

2010-11 Telephone Survey: Preliminary Report to Irrigators

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2010-11 Survey Participant Summary Report

In September to October 2010 you took part in a University of South Australia telephone survey about farming and water trade. Your involvement in our research is very much appreciated, and while analysis of the data is ongoing, we felt you should receive the descriptive findings so far.

Out of 946 irrigators that responded to the survey across NSW, Victoria and South Australia, the main findings (tables are provided at the end of the summary) were:

1. Farmer characteristics:

- The average irrigator age was 55. Most had been farming for 34 years, and expected to retire in 2020. The majority held higher than Year 10 qualifications and were married (Table 1).
- The average number of children per household was 3 and 36% of irrigators felt one of those children would take over the farm. If not, major reasons why included being too young to decide, or having left the farm for another life (Table 2).
- 35% reported a low or negative income for 2009/10, and 45% of irrigators received 50% or more of their income from off-farm sources. Debt-to-equity averaged 50% of total property values, and 38% of irrigators were willing to take risks. Generally, irrigators felt their health was good to excellent (Table 3). Finally, 50% of irrigators used all information sources available to them when making farm decisions (Table 4).

2. Farm characteristics:

- The area of crops grown was similar except for vegetables, rice and cotton (Table 5). Average farm size was 472HAs and average entitlement holding was 294ML. Other forms of entitlement include drainage licenses (31%) and stock and domestic licenses (26%) (Table 6). Average 2009/10 water use was 287ML and carryover from 2008/09 averaged 127ML.
- On average farms employed 2.2 full-time people and 71% operate under a whole-of-farm plan. 94% of those surveyed did not intend exiting—but the survey excludes those who already have. 44% had applied for and/or received infrastructure upgrade funding, while 38% had no intention of applying (Table 7). On the issue of buy-back, 59% were not interested in selling water, 21% had submitted a tender and 9% were awaiting decisions. For those who submitted tenders, average volume offered was 391ML at a price of \$2,181/ML. 11% had successfully sold to government an average volume of 367ML and received an average \$1,777/ML.
- With the funds from the sale water entitlements, 48% would retire farm debt, 9% would retire other debt, 25% would reinvest on-farm, 25% would invest off-farm, 25% would like to stay where they were and 6% felt they would leave the area. These strategies were different from state to state.

3. Farm strategies:

- 62% felt farm productive output had decreased over the last five years (Table 8), apparently unrelated to degradation issues (90% indicated no or slight degradation issues on the farm).
- 48% viewed climate change as a non-risk for their farm, while 20% were uncertain. Accordingly, 53% were not actively preparing for climate change on their farms.
- Strategic actions taken over the last five years or intended in the next five years are shown in Table 9. Land purchases may decrease by 7% and selling may increase by 2.5%. Irrigated area is set to increase by about 4% across all states, and continued changes to production mix are likely. Further investment in irrigation efficiency will remain significant, but decrease.

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- Table 10 summarises where irrigators have invested in infrastructure. Generally, except for pivot irrigation, irrigators in all three states have invested similarly to improve their water use.
- An alternative strategy may be shifting to organic production. Of those surveyed, 7% produced organic crops with an average of 18HAs under production. The mean organic premium received was 3% and fruit (36%), cereal (25%) and grapes or vegetables (16%) were the most predominant organic crops.

4. Water trade:

- 28% of irrigators had engaged in entitlement trade at some point, and for 78% of irrigators their first trade had been a sale. Very few irrigators had traded water entitlements more than once and the details for multiple trades appear in Tables 11 & 12.
- When asked if a cap had ever prevented a trade, 18% of irrigators stated yes. The response was similar across states, indicating wider problems than the Victorian 4% cap rule.
- Allocation trade had been undertaken by 71% of irrigators, split equally between buying (47%) and selling (53%). 44% would describe themselves as a net allocation buyer, 44% as a net seller and 12% as both. Both buying and selling activity could also be split one-third each between early, middle and late season activity.
- Allocation trade frequency for 2009/10 is summarised in Table 13, but no-one provided detail for any more than 3 trades (Table 14). First trades occurred on average in December, and subsequent trades within a 2-month distribution. The shift between selling and buying across multiple trades is also interesting, and appears to be more important for South Australian irrigators.
- Several motives for allocation trade at different times during a season were tested. The responses to these questions appear in Table 15. The low response rates made comparisons difficult across states, but it was expected that different issues would affect different states.

5. Alternative Buy-back approaches

- Table 16 shows the three forms of alternative water trade products suggested to enhance the buy-back program, and the responses for each category. As shown, nearly one-third of irrigators agreed with these products as an alternative, and thought they would participate if offered the opportunity.

6. Attitudes generally

- Finally, we asked for responses to a range of questions around farming lifestyle, family, the environment, water trade and rivers. The responses are summarised in Table 17.

Further analysis of this data is being conducted at present, but we hope that these results provide useful insights for everyone involved. Again, we are very grateful to all of the irrigators who took part and we hope that you will agree to participate in further research.

The tables are shown below. The notation of N represents the number of respondents in each category.

Table 1: Education and Marital Status

Education	N	Percent	Marital Status	N	Percent
To Year 10	153	16%	Married/Partner	832	88%
Year 10-12	495	52%	Separated/divorced	41	4%
TAFE	116	12%	Widowed	19	2%
University	182	19%	Never married	54	6%

Table 2: Income Sources and Levels

Farm income	N	Percent	Off-farm income*	N	Percent
Refused	320	39%	Refused	0	0%
\$0 or loss	150	18%	0%	252	27%
<\$20,000	140	17%	<20%	142	15%
\$20-\$40,000	70	8%	20-40%	113	12%
\$40-60,000	35	4%	40-60%	106	11%
\$60-80,000	34	4%	60-80%	62	7%
\$80-100,000	82	10%	80-100%	253	27%
>\$100,000	0	0%	>100%	0	0%

*As percentage of household income

Table 3: Risk and Health Profiles

Risk Profile	N	Percent	Health profile	N.	Percent
Totally unwilling	87	9%	Poor	22	2%
Somewhat unwilling	128	14%	Fair	104	11%
Neutral	374	40%	Good	302	32%
Somewhat willing	223	24%	Very good	346	37%
Totally willing	134	14%	Excellent	172	18%

Table 4: Sources of Information

Info source	N	Percent
Consultants	75	8%
Government agency	66	7%
Field Days	14	1%
Electronic media	22	2%
Newspaper(s)	154	16%
Neighbour	28	3%
Family	59	6%
All of the above	461	49%

Table 5: Land Use & Crop Characteristics

Variable	N	Percent	Mean HAs	Min	Max
Irrigated hectares	946		1449	0	3500
Dryland hectares	946		327	0	10000
Cereal (HAs)	946	36%	57	0	2975
Pasture (HAs)	946	22%	20	0	1500
Grazing (HAs)	946	37%	45	0	1500
Fruit (HAs)	946	16%	4	0	550
Grapes (HAs)	946	24%	7	0	569
Vegetables (HAs)	946	3%	1	0	195
Other (HAs)*	946	12%	10	0	1215

Includes rice, cotton and other seed crops

Table 6: Water Entitlement Holdings (ML)

Entitlement type	N	Percent	Mean	Min	Max
High security irrigation district	946	72%	254	0	6300
Low security irrigation district	946	47%	433	0	12000
High security private diverter	946	11%	40	0	8100
Low security private diverter	946	7%	29	0	5000
Groundwater	945	13%	83	0	7000
Other entitlement	945	7%	22	0	4000

Table 7: Exit and Infrastructure Grant Uptake Results

Exit Grant	N	Percent	Infrastructure Grant	N	Percent
No	894	95%	No	364	38%
Considered	4	0.4%	Considered	19	2%
Applied	27	3%	Applied	142	15%
Received	21	2%	Received	421	45%

Table 8: Land Productive Output Perceptions over last 5 Years

Productive change	N	Percent
Strongly decreasing	418	44%
Decreasing	172	18%
Neutral	223	24%
Increasing	87	9%
Strongly increasing	46	5%

Table 9: Future and Past Management Plans

Strategy	Last 5 years	Next 5 years
Purchase water entitlement	25%	14%
Sell water entitlement	32%	14%
Purchase farm land	22%	14%
Sell farm land	9%	12%
Increase irrigated area	14%	18%
Decrease irrigated area	45%	10%
Change production mix	52%	40%
Increase irrigation efficiency	72%	54%

Table 10: Irrigation Efficiency Investments

Technology	Percent	Mean HAs
Laser levelling of paddocks	60%	174.45
Water re-use/recycling	45%	135.87
Drip or overhead sprinklers	44%	
Micro or low-use spray	36%	12.52
Flood irrigation	35%	
Travelling/movable pipes	7%	
Centre Pivot	5%	7.96
Other	14%	

* Percentage totals may not converge to 100% due to multiple investments per farm.

Table 11: Entitlement Trade Detail

Number of Entitlement Trades:	Sell	Buy	Volume (ML)	Price (\$)
One Trade	30%	70%	301	\$1,376
Two Trades	65%	35%	192	\$1,198
Three Trades	55%	45%	180	\$1,116
Four Trades	44%	56%	230	\$1,254
Five Trades	36%	64%	288	\$1,018

Note: These percentages are for those who traded in entitlements only. 72% of irrigators in the sample had never traded in entitlement water.

Table 12: Allocation Trade Frequency in 2009-10

Number of Allocation trades	N	Percent
Zero	167	25%
Once only	103	15%
Twice	64	10%
Three times	39	6%
Four times	26	4%
Five times	35	5%
More than five times	235	35%

Table 13: Allocation Trade Detail for 2009-10

Allocation Trade #:	Sell	Buy	Mean Month	Volume (ML)	Price (\$)
One	50%	50%	December	128	\$243
Two	11%	89%	January	121	\$213
Three	54%	46%	February	111	\$114

Note: These percentages are for those who traded in allocations only. 25% of irrigators in the sample did not trade allocation water in 2009-10.

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Table 14: Responses to early, middle and late allocation trade motives*

Statement:	SD	D	N	A	SA	R
<i>Early selling statements:</i>						
I had surplus water early this season that I could sell	7%	22%	10%	41%	14%	6%
Possible restrictions on trade out of district worried me	6%	43%	9%	22%	14%	6%
<i>Early buying statements:</i>						
There are no financial constraints on my capacity to buy water	37%	27%	9%	20%	6%	1%
I feel more secure if I buy allocation water early	1%	14%	14%	53%	14%	1%
<i>Middle selling statements:</i>						
Allocations were too low to crop, so I sold what water I had	5%	28%	19%	29%	14%	5%
Early prices are better, but I didn't sell then, so middle season prices are OK	1%	16%	24%	49%	5%	5%
I prefer to wait until allocation and my annual cropping levels are certain	4%	17%	7%	54%	13%	5%
<i>Middle buying statements:</i>						
I wait for prices to reduce before buying in the market	0%	13%	10%	39%	34%	3%
My previous purchase was cancelled, so I had to buy again	28%	52%	3%	6%	3%	7%
I don't have the financial capacity to buy what I need early	4%	24%	7%	45%	16%	3%
The season turned out hotter/drier than expected, so I needed water	3%	34%	16%	31%	10%	4%
The allocation did not provide as much as I had anticipated	4%	37%	10%	33%	10%	4%
<i>Late selling statements:</i>						
I sell to late demand for carryover water	8%	43%	18%	20%	2%	8%
I can lose carryover between seasons, and sell to avoid that	3%	28%	12%	37%	12%	8%
I plan conservatively, and only sell when I have sufficient for my crop	5%	12%	3%	38%	37%	5%
<i>Late buying statements:</i>						
I needed to buy water to balance my water account	7%	30%	3%	37%	19%	4%
I like to carryover some water into the next season	1%	4%	7%	56%	30%	1%
I have financial constraints, so I always buy as late as possible	4%	37%	15%	33%	8%	3%

* The categories were strongly disagree (SD), disagree (D), neutral (N), agree (A), strongly agree (SA) and refused/did not answer (R).

Table 15: Irrigator's opinions on Participating in Alternative buy-back strategies

Alternative strategy:	SD	D	N	A	SA	R
Allocation trade —involves seasonal purchase of allocation water by the government to provide environmental flows	28%	26%	12%	27%	5%	2%
Entitlement leasing —involves the transfer of the allocation from your water account to government for a (lengthy) fixed term	27%	31%	11%	26%	3%	3%
Options contracts —government pays a premium to secure an option to purchase your allocation under certain agreed conditions. The contract includes a price paid by government if/when the contract is executed by them in a season	23%	26%	13%	29%	4%	6%

Note: Irrigators who responded to these alternatives in the SD or D categories were not disagreeing with the concepts as such; rather they were simply not agreeing to participate in them if made available.

Table 16: Irrigator’s responses to attitudinal statements

Attitudinal statement:	SD	D	N	A	SA	R
Farming is the only occupation I can imagine doing	1%	17%	8%	48%	26%	0.5%
Family should be an integral part of the farming enterprise	3%	24%	6%	47%	18%	0.3%
I usually follow the same strategic approach to allocation trade each year	3%	27%	12%	47%	11%	0.4%
It is important to maintain water in rivers for future generations	4%	30%	10%	41%	12%	1%
Financial gain is the only reason for my involvement in farming	11%	51%	8%	24%	7%	0%
I am generally a risk taker when it come to allocation trade	3%	29%	8%	44%	15%	0.2%
An annual maximum return from my property is my most important aim	1%	20%	8%	55%	15%	0%
I believe water trading has been a good thing for farming	9%	40%	7%	37%	7%	0%
My land is just something I use to generate an income	0.8%	2%	7%	60%	16%	0.4%
My family is fully committed to farming as an occupation and a way of life	4%	39%	9%	34%	13%	0.6%
Trading water allows me to cope with seasonal uncertainty	1%	7%	4%	64%	23%	0.3%
Covering the fixed water access expense is important when I trade	6%	29%	6%	37%	22%	0.2%
Improving my farm is important because it will increase its future sale value	3%	33%	13%	36%	10%	4%
I am open to new ideas and alternatives about farming	0.4%	13%	17%	55%	13%	2%
I could never imagine living anywhere other than in this area	3%	12%	10%	62%	11%	2%
I view my farm first and foremost as a farming enterprise	3%	14%	10%	61%	12%	1%
The wider community can expect landholder to adopt recommended practices that lead to improved environmental outcomes	0%	0.6%	0.9%	55%	44%	0%
My quality of life would decline if I moved from this farm	0.3%	4%	2%	67%	26%	0.1%
Knowing about new technology that becomes available is important to me	0%	4%	2%	64%	30%	0.2%
My right to do what I want with my property has to be balanced against wider environmental concerns	2%	5%	7%	55%	29%	2%
Balancing my water account during a season requires me to trade water	7%	24%	11%	48%	6%	4%
Looking after the land is more important than other farming issues	37%	41%	9%	10%	0.4%	3%
We would be willing to have our seasonal allocations reduced to ensure sufficient water for the environment	13%	39%	11%	33%	2%	2%
Most irrigators think increasing environmental water flows is a good thing	2%	6%	6%	54%	29%	3%
Governments should avoid changing trading rules or conditions during the season	3%	16%	14%	49%	10%	7%
I would like to buy or develop enough land for my family to remain or become farmers	2%	9%	4%	70%	14%	1%
I am well informed about seasonal allocation changes	14%	23%	14%	39%	8%	2%
It is essential to make allocations to the environment otherwise irrigation will not be long-term sustainable	3%	12%	10%	58%	14%	2%
I closely track water market prices to obtain maximised trade outcomes	3%	22%	10%	53%	10%	3%
I want to continue farming for as long as I am able	2%	7%	5%	71%	13%	1%
Farmers should encourage family members to be involved in the family farm	4%	34%	14%	39%	6%	3%
I am well informed about the trading rules in my district	11%	50%	12%	21%	3%	3%

Note: some percentages may not tally to 100% due to rounding