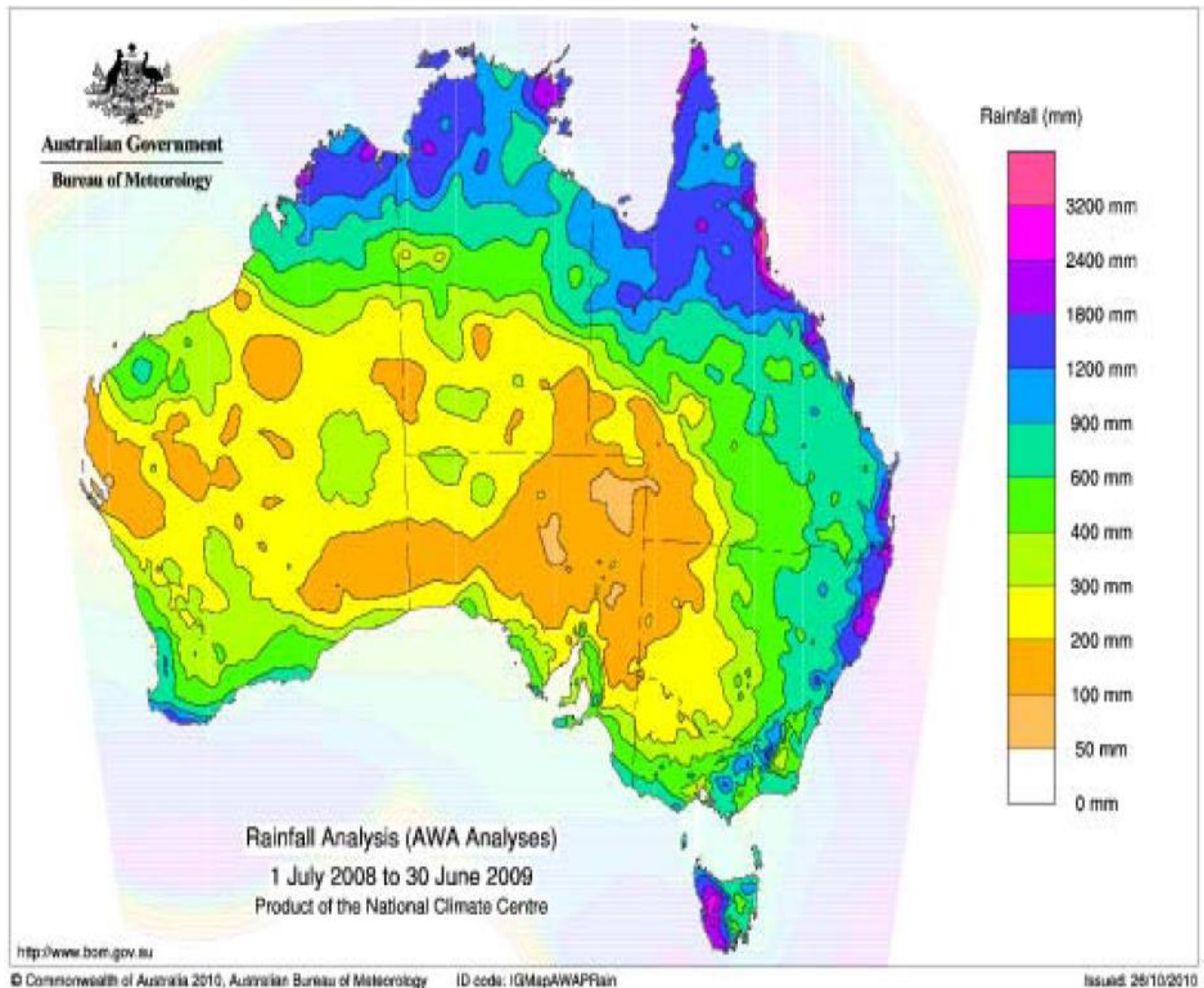
Economy, society, climate & geography

• Dry Climate

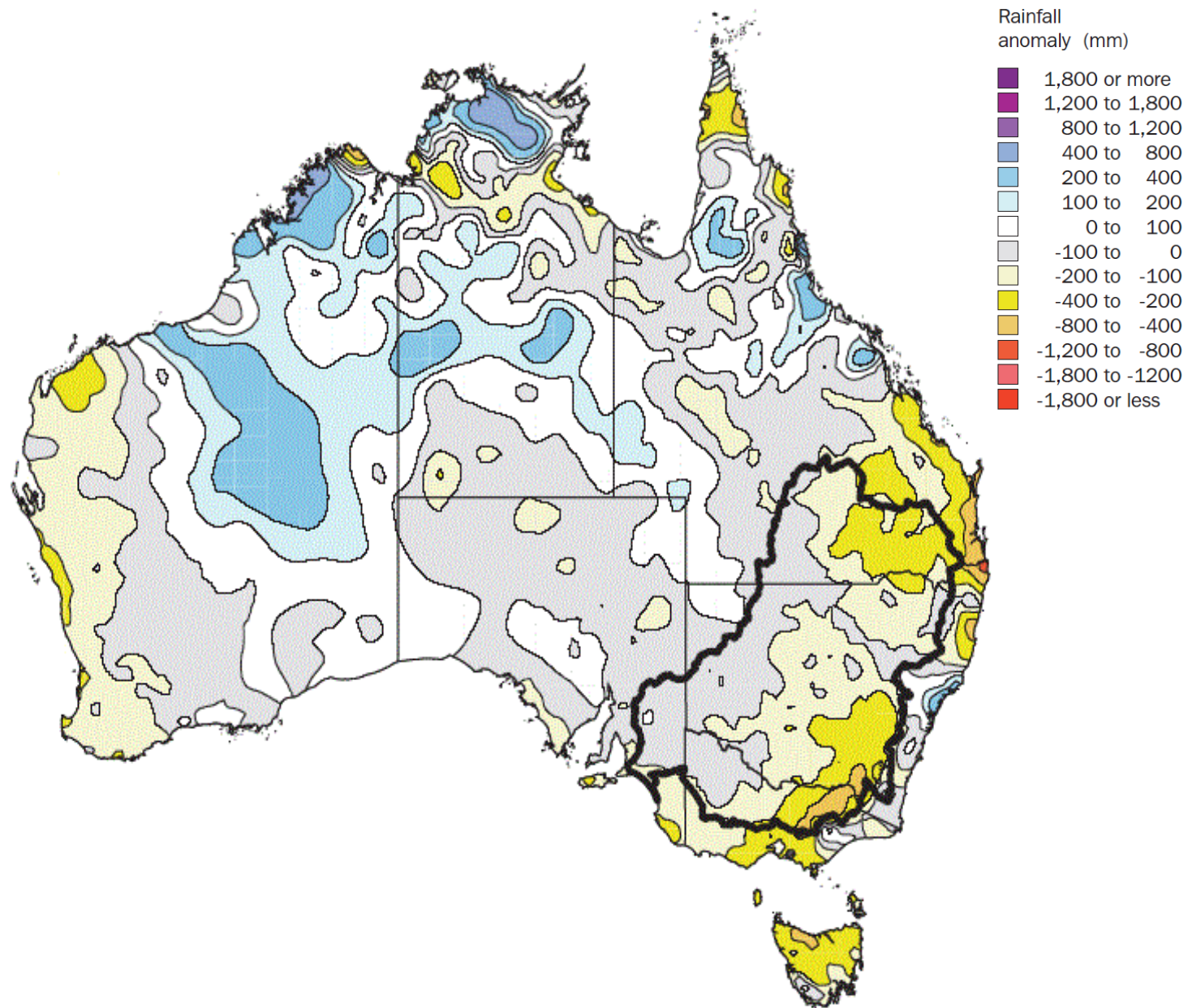
A1.1 ANNUAL RAINFALL 1992-93 TO 2008-09



Source: Bureau of Meteorology 2009



● Monsoon rainfall in the north



● Agriculture and population centres in the south

Economy, society, climate & geography

• Key economic and population aggregates (2010)

 Population	22,407,700
 GDP	A\$1,283.8 billion
▪ Agriculture	4 %
▪ Industry	25 %
▪ Services	71 %
 GDP per Capita	A\$57,293 per capita
 Mining	8.4% of total GVA
 Manufacturing	9.3% of total GVA
 Literacy	82%

Policy Concerns

- Water Security
 - Availability for Agriculture (food security)
 - Ecological sustainability
 - Energy security
 - Human consumption (quality, cost, quantity)
- Productivity & regulation of the water supply industry
 - Water prices and return on assets
 - Future investment
- Harmonisation of jurisdictional policies
 - National Water Initiative

Institutional Arrangements

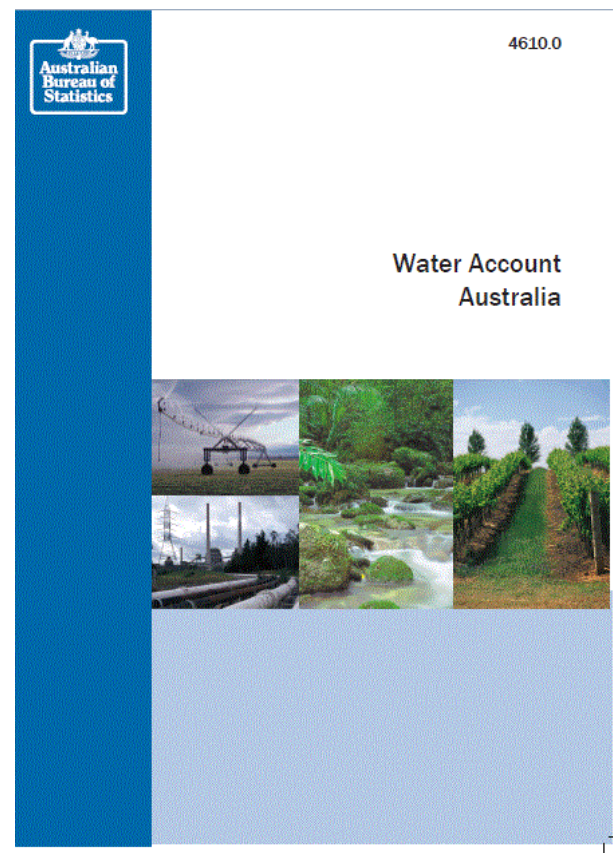
- Numerous agencies collecting & publishing water data
 - Jurisdictions
 - Commonwealth government
- National Water Initiative
- Provider burden and streamline initiatives
- Administrative data – the panacea?
 - Takes time & effort
 - Data items not mapping exactly
 - May lack important detail or data splits

Statistical Infrastructure

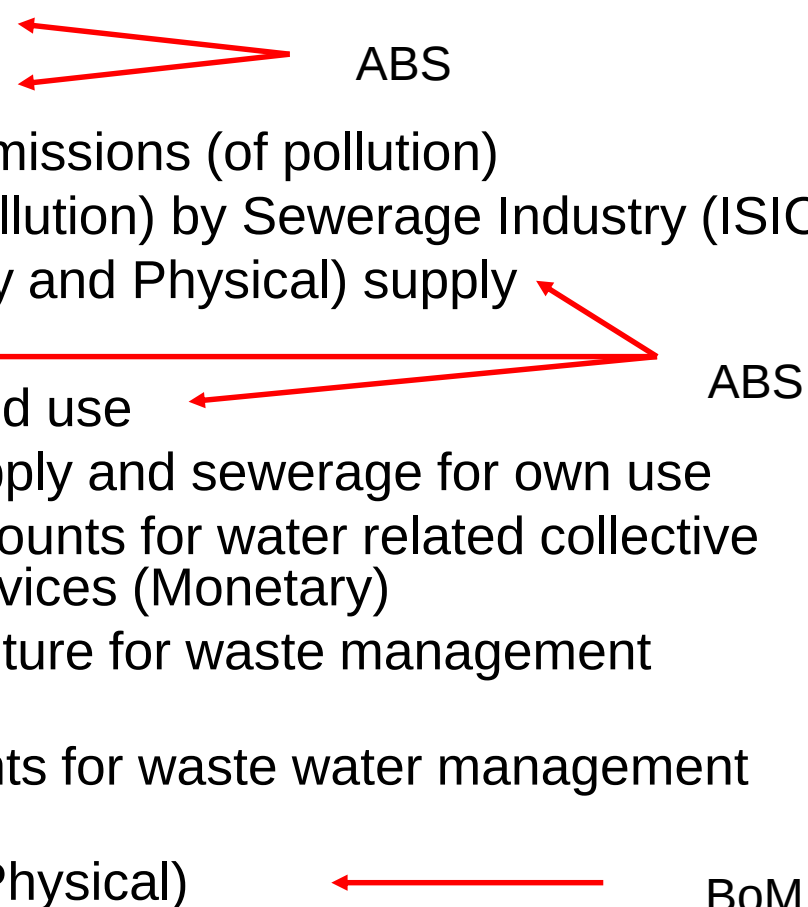
- Reportable data (metering & recording systems)
- Register of survey units & Frame maintenance
- Classification systems
 - International Standard Industrial Classification (ISIC)
 - Product classification (or Industry Terminology?)
- Survey Methodology – sample or census?
- Statistical literacy and technological literacy
 - Understanding of the survey cycle
 - Data Quality Framework

Water Account Australia

- Physical Supply and Use Tables
- Corresponding monetary flows and implicit prices
- Additional industry detail (*i.e. Agriculture, Water Supply Industry*)
- National Accounts and water intensity measures
- Gross Value of Irrigated Production



12 Standard Tables of SEEA-Water

1. Physical supply
 2. Physical use
 3. Gross and net emissions (of pollution)
 4. Emissions (of pollution) by Sewerage Industry (ISIC 37)
 5. Hybrid (Monetary and Physical) supply
 6. Hybrid use
 7. Hybrid supply and use
 8. Hybrid water supply and sewerage for own use
 9. Government accounts for water related collective consumption services (Monetary)
 10. National expenditure for waste management (Monetary)
 11. Financial accounts for waste water management (Monetary)
 12. Asset account (Physical)
- Plus 12 Supplementary tables
- ABS
- ABS
- BoM
- 

Water account input collections

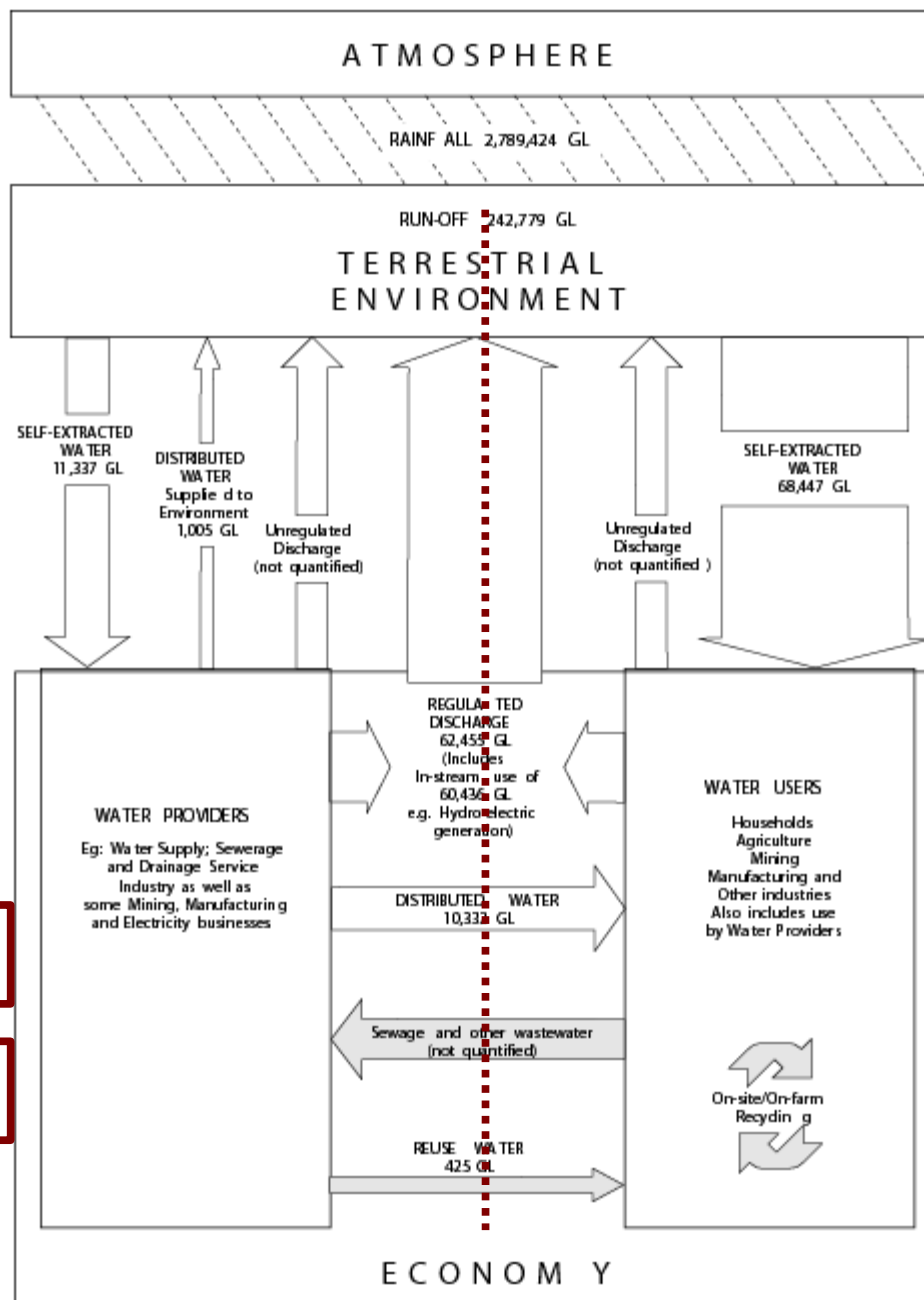
Data sources

- *2008-09 AIC Survey (Mining & Manufacturing)*
- *2008-09 Agriculture Survey*
- *2008-09 Water Supply Survey*
- *2008-09 Electricity Generator Survey*
- *Household surveys*
- *Administrative data (including Annual reports)*
 - *National Performance Report (NWC)*
 - *State department agencies*
 - *NSW Benchmark Reports*
 - *Victoria Water Account*
 - *Queensland SWIM*
 - *WA Economic Regulation Authority*
 - *State agricultural agencies*
 - *BoM (rainfall data)*

S
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Water Supply
Survey

Administrative
Data



U
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E

Agriculture
Survey

Annual
Integrated
Collection

Electricity
Generator
Survey

Administrative
data

	2017	2018	2019	2020	2021	2022	2023	2024	2025
Agriculture, forestry and fishing									
Agriculture									
Nursery and floriculture production	—	—	—	na	21 867	30 503	6 120	—	58 490
Mushroom and vegetable growing	—	—	—	na	292 437	123 310	16 034	—	431 782
Fruit and tree nut growing	—	—	—	na	372 433	658 916	16 261	—	1 047 610
Sheep, beef cattle and grain farming	—	—	—	na	1 310 110	843 253	23 499	—	2 176 863
Other crop growing	—	—	—	na	944 831	932 006	24 026	—	1 900 863
Dairy cattle farming	—	—	—	na	622 736	625 633	14 513	—	1 262 883
Poultry farming	—	—	—	na	np	13 357	np	—	23 973
Deer farming	—	—	—	na	np	335	np	—	631
Other livestock farming	—	—	—	na	51 311	39 926	1 449	—	92 686
Total	—	—	—	na	3 625 895	3 267 240	102 645	—	6 995 781
Aquaculture	—	—	—	441 411	444 444	1 178	32	441 411	4 243
Forestry and logging	—	—	—	na	1 435	91 267	1 912	—	94 613
Fishing, hunting and trapping	—	—	—	na	439	1 584	—	—	2 024
Agriculture, forestry and fishing support services	—	—	—	na	9 489	51 980	246	—	61 715
Mining									
Coal mining	—	9 057	na	57 099	125 154	304 021	1 043	123 560	97 601
Oil and gas extraction	—	777	na	72 265	94 409	1 219	—	57 609	37 243
Metal ore mining	—	np	na	150 549	386 791	np	5 997	127 939	285 533
Non-metallic mineral mining & quarrying	—	110	na	7 852	40 113	3 826	9	2 341	41 497
Exploration and other mining support services	—	np	na	24 353	68 687	np	7	22 738	45 800
Total	—	23 539	na	312 118	715 155	348 148	7 057	334 186	507 675
Manufacturing									
Food, beverage and tobacco product	—	5 554	na	62 031	149 608	339 942	6 677	47	290 025
Textile, leather, clothing and footwear	—	—	na	1 538	1 001	30 204	975	1	12 178
Wood, pulp, paper and converted paper product	—	—	na	66 276	np	43 908	np	—	96 142
Printing (incl the reproduction of recorded media)	—	—	na	155	7	6 604	2	—	5 513
Petroleum, coal, basic chemical and chemical product	—	np	na	20 585	22 120	51 582	np	3 556	72 454
Polymer, rubber and non-metallic mineral product	—	—	na	4 935	np	20 894	468	np	31 318
Primary metal, metal and fabricated metal product	—	np	na	65 141	98 791	57 946	13 331	np	157 735
Transport equipment, machinery and equipment	—	1	na	86	769	9 804	277	—	10 848
Furniture and other	—	—	na	9	31	1 060	4	—	1 084
Total	—	13 791	na	220 755	336 009	389 432	27 961	12 295	677 298
Electricity, gas, water and waste services									
Electricity and gas supply(e)	—	266 558	6 505	44 706 235	44 840 605	328 089	9 199	44 483 500	327 834
Waste supply, sewerage and drainage services(f)	—	9 365 147	541 463	1 718 772	9 269 147	2 387 205	79 030	—	2 306 236
Waste collection, treatment and disposal services	—	—	na	na	5 208	2 904	1	—	7 512
Other industries(g)	—	—	na	na	319 520	544 395	87 260	93 326	1 257 810
Household	—	—	—	—	172 092	1 593 968	2 193	—	1 768 251
Environment	59 839 438	—	—	—	—	601 265	30 432	—	—
Total	59 839 438	9 673 034	347 968	47 450 291	59 839 438	9 673 034	347 968	45 364 718	14 100 991

Main findings

- Water consumption down 25% since 2004-05, from 18,767 GL to 14,101 GL
- 38% fall in agriculture – 12,191 GL to 7,589 GL
- Large falls in cotton, rice, dairy pasture and sugar
- Value of distributed water supplied is up nearly \$2 billion (56%), from \$3.5 billion to \$5.5 billion
- Household paying \$927 million extra
- Businesses paying \$994 million extra
- Average price of water nearly doubled from \$0.40/kL to 0.78/kL
- Household pay the highest average price \$1.93/kL
- Agriculture pays the lowest average price \$0.12/kL

Main findings, *cont.*

- Industry valued added per GL is up \$41 million/GL or 76% from \$54 million/GL to \$95million/GL
- Largest increase in IVA mining of \$129 million/GL or 133% (\$97 m to \$226m /GL)
- Agriculture up 77% from \$2.2 million/GL to \$3.9 million/GL
- Agriculture industry consumed most water (50%) among industries, followed by Water supply industry (17%).
- Gross value of irrigated agricultural production up 13% or \$1.4 billion from \$10.6 to \$12 billion
- GVIAP is 29% of the total gross value of agricultural production (almost unchanged since 2004-05 when it was 30%)
- GVIAP peaked in 2006-07 at \$12.5 billion and 35% of total gross value of Agriculture production

Summary

- Learning by doing
- Frameworks are a helpful guide
 - Focus on key policy/resource management issues
- Bite sized chunks (at least initially)

Thank you – Questions?