Survey of water entitlement sellers under the Restoring the Balance Program

3rd August 2012

ANU Water Markets Workshop
Overview
Overview

- **Introduction:** study context; scope of assessment; approach

- **Buyback to date:** focus on volumes, regions, partial versus whole entitlement sale;

- **Survey results:** focussing on what irrigators said the impacts of their sales were, and the future of RtB.

- **Observations, conclusions and next steps**
Introduction
Introduction

- In December 2011, the Department engaged Marsden Jacob Associates and UniSA to survey irrigators who had applied to or sold water entitlements to Restoring the Balance (RtB). Study objectives were to develop a better understanding of:
  - the consequences of selling water for individual irrigators and their farm businesses;
  - how sellers had used the proceeds of Commonwealth water sales;
  - how applicants had applied to sell water through the tender process;
  - how irrigators thought RtB administration could be changed in the future; and
  - answer questions about RtB and the future.

- The study delivers an evidence based assessment of the impacts of RtB on individual irrigators who have participated, and provides insights into how individual irrigator impacts may have affected irrigation communities.

Study context

- Restoring the Balance (RtB) being implemented as part of the Commonwealth’s $14 billion Water for the Future program;
- is the largest market based environmental water recovery program in the world, committing almost $3.5 billion between 2007-08 and 2016-17;
- to 2012 20+ tender rounds. Tender rounds progressively becoming more frequent, regionally targeted, and shorter in duration;
- implemented during a period of significant national water reforms;
- implemented during a period marked by significant changes in water availability;
- program viewed with apprehension by many irrigators and irrigation communities, as evidenced by the findings of the Windsor Inquiry.
Scope of the assessment

- **Focus**: impacts and outcomes on individual irrigators participating in RtB buybacks;
- **Time period**: 2007-11. Surveyed irrigators commencing 2008-09;
- **Geographic coverage**: all major trading regions of the MDB;
- **Types of irrigators surveyed**: survey focuses on three types irrigators participating in RtB and consented to being surveyed:
  - irrigators who sold some or all water from an entitlement to the Commonwealth and remained in farming. Note these sellers may hold other entitlements that they didn’t seek to sell;
  - irrigators who sold water to the Commonwealth and exited farming (either staying on farm or leaving the farm subsequent to sale);
  - irrigators who applied in one or more of the tender rounds and had trades delayed by the Victorian 4% limit or subsequently withdrew the sale.
- Excludes irrigators who did not apply to sell water to the RtB program
Approach

- Literature review
- Evaluation of buyback databases
- Surveys of irrigators
- Case studies of irrigators
The Buyback to Date
Applications and acceptances

- Since 2007-08, 7,591 individual offers to sell water to the Commonwealth, with a total LTAAY of around 1,700 GL;
- Since 2007-08, Commonwealth has accepted 4,166 applications from roughly 3,150 individual sellers (around 15% of all irrigators in the Basin).

<table>
<thead>
<tr>
<th>Acceptance status</th>
<th>Northern Basin</th>
<th>Southern Basin</th>
<th>Basin Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications</td>
<td>107</td>
<td>4,059</td>
<td>4,166</td>
</tr>
<tr>
<td>Bid Accepted</td>
<td>90</td>
<td>2,924</td>
<td>3,014</td>
</tr>
<tr>
<td>Bid Rejected</td>
<td>23</td>
<td>388</td>
<td>411</td>
</tr>
<tr>
<td>Withdrawn</td>
<td>220</td>
<td>7,371</td>
<td>7,591</td>
</tr>
</tbody>
</table>

- Total applications: 220
- Total long term yield (ML): 280,208

<table>
<thead>
<tr>
<th>Acceptance status</th>
<th>Long term average annual yield (ML)</th>
<th>Basin Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bid Accepted</td>
<td>98,409</td>
<td>879,349</td>
</tr>
<tr>
<td>Bid Rejected</td>
<td>175,420</td>
<td>729,086</td>
</tr>
<tr>
<td>Withdrawn</td>
<td>6,379</td>
<td>87,680</td>
</tr>
<tr>
<td>Total long term yield (ML)</td>
<td>280,208</td>
<td>1,696,115</td>
</tr>
</tbody>
</table>
Volumes and acceptance ratios

- Since 2009-10 proportionally more LTAAY water from Victoria;
- 90%+ (LTAAY) of NSW water has been GS;
- 90%+ (LTAAY) of Victorian water has been HR;
- Acceptance ratios falling across in most States over time. Several reasons identified in report for this.

LTAAY of accepted offers and acceptance ratios by Basin region and State, 2008 to end 2011

- Since 2009-10 proportionally more LTAAY water from Victoria;
- 90%+ (LTAAY) of NSW water has been GS;
- 90%+ (LTAAY) of Victorian water has been HR;
- Acceptance ratios falling across in most States over time. Several reasons identified in report for this.
Irrigators selling whole entitlement

- 35% of sellers sold all water on their entitlement;
- % offering all water generally falling over time;
- Irrigators selling part entitlement sell around 50-60% of entitlement on average;
- LTAAY volume similar to on-market sales;
- More information in Annex 1 of report.

Number of applicants selling whole versus part entitlement, by Basin region and State, 2008 to end 2011

- Sold whole entitlement
- Sold part entitlement
- % selling whole entitlement
Survey insights
Respondents
A total of 589 respondents were surveyed. The survey achieved high contact, response and acceptance rates. Of the respondents:

- 520 had sold water to the Commonwealth and the transaction had settled;
- 49 applicants had had their sale of water delayed by the Victorian 4% limit; and
- 20 had tried to sell water but the transaction was subsequently withdrawn by the Commonwealth or the seller.

Of the 520 survey respondents who had sold water to the Commonwealth and the transaction had settled:

- 312 (60%) had sold part of their water entitlement and continued to farm;
- 50 (10%) had sold all of the surface water on their entitlement and continued to farm; and
- 158 (30%) had sold all of the water on their entitlement and had exited farming.

Survey respondents representative of participation by year and State, by whole or part sale;

Potential under-representation in 2008-09, but this does not appear to change key findings;

Sample size delivers 99% confidence level and +/-5 CI.
Impacts of selling water for individual irrigators
Most irrigators have sold to the Commonwealth once

- Almost 80% of survey respondents have only sold water to the Commonwealth once;
- Almost 95% have sold water to the Commonwealth twice or less;
- Frequency of sales do not differ between farmers selling some or all of the water on their entitlement;
- Recall 35% sell whole entitlement. 65% selling part generally sell 50-60% of entitlement, but this is falling.

<table>
<thead>
<tr>
<th>How many sales have you made to the RtB?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>Sold all water and left farming</td>
</tr>
<tr>
<td>100</td>
</tr>
</tbody>
</table>

Number of RtB sales
Significant majority of irrigators say participating in RtB was a positive decision

- Overall, almost 80% of respondents said their decision to sell water had been a positive decision for them. Around 12% said selling water hadn’t been a good decision;

- Farmers who sold all water and remained in farming were most likely to state that had not been a positive decision; around 20%. Recall these are 10% of total irrigators selling water.

![Bar chart showing the percentage of responses to the question: Overall, do you think selling water to the Commonwealth has been a positive decision for you?](chart.png)
Positive decision view stable over time and States

Overall, do you think selling water to the Commonwealth has been a positive decision for you?

<table>
<thead>
<tr>
<th>Year</th>
<th>VIC</th>
<th>SA</th>
<th>NSW</th>
<th>QLD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-09</td>
<td>23</td>
<td>34</td>
<td>33</td>
<td>16</td>
<td>106</td>
</tr>
<tr>
<td>2009-10</td>
<td>6</td>
<td>58</td>
<td>23</td>
<td>14</td>
<td>91</td>
</tr>
<tr>
<td>2010-11</td>
<td>20</td>
<td>40</td>
<td>45</td>
<td>8</td>
<td>113</td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>132</td>
<td>101</td>
<td>38</td>
<td>320</td>
</tr>
</tbody>
</table>

- Very strongly agree: 59% (2008-09), 30% (2009-10), 33% (2010-11)
- Strongly agree: 32% (2008-09), 22% (2009-10), 28% (2010-11)
- Agree: 7% (2008-09), 8% (2009-10), 10% (2010-11)
- Neutral: 3% (2008-09), 1% (2009-10), 2% (2010-11)
- Disagree: 1% (2008-09), 2% (2009-10), 1% (2010-11)
- Strongly disagree: 0% (2008-09), 0% (2009-10), 0% (2010-11)
Irrigators mainly sell water to generate cashflow

- Around 50% of irrigators reported selling water for debt and farm viability reasons.
- Response rates are consistent across farmer response types (no sale, continuing, exiting farming) with some logical exceptions;
- Around 10% sold surplus water and 7% for on farm investment;
- Reasons for selling stable across tender years and States (see report section 2.3).

What was the main reason for your water sale?

<table>
<thead>
<tr>
<th>Respondents</th>
<th>No sale</th>
<th>Sold some water still farming</th>
<th>Sold all water still farming</th>
<th>Sold all water and left farming</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce debt</td>
<td>32%</td>
<td>36%</td>
<td>28%</td>
<td>15%</td>
<td>29%</td>
</tr>
<tr>
<td>Low farm income viability</td>
<td>26%</td>
<td>23%</td>
<td>22%</td>
<td>19%</td>
<td>23%</td>
</tr>
<tr>
<td>Exiting farming</td>
<td>13%</td>
<td>4%</td>
<td>17%</td>
<td>38%</td>
<td>16%</td>
</tr>
<tr>
<td>Surplus water</td>
<td>7%</td>
<td>13%</td>
<td>2%</td>
<td>6%</td>
<td>10%</td>
</tr>
<tr>
<td>On farm investment</td>
<td>4%</td>
<td>9%</td>
<td>6%</td>
<td>5%</td>
<td>7%</td>
</tr>
<tr>
<td>Age</td>
<td>7%</td>
<td>3%</td>
<td>6%</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>Death or divorce</td>
<td>4%</td>
<td>2%</td>
<td>0%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Other</td>
<td>9%</td>
<td>10%</td>
<td>17%</td>
<td>6%</td>
<td>9%</td>
</tr>
</tbody>
</table>
Many partial sellers report few farm production consequences from their sales

- Recall 65% of sellers are partial sellers;
- Around half report no farm production consequences;
- Most do not change farm setup; crop mix; employees. Around 40% increase irrigation efficiency;
- Subsequent water trading lower than anticipated, may result from high allocations.

What were the impacts for your farm production from selling some of your water to the Commonwealth (partial sale)?

<table>
<thead>
<tr>
<th>No consequences</th>
<th>Some consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>157</td>
<td>155</td>
</tr>
</tbody>
</table>

'Since selling water to the Commonwealth, what changes have happened on your farm?'

<table>
<thead>
<tr>
<th>Farm area</th>
<th>No change</th>
<th>Increase</th>
<th>Decrease</th>
<th>Total</th>
<th>% no change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigation area</td>
<td>235</td>
<td>26</td>
<td>51</td>
<td>312</td>
<td>75%</td>
</tr>
<tr>
<td>Dryland area</td>
<td>252</td>
<td>50</td>
<td>10</td>
<td>312</td>
<td>81%</td>
</tr>
<tr>
<td>Employees</td>
<td>262</td>
<td>13</td>
<td>37</td>
<td>312</td>
<td>84%</td>
</tr>
<tr>
<td>Irrigation efficiency</td>
<td>188</td>
<td>124</td>
<td>-</td>
<td>312</td>
<td>60%</td>
</tr>
<tr>
<td>Off farm employment</td>
<td>135</td>
<td>99</td>
<td>78</td>
<td>312</td>
<td>43%</td>
</tr>
<tr>
<td>Disposed of delivery right</td>
<td>213</td>
<td>14</td>
<td></td>
<td>227</td>
<td>94%</td>
</tr>
</tbody>
</table>
Irrigators who sell all of their entitlement and stay on farm report more consequences

- Recall 10% of sellers are whole sellers who stay on farm;
- Around 25% report no farm production consequences;
- Small respondent numbers mean these results need to be treated with due caution.

What were the impacts for your farm production from selling some of your water to the Commonwealth (partial sale)?

<table>
<thead>
<tr>
<th></th>
<th>No consequences</th>
<th>Some consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15</td>
<td>35</td>
</tr>
</tbody>
</table>

'Since selling water to the Commonwealth, what changes have happened on your farm?'

<table>
<thead>
<tr>
<th></th>
<th>No change</th>
<th>Increase</th>
<th>Decrease</th>
<th>Total</th>
<th>% no change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation area</td>
<td>27</td>
<td>3</td>
<td>20</td>
<td>50</td>
<td>54%</td>
</tr>
<tr>
<td>Dryland area</td>
<td>37</td>
<td>11</td>
<td>2</td>
<td>50</td>
<td>74%</td>
</tr>
<tr>
<td>Employees</td>
<td>28</td>
<td>7</td>
<td>13</td>
<td>48</td>
<td>58%</td>
</tr>
<tr>
<td>Irrigation efficiency</td>
<td>31</td>
<td>16</td>
<td></td>
<td>47</td>
<td>66%</td>
</tr>
<tr>
<td>Off farm employment</td>
<td>25</td>
<td>5</td>
<td>18</td>
<td>48</td>
<td>52%</td>
</tr>
<tr>
<td>Disposed of delivery right</td>
<td>30</td>
<td>6</td>
<td></td>
<td>36</td>
<td>83%</td>
</tr>
</tbody>
</table>
When irrigators sell and exit, most farms don’t lie fallow; most irrigators say they find other work or retire

- 70% of all respondents who sold all their water and exited said that the farmland was still producing, versus 25% fallow;
- Most non-retiree age farmers exiting have moved into trades other than farming. Only 3% are unemployed;
- Less than 10% of irrigators who have sold all water have left their region.

**Do you know what is happening on farm now?**

- Still producing: 47
- Fallow: 17
- Commercial or residential use: 3

**What are you doing now?**

<table>
<thead>
<tr>
<th>Respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>157 100%</td>
</tr>
<tr>
<td>Work a trade apart from farming</td>
<td>65 41%</td>
</tr>
<tr>
<td>Working in farming</td>
<td>17 10%</td>
</tr>
<tr>
<td>Retired</td>
<td>55 35%</td>
</tr>
<tr>
<td>Other</td>
<td>15 10%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>4 3%</td>
</tr>
</tbody>
</table>
Most RtB sales proceeds appear to remain in the region

- Difficult issue to get at directly;
- When asked around 35% of irrigators directly said money had been spent “in the region” compared to 5% who said money had been spent “outside the region”;
- Most irrigators said they use proceeds to retire debt;
- When retire debt are increasing ownership in productive capital;
- When this happens proceeds are staying in the region;
- Critical point is how much of proceeds are used up paying interest versus paying down the principle sum;
- A point for discussion. Survey results don’t give all the answers, but do further our understanding of this issue.
The future
Many sellers currently disagree with Commonwealth environmental water purchasing objectives

- 44% disagreed to some extent with Commonwealth environmental water recovery;
- Support linked to location;
- Support did not differ significantly as a function of exit, whole sale or partial sale.

How much do you agree with the overall objectives of RtB of returning water from consumptive use to environmental use?

- **Very strongly agree**
- **Strongly agree**
- **Agree**
- **Neutral**
- **Disagree**
- **Strongly disagree**

![Bar Chart](chart.png)
Many irrigators surveyed want the southern Basin tenders to resume and would participate

- 50% of all respondents said they wanted general tenders to resume in the Southern Basin (25% do not);
- 50% would sell water to the Commonwealth again in the future. Figures same across States (recognise that irrigators may not have further water to sell).

Would you like to see general tenders in the Southern Basin resumed in 2013?

<table>
<thead>
<tr>
<th>State</th>
<th>Yes</th>
<th>Unsure</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>QLD</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>NSW</td>
<td>20</td>
<td>40</td>
<td>106</td>
</tr>
<tr>
<td>VIC</td>
<td>77</td>
<td>174</td>
<td>19</td>
</tr>
<tr>
<td>SA</td>
<td>19</td>
<td>60</td>
<td>19</td>
</tr>
</tbody>
</table>

0% 25% 50% 75% 100%
Observations, conclusions and next steps
Summary of survey results

- Survey findings provide an empirical evidence base that shows the experience of 520 irrigators who have sold water to RtB (around 16% of irrigators who have sold water to RtB);

- Overall message from majority of these irrigators is that selling water to RtB has supported them to manage their farm situation and achieve their other objectives. They say their decision has been good for them. This aligns with other evidence based work;

- Most irrigators use cashflow generated by sale to manage debt and supplement income.

- Overall results suggest breaking of drought and structural changes to RtB have not changed why irrigators sell water or how they use the proceeds;

- Farmers are innovating and post-drought allocations have clearly helped to maintain production and lessen adverse consequences;

- Weight of evidence suggests the ‘negative’ impacts on sales on irrigation communities are likely to be less than many perceive;

- Survey results are a strong evidence base. Results can be used to deliver better community outcomes from environmental water recovery.
Report can be downloaded at

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