



**MONASH**  
University

**SOCIAL SUSTAINABILITY  
IN DAIRYING COMMUNITIES  
IMPACTED BY THE MURRAY-  
DARLING  
BASIN PLAN:**

Short Report on  
research findings

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# LIST OF ACRONYMS

**GLASS** Gender, Leadership and Social Sustainability Research Unit, Department of Social Work, Monash University

**MDB** Murray-Darling Basin

**MDBA** Murray-Darling Basin Authority

**MDBP** Murray-Darling Basin Plan

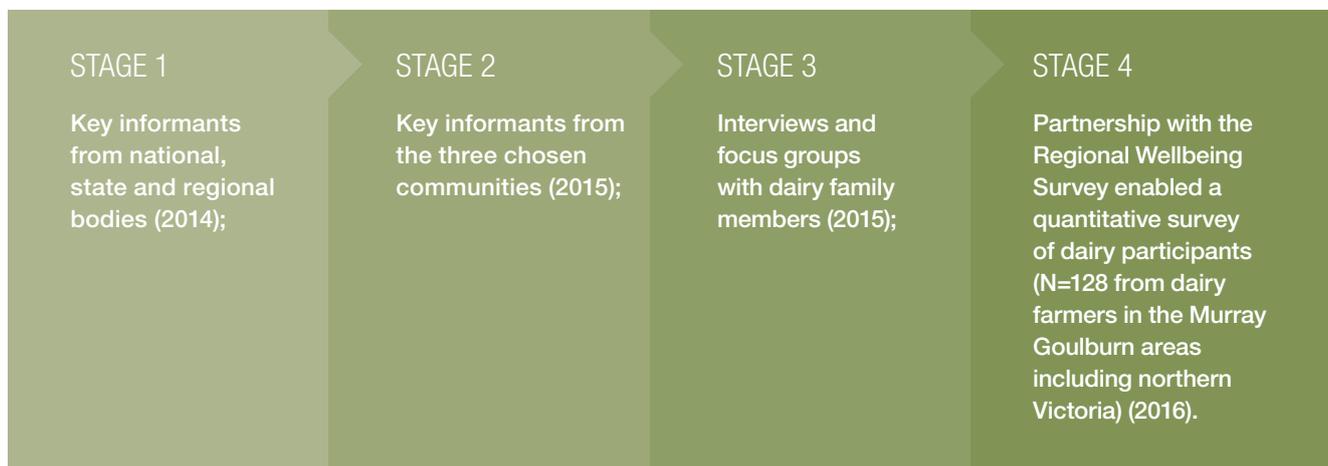


## EXECUTIVE SUMMARY

Immense changes are underway in the dairy industry consequent on the Murray-Darling Basin Plan (2012). These changes have affected dairy families and communities across the Basin and led to concerns expressed by industry and community leaders about the long-term impact of these changes. The Geoffrey Gardiner Foundation partnered with researchers in the Gender, Leadership and Social Sustainability (GLASS) research unit, Department of Social Work, Monash University and were successful in receiving an Australian Research Council Linkage grant to assess issues affecting the social sustainability of these communities. This project was undertaken from 2014-17.

While definitions of *social sustainability* are highly contested we note that attention to sustainability must recognise justice and equity, local livelihood factors, the health and wellbeing of citizens and their participation in decision-making. It must also alert us to the importance of community values and social norms in the context of environmental and economic sustainability.

The research was conducted from 2014-17. Three dairy communities in northern Victoria formed the background for this research. The research was conducted in four stages –



Key findings from the qualitative and quantitative data related to the following themes:

- Fairness, trust, uncertainty and equity issues
- Coping and wellbeing issues – the continuous requirement to adapt and cope, adaptive capacity and the limits to adaptation
- Critique of the Murray-Darling Basin Plan water governance process and related water reforms
- Intersecting challenges for farmers and related communities
- The future of dairy farming and related communities
- Farmer and rural community supports and support needs
- Gender equity issues
- Evolving relationships with water

We also note that many participants are supportive of water reforms.

On the basis of the qualitative data – including qualitative survey data – we make the following recommendations:

- Water policy – including policy supporting water markets – can be a form of support for dairy farmers and dairying communities, and therefore governments and industry should work to stabilise the reform process. A stable reform process is an inclusive policy reform process that incorporates local community perspectives, needs, and opportunities. A stable and trusted policy reform process will assist negotiating trade-offs.
- Water reform policy processes should integrate equity for the environment with policy support for *place-based* industry and communities. The identified risk is the reduction of wellbeing, health and industry investment given the convergence of multiple challenges for the dairy industry and associated communities.
- Policy practice must recognise the *limits to adaptive capacity* with the marketization of water and declining water availability for consumptive use.
- Dairy industry practices supporting gender/social equality require further needs assessment but this research indicates the need for further gender analysis and gender mainstreaming in water policy process. This should include on farm roles and responsibilities, training opportunities, opportunities to participate in decision-making (on and off-farm), and succession practices.

We recommend the following supports are essential to assist and support social sustainability in dairying communities:

- Childcare
- Communications, public transport, education and school options, livelihood opportunities
- Trust building in water governance reform and infrastructure program rollout
- Policy stability
- Inclusive policy development and policy nexus strategy that can support rural community/place-based adaptive capacity.



# SOCIAL SUSTAINABILITY IN DAIRYING COMMUNITIES IMPACTED BY THE MURRAY-DARLING BASIN PLAN

## INTRODUCTION

The 'Social sustainability in dairying communities impacted by the Murray-Darling Basin Plan' project was conducted by researchers in the Gender, Leadership and Social Sustainability Research Unit (GLASS), Department of Social Work, Monash University in partnership with the Geoffrey Gardiner Foundation. This research is supported by an Australia Research Council Linkage Project grant (ARC LP130100676). This three-year research project commenced in 2014 and was initially due to be completed in January 2017. Due to dairy industry exceptional circumstances in 2016, the project was extended until June 2017.

Participants in the project are from dairy communities designated as especially vulnerable in the proposed Murray-Darling Basin Plan (MDBP). The reallocation of water discussed in the Plan will have significant social consequences and will impact disproportionately on smaller, agriculturally dependent communities. This project identifies the social supports required to enhance positive adaptation and individual and community resilience in the Murray-Darling Basin.

The research project had several anticipated research project outcomes. These include:

- development of new knowledge on what constitutes social sustainability in Victorian dairy communities;
- critical understanding of the impacts of the MDBP on the social sustainability of Victorian dairy communities;
- a new, validated and tested conceptual model of limits to adaptation in the context of the MDBP that could be trialled in other national and international settings;
- identified limits and barriers to adaptation<sup>2</sup> and social supports necessary to assist the adaptation and resilience of people and dairy communities to enable targeted responses in communities undergoing significant change;
- changing the economic and environmental conceptions of water insecurity to include social elements;
- recommendations to governments and policy makers on social sustainability, limits to adaptation and social supports necessary to implement the MDBP in a socially just way; and
- improved wellbeing of people and communities in northern Victorian dairy districts.

## KEY THEMES

- Fairness, trust, uncertainty and equity issues
- Coping and wellbeing issues – the continuous requirement to adapt and cope, adaptive capacity and the limits to adaptation
- Critique of the Murray-Darling Basin Plan water governance process and related water reforms
- Intersecting challenges for farmers and related communities
- The future of dairy farming and related communities
- Farmer and rural community supports and support needs
- Gender equity issues
- Evolving relationships with water

<sup>1</sup> Map source: Murray-Darling Basin Authority © MDBA. Map used with permission. Map available at [www.mdba.gov.au/publications/products/murray%E2%80%93darling-basin-boundary-map](http://www.mdba.gov.au/publications/products/murray%E2%80%93darling-basin-boundary-map).

<sup>2</sup> The model is discussed elsewhere (Alston, Whittenbury & Clarke, under review).



## METHODS

The research was conducted in three northern Victorian dairying communities in regions identified as ‘especially vulnerable’ at the MDBP proposal stage (see Murray-Darling Basin Authority 2011, p. 123). All three communities are in the Victorian Murray Dairy region and have varying populations. As at the 2011 Census ‘Community 1’ has a population of less than 2000, ‘Community 2’ has a population less than 1500, and ‘Community 3’ has a population of approximately 5000.

The research design included a ‘qualitative dominant’ mixed methods approach (Burke Johnson, Onwuegbuzie & Turner 2007, p. 124) including interviews and focus groups. Analysis of this data informed the design of survey questions.

2014 – first stage of interviews and focus groups conducted with Key Informants (n.12) involved with industry (water and dairy), government and communities. Findings from this data were published in 2016 (see Alston et al. 2016). This focused particularly on issues of uncertainty and lack of trust in the water reform process.

2015 – second stage of interviews and focus groups with Key Stakeholders (40 participants) in the three northern Victorian dairy communities was conducted (April/ May). Participants included farming people, many involved in the dairy industry, as well as others involved in health and support services, community organisations, education, local business, local government, and community sports. Many of these people wear ‘many hats’ and so some participants offered multiple perspectives.

2015 – third stage of interviews as well as one focus group, were conducted with dairy farmers and farming family members and other community members (52 participants) (September/November).<sup>3</sup> The Gardiner Foundation and Murray Dairy assisted with the recruiting of participants in Stage 3.

2016 – The project team originally planned to conduct a survey with dairy farmers. However, due to the dairy commodity price crises that commenced in late April 2016 and which particularly impacted on dairy farmers in northern Victoria, a decision was made to collaborate with the University of Canberra’s Regional Wellbeing Survey. Monash researchers received survey data for all Murray Dairy farmers, and the relevant three Local Government Areas.<sup>4</sup>

The research project incorporates a gender analysis in its research design and implementation. In the third stage of qualitative fieldwork the researchers actively recruited dairy farming couples and where possible interviewed partners separately. Thus Stage 3 interviews included 12 dairy farming couples allowing a gender analysis of the experiences of dairy farming and water reform. These qualitative research findings have been published (see Alston, Clarke & Whittenbury 2017).

## SOCIAL SUSTAINABILITY

The concept of sustainability is a changing, dynamic one (Cocklin and Alston 2003) given that different communities, at different times, will prioritise the various components that constitute sustainability in different ways. For example, some communities may place emphasis on environmental sustainability whereas other communities will give their attention to the social component of sustainability. The meaning of sustainability is further complicated when it is applied within development contexts resulting in concepts and practices such as sustainable development and urban sustainability, sometimes linked to economic growth and development (Vallance, Perkins & Dixon 2011).

Cocklin and Alston (2003, p. 3) summarise the importance of context when considering the notion of sustainability as "... one of understanding the many and often competing perspectives on sustainability and understanding how these contests play out in social space – the role of actors, the multiple constructions of meaning, power relationships, the authority of competing knowledges and discourses, and the implications of the many and varied pathways towards sustainability" (see Western, Alston & Whittenbury 2014, p. 27).

∴ Definitions and interpretations of  
∴ sustainability are highly contested.

Nonetheless it is critical to have a definition of social sustainability that is locally grounded **in the context of dairy communities of northern Victoria**. This must recognise the critical elements of livelihood opportunities, health and wellbeing, social participation, justice and equity while noting that rural communities are made up of more than farms and agricultural producers.

On a somewhat more practical level, tangible and basic requirements such as water and food security, health and housing through to less tangible needs concerning employment, education, equity and justice, all fall within the concept of social sustainability (Vallance, Perkins & Dixon 2011). It is also necessary to consider the water reform process and reduced water available for production at the individual, household, farm, community and industry level.

∴ The concept of 'Social sustainability' must recognise  
∴ justice and equity, local livelihood factors, the health  
∴ and wellbeing of citizens and their participation in  
∴ decision-making. It must also alert us to the importance  
∴ of community values and social norms in the context  
∴ of environmental and economic sustainability.

Other key concepts are vulnerability, resilience, adaptation and adaptive capacity, as well as gender equality.

<sup>3</sup> One interview completed outside this period.

<sup>4</sup> Survey data was received for all responses in the Murray Goulburn Local Government Areas.

# WATER REFORM IN THE MURRAY-DARLING BASIN

The Murray-Darling Basin (MDB) covers a substantial area in Australia – 14 % – and incorporates twenty-two catchments (Murray-Darling Basin Authority 2016). The MDB supports approximately 40% of the country's total number of farms and half of the country's irrigated production (Murray-Darling Basin Authority 2016).

The Murray-Darling Basin Plan was introduced in 2012. This significant water reform initiative aims to improve environmental and river health in the Murray-Darling Basin (MDB). The MDBP involves recovering water for the environment. The monitoring, evaluation and development of the MDBP is an ongoing water reform process.

Historically governments and agencies have invested in water supply for consumption, irrigated food production and the establishment of agriculturally related rural communities. Thus actions undertaken have included regulating rivers, developing dams and water storage capacity, developing irrigation infrastructure and districts (see Henderson 2014, O’Gorman 2012, Powell 1989). Closer and soldier settlement also occurred in northern Victoria and investment in irrigation communities continued post WW2 (Powell 1989).

State and Commonwealth responsibilities and policies designed to support producers, water supply investment, irrigation production, the environment, waterway and catchment health have evolved and changed over the last century. For example, in northern Victoria, water markets were first developed in 1987 and water entitlements were unbundled from land in 2007. Over time water rights have been revised to become water shares (Smith & Pritchard 2014).

The MDBP, introduced in 2012, follows many other policy and funding initiatives to support river and catchment health including:

- the Murray-Darling Basin Ministerial Council cap on diversions in 1997;
- the Living Murray river restoration program established in 2002 to recover water for the environment to support six icon sites; and
- the introduction of the National Water Initiative in 2004 – a landmark national agreement on water reform.

Commonwealth, State and Territory government involvement, roles and responsibilities in water reform in the MDB have also changed over time, and this also reflects changes in governance of water resources, and addressing water security and environmental concerns (Musgrave 2011, Connell 2011).

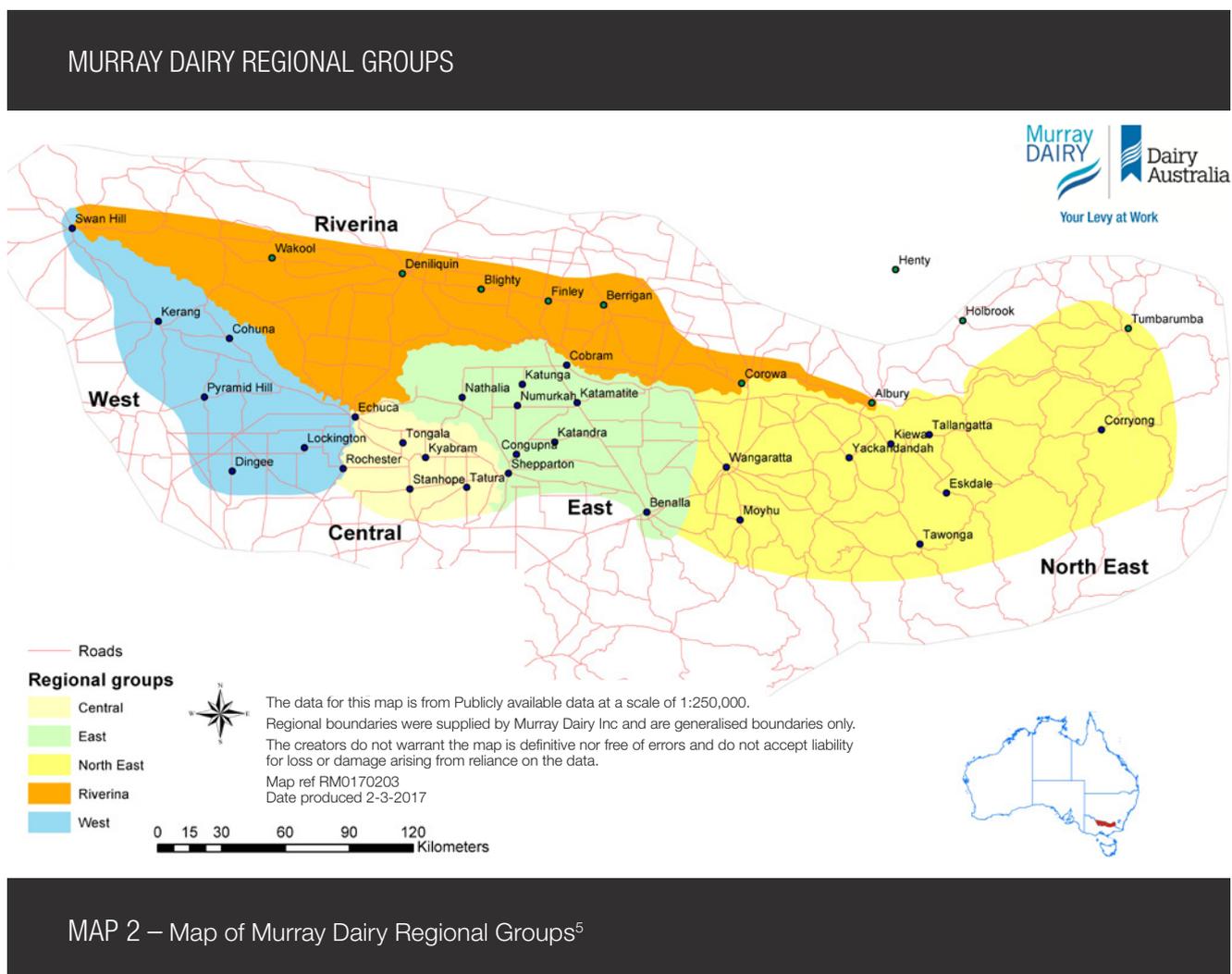
Through the **Restoring the Balance** program from 2007 the Commonwealth government purchased water for the environment. Subsequently, the Commonwealth Government’s **Water Recovery Strategy for the Murray-Darling Basin** (2014, p. 3) prioritises ‘environmental water recovery through infrastructure investment over water buybacks’. The Water Recovery Strategy capped water buybacks at 1500gl and the new priority became achieving water efficiencies and hence water recovery, via on and off farm irrigation infrastructure investment.

There are other key water reform projects in irrigation areas and communities in northern Victoria including the **G-M (Goulburn- Murray) Water Connections Project**. The G-M Water Connections Project runs from 2007 to 2018 and provides upgraded distribution connections as well on-farm infrastructure upgrades. Water savings are in turn passed on to the Commonwealth Government and used to benefit the environment. On-farm efficiencies – the **On-Farm Irrigation Efficiency Program** – are also supported by the Commonwealth’s **Sustainable Rural Water Use and Infrastructure Program**.

Concurrently in recent years producers have experienced a range of structural adjustments including dynamic markets including the water market, variable terms of trade, adjustments in community and rural demographics, and changing climatic conditions including the Millennium Drought. At the time the researchers undertook Stage 3 fieldwork, an added pressure emerged as the cost of water increased considerably in spring 2015. Conditions had become drier and competition for water had increased significantly (Tim Cummins & Associates and the State of Victoria 2016).

## THE DAIRY INDUSTRY

The research took place in dairying communities in the southern part of the MDB (see Map 1 on p.6). This research project has undertaken research in the Murray Dairy region – a region that includes areas in northern Victoria and southern New South Wales (see Map 2 below). This is largely an irrigated dairy region and specifically the research has focussed on northern Victorian irrigated dairying communities. The Murray Dairy region produces approximately a quarter of Australia’s milk supply (Murray Dairy 2016). There are 1490 dairy farms in the region producing 2268 million litres of milk in 2016, and contributing to ‘approximately 28% of Australia’s dairy exports’ (Dairy Australia cited in Murray Dairy 2016).



MAP 2 – Map of Murray Dairy Regional Groups<sup>5</sup>

<sup>5</sup>Map supplied by Murray Dairy.

## KEY QUALITATIVE FINDINGS

Together the three stages of qualitative data provide a detailed understanding of the social experiences and impacts of the Murray-Darling Basin Plan and related water reforms including water markets, as experienced by dairy farmers and surrounding rural communities.

### FAIRNESS, TRUST, UNCERTAINTY AND EQUITY ISSUES

Following the completion of interviews with key regional, state and national stakeholders in phase one of the project we noted that ‘despite agreement amongst stakeholders that returning water to the environment to ensure river health is critical, our research reveals significant tensions between stakeholders concerning the evolving process particularly centred on the potential social outcomes and the fairness and equity of the process. This suggests the need for more integrated and transparent governance structures, attention to levels of trust between partners and a common vision that incorporates environmental, economic and social goals’ (Alston et al. 2015).

Respondents spoke of their lack of trust in the process of water restructuring, and their anger at the perceived lack of consultation (Alston et al 2015).

⋮ “... the uncertainty has been a major issue”

⋮ [Stage 2 Key Informant C1 03]

Several industry and State government representatives suggested that the Commonwealth has little understanding of, or respect for, the affected communities.

⋮ “To not understand the connection that communities like X has to its dairy industry is just naïve, stupid ... [the Commonwealth should] give us the money and get out of our lives”

⋮ (R9 – state bureaucrat)

⋮ “The reality of industry adjustment is that it is going to hurt and the government needs to recognize that as a starting point before people can really shift on... I deal with people who’ve been at the frontline of the debate, but the pain is in part the fatigue of the battle... and while government wants to move on ... we haven’t actually caught our breath in terms of the current wave of reform... there’s certainly a lot of tired people around my tables”

⋮ (R10 – industry representative)

One industry representative noted the social costs to communities and local organisations that have engaged in the consultation processes. These processes have been lengthy, time consuming and emotionally taxing.

“There are two elements – there’s the social impacts in terms of direct impacts that flow to the local communities ... but then there’s a psychological impact too that is the missing gap – there’s no recognition that an enormous amount of energy and effort has been poured into the Basin Plan process by thousands of people ... the social institutions whether industry or local councils – the effort and energy that those people have poured into the fight takes a psychological healing process almost to get people through”

(R10 – industry representative)

Commonwealth level bureaucrats did recognise the high emotional cost of the reform process for both irrigators and their communities and industry representatives.

“The discussions [at community level] were very difficult ... tears and yells and screams and people walking out ... some of the discussions were very difficult ... it was at the end of the drought and people were at the end of their tether financially ... they were hanging on for grim death ... I have to take my hat off to the boards of these irrigation schemes, they were heroic in doing the consultations, directing the plans, making big decisions ...”

(R6 – Commonwealth representative)

Another industry representative explained the problem as a mismatch of expectations:

“We’ve got a mismatch between what the MDBA envisages should happen with the Basin Plan and how its rolled out and what the Department of Environment is actually doing about rolling it out. And then you’ve got the Commonwealth Environmental Water Holder ... Each state has their own state environmental water holders and within each state you’ve then got the CMAs that do a lot of the practical work on the ground ... and yet the Commonwealth Water Holder is not responsible for coming up with the Environmental Watering Plans or the Environmental Watering Strategy – that’s the MDBA”

(R7)

Several industry and state representatives suggest that government has more work to do to rebuild trust and to address the social outcomes in communities and the impact of the reforms.

“The ‘new normal’ is the [phrase] people are using ... they’re going through a period of flux and upheaval and they’re just waiting for it to settle ... and when they say normal they don’t mean constant, they just mean something where they don’t feel as unsure as what they are now ... there needs to be a recognition from government that there has been an impact and ... they need to recognize that impact so that it can be part of the process that people need to go through to find their ‘new normal’ ... but there’s a political unwillingness to acknowledge it ...”

(R10 – industry representative)

“There has been massive denial that taking water out wouldn’t cause massive adjustment within communities – the Commonwealth didn’t want to recognize it – they just don’t want to face up to it as a consequence of their decision ... it was patronising and disingenuous ... and incomprehensible ... it was a very destructive process”

(R9 – state bureaucrat)

“Commonwealth bureaucrats – one of the things I really hate them for is they’ve given up on providing public policy, independent public policy. They just don’t do it, they’re just too timid, shy and in the case of water – they don’t have a clue – they do not have a clue. ... The system is incredibly fragile ... the Commonwealth hasn’t been tested on this stuff – so bring it on!”

(R9 – state bureaucrat)

State, regional and industry representatives reported feeling excluded from ongoing planning processes. Several referred to the ‘command and control’ style adopted to implement the Basin Plan and this had led to a perceived disregard for the work done previously by states and regional bodies.

“[Our state process] was a different model – a deliberative process ... entering dialogue ... weighing stuff up together ... The Basin Plan came in over the top of that ... [it was] command and control ... that pervaded everything [and was] incredibly offensive”

(R9 – state level bureaucrat)

“There wasn’t any consideration of what had been done before... and that affected the state and regional people who thought they had had some hard stuff happen already”

(R4 – regional bureaucrat)

Participant views and perspectives on their experiences of the Murray-Darling Basin Plan and its impacts are not always separate to discussions of broader water reform issues including associated irrigation infrastructure upgrade opportunities and supporting programs – the latter in turn support MDBP water recovery targets. Conversations with participants regarding the M-DB Plan frequently involved also discussing the Connections Project. Participants articulate a perceived lack of fairness in the rollout process and in the MDB Plan development and governance process.

A key finding is that there are significant impacts from both *water recovery and water markets*.

Water markets and water recovery for the environment supported by marketization offer opportunities for individual farmers, however this is not necessarily socially sustainable for dairy farming communities. Dairy farmers clearly perceive there are haves and have nots in this social space of water restructuring and recovery. For example, a farmer may ‘have’ on-farm upgrades, and connection to the backbone, but may describe the loss of other dairy farmers and unwanted changes to the community.

There are impacts and tensions surrounding the irrigation infrastructure upgrades and participants are concerned about the lack of fairness and equity in the Connections Program and on-farm upgrades, and how this has impacted on farmers. A common phrase used by participants is ‘low hanging fruit’ to describe the inequities in who has benefitted from the Connections Program. This has led to a lack of trust in a key water reform program that supports the water recovery process. This has also contributed to the experience of uncertainty. While some participants noted they have benefitted from farm irrigation infrastructure upgrades, there are others who are uncertain about infrastructure upgrade supports on offer for them.

“...if you put yourself in that farmer’s shoes, if you’re sitting out there and you don’t know what’s going to happen and you’ve been waiting for five years, [you’ll want to know] “Will I have a business next year or not, or will I be disconnected? Yes okay, I can sell my water off, but really you’re talking about my future,” and I think that’s a real issue...”

“...that to me – again it’s the lack of communication, but ... [they are] effectively playing with people’s livelihoods and their lives in that way and that’s shocking, that’s unreasonable.”

[Stage 2 Key Informant focus group C2 07]

“That stress, and I talk first hand on that, is just incredible. You’re talking six years, the first year you’re angry, and then you’ve got to get through that, and then you don’t know what to do, you physically don’t know, because especially when they wouldn’t give you the information, they had their pre-planned idea, I believe, and they wouldn’t give you the information you needed to make your informed decision, and I’m still asking for information to make an informed decision. I’ve been asking for information to make an informed decision for six years, so in that timeframe, and me alone, I love the stock, absolutely love the cattle. When I had calves I knew every one, I could tell you which one – and you look at the traits that this one had and that one, but I couldn’t look at them, it would just make you upset. So, you just couldn’t because you didn’t know if you were going to keep them or not, you had that type of stuff which is terrible.”

[Stage 2 Key Informant C2 02]

Farmers and other community members, are uncertain about intersecting matters. These include:

- Water security for farming e.g. drier conditions and what this means for allocations and availability of water to purchase
- Water affordability
- The future of their town and wider regional viability
- Climate changes
- Further dairy industry structural adjustment
- Water held by the Commonwealth Environmental Water Holder
- Rationale for water releases or environmental flows
- Government support for irrigated production.

Many participants discussed their concerns regarding the high cost of purchasing water – this is a notable theme during Stage 3 given the timing of the fieldwork and escalating water prices.

While some participants (particularly during Stage 3) expressed their support for the benefits of healthy rivers, several participants were confused about water releases in rivers during a time of low allocations and high water market prices.

“... but it’s just so unjust, that water in years such as this, is being tipped into forests at the rate it is, of hundreds of megalitres a day, it’s really, really hard to take.”

[Stage 3 C1 15, female, dairy farming]

Uncertainty, distrust, stress and angst are all significant issues discussed by participants.



## COPING AND WELLBEING ISSUES – THE CONTINUOUS REQUIREMENT TO ADAPT AND COPE, ADAPTIVE CAPACITY AND THE LIMITS TO ADAPTATION

A key finding is that there are several coping and wellbeing issues currently being experienced as participants manage sequential and multiple changes. As several participants pointed out, farming involves continuous adaptation. However, of concern is the adaptive capacity of people and communities is stretched as people cope with several uncertainties including water reforms.

“I’d never say that this particular person had a mental health issue and then attempted suicide possibly successfully and it was because of the catchment water management plan, you know, that’s a big leap to make. But, there is no doubt that economic stresses puts pressure on people in families and relationships, and mental health issues, so it is an absolute plain factor that the economic status and the management plan has put huge pressure on economics.”

*“So you’re seeing that link between adjustment pressures and mental health?”*

*“Absolutely. I would say it’s one of the factors, I won’t say it’s the primary factor.”*

[Stage 2 Key Informant C1 04]

Nonetheless there are existing informal and formal supports that assist coping. Several farmers discussed the usefulness of farmer discussion groups, for example. Others describe the benefits of volunteering in their communities and community group efforts to maintain existing services as well as establish new supports. Participants articulated what they value about their community and these included discussions of existing supportive community networks and events:

“... probably the community coming together as a community that’s what keeps you together, and that’s probably the means by which you get to keep the head under control and not get depressed or anything like that, to keep involved in the community. If you finished up on your own and let community alone I would say your health risks are huge. While you’re around community, and we’re very aware, we’ve done nights and all that because we’re very aware of it, whereby you’re watching people, watching young ones, even the ones that aren’t involved in rural because now football clubs aren’t that involved in rural, but you’re watching young ones, and I know for a fact there’s people watching me and I’m watching people, because you’re aware there’s pressures and you help one another, and that to me is pretty bloody important that we all look after one another like a big community team; like there’s sporting teams there’s a community team.”

[Stage 3 C3 02 male dairy farmer]

Many participants raised their concerns about the rollout of the Connections Program. One participant also describes their experience of stress:

“It was the grief that you went through before and there was a lot of fear in the Connections Program, and I can’t remember the wording now, and I should know all this because I was fighting against it for so long, but there is fear that they would take your water away if you didn’t move, shut you down and take your water away. For us it was a good opportunity to move, it’s just now we have no security,”

[Stage 3 C2 01, dairy farmer]

Another participant describes the stress of managing the temporary market with water costs increasing, and describes the risk to the farm business as well as the impact on relationships:

“But, now we’re finding ourselves in the position – we’ve never had enough cash to pay all the bills each month, it’s a huge pressure, a huge stress, and because we’re very exposed to the temporary market there are always pressures there and if you don’t have the cash you can’t actually make those timely decisions to then implement things on the farm. We are fortunate that we are good managers ... and now we’ve got masses of accounts waiting to be paid and no money to pay them and water is trading at over \$300 a megalitre now, and we don’t have any reserves to buy that. So, we’re going to be faced with some tough decisions again shortly, in the next week, so yeah, it takes its toll and it puts a lot of strain on relationships.”

[Stage 3 C2 02, female dairy farmer]

The same participant also raises the critical issue of whether it is viable to remain farming in the region given current stresses (high water costs, inadequate terms of trade and relationship stress):

‘...because at the moment I don’t see it as being sustainable.

*You don’t?*

No. Even for us now, we were tossing around that – we had conversations last week about, “Are we better off to sell up and move out of this area, and take our investment elsewhere?”

*It’s a big decision.*

It is but it’s something that you really have to look at because do you want all the hard work that you’ve done for the last years, as people who’ve been in it a lot longer than us and have a lot more invested, but it’s at a point where either you operate, and you have to operate under extreme pressures all the time, and it’s seven days a week, 52 weeks of the year, to be able to perform and to be able to make a profit. But, if you don’t want to operate at that level all the time you have to look at your options, it’s not sustainable for your own health or your relationships.”

[Stage 3 C2 02, female dairy farmer]

The significance of the Millennium Drought is referenced by several participants. This suggests that many recognise that what is currently experienced is informed by the experiences of managing the (ongoing) impacts of past drought. Further, as this quote by one Stage 3 participant demonstrates, it is suggested that drought-based responses continue to inform responses to current water security challenges – and they are gendered:

‘We had a milker ask for a job yesterday because the place they’re working at they can’t afford to pay her anymore, so it’s things like that that are the flow on effects. And, the wife might milk all the cows and she’s got to go out and get a job because the farm can’t afford to pay the husband and the wife, it’s essentially like the drought, but it’s created from people investing into the market that are not doing it for the right reasons.’

[Stage 3 C2 12, female dairy farmer]

Our research confirms that farmers and communities do adapt to change, and have adapted to several changes in recent years. At the same time the continuous requirement to adapt and cope with change including water reforms – the MDBP, water markets, infrastructure upgrade programs – reveals significant coping and wellbeing issues. Wellbeing and health are integral to social sustainability and in turn, support all aspects of the broader concept of sustainability.

Reduced water security impacts on community life and community capacity. While there are many existing informal and formal social supports identified by participants, there are also concerns about how to sustain existing supports.

“So, I think it’s going to be very painful over the next – it has been painful and it will be painful as the whole community comes to taking that water out of the district, that adjustment, that devaluing of land, because if it can no longer be irrigated, and yes the individual farmer might have got well paid for his water but you’re still left with this land asset that’s no longer usable the same as it used to be, and yet people still want the same price for it. So yeah, there’s still a lot of pain to go, as I see it.”

[Stage 3 C2 05, male, dairy farming]



## CRITIQUE OF THE MURRAY-DARLING BASIN PLAN WATER GOVERNANCE PROCESS AND RELATED WATER REFORMS

“... and so you had, unbundling, separation of water and land, you had a rapid change in the management of water and policy that was starting to come out of there and the rate of information, the average man couldn’t keep up with.”

[Stage 2 Key Informants focus group C2 07]

While there is participant support for using less water and for irrigation efficiencies, what is critiqued is the MDBP development and consultation process, *as well as* inequities in associated water recovery programs supporting water supply and on-farm infrastructure upgrades. Some participants who are beneficiaries of on-farm upgrades are also concerned about program inequities and the impact on the community. What may be considered beneficial to a farm may concurrently be identified as not necessarily benefitting the surrounding community. There is a connection between farm level and community level sustainability yet there is also a tension when there are inequities in who benefits from water reform programs as well as associated stress and coping issues.

The Murray-Darling Basin Plan is critiqued for having a top-down process during its development stage. Further, several participants describe hierarchies of knowledge whereby local knowledge and perspectives have been disregarded by the MDBP water governance and reform process.

“...So, there were community meetings ... and I’ve been to plenty of meetings, but it was always talking down to farmers and it there was a group of farmers who were very vocal; very direct, and so what I saw was the MDBA didn’t want to consult anymore and, “We’ll just go off and do what we want to do and then we’ll come back.”

[Stage 2 Key Informant C1 07, female dairy farming]

“... we kept saying, “What’s happening with the social economics?” “Oh we’ll do that, we’ll do that,” and it hasn’t been done, and I think they’ve now realised, “Oh we have to actually do something with that.”

[Stage 2 Key Informant C1 07 female dairy farming]

However, a few participants critique this view of the MDBP given that there are other factors influencing community and dairy industry change:

“I think there’s a perception that the Basin Plan, because you’ve had drought, you’ve had low dairy prices, there’s a real perception that a lot of it, in the community in particular like small business holders, that the Basin Plan is the cause of everything going wrong; very much so in small businesses. Because, I think small businesses have seen a retraction in their business particularly as communities have got smaller through whatever has caused them to get smaller, drought, Murray Darling Basin Plan, things like that, and I think the Basin Plan pretty much cops a bit of a battering that it’s responsible for everything.”

[Stage 2 Key Informant C1 06]

Our data demonstrates there is participant support for improving the environment and irrigated farming water efficiencies:

“It is quite interesting how it’s been set up. I don’t have a problem with the environment, I want to save the rivers and look after our whole environment but it’s just the way it’s been done, it’s been handled very poorly and with no foresight of what was going to happen in the future. People own water that aren’t involved in food and fibre production and they can manipulate the market, they can buy water at 200 and now sell it for 280, so of course if you’ve got money and you’re smart why wouldn’t you do that, particularly in a dry year, but it’s just been going up every year.”

[Stage 3 C2 01, dairy farmer]



“I think I had a fairly open mind, and from the outset I had the impression that it was something that had to be done and also that there needed to be created a balance between environmental concerns and agricultural use of water.”

[Stage 3 C2 05, male dairy farmer] (Participant describing support for the M-DB Plan.)

However, there is a perceived lack of fairness in water markets and the high cost of water. People are managing the stress of high water prices and low allocations and there is a risk that farm assets may be underutilized. Given the coping and wellbeing issues raised in this study, this indicates that the limits of the marketization of water need to be addressed.

“There’s no doubt, there’s people who are able to exploit the system far better than others. A market works perfectly when both sides have got the same level of knowledge and at the moment they’ve got none of that.”

[Stage 2 Key Informant C1/08]

“You can go in if you’ve got some money to invest, you think it’s going to be dry, you can go and buy a heap of water, hang onto it, and then when people are desperate they’ll pay you whatever you want for it. Well, that’s good for you but it’s no good for the wider community which is relying on it. I thought the unbundling of water was a good thing, we could trade amongst ourselves but it’s gone beyond that and now it’s becoming a money making concern.”

[Stage 3 C2 01, dairy farmer]

In particular, many participants:

- criticise an open water market whereby existing producer interests and viability are inadequately supported by a water market that supports non-producer investment interests;
- note the detrimental impacts on irrigators of current water market trade conditions;
- note the vulnerability of irrigators to adapting to change, and managing uncertain trade conditions;
- are concerned about unaffordable water and therefore a lack of water security; and
- note their concern at the lack of support for existing irrigated production.



## INTERSECTING CHALLENGES FOR FARMERS AND RELATED COMMUNITIES

An interplay of factors are contributing to declining terms of trade including a plethora of matters associated with water reform and restructuring, with ongoing impacts of the drought and with the management of climatic variations. Further, there are factors that are specific to irrigated dairy farmers and small rural communities in northern Victoria.

Participants are concerned about water security including:

- problematic access to water available for irrigation during times of low water allocations;
- the capacity to purchase water on the temporary water market;
- climate changes;
- the viability of farming in the region; and
- their farm investment in the region.

“So, we were talking about selling up and moving to an area with a high rainfall so the water is taken out of the context to makes it easier to operate, but that’s only talk at the moment but it’s something that you have to start considering.”

[Stage 3 C2 02 female farmer]

“...it really all revolves around that high price of the water, and people will say that’s separate to the Murray Darling Basin Plan, but I see it all connected because you can’t remove that amount of – well, it’s still the El Nino and it’s still our climate but it’s the combination of the removal of water and the climate. So, it’s really been that water price.”

[Stage 3 C2 05 male farmer]

“I may sit here in 12 months’ time and have a totally different view of it, but the timing of your visit is probably at certainly my most pessimistic outlook, and that certainly is driven by our inability to secure water to conduct our business.”

[Stage 3 C2 05 male farmer]

The latter quote indicates the significance of the timing of the interview when water market prices had substantially increased due to drying conditions.

Throughout interviews and focus groups many participants expressed the view that there had been much structural adjustment as a result of the drought, water buybacks and changing terms of trade. Participants also noted the impact of floods in recent years as well as population decline. In Stage 2 interviews and focus groups several participants described a situation where the dairy industry had stabilised. This is a contrast to discussions with Stage 3 participants who describe the detrimental impacts of high water costs and anticipate further structural adjustment.



## THE FUTURE OF DAIRY FARMING AND RELATED COMMUNITIES – OPPORTUNITIES AND CONCERNS

Many participants in all three communities and surrounds offer examples of individual, farmer and community resilience, adaptive capacity and successful advocacy. Many dairy farming participants describe various combinations of strategies designed to source water and to adapt to less water, thereby reducing costs e.g. by way of share entitlements and use of the water markets. Others described changes in feed regimes, and adaptations in calving, herd size, and cropping. For example:

“... probably a third of our water is permanent and the other two thirds we’ve got to buy so it’s about making management decisions as to whether we buy that water or whether we buy in feed or what we do to feed the cows through the summer because it’s getting to the point, well it is at the point where there’s no money in pasture, so we either use that water on crops and preserve that feed or we grow a less area of pasture and feed something that can – that’s what we’re doing this summer.”

[Stage 3 C2 12, female dairy farmer]

Participants identify several challenges including:

- a need for diverse and increased rural livelihood opportunities to sustain the population and community and associated services;
- declining terms of trade for farmers;
- an ageing population;
- challenges in managing climate extremes and changes;
- concerns that there are a lack of opportunities for young people to enter dairy farming;
- increased work hours in the dairy industry to remain viable; and
- on-farm (dairy) labour and management issues.

“Traditionally in a country area everyone joined in the community, very few people missed out and now the pressures on the farms, just the work pressure, forget any other pressure, just the sheer hours to keep up and keep going, and your time to get out the gate is far less than it ever was before.”

[Stage 3 C3 02 male dairy farmer]

There are also participants who are dairy farming who describe the adoption of new technologies including water efficiency technologies, and their benefits, and their successful farm expansion.

“... we need to help people to acquire the skills to run more complex farming businesses, I think technology such as robotic milking systems, because labour, people don't want to work on weekends, people don't want to work early in the morning, late at night, and we have to, eventually, face up to it, and the technology is well proven, it's there. It's the right economic model, it's the right mindset, and I think it's as much mindset – rotary milking systems are really good, it does help.”

[Stage 3 C1 11, male dairy farmer]

In discussions about the future of dairy farming, many expressed concerns about the limited capacity for people to enter farming, and viable terms of trade to sustain farming. However, dairy farmers do discuss their hope and optimism for the future of dairy farming.

*“So, you want to be involved in the family farm and in the dairying industry for a while?”*

“Yeah it's always been my passion, it's always been something I wanted to do. I would love to own my own farm and run my own dairy farm but I don't know that that's going to happen because for young people it's just too hard to get into the industry. We have to buy land, a 300-acre dairy farm, which is 250 cows, I suppose, which is near on a million dollars, and then you've got to buy another million dollars' worth of water on top of it to run it and you can never get there, the bank would never loan you that sort of money and you could work half your life to try and save a deposit to buy it so it's pretty unreachable for our age group, which is the next generation in farming. That is quite disheartening because a dream and a passion and you can't get there.”

[Stage 3 C2 12, female dairy farmer]

“You don't encourage your kids to be dairy farmers anymore, or a lot of people don't... Because, the future's uncertain.”

[Stage 2 Key Informants C1 06]

Participants in all three communities identify the need for improved rural livelihood opportunities. There is a discrepancy between the expressed need for more and diverse employment opportunities as well as descriptions of dairy industry recruitment challenges.

Multiple variables are at work in understanding experiences of on-farm decision making, water reform and social sustainability including labour issues, life-stage and succession:

“At the moment the core herd size is about 220, when we were 10 years younger we milked more but as we get older we think, “What’s the point?” so we’re basically just in a maintenance curve now, we’re not trying to increase or anything.”

[Stage 3 C1 01, female dairy farmer]

“Honestly, this succession farming stuff is not easy, that’s the other complication with water and farming that needs to be taken into consideration because everyone still has a vested interest, or unless you can do it clean...”

[Stage 3 C1 10, service provider]

## FARMER AND RURAL COMMUNITY SUPPORT NEEDS

Participants were asked to identify social supports that might assist community and individual adaptation and resilience. They were also asked to comment on what assists social sustainability as well as what negates social sustainability.

What assists social sustainability?

- Informal and formal social supports
- Accessible, affordable services – transport, childcare, health and education
- A diverse community
- Communications – internet and mobile phone coverage
- Livelihood opportunities – this in turn supports community diversity
- Accessible businesses and access to affordable food
- Policy processes valuing local knowledge and place-based industry and investment
- Natural capital
- Safety – valuing a safe place to live
- Volunteer capacity & community-based efforts to sustain existing services that are highly valued (this is also identified as a challenge)
- Farmer discussion groups
- Sports and community group involvement
- Community capacity to self-advocate for its needs
- In-migration
- Increased on-farm water efficiencies.

## What isn't socially sustainable?

- Health and wellbeing issues in response to managing uncertainty and multiple ongoing changes
- Rate of water reform
- Declining terms of trade – includes less farmers to manage supply system costs/delivery share costs (also a decline in 'farmer' status)
- Risk of loss of benefits of on-farm developments due to water unaffordability – a second tier of stranded assets
- Succession problematic including supporting farm entry for next generation
- Long work hours in the dairy industry
- Gendered impacts of dairy farm workloads for example, women taking on caring and support roles, risk of men being socially isolated in farming.
- Physical limits to farming (gendered)
- Coping with intersecting and multiple challenges – climate change, drought, water price rise in 2015, declining terms of trade
- Inadequate childcare
- Loss of family and friends (out-migration)
- Indifference to water policy development/governance linked to lack of trust
- Perceived lack of fairness in water reforms and water markets in the rollout of the Connections Program and associated farm upgrades
- Stress and coping with uncertainty, lack of trust, inability to influence water governance processes
- Managing loss of productive landscape
- In-migration.

On the one hand in-migration is welcomed as it sustains a population, shops and services. On the other hand, at times in-migration is identified as problematic as people with a low socio-economic background move to small rural communities and concerns are raised regarding adequate supports including transport and social supports.

Several participants also articulate community self-advocacy efforts and community support needs:

∴ "... just because we choose to live here in the country we should not be left behind in anything in our professions or our careers, we should be able to – we need decent broadband so if we are working through it for companies in Melbourne or Sydney or overseas we can still do it from here and we can live our life that we have here."

∴ "You can't force everyone to the big centres, you can't force everyone to Bendigo, Ballarat and Melbourne, because the infrastructure there would struggle if we all went there anyway, we need to maintain and improve these rural communities, we have a right to live here as much as anyone else."

∴ [Stage 2 C1 09, service provider]

## GENDER EQUALITY ISSUES

Participants noted significant gender equality issues.

“I should be treated as equal but it is hard in probably a male dominated industry to step up, but there are some pretty good women who I talk to. But, it is hard to get younger women involved because you’ve got kids and helping run a farm and all sorts of stuff, but I think it’s getting a bit easier, or I would hope so.”

[Stage 2 C1 07, female dairy farmer]

Others noted that the development of farms has implications for gender arrangements – gendered divisions of labour, roles and responsibilities. These include:

- smaller farms being reliant on off farm income most often by women
- larger farms developing as result of the Connections Program – women working more on the farm, often in dairies
- women working on-farm to reduce labour costs – specific roles eg milking, livestock
- development of the male farmer-manager role - specific roles eg water trade, staff management, decision-making
- opportunities for women in the dairy industry including leadership development.

It is important to note that female participants expressed their concerns about the redevelopment of dairy farms include managing declining terms of trade. Many women undertake the farm enterprise’s financial administration and are critically aware of increased water costs due to reduced availability of water for consumptive/irrigation use, and the management of debt associated with farm redevelopment.

“...but what’s happening, and I know for us, is you get a grant and you use the grant but you always need to put more money into whatever the project is that you’re doing, and the amount of debt, you’re sort of up to your eyeballs in debt, and I try to avoid hearing about it too much because I’d be stressed and anxious as well if I knew the ins and outs of how much people owe. And, we’re included in that ...”

[Stage 3 C1 05, female dairy farming]

## EVOLVING RELATIONSHIPS WITH WATER

“... somehow or other you should not be able to sell water purely for profit”

[Stage 2 Key Informant C1 03]

*Our research demonstrates the social significance of people’s relationship to water.*

This assists an understanding of the ways that water security and insecurity are experienced. There are various discourses and lived experiences of water: for example, water may be viewed as an input to purchase for agricultural production, a tradeable commodity, an entity belonging to a farm or a district, a resource supporting livelihoods and communities, or a right and/or responsibility.

“So, I sold water to a fellow who’s down the road, I know him, I can go see him and say, “How’s my water going?” So, the wealth of our area hasn’t been diminished by my decision.”

[Stage 2 Key Informant C1 08]

“But should water be a commodity? That’s probably a good question too if you want good social outcomes.”

[Stage 2 Key Informant C1 02]

*There are changing social norms in relating to water.* This is frequently expressed in discussions of the water market and in particular, participant concerns about the high cost of water and how non-producers can participate in the water market.

“My opinion is, if you don’t use water in agriculture to grow something you shouldn’t own water; pretty simple.”

[Stage 3 C3 09]

As well as a reconceptualization of water for trade and farming, there is also a reconceptualization of water for the environment. A marketization of water (Bakker 2012, Hussey 2014) has occurred and this is also a social experience requiring adaptation. Further, there are multiple values at work in rural communities, industries, governance processes, and environments. Understanding these values is integral to respectful negotiations in water reform processes.

# SELECTED FINDINGS FROM THE REGIONAL WELLBEING SURVEY 2016

To assist with understanding the significance of the qualitative research findings, responses to selected open ended questions included in the Regional Wellbeing Survey 2016 were analysed.

The timing of this survey was critical to the responses received. In late April 2016 Murray Goulburn, a company that purchases milk and to whom many irrigated farmers in northern Victoria supply to, dropped their milk price retrospectively. Further, in late 2016 substantial rainfall and flooding occurred in some areas.

First, responses to the following question from all responses in the three Local Government Areas Campaspe, Gannawarra and Moira, as well as all dairy farmers in the Local Government Areas categorised as in the Murray Goulburn region were analysed for key themes.

∴ *“What is most needed to improve quality of life in your community?”*

Results from responses to this question include these top five themes:

1. Employment and local business opportunities
2. A more socially inclusive community
3. Issues and support for young people
4. Need for more local government support
5. Upgraded outside recreational and town spaces.

Additional responses included:

*the need for travel and public transport services, better health care services, and better roads.*  
*the need to manage drug issues, and*  
*the need for water security.*

All responses from local government areas Campaspe, Gannawarra and Moira were analysed for the question:

∴ *“At the moment, what things are having a POSITIVE effect on the wellbeing or quality of life of people in your community?”*

The top five themes for results for this question are:

1. Sports, Community, Market, Festival and other group activities, events and participation
2. Strong Community
3. Local and new business (including tourism)
4. Season and weather and rain
5. Season and terms of trade including affordable water.

All responses from local government areas Campaspe, Gannawarra and Moira were analysed for the question:

∴ *“At the moment, what things are having a NEGATIVE effect on the wellbeing or quality of life of people in your community?”*

The top five themes for results for this question are:

1. Low milk prices, repayments and ‘state of the dairy industry’
2. Drugs and/or alcohol
3. Dairy and farming downturn and community impact
4. Flooding, weather and climate
5. ‘Inadequate health and wellbeing services and issues (including patient transport issues)’ and equally ‘no jobs or not enough employment opportunities’.

## DISCUSSION

This research was conducted at a time of considerable stress for the dairy farm families and communities of northern Victoria. The Murray-Darling Basin Plan was just one of the factors that shaped this stress, but by no means a minor one. The Plan, designed to return water to the environment has been accepted by all stakeholders, including farmer representative bodies, as a necessary strategy. However the implementation of water policy reform has created fear, anxiety, uncertainty, alienation and an erosion of trust in governance processes and it is these issues that have not been adequately addressed.

During the course of this research additional stresses occurred that impacted on the capacity of dairy families to adapt. These included drought conditions and the Murray Goulburn decision to drop milk prices retrospectively. Meanwhile the processes designed to capture water savings changed over time from a focus on water buybacks to water efficiency schemes, schemes that represented something of a lottery for those involved. The way success in ‘winning’ grants was determined created further community divisions and these processes further destabilised already affected communities. Further, the decoupling of water from land and the commodification of water represented by the water market reforms have changed the relationship of farms to water and created additional tensions about water access and its use.

Since the Plan was implemented there has been a significant drop in the numbers of irrigated dairy farms from northern Victoria caused by families leaving dairying, by others selling their water and moving into dryland farming, and by farms becoming bigger as smaller farms are swallowed by neighbours. These changes in dairying have created significant changes in the livelihood strategies adopted by farm families including the higher levels of input by women on farm and the critical sourcing of off-farm income again undertaken predominantly by women. Additional strategies have been adopted to change the production process including the introduction of more efficient dairy technology.

Critical social outcomes have emerged that affect the capacity of dairy families to adapt to the new realities. These include the problematic access to hired labour, the lack of employment options in dairy communities, the lack of child care services, critically problematic telecommunications and public transport access, service access, succession planning and the capacity for aging dairy families to continue.

What appears evident to outsiders spending considerable time in these communities during this time of considerable change is that they are in an unprecedented era of change, that some are coping more easily with these changes, that governance processes surrounding the water reform processes are negligent of community participation, and that the outcomes for dairy participants are critically shaped by gender, stage of the life cycle, longevity in dairying and experience. Further the frustration expressed by families at the lack of community understanding and at not being heard by those in positions of power is palpable.

What is also evident is that there are significant and fundamental changes underway that may affect the viability of the dairy industry and the ongoing health of communities. These include the declining numbers of dairy families, the loss of expert knowledge, the high numbers of empty farm houses, emerging issues of poverty, mental health issues, critical issues of drug and alcohol dependence, the loss of professionals from communities, and gender disparities.

There is a critical and in fact a moral need to address the social implications of dairy restructuring and water reform. Dairy families have accepted the need for water reform. It is incumbent on the community and policy makers to support families and communities to a successful transformational adaptation. To do this requires major attention to services and supports that will assist this transition.

## CONCLUSION AND RECOMMENDATIONS

On the basis of the qualitative and selected Rural Wellbeing Survey data we note the following recommendations:

- Water policy – including policy supporting water markets – can be a form of support for dairy farmers and dairying communities, and therefore governments and industry should work to stabilise the reform process. A stable reform process is an inclusive policy reform process that incorporates local community perspectives, needs, and opportunities. A stable and trusted policy reform process will assist negotiating trade-offs.
- Water reform policy processes should integrate equity for the environment with policy support for *place-based* industry and communities. The identified risk is the reduction of wellbeing, health and industry investment given the convergence of multiple challenges for the dairy industry and associated communities.
- Policy practice must recognise the *limits to adaptive capacity* with the marketization of water and declining water availability for consumptive use.
- Dairy industry practices supporting gender/social equality requires further needs assessment but this research indicates the need for further gender analysis and gender mainstreaming in water policy process. This should include on farm roles and responsibilities, training opportunities, opportunities to participate in decision-making (on and off-farm), and succession practices.

We recommend the following supports are essential to assist and support social sustainability in dairying communities:

- Childcare
- Communications, public transport, education and school options, livelihood opportunities
- Trust building in water governance reform and infrastructure program rollout
- Policy stability
- Inclusive policy development and policy nexus strategy that can support rural community/place-based adaptive capacity.

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