

Trust in the trust! Basin reforms and the Renmark Irrigation Trust

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Abstract

The changing policy narrative in Australia's Murray-Darling Basin (MDB) is threatening to place concerns about conservation and responses to climate change ahead of the stated interests of food producers and rural communities. This paper examines the evolving outcomes for producers, the community and the ongoing policy debate. In Renmark, one of the principal communities within the South Australian Riverland where producers are overwhelmingly reliant on irrigation, this shift in government rhetoric and policy challenges the producers' views of their long-term role. The changes threaten the existence of the Renmark Irrigation Trust (RIT), which provides water to its member irrigators (known as ratepayers) and maintains the pumps and pipes servicing them. Landscape change is one recent outcome, via an exit package banning irrigation for at least five years. The paper's focus is upon the operation of the RIT under the changing circumstances and on how new possibilities for trading in water may affect this institution and its members.

Keywords: water policy, irrigators, Murray-Darling Basin, management.

1 Introduction

This paper examines the behaviour of the Renmark Irrigation Trust (RIT), a collaborative water delivery organisation within Australia's Murray-Darling Basin (MDB), operating at a time of policy reforms which have as their central tenet the principles of market theory [1]. The question is whether market reforms fundamentally challenge the existence of the RIT. This question is examined within the context provided by Elinor Ostrom's proposition that while



collaboration is essential over a common resource such as shared water delivery infrastructure, regional parties “... organize themselves into special-purpose enterprises” [2], so that the emergence of higher layers of control, at greater levels of aggregation can change the array of costs and benefits which underpin the regional organisation. Ostrom follows the logic first laid out by Coase [3] that the costs of governing the potential for opportunism, the so-called transaction costs, are lowered by devising institutional arrangements to govern the interdependence as an alternative to market transactions, conducted ‘at arm’s length’ and governed by competition [4].

Costs are incurred in undertaking this activity, which are the so-called transaction costs, because the sunk investments in collective water delivery and those in individual water use mean that there is an interdependence such that costs can be imposed opportunistically, without compensation (or benefits extracted without payment). Ostrom [5] argues that these so-called externalities will lead to sub-optimal outcomes unless “some individuals in a game do *not* follow the prescriptions of full rationality.” Cooperation can lead to ‘higher level’ outcomes [6, 7].

As explained below, the RIT represents a ‘high level’ cooperative outcome in that it delivers water cheaply [8], without significant loss and it allows its members (ratepayers) to commit to the long-term investments needed for high value, perennial crops. This long-standing arrangement is being challenged by recent developments in two ways: by market-based reforms and by the interceding of rules imposed by the Australian government which “may be justified only by the overwhelming importance of the externalities that remain after localized and decentralized collectivizations” [5].

Crane and Dollery [9] referring to Ostrom’s views, stress the importance of interpreting the situation as a “system of nested rules ... or an institutional hierarchy.” This paper makes three particular advances. Firstly, the current literature discusses the problem as one of “debates about how property rights are attenuated” [10]. This reasoning is extended to the external costs which fall within the Renmark region and so, in principle, these costs could be governed by the RIT so long as the proposed Basin-wide reforms do not count fundamentally against it doing so. Secondly, this paper focuses on water use within South Australia. While many researchers recognise the important differences among the water policies of the Australian states, their focus is almost exclusively on the upstream States where the great majority of water is used. South Australia is different [10, 11]. It is at the end of the river; it capped consumptive extractions in 1969; it has a “conservative allocation regime” [9]; and it has a distinct administrative and institutional history into which the RIT fits. Thirdly, the paper argues that the RIT was not formed on the basis of a rational assessment of costs and benefits, and that it might better be seen as a spontaneous creation of its members, based on their tacit knowledge and implicit understandings [11, 12].

The empirical evidence presented has been collected in the initial phase of research being conducted in collaboration with the RIT, the Premier’s Social Inclusion Unit, and Primary Industries and Resources South Australia (PIRSA), which is a South Australian government agency. The research has involved a



series of in-depth interviews with 24 RIT ratepayers and 12 regional stakeholders, in addition to a review of historical documents and Board minutes.

The paper is organised as follows: Section 2 briefly describes the history and development of the RIT; Section 3 discusses recent policy developments in Australia; Section 4 then presents the empirical evidence regarding four major issues dealt with by the Trust *viz*, the cumulative problems associated with allowing individuals to sell their water entitlements, two separate attempts to re-allocate water among the Trust's ratepayers and the on-going issue of national public assistance to irrigators being premised on efficiency gains that enable water to be returned to the river. Section 5 draws together the conclusions about what these mean for a collaborative water delivery institution.

2 The Renmark Irrigation Trust in a time of water scarcity and policy change

The RIT is a local collective with 117 years of experience in owning the pumps and pipes that deliver water to its members [14]. The Trust may provide up to 47 GL of water per annum to its members' properties, who irrigate their holdings with this water, at a cost to its ratepayers set by the Board and within the confines of its own Act of the South Australian Parliament [15]. RIT membership extends to all who hold land in the areas serviced by the Trust's pumps and pipes, being 4,700 hectares under irrigation on 852 farms belonging to 650 ratepayers. This means the average scale of operation is small, less than 6 hectares per farm. The RIT operates in the immediate vicinity of Renmark, the largest of five towns in the South Australian Riverland region which has an overall population slightly greater than 30,000, produces one-quarter of Australia's wine grapes and 30 per cent of its citrus fruit, with all producers of these crops being dependent on irrigation water drawn from the River Murray [16]. The River is the lower section of the vast but mostly flat and dry Murray-Darling Basin (MDB), containing the country's three longest rivers, the Darling (2740 km) and the Murrumbidgee (1690 km), which both flow into the Murray (2530 km). Renmark, 250 km north-east of the state capital Adelaide, is 460 km from the terminus of the system.

Renmark began as an irrigation district in 1887 when the Canadian Chaffey brothers, in conjunction with the South Australian colonial government, first installed pumping facilities [17]. The RIT was established by Act of the South Australian Parliament in 1893 to take over the pumps and pipes when the initial venture was bankrupt [14]. It was the first of ten irrigation trusts in South Australia. The choice of a trust arrangement was typical of South Australian governments [18] and its Board has always comprised prominent local residents elected by irrigators.

In its early years, the RIT was deeply involved with the region and its ratepayers and not merely because it delivered water. It was originally vested with the powers pertaining to a South Australian District Council and so had responsibility for all manner of civic duties from establishing and operating a cemetery, through pest control, infrastructure and waste disposal. It also supplied



domestic water and electricity to the district and to the town of Renmark. While other South Australian regions “enthusiastically took up the District Council Act” [19], in Renmark this unusual role of the Trust emerged and persisted until 1960 when the District Council of Renmark was formed and the Trust “finally withdrew from Local Government affairs” [14].

The irrigation-related activities of the Trust have also varied through time, especially as the infrastructure that it owns has successively been installed, extended, depreciated, become obsolete and then replaced. Historically, capital financing has come predominantly from the rates paid by irrigators served by the Trust, but a common sequence has been for the officers of the Trust, i.e. its Water Masters or engineers, to identify major issues involving capital outlays, for the Board to consider the matter repeatedly while lobbying ratepayers and government for the funds required, eventually to succeed by a cocktail of funding sources including ratepayers, banks, and government loans and grants (with, slightly less often, government loans being transformed to grants at a later date).

That the Trust is a highly water efficient organisation, delivering water to its members on order and with virtually no loss (measured by the CSIRO at only between 2.2% and 3.45%), is widely recognised and understood to be the result of investing in underground piping, in large-scale centralised pumping, telemetry, quality control and water on demand via on-line ordering [8, 20]. The same is not true of water delivery in many upstream regions where water users gain access to the river directly and individually and often by means of open channels dug from the river to their sometimes distant land holdings [21]. Such arrangements divert water only with significant losses and increase the difficulties in monitoring water use and enforcing limits, all of which counts against careful, sustainable husbandry of the resource.

In the histories of the RIT there are no definitive statements of its *raison d'être* other than general terms about “the interests of the landholders who had taken up and developed irrigation land” [14]. The consultants to the RIT's current business plan also formed the view that the “Trust's vision and mission is not defined” [22].

This paper focuses on the costs and benefits that might explain why the Renmark people created and maintain the Trust. Centralised pumping offers some obvious efficiencies arising from economies of scale and from professional management of the infrastructure. But why is an organisation like the RIT needed? The question may be posed like this: given there are objective benefits from aggregating pumping and pipes, why are these delivered by a collaborative Trust and not under some other arrangement, particularly by a market relationship whereby the water delivery agent and the irrigator are separate entities and their inter-relationship is mediated by the potential to switch partners, i.e. by the competitive pressures created by potential rivals? The argument, proposed originally by Coase [23, 24], is that there are costs in using such a market arrangement, arising from the potential for opportunism, upon which institutions such as the RIT can economise. The idea is that in the transaction for the irrigation service of water delivery, the party that controls the



pump and the party that controls the land become locked into a ‘bilateral monopoly’ because they must undertake “idiosyncratic investments” with high “asset specificity” [24]. In other words, the water delivery agent must make sunk investments which rely on continual use of its infrastructure by irrigators. Irrigators must make sunk investments which rely on the ability to access water continuously. This leaves RIT ratepayers exposed to the potential opportunism of the supplier of irrigation services, which might for example, after the land is bought, skimp on maintenance or upgrades or extensions or might exploit its monopoly power by pricing in excess of marginal costs. The irrigation service provider is also exposed to potential opportunism by growers who might, for example, respond to temporary low crop prices by choosing not to irrigate in any season, leaving the owner of the pipes and pumps with the losses associated with excess capacity. The parties will incur transaction costs to deal with these potential problems and, sometimes, a cheaper alternative to a market organised relationship is an institutional arrangement, based on continuing relationships among the parties. In short, to deal with the interdependencies of sinking investments into state of the art water delivery and into high-value added vineyards and orchards, and institutions using “formal and informal rules” [9] can be a cheaper means of proceeding than relying on market competition. If the RIT exists because of the costs of using the market, then market-based reforms are antithetical to its existence.

But does the Trust exist because it is rationally superior? Is it based on what Ostrom has called the “calculus of consent” [5]? The Trust emerged from the crisis of bankruptcy and there is no evidence of alternatives to the Trust arrangement being considered. Moreover, self-interested objectives are unstated in the histories of the RIT and nowhere is its *raison d’être* stated in anything other than general terms about “the interests of the landholders who had taken up and developed irrigation land” [14]. This conception of the RIT emerging spontaneously also fits with the very broad historical roles the Trust assumed, anomalous in South Australia but unsurprising it seems to the participants. Respondents were asked about their current understanding which is that the Trust must deliver water efficiently and provide a collective voice for ratepayers but there is no consensus view about why it exists or what alternative arrangement, such as a market relationship is not preferred. The consultants to the RIT’s current business plan also formed the view that the “Trust’s vision and mission is not defined” [22].

This all suggests that the focus on individual incentives and the Trust as a rational response fails to capture its essential elements. It says the situation of the RIT is best understood by means of Polanyi’s notion of “spontaneous order” [12], based on tacit understandings. The RIT relies on the “norms, networks and ties which bind these associates together” [26]. Rather than being the outcome of a rational process, the Trust is the result of “an act of grouping which originally passed the understanding of it agents ...” [13]. This view has important implications for the likely impact on the RIT of market-based reforms and that is the subject considered below.



3 Water policy reforms in Australia

Annual diversions from the MDB have grown significantly to 12 900 GL, from a median inflow of a little more than 25 000 GL and a long term annual average water availability of 23 300 GL [1]. The long-term balance between usage and availability, as measured by the coefficient of variation for water flows, has become precarious in the upper reaches of the Basin. But until recently the hydrology of the Basin and storages along the river have provided low levels of variation for the system as a whole and particularly for the lower reaches [1]. The recent unprecedented drought undid that relative security of supply at Renmark. The period 1999–2009 was the driest period in the past 114 years; the period 1997–2006 saw a 50% reduction of run-off below the long-term mean for the southernmost parts of the MDB; and 2006–07 was the driest year ever recorded in the Basin, 2007–08 the sixth driest and 2008–09 the third [1, 27].

The drought has been widely seen as an immediate crisis across the Basin but the need for reform to restrict consumptive diversions had long been recognised. In this regard it is also important to understand that the water allocation policies of the South Australian government differ from those of other states in two pertinent ways. Firstly, while all other states in the MDB increased their licensed allocations to irrigators in recent years, South Australia capped its water use in 1969. The cap has made water for irrigation relatively scarce and increased the incentive for it to be conserved, leading to the piping of water delivery, as by the RIT and the introduction of technologically-supported efficiencies. Secondly, while the upstream states have created irrigation licences with different degrees of security, allowing them to adjust annual allocations to some irrigators in some years [10], South Australian irrigators have all had a single security licence and had received full allocations every year until 2006–07 when allocations fell to 60%. They were 32% in 2007–08 and 18% in 2008–09.

The current phase of systematic, basin-wide reform began in Australia before the recent drought, in the early 1990s with the pro-market, National Competition Policy [1]. Central to these reforms has been the creation of individual property rights so that their efficacy relies upon distributed, self-interested decision-making by many individual irrigators as to where and how water will be used. The idea is that if water can be bought and sold freely, it will be allocated to its most productive use. These policy principles have been endorsed repeatedly by the Australian government through the Council of Australian Governments (COAG), a body comprised of the nine State, Territory and national governments which operates as the Murray-Darling Basin Ministerial Council. The reforms have brought the Basin within the purview of the National Water Commission [28] and the National Water Initiative (NWI), which was signed by federal and Australian State governments between 2004 and 2006 and aims at sustainable use by application of utilitarian policy perspectives [29]. It also established the Murray-Darling Basin Authority (MDBA), under the Commonwealth Water Act (2007). The MDBA is charged with reforming and thereby reducing consumptive water allocations so as to achieve environmental gains and sustainability in water use. The assignation of property rights alone will not

achieve these ends because individual decision-making does not take account of the costs those decisions impose on others.

The reforms have important implications for the RIT, which had previously held the water licence of its ratepayers, as granted by the South Australian Government, but is now required to devolve the single licence into multiple, individual licences. This has been achieved by amending the Act of Parliament which governs the RIT [15]. The Trust must now accede, “within a reasonable time” to any request from their ratepayers that their water allocation be “permanently transferred” to “a person who is not a member of the trust” (RIT Act, Division 3, sections 31 and 34). This is an important change and we take it is examined further in the analysis in the following section.

These recent policy reforms build on a much longer history. During the 19th century, repeated policy conferences were held among the (then) three colonial governments most dependent on the MDB (i.e. South Australia, Victoria and New South Wales). These did not settle the disputes and governing the Basin became a significant issue in the federation of the colonies in 1901 [30]). While the MDBA will determine future diversion limits, currently and historically each state government “has retained superordinate legal status over water resources” [9]. However, it is the national government, using COAG arrangements, which is driving the recent reforms, using their financial strength to do so and aiming “to promote national sustainable development in the long term by telling the States what to put in their laws” [31]. In the case of the MDB reforms, this is done by using funding through its Water for the Future program, a \$12.6 billion national program including, within the MDB, \$5.8 billion for improving efficiency in water use and delivery and \$3.1 billion for purchasing licensed entitlements from willing sellers. As shown above the least efficient water delivery mechanisms are upstream of Renmark (and so outside South Australia) so the program has favoured irrigators with the least efficient water delivery systems, as it is they who are most able to return water. This theme is taken up in the next section.

4 The impact of market-based policy on the behaviour of the RIT

The behaviour of the RIT in response to the market-based reforms is investigated using four recent events: firstly, the devolution of the once single, RIT water licence; secondly, two attempts of the RIT Board to alter the internal water allocation rules away from strict and simple equity; and, lastly, the position of the RIT in response to the assistance programs provided under the policy reforms.

The creation of individual, tradeable water rights for all RIT ratepayers has favoured the RIT during the recent drought because its ratepayers purchased more water than they sold. However, it is important to understand that, when compared with the life cycle of the investments by growers and the RIT, the drought was relatively short. If water shortages become persistent and prolonged, the likelihood of a net outflow of water from the RIT becomes greater. This is because, while growers with highly committed investments will suffer short-term



losses and buy in water to maintain plantings, prolonged water shortages mean chronically high water prices and that increases both the benefits of selling and the costs of buying water so that there are greater incentives to leave and fewer to remain. And the problem gets worse, the more that leave. There is the prospect of 'death by a thousand cuts' whereby each exiter adds marginally to the costs of those that remain but the accumulation of exits makes it impossible to continue. This is a prospect which exists because of the national policies and the conforming State policy changes.

The behaviour of the Trust shows that it recognises this problem arising from the market-based reforms. Even before the planned lower diversion limits are announced by the MDBA, the Australian Government has been an active water buyer, purchasing water to generate environmental benefits. To encourage irrigators to sell, the government instigated the Small Block Irrigators Grant Exit Package, under which qualified growers receive a \$150 000 grant (on top of the price they receive for the water) to sell their water rights permanently to the government provided they cease to irrigate their land, which cannot then be used for irrigation for five years after the grant is made [32]. It has been estimated that as many as 8% of RIT ratepayers have taken the exit package (pers. comm. with RIT) and the Trust has negotiated compensation payments that provide five times the annual maintenance fees for each exit package grant made. This has created a holding pattern but it is not a permanent solution [33]. There also needs to be further investigation of the net amount of exits as there may be irrigators who have sold all their water but who still pay their delivery rights. This requires further investigation of RIT records.

The impact of the market-based reforms can also be seen in two recent instances when the Trust has attempted to alter its long-standing water allocation arrangements to create a net benefit for its ratepayers, one before and the other after the devolution of licences. Historically, the rules of the RIT have stressed equality, not merely through the formal equality of each member's secret votes but also in that each member's share of the Trust's total water entitlements (and the rates they pay) have been set in direct proportion to the extent of their serviced land, virtually all of which was continuously used for a variety of perennial crops.

During the 1990s, it was thought by many, including by the State government's extension officers, that the Trust and the region were vulnerable because of the preponderance of small-scale operations and that they would be more secure if a larger scale agri-business firm could be attracted. If that were accomplished within the capacity of the Trust's existing infrastructure and licence, it was understood that rates would be reduced for all users. So a strategy emerged to insert a larger scale business onto some easily serviced land at Renmark. To provide sufficient water for the new entrant the Board decided to reduce the allocations to each of its ratepayers from the existing 11 ML/ha to 9.2 ML/ha in 1988. The change was not put to a plenary meeting but was decided by the Board and enacted against some vocal opposition. The opposition failed, despite the resentment, which still lingers in the minds of many of our respondents, possibly because the Board was right in its estimation that



ratepayers did not need (they certainly had not used) all of the 11 ML/ha they could receive under the Trust's licence, as shown by the Trust's pumping records. The average amount pumped since 1993–4 was approximately 32GL pa while the total entitlement was 45 GL p.a. [8].

The second instance, in 2006, had a very different outcome. The same RIT Board tried again to alter the water allocation as an initial response to the unprecedented drought. This time the individual irrigators had nascent rights to the water. The Board wanted to reallocate on the basis of the water requirements of each grower's crop, in effect meaning that grape growers (who can crop at as little as 6ML/ha) would give up water for orchardists (the vast majority of which are almond growers who need 13 ML/ha and citrus growers who need slightly less). A plenary meeting of ratepayers saw the proposal clearly and angrily rejected. Most members of the Board were voted out at the next AGM and the whole idea was scrapped. When the Board controlled the licence it was able to re-allocate the water; after the market reforms each ratepayer exercised their individual right and countermanded collective action.

The final piece of empirical evidence confirms this point. It concerns the Australian Government assistance that is available to irrigators to encourage them to reduce their diversions and return water to the river. This policy is also based on market theory, specifically the notion that there is a significant market failure in the form of external costs imposed on the environment because of over-extraction. On this basis, funding has been made available for irrigation infrastructure upgrades which will reduce water losses in delivery. In South Australia, this funding is provided through the Private Irrigators Infrastructure Program for South Australia (PIIPSA) and is premised upon "improving the efficiency and environmental benefit of irrigation ... (i)n exchange ... applicants will transfer water entitlement to the Commonwealth ... to use for environmental purposes" [34]. However, the assistance has been taken up only slowly because few South Australian projects have met the Program's requirements. Of the \$110 million available since 2009, only \$14.4 million has been spent by 2012, none of it to assist the RIT. The situation has caused widespread anger among South Australians, whose successive Premiers threaten legal action on the basis that the funding criteria fail to reflect "the water efficiencies made by South Australian irrigators over many years" [35]. A federal senator from South Australia has said South Australia is being treated as a "poor cousin" because the policies fail to recognise existing efficiencies and are "unfair and unacceptable" [36]. Again, the reforms based on market theory are viewed as failing the RIT.

These four instances show a collective organisation responding to market-based policy change. This amounts to considerable evidence that the policy changes emanating from the higher levels of nested governance have created an array of private costs and benefits which count against and in some cases appear to threaten the RIT's operation. The conclusion considers the implications.



5 Conclusions

The RIT has played a significant historical role in the Renmark region and was once its *sine qua non*, but its role has long been narrowing. Other governance institutions have emerged. Initially, regional functions were passed to local representative bodies and the RIT focused on delivering water to its members. This has been its principal function for many decades, but its role is now threatened by major policy changes. For example, the State government has capped water diversions, and more recently, national governance structures have emerged, which cover the Murray-Darling Basin as a whole and act according to market precepts. These latest, market-based reforms challenge the on-going operation of the Trust because they change the costs and benefits facing individual ratepayers. The reforms seem to confirm Ostrom's point that higher levels of governance can upset the ability of regional organisations to govern interdependence among locals.

An alternative construction sees the RIT as existing in ways which are more than the self-interested calculations of its ratepayers. Considerable evidence for this view can be found in the history of the RIT and in the views of some of its current ratepayers. The RIT is not based upon rational self-interestedness but is best understood as an institution created from tacit knowledge and dependent on unstated understandings. It is not apparent, individual gain but implicit, collective commitments to regional development that have underpinned its historical success. Even though the current policy reforms threaten the array of individual costs and benefits relevant to the RIT, it is highly likely that it will persist because it has a basis different from the calculus of self-interest.

Further research by the authors will follow the evolving rules, norms and networks of the RIT, directing the work to understand how sustainability and efficiency in water delivery is not a competitive, zero sum game. The exit of some irrigators already means there is an emerging problem of growing over-capacity in the RIT network, and the research will consider whether there can be a collaborative response to the rising costs of underused pipes and pumps. It will also focus on water allocation, in particular the enforcement of limits to each user's allocation: how is water policed when it becomes scarce and how is that different from when it is plentiful? Finally, it will track reactions to the changing landscape: what is the human impact of the previously complete cover of irrigated blocks becoming fragmented and interspersed with deserted, semi-arid patches? Those are important issues that merit further consideration in the Australian policy debate.

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