REPORT

MARNE SAUNDERS COMMUNITY ENGAGEMENT PROCESS

Tuesday 01 and Thursday 03 November 2022

Location: Mount Pleasant Community Hall

Independent Facilitator: Leanne Muffet (Strategic Matters)

Client: Murraylands and Riverland Landscape Board









(Photos taken by Strategic Matters and Landscape Board staff)

Overview

As part of their commitment to developing a sustainable approach to the ***Marne Saunders Water Catchment,*** the Murraylands and Riverland Landscape Board (the Board) held two community workshops with water users in early November 2022. The workshops were an extension of a Water Allocation forum held in Cambrai in February 2022, also run by the Board. The February forum provided both expert advice on the water resource status and created opportunity for discussion with the community.

The November community workshops were facilitated by an independent Community engagement facilitator from the business "Strategic Matters".
Each workshop ran from 6pm-9pm and each was held at the Mount Pleasant Soldier's Memorial Hall, in Mount Pleasant.

- The Tuesday (01/11/22) session was held with water licensees.
- The Thursday (03/11/22) session was held with non-water licensees / holders.

The November 2022 workshops responded both to the February meeting, and to the recent years of lower than average rainfall that have impacted on the Marne Saunders Catchment.

The workshops were intentionally designed to elicit the community's long term vision (preferred outcomes) for the catchment and agreed options for achieving these outcomes. More specifically, the workshops created an opportunity for the community to:

- articulate their long-term vision for the catchment
- identify and discuss options to address concerns about water resources in the catchment
- assess possible options for the longer term management of catchment
- hear from the Board on outstanding matters from February's water forum, and
- continue to share their concerns and ideas with the Board

To assist with the workshops a series of six (6) factsheets pertaining to the water planning process, potential options for addressing concerns, the current water resource status, and key issues heard during the February session were sent with the invitations and were available at both November workshops.

This report consolidates key and conceptual findings from both November workshops.
Findings have been presented in this manner to ensure transparency of information for all water users who attended the workshops. Raw data from each meeting can be found in Appendices of this report.

Findings across both November workshops illustrate that stakeholders wish to see the reestablishment of long term environmental flows / health, AND long term positive outcomes for the community and agricultural businesses. While some difference of opinion regarding water use and its associated management within the Marne Saunders catchment does exist particularly between licensees and non licensees, most stakeholders who attended the workshops identified environmental outcomes and improved efficiency in irrigation as their key aims for the future of the catchment.

There is recognition that for this to occur, change is required across water management, practices, infrastructure, planning and policy.

More specific items such as monitoring water use, improving compliance, administrative changes, importing water from other sources, exploring on farm options – such as dam infrastructure and agricultural technology, were all explored by stakeholders as possible tools and or practices to improve water outcomes.

What is clear is that the community cares about all aspects of the catchment (environmental, economic, and social) and recognises that a concerted collective effort is required to sustain the water resource into the future. ***

Process

A key focus of the workshops was to develop a vision for the catchment together with the identification of options to assist with creating a collectively owned sustainable future.

The agenda focussed on the following items:

1. Welcome and Acknowledgement of country;
2. Objectives, process, and housekeeping
3. Project context presentation;
4. "Visioning Process" including short presentation from both Strategic Matters and community members ("Local voices");
5. The Role of DEW in analysing the benefits of the options going forward (*first workshop only*);
6. Group work: Articulating, capturing, and exploring options and pathways forward
7. Feedback
8. Evaluation of the process and next steps
9. Close

Who attended?

Demographics

On Tuesday 22 community members attended.

- attendees were **all licensees** who resided across the catchment (in both the upper and lower reaches)

On the Thursday, 24 community members attended.

- While most attendees were **not water licensees**, a small number of attendees were. Participants of the session resided across the catchment (in both the upper and lower area).

Findings

Item 4: VISIONING

The Visioning process asked attendees the following questions:

1. What do you want and need the catchment, river system and water allocation to **LOOK LIKE** in 20 years' time?
2. What ***needs to be done*** to achieve those multiple outcomes?

Following an introduction from Strategic Matters and the two Local Voices (Rose Laucke and Leon Deans on November 1st; George King and Angus Jones on November 3rd), community members convened in smaller groups to discuss the questions.
Responses were recorded by Landscapes staff, who also moderated and guided conversation.

Approximately 200 individual responses to the visioning questions were recorded across both evenings.

In addressing both questions, ***non-licensed community members*** presented a wider range of responses than license holders did.

- This may be due to a slightly larger number of attendees at the non-licensee meeting;
- however this pattern is most likely representative of the wider range of backgrounds represented at that meeting.
- Conversely, *higher levels of congruency of opinions* was evident ***among licensees.***

Environmental outcomes and improved efficiency in irrigation (via Agricultural Technology) were identified as key aims for the future of the catchment by the majority of workshop attendees.

Findings from the Visioning process have been presented below for each evening using a Word Cloud process.
A Word Cloud illustrates with words those items that are articulated most frequently.

Tuesday Evening Findings (Licensees).

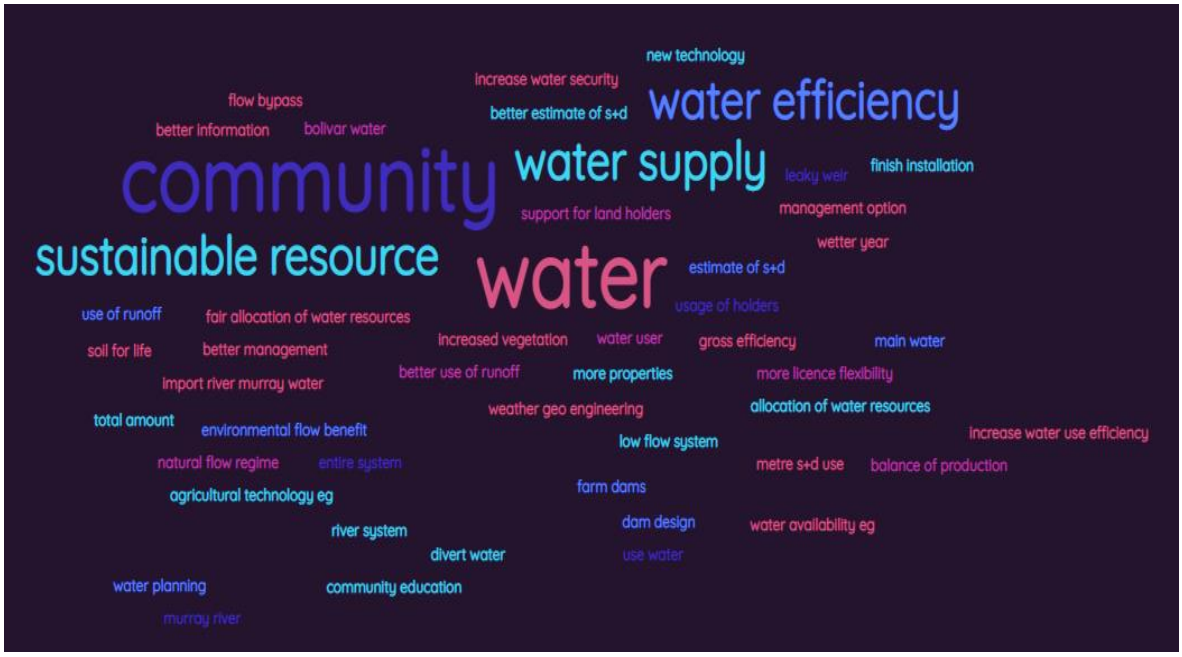
On the Tuesday evening, approximately 80 individual responses were recorded for the two visioning questions. These are depicted below both as a Word Cloud and with a sample of verbatim comments.

1. TUESDAY Qst 1: What do you want and need the catchment, river system and water allocation to **LOOK LIKE** in 20 years' time?

And some verbatim comments: (listed alphabetically)

- *Be able to use half water allocations*
- *Better agricultural technology*
- *Better use of rainfall*
- *Blackfish / fish doing well*
- *Blockages in this system to slow down water movement*
- *Cultural water rights respected*
- *Custom preparation from soil*
- *Import water from bolivar to Eden valley*
- *Marne River flowing*
- *More trees*
- *Prosper with better or improved water use*
- *Red Gums trees doing well*
- *River Marne flowing*
- *Salt levels managed*
- *Seeing healthy green, Red Gum forests / trees*
- *Sustainable systems*
- *Sustainable economically and culturally*
- *This system does not get any worse!*
- *Thriving and continuing communities and industries*

2. TUESDAY Qst 2: What ***needs to be done*** to achieve those multiple outcomes?



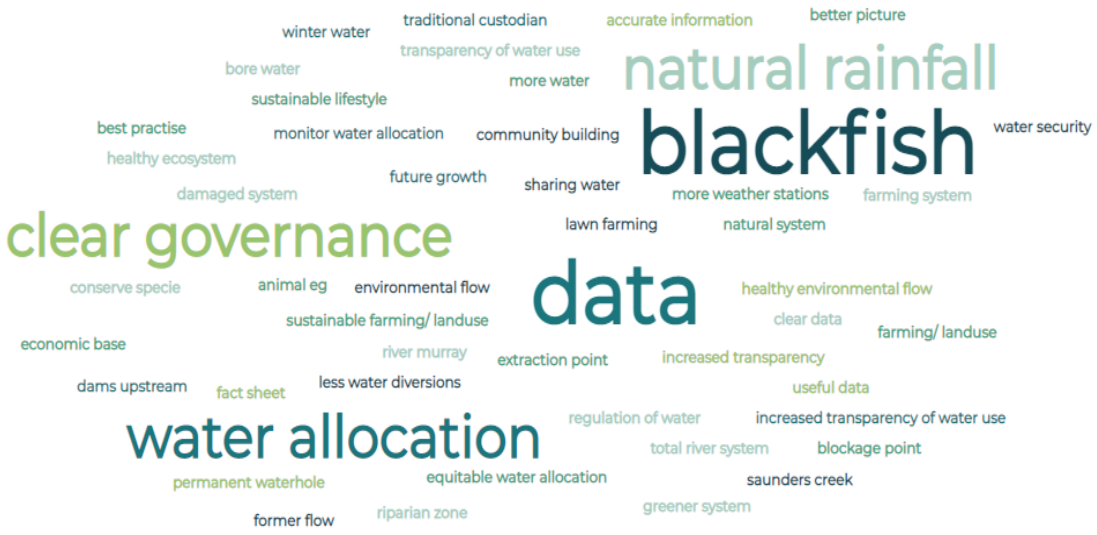
And some verbatim comments: (listed alphabetically)

- ★ *Better information to water users on the management options available*
- ★ *Better use of runoff from roads and other water*
- ★ *Bolivar water pumped into the river system*
- ★ *Divert water back into the catchment to assist recharge*
- ★ *Empower the community*
- ★ *Financial support for land holders to adapt*
- ★ *Increase flows*
- ★ *Meter stock and domestic use*
- ★ *More licence flexibility - within total zones*
- ★ *Piping water from Murray River to Marne*
- ★ *Provide mains water to more properties*
- ★ *Remove dams to restore natural flow regimes*
- ★ *Review the licence usage of holders*
- ★ *Sustainable water supply*
- ★ *Take time with the community to understand perspectives*
- ★ *Water management, efficiency, and fair allocation of water resources*
- ★ *Work with Barossa council by sharing information re water infrastructure*

Thursday Evening Findings (Non Licensees).

On the Thursday evening, approximately 120 individual responses were recorded for the two visioning questions. These are depicted below both as a Word Cloud and with a sample of verbatim comments.

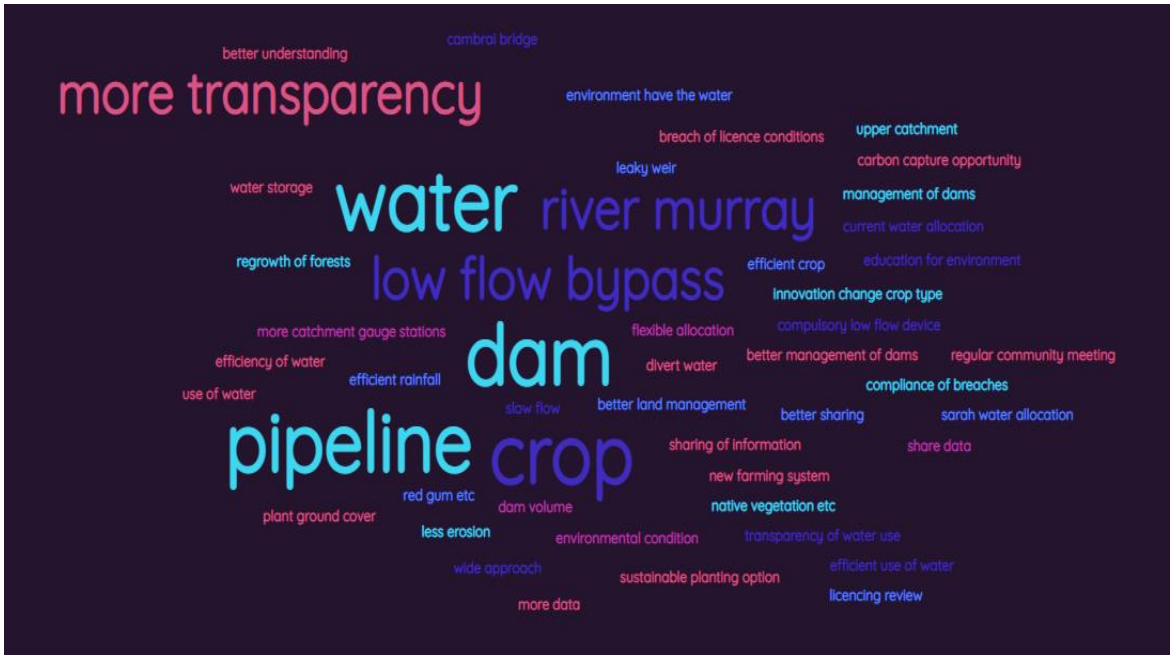
1. THURSDAY Qst 1: What do you want and need the catchment, river system and water allocation to **LOOK LIKE** in 20 years' time?



And some verbatim comments: (listed alphabetically)

- *A better picture of what we've got versus using*
- *Clear and useful data*
- *Clear governance*
- *Fixing blockage points and extraction points (dams)*
- *Healthy environmental flow: Blackfish*
- *Hydrated and greener system*
- *Increased transparency of water use*
- *Monitor water allocations*
- *More accurate information and data*
- *permanent waterholes for Blackfish*
- *Reduce loss to evaporation*
- *Regulation of water*
- *Remove dams*
- *Return to natural systems*
- *Saunders Creek flowing*
- *Stop lawn farming*
- *Sustainable farming*
- *Sustainable farming / landuse reflect natural rainfall*
- *Thriving communities*
- *Traditional Custodians owning the land again*

2. THURSDAY Qst 2: What ***needs to be done*** to achieve those multiple outcomes?



And some verbatim comments: (listed alphabetically)

- ★ *Better land management*
- ★ *Consider climate in licencing review*
- ★ *Carbon capture opportunities*
- ★ *Domestic bores and dams metred*
- ★ *Ensure data is 100% correct*
- ★ *Fairer water allocation*
- ★ *Licencing and regulation*
- ★ *Make low flow bypasses mandatory*
- ★ *More transparency of water use*
- ★ *More regulation and policing*
- ★ *No forestry*
- ★ *Orchestrated rehabilitation*
- ★ *Plant ground cover in the hills*
- ★ *Water pipeline*
- ★ *Pump water from Eden valley to the Marne*
- ★ *Remove the dams*
- ★ *Stabilise riverbanks (Marne)*
- ★ *Stormwater harvesting*
- ★ *Technological approaches to water collection*
- ★ *Increased transparency*

Following the workshops, Landscape Board and Department for Environment and Water (DEW) staff undertook more detailed analysis of the visioning comments. This resulted in the development of graphs illustrating the breakdown and frequency of responses and a wider interpretation of these findings. These results can be found in a supplementary document produced by the Landscape Board.

Item 6: Group work: Articulating, capturing, and exploring benefits and risks associated with Options

To assist with the digest of the large volume of Visioning comments, over the workshop coffee break, Visioning ideas were clustered and categorised into broad "Options" heading by the Landscape staff and the Facilitator.
These headings were verified with the attendees prior to moving to the next agenda item.

Options were then consequently explored in smaller group discussions.
Participants were provided with a "Benefit and Risk" matrix / table that focused on the following:

- Benefits of adopting Options
- Challenges and risks associated with adopting Options, and
- One idea that the group would like to see the Board engage in to move this issue forward

Item 6.1: Populating the OPTIONS Table (TUESDAY evening) (Licensees)

(Options are listed alphabetically below as no weighting / prioritisation was given on the night)

- Account for Licence Stock + Domestic and Forestry Water Use
- Adjust Allocations
- Agricultural Technology (for soils, irrigation, dams)
- Import Water
- Reducing Dams + Bores
- Reforestation
- Runoff Capture

6.1.1 Key findings (Tuesday)

Key findings across Tuesday evening's issues primarily demonstrate that stakeholders wish to see more water in the system for environmental outcomes / flows, the capacity to increase recharge across the system, better equity and access of water, and the capacity to increase irrigation efficiency resulting in both environmental and economic benefits.

It was important for some stakeholders to be able to know how much water is being used as it is believed that an increase in measurement and transparency of data would ultimately enhance water use allocation.

More specially, ***accounting for / introducing a licence for stock and domestic water*** use (and possibly 'Forestry') was explored. Potential perceived benefits associated with this include the measurement of all water use, transparency of information for all users, the potential for benchmarking and assessment of water-use efficiency, and an enhanced sense of equity across all uses of water.

When discussing the option of ***adjusting water allocations,*** benefits were seen as: increased water availability in the system for environmental outcomes, (prospective) increased flexibility in water allocations, enhanced sharing of the resource (i.e.: more people can access water across the entire catchment), and increased capacity to manage / respond to anticipated climatic changes.

The idea of improved ***Agricultural (Ag) Technology*** was appealing to the attendees. Benefits of enhanced Ag Technology included potential improvements to soil water holding capacity, improved watering regimes (including the ability to tailor watering for soil type and crops), reduction in longer term costs across farms, and conceivable increased flexibility in water transfers (if greater efficiency results in more water being available in the system).

The ***importation of water*** into the system was also explored as an option. Perceived benefits associated with this focused on both increased water security for the community (and business) and enhanced environmental outcomes for the Marne River.

Comments pertaining to the option of ***reducing dams and bores*** within the catchment were coupled with anticipated benefits of increased flows throughout the catchment and the potential to increase aquifer recharge. Some attendees noted that a reduction in dams and bores could equate to an increase in water tanks – which they perceived as a good outcome.

A small cohort of attendees believe that planting trees en mass can positively affect microclimates that in turn encourage localised rainfall. Within this context, ***reforestation*** was seen as an important factor in the water planning process by some stakeholders.

Runoff capture was cited as one of the options by attendees at the Tuesday evening session. Attendees perceived that increase runoff could result in increased surface water supply, increased capacity to recharge localised aquifers, and positive impacts on salinity levels.

6.1.2 Risks and challenges (Tuesday)

Overall, stakeholders at Tuesday's workshop identified risks and challenges in terms of reduced economic certainty / viability and water security, additional expenses, increased bureaucracy, and complexities pertaining to implementation of practices and the measurement of water use.

More specifically the perceived risk and challenges relating to "***adjusting allocation***" included difficulty in policing and implementing the process, the need to clarify what an allocation is, and the concern that any changes may result in people seeking to increase allocations or storage of water to create a buffer.

Other risks and challenges cited by attendees across many of the options included anticipated high costs (whether for administration, policing, or construction), the need to ensure quality water for users, difficulties in implementing and / or measuring outcomes and resource requirements for ongoing administrative of activities (for example: reduction in the number of dams and bores).

Workshop attendees highlighted that if water was imported in the region this may result in several adverse outcomes such as: the expansion of industries (arguably not sustainable over time), significant infrastructure costs, challenges in finding a sustainable water source / supply, declining water quality and uncertainty regarding security of long-term water importation contracts at a reasonable price.

6.1.3 One idea (Tuesday)

While not all participants completed the final column on the table, it is worthwhile noting the comments that did come through under the heading "one idea" and "ideas for the board to take forward". Key items are recorded below:

- Creating water buybacks
- Carrying over water allocation based on weather conditions
- Utilising imported water and mains water for Stock + Domestic (S+D).
- Changing the situation for S+D users so that they cannot use dam water
- Engaging in expert consultation / education on technical advice (regarding Ag Technology)
- Increasing funding and education to assist community to change their technology / ies
- Talking to / connecting with the Australian Government to learn from irrigation efficiencies in the Murray Darling Basin (MDB)
- Undertaking efficiency audits

Item 6.2: Populating the OPTIONS Table (THURSDAY evening) (Non Licensees)

On the ***Thursday*** evening the following key issues were identified and agreed to by attendees as suitable topics for further discussion.

(Options are listed alphabetically below as no weighting / prioritisation was given on the night):

- Agricultural Technology
- Alter Allocations (upper / lower), (surface/ groundwater), (seasonal adjustments)
- Appropriate Revegetation
- Equity: Licence Vs Unlicensed
- Import Water from Murray River, Bolivar, North Para
- Improve Compliance
- Improved Communication + Transparency of Data
- Increase Environmental Flows / Sharing Water with Environment
- Low Flow Bypasses at all Dams
- Matching Crops to Conditions

6.2.1 Key findings (Thursday)

Attendees suggested that improvements to ***Agricultural (Ag) Technology*** may result in less water needing to be used in the system. For example: where improvements in access to water related data could be achieved, these could support on farm decisions resulting in better use of water across different soil types.

Altering water allocations in the upper and lower parts of the catchment to benefit the extraction of surface and groundwater was also cited as an option. The benefit associated with this, as expressed by participants was that more water will flow through the system and be available to recharge aquifers (and contribute to environmental health).

When referring to ***appropriate revegetation of water courses*** benefits were cited as the stabilisation of water courses, channels and soil, and the creation of new zones that encourage / bring back biodiversity. Workshop participants also noted the benefits that revegetation could generate for agricultural land, prospectively increasing viability and yield for landholders.

Greater ***equity between licenced and unlicensed water users*** was another option that emerged in Thursday's workshop. Key benefits associated with this were noted as increased transparency across all water users, and improvements in water data and water use.

Increasing environmental flows / sharing water with the environment was another option that was discussed. The benefits associated with this were perceived increased health in and across ecosystems / biodiversity. Increasing environmental flows was also paired with the idea of reducing dam heights.

The idea of ***importing water*** from other systems was explored by attendees. Benefits associated with these included the ability to re-establish the flow in the Marne River- creating environmental benefits. The idea of utilising Bolivar water was perceived to be a positive way of re purposing an otherwise waste resource.

Improved compliance was cited as an option in the Thursday evening group. Benefits associated with this included improved confidence in the management of water, an increased sense of equity of water distribution, and the possibility of data available in real-time. Attendees noted opportunity for better planning for water use, water scarcity and business investment because of improved compliance in the system.

The need for ***improved communication and transparency of data*** was noted as an option for the Board. Attendees expressed a desire for greater access to clear and efficient data and information. Attendees were energised about such an approach prospectively assisting with an improved

collective understanding of issues and improved engagement and participation in water related decision making.

Creating ***Low flow bypasses*** on all dams was another option explored by attendees. Perceived benefits associated with this were increased flows available for the system; hydrating the catchment and sustaining the system. Attendees perceive that the introduction of Low flow bypasses could increase education of and involvement by the community in environmental practices, ultimately creating positive action. Attendees also associated Low flow bypasses with reduced erosion.

Matching ***crops to the conditions*** was another option explored at the Thursday evening meeting. Attendees believe the following benefits are associated with this option: spreading economic risk across activities, increased water use efficiency, and capacity to grow a range of crops at different times and or on different locations (these could include perennial and annual crops, and / or drought tolerant crops). Attendees noted that increased nutritive value of mixed species / crops could result in better soil health and improved ecosystem functioning.

6.2.2 Risks and challenges (Thursday)

Risks associated with ***Ag Technology*** included concern that the initial outlay of investment / capital may be high and the outcome may not be guaranteed. There was also the perception that if equipment is not tested appropriately farmers may be disadvantaged in the process. The risk of technology becoming 'out of date' was also mentioned as anther risk and or challenge. One of the other challenges noted was the time required for people to gain confidence / trust in a new product / practice.

Perceived risks and challenges of ***altering allocations*** include the possible loss of jobs (creating an adverse impact on the community), concern that the process will be political (!),the process may not alter the collection of water in dams and that many water users are already very efficient.

Risks associated with ***appropriate revegetation*** include the cost of revegetation, the cost of fencing water courses and undertaking appropriate mapping / logistics to understand where the need is. Concern was also raised regarding how to establish viable plants particularly if planting occurs in dry year(s) with no or little rainfall.

Regarding ***increased equity between licenced and unlicensed users***, the cost of monitoring was cited as a key challenge for this option. It was also noted that some people may resist the process.

When discussing the risks associated with ***utilising water from the River Murray, Bolivar and or North Para***, attendees queried whether importing water is masking the issue and therefore reducing the likelihood of positive changes by local landholders. The cost associated with engineering and or water diversion was also seen as a challenge and /or risk. It was also noted that there is prospectively not enough water in either the River Murray or North Para system to continuously export to the Marne.

When exploring prospective water from ***Bolivar***, issues pertaining to poor / inappropriate water quality - derived from heavy metals, were of concern. Finally, the use of energy to pump water was cited as a challenge for these options.

The risks and challenges affiliated with ***improved compliance*** focused on possible backlash from the community, the cost for the Board to realistically resource the process and questions relating to the timely enforcement / implementation of such a practice.

When exploring risks associated with ***improved communication and transparency of data***, attendees noted the need to get the balance right across:

a) the provision of clear and accessible data, and
b) preventing the oversupply of data.

Workshop participants believe that too many events can result in *consultation fatigue*, as can the inappropriate choice of timing of event and / or the location of an event. Freedom of Information and other "red tape" are perceived as stymieing efforts for people to access information. Attendees perceive that the Board is constrained by political cycles which can both alter the provision of information and hamper outcomes. Attendees encouraged the Board to adopt a proactive approach to prevent agendas being hijacked by loud voices.

The introduction of ***Low flow bypasses*** on all dams was paired with perception of economic risk accrued through less water being available for those with dams. The cost of installation and maintenance were also perceived challenges as was the note that the mechanics do not always work properly. Another perceived challenge is the landholder buy-in to the practices. Finally, some cited that low flow bypasses have limited benefit in some parts of the catchment.

Risks and or challenges associated with ***matching crops to conditions*** included no market for products, decreased profit / viability, and concern that it takes time to change to these practises. Other perceived challenges are the willingness and capacity to invest in a long term approach (including markets, viability, and investment), the ability to research and or access crops, and building the knowledge and capacity of local farmers.

6.2.3 One idea (Thursday)

As a final exercise, attendees were asked to focus on two questions:

1) one idea to move things forward
2) what role could the board play (to advanced things)?

As only a few responses were received, these answers have been combined.

- assisting farmers to utilise AG technology through adapting farm machinery rather than purchasing the equipment.
- improved communication could be achieved through ensuring readily available and accessible information combining community engagement with council events (expanding the reach), enhancing the promotion of events, and holding more community meetings.
- supporting farmers to transition to 'matching crops to the conditions'. This could be achieved through education, farm walks, pilot projects, learning from others, funding to support projects, fine tuning the knowledge we already have, and creating incentives such as farm trials that cut across science and economics.
- exploring water import options.
- monitoring ALL water use.
- making low flow bypasses compulsory, both raising the profile at a State and Federal level, and marketing the product as "clean and green".

Conclusion

The two community workshops held by the Murraylands and Riverland Landscape Board and facilitated by *Strategic Matters* in November 2022 demonstrated broad consistency of thought and vision across the catchment amongst both water licensees and non licensees.

Collectively, the two workshops revealed a desire to see the re-establishment of long-term environmental flows and environmental health in the Marne Saunders catchment. Furthermore, workshop attendees are seeking long term positive outcomes for the community, local economy, and agricultural businesses.

While some difference of opinion regarding water use and its associated management within the Marne Saunders catchment does exist, most stakeholders who attended the workshops identified environmental outcomes and improved efficiency in irrigation as their key aims for the future of the catchment.

In addition, it is useful to note a number of consistent themes that emerged across both evenings:

Community members expressed a desire for the Board to support them with an entry point to Agricultural Technology advancements, including education and implementation. Agricultural Technology can be applied to understanding soil types, selection of alternative (less water dependent) crops and improvements to irrigation practises.

Notwithstanding the identified risks and challenges associated with it, community members are also keen to explore whether water importation is a viable piece of the jigsaw for the Marne Saunders Catchment.

Community members are keen to explore policy, and administrative changes that might improve water outcomes including the monitoring of all water use, improving compliance, and increasing equity amongst *licenced and unlicensed users.*

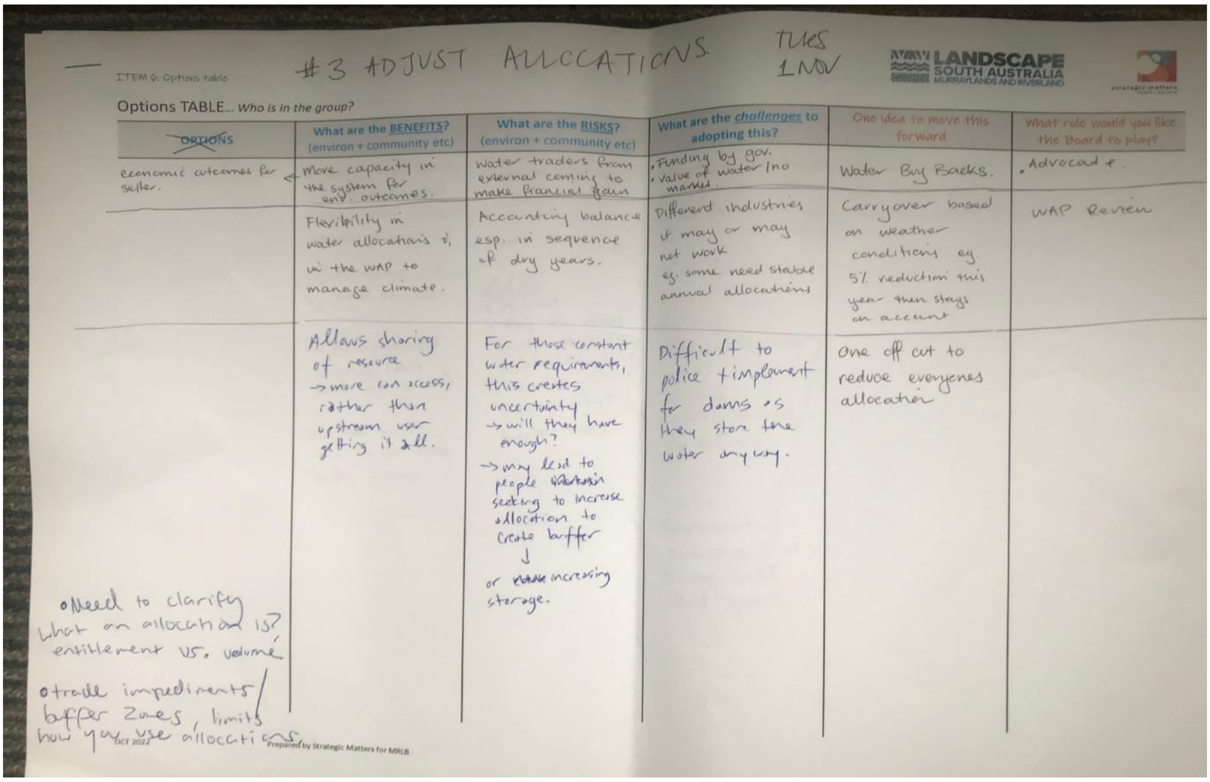
The issue of dams and Low flow bypasses are also important topics for future discussion if longer term viability and sustainability of water in the catchment is to be achieved. It is recognised that these are complex are multi-faceted issues. However, as important components of the solution, objective discussions and research are encouraged to navigate a pathway on these matters.

The community expressed a desire for the Board to play a stronger role in the generation of clear, consistent, and accessible data for all water users. Improvements in communication and engagement practises are also seen as opportunities for the Board to strengthen community input on water decisions. Future engagement might take the form of provision of regular information, creation of multiple entry points for comment and engagement, and potential partnering with other organisations to enhance the reach of the Board's work.

Recognising that the current system has not been adequately accounting for recent dry conditions, (whether across the environment, community, or business), stakeholders acknowledge that change is required across water management, practises, infrastructure, attitude, planning, and policy. And importantly, for success to occur, everyone has a role to play.

Ends (15/12/22)

TUESDAY EVENING (01 Nov 2022)



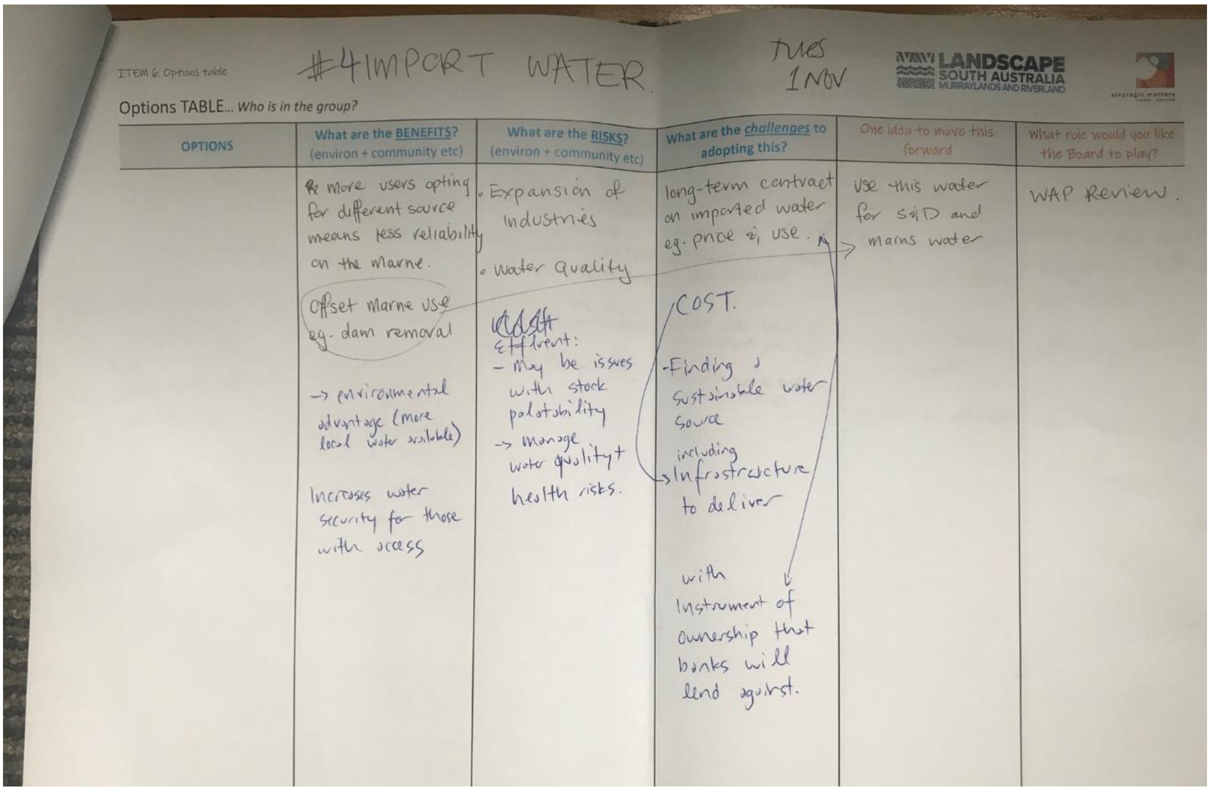
ITEM 6: Options table — #3 ADJUST ALLOCATIONS — TUES 1 NOV

LANDSCAPE SOUTH AUSTRALIA MURRAYLANDS AND RIVERLAND

Options TABLE... *Who is in the group?*

~~OPTIONS~~	What are the **BENEFITS?** (environ + community etc)	What are the **RISKS?** (environ + community etc)	What are the *challenges* to adopting this?	One idea to move this forward	What role would you like the Board to play?
economic outcomes for seller.	More capacity in the system for env. outcomes.	water traders from external coming to make financial gain	• Funding by gov. • Value of water/no market	Water Buy Backs.	• Advocate.
	Flexibility in water allocations & in the WAP to manage climate.	Accounting balance esp. in sequence of dry years.	Different industries it may or may not work eg. some need stable annual allocations	Carryover based on weather conditions eg. 5% reduction this year then stays on account	WAP Review
	Allows sharing of resource → more can access, rather than upstream user getting it all.	For those constant water requirements, this creates uncertainty → will they have enough? → may lead to people seeking to increase allocation to create buffer ↓ or increasing storage.	Difficult to police & implement for dams as they store the water anyway.	One off cut to reduce everyones allocation	
• Need to clarify what an allocation is? entitlement vs. volume • trade impediments / buffer zones, limits how you use allocations					

Oct 2022 Prepared by Strategic Matters for MRLB

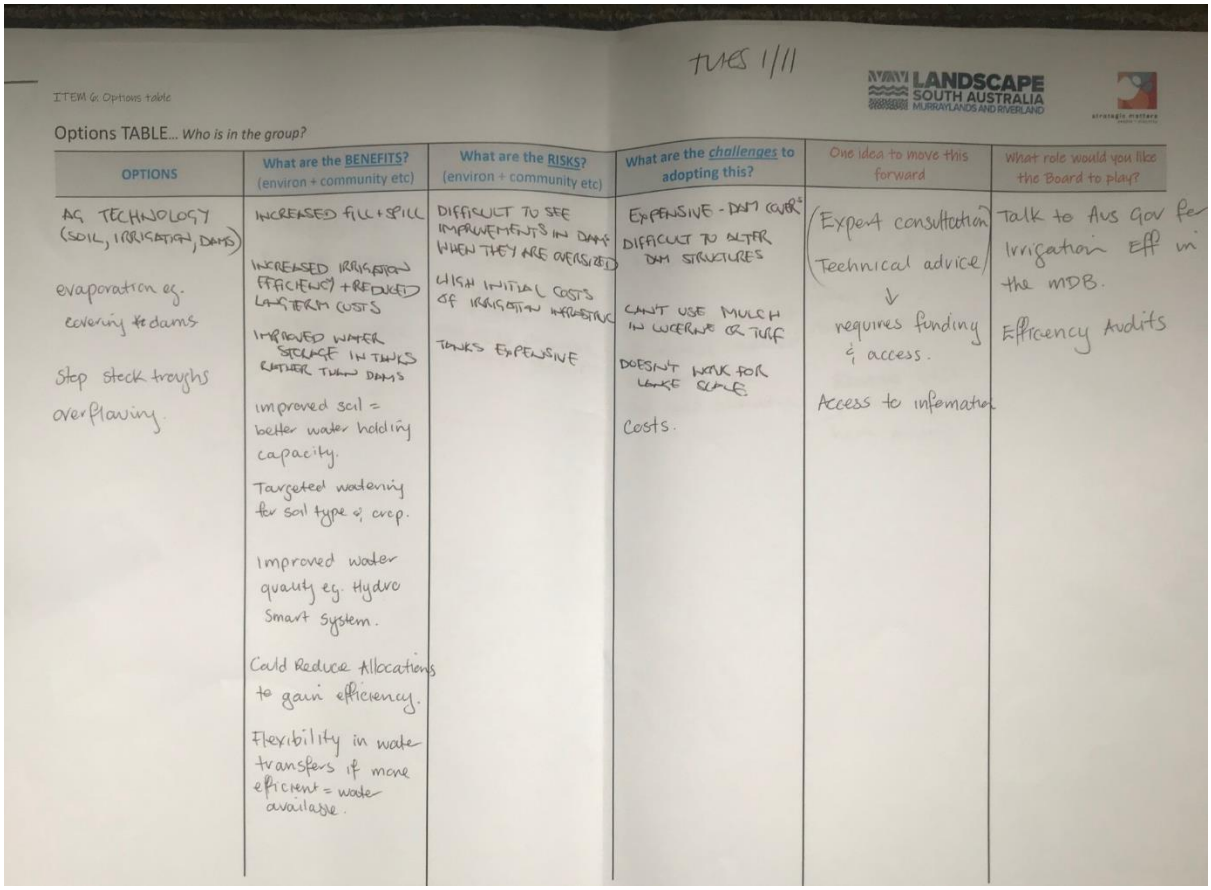


ITEM 6: Options table — #4 IMPORT WATER — TUES 1 NOV

LANDSCAPE SOUTH AUSTRALIA MURRAYLANDS AND RIVERLAND

Options TABLE... *Who is in the group?*

OPTIONS	What are the **BENEFITS?** (environ + community etc)	What are the **RISKS?** (environ + community etc)	What are the *challenges* to adopting this?	One idea to move this forward	What role would you like the Board to play?
	More users opting for different source means less reliability on the Marne.	• Expansion of industries	long-term contract on imported water eg. price & use.	Use this water for S&D and marne water	WAP Review.
	Offset Marne use eg. dam removal → environmental advantage (more local water available)	• Water Quality Effluent: - May be issues with stock palatability → Manage water quality + health risks.	COST. -Finding a sustainable water source including infrastructure to deliver with instrument of ownership that banks will lend against.		
	Increases water security for those with access				



TUES 1/11

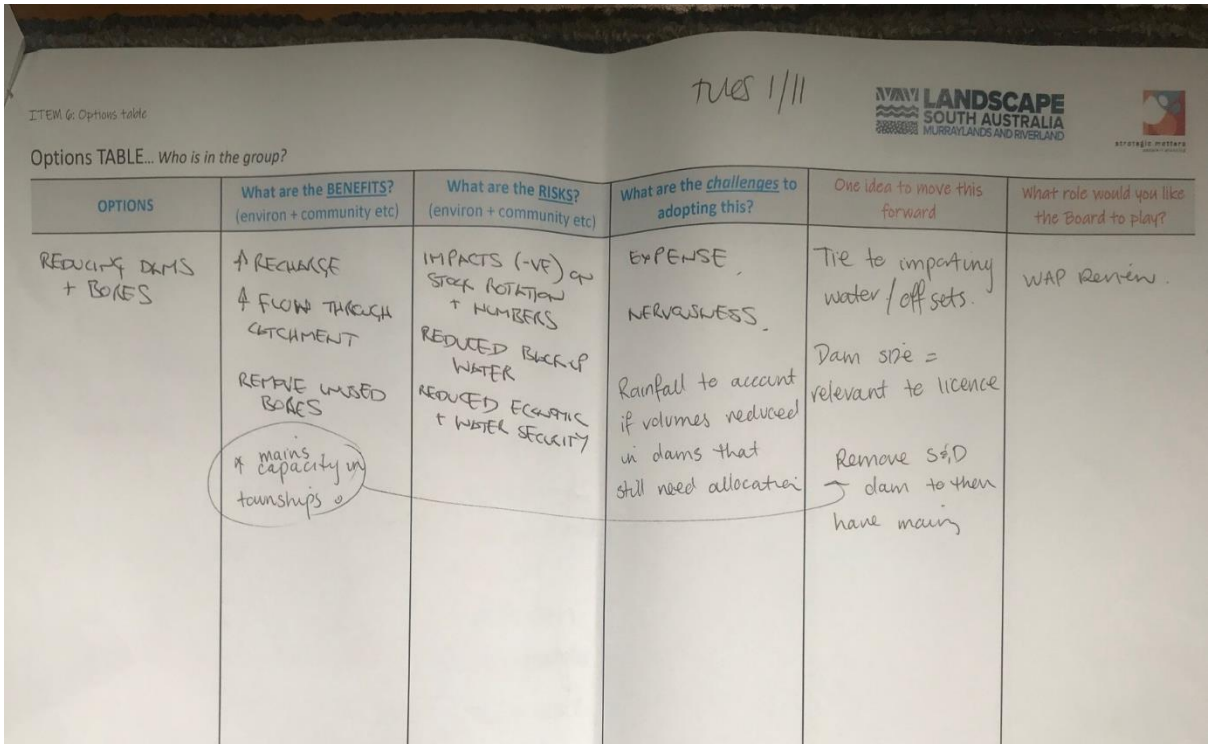
ITEM G: Options table

LANDSCAPE SOUTH AUSTRALIA MURRAYLANDS AND RIVERLAND

strategic matters

Options TABLE... *Who is in the group?*

OPTIONS	What are the BENEFITS? (environ + community etc)	What are the RISKS? (environ + community etc)	What are the challenges to adopting this?	One idea to move this forward	What role would you like the Board to play?
AG TECHNOLOGY (SOIL, IRRIGATION, DAMS) evaporation eg. covering to dams Stop stock troughs overflowing.	INCREASED FILL + SPILL INCREASED IRRIGATION EFFICIENCY + REDUCED LONG TERM COSTS IMPROVED WATER STORAGE IN TANKS RATHER THAN DAMS improved soil = better water holding capacity. Targeted watering for soil type & crop. Improved water quality eg. Hydro Smart system. Could Reduce Allocations to gain efficiency. Flexibility in water transfers if more efficient = water available.	DIFFICULT TO SEE IMPROVEMENTS IN DAMS WHEN THEY ARE OVERSIZED HIGH INITIAL COSTS OF IRRIGATION INFRASTRUC TANKS EXPENSIVE	EXPENSIVE - DAM COVER DIFFICULT TO ALTER DAM STRUCTURES CANT USE MULCH IN LUCERNE OR TURF DOESN'T WORK FOR LARGE SCALE Costs.	Expert consultation Technical advice ↓ requires funding & access. Access to information	Talk to Aus Gov for Irrigation Eff in the MDB. Efficiency Audits



TUES 1/11

ITEM G: Options table

LANDSCAPE SOUTH AUSTRALIA MURRAYLANDS AND RIVERLAND

strategic matters

Options TABLE... *Who is in the group?*

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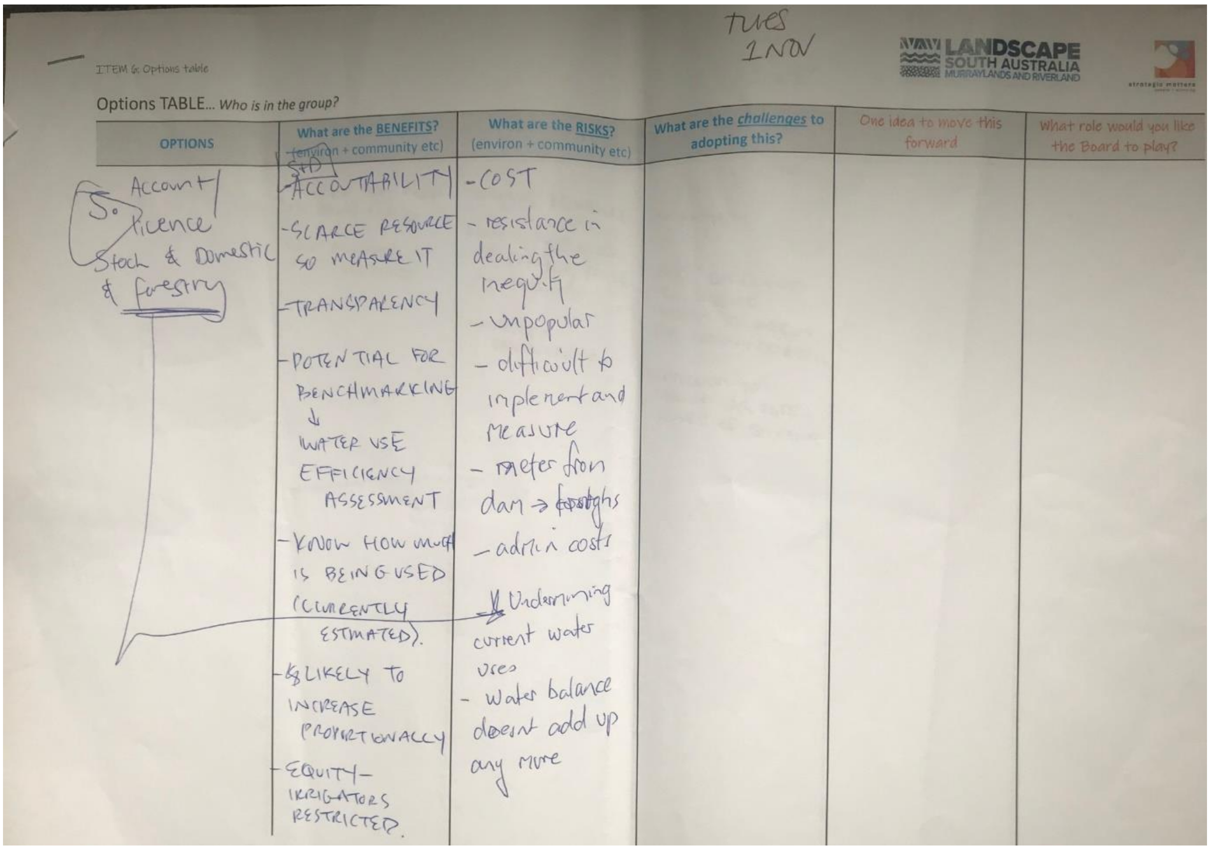
REDUCING DAMS + BORES	↑ RECHARGE ↓ FLOW THROUGH CATCHMENT REMOVE UNUSED BORES ↑ mains capacity in townships ☺	IMPACTS (-VE) ON STOCK ROTATION + NUMBERS REDUCED BACK UP WATER REDUCED ECOLOGIC + WATER SECURITY	EXPENSE NERVOUSNESS Rainfall to account if volumes reduced in dams that still need allocation	Tie to impacting water / off sets. Dam size = relevant to licence Remove S&D → dam to then have mains	WAP Review.



ITEM 6: Options table

Options TABLE... *Who is in the group?*

TUES 1 NOV

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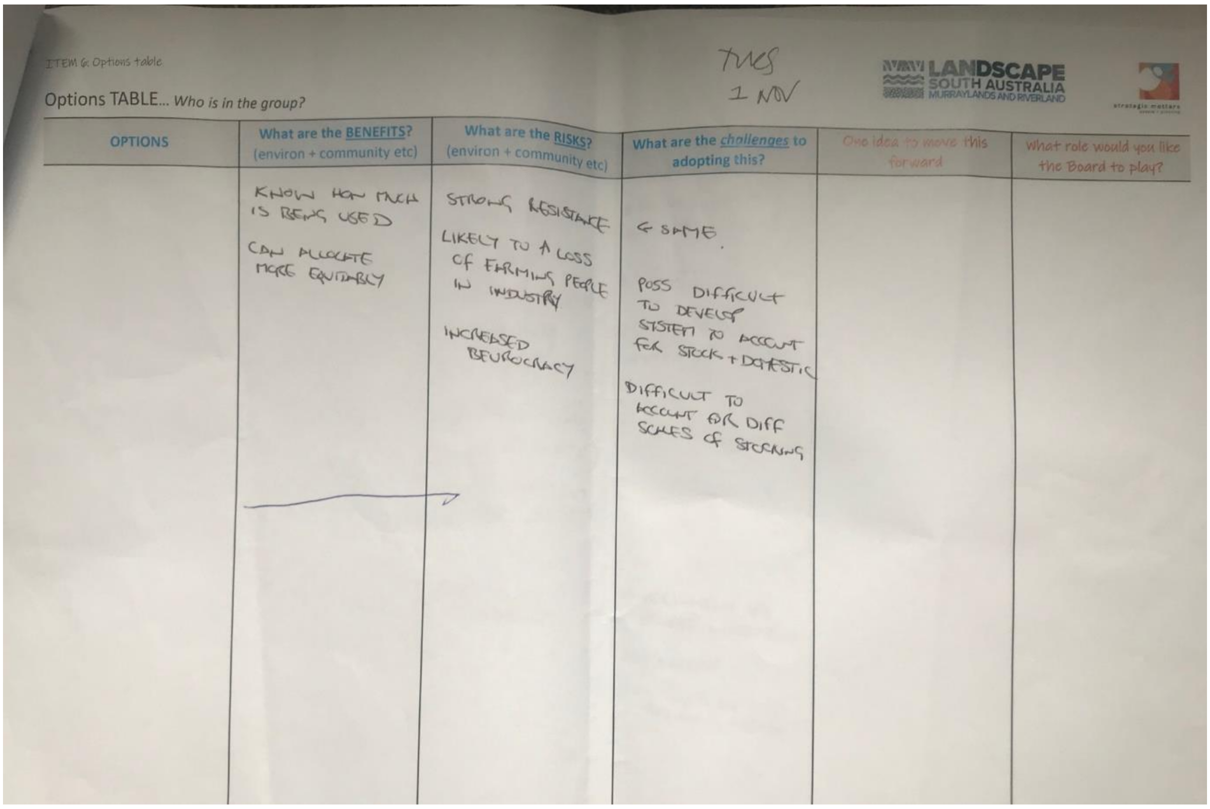
Account / S. licence Stock & Domestic & forestry	- ACCOUNTABILITY - SCARCE RESOURCE SO MEASURE IT - TRANSPARENCY - POTENTIAL FOR BENCHMARKING → WATER USE EFFICIENCY ASSESSMENT - KNOW HOW MUCH IS BEING USED (CURRENTLY ESTIMATED). - LIKELY TO INCREASE PROPORTIONALLY - EQUITY – IRRIGATORS RESTRICTED.	- COST - resistance in dealing the inequity - unpopular - difficult to implement and measure - meter from dam → troughs - admin costs - Undermining current water uses - water balance doesn't add up any more			



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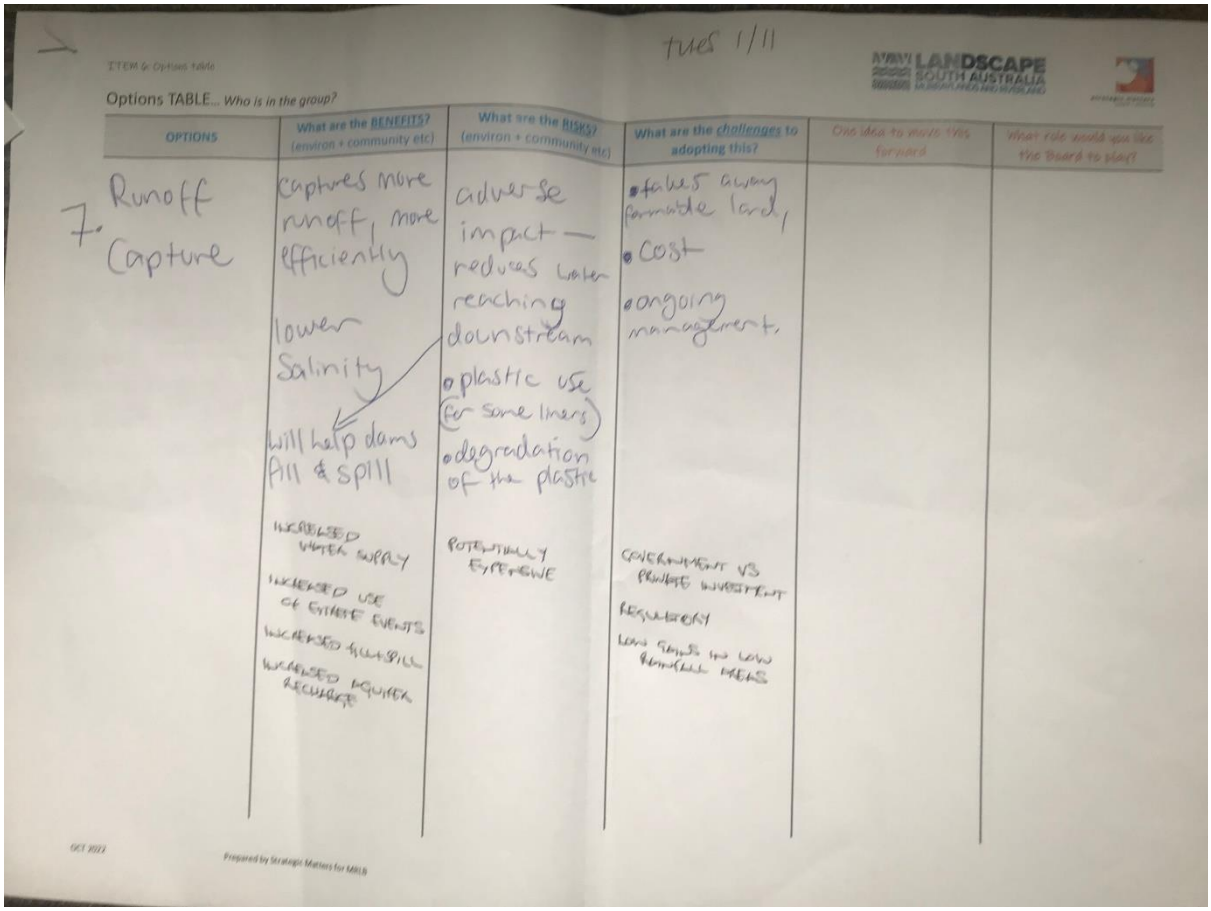
	KNOW HOW MUCH IS BEING USED CAN ALLOCATE MORE EQUITABLY	STRONG RESISTANCE LIKELY TO ↑ LOSS OF FARMING PEOPLE IN INDUSTRY INCREASED BEUROCRACY	← SAME. POSS DIFFICULT TO DEVELOP SYSTEM TO ACCOUNT FOR STOCK + DOMESTIC DIFFICULT TO ACCOUNT FOR DIFF SCALES OF STOCKING		



ITEM 6: Options table

tues 1/11

LANDSCAPE SOUTH AUSTRALIA MURRAYLANDS AND RIVERLAND

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7. Runoff Capture	captures more runoff, more efficiently lower Salinity will help dams fill & spill INCREASED WATER SUPPLY INCREASED USE OF EXTREME EVENTS INCREASED FLUSH/SILL INCREASED AQUIFER RECHARGE	adverse impact — reduces water reaching downstream • plastic use (for some liners) • degradation of the plastic POTENTIALLY EXTENSIVE	• takes away farmable land, • cost • ongoing management. GOVERNMENT VS PRIVATE INVESTMENT REGULATORY LOW FLOWS TO LOW RAINFALL AREAS		

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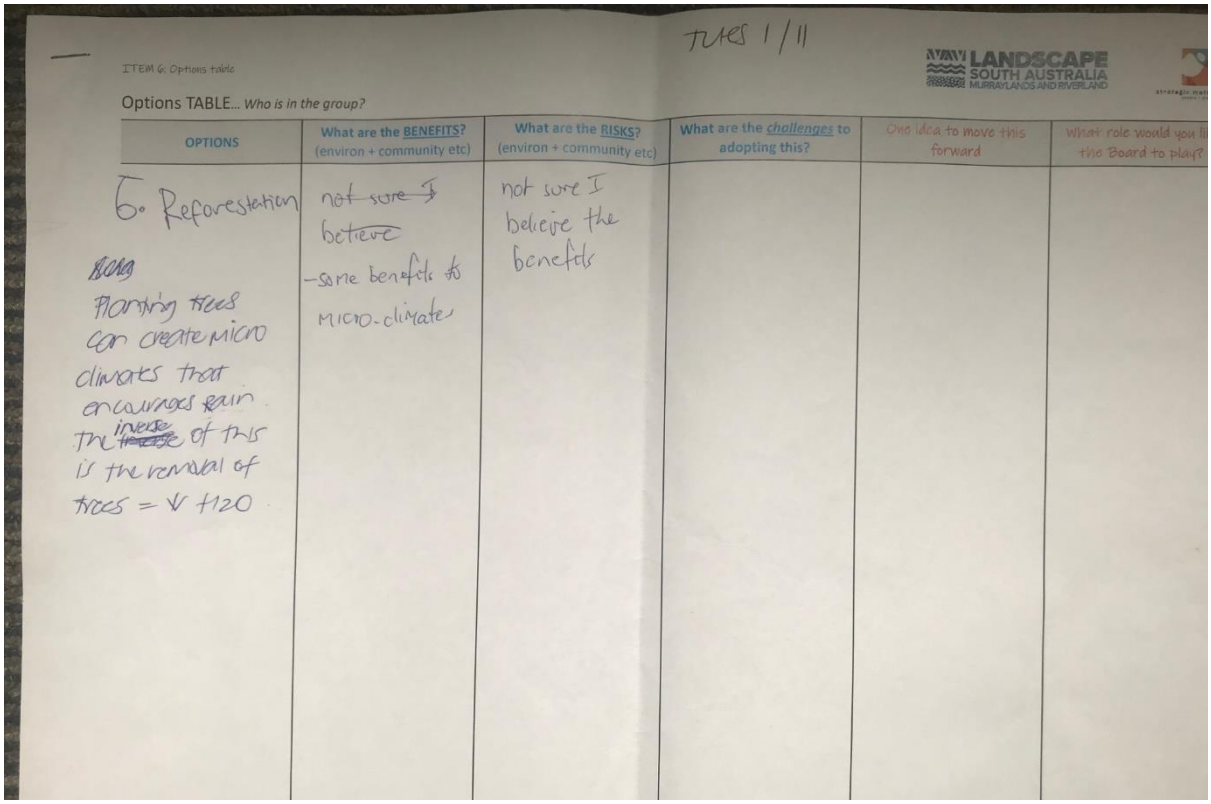

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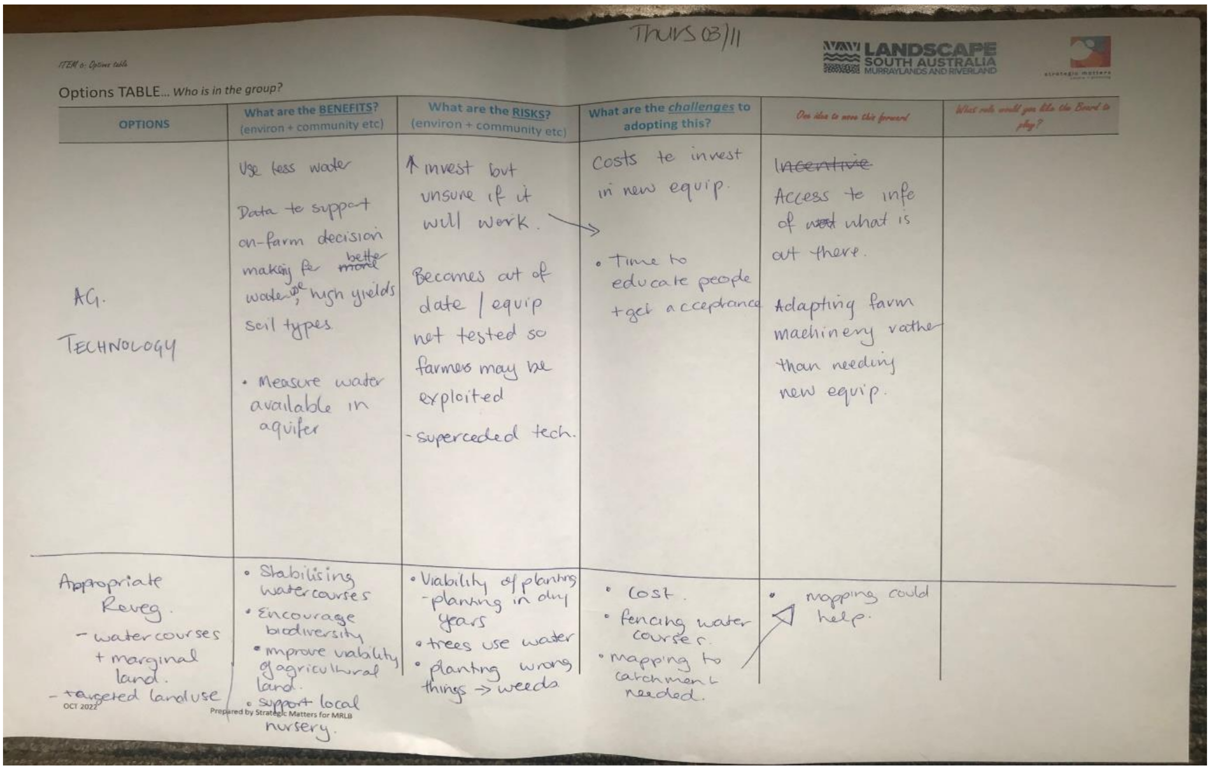
6. Reforestation Planting trees can create micro climates that encourages rain. The ~~increase~~ inverse of this is the removal of trees = ↓ rain	not sure ~~I believe~~ -some benefits to MICRO-climate	not sure I believe the benefits			

THURSDAY EVENING (03 Nov 2022)



Thurs 03/11

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AG. TECHNOLOGY	Use less water Data to support on-farm decision making for ~~more~~ better water use, high yields soil types • Measure water available in aquifer	↑ invest but unsure if it will work. → Becomes out of date / equip not tested so farmers may be exploited - superceded tech.	Costs to invest in new equip. • Time to educate people + get acceptance	~~Incentive~~ Access to info of ~~wat~~ what is out there. Adapting farm machinery rather than needing new equip.	
Appropriate Reveg. - watercourses + marginal land. - targeted landuse	• Stabilising watercourses • Encourage biodiversity • improve viability of agricultural land. • support local nursery.	• Viability of planting - planting in dry years • trees use water • planting wrong things → weeds	• Cost. • fencing water courses. • mapping to catchment needed.	• mapping could help.	

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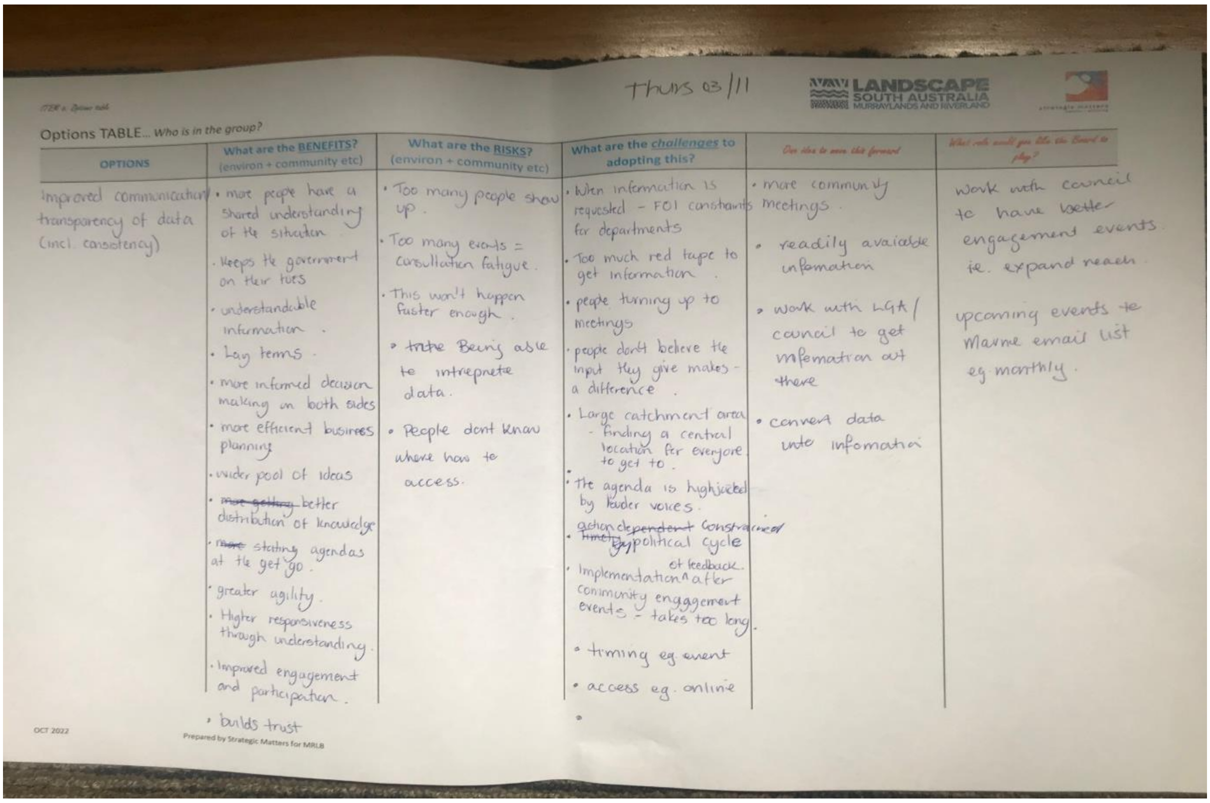

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Improved communication/ transparency of data (incl. consistency)	• more people have a shared understanding of the situation • Keeps the government on their toes • understandable information. • Lay terms. • more informed decision making on both sides • more efficient business planning • wider pool of ideas • ~~more getting~~ better distribution of knowledge • ~~more~~ stating agendas at the get go. • greater agility. • Higher responsiveness through understanding. • Improved engagement and participation. • builds trust	• Too many people show up. • Too many events = consultation fatigue. • This won't happen faster enough. • ~~the~~ Being able to intreprete data. • People dont know where how to access.	• When information is requested - FOI constraints for departments • Too much red tape to get information. • people turning up to meetings • people don't believe the input they give makes a difference. • Large catchment area - finding a central location for everyone to get to. • The agenda is highjacked by louder voices. • ~~timely~~ action ~~dependent~~ constrained by political cycle • Implementation of feedback after community engagement events - takes too long. • timing eg event • access eg. online	• more community meetings. • readily available information • work with LGA / council to get information out there • convert data into information	Work with council to have better engagement events ie. expand reach. upcoming events to Marne email list eg monthly.

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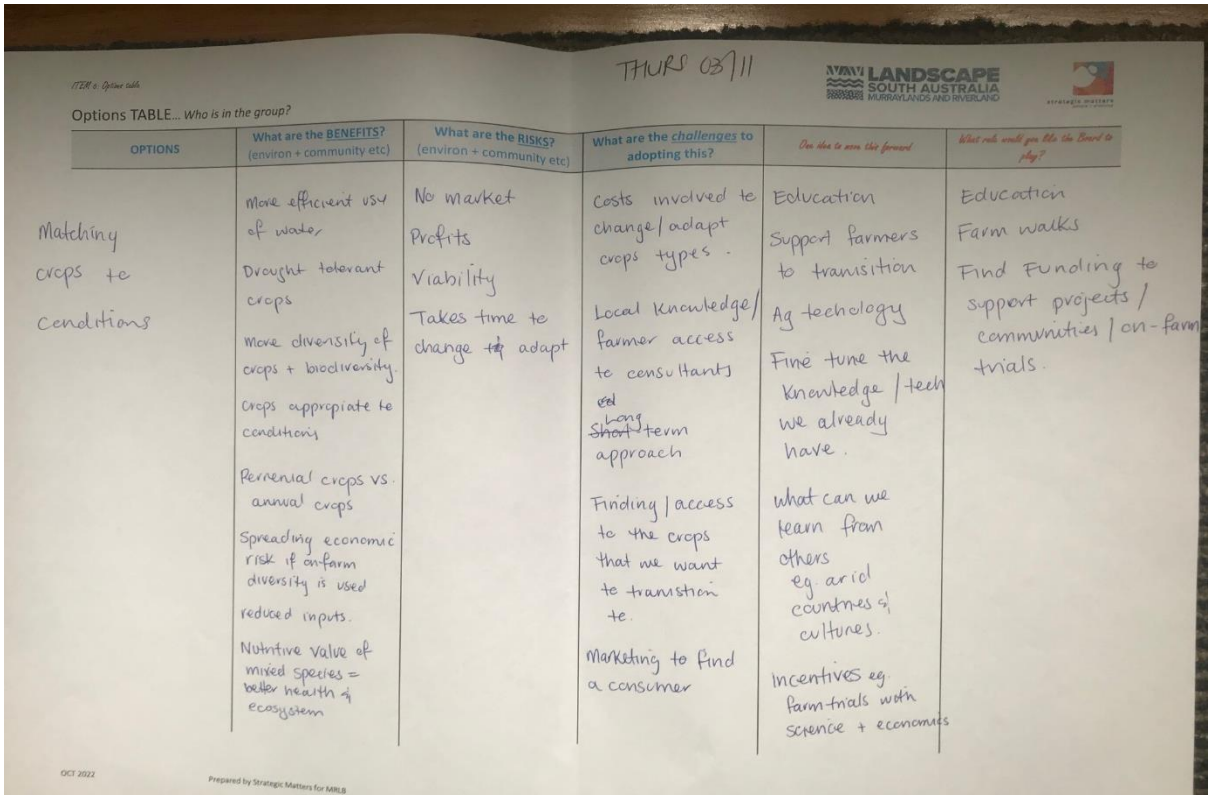

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THURS 03/11

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Matching crops to conditions	More efficient use of water Drought tolerant crops More diversity of crops + biodiversity Crops appropriate to conditions Perrenial crops vs annual crops Spreading economic risk if on-farm diversity is used reduced inputs. Nutritive value of mixed species = better health of ecosystem	No market Profits Viability Takes time to change ~~to~~ adapt	Costs involved to change/adapt crops types. Local knowledge/ farmer access to consultants ~~Short~~ Long term approach Finding/access to the crops that we want to transition to. Marketing to find a consumer	Education Support farmers to transition Ag technology Fine tune the knowledge/tech we already have. What can we learn from others eg arid countries & cultures. Incentives eg farm trials with science + economics	Education Farm walks Find Funding to support projects/ communities/ on-farm trials.

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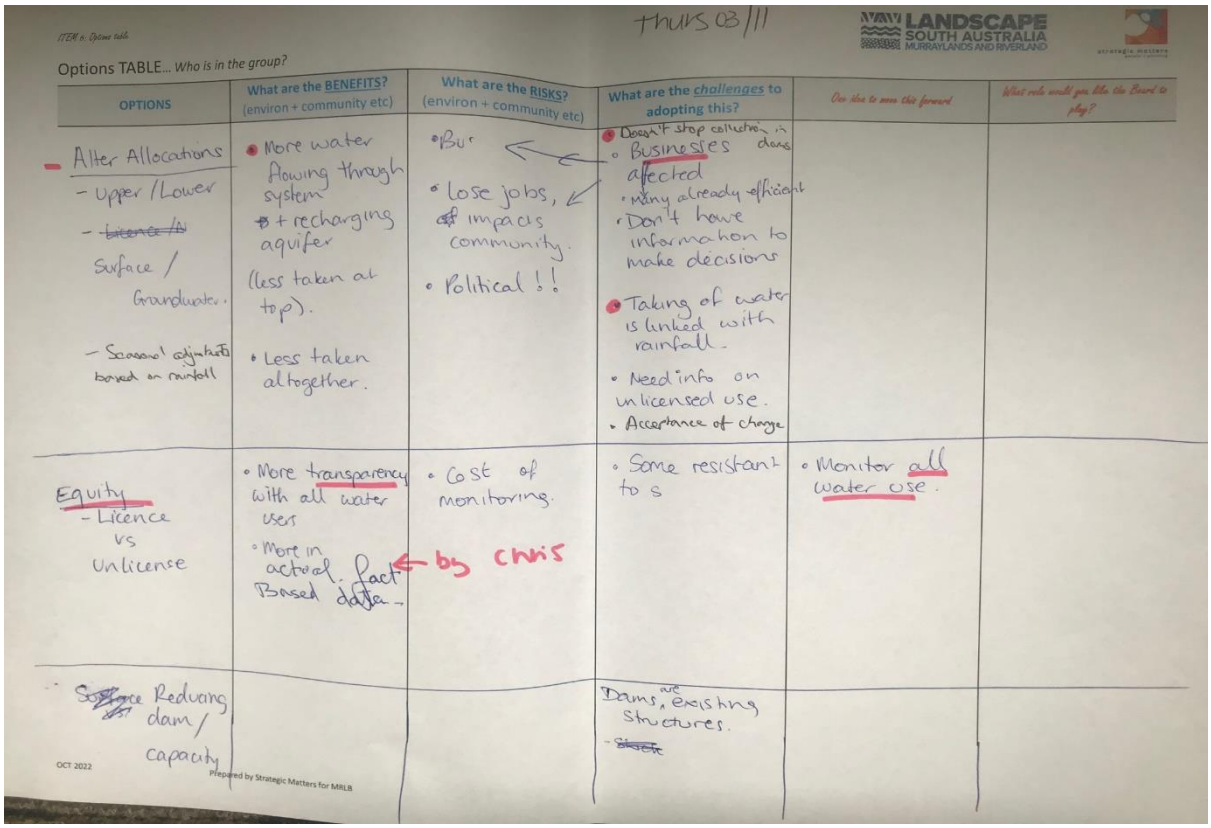

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Alter Allocations - Upper/Lower - ~~Licence to~~ Surface / Groundwater. - Seasonal adjustments based on rainfall	• More water flowing through system ~~to~~ + recharging aquifer (less taken at top). • Less taken altogether.	• Bus • lose jobs, ~~of~~ impacts community. • Political!!	• Doesn't stop collection is • Businesses done affected • Many already efficient • Don't have information to make decisions • Taking of water is linked with rainfall. • Need info on unlicensed use. • Acceptance of change		
Equity - Licence vs Unlicense	• More transparency with all water users • More in actual fact Based data ← by chris	• Cost of monitoring.	• Some resistant to s	• Monitor all water use.	
~~Sou~~ Reducing dam/ capacity			Dams, we existing structures. - ~~Stock~~		

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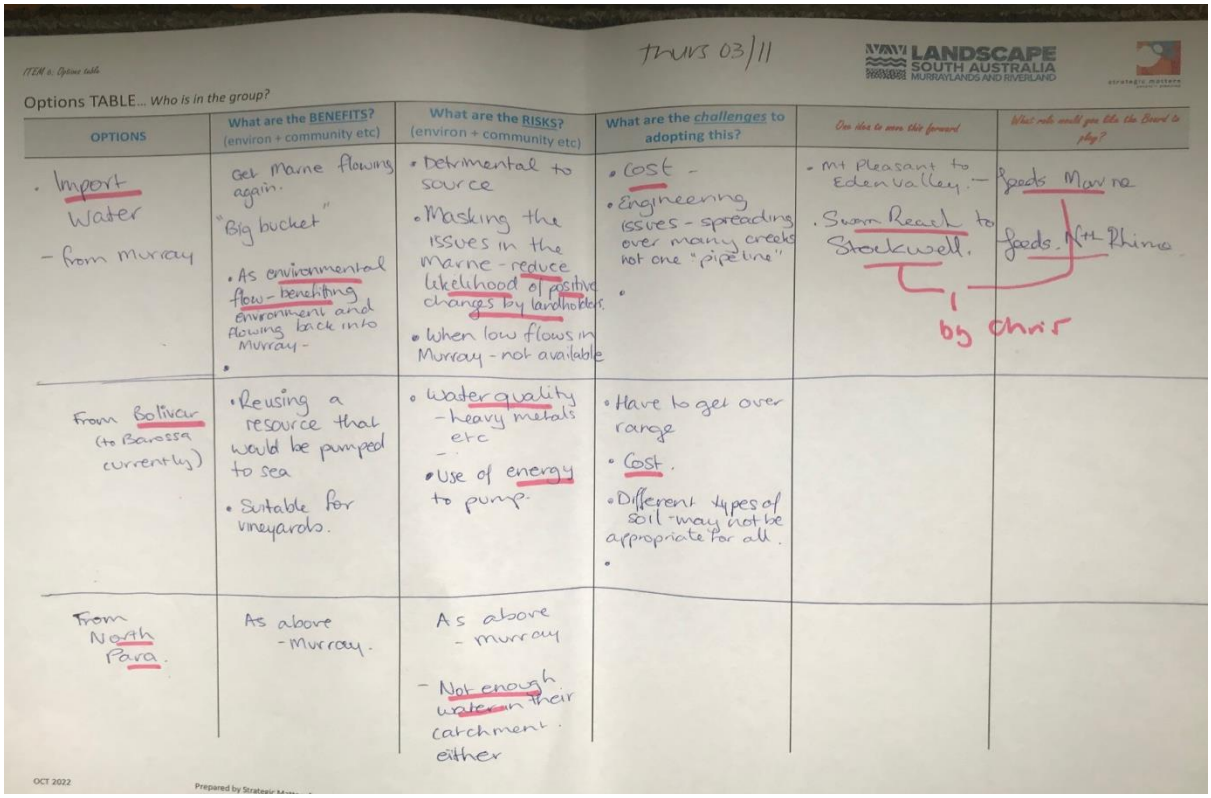

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strategic matters

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• Import Water – from Murray	Get Marne flowing again. "Big bucket" • As environmental flow - benefiting environment and flowing back into Murray - •	• Detrimental to source • Masking the issues in the Marne - reduce likelihood of positive changes by landholders • When low flows in Murray - not available	• Cost - • Engineering issues - spreading over many creeks not one "pipeline" •	• Mt Pleasant to Eden Valley. – • Swan Reach to Stockwell.	Leads Marne Leads Mth Rhine by Chris
From Bolivar (to Barossa currently)	• Reusing a resource that would be pumped to sea • Suitable for vineyards.	• Water quality - heavy metals etc – • Use of energy to pump.	• Have to get over range • Cost. • Different types of soil - may not be appropriate for all. •		
From North Para.	As above - Murray.	As above - murray – Not enough water in their catchment either			

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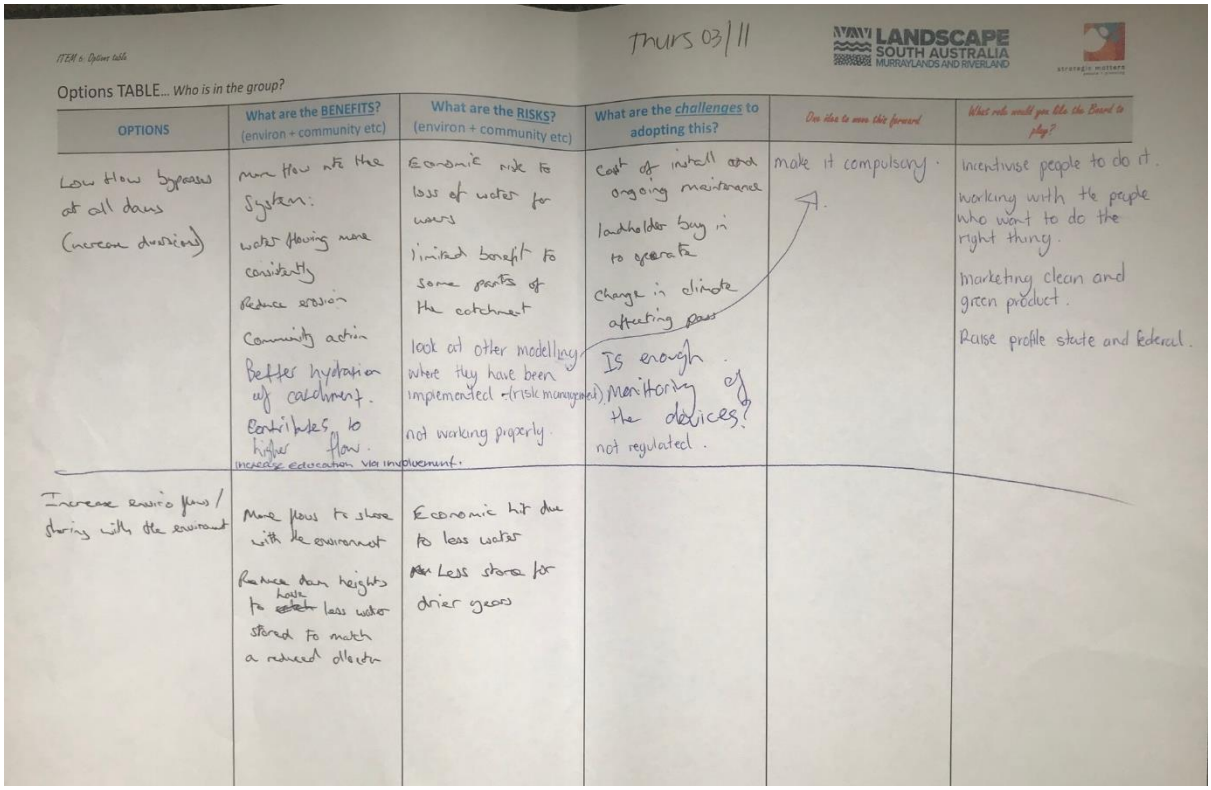

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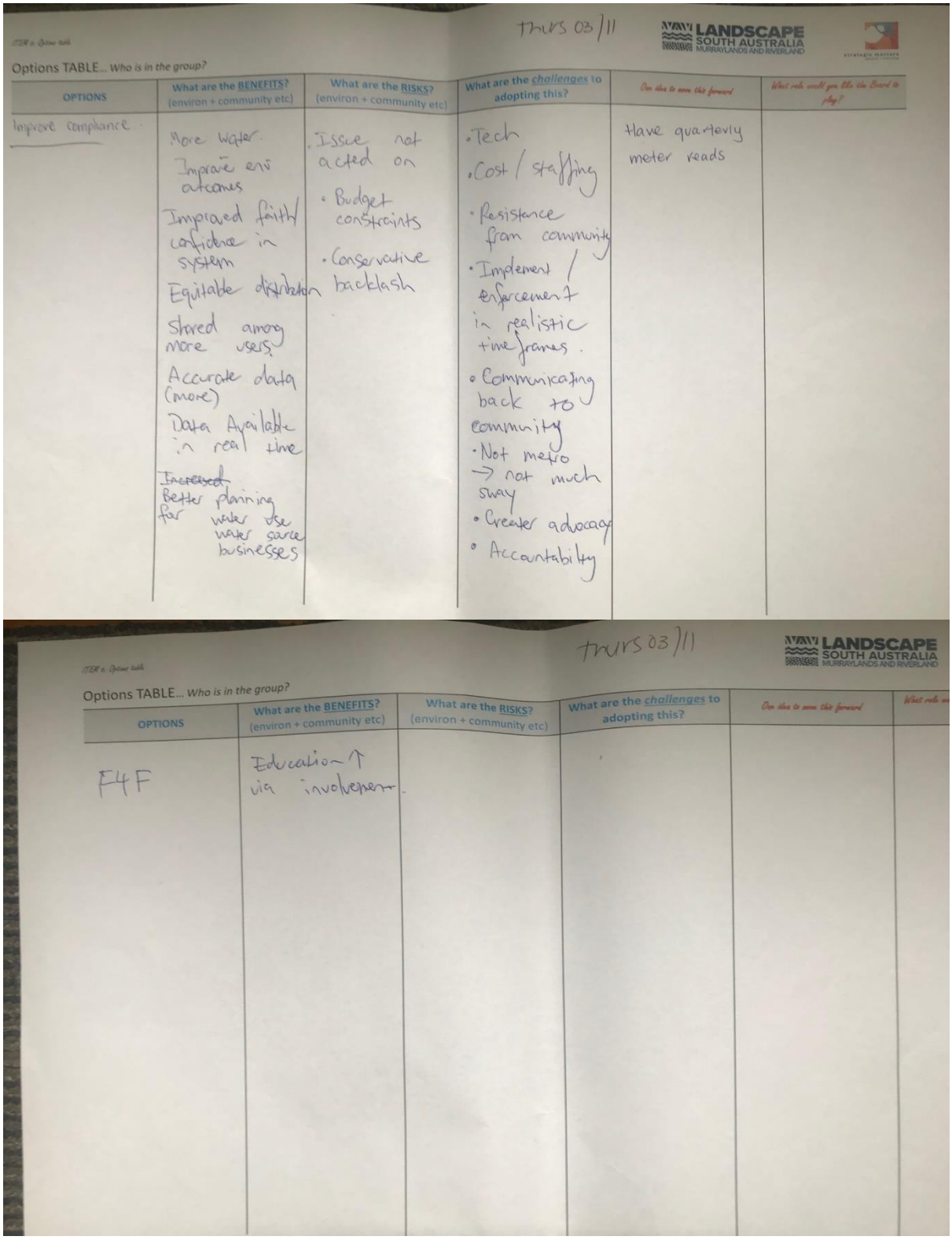
Low flow bypass at all dams (increase diversion)	more flow in the System: water flowing more consistently Reduce erosion Community action Better hydration of catchment. Contributes to higher flow: Increase education via involvement.	Economic risk to loss of water for users limited benefit to some parts of the catchment look at other modelling where they have been implemented (risk management) not working properly	Cost of install and ongoing maintenance landholder buy in to operate change in climate affecting flows Is enough monitoring of the devices? not regulated.	make it compulsory.	incentivise people to do it. working with the people who want to do the right thing. marketing clean and green product. Raise profile state and federal.
Increase environ flows / sharing with the environment	More flows to share with the environment Reduce dam heights to lower to retain less water stored to match a reduced diversion	Economic hit due to less water Less stored for drier years			



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Improve Compliance	More water Improve envi outcomes Improved faith/ confidence in system Equitable distribution Shared among more users Accurate data (more) Data Available in real time ~~Increased~~ Better planning for water use water savie businesses	• Issue not acted on • Budget constraints • Conservative backlash	• Tech • Cost / staffing • Resistance from community • Implement / enforcement in realistic timeframes. • Communicating back to community • Not metro → not much sway • Greater advocacy • Accountability	Have quarterly meter reads	

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F4F	Education ↑ via involvement				

ends