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Sherval, Meg, Greenwood, Amy "' Drought-proofing' regional Australia and the rhetoric surrounding Tilleggra Dam, NSW", Originally published in Australian Geographer Vol. 43, Issue 3, p. 253-271 (2012)

Available from: <http://dx.doi.org/10.1080/00049182.2012.706205>

This is an electronic version of an article published in Australian Geographer Vol. 43, Issue 3, p. 253-271 (2012). Australian Geographer is available online at: <http://www.tandfonline.com/openurl?genre=article&issn=0004-9182&volume=43&issue=3&spage=253>

Accessed from: <http://hdl.handle.net/1959.13/933138>

'Drought-proofing' regional Australia and the rhetoric surrounding Tillegra Dam, NSW.

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ABSTRACT

Water conservation, distribution and management are highly contested in the Hunter Valley of New South Wales. During the height of the Millennium Drought calls from local politicians and community leaders alike suggested that there was a need to ‘drought-proof’ not only the Hunter region, but also the Australian continent from recurring climatic events. In response to this, Hunter Water Corporation framed its long-term sustainable water policies around the proposed development of ‘Tillegra Dam’ as a means to ensure future water security for the region. Local residents, centred around the ‘No Tillegra Dam Group’, opposed the dam, pointing to its harmful effects and more sustainable demand-side options. Scientific studies also indicated that future droughts were unlikely to place stress on current water levels, thereby making the dam unnecessary. Hunter Water, however, co-opted the notion of ‘drought-proofing’ to argue for the continuation of large-scale infrastructure projects rather than pursue less costly, more sustainable options. As a result, arguments and discourses over the dam’s construction became increasingly complex, involving environmental, economic and ethical issues that ultimately favoured local community perspectives. This paper examines how the different stake-holder arguments were framed and considers the important role communities can play in altering decision-making.

KEY WORDS

Discourses, Drought-proofing, Tillegra Dam, Water Management.

Introduction

In 2002, amidst one of the worst drought's in Australia's recorded history, calls to 'drought-proof' the Australian mainland increased. Calls of this nature are not new and are likely to accelerate with climate projections suggesting that the frequency, intensity and duration of droughts will increase over most of Australia (CSIRO, 2007). Decisions about water – how to use it, allocate it and manage it – are thus deeply ethical ones (Postal, 2010).

In the Hunter region, the issue of supply has dominated water policy and management initiatives for many years. In 2006, during the height of local drought conditions, the then NSW Premier Morris Iemma, announced a \$342 million plan to construct the first major dam in the Hunter-Greater Sydney region since the completion of the Tallowa Dam thirty years prior. The rationale behind the decision was founded on the premise that such a large-scale construction (450,000 Megalitres) would assist in 'drought-proofing' the Hunter and Central Coast region and provide ongoing water security for the next 60 years. Fundamentally, this crystallised Hunter Water Corporation's (HWC) expectations about water supply and future consumer use habits, essentially closing down any consideration of alternative or more sustainable water saving options for the region. This decision ensured that the traditional, large-scale engineering 'fix' continued to be seen as the only viable solution for addressing the Hunter's water problems then and into the future, diminishing the need to adapt local water usage to natural limits (Williams 2003).

In opposition to this, local and regional interest groups formed to express their concern over this decision and heavily utilised the media to highlight what they saw as 'flaws' in Hunter Water's decision making process and the politicisation of the issue by the NSW government. Acknowledging Throgmorton's (1991, p.153) argument that all policy or decision-making analysis 'is inherently rhetorical', we illustrate this claim by critiquing the arguments for and against construction of the dam and review the collective action that was maintained for over four years and directed towards

changing local water policy and the political outcomes of the state government. This is done by considering how the issues have been 'framed', by whom and to what ends.

Framing the arguments

'Framing' is a critical component of any political success. Given that the decision to build 'Tillegra dam' was seen as highly politicised, it is no surprise that opponents were well organised and able to use the media in a way that ensured that their opinions dominated coverage. Ryan and Gamson (2006, p.13) would suggest that this type of framing was successful in that it involved a strategic dialogue and 'any movement building strategy needs to ground itself in an analysis of existing power relations, to position supporters and allies to best advantage'. Entman (1993, in McGregor 1998, p.193) suggests

that:

to frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation.

Opponents of the dam did this by waging a long campaign that appeared to never lose momentum.

McGregor (1998, p.193) suggests that in these protracted campaigns:

Who[m]ever succeeds in having their views consistently reported, gains the power and acceptance (at least in the media) associated with a Gramscian 'common sense' understanding of the issue. The prominent views come to be seen as representing rational, logical, 'common sense' thinking, while opposing views may be undermined by either being omitted or represented by reporters in the frames, language and discourses associated with the dominant view.

In this case, while the arguments of Hunter Water and the NSW government were much publicised, the space given to opposition groups greatly overwhelmed those arguing for the dam's development. This suggests that opposition groups recognised very early in the campaign either consciously or unconsciously that 'the contest [would be] lost at the outset if [they] allow[ed] adversaries to define what facts were relevant' and what were not (Ryan & Gamson, 2006, p.14). This paper considers how the arguments over this contested issue were structured and why the outcomes were inevitable given the persuasive rhetoric used by different stakeholder groups.

Perceptions of Drought

Drought has a long history and while it is a normal part of virtually all climatic regimes world-wide, in Australia it remains perceived by many as something to be 'conquered' (Wilhite, 2003). This battle metaphor constructs drought as 'an enemy to be vanquished' (Ward & Smith 1996, p.93). It also personifies it as a ravager who brings 'crisis', 'disruption' and reoccurring 'catastrophe' (Heathcote 1969, Hay 1995). Given this status, it is hardly surprising that during the Millennium drought (1997-2010), calls to 'drought-proof' the country were reignited by interest groups such as the National Farmers Federation and 'Farmhand'¹. In response to these calls, the 'Wentworth Group of Concerned Scientists' was formed and advised that (despite the desire to do so), Australia could not be drought-proofed and that Australian's needed to 'learn to live in harmony with the landscape, not fight against it' (Wentworth Group of Concerned Scientists 2002, p.3). CSIRO scientist John Williams (2003, p.42) went further to add that plans to drought-proof Australia were 'like bashing the continent into submission', concluding that the critical need was not to drought-proof the inland, but 'to myth-proof Australians'.

Despite these statements from eminent scientists, the media continued the discourse on drought-proofing by regularly printing rhetoric from Farmhand and its supporters and running

commentaries on the Federal parliamentary enquiry into ‘future water supplies for Australia’s rural industries and communities’ which ran from 2002 – 2004. Lewis (2002a, p.12) suggests that during this time, a ‘war of words’ erupted over whether or not Australia could be properly drought-proofed with everything from ‘cloud seeding...the Snowy Mountains, [to] piping water across Bass Strait from Tasmania, [and] turning around tropical rivers to flood Lake Eyre’ being offered as possible solutions to the crisis.

During this debate, Bob Mansfield – the Chairman of Farmhand qualified his idea of drought-proofing, as criticised by the Wentworth Group, saying that:

the term ‘drought-proofing’ has been misused. We aren’t saying that we can make it so we never have drought again. But part of the answer is how we farm. Whether this is planting trees or better farm management, not one thing will solve it (in Benson & Scala 2002, p.27).

While Mansfield’s focus on farm management practices indicates a more prosaic use of the term ‘drought-proofing’, as Bell and Moller (2006, p.12) suggest, ‘traditional visions of drought-proofing by controlling rivers and ground water persisted in reports of the 2002 drought’. Lewis (2002b, p.6) notes that prior to the Wentworth Group’s statement against drought-proofing, Bob Carr, the then Premier of NSW, was ‘even quoted as promoting drought-proofing, in the context of his idea for a federal government levy to help improve the ecological performance of Australian farms’. The fact that this type of rhetoric was also emanating from within government circles, reinforces the notion of drought which has plagued Australian governments for decades, that of ‘drought-as-crisis’ rather than recognising that drought is a natural part of the climate cycle (see Kiem *et al* 2010). Ironically, Bakker (1999, p.369) suggests that ‘crisis’ is a ‘discursive construction, a narrative of failure’ that demands ‘decisive intervention’, which is why governments often respond in a vigorous manner amidst heated public debates over issues such as drought.

This reaction was evident during the height of the drought in the Hunter region when Premier Morris Iemma declared in January 2007 that he was ‘not interested in playing politics with the State’s water supply’, he was ‘only interested in putting in place real plans and initiatives for a sustainable water supply for the Central Coast and the Lower Hunter for at least the next 60 years’ (in Frew 2007b, p.2). This framing of Tillegra Dam as a way to drought-proof the region through providing protection against the disruptive effects of climate change, was to give decision-making bodies such as Hunter Water the power they needed to fully endorse the large-scale project irrespective of the fact that concepts such as ‘drought-proofing’, the reason given by Hunter Water for the dam, remained problematic.

Using ‘drought-proofing’ as the excuse for ensuring long-term water security implies not only that the goal is attainable, but also that best practice is being employed in the choice of ‘solution’. This scenario also assumes that the natural hydrological system is historically unchanging, which recent studies have shown to be incorrect, thereby challenging policy makers to embrace dynamic and systemic approaches to incorporate non-linear change and increasing levels of uncertainty into their decision-making (see Milly *et al* 2008). As Godden & Ison (2010, p.181) suggest:

rather than ‘crisis’ reactions which reveal the entrenched path dependency of water management, there is a need to employ a full range of governance tools for meeting the challenges of water supply variability, including demand-side options.

Calls for more integrated decision-making concerning water management have long existed but of particular note is the report by the World Commission on Dams which suggested that dams have ‘too often produced severe social and environmental impacts borne disproportionately by people displaced, by communities downstream, by tax payers and by the natural environment’ (WCD 2000, p.310). The report continued that, ‘this lack of equity in the distribution of benefits raises

serious questions about the continued efficacy of large dams...when alternative means of achieving water and energy use goals are available' (WCD 2000, pp.310-311). Despite this, 'water authorities', have continued to deliver to their residents 'a counter-rational fantasy of an unending, seasonally invariant flow of water' and when this reliability falters, some regions, rather than reimagining ways of reforming water consumption, invoke the old idea of 'Big Water' as a solution to the perceived 'water crisis' (Allon & Sofoulis 2006, p.48). This can be seen most clearly in the case study of the Hunter.

'Drought-Proofing' the Hunter Valley

When the NSW Premier Morris Iemma announced the \$342 million dollar plan to construct Tillegra Dam in November, 2006, the rationale behind the decision was that such a large-scale construction would assist in 'drought-proofing' the Hunter and Central Coast region for the next 60 years. Iemma claimed that the development would serve as a 'secure and sustainable water supply for areas like the Central Coast and Goulburn' which according to Iemma was the key priority of his Government's State Plan (Premier's Department, 2006). The State Government framed the case for the development of Tillegra Dam as an investment in the future of the Hunter Valley and an additional water storage facility which would provide water supplies to areas with problematic existing infrastructure such as the Central Coast's Mangrove Creek Dam. Central Coast residents had encountered long periods of water restrictions as a result of their respective dams operating at limited capacity for prolonged periods.

The proposed dam would be located 74 kilometres north of Newcastle within the Williams River catchment, a sub-catchment of the Hunter River catchment which is ultimately part of a much larger and complex river system encompassing 7 rivers and 2 creeks, in total, an area of more than 2.2 million hectares (HWC 2008, p.18), (see Figure 1). Dungog, the closest township to the on-creek storage facility, is located approximately 9.5 km east of the site. River channels within the Williams River catchment have been extensively modified 'as a result of flood mitigation works, such as

channel straightening, drainage works, the removal of in stream woody debris and aquatic vegetation' (Aurecon 2008, p.i). Flows have also 'been regulated by the construction of the Chichester Dam, the Seaham Weir, various grading devices and extraction by irrigators' over an unspecified period of time (Aurecon, 2008, p.i). Thus, historically, humans have intervened in the natural water processes throughout the region for many years. The available water has to be shared between many competing interests which include power generation, mining, heavy industry, irrigated agriculture and associated businesses (cropping, viticulture, stock), urban infrastructure and fisheries (Australian Government, 2002). The most extensive surface coal mining area in NSW is also located within this region as are the expanding activities of power generation, aluminium smelting and more recently, coal-seam gas exploration. Water usage in the region consequently requires a considerable management regime.

Management of the water resources of the Hunter catchment is the responsibility of the NSW Department of Water and Energy (specifically the new NSW office of Water) and the Hunter-Central Rivers Catchment Management Authority. There are, however, many other organisations that have a direct interest in the management of this resource including the Hunter Water Corporation, the Department of Environment and Climate Change, the Department of Primary Industries and local councils, alongside numerous non-government organisations and individuals (HVRF 2010).

The Hunter River is also regulated by two major headwater storages, as well as a number of minor dams (NSW Office of Water, 2011). Glenbawn Dam on the upper Hunter River, and Glennies Creek Dam on Glennies Creek are operated to supply water for irrigation, town water, stock and domestic supplies, as far downstream as Maitland (see figure 2). Lostock Dam is a smaller storage that provides a regulated water supply to users along the Paterson River. Chichester Dam in the upper Williams catchment, and Grahamstown Dam near Raymond Terrace are also operated to supply town water to the lower Hunter region (NSW Office of Water, 2011). Large volumes of water are also taken and stored for power station use in Lake Liddell. As there are numerous pressures

upon this system, water sharing plans have been developed to address environmental requirements downstream of the major dams and ensure sustainable use of water by all water users throughout the valley.

Despite these water sharing plans, in 2007 Hunter Water decided that due to the vulnerability of the lower Hunter water storages to drought and the potential impact of climate change, something had to be done ‘to avert a bleak future of increasing frequency and duration of water restrictions and [the] higher risk of running out of water’ (HWC 2007, p11). The solution to this scenario was seen in the form of Tillegra dam, the fourth dam for the region. Hunter Water’s plans were endorsed by Premier Morris Iemma who was quoted as saying ‘this will not only secure supply for Hunter families, but will ensure the crisis on the Central Coast will never happen again’ (in Barnes 2006,p.1).

While on one hand this type of rhetoric is invaluable in countenancing local authorities’ plans, on the other it is reckless and raises false hopes within communities which can easily be quashed by the next surprising climate or weather anomaly. False hopes of a sustainable agricultural future in the Dungog Valley were also raised when land holders were told on October 28th 2006 by Hunter Water’s Managing Director – Kevin Young, that ‘any new [water] reserve would be at least 20 years away, if at all’ and that ‘our priorities are more about increasing capacity in what we’ve got, than building a new dam’ (in Gordon 2006). Yet, 16 days later these hopes were dashed, when the plans for the 21 kilometre Tillegra Dam were announced and with it, the subsuming of 4500 hectares of fertile land in the area (Clarke 2010). As local Tillegra farmer Jim Moore noted:

the governments are saying they want farmers to come in from the west and take up the better land; well, this is better land, this is prime agricultural land, and now, they’re going to put it under water (in Kirkwood, 2006).

This decision was seen by many local residents as a ‘backflip’ by Hunter Water particularly when it argued that the dam would ‘provide the people of the lower Hunter with unparalleled drought security [and would] allow the region to grow and prosper in a water critical future’ (HWC 2007, p.4). Little was mentioned of the fact that it could take up to ten years to fill the dam once it was completed or more importantly, that the rain required to do so, might not be forthcoming. While no one in adjacent communities begrudged their fellow citizens access to plentiful water supplies, the apparent haste of the decision seemed to many to be a case of Hunter Water continuing on with ‘business as usual’ and failing to appreciate the human and ecological significance their decision would have on many communities, not just those in Dungog and its surrounds. As Mollinga (2008) suggests, the management of water resources more recently is about recognising the embeddedness of them in broader socio-political structures where spaces for considering the concerns of interest groups and communities are created, rather than denied. Weir (2009, p.1) suggests that in such spaces we should be ‘questioning business-as-usual’ and, equally the value of water ‘beyond utility’ that Gibbs speaks of in her work on Lake Eyre (2010, p. 368). Likewise, Hillman (2004, p.20) reminds us that ‘new approaches to water management have emerged which aim to incorporate holistic, ecosystem-wide approaches...’ that recognise ‘the imperative of flexible and adaptive management with significant community input’.

The following sections of the paper outline the various arguments which surrounded the decision to construct Tillegra Dam.

Hunter Water Corporation

Hunter Water Corporation is a state-owned utility providing water and wastewater services to over 500,000 people from five local government areas (LGA’s) including: Newcastle, Lake Macquarie, Maitland, Cessnock and Port Stephens, with over 200,000 properties connected to HWC’s water

network. Bulk water is also supplied to Dungog Council and to small parts of Singleton and the Great Lakes area with the additional capacity to supply up to 35 megalitres daily to the Central Coast (HWC, 2008). HWC delivers 200 megalitres of water per day using water assets worth around \$2.5 billion dollars. Historically, the majority of the water delivered by HWC came from three main sources including the Grahamstown and Chichester Dams (surface water) with small contributions from Tomaree Sandbeds (ground water) (HVRF, 2010). The rivers and creeks of the Hunter drain a total catchment of 22,000 km² with HWC delivering water to consumers via a network of 76 service reservoirs, 84 pumping stations and 4548 kilometres of water mains (HVRF 2010, p.5) (see figure 2).

HWC Managing Director Kevin Young framed the mandate of HWC as follows:

we face a water-critical future, where security of water supply is the single most important issue. At Hunter Water our mission, our obligation to the people of the lower Hunter – and to future generations – is to secure our water future (HWC, 2007, p.2).

He followed up these statements in a 2007 report entitled *Why Tillegra Now?* where he stated that:

every 20 to 30 years Hunter Water has taken the right decision to enhance its water security, to secure the water future for [its] customers; now is the time for the next increment to our water resources (HWC 2007, p.2).

In this document, he also highlighted the background to the Tillegra decision, a legacy from 1952 when HWC started buying land in the Dungog area. The document concluded that:

our water conservation and demand management programs – and the enhancement of other sources – have postponed the need for a new dam – until now, as climate change has increased the uncertainty factor in terms of weather patterns, and forced a reassessment of the reliable yield from our existing storages (HWC 2007, p.2).

Supporting this view, HWC in a summary of its Environmental Impact Assessment of the project stated that the construction of the dam was necessitated as a result of ‘a number of significant changes to the assumptions that underpin water resources planning in the region’ (HWC 2009, p.2). These changes included: a) the need to improve drought security and provide a higher level of security based on the premise that a major urban centre cannot be allowed to run out of water; b) significant predicted population growth with the Lower Hunter Region Strategy forecasting population growth of 160,000 over the next 25 years; c) a change in the assessment of the amount of water which can be supplied from the current system on a sustainable basis, showing a shortfall between current reliable yields; and d) the increasing uncertainty of long-term climate change which is likely to bring periods of higher rainfall followed by longer, drier periods.

While these are certainly concerns for the Hunter region, perhaps of more concern, however, is the fact that 54 years after the initial decision to begin preparations to build a dam in the Dungog area, HWC proceeded with its original 1952 plan to take the traditional route of damming, rather than seeking more sustainable and less costly options. The other supply options considered, all relied on large engineering schemes such as:

new dam sites, upgrades at existing dams at Grahamstown and Lostock, as well as climate independent options such as desalination and indirect potable reuse (the recycling of treated effluent to an environmental buffer - such as a dam - and then to the water reticulation system for general consumption purposes). (HWC 2007, p.29).

At no time were more sustainable, less costly demand options seriously considered such as plans to ensure recycling and reuse of water on industrial sites such as mines sites, or storm water harvesting, or assisting residents in older housing stock invest in water tanks (compulsory with newly built houses under NSW BASIX requirements) or water – saving refits through residential grey water or biocycle systems, which can also be used for commercial purposes. As Pittock (2011, pp.2-3) notes ‘Dam projects are an inflexible, one to two decade development proposition compared to the quicker,

incremental 'soft path' alternatives'. Gleick (2002, p.373) suggests that while 'soft path alternatives', essentially those mentioned above, will require some 'institutional changes, new management tools and skills, and a greater reliance on actions by many individual water users, this is more durable than relying upon 'a few engineers' to solve long term water problems. As Sofoulis (2005, p.455) clearly identifies:

BigWater is not keen to shed the responsibility it [has] so heroically shouldered. The more water people save, the less money a corporatised utility makes from selling it. Demand management strategies such as new systems for waste water reclamation and recycling would, if pursued, shift the balance of responsibilities away from Big Water's centralised systems and disperse it to businesses, communities and households seeking medium and small-scale sustainable solutions.

One might suggest that this was evidently one of HWC's concerns especially in light of the Hawkesbury–Nepean River Management Forum report produced in 2004 during the height of the 'water crisis' which strongly opposed further large –scale engineering projects such as the building of new dams and pipelines and advocated that 'the cheapest and most lasting method' of reducing the need for such programs is 'the reduction of consumption through demand management' (HNRMF, 2004, p. x). Seizing on these sorts of recommendations, residents, community and interest groups began a long –term politicised campaign of resistance against the building of Tillegra Dam and the logic behind the State government and HWC's decision-making processes.

Community and Public Rhetoric

The politicisation of Tillegra residents can be seen most clearly through the establishment of resistance-focused groups such as the 'No Tillegra Dam Group' (NTDG) which was composed of affected land owners, business people and residents. The group was a self-proclaimed

community-based, grass roots organisation that was formed by concerned citizens in protest at the sudden announcement by the NSW Government that a dam was proposed that would flood prime farmland and disrupt a farming community with a history spanning up to six generations. (NTDG, 2010)

The initial formation of the group epitomised the vast amount of opposition and contestation that existed over the decision to develop Tillegra Dam. Its formation was also to result in the mobilisation of other community groups with a key objective being ‘to lobby state and federal MP’s in every way possible to show them that there [were] viable alternatives to secure water supplies in the region thus making a dam unjustifiable’ (NTDG, 2010). Sally Corbett, chairperson of the NTDG told the *Green Left Weekly* that ‘the dam is unnecessary [as] the project is economically, socially and environmentally devastating’ (in Alcorn, 2008). Corbett suggested further that ‘demand side management [was needed] to balance supply and demand’ as ‘currently there are no restrictions or water saving regulations on water in the Hunter’ and ‘people are still allowed to hose down their driveways and wash their cars with drinking water’ (Alcorn, 2008). This comment was quite damaging in light of HWC’s rhetoric concerning ‘a water-critical future’, especially considering that the residents of other major cities such as Sydney and Brisbane had been on water restrictions to preserve water usage since 2003. By 2007, Sydney-siders had ‘saved more than 243 billion litres of water since restrictions were first imposed’ yet in the Hunter, no such savings were being made (Frew 2007a). Even Gosford, the closest region to the Hunter, had been on stage 4 restrictions (banning the use of sprinklers, hoses, pool filling without approval) from 2006 (GCC 2009).

Owing to the apparent lack of will to impose such restrictions or consider other ‘water-wise’ options, the NTDG stepped up its campaign establishing ties with well-recognised NGO groups such as the Wilderness Society, which was similarly opposed to the damming of the Williams River. The Wilderness Society was to go onto commission a number of reports throughout the campaign which resulted in its questioning of the legitimacy of NSW State Government and HWC’s claims that there

was a justifiable requirement for additional large scale water infrastructure in the Hunter region. Building on the success of this connection, the NTDG also established ties with a number of other actors and institutions such as the: ‘Save the Williams River Coalition’ (established in 2008), the ‘Total Environment Centre’, ‘The Nature Conservation Council’, the ‘Central Coast Community Environment Network’, the ‘Hunter Environment Lobby’, the ‘Gosford/Wyong ratepayers association’, the ‘NSW Greens political party’, independent ecologists, water planning experts, academics and interested others (Alcorn, 2008).

The NTDG, with the assistance of these interest groups, ‘maintained the rage’ for 4 years and actively protested the proposed development of Tillegra Dam by physically blocking roads to the site, protesting outside HWC’s headquarters and keeping up a vigorous and sustained media campaign (see Plate 1). Additionally, the group also met with National Party MP, George Souris, then NSW opposition leader Barry O’Farrell, and with the shadow Liberal water and environmental ministers, ensuring that the rhetoric of opposition remained firmly in the public domain. Current premier Barry O’Farrell suggested in early 2010 that:

Tillegra dam was never about water security...like Sydney’s desalination plant, it was an attempt by the state Labor government at the 2007 election to show they had a water policy after more than a decade of neglect. We will not impose an ill-thought out ...dam on the region (in Bennett & Smith, 2010).

Likewise, comments by Simon Fane of the Institute of Sustainable Futures (ISF) at UTS in Sydney conveyed his opposition to the development of Tillegra by stating publically that:

the Premier’s announcement...circumvents established urban water planning processes designed to protect consumers and the environment and allow public input. Tripling the available surface storages in the name of “drought-proofing” seems like gold-plating for a system that has performed well to date. Building the dam (Tillegra)

will simply entrench higher than necessary water usage in both industry and the community. Tillegra's the dam we just don't have to have (in NTDG 2010).

Trying to Silence the Rhetoric

In 2009, the NSW Government responded to the increasing public outrage over the dam's construction by applying its controversial 'Part 3A' planning powers to declare Tillegra Dam 'critical infrastructure' which effectively restricted public input to the project and eliminated any chance of appeal. Such declarations then were rare, though previous examples included the proposed Hunter to Queensland gas pipeline and Sydney's desalination plant. Classification as critical infrastructure ensured no 'right of appeal' since this excluded anyone taking judicial review proceedings in the Land and Environment Court to challenge the declaration, unless the proceedings were approved by the Planning Minister (EPA Act, s 75T(2)). Bauer (2007, p.17) stated that:

the declaration of a project as critical infrastructure places it firmly in a category where there is very little recourse (other than an appeal to the Supreme Court) for preventing a project from proceeding exactly as the Minister envisages, regardless of the potential impacts.

The Environmental Defenders Office also suggested that 'the greater the potential environmental effects of a proposal, the fewer rights of involvement the community has, either through the decision-making process, or through legal remedies where environmentally damaging proposals are approved' (Ratcliff, 2006).

These imposed restrictions imply that opposition to the project was gaining traction and that the government needed to effectively shut it down. By imposing the controversial Part 3A of the *Planning Act* (under review since 2011), the government indicated both its unwillingness to address public concerns and reluctance to acknowledge the growing momentum against the dam. State Member for the upper Hunter, George Souris asserted that the dam would 'have masses of impacts

and no compensation’, continuing that ‘no wonder they don’t want to allow local input’ (in Ray, 2009). The NTDG (2010) also maintained that the socioeconomic models had been incorrectly constructed

Hunter Water failed to use the correct socioeconomic modelling process to determine what the dam’s impacts will be. International, Federal and State guidelines clearly identify *Cost Benefit Analysis* (CBA) as the required method for determining the economic impacts of major infrastructure projects. CBA is international best practice. The absence of CBA modelling points to bad policy decision-making and evaluation.

Furthermore, Dungog Shire Council contended ‘when Hunter Water brought their consultants to meet with staff on socio-economic impacts, it was evident that they were going to persist with modelling that would not take into account any local impacts’ (Deasey 2009, p.1).

Adding more ammunition to anti-dam groups’ arguments, a poll commissioned by Roy Morgan Research in late 2009 found that over 61 per cent of individuals surveyed opposed the dam with 77 per cent believing that there were cheaper and less damaging alternatives (in Kaye, 2009). NSW Greens MP - Dr John Kaye suggested that the poll results sent a strong message to the State Government and argued that: ‘it’s very clear that the Keneally Government and Hunter Water are on their own in wanting this dam’ (Kaye, 2009). He further suggested that the Water Minister Phil Costa had had in his possession for 13 months a detailed analysis of the dam project by his own department which suggested that ‘in essence the hydrologic analysis, climate forecasts and demand estimates [were] flawed’ and that the ‘dam proposal had not properly considered the alternatives’. Despite comprehensive analysis from his own planning department, the minister and the government refused to listen to expert advice, though independent scientific studies were to leave them in no doubt that the plan to dam the Williams Valley was ultimately ill-conceived.

Scientific Rhetoric

The initial proposal for the development of Tillegra Dam was that an urban centre must not be allowed to run out of water, and that the Hunter Valley must be 'drought-proofed' due to the uncertainty brought about by the impending threat of climate change and diminishing water supplies (HWC 2009, p.2). While these ideals remain fixed in the minds of both urban and regional water authorities, it is important to recognise that climate change will not necessarily result in droughts across all of Australia. Instead, climatic variability fostered by climate change is expected to increase rainfall in certain parts of Australia leading to increased incidences of flash flooding, while limited rainfall in other regions is expected to result in more severe droughts (Hughes, 2003). Thus, climate change will result in local variations across the entire Australian continent and as a result, decisions about future water management issues must be place specific rather than generalised.

Studies conducted during the Tillegra Dam debate showed in fact that the Hunter Valley region was likely to experience an increase in rainfall events leading to increased instances of flooding, rather than prolonged drought conditions (ISF 2009, p.2). Somewhat ironically, HWC (2009, p. 2) acknowledged that 'in recent years the lower Hunter has been fortunate to have higher-than-average rainfall and flows within its water supply catchment' which is 'in stark contrast to the significant drought across the rest of Australia'. This was further substantiated by the ISF (2009, p.19) which indicated that a report on climate change in the Hunter Central Rivers Catchment found that 'rainfall events [were] likely to be more extreme, including an increase in the frequency of floods and severe storm events'. However, despite this evidence and its own admission, HWC remained wedded to its claim that historic rainfall data revealed that every 25 years, on average, 'the lower Hunter can expect a significant drought' (HWC 2009, p.2). Thus, the occurrence of drought every quarter of a century was highlighted as a key concern in the ongoing security of Hunter water sources and subsequently, it was employed as an indicator of the need for additional large-scale infrastructure in the region.

In response to this, the ISF (2009, p.2) reported that in terms of the immediate future, ‘the current water supply in the Lower Hunter Valley had been shown to have high levels of drought security’. A report commissioned by the Wilderness Society (2010) also stated that HWC’s estimates that there was a one in a million chance of supplies falling to critical levels in any given year, means that if the Tillegra Dam was being built for drought security, it was being built for an event that was predicted to occur only once in a million years (WS 2010, p.28). Furthermore, the report also claimed that an analysis conducted by consulting engineers Sinclair Knight Merz concluded that the existing system would retain high levels of drought security even with increased levels of demand (WS 2010, p.7). Additionally, the Lower Hunter Valley had demonstrated a significant amount of water security in the past thirty years, with no water restrictions placed on consumers since the early 1980s. In fact, drought security was at ‘a thirty year high as a result of decreased consumption coupled with increased storage volumes’ (ISF 2009, p.2).

Despite this mounting evidence, HWC (2007, p.3) contended that such data and conclusions presented by the independent studies were based on ‘very low risk’ assumptions which no longer served as the bottom line in risk assessment models in water management. According to HWC (2007, p.3):

previously water resource planners based their assessments on the assumption of a very low risk that a community would completely run out of water. Now, water resource planners make the assumption that there be zero risk that a community will run out of water.

In reality, however, as Quiggin (2008, p.61) noted, in a hydrological climate as temporally and spatially variable as Australia’s, there can ‘never be an absolute insurance of zero risk in water management’. This indicates the unrealistic fundamentals underlying HWC’s approach to water

management and the contradictory evidence against its continued adherence to traditional Eurocentric myths historically governing water management concerns.

In 2010, local media reports also continued to outline discrepancies between HWC's scientific modelling and data, by publishing in great detail, research findings from independent studies. For example, a study conducted by the University of NSW's Australian Wetlands and Rivers Centre (AWRC), indicated that 'saline seawater would move up the Hunter River estuary more often and for greater distances when inflows from the Williams River were reduced' (Beale, 2010). This would potentially affect around '200 irrigators and the protected Rasmar wetlands in the estuary, which are used by migratory shorebirds' (Beale, 2010). AWRC Director and lead researcher Professor Richard Kingsford stated that HWC's 'environmental assessment did not look adequately at daily or monthly reductions of flow, [the assessment] suggesting that there would only be a 0.3 per cent reduction in flows to the estuary' which was incorrect (Beale, 2010). The report concluded that:

given the cumulative impact of the existing pressure of storages and diversions on the Hunter River, the current impacts on monthly and daily flows will be exacerbated by the construction of Tillegra Dam, further reducing freshwater flows reaching the Hunter Estuary. There would likely be a significant impact (Kingsford & Hankin, 2010, pp. 6-7).

By this time, the potential threat caused by Tillegra Dam had also begun to appear in international media as part of the United Nations International Year of Biodiversity. UK research identified Tillegra Dam as one of the greatest current threats to wetland and river biodiversity in Australia (Chapron *et. al.* 2010). Perhaps this was the final straw for the government, or perhaps, they had just tired of the constant debate over the proposal which had lasted for over 4 years, but 5 weeks later, the Keneally Labor government (the third premier

during the life-time of this project) on November 28th 2010, decided to reject the option of Tillegra Dam and called for a new approach to water planning for the Hunter.

Conclusion

Climate change and uncertainty have sparked debates regarding critical water security issues in Australia for many years. Contestation over 'drought-proofing' methods, however, will no doubt continue as concerned communities and regional authorities seek to insulate themselves against future climate variability. As the case study of Tillegra Dam has shown, water authorities and governments need to ensure that their decision-making is not only transparent, but equitable and ethical as communities will no longer allow authorities to dictate unsubstantiated 'solutions' to supply problems when more sustainable alternatives are available. As Dovers (2008, p.87) noted, we need to be aware of 'hydrological determinism, of narrow water-fixations in policy and management' that prevent reimagined ways of viewing water usage.

As the Tillegra Dam case study further suggests, communities and various interest groups now have the capacity to organise sustained campaigns particularly in light of emerging information technologies which make communication less costly and time consuming than it once was. This and greater access to the media mean that persuasive arguments may be framed which either render supposed 'facts' relevant and significant or irrelevant and trivial. As Ryan and Gamsom (2006, p.15) suggest 'all frames contain implicit or explicit appeals to moral principles' and it was this idea that opponents of the dam were able to successfully tap into. By making the official or dominant frames of the NSW government and Hunter Water appear flawed and inconsistent, the collective action was inevitably successful in its campaign. By tapping into local concerns and keeping this a key focus for many years, the campaign was able to show most clearly that decision-making which involves communities cannot be ignored as public participation is a legal right, whether governments, ironically the representatives of local communities, subscribe to it or not.

Acknowledgement

The authors would like to thank John Connell and the two anonymous reviewers for their advice and insightful comments. The authors would also like to thank Olivier Rey-Lescure – Cartographer, for his skilled assistance.

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Notes:

[1] Farmhand is a foundation set up in 2002 to support farming families during the Millennium drought. It raised and distributed \$24,640,000 with more than 18,000 families receiving 'helping hand' grants for the basics of day to day living. The Farmhand Appeal has now been closed, but was supported by national, state and local governments, as well as the general public and private corporations.

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Figure 1.

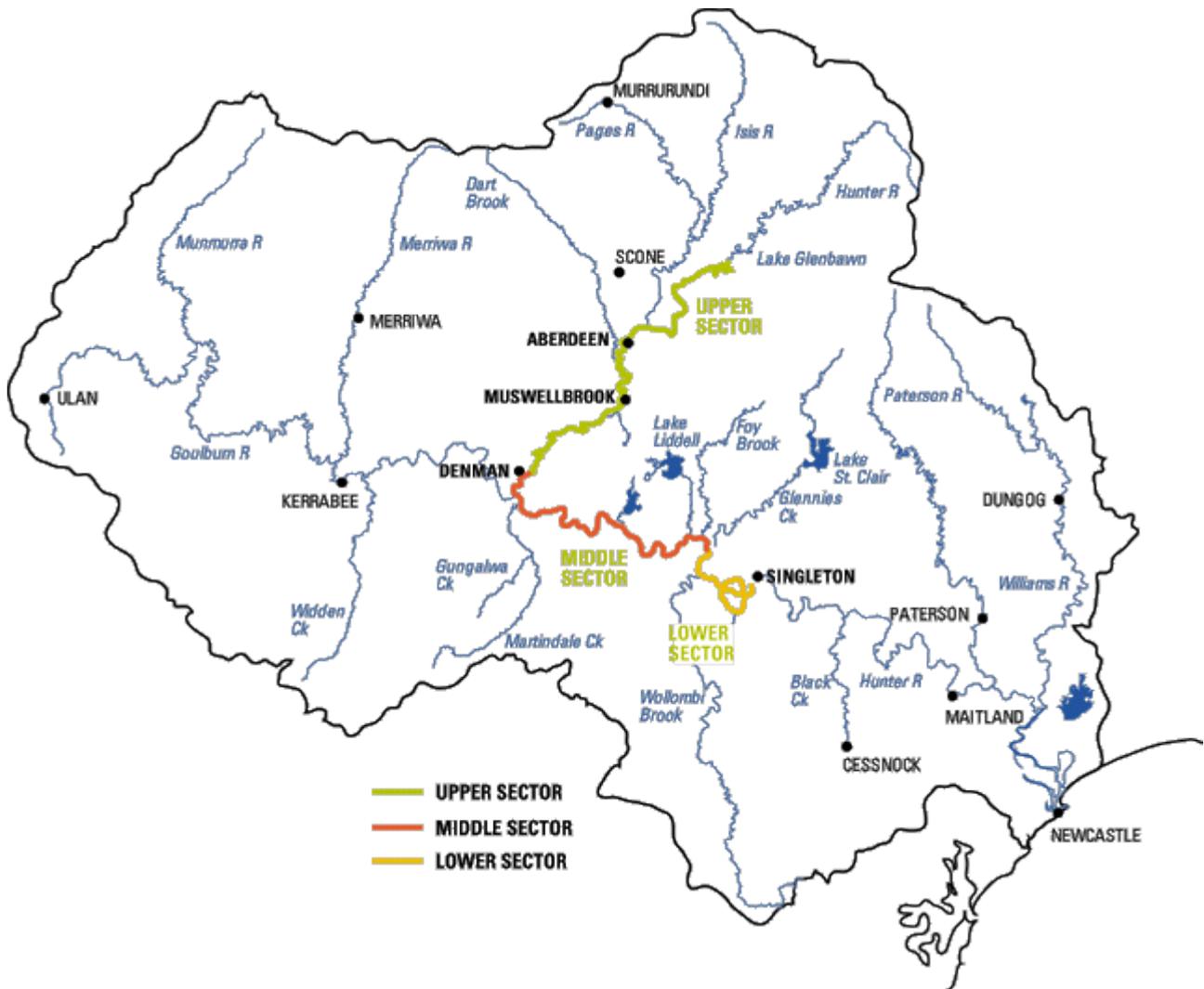


Figure 1 – Hunter River Catchment (© State of NSW through the Office of Environment and Heritage, 2011)

Figure 2



Figure 2 – HWC's Supply Network Schematic

Plate 1.



Plate 1 – Protest at Tillegra Bridge including actor Hugo Weaving who lives in the area. (NTDG, 2010).