

A National Plan for Water Security: Pluses and Minuses^[1]

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Introduction

This was a hard paper to prepare. The debate over water in Australia is overwhelmed by arcane technical and political arguments, convoluted and shifting allegiances, and mammoth journalistic commentary. That does not make life easy for observers and commentators. A couple of drafts of this paper have already been discarded after being overtaken by events.

One thing can be said for the authors of *A National Plan for Water Security* released on 25 January 2007. They are not claiming spurious accuracy for their major proposals. As subsequently emerged, the ten-point *Plan* to spend \$10 billion over ten years was prepared in haste, well away from the troublesome gaze of Treasury and Finance officials and the experienced eye of the Murray-Darling Basin Commission.

Nevertheless, by accepting the case for limited buyback of irrigation licences following decades of political infatuation with irrigation, the *Plan* advanced by the Commonwealth represents a decisive and overdue shift in the overall direction of irrigation policy. This should be conceded even by those instinctively suspicious of grand gestures and central control of water policy by the Commonwealth Government with inevitable disruption to the established arrangements involving the states, however inadequate existing administration may be.

Sadly but predictably, some irrigators and their political representatives immediately resisted this welcome part of the *Plan* by raising unreasonable fears about compulsory buyback. Compulsory buyback is a necessary residual power for any buyback scheme to protect against unreasonable holdouts. Without some residual power for compulsory acquisition, buyback would result in stranded irrigation infrastructure and a patchwork quilt of diversions. In any case, the Commonwealth Government would be legally obliged to pay reasonable compensation even if it were inclined to use buyback powers recklessly, which is hardly likely because of political opposition from irrigators and irrigation communities.

Opposition to buyback has become a shibboleth in irrigators' organizations and irrigation communities. The economic effects of even small reductions in irrigation are often exaggerated. Unfortunately, some leaders of farm organisations still choose to ignore the damage caused by treating common property resources as open access, including to irrigators themselves. Their influence is reflected in the way the case for buyback is clouded in the *Plan* by linking buyback to adjustment programs rather than admit that buyback is the cheapest way of dealing with over allocation.

How buyback is handled in the face of influential opposition is the major challenge confronting the *Plan*. Buyback could be fudged. Over-allocation is frequently discussed

without much thinking about its precise meaning. The problem is in several parts. Governments issued too many entitlements to use water for irrigation, especially in the northern part of the Murray-Darling basin. Furthermore, the processes for converting entitlements to annual allocations are imperfect.

Whether too much water is used for irrigation depends on the value of alternative uses of the water. There are multiple environmental objectives for rivers, with spatial and temporal dimensions that are only crudely reflected in usual estimates of desirable environmental flows. Because environmental objectives such as wetlands, riparian vegetation, avian fauna, native fish and flow-related aspects per se have to be weighted, an already difficult technical problem becomes an even more difficult economic problem.

The next major challenge confronting the *Plan* will be to implement the much larger program of investment in irrigation infrastructure. Government intervention on the scale envisaged threatens to generate substantial economic and administrative costs. Investment in infrastructure will be more cheaply administered for off-farm investment than on-farm investment. Payments by government to irrigators for investments inside the farm-gate send a confusing signal to the irrigation community. Like all input subsidies, this part of the *Plan* will distort on-farm decision-making and is inequitable to irrigators who have acted already in response to market incentives to save water. Bad luck if you have invested in laser levelling, reuse systems or drip irrigation already. The program also ignores the existing market-based network of equipment suppliers and other specialists in irrigation areas who assist farmers design and install irrigation systems.

A new round of subsidies for infrastructure flies in the face of the intention, if not the reality, of post-COAG arrangements that asserted that Australian irrigation should stand on its own feet. How regulators set the prices that rural water authorities charge irrigators would be even more problematic if taxpayers funded major investments in delivery systems. Policy-making has not been helped by the optimism of Professor Peter Cullen of the Wentworth Group who has claimed that profits from irrigation could be doubled and water use halved inside five years. This grossly underestimates the costs of retrofitting off-farm and on-farm irrigation infrastructure, and overestimates prospective returns from high-valued irrigated products. Markets are limited for 'high value' irrigated commodities. Elastic demand prevails for exports of despised bulk commodities like dairy, rice and cotton.

The *Plan* reflects similar wishful thinking about costs and returns from investment in water saving and implies that farmers cannot run their own businesses. According to David Uren (2007) of *The Australian*, Minister Turnbull has supported these comments by Cullen. In Uren's words: "This takes farmers for fools." Gordon and Grattan (2007) report that Minister Turnbull believes that the *Plan* means 'Australia can play a greater role in world food production as water shortages cut farming in China and India.' Both countries are now in a better position to pay for food imports than in the Australian agriculture of my youth, when the Chinese were meant to save the wool industry by each purchasing a wool sock. In the event, the wool industry needed saving from itself.

Journalists are more interested in personalities and power than the minutiae of economic analysis and policy.^[2] Not surprisingly, tensions over administrative arrangements between the states and the Commonwealth dominate media coverage of the *Plan*. Attitudes to this part of the *Plan* are divided between those who think the present situation is so bad that immediate drastic action is required and those who prefer to believe that inevitable mistakes by government should be dispersed among smaller jurisdictions, hopefully allowing an array of experiments and experience to produce a superior outcome.

Veterans of agricultural policy discussion in Australia fall in the latter camp because they are aware of the record of the Commonwealth in administering agricultural policy, especially agricultural pricing, marketing and assistance. For them, talk of independent experts calling the shots in policy has a familiar and disturbing ring. A lot of effort was dissipated in the 1970s and 80s fiddling about with the organisation of statutory marketing authorities, searching for marketing skills and commercial expertise for board members of SMAs, in what proved to be unsuccessful attempts to reform wool and wheat marketing.^[3] The problem was not in finding the right people but flawed economic policy in both conception and application. In fact, the commercial experts chosen proved to be more of a problem than the farmers they replaced. Reform worked better for other agricultural industries when a more rigorous approach was taken to determining the role of government in commercial decision-making.

The lack of logic about the role of government in irrigation policy is the major weakness in the *Plan*. Moreover, considerable administrative confusion would be caused by a Commonwealth takeover of water used for irrigation. Other state-based agencies are involved in water and land management as well as the rural water authorities that manage irrigation, such as Environmental Protection Authorities responsible for water quality and local government responsibilities for stormwater.

Brian Fisher, cited by Uren (2007), summarised the conventional stance of economists on separation of public and private responsibilities in irrigation as follows:

...there is little case for government spending taxpayers' money on irrigation infrastructure. [And] ...it is reasonable for the Government to decide that there is a public benefit from wetlands and red gum forests and that without some government intervention, there would be less of them than there should be.

Unless the ambitions of the Commonwealth Government to reconfigure the irrigation industry through engineering solutions are curbed and the focus of the *Plan* shifts to providing public goods, prospects for this latest in a series of water policy initiatives are bleak. Minuses will be greater than pluses.

The analogy with the Reserve Bank drawn by some supporters of Commonwealth control is flawed.^[4] The administrative task for the RBA is far more important than water policy but the task is less complex, politically and conceptually. The RBA is a research-based professional organisation with a broad spectrum of interests represented on the Board

who would cancel one another out if they attempted to engage in a contest of interests. Not that the RBA has been spared the odd shonk on the Board over the years, and occasional political interference. An Australian Water Board (AWB?) or Australian Water Commission (AWC?) would not keep competing interests at bay and would eventually be embroiled in a contest between groups of irrigators and organised environmental groups to the disadvantage of a broader community interest. And to face facts, the talent pool of suitable staff and Board members for the RBA is deeper. Who are the experts on water policy? All aspects of the debate over water for irrigation and the environment should be informed by technical advice but many require a political solution (Prasser 2007). Whether that solution is determined more effectively centrally or locally is the crux of the argument.

The policy debate and its ongoing deficiencies

Rarely has Australia been in such need of drought-ending downpours. Concern about drought bordering on panic now dominates short-term responses to water policy. A long-term *Plan* is proposed to solve an acute short-term problem. A decent flood would do wonders, hydrologically, economically and politically.

A flurry of quack remedies and howlers have been inflicted on the public by political luminaries and journalists alike. The most persistent mistake in media commentary, which is inevitably reflected in public attitudes, is confusion between water use efficiency and economic efficiency. Ambiguous statistics on water use by various agricultural commodities are thrown about as if they are relevant to either on-farm or off-farm decision-making. Farmers take other factors of production into account when choosing techniques of production and their output mix. This simple insight does not stop a raft of editorial writers and newcomers to the debate like Shorten (2007) fulminating about the rice and cotton industries. Ratbag advice from the suburbs that the rice and cotton industries should be closed down makes rice and cotton farmers beleaguered and over-defensive. Necessary compromises are more difficult to achieve. It is indulgent posturing with adverse consequences because rice and cotton farmers are not politically naïve or powerless. In fact, the opposite is the case because these industries are concentrated in isolated areas and irrigators are influential in some electorates.

What public policy and enlightened environmental advocacy should be about is how much water is available for irrigation, the adverse external effects of irrigation and how those effects are mitigated and rectified? Design, funding and sequencing of environmental programs are the important issues.

A recent variant of the erroneous idea of water use efficiency is mindless calculation of what has come to be known as ‘virtual water’, purporting to calculate the amount of water embodied in products destined for domestic consumption or export. Thank goodness the campaign for a clever country came to nought; otherwise we would be worried about exporting our brains. An obvious fallacy in the discussion of virtual water is that it does not distinguish water falling from the skies or water obtained by irrigation from regulated rivers. Virtual water is yet another blind alley in the discourse on

irrigation policy of absolutely no public policy significance, generating meaningless figures by the ill informed for the ill informed.^[5]

Perhaps the Davidson award for absurdity in the controversy over water in the last month or so should go to Queensland Premier Beattie for his resurrection of the Bradfield scheme of the 1930s. Unless Beattie has some obscure tactical trick up his sleeve, he has managed to make a clown of himself on both irrigation and northern development. Rejected Western Australian politician Colin Barnett has a right to be miffed that people ridiculed his proposal for a far canal from the Kimberleys to supply urban water to Perth. Beattie has apparently survived with his reputation more or less intact promoting connection of the northern rivers of coastal Queensland to the southern irrigation system.

Bradfield's ideas were silly then, and have not improved since. Keynes knew something when he wrote about 'madmen in authority'. Unelected politicians and former government advisors like Alan Jones, now posing as a journalist, are unfailingly impressed by spectacular ideas like turning coastal rivers inland and making the deserts bloom in Australia's dry interior. Richard Pratt was another Bradfield enthusiast although his enthusiasm was dampened once he put his ideas to the test with empirical investigations of the practical possibilities of covering the countryside with pipes and lined channels.

Most ordinary citizens are cured of the romanticism and extravagance of Bradfield and similar proposals by remembering the shock of the last bill from the local plumber. The idea of opportunity cost and the dangers of throwing good money after bad do not count for Australia's rich and powerful. In a newspaper article between Christmas and New Year 2006, Jones cited claims by solar enthusiasts that 'solar stations near Bourke and Moree could provide energy for two billion people.' One suspects that proofreaders of *The Australian* were then taking a Christmas break.

But even that is no excuse for the shameless implication by Jones that unexpected fiscal surpluses from the resources boom and the GST justify oddball engineering projects such as the Bradfield scheme. Aficionados of the sad history of water policy in Australia and the role therein of hucksters like Jones would notice in his article that he is still smarting from rejection by the Hawke Government of an attempt by Malcolm Fraser to put Bradfield back on the agenda in the hopeless and hapless *Bicentennial Water Resources Program*. Peter Walsh (1995, p.85) described that program as 'one of the Fraser Government's desperate last throws'. A program that the community was spared and a reminder like the Ord episode of the 1960s that the Commonwealth is not always the fount of wisdom in irrigation or land management policy.

The language of past centralist ambitions and Commonwealth mistakes is being recycled in the current debate on water. Senator George Brandis referred on television to the desirability of a 'national unified system' of water management, almost the same words that were used by the unlamented John Dawkins to describe ill-fated changes to tertiary education; later labelled by Professor Max Corden as *Moscow on the Molonglo*. Senator

Brandis must also have a copy of the Paul Keating phrase book. He described Premier Bracks as a 'recalcitrant.'

The last twenty years have seen greater professional appreciation of rational analysis of irrigation in Australia by scholars like Davidson (1965, 1969) and Randall (1981) although their work has had insufficient influence on opinion makers. Manifest improvements in policy followed with introduction of water trading around fifteen years ago and a Cap on extractions from the Murray-Darling system in the mid-1990s. The beneficial and lasting influence of administrative efforts in Victoria by the late John Paterson ought not be underestimated in this regard. Though the usual gap exists between promise and performance, what has happened in irrigation policy in a succession of initiatives since the COAG agreement of 1994 is mainly in the right direction, far more so than for urban water. Does the new *Plan* improve on or detract from the achievements of recent years?

An inconvenient truth

The pervasive political and economic dilemma for water policy in Australia is a legacy of an inconvenient truth. There is too much irrigation in Australia because of previous political excesses that continued in Victoria at least into the 1970s, and later elsewhere. Understandably, recognition of this point is implicit rather than explicit in the recent *Plan*. The current generation of politicians is willing to canvass the follies of their contemporaries but find it hard to face up to widespread bipartisan deficiencies of their predecessors in water management, in case their own fallibility is revealed.

Early encounters with droughts had a powerful impact on British settlers in Australia. The stripper's defence explains the attraction to irrigation: it seemed like a good idea at the time. When blind enthusiasm for irrigation was in its heyday, flawed public irrigation schemes were established without careful appraisal of economic prospects taking into account availability and cost of other factors of production, market opportunities and rainfall variability. That is a matter of historical record (Davidson 1969). Paterson (1987) estimated that only twelve per cent of the land in irrigated production in 1987 would have been developed on strict economic criteria.

This is not to say that only twelve per cent of current irrigation is economically defensible or that there are not plenty of opportunities for market-based investments in irrigation according to current economic circumstances. The amount would have been larger if public irrigation schemes had been organised differently. Most importantly, the costs incurred in previous irrigation developments are now sunk, however ill-advised might have been the initial public investment. Just as in the private sector, the mistakes of the past are of no account in deciding how the capital stock created from past investment should be used now, or in the future.^[6] The economic difficulties now facing irrigation farmers and districts as well as the environmental consequences of irrigation should be tackled patiently to solve problems that have had a long gestation period.

Australia was not special with regard to its irrational attraction to irrigation. Techniques like benefit-cost analysis (that by the way seem to have gone by the board in the Australian public sector) were developed in the United States in reaction to the unholy alliance of government engineers, irrigators and parochial interests that pushed irrigation in the US well beyond its economic limits. And created economic problems that are not being handled anywhere near as effectively as in Australia, judging from several papers presented at the meetings of the International Association of Agricultural Economists held at the Gold Coast, Queensland in August 2006. Far worse horrors in irrigation development were visited on centrally planned economies in the twentieth century than those that occurred in the US and Australia.

As an initial response to a dry and variable climate, a pro-irrigation bias was understandable in the first days of European farming in Australia. Ignorance of local farming conditions and recklessness of politicians was exacerbated by the simultaneous attraction to closer settlement, in pursuit of poorly thought out distributional goals. This led to irrigation blocks that were too small and unable to pay their way from the outset. Small farm problems persist to the present day in many irrigation areas. Cutting corners on investment in drainage infrastructure guaranteed environmental damage despite centuries of knowledge of the potential adverse effects of irrigation.

The result was subsidised irrigation development and widespread damage from waterlogging and salinity. The weak economic condition of irrigated settlements meant that substantial product-related assistance for irrigated horticulture and dairying became necessary later to support farm incomes. Except for irrigated districts with mixed farming (crops and livestock), for many years it was a case of producing subsidised outputs with subsidised inputs for a large part of Australian irrigation. Product-related assistance has been largely eliminated in Australia and assistance to irrigation is much less than it was formerly. Changes in pumping technology and falling costs of engineering works have enhanced the comparative advantage of irrigation vis-à-vis broadacre agricultural industries.

The history is different in northern parts of the Murray-Darling system where irrigation came much later. This was private development in the main rather than government sponsored development of irrigation districts and farms. Government built dams on some rivers, supplied the water at concessional rates and issued licences to use water. Further irrigation development followed on other rivers and watercourses in northern areas with the development of techniques to capture and use episodic overland flows in dams on private land. As in many countries around the world, the advent of low cost pumps and pumping has had pervasive effects on the technical possibilities of irrigation and has also generated associated environmental consequences in need of public attention and regulation.

The harvesting and use of overland flows is contentious because flows are poorly measured and monitored and deprive downstream users of water supplies. The intent of the Murray-Darling Cap has been frustrated. Official policy seeks to redress this problem but has made little progress to date. It is usual to blame management neglect by state

governments and/or the political power of local landowners and the irrigation establishment, but the problem is also inherently intractable and may only be amenable to a regulated and political solution. Implicit in the *Plan* is the belief that the Commonwealth Government will have more success in enforcing such a solution.

The range of rainfall and runoff in the Upper Darling area within and between years is extraordinary and far greater than for other major river systems throughout the world.^[7] It is doubtful whether concepts of sustainable yield can be given precise enough meaning to manage irrigation effectively on the basis of strict rules and planning of allocations as is the policy espoused by the National Water Commission created in the National Water Initiative that immediately preceded the latest *Plan*. The *Plan* refers a couple of times to current studies within CSIRO that are knocking up at short notice the '2007 Murray-Darling Basin Sustainable Yields Assessment' following the request of the Prime Minister and MDB State Premiers at a meeting on Melbourne Cup Day 2006. If it were that easy, the work would have been done already and would have been incorporated into Australian river management many years ago. Whether this is the result of technical problem for hydrologists in dealing with the consequences of high variability of rainfall and runoff or failures of policymakers in New South Wales and Queensland to even consider hydrological constraints to water allocations in the northern basin is a moot point.

Quiggin (2007, p.12), writing before the *Plan* was announced, argued that gross differences in catchment hydrology make the pursuit of uniform policy between the states misguided. In his view, 'rather than a one-size-fits-all solution it would be better to adopt policies based on local circumstances, and the democratic choices of local electorates.' A fortiori, once we consider attitudinal differences between private irrigators in northern New South Wales and Queensland and irrigators in the former closely controlled government irrigation districts of the southern-connected Murray-Darling system. Even in the south, there are tensions (especially over the rules for water trading) between private diverters for horticulture who use their own pumps and delivery systems and the more numerous irrigators from the former irrigation settlements who rely on shared irrigation infrastructure.

The economic and political effects of the different history of irrigation settlement and private irrigation development were scarcely recognised with the onset of microeconomic reform in the last twenty years. Given a history of subsidisation of irrigation, attention first turned to water pricing. Despite loose talk in the original COAG documents about cost recovery and full cost recovery, regulators have accepted that there is no justification for reflecting previous capital costs in the current pricing structure, usually developing pricing approaches that recover annual operating costs for supplying irrigation water plus a capital charge to meet the expected cost of keeping delivery capacity intact. Nevertheless, irrigators in parts of the irrigation system are unable to pay prices based on reasonable pricing rules for irrigation infrastructure that has to be replaced in the near future. How can 'full' costs be recovered for something that should not have been there in the first place?

The usual conclusion drawn by unsophisticated observers of Australian irrigation is that prices of irrigation water need to be increased and/or the technical efficiency of irrigation enhanced. Shorten (2007), for example, has given unqualified support to the well promoted, expensive and (economically) barely researched technique of total channel control. Total channel control is in need of urgent independent research to determine whether claimed water savings are genuine and whether, and where, the technology might be applicable in Australia's irrigation systems. Total channel control might be an appropriate technique for countries like Israel or in California where high-valued horticultural products with exacting irrigation requirements are produced for affluent consumers in Europe or North America. That is not the case for Australian horticultural industries. Most popular discussion of water prices charged to irrigators misses the point that following the introduction of water trading, traded prices influence farm decision-making more than the prices charged by rural water authorities set by regulators. Ostensibly low technology gravity irrigation systems are appropriate for low unit value commodities and for intermittent water supplies that cannot support substantial capital investment in irrigation infrastructure, off-farm or on-farm.

It follows that if water use in the irrigation system is to contract as envisaged in the *Plan* and (unofficial) policy for several years, arrangements are needed to tackle local issues in water supply. Whether, how, and which, government is involved in these negotiations is fraught. While much has been made of 'stranded assets' in irrigation following the introduction of water trading, the issue is not as difficult as often presented. Assets are being stranded all the time by social and economic changes. Private firms are reorganising logistics and distribution systems with suppliers and customers continuously. Commercial arrangements worked out between supply authorities and irrigators are the best way of tackling local issues in water supply. Flexible arrangements would allow local groups to negotiate terms and conditions for continued supply provided they meet variable costs of operation. In many instances, it will make sense for ownership and maintenance of local channels to pass to irrigators.

The *Plan* is vague about administrative arrangements for implementing the key objective of modernising Australia's irrigation infrastructure (*Plan*, pp.7-9). The 'irrigation water providers' for improving delivery system efficiency are obviously bulk and retail rural water authorities, both private and publicly owned. As stated, how this will affect the principles applied and determinations of price regulators remains to be seen. 'Our delivery partners' for on-farm infrastructure could turn out to be catchment management authorities. These are inexperienced organisations with differing structures across Australia, and varying competence. CMAs have demonstrated an appetite for chasing public funds, whatever the funding channel, and intended purpose. CMAs are not worried by niceties like logical criteria for spending any public money they get their hands on. It might be different if CMAs were required to raise a substantial proportion of their revenue through taxes and levies on farmers and citizens of the areas in which they operate.

An underlying assumption of the section of the *Plan* on modernisation of infrastructure is that benchmarks can be derived for investment in irrigation infrastructure. It is not

explained why water providers do not have the incentives and ability to make decisions about off-farm infrastructure without central direction. Examples are given of savings that can be made by converting flood irrigation of crops and pastures to centre pivots and laser levelling in the rice industry. Again, it is not explained why irrigators cannot do this of their own volition without advice (and subsidies) from Canberra. Possible reasons include farm layout, remnant vegetation and labour supplies. Long-lived investments on farms are often made to match the life cycle and aspirations of the farmer. On-farm benchmarking and comparative analysis is even more flawed for irrigation than in other industries because of variations in soil type and drainage. Technical efficiency in water use is often not a major consideration in the financial and operational management of irrigated farms. For irrigated dairy farms in Victoria, for example, far more important success factors are pasture production and grazing management (Bill Malcolm, Peter Doyle, personal communication).

The *Plan* is an expression of Commonwealth interference in the normal business of farm decision-making that has not been seen since the halcyon days of soldier settlement following World War 2 or in the Queensland Brigalow schemes of the 1960s.

Page 9 of the *Plan* states:

To participate in the Commonwealth Government's on-farm water savings programme, irrigators will be required to develop water efficiency plans accredited by agreed deliver partners. Expenditure receipts will be required for payment.

Will Centrepivotlink administer this rediscovered dirigisme!

Another inconvenient truth

Some states introduced water trading well in advance of COAG in 1994. Water trading has been endorsed in subsequent programs like the National Water Initiative and recent *Plan*. The theoretical advantages of moving water to higher value uses and preferable locations from an environmental standpoint are clearcut. There have been problems of implementing water trading however that are recognised in the *Plan*. Water trading activated previously unused rights as well as rights to the savings generated by water trading itself. Investment in water saving was a mixed blessing because of reduced return flows. The policy of Cap and trade also failed to account for the water cycle as a whole, by ignoring supplies available to irrigators from groundwater, capture of water in plantations, extractions from unregulated rivers and water collected in farm dams.

Groundwater has been poorly managed in Australia despite a fine scientific tradition in hydrogeology. The concern for improved management of groundwater in the *Plan* by including groundwater in the Cap is welcome and overdue. An absurd situation exists on some sites with irrigators pumping unmetered groundwater, after having sold their entitlements to irrigation water that was in fact extracted from rivers or streams where groundwater and surface water are connected. Whether the Commonwealth is any better

than the states in administering groundwater will be a defining test of the success of a Commonwealth takeover.

In effect, the introduction of water trading was accompanied by increases in the rights of irrigators and reduced supplies of water for environmental flows. Logically, removal of constraints on rights once trading was permitted should have been accompanied by reduction in volumetric entitlements or variation in the formulae by which expected annual supplies in the storage system are translated from entitlements to allocations (Quiggin 2007, pp.8-9). Economists are aware of the advantages of secure property rights if water trading is to serve a useful social purpose. However, present arrangements for property rights are loaded in favour of irrigators to the detriment of environmental flows.

While it is reassuring that the *Plan* emphasises the need for improved monitoring of groundwater and attention to other parts of the water cycle, it would be even more reassuring if there were instructions in the *Plan* that rural water authorities employ more water bailiffs to enforce existing regulations. More effective regulation would also protect the property rights of the majority of irrigators who comply with existing regulations. Non-compliance varies between states but is an issue for groundwater, private pumpers and domestic and stock supplies. Rivers and streams that are not part of the irrigation system are managed more poorly than is the irrigated system in all states. Instead of putting first things first in water management, the *Plan* reflects the age-old faith in engineering solutions as witness the enthusiasm for lining and piping irrigation channels, and space age variants like total channel control. This approach is redolent of Professor Parkinson's parable of the committee that spends hours deciding which colour to paint the bicycle shed, and five minutes on a decision to build a nuclear generator.

Minor aspects of the *Plan*

Measuring and monitoring water resources receives further recognition in the *Plan* with a proposal to transfer responsibilities for data collection and reporting standards to the Bureau of Meteorology. That suggestion appears reasonable in that the profession of meteorology is skilled in working in a framework of uncertainty in all its dimensions: theories of climatic phenomena, and time and space. Not that data are always the problem, recent collections by the Australian Bureau of Statistics in association with the Productivity Commission have been excellent, even if the ABS got off to a shaky start a few years back by wrongly emphasising data on the output of various irrigated commodities per ML of water applied. The financial provision for the Bureau of Meteorology to takeover responsibility for data is generous and duplicates existing services. Even though the States have wiped out a lot of corporate knowledge in scientific disciplines relevant to water, the States still have a lot of data and knowledge of the processes they have been managing to date.

A taskforce is proposed to study the water resources of Northern Australia under the chairmanship of Senator the Hon Bill Heffernan. Northern Australia is now experiencing exceptional economic prosperity based on minerals, energy, tourism and a live cattle trade that has managed to evolve and succeed of its own initiative in response to market

forces, aided by publicly funded research on the cattle industry. The situation of indigenous people in Northern Australia remains appalling despite all these economic developments. It is hoped that Senator Heffernan is immediately briefed on the fundamental insights of Bruce Davidson (1965), the thinker from Tambo Crossing, on prospects for northern agricultural development. Otherwise, Alan Lloyd's advice to Australian politicians to "do their vicarious pioneering in front of a television screen" will remain apposite.

Davidson emphasised the transport difficulties of northern agriculture, lack of markets for output and lack of processing and other infrastructure (Watson 2007). Rainfall is also variable and growing seasons are short. Public effort was justified in agricultural research and development but there was no case for farmers in the north to be treated any differently than their southern counterparts. Competition for labour from mining makes those conclusions even stronger today. Nothing stops individual farmers or large agribusiness firms chancing their arm in the cattle industry or other agricultural industries in Northern Australia. Past agricultural research in Northern Australia created a cadre of specialists whose skills have been extremely valuable in international efforts in agricultural development but whose knowledge was never going to be applicable in Australia because principles of production economics and comparative advantage were ignored in the design of research programs. Of what use (to Australia) is knowledge of tropical pasture species suitable for land-saving techniques like pasture improvement with land so abundant in Northern Australia.

The *Plan* also proposes continuation of Commonwealth efforts to repair past damage to the Great Artesian Basin, a shared water resource of three states and the Northern Territory. Commonwealth involvement in management of the GAB is uncontroversial and funding arrangements appropriate.

The squabble with Victoria

Proposals for reforming management of the Murray-Darling Basin in the *Plan* start with a litany of problems in present arrangements that can hardly be disputed. There is a history of slow progress and inter-jurisdictional bickering. Failings with respect to the Cap on diversions and the absence of effective sanctions on miscreant states are highlighted. A radical solution is proposed with referral of powers by the states to allow the Commonwealth to achieve its objectives of water saving, improved monitoring and metering, tackling over allocation through buyback and adjustment, and reform of decision making processes.

There will be a revised Cap taking into account groundwater and losses from afforestation, farm dams and diminished return flows following investment in water use efficiency. How revised is 'revised' is a matter for conjecture. It is something that the major interest groups have not contemplated seriously, except for Victorian farmers. Referral of powers could result in a future Commonwealth Government taking major decisions that could affront farmers or environmentalists. Most of the individuals now involved will not be around to observe the consequences.

A weakness of the existing Murray-Darling Basin Commission is that it has operated by consensus. Hard decisions were avoided. In essence, this is what jurisdictions wanted in the past but there is no reason why unanimity should be required in any future arrangements. A Commonwealth takeover will not remove underlying conflicts between the states that have caused these difficulties of administration. Nor will disagreements between irrigators and environmentalists be removed. Instead, they will be sorted out in the party room of whatever Government is in power in Canberra. There is no reason to believe that this will result in a better result than existing arrangements.

The MDBC is detached from the mainstream of the public sector, nationally and in its component states and territory. In the fashion of the 1980s, the MDBC has a substantial consultative apparatus. The Community Advisory Committee of the MDBC was an obstacle to taking hard decisions. Diverse regional irrigation interests and token representatives of the wider community interest operated in the same consensus-seeking mould. At the intellectual level, the MDBC was influenced to a large extent by a nebulous discipline of Social Impact Assessment, trying to achieve the best of all possible worlds for all concerned. It was as if entrenched interests were non-existent and Australian irrigation had no history. Similarly, the Healthy Rivers Flagship program of CSIRO flirts with Social Impact Assessment rather than a hard-nosed appreciation of the economics and politics of irrigation.^[8] The strength of the MDBC is its expertise in technical aspects of river management, hydrology, ecology and other disciplines. MDBC staff have effective professional links to their counterparts in the constituent jurisdictions.

In the event, Victoria was the only jurisdiction to resist referral of powers to the Commonwealth. The final decision by Victoria was greatly influenced by vehement opposition from the Victorian Farmers Federation to the *Plan* (Topsfield, Grattan and Ker 2007). These attitudes were subsequently confirmed by the president of the VFF (Ramsay 2007). South Australia and Queensland were more concerned with their (successful) play for a group of experts to be imposed on the new Commonwealth decision-making process. New South Wales was compliant with Commonwealth ambitions for a takeover of water management. Ramsay claims that irrigators in other states are not happy with the decisions of their respective governments who 'took the opportunity to hand over the problems caused by mismanagement and inaction to someone else'...whereas...'the Victorian system is the most responsibly managed in Australia.' No doubt the money offered by the Commonwealth is also difficult to resist.

The VFF are not ingrates. Farmers have had an excellent financial deal from the Victorian Government before and after the White Paper of 2004. The way sales water was converted to tradable entitlements was favourable to irrigators and of limited benefit to environmental flows. A five per cent environmental levy (oops, contribution) was imposed on urban water consumers to fund projects in northern irrigation areas. Concessions have also been given from time to time on water prices and strengthening the dam wall at Eildon Weir. The Victorian Water Trust funds an array of projects of substantial benefit to irrigators, many of which would not stand up to detailed scrutiny. The impenetrable and untouchable VWT provides a template for the difficulties soon to be confronted by the Commonwealth Government, when the Commonwealth foolishly

enters the business of picking winners in off-farm and on-farm investment in irrigation infrastructure.

At a general level, the VFF knows what it like to be run over by the single-minded aggression of farmers' organisations in other states. Known Victorian devils are a better bet for the VFF than unknown Commonwealth devils, with their unknown unknowns. Victorian taxpayers and urban dwellers have more reason for a few gripes with local water policy. The overriding political imperative has been keeping the peace with Victorian irrigators while long-term objectives are patiently worked through. And this is a reasonable assessment of the realpolitik of irrigation in Victoria.

Irrigators have little to complain of except that hype about Victorian export targets has wound up irrigation development in Victoria excessively, with negative consequences for longstanding irrigators. Claims about exports and the favourable value added by irrigation in Victoria compared with other states are economic nonsense. The main reason that the ratio of the value of output to the amount of irrigation water is higher in Victoria than New South Wales is that Victoria has a vulnerable irrigated dairy industry that uses substantial inputs of grain to maintain production. The much-maligned rice and cotton industries of NSW can be shut down in periods of water shortage. If present rainfall and runoff conditions continue, Victoria will be in dire straits in irrigation season 2007-08.

Victoria has not been a backslider on the Cap and has been at one with the Commonwealth on policies for water trade and exit fees. Significantly, the first of Premier Bracks' 44 concerns^{[\[9\]](#)} with the *Plan* was its geographical scope. The Goulburn (and Murrumbidgee) in the southern-connected M-D Basin are in the Commonwealth's sights but not the Queensland/NSW tributaries in the northern basin where some of the worst abuses occur. The Commonwealth was only able to provide a hair splitting justification for this selectiveness. The Commonwealth Government cannot have it both ways by picking and choosing which rivers it wants to manage. Furthermore, the Commonwealth appears only interested in rivers in the Murray-Darling Basin on the other side of the Great Dividing Range from Australia's major cities. Does this mean that Victoria, for example, would have a Water Act covering south of the Divide with the Commonwealth having a separate Water Act for north of the Divide? Would The Commonwealth take responsibility for managing water for plantations and urban dwellers in its area of interest.

It is not possible to go through the 44 concerns of Premier Bracks in detail. Ministers Turnbull and Thwaites have plenty to negotiate. Their successors will be on the case for years to come, as referral of powers does not involve changes in ownership. Who will be footing the bills when the major, and uneconomic, state-owned infrastructure now being touted comes to the end of its useful life?

Concluding comments

Minister Turnbull has described on his website the Prime Minister's statement of 25 January 2007 as the 'the most important statement on water security in our nation's

history.’ Time will tell, for good or ill. Similar sentiments were expressed when Prime Minister Hawke and Environment Minister Graham Richardson made ‘the world’s greatest environment statement’ at Wentworth in 1989 at the junction of the Murray and Darling Rivers (Hawke 1989). Hubris lives.

The *Plan* has a lot more going for it though than the 1989 target to plant one billion trees (another example of political fascination with round numbers).

We should be thankful that de facto trade between irrigation and the environment is quietly accepted in this *Plan*. When the dust settles on arguments between the states and the Commonwealth over management of the Murray-Darling system, the debate can return to more important issues – the detail of policy to deal with over allocation of water in regulated rivers, its funding and timing. Compensation issues will need to be tackled. Over time, the relative emphasis on buyback and costly attempts to recover water through investment in infrastructure can be changed. More care will be given to the design and implementation of environmental projects to use water purchased, or saved.

The *Plan* is silent about connection of urban and rural water. Present indications are that some irrigators in Victoria are at last recognising the advantages (to them) of urban-rural water trade (Kleinman 2007). The gearing of rural and urban water is favourable to trade. A one per cent reduction in use of diverted water by irrigation results in a three per cent increase in water for other purposes. Support for trade is stronger among horticulturists for whom water security looms large and who require higher standards of infrastructure for timely delivery of water for quality control. Other irrigators are less enthusiastic. Whether the proposal under discussion in Victoria is a good deal for taxpayers and urban consumers is debatable. In a well-functioning water market, urban consumers should pay the going rate for water purchased on the market. There is no case for their expenditure to be hypothecated to any particular infrastructure project in irrigation areas, water saving or otherwise.

Since the era of microeconomic reform was initiated in the 1980s, it has been a case of two steps forward and one step back with COAG, the Living Murray Initiative, the National Water Initiative and now the recent *Plan*. A program is hardly in place and a new one is announced before previous policies are worked through. A myriad of programs with different sources of funding and overlapping budgetary intervals now exists. No one can be really sure what is going on. Rather than embark on a new program for water via a commonwealth takeover and the ambiguity, risks and costs that entails, it would be more convincing if the Commonwealth and states were to agree to carry existing programs for the Snowy and the Living Murray Initiative to fruition and clean up once and for all the administration of the MDBC by removing the effective veto given to each jurisdiction by consensus decision-making. Penalties should apply for non-compliance with the Cap.

The harsh reality is that the logic of trading was not fully accepted by powerful forces in the environmental movement and irrigation community. Once property rights are established and water was made tradeable, it was unreasonable to prescribe to whom

water was sold and for what purpose water was used, including no use if water were purchased by environmental agencies. No government has made a serious attempt to break down rigid separation of rural and urban water markets. Within Coalition ranks there is greater division over water policy than between the Commonwealth and the states. For Australian Labor Party governments in the states, the political issue is applying pragmatic principles to water policy while keeping quiet its inner city supporters from the non-empirical tail of the environmental movement.

Why is it difficult to make progress in the water industry? This paper has emphasised the difficulties of policy implementation because of the history of irrigation, drought and the powerful interests at play. Nevertheless, ideas and information are important as well. Obvious problems caused by carelessness about the meaning of water use efficiency and wishful thinking about expensive engineering solutions like the Bradfield scheme have been highlighted throughout the paper. Failure to distinguish on-farm and off-farm effects of irrigation is another failing resulting in unproductive rivalries between states and industries with silly prescriptions about which industries should be encouraged or discouraged.

More subtly, the base line or point of reference for analysis of environmental problems is often confused. Scientists and economists are often at loggerheads on this issue with the former less likely to realise that the starting point should be the present not some idealised pre-existing state of nature or fixed point to which policy should be directed. Further there have been arguments over funding with frequent erroneous support for environmental levies in the mistaken belief that these levies and/or increased water prices will be passed on to consumers rather than fall squarely on farmers (Foran, Lenzen and Day 2005; Wentworth Group 2003). The idea that export prices determine Australian farm prices is completely foreign to most scientific commentators on Australia's irrigated industries. But the most important sticking point between scientists and economists has been disagreement over the difference between technical and economic efficiency in irrigation. Unfortunately, the *Plan* leans too far in the direction of an imposed solution based on crude approaches to benchmarking irrigation efficiency rather than a market-based solution that takes account for other factors confronting farm businesses and imposes greater discipline on the selection of environmental projects.

The economic rationalist's nightmare is that history may be repeating itself. Excessive reliance on engineering solutions to water shortages is a mirror image of the technology-driven ethos that created those shortages in the first place. This time however it is planned to recreate the glories of irrigation on brownfield sites instead of greenfield sites. Like Oscar Wilde's *The Picture of Dorian Gray*, irrigation is supposed to stay young forever. As remarked by Geoff Miller at the Australian session of the IAAE meetings at the Gold Coast last August, a tipping point may have been reached whereby agriculture is such a small proportion of the Australian economy that governments start to act rashly. There are few restraints on such behaviour in rich countries. The farm sector wants the money and urban dwellers want environmental problems tackled. Ineffective policies can be dressed up as stewardship. Parts of the environmental movement and some farmers' organisations have already demonstrated that they are happy to go down this road.

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[1] This is a revised version of a paper originally prepared for a talk given at the lunchtime seminar series of the Victorian Branch of the Australian Agricultural and Resource Economics Society on 07 March 2007. Much appreciated comments were received on that version of the paper from several colleagues. Many of the most useful comments came from officials involved in the administration of water policy and should remain anonymous.

[2] Politics and journalism in Australia work on principles set out by Dostoyevsky (2003, p.568) almost 150 years ago. "There is nothing in the world more difficult than plain speaking, and nothing easier than flattery. If when a man is trying to speak plainly one-hundredth part of a false note creeps into what he is saying, the result is an instant dissonance, and following it – a scandal. In the case of flattery, however, even if everything in it, right down to the very last note, is false, it sounds agreeable and is received not without pleasure; even though it's a crude sort of pleasure, it's pleasure nevertheless."

[3] 'From SMAs to CMAs' (catchment management authorities) would be a good title for a study of agricultural administration in Australia.

[4] Agricultural economists should take a healthy interest in the RBA. The Australian profession was greatly supported in its infancy by the former Rural Credits Development Fund of the Bank. The RCDF was based on profits made by the Bank lending to

marketing boards and agricultural cooperatives. Those origins did not influence the views of early agricultural economists on agricultural prices and marketing.

^[5] Like all bad ideas, the concept of virtual water attracts cranks and habitual letter writers to newspapers. It cannot be long before the idea will be advocated by editorial writers. A recent twist of advocates of virtual water is to promote what amounts to an obscure case for vegetarianism whereby it is claimed that eating less red meat can save water. This can hardly even be empirically true for Australia where most meat is produced under dryland farming systems.

^[6] As imprudently put by one of our colleagues in the title of an ANZAAS paper during the reckless expansion of irrigation in New South Wales in the 1970s, much to the chagrin of his superiors in the NSW public service, irrigation policy in Australia has been for a long time a case of 'Turning white elephants into a dirty shade of grey'.

^[7] The Murray-Darling system is large on a world scale in terms of the area of the catchment but inconsequential in terms of the volume of flow.

^[8] Perhaps the experience of Bruce Davidson working for CSIRO in the 1960s has not been forgotten. Independence of advice is still an issue in water research and policy with a few individuals maintaining a stranglehold on grants-based funding. Land and Water Australia eschews research on water policy.

^[9] Catch[ment] 22 times two!