

[REDACTED]

Submission on Draft replacement Bega River Area Regulated, Unregulated and Alluvial Water Sharing Plan

About [REDACTED]

[REDACTED] is an advocacy group founded in 1994 representing productive water users throughout the Hunter Catchment. Our members consists of private diverters and both the Pokolbin and Broke/Fordwich private irrigation districts which include the thoroughbred industry, dairy, viticulture, horticulture, beef and cropping. Through our members, [REDACTED] represents over 2,000 Water Access Licence holders throughout the catchment who access regulated, unregulated and groundwater systems. [REDACTED] engages in advocacy and policy development on behalf of the productive sector in the Hunter and strives to provide apolitical advice to all stakeholders and decision makers.

To whom it may concern,

This submission is provided on behalf of the [REDACTED]. Whilst we are not within the Bega River WSP area, we are providing this submission out of concern that some of the proposals may, in future, sought to be applied to other Coastal WSP areas of NSW.

The [REDACTED] is concerned to hear of proposals in the Bega WSP consultation documents that the increase in harvestable rights may be sought from within the *existing* Long-Term Average Annual Extraction Limit (LTAAEL), thereby impacting water reliability of existing entitlement holders. This is contrary to how water users were informed at the time of the Harvestable Rights review, that “*if the harvestable rights volumes increase, the LTAAEL will increase by the same amount so there would be no impact on licence holder’s entitlement volumes at present*”.

We understand that the NSW Irrigators’ Council (NSWIC), to which [REDACTED] is a member organisation, has written to DPE to clarify this matter, and we eagerly await the response. It is our position that, given the significance of this matter in determining the industries position on the harvestable rights increase, DPE adhere to what was advised to stakeholders during the public consultation.

Secondly, [REDACTED] is aware that the Natural Resources Commission (NRC) has recommended in a number of coastal WSPs to move towards numeric LTAAELs. Whilst [REDACTED] is open to further considering this proposal, there are a number of questions which we seek clarification on. [REDACTED] is of the understanding that DPE has previously advised NSWIC that significant further work would be required before this could occur, such as to determine an appropriate method. We seek indication from DPE as to whether this work has occurred, and if so, what the findings were. We also need to understand how this proposal would interact with increased harvestable rights – i.e. whether the numeric LTAAEL would be fixed before, or after, increased harvestable rights, and at what point in time.

Finally, our coastal valleys are unique, and very different to inland valleys, requiring different management regimes to respect this difference. In the NSW coastal valleys, water licence holders

(including, but not just, irrigators) access typically between 3–10% of the total water yield, leaving 90–97% to be discharged. Engaging genuinely and meaningfully with local water users is fundamental to understanding these systems, and how the water sharing rules have developed over time, often from an industry-led and voluntary basis. We hope DPE recognises the land and water stewardship of our water users all along coastal NSW, and enables this to continue.

Yours sincerely,

[Redacted signature]

Secretary,

[Redacted name]

20 August 2022

Your name
address
Phone No

NSW Department of Planning & Environment
NSW Department of Primary Industry

To whom it may concern,

We strongly object to the draft water sharing plan for the Bega River Area Regulated, Unregulated and Alluvial Water Sources 2023.

The proposed plan does not meet the needs of the community and therefore will not be successful in meeting its objectives. We find it appalling that after all the work we have done, and money spent, to improve the condition of our water ways that we are now being penalised for our efforts. By the Govt renegeing on the Cease to Pump agreement at Kanoona and by making the implementation of on farm water storage unviable in most water sources.

The capture of water in high flows following major rainfall events in on farm storages for use during prolonged dry periods, makes a lot of sense in this region. Through the right licencing options there is also significant opportunity to reduce irrigation pressure on low flows to further improve the condition of our water ways.

It is difficult for us to reconcile that;

The Natural Resource Commission 2021, recommended investigation into on farm water storage as a means of reducing pressure on low flows and that DPIE Water as part of the Draft Southern Regional Water Strategy included on farm water storage in their shortlist of options to improve water resilience for communities and industry. Yet DPIE Water as part of the remake of the Bega Water Sharing Plan are proposing to make the implementation of on farm water storage impossible across most water sources for the next 10 years.

We strongly object to the proposed increases to the cease to pump rules in all water sources. In the Dry and Narira water sources the increase makes irrigation direct from streams unviable with out on farm water storage, which are not viable to implement the under current and proposed WSP. In the Bega Bemboka, the increase is unjustified given, during the current WSP period, flows only dropped below 2ML/day at Kanoona, at the very end of the second worst drought on record. Rather than imposing increased risk on irrigators the focus should be on increasing the Drought Reserve in Cochrane Dam and encouraging the implementation of on farm water storage.

We urgently request that DPIE Water return to the Bega Valley and work together with water licence holders and the community to identify and agree on rules that are appropriate for our landscape and will help encourage on farm water storage and reduce irrigation pressure on low stream flows. The proposed WSP in its current form will result in further dairy closures during the next dry period and will put at risk food manufacturing in this region. We need the Govt to urgently work with the local community to change the plan so it will achieve its objectives and assist the Bega Valley transition to a circular economy.

Yours sincerely





19 August 2022

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Submission on the Draft Water Sharing Plan for the Bega River Area Regulated, Unregulated and Alluvial Water Sources 2023 (the draft plan)

Thank you for the opportunity to provide comments on the draft Water Sharing Plan (draft plan). Our submission is provided by way of this letter. It follows our submission to the Natural Resources Commission (NRC) in July 2020. Headings and sub-headings are taken from the Department of Planning and Environment (the department) submission form.

Information on privacy and confidentiality

We have no objection to the department making our submission available to the public.

Stakeholder group

Local govt/utilities.

Did you attend and information session, webinar, or meet with the department about the WSP?

We met with the department about the draft plan in Bega on 25 May 2022. We understand that the draft plan will replace both the Bega-Brogo 2011 plan and the Murrah-Wallaga 2010 plan when they expire on 30 June 2023. As per the background document, key drivers for plan changes include the NRC review recommendations, contemporary water resource policy alignment and updated data and knowledge. Aims are to modernise and simplify the plan, make it easier to read and to standardise the layout, while ensuring provisions are practical and legally accurate. Report cards for each water source and fact sheets are available.

Draft access rules for water access licences (Part 6; Divisions 4 and 5)

Which water source/s does your answer refer?

Upper Bega/Bemboka Rivers, Tantawangalo Creek, Mid Bega River Sands and Wallaga Lake Tributaries.

Do you support the proposed cease to pump rules? Why/why not?

Not entirely. Refer to Table 1.

Will the proposed cease to pump rules impact your business? How? What could be done to mitigate that impact?

They could do. Refer to Table 1.

Do you think that the proposed cease to pump rules appropriately protect the environment? Why/why not?

We understand that cease-to-take rules are aimed at protecting the environment and are set to achieve a balance between environmental and extractive water needs. Determining if they appropriately protect the environment is difficult to say. The flow percentiles used vary from source to source. We would need to refer to past and future ecosystem assessment study reports, or experts in the field, to provide a more informed answer for specific locations.

Draft trading rules for water access licences (Part 8)

Do you support allowing trade into these water sources at high flow, and the limits to ensure risk remains low at these higher flow classes?

The draft plan has many specific trade conversions, assignments, amendments and cancellations, that are prohibited, with limits. We are not fully across them all. In principle, we support trade into these water sources at high flow, and the use of high flow conversion rates as an incentive to facilitate trade away from low flow to high flow licenced water take.

What factors would encourage you to buy/sell water?

Our share components for each water source are sufficient for future dry-year town water supply demand needs. The trade opportunities are unlikely to encourage us to buy or sell water through the water market. We would need to clarify what rules apply to LWU licences before selling any water.

Applications for Aboriginal community development licences (Part 5)

Do you support allowing Aboriginal Community Development Licences in these selected areas.? Why/why not?

Yes.

Conversion to high flow access licences (Part 8; Clause 50)

What do you think of these proposed changes and the reasons for them?

As per our response above about high flows access licences.

Do you think this is appropriate? Why/why not?

Clause 50 appears to define conversions and set limits, with reference to the high flow LTAAEL. It is difficult to say if it is appropriate. It is not directly relevant to town water take.

Operation of Brogo Dam (Part 8A; Divisions 1 and 2)

Do you have any comments on this aspect of the draft plan?

Yes. Refer to Table 1.

Rules re supplementary and uncontrolled flows

Do you have any comments on this aspect of the draft plan?

No.

Water ordering for regulated river access licence holders (Part 9; Clause 58(2))

Do you have any comments on the requirement for water ordering in the Bega/Brogo system?

No. Water ordering has merit.

Cochrane Dam (Part 8A)

Do you have any comments on the drought reserve rules or other operational aspects of Cochrane Dam?

Yes. Refer to table 1.

Long-term average annual extraction limits (Part 4)

Do you support the new LTAAEL definition? Why/why not?

We understand that specifying an amount of water available for take by licensed users and under basic rights is fundamental. It enables trading and defines the amount of water remaining for the environment and downstream take. It also enables AWDs to be varied depending on water availability.

It is unclear how clauses 20-22 and 24-26, to calculate extraction and determine compliance with the LTAAELs, will be given effect. There is not accurate metering in place and compliance monitoring procedures to do this. This is understood to be a work in progress.

Bega River Area Coastal Floodplain Alluvial Groundwater Source

Do you support inclusion of this groundwater source? Why/why not?

Yes.

Groundwater-dependent ecosystem maps; Water supply works approvals; Distance conditions in alluvial aquifers (Part 7)

Do you think these proposed rules and distance conditions are appropriate?

There may be some implications for Bega borefield, which is old and need of replacement. The proposed rules appear to be appropriate, although we are not fully across all at this stage. We would appreciate the department highlighting any rules that may affect a relocation of the borefield. It is possible new bores could be constructed in land approximately 200 metres north of the existing site.

Metering provisions

Do you have any comments on this aspect of the draft plan?

We support metering and data recording for all WALs.

Managing the risks of increased harvestable rights

Do you think this is appropriate? Why/why not?

It is important to manage the risk of increased harvestable rights. More work is required in this area to determine a good balance for each of the water sources and management zones. There are benefits from more on-farm water storages.

Table 1. BVSC identified issues and suggested changes for the draft plan

Plan reference	Issue	Suggested change
Part 1. 3(2)(a), 3(5)(a) & 3(6)(b)	Clause 3(2)(a) is repetitive and appears to contradict clauses 3(5)(a) & 3(6)(b)	Consider rewording to improve clarity around water sources including all groundwater contained in unconsolidated sediments
Part 4. 16	Clause 16 lacks a subclause about how AWDs are made for general security licences on the regulated river. There are subclauses about how they may be made, and how they must not be made, but it is unclear about how they are made.	Insert a clause after (3) about how AWDs are made for regulated river (general security).
Part 4. 16	Clause 16 lacks a subclause on how available water determinations (AWDs) for the regulated river are used to calculate a drought storage reserve for Brogo Dam. Part 8A 56C also lacks reference to a drought storage reserve volume. This is addressed under Part 8A.	Refer to suggested change for Part 8A 56C.
Part 4. 16(4)	Clause (4) is out of place in the sequence.	Move clause (4) after (6)
Part 6. 34(1)	Missing Bega	Change to Bega and Brogo Regulated Rivers Water Source.
Part 6. 36A(2) & (3)	Clause 36A(2) states that surface water must not be taken if there is no visible flow at the location from which it is taken. As per clause 63(2), access licences holders in the Mid Bega River Sands water source are permitted to take surface water when there is no visible flow, by excavating up to 3m in depth. At the VLF class level of 4.5m AHD this is no permitted as per clause 36B(1). Should clause 36A(3) include the Mid Bega River Sands Water Source?	Include 36A(3)(e) the Mid Bega River Sands Water Source, if access to LF and A1F class by surface water licence holders is permitted
Part 6. 36(B)(8)	0.2 ML/d TDEL for Bemboka village presents an unnecessary constraint on the supply of water to the village. Water demand fluctuates day-to-day. Water is taken from the river in response to demand, which	Suggested rewording for 36(B)(8): Surface water must not be taken from the Upper Bega/Bemboka Rivers Water Source under access licence 23756 when flows are in

Plan reference	Issue	Suggested change
	<p>causes a drop in the village reservoir and water treatment plant clear water and flocculation tanks. Restricting extraction to 0.2 ML/d would at times cause these tanks to drop to low levels, triggering alarms and a need to pump more water on a given day to catch up, causing a TDEL non-compliance.</p> <p>The introduction of water restrictions (community water use rules for outdoors) is a tool available to us, as the local water utility, when the supply of water is limited, to prolong supplies. However, water restrictions are a demand management measure more suited to a longer term (weeks, months) rather than daily (TDEL compliance) implementation. The volume of water take reduced by water restrictions is likely to be very small (~ 0.02 ML/d).</p> <p>We acknowledge the need for the community to use water wisely during dry times, particularly following the suspension of water extraction for irrigation. Many people in Bemboka would do this naturally.</p> <p>The suggested change to this clause is aimed at enabling a more reasonable and logical trigger for the introduction of water restrictions, and enable improved compliance with an extraction limit, over a longer term, during dry times.</p>	<p>the Very Low Flow Class and A Class unless the total volume of water taken is no more than 0.2 ML/day, averaged over three consecutive weeks on a rolling basis.</p>
Part 6. 36(B)(9)	<p>This complicated clause reflects a time before we had the capability to pump water upstream from Yellow Pinch Dam. It is appropriate now to establish a cease-to-take condition for the weir and to simplify the rules. We propose a 4 ML/d CTT, as measured at Tantawangalo Mountain site gauge (219006). The impact of this change would be to reduce our potential very low flow and low flow water take. It would allow more water to flow downstream in dry times. This change is proposed instead of the</p>	<p>Suggested replacement for Part 6 clause 36(B)(9):</p> <p>(9) Surface water must not be taken from the Upper Tantawangalo Creek Management Zone under access licence 23486 unless –</p> <p>(a) if flows at the Tantawangalo Creek gauge are at least 4 ML/d – 50% of the flow is taken, up to a maximum of 5 ML/day</p>

Plan reference	Issue	Suggested change
	condition relating to Candelo Dam site, which, by referring to two gauging points in the one clause, complicates operational management.	
Part 6. 36(B)(11)	Tantawangalo Creek dam site gauge is defined as Tantawangalo Creek at Tantawangalo Mountain site gauge. The words “dam site” may be in error.	Delete the words “dam site” and reword to: Tantawangalo Creek gauge means Tantawangalo Creek at Tantawangalo Mountain site gauge (219006).
Part 6. 38(2)	<p>We think it is appropriate to revise the rules in clause 38(2) for Bega borefield, in light of recent groundwater modelling by SMEC 2022, and the proposed CTT for Tantawanglo Creek weir. SMECs modelling work was based on a theoretical worst case of no inflows to Mid Bega River Sands water source from the Upper Bega/Bemboka water source, no flow in the Brogo regulated River and groundwater level at 4.5m at the Ranch. That is, a starting scenario in the VLF Class, with no water flowing beyond Kanoona gauge. The model simulations showed that the current borefield has the capability to take 5ML/d for up to one year, under these conditions, with no rain and inflows to the sands. If the borefield was moved approximately 200 metres downstream, the period increases to just over two years.</p> <p>The increases proposed will help to improve the resilience and adaptability of town water supply to extreme drought and drought recovery circumstances. They will help to improve operational flexibility capability and to offset the potential loss of water take from Tantawanglo Creek weir with a CTT. The change is also consistent with the NRC Recommendation #12.</p> <p>We note in Schedule 2 Table A that there are 3 surface water access licences permitted to take water from VLF class. We note that these are limited to 20 kL/d under clause</p>	<p>Suggested rewording for 38(2)</p> <p>(2) Groundwater must not be taken from the Mid Bega River Sands Water Source under local water utility access licence 43652 if—</p> <p>(a) flows are in the Very Low Flow Class, unless the total volume of water taken is not more than 5 ML/d</p> <p>(b) flows are in the Low Flow Class or A1 Flow Class, unless the total volume of water taken is not more than 6 ML/day,</p> <p>(c) flows are in A2 Class, unless the total volume of water taken is not more than 8 ML/day,</p> <p>(d) flows are in B Class, unless the total volume of water taken is not more than 15 ML/day.</p>

Plan reference	Issue	Suggested change
	36C. This relatively small amount leaves only Bega borefield and Bega Cheese's production bores as the points of extraction in the VLF class. SMEC considered Bega Cheese bores extraction rate in the model.	
Part 6. 38B	The draft plan does not have any specific access rules for Couria Creek weir, to protect low flows. It is a challenging location with no gauging station, however there are possibilities that could be implemented. The weir is used episodically and usually when flows are good, rather than low. However, there is potential for low flow take in the absence of rules.	Further discussions between the department and BVSC are required to develop specific access rules for Couria Creek that are appropriate and workable.
Part 8A. 56C	The draft plan does not specify a storage/drought reserve volume for Brogo Dam. Instead, 56C(1) requires WaterNSW to determine a volume of water to be held to satisfy basic landholder rights and available water determinations (AWDs) through a repeat of the worst period of low inflows, based on historical flow information held by the department. We are of the understanding that the historical flows used are only of a relatively short historical period; the last 20 years or so. This approach lacks consideration of climate change impacts on future inflows. It creates uncertainty and anxiety in the community around the volume that will be reserved as water in the dam rapidly depletes. In recent times the approach resulted in a reserve volume that was too low and risky for town water supply security, particularly in a changing climate. The residual volume determined in late 2019 was around 1200ML (1000ML active storage + 200ML dead storage, or about 11% active storage). This equated to about an 8-month period of water supply before the reserve would have been exhausted, assuming no inflows, and an average release rate of 4 ML/d.	Include specific clauses/subclauses about a drought reserve storage volume in ML for Brogo Dam, rather than it being left unknown and determined year-to-year by the WaterNSW. The reserve volume needs to be clear and sufficient to meet town, domestic and stock water supply needs, and environmental contingency, for a longer period of low inflows than has historically occurred. It should consider climate change impacts on future flows and releases required to meet the identified needs downstream.

Plan reference	Issue	Suggested change
	<p>Exhaustion of the reserve in the dam would leave approximately 3000 people in dwellings and businesses connected to the Brogo-Bermagui water supply system with no water.</p> <p>Our commitment to help improve this situation is to construct a weir on the river at our pump station. This will assist our low flow water take capability and WaterNSW's capability to fine-tune releases from the storage reserve.</p>	
Part 8A. 56E(1)	The draft plan does not require a minimum release from Cochrane Dam between April-September. The lack of this requirement means water can be stored or released episodically, causing fluctuations from a low base flow in a dry year. The need to store water for the drought reserve, without a minimum release requirement, can result in very low flows and pressure on the system in late winter early spring, in a dry year.	The lessor of 3.5 ML/d or daily inflows must be released daily all year, depending on a threshold flow established at Moran's Crossing gauge (e.g., 80 th percentile flow).
Part 8A. 56F, 56H	There are gaps in the rules for the preparation of the drought reserve storage volume each year, that risk miscalculation, causing a prolonged period of low flows downstream. Between April-September there is no requirement for a drought reserve in many years and the dam can be operated to near empty. An onset of dry conditions can cause a need to catch-up and replenish the reserve, at the expense of downstream releases.	A minimum of 500 ML should always be set aside in Cochrane Dam as drought reserve, extended to 800 ML as per the rules under the draft plan. The volume in the dam should not go under 500 ML, unless the drought reserve is being used. Subsequent inflows during and after utilisation of the drought reserve must be prioritised to replenish drought reserve.
Schedule 1	The Healthy River Commission 2000 endorsed the 1990's Bega Flow Plan and the 2 ML/d CTP at Kanoona. The draft WSP proposes to change this to 5 ML/d. We are concerned about the impact this will have on Cochrane Dam drought reserve volume when the reserve is being used. We are also concerned about the impact it will have on	More consultation between the department and local river representatives on this aspect.

Plan reference	Issue	Suggested change
	the voluntary water sharing arrangements that have served the area well over many years.	
Schedule 2 Table B	Table B water source for LWU access licence 43652 is incorrectly shown as Mid Bega River Tributaries	Change to Mid Bega River Sands

How did you hear about the Public Exhibition?

Through direct email, meeting with department staff, and the department website.

Additional feedback

Comments on any aspect of the draft plan?

Within the Bega Valley there are three water storage related initiatives that should be considered in the context of water sharing plans. The first is relevant to this draft plan review. The second and third are relevant for consideration during the term of this plan.

Firstly, Council is aware there is a strong desire within parts of industry within the Bega Valley, particularly the dairy farming sector, for increased on-farm storage. This has the potential to change demand and balance for stream-based pumping and irrigation and to make farms more resilient as well as increase disaster response, namely bushfire and drought. Plan rules to enable off-stream dam construction in appropriate local topographical locations, with enabling high flow licence conversion and trading provisions, need to be worked through with the local water sector further, and included for this plan term.

Secondly, and whilst not strictly within scope of this draft plan review, Council is aware there is a proposal currently being prepared by the owners of the Cochrane Dam for a significant expansion of storage capacity within the catchment of the existing the dam. Although a key focus of the proposal relates to pumped hydro electricity production, the proposal has potential to provide environmental flow, irrigation use and town water supply benefits. These potential benefits also apply to the third local water storage related initiative, to increase the storage capacity of Brogo Dam.

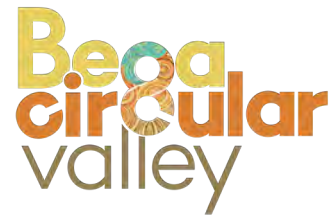
Council is strongly of the view that each of the above initiatives do not need to be mutually exclusive and in fact complement each other. The second and third warrant state government strategic support, to enable the cost-benefits to be properly explored within the context of taking a holistic approach to land and water management, ensuring water resource development and use is sustainable and equitable, and preparing for future climate extremes; the three priority areas of the draft Regional Water Strategy. Council requests that further consideration be given to these opportunities and their interaction with the water sharing plan.

Thank you for the opportunity to provide feedback on the draft plan. Please contact Ken McLeod for any clarifications or further questions regarding this feedback.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'SM', with a stylized flourish at the end.

Stephen Marshall
Acting Manager
Water and Sewerage Services
Bega Valley Shire Council



19 August 2022

NSW Department of Planning & Environment
NSW Department of Primary Industry

To whom it may concern,

Re: Water Sharing Plan for the Bega River Area Regulated, Unregulated and Alluvial Water Sources 2023

The Regional Circularity Co-operative is a new entity with a vision of transitioning the Bega Valley into Australia's first regional circular economy. The Co-operative currently has as its foundation members, Bega Cheese Limited, Bega Valley Shire Council, Rabobank, AACo, University of Wollongong and Charles Sturt University. The Co-operative is technically supported by KPMG. The Co-operative has engaged extensively with the local community and local industries and has developed a series of flagship projects and supporting initiatives which we are progressing to implementation. On farm water storage is one of the flagship projects. A copy of our vision document is attached.

Water is critical to all life and its optimisation to support all natural systems and the local community is a key feature of a successful circular economy. The Regional Circularity Co-operative is concerned that the needs of the local community/industry and the characteristics of our landscape have not been adequately considered in the proposed draft water sharing plan, specifically the rules around on farm water storage.

On farm storage and the capture of water during high flows for utilisation by industry and the fire authorities during prolonged dry periods and fire events is critical to the future resilience of the Bega Valley. On farm storage is also the key to reducing irrigation pressure on low stream flows. Appreciating there is significant risk and cost involved for water licence holders, the rules around on farm water storage need to encourage implementation, reflect the nature of the landscape as well as the needs of our aquatic ecosystems during low flows. Careful negotiation will be required to get the optimum outcomes for water licence holders, the community and the environment.

We urgently request DPIE Water return to the Bega Valley and work collaboratively with water licence holders and the local community to ensure the Water Sharing Plan reflects the needs of our local community and supports the transition to circularity.

Regards,

A handwritten signature in blue ink that reads 'B.A. Irvin'.

Barry Irvin AM
Director – Regional Circularity Co-operative Limited

A person wearing a cap and dark clothing stands in a field, looking towards the horizon. Two dogs are present: one is lying down on the left, and another is standing on the right, looking towards the person. The background features a misty valley, rolling hills, and a large wooden structure on the right. The scene is bathed in the warm, golden light of a sunrise or sunset.

Together for a
Stronger Bega Valley

A community's vision for circularity in the Bega Valley
The 'Bega Circular Valley 2030 Program': Together for a stronger Bega

Acknowledgement of Yuin Nation

The country the Yuin ancestors occupied, used, and enjoyed reached across from Cape Howe to the Shoalhaven River and inland to the Great Dividing Range. Their descendants claim rights to be recognised as the traditional owners of the land and water from Merimbula to the southern head of the sea entrance of the Shoalhaven River.

The Yuin people consisted of 12 clans at the time of European arrival in the area. We pay our respects and acknowledge the Yuin people, their ancestors, and current and future custodians of this beautiful country.

We learn from the Yuin people about the traditions of stewardship of resources and working together as a community to have a lighter impact on the environment.

Biggah a meeting place for ceremonies

Bunan rings are culturally significant ceremonial sites for Aboriginal people. There are a large number of bunan rings located throughout the Bega Valley area and the majority of these sites are on privately owned land.

Tribes within the Yuin Nation would travel and congregate in the Bega Valley for ceremonial practice. Bunan rings are evidence of these ceremonies.

It is important that we work together to protect and preserve these special sites.

“Then something of our Aboriginal Culture will be preserved and the heritage of all Australians, white as well as Aboriginal will be richer.”

GUBOO TED THOMAS, APRIL 1979

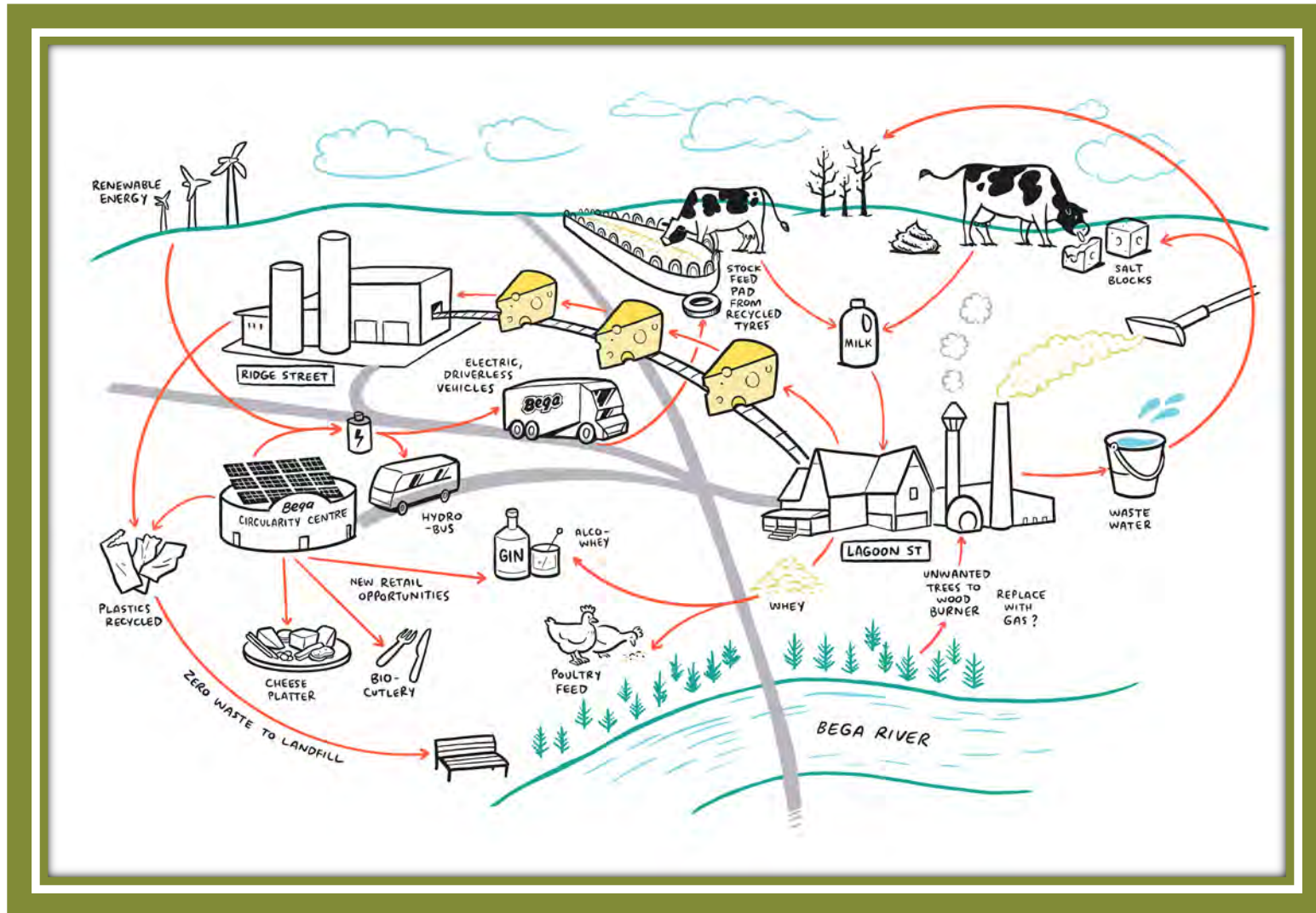


Local Land Services South East

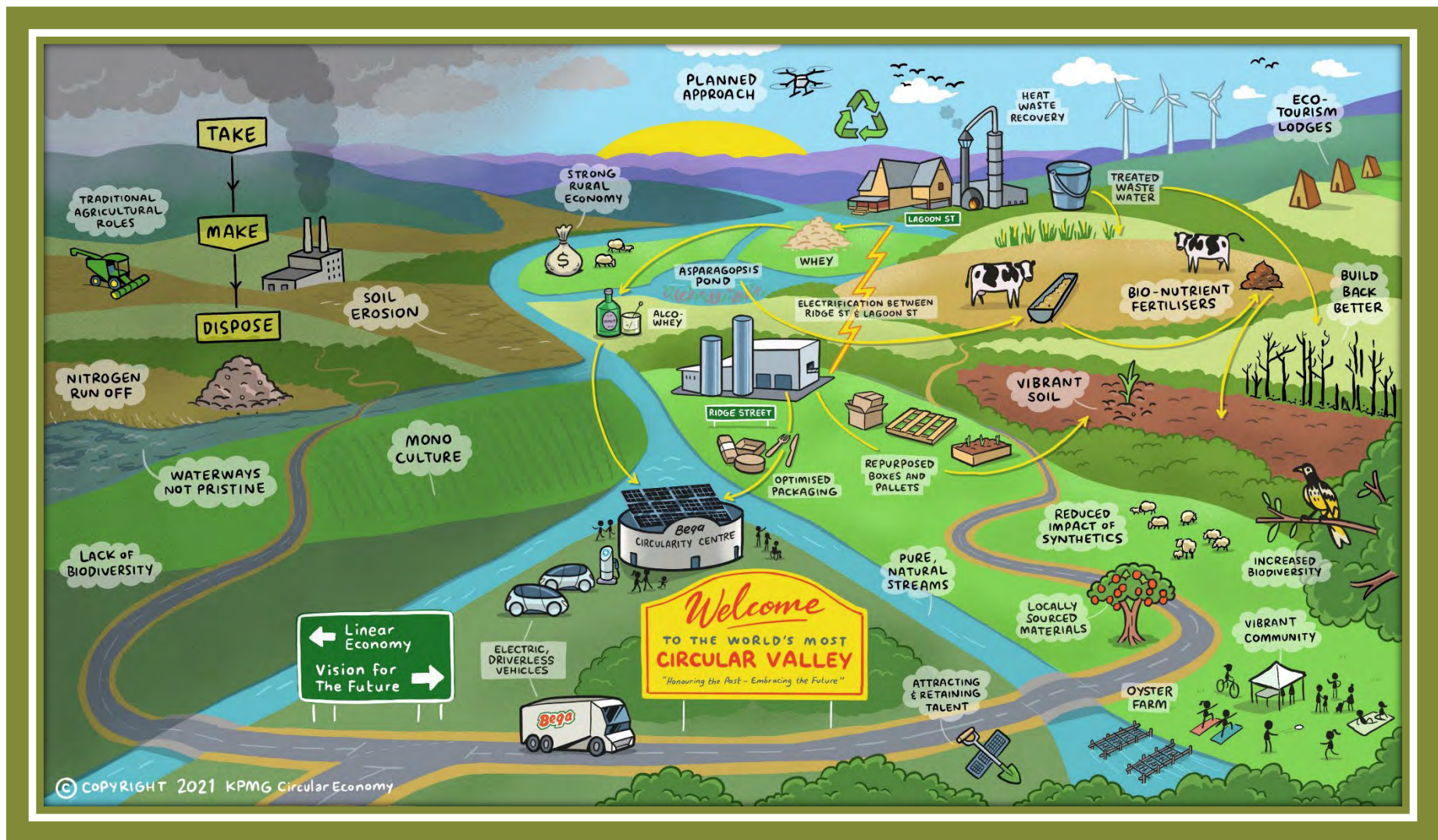


Office of Environment & Heritage

Bega Cheese is moving beyond sustainability to circularity



Bega Valley – Vision to become the world's most circular valley



What would success look like for BCV?

Exploring the business case for Australia's first circular net-zero footprint region

HORIZON 1 1 - 2 Years

Waste generation/repurposing



Water



Soil



Biodiversity



Energy / GHG emissions



Nutrients / Animal feed



Packaging & Logistics



Animal Care



Community/ Education/ Innovation/ Aged Care



Rural economy/ Tourism



HORIZON 2 3 - 5 Years

Tonnes of waste to landfill
Tonnes of waste diverted from landfill
Recycling rate by waste stream
Circular inflows and outflows

kL water used
% water recovery, treatment and re-use (water circularity)
Water quality (e.g. eutrophication)

Soil acidification
Land productivity
Rejuvenated soil
No. farms with regenerative practices

Land productivity and efficiency
Land use per industry/nature
Local biodiversity
Threatened species

% renewables
GHG from landfill reduced
Biofuel/gas captured
Carbon offset

Soil fertility
Land productivity and efficiency
External nutrient input phase out

Scope 3 (Value chain) emissions decrease
Single use packaging phase out
% transport fleet using electric vehicles or biofuels

Reducing animal emissions
Reduced animal waste
Hormone-free/organic fed

Population growth
\$ community funding
Poverty rate
Homelessness rate
Local stakeholders engaged, circular participation %
Domestic Violence rates

\$ Invested into economy from solution
jobs created
Unemployment rate
No./\$ training programs
Skills improvement
new businesses and industries
Private investment
Regional growth

HORIZON 3 5-10 Years

Closed loop
Close to zero waste to landfill
\$ Re-manufactured goods sold
\$ trade in recycled/reused materials
% Waste-to-Hydrogen energy

Water recovery and reuse
% of water is recovered or reused (Waste-to-Hydrogen)
Recovered waterways
Water quality

Soil and land preservation
Re-forestation
Re-wildered regions
Closed soil nutrient cycle
Land productivity
farms with regenerative practices

Biodiversity in business model
Re-forestation
Re-wildered regions
Local biodiversity
Threatened species

100% renewable electricity by 2030
% Renewable energy
Biofuels captured
Carbon sequestered

Closed soil nutrient cycles
Limited input of external nutrients
Nutrient recycling

Circular logistics
Scope 3 emissions minimised
% of transport fleet using electric vehicles or biofuels
No. companies with a circular business model

Holistic animal care
credentials issued
patents for animal care initiatives

Rural (mental) health Barometer
Population growth
\$ community funding
Poverty rate
Local stakeholders engaged circularity participation %
Mental and general healthcare costs

No. 1 Food & Agri Innovation Hub in Australia
No. jobs created
Unemployment rate
Training programs
Business innovation (start ups and social enterprises)
Private investment in regional growth
% circular revenue/growth costs

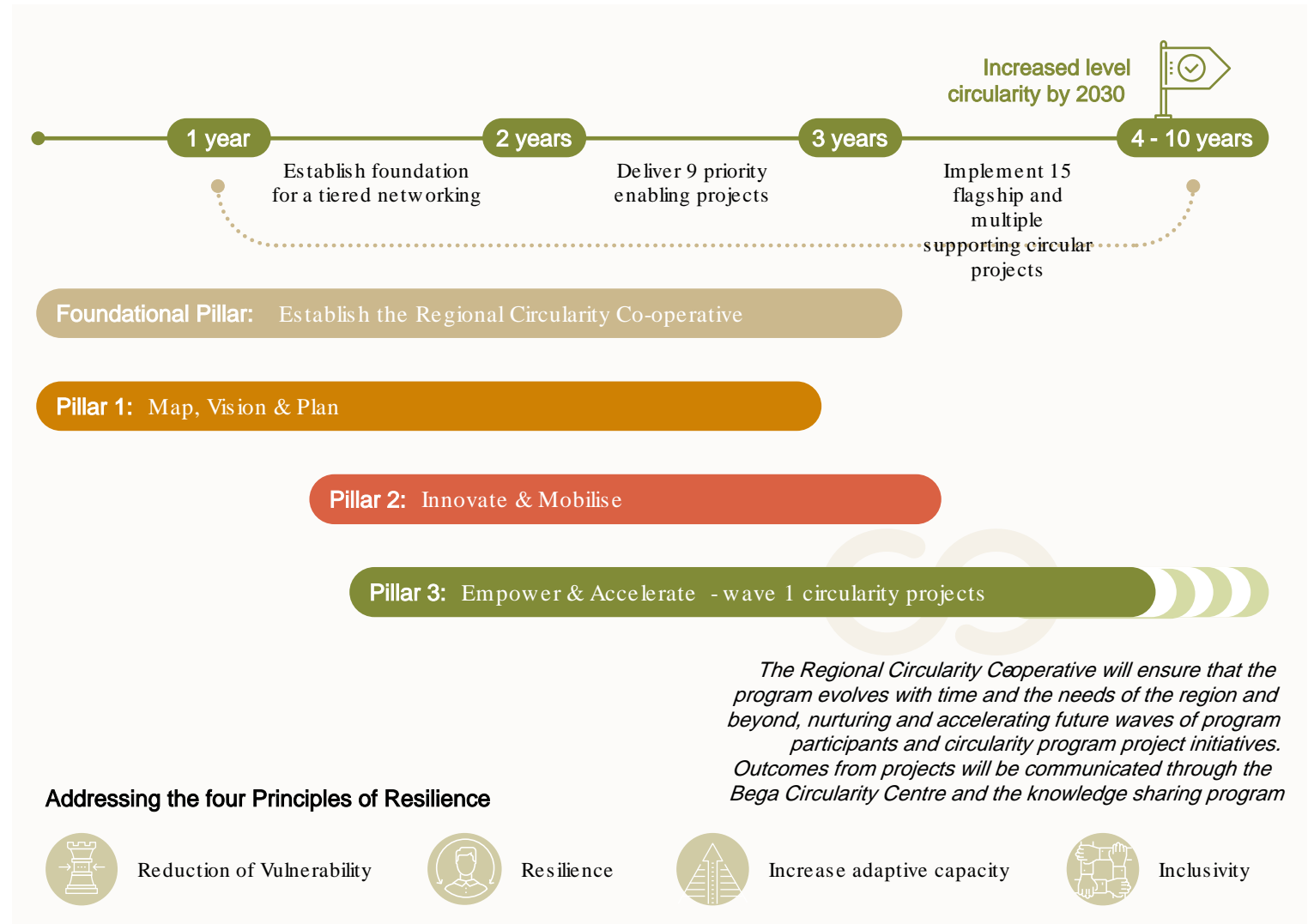
Bega Circular Valley 2030 Program - on a page

A 10-year high-impact regionally networked program with the expertise, process, rigor, technology and convening and implementation power to accelerate circularity in the Bega Valley shire by 2030.

Specifically, over the next 3 years, the program will aim to identify, promote, train and accelerate and implement 9 enabling projects which will support the delivery of 15 flagship and 29 supporting circular projects to stimulate a regional circular marketplace.

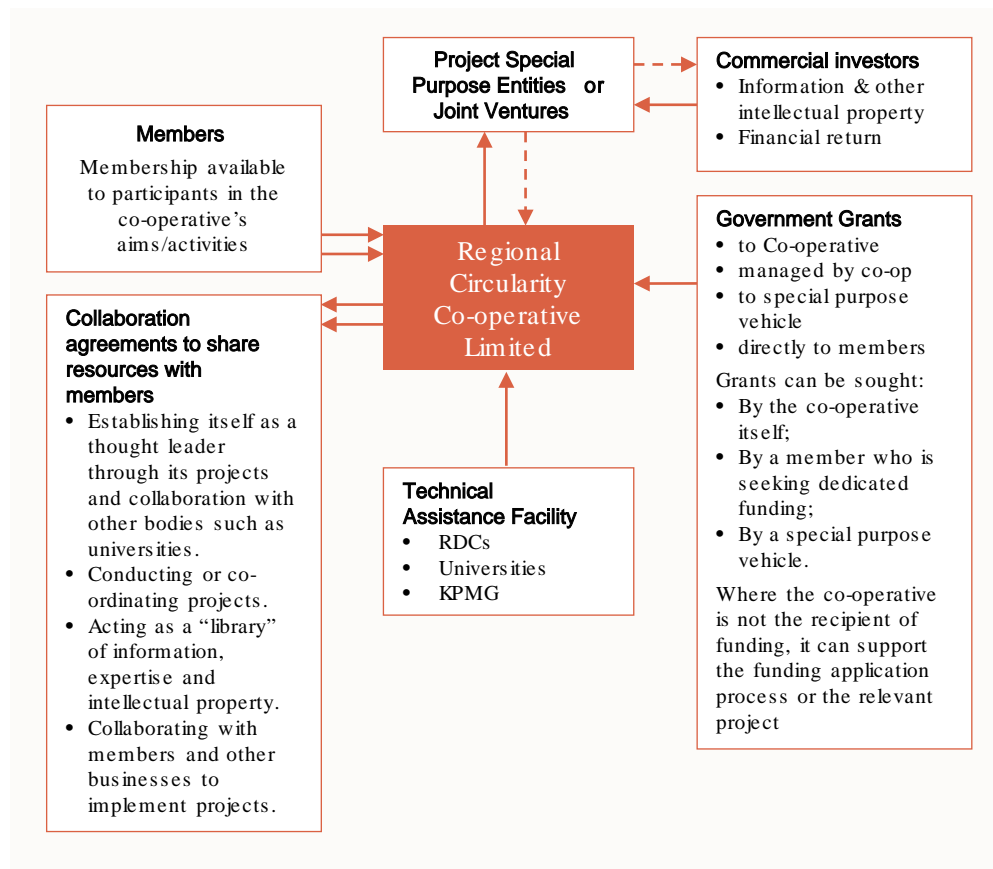
A newly created 'Bega Circular Valley' backbone organisation in form of a non distributing co-operative has been established to drive and convene the program across seven defined pathways that will ensure engagement with diverse stakeholders to optimise community participation.

Informed and powered by two global circular economy design and strategic delivery partners, KPMG Australia and Rabobank, this program has been designed around the 'Principles of Resilience' with an embedded impact evaluation framework (at both program and project level) to measure outcomes and monitor the success.



Implementing Vehicle: The Regional Circularity Co-operative

A sustainable funding structure



Non distributing Co -operative Snapshot

Name	Legal Structure	Type	Membership	Subscriptions
Regional Circularity Co-operative (RCC)	Non-Distributive Co-operative	Public Benefit	Targeting 1,000+ across all parts of the community	Annual
Investment Strategy	RCC will establish and administer a fund that aims to provide financial and technical assistance to Eligible Beneficiaries that deliver regional circularity outcomes.			
End-Beneficiaries	The ultimate beneficiaries, or target group, of all co-investments will be local enterprises and farmers across small, medium and large enterprises which are committed to delivering circular economy projects aligned to the purpose of the Regional Circularity Co -operative .			
Size	\$100m – with desired government seed grant funding of \$7.5m for the enabling projects.			
Geographic Focus	BVSC LGA is focus but no intent is to support spill over into other geographies.			
Sectors	The RCC Fund aims to undertake transactions to enhance the circularity in four core sectors: <ul style="list-style-type: none"> Agriculture and Food Manufacturing Forestry, Environmental Services Tourism Health & Wellbeing 			
Goal	As the Fund Manager, RCC would lead and enable projects .			
Objectives	<p>Technical Assistance Facility – Established to accelerate the development of investable opportunities and maximise the circular solutions, as well as de-risk the investments made by the Fund. The TA Facility is set up as a separate facility. The TA Facility will accompany the Fund in the following areas:</p> <ul style="list-style-type: none"> Pre-investment support: circularity design support, to support projects to become investment ready for the Fund, resulting in a strong and balanced pipeline of investable projects. The intention is that TA provided should lead to a potential investment for the fund within 12 month's time. Post-investment support: projects in the implementation phase, so that project developers have greater capacity to implement projects, resulting in reduced risk to the fund and/or increased positive environmental, social and cultural outcomes. Enhanced impact monitoring: supporting projects and the Fund Manager in monitoring progress towards targeted impact for circularity and reporting on the fund's impact KPIs. Learning and knowledge sharing: Taking insights from circularity transactions and publishing them in a variety of formats including workshops, publications and tools. 			

Steering Committee

Together for a
Stronger Bega Valley

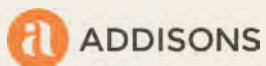
The BCV Steering Committee was formed in October 2020 and has meet weekly since to progress the establishment of the Regional Circularity Co-operative Limited, advance program design, launch projects and engage stakeholders.



Rabobank



UNIVERSITY OF WOLLONGONG AUSTRALIA



Barry Irvin AM
Executive Chairman
Bega Cheese



Ben van Delden
Partner, Head of AgriFood
Tech & Circular Economy
Advisory
KPMG



Karin van Selm
Regional Head Food&Agri
clients Europe and Africa
Rabobank



Daniel Murphy
Business Development
Manager, South East
Department of Regional
NSW



Emily Harrison
Acting Director Community,
Environment and Planning
Bega Valley Shire Council



Andrew Taylor
Local Manager
Far South Coast
Local Land Services



Hugh Killen
Managing Director
& CEO
AACo



Sam Avitaia
Manager
Bega Campus
University of Wollongong



Mel Balas
Farm Sustainability &
Technical Services
Manager
Bega Cheese



Marc Oostdijk
General Manager
Sustainability and Rabo
Community Fund
Rabobank



Steve Rae
Executive General
Manager, Strategy
Bega Cheese



Ross Dawson
Co-Head Corporate
Banking, AU & NZ
Rabobank



Carolyn Leeshaa
Director, Head of Social &
Sustainable Finance and
Natural Capital Co-Lead
KPMG



Niki Eder
Sustainability Manager
Bega Cheese



Isabelle Le Guay
Manager
KPMG



Faith Behrens
Executive Assistant
Bega Cheese



David Ferguson
Partner
Addisons



Michael Friend
Pro Vice Chancellor
Research and Innovation
Charles Sturt University



Partner support

Participating organisations form a collective supporting the Regional Circularity Co-operative and involved in grants and application efforts and other funding streams.



Bega Cheese is investing in the building of the Bega Circular Centre as well as providing co-investment in both the Cooperative establishment and projects, alongside pro bono resources.



Microsoft globally are interested in supporting circular initiatives to support their global sustainability objectives, particularly decarbonisation. Bringing FarmBeats, Planetary Computer, Microsoft Cloud for Sustainability

Microsoft Australia is engaging in the next phase of the Smart Water and Biodiversity Solution and contributing satellite and biodiversity sensor data to the solution for real time predictive models.



AA Co is the largest agricultural landholders and is heavily committed to methane reduction. It is engaged in the BCV program to collaborate around livestock emissions and circularity opportunities.



nbn are committed to enabling regional Australia to participate in the digital future through the provision of broadband connection and digital planning tools. Nbn are a foundational member of the Regional Circularity Cooperative and focused on the role of data and instrumentation of the landscape to improve resource use.



MLA are committed to supporting the red meat industry achieve Carbon Neutrality by 2030 and are driving research and extension investment in innovation and circular economy. MLA will contribute access to past research and support BCV program areas with co-investment.



FRDC identified the need to promote a circular economy to remove waste from processing systems, keep products and materials in use and promote the repair of natural systems as focus areas. FRDC will facilitate knowledge creation, collaboration and innovation to shape the future of aquaculture.



NSW will collaborate and provide guidance on the development of the program and projects.



BVSC will support projects aligning with its priorities, development of the accelerator program, support the creation of the natural capital investment fund and support pilot programs.



Rabobank, as a global Food and Agriculture bank, contributes to the Bega Circular Valley project with active and pro bono support. Rabobank will be committed to the Bega Circular Valley Cooperative structure and will support selective project streams by providing access to finance, knowledge and networks.



KPMG has provided pro bono support to the development of the Bega Circular Valley program and projects, and will support as implementation partner, drawing on its global knowledge, insights and expertise in Circularity, Digital and Natural Capital.



Addisons provide pro bono legal advice on establishment of Regional Circularity Cooperative, and company secretariat services.



UNIVERSITY OF WOLLONGONG AUSTRALIA

The University of Wollongong founded the Bega Valley Innovation Hub and will provide Start-up support and education, SMART Infrastructure innovation and global Research expertise (e.g. energy generation/storage, water sustainability, environmental engineering, spatial geotechnics and social planning towards a Circular Bega Valley.



CSU will participate to projects, provide research insights, support the accelerator program, promote the program and collaborate on the waste to energy, alternative animal feed development, soil carbon and use of marine by-products and socio economic modelling.



Hort Innovation represents an industry valued at \$15.1 billion that is committed to investing in R&D to improve productivity and climate resilience and improving the environmental impact of the horticulture industry. Hort Innovation will provide access to their research insights and key projects with relevance to circularity.

Momentum achieved



Project funding requirements

Priority enabling projects	Est. total cost	Industry investment	Government ask
Foundations – Pillar 0			
Circular Co-operative and Finance Fund	\$0.5m	TBC	\$0.5m
Circularity and Resilience strategy	\$0.4m	-	\$0.4m
Circularity Procurement Aggregator and Accelerator	\$0.5m	-	\$0.5m
Bega Circularity Centre	\$12m	\$7m	\$5m
Bega Biodiversity and Carbon Trading Scheme	\$3m	TBA	\$3m
Circularity State Environmental Planning Policy and Special Activation Precinct*	TBA	TBA	TBA
Measuring circularity a regional baseline	\$2m	\$0.2	\$1.8m
Program delivery – Pillar 1			
Circular Knowledge and Resource Enabler	\$0.8m	\$0.4m	\$0.4m
Program delivery – Pillar 2			
Circularity Procurement Aggregator and Accelerator	\$0.8m	-	\$0.8m
Circularity Program Feasibility Analysis	\$0.5m	-	\$0.5m
Program delivery – Pillar 3			
Circular Cultural Enabler (smart foods, Indigenous engagement, tourism)	\$0.2m	-	\$0.2m
Circular Engagement and Advocacy Strategy	\$0.2m	-	\$0.2m
Priority Enabling Projects Sub Total	\$20.9m	\$7.6m	\$13.3m
Flagship projects seeking access to existing government funding program			
On-farm water storage network	\$35m	\$15.6m	\$19.4m
Bega Smart Local Food and Logistics Program	\$5m	\$2.5m	\$2.5m
Bega Valley Organics Processing Facility	\$2m	\$1m	\$1m
Bega Livestock Exchange Centre	\$3.6m	TBA	\$3.6m
Bega Net Zero Emissions Water Supply Network	\$6m	\$3m	\$3m
Tackling climate change and biodiversity loss through kelp farming	TBA	TBA	TBA
Animal methane reduction through asparagopsis diet	TBA	TBA	TBA
Flagship Projects Sub Total	\$51.6m	\$22.1m	\$29.5m
TOTAL	\$72.5M	\$29.7M	\$42.8M

In order to launch the BCV 2030 program, a series of enabling and flagship projects have been identified.

Indicative budgets for these projects have been established along with associated funding contributions from industry and local government.

In addition, considerable in-kind contributions have been secured to support the projects.

We are seeking a government contribution for priority enabling projects of \$13.3 million to complement the \$7.6 million funding commitments BCV 2030 has secured.

We expect that our flagship projects will be accessing funding from existing government programs and attract industry co-investment.

Smart Water management & Biodiversity Solutions

The Smart Water & Biodiversity Management Solution will be designed to optimise resources and establishing a robust digital infrastructure. Through effective data management, resource monitoring will bring a variety of social & community benefits in the short and long term:

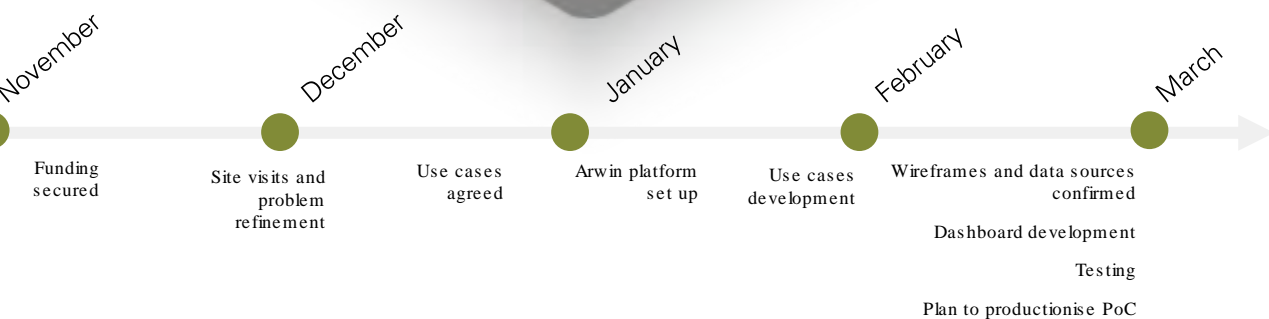
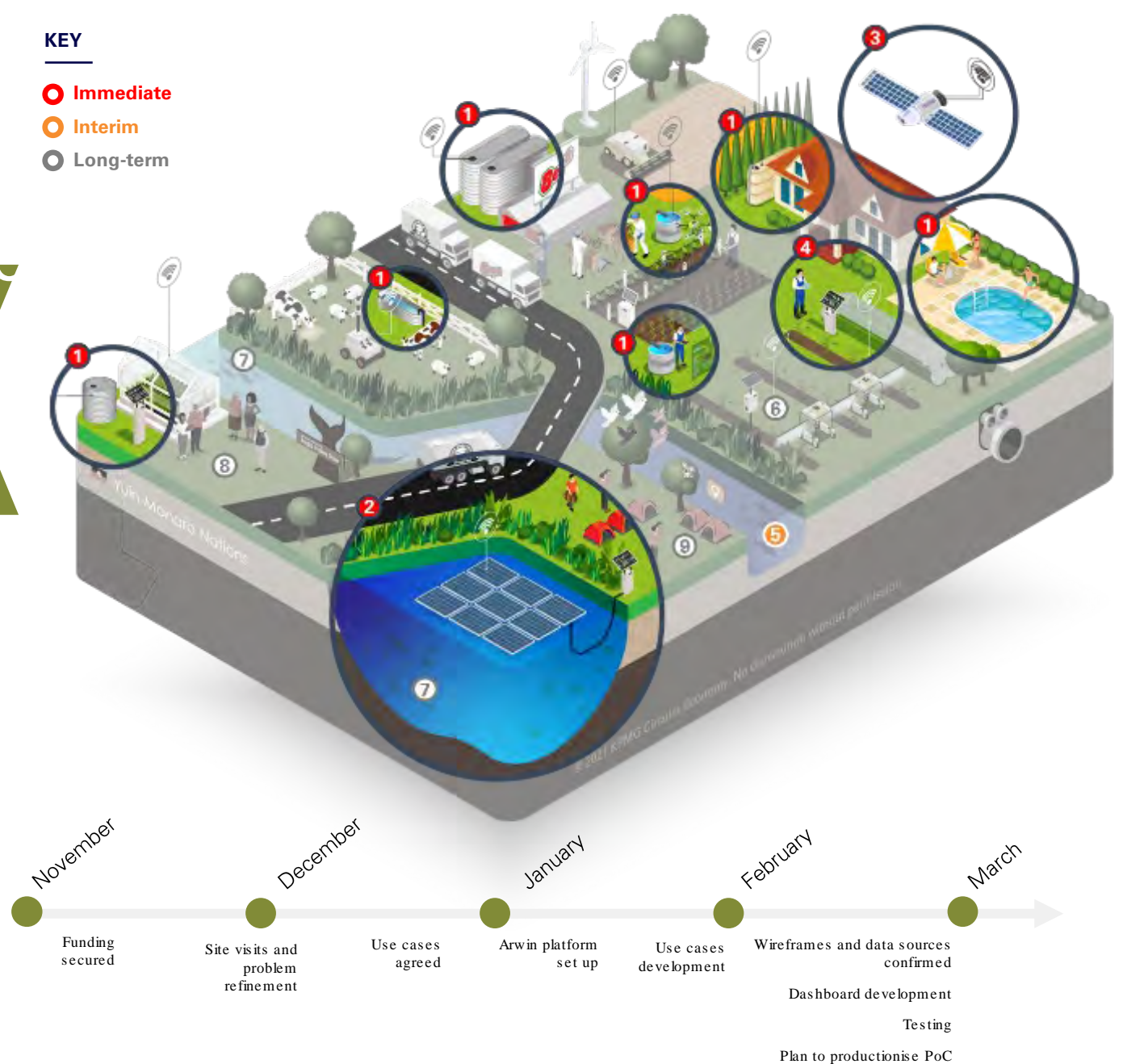
The **immediate** focus will uplift & homologate water storage facilities on location for farms and industry (1), as well as initiatives such as reservoirs with solar arrays (2) for immediate benefit of the region. Data will be accessed by an existing LoRa WAN (3) system, collecting in real time to help farmers free up time and reduce water loss. Visibility of the region's water supply systems (4) has additional benefits for monitoring demand, to help farmers free up time & reduce water loss, optimising maintenance and mitigating long term risk.

The **next** initiative will be to expand on monitoring natural waterways (5), and other natural catchment areas to increase the accuracy of the total water resources in the region.

Longer term, environmental monitoring will collect data such as soil quality (6) measure impacts of water quality on biodiversity (7). Other benefits of democratised data will drive deeper social engagement between small business, indigenous communities, and local councils (8). Over time, the connected region will attract other economic benefits such as eco tourism (9) and floating solar panels to power irrigation pumps, developing a pathway towards a strong circular economy.

KEY

- Immediate
- Interim
- Long-term



NEXT STEPS

- Develop the full scale application, including sensors and satellite imagery.
- Trial live data flows.

POTENTIAL PARTNERS

- Microsoft
- Smart Sat CRC
- Farmbot
- Water NSW

Three initial concepts have been delivered that showcase the value of the Smart Water & Biodiversity PoC

The Smart Water & Biodiversity PoC can be scaled to help collect, store and analyse data relating to resource management, material flows and climate impacts, helping improve stewardship of natural resources and improve the effects that operations have on the environment.

Three concepts have been delivered through the PoC so far, and we can also develop new concepts such as substituting the resource that is being monitored, and deploying different technologies to collect data, such as satellites, drones and IoT sensors.

1

WATER



Providing an 'all of environment' view of water availability, including both quantity and quality to help improve resource stewardship.

Next step we envisage integration with river/stream flow meters and take and release data from public dams in the region to improve community outcomes from connected water management.

2

FIRE



Sharing data across organisations and regions will help in the preparation and response to fire and other emergency events. This should improve the usefulness of resources, response times, outcomes and financial recognition.

Ultimately this could lead to an estimated 5-15% insurance premium reduction for communities close to water storages

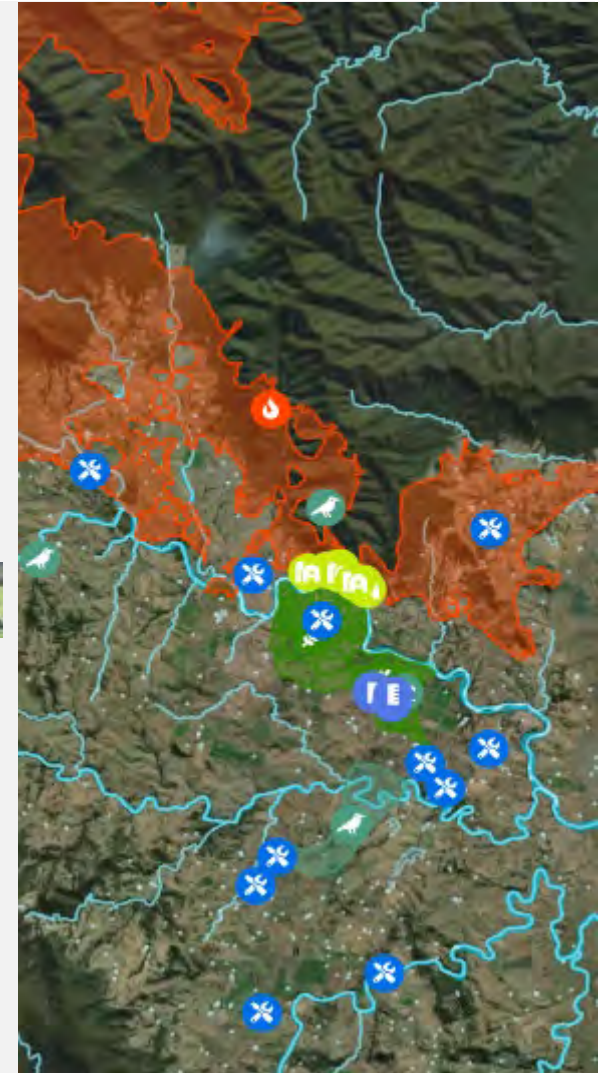
3

BIODIVERSITY



Collecting and demonstrating evidence of impacts on biodiversity will help analyse the effects of management activities, such as minimising run-off from dairy farms.

This evidence could also be used to capture biodiversity credits to create new revenue streams for land and water stewards.



Bega Circularity Centre

Delivering a Regional Circularity Centre

Description

The Bega Circularity Centre is a planned multi-purpose community facility that will be located on the northern access to the Bega township. The facility will be the public face of the Bega Circular Valley, showcasing local products, programs, technology use and community history. Connecting past to the future It will incorporate a visitors centre, a local providore, AgTech and business innovation hub, Indigenous cultural information and the home of the circular economy concept. It could also incorporate R&D and training opportunities.

Bega Cheese has set aside land for the site and plans are being developed to reflect the valuable inputs gained from the National Design Challenge run by Australian Design Council on the purpose and use of the Bega Circularity Centre.

Showcasing circularity in practice through how the building is designed and built to include recycled and locally sourced materials, educating through a sense of place.

Outcomes

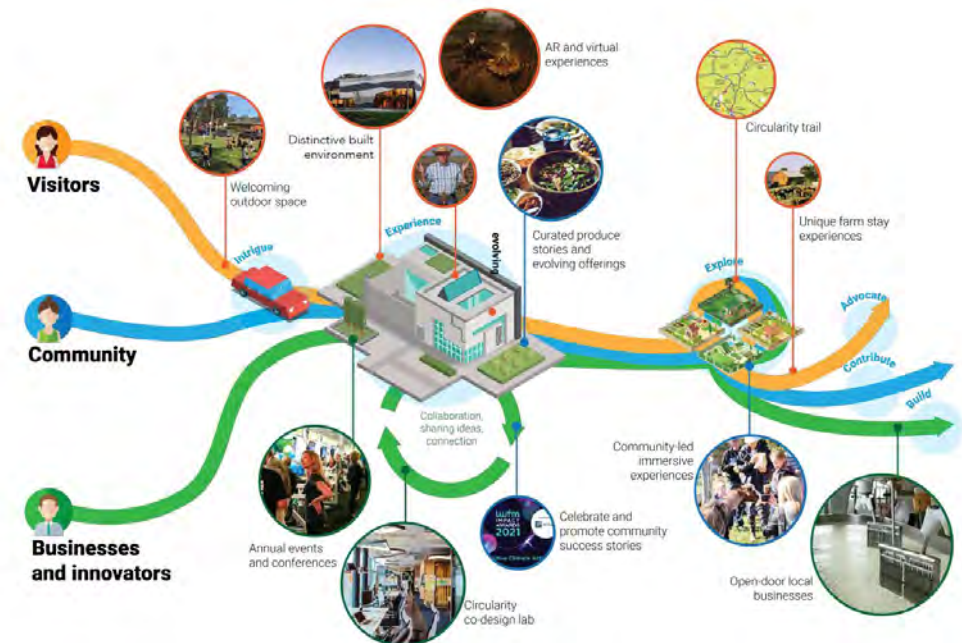
- **Local economy & Community** - It will enable the local community and visitors to the region to experience firsthand the fruits of a Valley transforming into a circular economy.
- **Education & Tourism** - The Centre will showcase the vision, pathway and technology used in the transformation. Additionally it will showcase AgTech and business innovation and the highlights of the valley in a circular economy context. Creating a base for extension officers from Drought Resilience Hub and RDCs to provide access to knowledge from these connected networks.
- **Regional Australia** - The hub will inspire others to undertake and participate in the journey.

Available grants/funding

- Community Development Grants

Potential partnerships/investors

- Bega Cheese
- Nbn
- Regional Circularity Cooperative
- Education sector



Improving soils

Bega Valley Organics Processing Facility

Description

Bega Valley Shire currently collects food and organic waste for processing using low-technology windrow composting. The compost product is relatively low quality, with high pH making it unsuitable for use on farm. Through investment in additional shredding, screening and sifting infrastructure, as well as more sophisticated process control, this project will generate a product suitable for reuse on farms, household gardens and public spaces.

Outcomes

- **Resource optimisation** - The compost product would be applied to agricultural soils within the valley, including those owned or managed by Bega Cheese suppliers.
- **Natural capital** - While achieving continued positive environmental outcomes, the project also helps manage a number of operational challenges faced by Council and increasing soil amelioration costs faced by farmers in the Bega Valley. It also supports development of paddock to plate to paddock circularity.

Available grants/funding

BVSC matching funds

Waste Less Recycle More grant program

Potential partnerships/investors

BVSC, Bega Cheese, Ocean2Earth, farmers, Woolworths



Setting up the Co-operative

Bega Circular Valley Co-operative and Finance Fund

Description

An innovate and formal, governance and management structure developed with a legally constituted co-operative body established to strategically lead the Bega Circular Valley across all sectors and oversee the financial framework for core and pillar projects. Key memberships to be locally and broader.

Priority  Impact  Cost \$0.5m

Outcomes

A Non distributing co-operative will be established, and a legal framework with clear adopted strategic direction will be developed.

- **Collaboration** - MOU with NSW Circular
- **Financially independent** - Self-funded body
- **Community** - Distributed community ownership and benefits

Available grants/funding

- Membership
- Farm Innovation Fund
- Bushfire Industry Recovery Fund
- Remanufacture NSW
- BLERF

Potential partnerships/investors

- Bega Cheese/KPMG/Rabobank
- BVSC
- Members
- NSW Circular
- Regional NSW

Benefits



Foundational Pillar: Establish 'Bega Circular Valley Co-operative'

Empowering the Bega Valley community to achieve sustainable growth

Develop a practical model for our regions

Regional Circularity and Resilience Strategy

Description

The Regional Circularity and Resilience Strategy will set a national and international benchmark and model. It will articulate the Bega Circular Valley program including the vision, projects, its pillars, pathways and project, governance and financing mechanisms that will deliver transformation of the Bega Valley economy. The Strategy will clearly link to local, State and Federal actions and targets to improve the use and value of resources and the resilience of local communities. It will include a comprehensive monitoring and evaluation program to inform continuous improvement and support uptake in other jurisdictions.

Priority  Impact  Cost \$0.4m

Outcomes

- **Education** - Global best practice in a regional context. It will lead to a broader more holistic definition and framework of a real life circular economy, achieving a national (and international) model for the future.
- **Resilience** - It contributes to outcomes of the Bega Valley Community Strategic Plan, Climate Resilience Strategy. It improves social resilience and diversifies the economy for Australia's most disaster impacted local government area of 2020.
- **Local economy** - It contributes to outcomes of NSW Economic Vision for Regional NSW; NSW Circular Economy Policy and Far South Coast REDS
- **Waste** - It contributes to outcomes of National Waste Action Plan and South East and Tablelands Regional Plan.

Available grants/funding

NSW Circular, Modernising Australian Recycling Fund, Place based investments NSW Regional

Potential partnerships/investors

BCV Coop, BVSC, KPMG, Rabobank, NSW Circular

Benefits



Foundational Pillar: Establish 'Bega Circular Valley Co-operative'



Funding our ecosystem services

Foundational Pillar: Establish 'Bega Circular Valley Co-operative'

Bega Biodiversity and Carbon Trading Scheme

Description

Around 75% of the Bega Valley Shire has conservation values, with significant potential for carbon and biodiversity credits. In addition, agricultural land has the potential for on-farm carbon sequestration and biodiversity projects. Building economic and market systems that can support this long term stewardship provides a foundation for investment in effective environmental sustainability. This project aims to support effective governance and administration of a Shire-wide biodiversity and carbon trading program

Priority  Impact  Cost \$3m

Outcomes

- **Local economy** - Establishment of alternative income streams for farmers, other landholders and indigenous land management bodies. The opportunity to market local produce under a local biodiversity assurance scheme. Introduction of high skilled employment to the region resourcing the Carbon Desk.
- **Productivity** - Higher land and agricultural productivity through regenerative practices. Increased resilience of soils, biodiversity benefits and forest recovery.
- **Regional economies** - Creates the opportunity for farmers and landholders from other regions to access the benefits of the specialised Carbon Desk which include revenue opportunities, expertise and education services.
- **Education & Awareness** - Fast track the development, education and uptake of carbon and biodiversity projects. Contributing to moving carbon trading from a volatile and immature market to a stable and transparent market.
- **Technology** - Comprehensive data sets and audit mechanisms of local biodiversity and carbon banks that can link to State, Federal and international biodiversity and carbon programs.
- **Carbon neutrality** - Support international, national and industry emissions targets. Governance framework to support assurance, trading, monitoring and reporting for investing partners and agencies,

Available grants/funding

Corporates (offsetting), Government (e.g. Federal CF announcement),

Potential partnerships/investors

BCV Co-op, Rabobank, KPMG, Biodiversity Conservation Trust, carbon markets, Land to Market, farmers, LALCs, Forestry lands

Benefits



Provide input into the Regional Plans

Circularity State Environmental Planning Policy and Special Activation Precinct*

Description

This project is externally enabled through a partnership with NSW and seeks to establish a 'regulatory sandbox' to test circularity models such as carbon trading, and pilot circularity projects in the Bega Valley. This work will progress the NSW Government's circular economy policy and lead to the development of a Circularity State Environmental Planning Policy and embedding of circularity principles in the next round of Regional Plans.

Priority ★★☆☆ Impact ★★★★★ Cost -

Outcomes

This project will streamline the regional planning system in response to circularity and aim to improve environmental, waste, economic, social outcomes.

- **Regional Australia** - It will establish a model for NSW Circular and the NSW Government and enhance collaboration among government and industry stakeholders.
- **Resilient local economy** - Through this work the Bega Valley Shire will be identified as a NSW Special Activation Precinct in its own right.

Available grants/funding

- Waste Less Recycle More
- Local Economic Recovery Fund
- Technology enabled primary industries

Potential partnerships/investors

- BVSC, NSW Circular Research Taskforce, CSU/UoW, NSW Regional, NSW Planning, EPA

Benefits



Foundational Pillar: Establish 'Bega Circular Valley Co-operative'

Source locally

Bega Circular Valley Knowledge and Resource Enabler

Description

Transformation to a circular economy in the Bega Valley requires a deep understanding of material and energy flows across the local economy. This project will leverage the outputs of the Regional Circularity Baseline project that has measured circularity and will map out the enterprises to highlight opportunities to substitute imported products with local products, create partnership to exchange by-products and generate economies of scale to support investment in new, local goods and services will be identified. By supporting matching of supply and demand for resources and circularity training we will accelerate circularity adoption in the Valley.

Priority  Impact  Cost \$0.8m

Outcomes

This is foundational work that seeks to create a pipeline of innovation beyond the low hanging fruit identified as flagship projects.

- **Resource optimisation** - Visualising inputs, outputs and throughputs of key material and energy streams, quantification of waste streams that could substitute virgin and imported materials across the local economy and identification of shared procurement opportunities to broker local sourcing.
- **Capacity building** : - Circularity training and awareness materials will be delivered to local industry through extension services. The outputs of this project will be used as inputs to the Bega Circularity Program Feasibility Analysis, and will inform capacity building projects.

Available grants/funding

None identified

Potential partnerships/investors

Bega Cheese, Bega Council, NSW Circular, Charles Sturt University, UoW Innovation Hub

Benefits



Pillar 1: Map, Vision & Plan

Pillar 2: Innovate & Mobilise



Enhance our water management and biodiversity

On-farm smart water storage network

Description

This project proposes a water management solution that will revolve around the implementation of an initial 47 water storages amounting to a maximum volume of 9,000ML. These water storages will be complemented with a smart water management solution based on AI, which will capture detailed data around water levels, fire risk and biodiversity for the purpose of trading credits, preparedness for future bushfires and the fine-tuning insurance policies. 50% of the funding is committed from industry.

Priority ★★★★★ Impact ★★★★★ Cost \$35m

Outcomes

- **Resource optimisation** - This project will help improve water reliability for agriculture.
- **Resilience** - Consequently bringing a range of benefits, the main ones being an improved climate and fire resilience as well as decrease of insurance premiums.
- **Biodiversity** - It will support the regeneration of native ecosystems on farms and offer opportunities for low stream flows and riverine ecosystems.
- **Education** - The region will further benefit through associated education programs and eco-tourism opportunities.
- **Local economy** - It is expected that Agriculture and Food Manufacturing will stabilise at 700 FTE positions, milk volume from dairy farms will stabilise at 115 million litres per year, no water shortage for participating farmers, real-time data for the RFS and the provision of opportunities beyond the Agriculture sector.
- **Community** - It will support the production of Indigenous food/medicine.

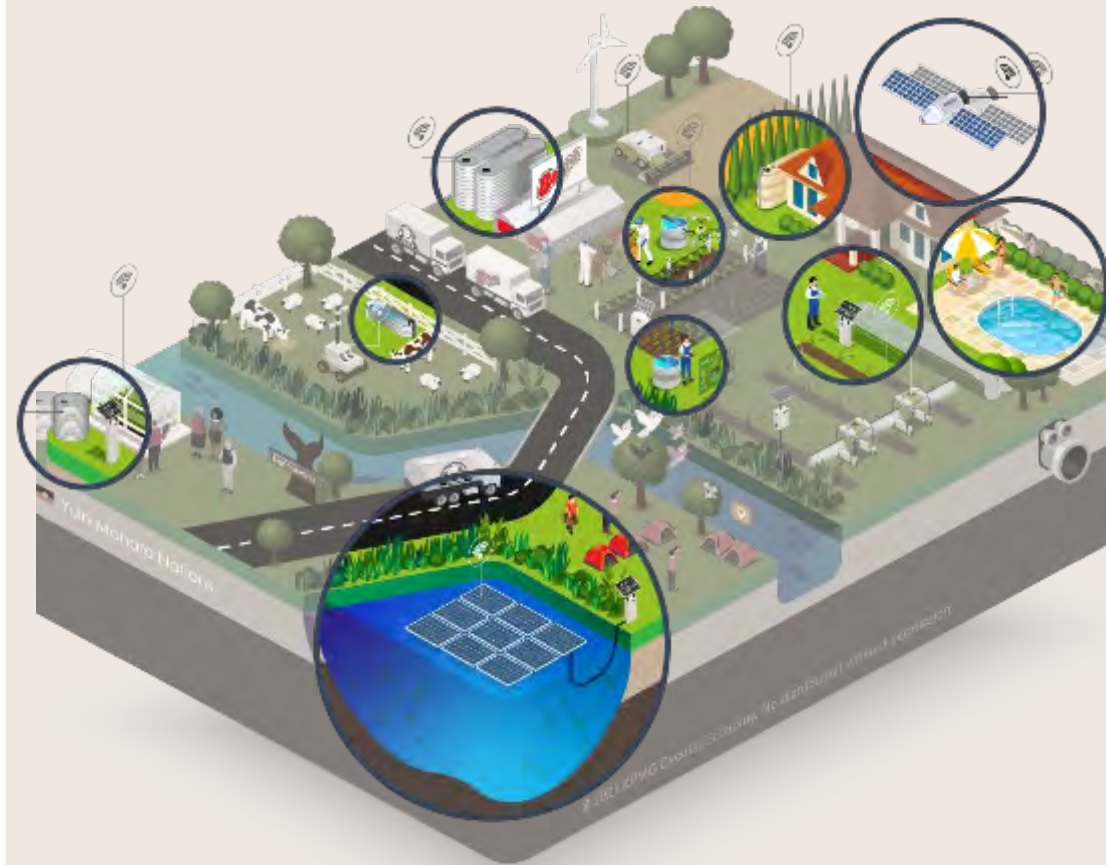
Available grants/funding

Bushfire Local Economic Recovery Fund (application pending)

Potential partnerships/investors

KPMG Arwin, Rabobank, NSW RFS, Esri, Farmbot, Microsoft, Local Farmers

Benefits



This illustration is extracted from an application currently underway for consideration by the BLERF. It highlights key water resource instrumentation proposed.

Celebrate what makes the Bega Valley unique

Circular Cultural Enabler

Description

Celebrating, enabling and promoting the unique social and cultural characteristics of Bega Valley Shire is central to the circularity program philosophy. Through this project, opportunities to reflect the arts, culture and history of the Shire within circularity projects will be explored. This will ground the program in the local community, showcase the breadth of local creative talent, and generate employment for local artists. It will enrich tourism offerings across the Shire and contribute to increased understanding among disparate local communities.

Priority  Impact  Cost \$0.2m

Outcomes

- **Local economy** - This project will complement the Bega Circular Valley Knowledge and Resource Enabler by generating a suite of opportunities to incorporate cultural elements in circularity projects. It will directly inform the scoping of flagship projects and feasibility analyses of the next tranche of circularity projects.
- **Community** - It will build on work already completed by BVSC, South East Arts and the Bega, Eden and Merrimans Local Aboriginal Land Councils.
- **Awareness** - It will help shape the vision and values of the Co-operative and Finance Fund and contribute directly to the narrative of the Bega Circular Valley Communication Strategy.

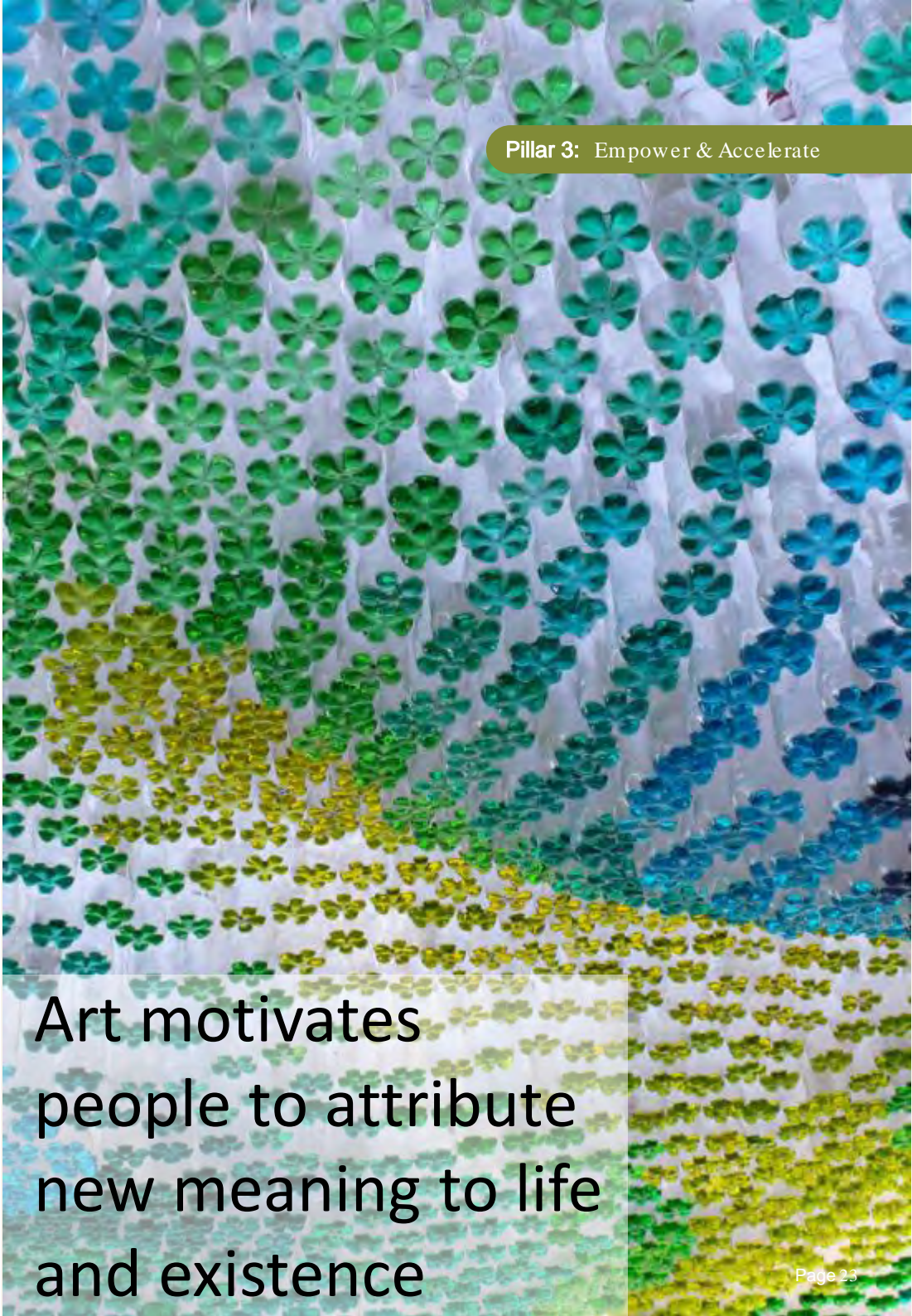
Available grants/funding

None identified

Potential partnerships/investors

Bega Council, South East Arts, KPMG, Bega LALC, Eden LALC, Merrimans LALC

Benefits



Art motivates people to attribute new meaning to life and existence

Engage with our stakeholders

Circular Engagement and Advocacy Strategy

Description

The Bega Circular Valley Communication and Engagement Strategy will guide story telling around the initiative. It will reflect the values and vision of the Co-operative and Finance Fund, celebrate the culture of the Shire identified through the Cultural Enabler, and leverage ongoing momentum and support for the circularity initiative. It will articulate key messages, identify key partners and stakeholders, and develop promotional and advocacy collateral. It will also deliver a range of web, social media, print and radio content.

Priority  Impact  Cost \$0.2m

Outcomes

- **Local economy** - This project aims to develop a compelling narrative for the circularity initiative that celebrates successes of early adopters, generates local support to transform the local economy and assists others outside the Shire to make the transition towards a more sustainable way of living and doing business.
- **Education & Awareness** - It will guide engagement with stakeholders across the Valley to generate buy-in and participation in circularity initiatives, and ground those initiatives within the local community.

Available grants/funding

None identified

Potential partnerships/investors

Circularity Coop, Bega Council, KPMG, NSW Circular, local media, cross-sectoral stakeholders

Benefits



Develop circular procurement

Bega Circularity Procurement Aggregator and Accelerator

Description

Investigate opportunities to develop procurement specifications that drive circularity, including local sourcing and employment, whole of life costs and evaluate potential externalities on suppliers along the supply chain. Explore joint procurement opportunities with large procurers in the region, with a focus on local industry procurements.

Priority  Impact  Cost \$0.8m

Outcomes

- **Innovation** – supporting the nurturing of local circular businesses and business models to accelerate the region towards being more circular.
- **Globally connected** – leveraging the partners global reach to bring specialist insights to the regional entrepreneurs and support commercialisation through their national and international networks.
- **Resource optimisation** - Partnerships with local industry buyers to promote efficiency, circularity and demonstrate leadership. Local supplier networks that are cost competitive and demonstrate social, cultural and environmental value. Improved category management driving decisions around procurement partnerships and managing investment in viable circular initiatives.

Available grants/funding

- Industry Capability Network (ICN)
- Supply Chain Resilience Initiative

Potential partnerships/investors

BVSC, Bega Cheese, South East Regional Hospital, Key Haulage and distribution partners, All sectors – Retail, Agriculture & Forestry

Benefits



Pavilion built with waste based bricks

Drive equitable and feasible circularity

Bega Circularity Program Feasibility Analysis

Description

Once the opportunities for enhanced circularity are identified through the Bega Circular Valley Knowledge and Resource Enabler and Cultural Enabler, feasibility analyses will be undertaken for 10 specific projects. These projects will seek to cover the breadth of benefit categories, but will be prioritised based on potential benefit and buy-in of project partners. For those projects that are deemed feasible, concept plans will be developed to describe and quantify their implementation.

Priority  Impact  Cost \$0.5m

Outcomes

- **De risking investment** - This project will result in a suite of concept plans for the next tranche of circularity projects for the Bega Valley. It will provide further insight to improve the industrial ecology map of the Shire and will provide input to the commercialisation activity undertaken through the Bega Circularity Centre.

Available grants/funding

- Partner matching funds
- No Grants identified

Potential partnerships/investors

Bega Circularity Coop, Bega Cheese, Bega Council, UoW, Rabobank, KPMG

Benefits



The natural ecosystem as inspiration for the industrial ecology map

Beef saleyard infrastructure upgrade

Bega Livestock Exchange Centre

Description

The Bega saleyards is a key enabling infrastructure for the Bega Valley agricultural and subsidiary sectors. It provides a vital service to beef and dairy producers within and beyond the Bega Valley, being a local selling point that enables the industry to operate locally without having to send stock to larger selling centres outside the region. This project will upgrade the facility to handle larger volumes of stock and facilitate online sales.

Priority  Impact  Cost \$3.6m

Outcomes

- **Local economy** - The proposed upgrade of the facility will enable the saleyards to operate more effectively and through the application of technology, will improve access to larger markets. With the addition of more local processing and value-adding, this project will contribute to improved margins for local producers.
- **Animal welfare** - The upgrade will also improve animal welfare and WHS outcomes (important for future viability) and will establish the saleyards as a focal point for the local agricultural community.

Available grants/funding

BLERF

Potential partnerships/investors

Bega Beef Co-op, BVSC, LLS, producer groups

Benefits



Solar-powered water infrastructure network

Bega Net Zero Emissions Water Supply Network

Description

Pumping water is high energy use but can be shifted into different parts of the day to suit low carbon energy generation sources. Installing significant behind-the-meter solar can create a daytime energy supply opportunity which, coupled with process changes, can meet up to 70% of energy needs and export significant power. Energy storage systems, battery or otherwise, can close the gap for energy demand. Changing how and when we pump water needs smart control systems and smart operations to optimise return on investment.

Priority  Impact  Cost \$6m

Outcomes

- **Carbon neutral** - This project will contribute to achieving Bega Valley Shire's net zero emissions by 2050 target, through reduced emissions from water treatment and reticulation.
- **Resource optimisation** - Power generated on site will reduce electricity transmission losses, while on-site storage will contribute to grid stability and load management. Export to the grid will contribute to reducing the carbon intensity of the electricity grid.
- **Local economy** - Investment in capital installation, maintenance and operation will contribute to the local economy.

Available grants/funding

- BVSC matching funds
- No Grants identified

Potential partnerships/investors

- BVSC
- Essential Energy
- Water users

Benefits



Implement a circular food system

Bega Smart Local Food and Logistics Program

Description

The complexity of food systems requires a holistic and co-ordinated approach. To develop more resilient food systems that support a vibrant and sustainable local economy and environment, agricultural producers need to be profitable. This Future Food System program will develop a strategy and activation program based on circularity concepts to achieve local job creation, improved logistics networks, integrated digital Ag technologies, optimal nature positive production, increased resilience and reduced food/resource waste.

Priority



Impact



Cost: \$6m

Outcomes

The program will bolster the passion and strength of planned and existing local initiatives ensuring synergies that will amplify collective outcomes:

- **Local Economy** – Improved farm gate returns and increased employment through new approaches to farming, agricultural processing, marketing and distribution. Promoting provenance, future proof farming and uniqueness of the Bega region incorporating a “Hack Farm” and Circularity Education Centre.
- **Logistics** - Smart logistics network supporting regional and national market access, decreased footprint involving the participation of logistics and distribution partners and infrastructure planners.
- **Technology** - Empowered locally driven technology pathway targeting smart yet low cost technology solutions with locally demonstrated value and effectiveness allowing access to low threshold technology to increase productivity for farmers and small businesses.
- **Education & Tourism** - Valuable research opportunities for local Universities i.e. Charles Sturt University and the University of Wollongong. Study tour facilities for primary and secondary schools aligned with the STEM curriculum. Promoting the Bega region as a Eco-Tourism destination.
- **Waste** - Smart food & resource waste/surplus solutions

Available grants/funding

Kick off with Rabobank powered Circular Food Valley Forum 2021 in the Bega Valley to share the vision and mobilize the stakeholders.

Potential partnerships/investors

SCPA South East Producers, 2PiSoftware, Bega Cheese, KPMG, Rabobank, local farmers/networks, technology entrepreneurs, Government, Logistics, Universities, local schools

Benefits



Pillar 3: Empower & Accelerate



Bega Future Food Systems Forum

Develop new marine carbon sinks

Tackling climate change and biodiversity loss through kelp farming

Description

Kelp is able to absorb up to 20 times the amount of CO₂ than a forest and improve marine biodiversity. Bega Valley's strong coastal presence provide an ideal location for develop regenerative seaweed farming and carbon sinks.

This project aims to promote the development of a kelp nursery and kelp farming for applications within other industries.

Priority ★★☆☆ **Impact** ★★★ **Cost:** \$
Under consideration

Outcomes

- **Carbon sequestration:** strengthen the region's environmental services through carbon offsets.
- **Biodiversity enhancements** : contribute to the restoration of marine biodiversity through the provision of habitat and shade.
- **Organic material** : tap into the potential of algae for the Circular Economy by supporting other industries to source regenerative products (e.g. as fertiliser, superfood or other, as discovered by our research partner).

Available grants/funding

- No Grants identified

Potential partnerships/investors

Bega Cheese, Participating seaweed farms, Bega Beef Coop, Far South Coast Dairy Development Group, Rabobank, UoW, KPMG.

Benefits



Asparagopsis

Animal methane reduction through asparagopsis diet

Description

Over 50% of Australia's land use is leveraged for ruminant grazing. In the Bega Valley, 15% of the land is used for ruminant grazing. While cows in particular generate a high amount of methane, CSIRO identified that asparagopsis seaweed could significantly reduce methane reduction in cow's digestion process, potentially paving the way for a world class solution on cow footprints.

This project will aim to enhance existing efforts around asparagopsis and the following options are being considered:

- **Embed circularity into stockfeed** (lick blocks) asparagopsis into feed solutions using Bega Cheese's by-products (salt, nutrients, energy) as ingredient inputs to AACo lick block manufacturing + asparagopsis;
- Identify **additional uses** for the asparagopsis product beyond feed, e.g. as a fertiliser;
- **Land based production** - use of waste salt water, energy (heat)
- Trial into **dairy** as a feed input and **measure methane reduction** in a pasture fed dairy model as well as **assess taste implications** on dairy products;
- Research additional delivery options, e.g. infuse into livestock drinking points

Outcomes

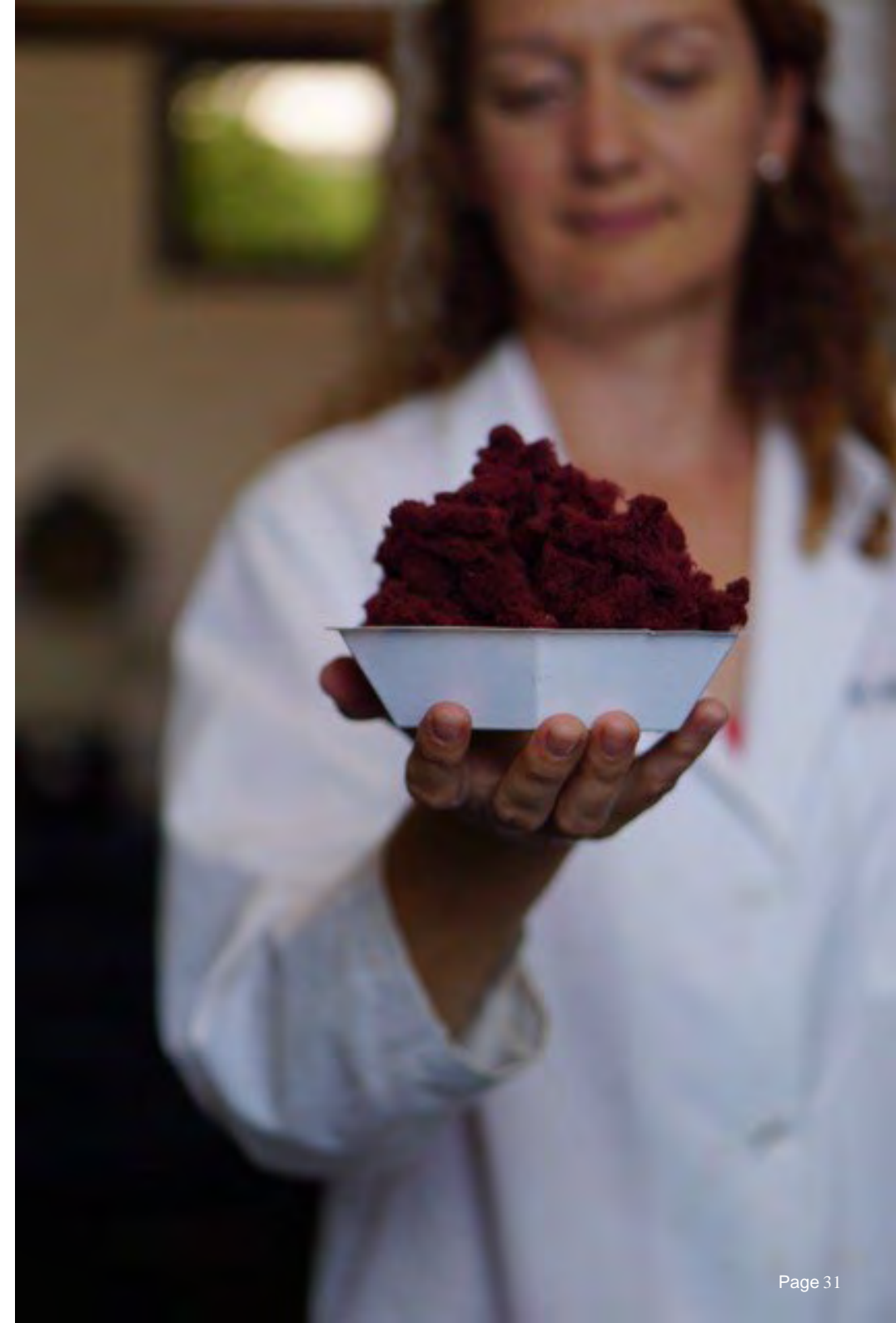
Confirmed feasibility, viability, practicality of introducing asparagopsis to cow diets.

Available grants/funding

- Methane Emissions Reduction in Livestock Stage 2: Feasibility and Development Grants

Potential partnerships/investors

- Regional Circularity Cooperative
- Woolworths
- AACo
- Bega Cheese
- MLA
- CSIRO
- Fisheries RDC
- KPMG
- Rabobank
- Microsoft





Join us to
enable a more
circular
economy and
regionally
resilient
communities

Contact details:

Barry Irvin
Chairman

Regional Circularity
Co-operative

02 6491 7720

From:
To: [DPIE Bega River Area Water Sharing Plan Mailbox](#)
Subject: Bega Water Sharing Plan Review
Date: Saturday, 20 August 2022 10:54:36 AM

██████████

CANDELO 2550

NSW Department of Planning & Environment
NSW Department of Primary Industry

To whom it may concern,

We strongly object to the draft water sharing plan for the Bega River Area Regulated, Unregulated and Alluvial Water Sources 2023.

The proposed plan does not meet the needs of the community and therefore will not be successful in meeting its objectives. We find it appalling that after all the work we have done, and money spent, to improve the condition of our water ways that we are now being penalised for our efforts. By the Govt reneging on the Cease to Pump agreement at Kanoona and by making the implementation of on farm water storage unviable in most water sources.

The capture of water in high flows following major rainfall events in on farm storages for use during prolonged dry periods, makes a lot of sense in this region. Through the right licencing options there is also significant opportunity to reduce irrigation pressure on low flows to further improve the condition of our water ways.

It is difficult for us to reconcile that;

The Natural Resource Commission 2021, recommended investigation into on farm water storage as a means of reducing pressure on low flows and that DPIE Water as part of the Draft Southern Regional Water Strategy included on farm water storage in their shortlist of options to improve water resilience for communities and industry. Yet DPIE Water as part of the remake of the Bega Water Sharing Plan are proposing to make the implementation of on farm water storage impossible across most water sources for the next 10 years.

We strongly object to the proposed increases to the cease to pump rules in all water sources. In the Dry and Narira water sources the increase makes irrigation direct from streams unviable with out on farm water storage, which are not viable to implement the under current and proposed WSP. In the Bega Bemboka, the increase is unjustified given, during the current WSP period, flows only dropped below 2ML/day at Kanoona, at the very end of the second worst drought on record. Rather than imposing increased risk on irrigators the focus should be on increasing the Drought Reserve in Cochrane Dam and encouraging the implementation of on farm water storage.

We urgently request that DPIE Water return to the Bega Valley and work together with water licence holders and the community to identify and agree on rules that are appropriate for our landscape and will help encourage on farm water storage and reduce irrigation pressure on low stream flows. The proposed WSP in its current form will result in further dairy closures during the next dry period and will put at risk food manufacturing in this region. We need the Govt to urgently work with the local community to change the plan so it will achieve its objectives and assist the Bega Valley transition to a circular economy.

As a fourth generation dairy farmer here in the Bega Valley, recently retired after over half a century of dairying, I shudder at the thought of what will be the future of farming under these directives in the name of the environment. No amount of pumping will do to our rivers and streams what nature did in the first decade of this century. Within months of the rains returning the flora and fauna in our streams was well on the way to normality. Small fish, eels, shrimp, water spiders etc. could be seen as routine. Cormorants, rarely seen here in the past, regularly feeding in the waterholes up and down stream were an obvious indication of the natural recovery of the system.

I believe that our farming industries are being hijacked by armchair intellectuals, with no dirt under their fingernails, to appease a doomsday environmental crowd with little knowledge or appreciation of the land that feeds them.

Yours faithfully,

██████████

20 August 2022

NSW Department of Planning & Environment
NSW Department of Primary Industry

To whom it may concern,

I strongly object to the draft water sharing plan for the Bega River Area Regulated, Unregulated and Alluvial Water Sources 2023.

The proposed plan was written before engagement with the community, does not meet its needs and therefore will not be successful in meeting its objectives. The Bega Valley is uniquely positioned in that the community, industry and local government are all engaged in environmental improvement activities through the established of the circular economy cooperative. The proposed changes will have limited to no environmental benefit and will limit other environmental improvement through local activities.

Farmers in the Bega Valley have engaged with the government in the past to successfully improve waterways. I find it inexcusable that with no consultation and after over \$10m has been spent by local farmers in waterway improvements, that we are now being penalised for our efforts. The Government is renegeing on the Cease to Pump agreement at Kanoona which was agreed as part of the justification to give up land and water access for stock. It is also making the implementation of on farm water storage unviable in most water sources.

The capture of water in high flows following major rainfall events in on farm storages for use during prolonged dry periods, makes a lot of sense in this region. Through the right licencing options there are also significant opportunity to reduce irrigation pressure on low flows to further improve the condition of our water ways.

It is difficult to reconcile that;

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increased risk on irrigators the focus should be on increasing the Drought Reserve in Cochrane Dam and encouraging the implementation of on farm water storage.

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Yours sincerely



[REDACTED]

[REDACTED]
Email: [REDACTED]
ABN: [REDACTED]

19 August 2022

NSW Department of Planning & Environment
NSW Department of Primary Industry

To whom it may concern,

Re Water Sharing Plan for the Bega River Area Regulated, Unregulated and Alluvial Water Sources 2023

The [REDACTED], represent licenced irrigators in the Bega Valley. We are a voluntary organisation that has limited capability and time resources.

We strongly object to many of the proposed changes proposed in the new Water Sharing Plan. Our detailed comments are included in the attached background document. It is disillusioning that the proposed plan can be so disconnected from the recommendations of the Natural Resource Commission and the draft Southern Regional Water Strategy.

There is a significant disconnect between the values and the vision the Bega Valley has for the future of our community and the proposed water extraction rules being imposed by Government. We are extremely frustrated by the lack of local input into the plan. Given the set and forget nature of this plan it is critical that the plan reflects the needs and vision of the community to ensure initiatives, such as the circular economy transition, that will improve the resilience of our community and the environment are well supported.

Our irrigators are extremely frustrated, annoyed and disappointed that they are effectively being penalised for their massive efforts to improve the condition of the water ways in the Bega Valley. It has taken considerable effort to get this far. The renegeing of the Bega River Health Agreement is unforgivable and has resulted in a severe erosion of trust between landholders and the Government.

On farm storage is the key to securing the resilience of agriculture in the Bega Valley. Irrigators have etched in their memory the hardship endured during the two severe droughts that have occurred in recent years. Our irrigators are motivated to improve their preparedness for the next drought, unfortunately the proposed changes proposed in the WSP plans make their preparation plans involving on farm water storage almost impossible to implement.

The [REDACTED] supported the proposed increase in Harvestable Rights based on advice from the Department that the entitlements of irrigators would not be impacted. We are very annoyed that this now may not be the case.

As a community we want this region to thrive, and through the Bega Valley Circularity initiative we have a means of making that happen. We urgently request that DPIE Water, with representatives that share a vision for circularity and have the authority to make decisions come back to the Bega Valley urgently to work with irrigators and the community to develop extraction rules that support the implementation of on farm water storage in our landscape.

Yours sincerely

[Redacted]

[Redacted]

[Redacted]

From: digital.services=squiz.dpie.nsw.gov.au@squiz.regional.nsw.gov.au on behalf of digital.services@squiz.dpie.nsw.gov.au
To: [DPiE Bega River Area Water Sharing Plan Mailbox](mailto:DPiE.Bega.River.Area.Water.Sharing.Plan.Mailbox)
Subject: Submission for the draft replacement Bega River Area Regulated, Unregulated and Alluvial Water Sharing Plan
Date: Sunday, 21 August 2022 10:44:24 AM

Permission

I would like my submission to be treated as confidential?: No

I would like my personal details to be treated as confidential?: Yes

Your details

Name:

Postal address:

Telephone:

Email address:

Stakeholder group : Local landholder

If you selected other, please specify:

Did you attend one of the drop-in information session at Bega or Cobargo; the information webinar, or meet with the department about the water sharing plan?: yes

If your comments refer to a specific water source, which one?: Candelo water source

Your feedback

Which water source/s does your answer refer?: Upper Bega/Bemboka

Do you support the proposed cease to pump No - the water licence holders kept their end of the BRHA and implemented a lot of environmental works to maintain the 2ML CTP. The licence holders managed water sharing to keep the water flow above 2ML/day until the end of the 2019 drought. The focus should be

rules? Why/why not?: on the Cochrane Dam drought reserve and improving its security , triggers and releases. The volume needs to be 800ML when below average rainfall is predicted by the BOM

Will the proposed cease to pump rules impact your business? How? What could be done to mitigate that impact?:

Yes - the whole region will be impacted if more dairy farmers close and the factories in Bega downsize as a result of this plan. Services will be lost and that will directly impact our business

Do you think that the proposed cease to pump rules appropriately protect the environment? Why/why not.:

The CTP rules have been modelled many times. The river is in good condition, Yes the environment is protected except when the drought reserve is active - that is the area that needs improvement

Your feedback

Do you support allowing trade into these water sources at high flow? And the limits to ensure risk remain lows at these higher flow classes?:

This is a positive change but the upper limits will stop implementation particularly in the Upper Bega Bemboka tributaries. We need both a high flow and low flow option to make the implementation of on farm storage work.

What factors would encourage you to buy/sell water? Other comments?:

We don't use our entitlement, but we are unlikely to sell because it may affect the resale of the farm. We don't use our entitlement because when we want to irrigate there is not enough water flow and we would adversely impact downstream stock and domestic users. Investment in irrigation infrastructure would be viable for our beef operation at the moment but the high beef prices are not likely to last.

Your feedback

Do you support allowing Aboriginal Community Development Licences in these select areas? Why/why not.:

yes support in principle, don't know enough about what the Aboriginal community need to make an informed comment.

Your feedback

What do you think of these proposed changes and the

the 3:1 needs to be maintained in all the water sources where it is allowed currently and extended to the Murrah Wallaga water sources. Our understanding is the current 3:1 is to a B class not C class and outlined in the govt documentation. We need to encourage the implementation of on farm water storage - there may be other ways that could achieve this - it needs to be explored further. Turkey nest dams

reasons for them?: can not be constructed in our landscape the hills are too steep and there is not enough clay content in the soil. We need to use natural gullies - we need to work out licencing options that will work in our landscape that will also protect low flows.

Do you think this is appropriate? No to what is currently proposed
Why/why not?:

Your feedback

Do you have any comments on this aspect of the draft plan?: The Brogo has a over allocation and under utilization problem. The Brogo needs serious focus and discussion with licence holders on how the system can be best managed. I am not sure what impact this rule change will have on licence holders

Your feedback

Do you have any comments on this aspect of the draft plan? : This could be a positive rule change if the licence holders down stream could build on farm water storages to benefit from it.

Your feedback

Do you have any comments on this aspect of the draft plan? : Changing culture will be challenging - irrigators are used to just turning their pumps on. it will need significant effort from water nsw to achieve change. is it was easy to use for irrigators - is the tool the part of the problem?

Your feedback

Do you have any comments the drought reserve rules or other operational aspects of Cochrane Dam?: This dam was built for the purpose of power generation, however its catchment area is one of the most high yielding from a water source perspective and it is located on an unregulated water source. Cochrane should be able to hold back high flows for power generation, but they should not be allowed to hold back water during low flows and drought. The drought reserve is critical - it needs to be better secured and more effective triggers put in place to ensure during drought times the volume stored is 800ML not 500ML. The pulsing of the river should also be reviewed - Flows should be released over a 6- 12 hr period not 30 minutes based on the AEMO spot price.

Your feedback

Do you support the new LTAAEL (Long Term Average Annual Extraction Limits) definition? This change has potential but is not likely to be effective because the current other rules will not facilitate the building of on farm water storage and the conversion to high flows
Why/why not? :

Your feedback

Do you support inclusion of this Groundwater Source? No comment - groundwater will benefit a very small number of landholders - not major industry benefit
Why/why not? :

Your feedback

Do you think these proposed rules and distance conditions are appropriate?: Not likely to impact many people

Your feedback

Do you have any comments on this aspect of the draft plan?: The metering of water use between water sources needs to be simplified - particularly for the upper bega/Bemboka systems - the rules are crazy

Your feedback

Do you think this is appropriate? Why/why not?: We were advised the increase in HR would be added to the LTAAEL and not affect licence holder entitlements. This is not what we were told at the HR consultation sessions. This is a major breach of trust - in consultation sessions we need to be told the truth and the Govt needs to abide by what they tell the community.

Additional feedback

Comments on any aspect of the draft plan?: DPIE need to come back to the Bega Valley and work with licence holders to make the plan workable - as it is it will be devastating for our communities

Attachments: No file uploaded

How did you hear about the Public Exhibition?: Direct email

If you selected other, please specify.:

Submission on the Bega Water Sharing Plan Remake.

[REDACTED], August 2022.

The proposed changes to the Bega water sharing plan are in general to be welcomed, but they do not go far enough. While it is understandable that the dairy irrigators feel some chagrin that their efforts in environmental improvements (Box 2, page 74/112, PDF 80/134, NRC report) have not been adequately rewarded, the fact remains that connecting flows down the trunk stream of the Bega/Bemboka River have failed in dry times.

Connecting flows are important in maintaining water quality for dairy wash-down purposes. Should some of the pool environments experience prolonged periods of no flow during hot weather, temperature stratification will cause the release of nutrients from the benthos. With temperature stratification, there is no mixing of oxygen rich surface water with the lower depths. Anaerobic bacteria will proliferate and unfortunately lower the pH and make nutrients bound to clay particles more soluble. In this circumstance, toxic cyanobacteria blooms (blue-green algae) are likely to occur. This could kill dairy cows directly and cripple the dairy industry because the water will be unusable for dairy hygiene.

Standard chlorination treatment of town-water supplies from the Murray River, which were contaminated with blue-green algae, has been shown to release the toxins and actually cause an increase in gastro-intestinal disease.

The Natural Resources Commission report on the Bega/Bemboka plan proposed an increase in the cease to pump rule for the Kanoonah gauge from 2 to 5 ML per day. However, the modelling report for the upper Bemboka showed that connectivity is lost at flows less than 6 ML/day and that a commence to pump rule of 10 ML/day would be required to maintain connectivity.

The fact sheet summarising the productivity impacts of proposed changes to the cease to pump rule showed fairly modest costs even with a 10 ML/day rule. These costs should be compared to the risk of the impact of a toxic cyanobacterial bloom.

The Upper Bemboka modelling report illustrated periods of very low flow which occurred intermittently from September 2008 to May 2009 and from mid-November 2019 to January 2020 (page 3/7). The causes of these periods of low flow should be examined in detail. Illegal pumping by dairy irrigators is now likely to be detected by monitored pumps. Transmission losses associated with riparian vegetation, particularly exotic willows, could be a factor. Increased water use in the upper catchments associated with intensive logging and dense regeneration is likely to be a contributing cause. There is no cease to pump for trees.

As the climate warms, evapotranspiration losses are likely to increase significantly. The Draft South Coast Regional Water Strategy sets out predictions on changes to rainfall seasonality, temperature, evapotranspiration losses and sea level rise (page 25/112, PDF 31/134). While the rainfall predictions are questionable in the light of recent experience, there can be no doubt that evapotranspiration losses will increase as average temperatures increase. This implies cease to flow events will be more common and of longer duration. Dairy farmers may find it prudent to store good quality water in large tanks for periods when low flows are embargoed or contaminated.

The provisions for “carryover water” rights in unregulated rivers are questionable. There is no method to predict future water availability in unregulated rivers so allowing licensed extractors to accumulate credits seems foolish. The shares available to other water users would be decreased should total water availability be decreased. Perhaps carryover water entitlement should be limited to regulated streams.

The effect of new harvestable rights dams is to be monitored in the first 3 years of the plan. Harvestable rights have been increased from 10% to 30% of average annual runoff. When assessing the impact of this provision, the effect on stormflow runoff versus low flows should be carefully considered. Increased storage throughout the catchment may actually improve flow duration.

Aboriginal Community development Licences may become available many years after dispossession of water rights was formalised when annual water licences were made a property right for existing license holders. This occurred on the eve of a COAG meeting without any opportunity for other citizens to make claims or bids for these assets and without any additional cost to the existing license holders.

When considering the grant of pastoral leases, Lord Earl Grey said the rights of indigenous people to continue to enjoy access to fresh water and the associated resources should remain undiminished. Following the Wik people’s court case in Western Cape York, the Howard government suspended the Racial Discrimination Act to give exclusive possession to pastoral lease holders. This was touted as “bucket loads of extinguishment” (of native title) by the late Tim Fisher.

The traditional enjoyment of access to fresh water and associated resources can be largely ensured by protection of the health of rivers in all aspects. This includes water quality, flow duration, natural riparian vegetation and aquatic biota.

The scale of Aboriginal Community development licenses appears to be rather mean-spirited in the context of this history.

Town Water Supplies.

The Bega sands aquifer is the largest and most secure fresh water source in the Bega Valley Shire. It supplies the Bega/Tathra system and supplements the “Tantawangalo scheme” through the pipeline from the Bega sands to the Yellow Pinch Dam. This proved to be crucial in the lead up to the bushfire emergency of 2019/2020 so that water supplies for towns in the southern half of the shire were unrestricted even though the Kiah bore field had been depleted.

The size of the Bega Sands aquifer has not been adequately assessed. Earlier estimates of 20,000 or even 30,000 ML have been reduced to about 12,000 ML (NRC report, Page84/134). This suggests that good flow duration at least to the Kanoonah gauge will be vital into the future.

Conclusions.

Protection of low flows connecting pool habitats along coastal streams remains the cornerstone of protecting water quality for town water use, dairy hygiene and the aquatic environment. While long term average annual extraction limits have been a focus of DPIE water as a tool for balancing water extraction and environmental needs, these are more relevant to inland streams where any

extraction can have an impact all the way to the Murray mouth. For coastal streams east of the Dividing Range, the overwhelming preponderance of flows occurs in a few events following a few days of heavy rainfall. Most of this water is out to sea within a week or so. To capture and store a proportion of this stormflow water would seem to be desirable. Protection of the aquatic environment and water quality for human use depends upon maintaining flow duration and connecting flows in dry times.

20 August 2022

[REDACTED]
[REDACTED]
Bemboka NSW 2550
[REDACTED]

NSW Department of Planning & Environment
NSW Department of Primary Industry

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community to change the plan so it will achieve its objectives and assist the Bega Valley transition to a circular economy.

Yours sincerely

[REDACTED]

[REDACTED]

[REDACTED]

Bemboka NSW 2550

From: digital.services=squiz.dpie.nsw.gov.au@squiz.regional.nsw.gov.au on behalf of digital.services@squiz.dpie.nsw.gov.au
To: [DPIE Bega River Area Water Sharing Plan Mailbox](#)
Subject: Submission for the draft replacement Bega River Area Regulated, Unregulated and Alluvial Water Sharing Plan
Date: Sunday, 21 August 2022 4:59:15 PM

Permission

I would like my submission to be treated as confidential?: No

I would like my personal details to be treated as confidential?: No

Your details

Name: Josh Hergenhan

Postal address:

Telephone:

Email address:

Stakeholder group : Water user – Licence holder

If you selected other, please specify:

Did you attend one of the drop-in information session at Bega or Cobargo; the information webinar, or meet with the department about the water sharing plan?: Yes

If your comments refer to a specific water source, which one?: Tantawangalo Creek

Your feedback

Which water source/s does your answer refer?: Upper Bega/Bemboka

Do you support I do not support the proposed cease to pump rules. Considerable work has been undertaken by irrigators in the form of river management of environmental flows along with rehabilitation works along creek and river banks. These works have been undertaken at the landholders

the proposed
cease to pump
rules? Why/why
not?:

expense and I believe the landholders are being punished with unrealistic expectations resulting from the exceptional works completed. Cease to pump levels on Tantawangalo Creek was raised from 2mL to 5 mL without consultation. Bega Valley Shire Council takes a minimum of 3mL per day for town supplies. This effectively makes the cease to pump on the Tanawangalo Ck at 8mL.

Will the
proposed cease
to pump rules
impact your
business? How?
What could be
done to mitigate
that impact?:

The cease to pump levels will definitely impact our dairy farm in a negative way. Having a 5ML ctp instead of 2ML will increase our days of not pumping by another 77 days. This will make the operation of our dairy unsustainable in the future. Cease to pump needs to revert back to 2ML in order to make our business sustainable.

Do you think
that the
proposed cease
to pump rules
appropriately
protect the
environment?
Why/why not.:

Tanatawagalo Ck has a strong environmental flow at 2ML. All irrigators operate as a team in sharing water supply and the only times levels drop below 2ML is in extreme drought when water is not running into system.

Your feedback

Do you support
allowing trade
into these water
sources at high
flow? And the
limits to ensure
risk remain lows
at these higher
flow classes?:

I support the trade rules. The maximum limits are to low.

What factors
would encourage
you to buy/sell
water? Other
comments?:

Not selling at all. Would perhaps buy if we were able to put in decent on farm storage.

Your feedback

Do you support
allowing
Aboriginal
Community
Development
Licences in
these select
areas? Why/why
not.:

Your feedback

What do you
think of these
proposed

Object to the removal of water sources. On farm storage should be

changes and the reasons for them? encouraged

Do you think this is appropriate?

Why/why not?:

Your feedback

Do you have any comments on this aspect of the draft plan?:

Your feedback

Do you have any comments on this aspect of the draft plan? : Has potential but need more encouragement for farm storage options to take advantage of it

Your feedback

Do you have any comments on this aspect of the draft plan? :

Your feedback

Do you have any comments the drought reserve rules or other operational aspects of Cochrane Dam?: Need minimum releases all year round to maintain flow and stop pulsing occurring

Your feedback

Do you support the new LTAAEL (Long Term Average Annual Extraction Limits) definition? Has potential if applied correctly, but rules/ red tape will render it ineffective

Why/why not? :

Your feedback

Do you support inclusion of this Groundwater Source?

Why/why not? :

Your feedback

Do you think these proposed rules and distance

conditions are appropriate?:

Your feedback

Do you have any comments on this aspect of the draft plan?:

Your feedback

Do you think this is appropriate? Why/why not?:

Additional feedback

Comments on any aspect of the draft plan?: Plan has been done with virtually no input from irrigators. I request that the department come to the table to negotiate a plan that is fair to all concerned. Maintaining primary production whilst still providing a strong environmental outcome. The plan in its current form does not do this.

Attachments: No file uploaded

How did you hear about the Public Exhibition?:

If you selected other, please specify.:

██████████
██████████
██████████
21-8-2022

To whom it may Concern

I write to you regarding the Bega River Area Water Sharing Plan.

I am a river representative for the Bega Bemboka system. I have lived on the river all my life and have seen a massive change for the better in how the river has been managed. There has been an improvement in maintaining connectivity and flows within the system to the Kanoona rocks gauging station. Currently set at 2 megs per day minimum.

I have a pump under 100 mm so I keep a daily pumping log when irrigating. At no stage have I seen the flow rate fall below 2 megs at Kanoona rocks when pumping has been taking place. My diary is available to anyone who cares to look at it.

The cease to pump has been lifted to 5 megs. This I feel is wrong.

Around 2009 under the Bega River Health agreement. It was agreed to maintain access to the river flows irrigators were required to fence the river and tree out the fenced area. This was done at considerable cost and combined with ongoing maintenance, takes considerable management. This seems to have been ignored with the lifting to 5 megs.

The 5 megs would be workable if larger irrigators were given a clear path to dam building in advance (10 years) of lifting the cease to pump at 2 megs. Had this occurred, dams would have been built to harvest high flows and allow storage of water higher in the catchment. I find it hard to believe when 220,000 megs are flowing past the Kanoona gauging station a day, a portion of this water cannot be harvested. I believe a mechanism needs to be found to allow this to happen, but not impact licences, as capturing this water comes at a cost.

Maximum harvestable rights need to be lifted even above 30 % as the 30% is not worthwhile. The coastal areas seem to be getting captured within inland rivers. Flows on the coast are completely different – our water is only in the system for 3 days. Should someone be prepared to build a larger dam that will not fill every year they should be allowed to.

With the region been impacted by bushfires 2 and a half years ago dams, would have allowed access to nearby water instead of having to cart of fly it for many kms.

Building of turkey nest dams on the coast do not work, as the terrain needs to have level areas for their construction. Because of this, storages need to be allowed on level 3 water courses. There appears to be a deal of inconsistency with level 3 water courses and mapping precluding some from been able to build.

With this, I have not found I person who has been able to explain to me the pathway to constructing a dam. This does not even touch on the inconsistencies within the catchment which seem to be put in place to stop any progress.

Add to this in one of the main areas of the catchment we have Cochrane Dam. This dam does not even appear in the plan. Irrigators had a plan and a drought reserve in place when the dam was government owned. The dam was sold with an agreement in place, this plan has been ignored. Irrigators had a pool of money in place to compensate for any spills. Management of the dam now releases slugs/pulses of water into the system which certainly makes "sharing" impossible.

In finishing I am very disappointed in the consultative process – which I have been a part of. The plan has been written and then "consultation" has taken place. It appears we have been listened to but not heard. We have certainly not been consulted.

I feel the process needs to start again as getting this wrong will have serious implications for the region.

Yours Sincerely

A solid black rectangular box used to redact the signature of the sender.

From: digital.services=squiz.dpie.nsw.gov.au@squiz.regional.nsw.gov.au on behalf of digital.services@squiz.dpie.nsw.gov.au
To: [DPIE Bega River Area Water Sharing Plan Mailbox](#)
Subject: Submission for the draft replacement Bega River Area Regulated, Unregulated and Alluvial Water Sharing Plan
Date: Sunday, 21 August 2022 9:19:54 PM

Permission

I would like my submission to be treated as confidential?: No

I would like my personal details to be treated as confidential?: No

Your details

Name: Farran Terlich

Postal address:

Telephone:

Email address:

Stakeholder group : Water user – Licence holder

If you selected other, please specify:

Did you attend one of the drop-in information session at Bega or Cobargo; the information webinar, or meet with the department about the water sharing plan?: Yes. Cobargo

If your comments refer to a specific water source, which one?: Murrah Narira Dry River

Your feedback

Which water source/s does your answer refer?: Dry River

Do you support the proposed cease to pump rules? Why/why not?: No The environment has changed since the Summer Bushfires

Will the proposed cease to pump rules impact your business? How? What could be done to mitigate that impact?: Could as weather conditions have changed

Do you think that the proposed cease to pump rules appropriately protect the environment? Why/why not.: No. The environment is changing constantly. As you stage this question maybe you should be asking why not remove all humans from this planet.

Your feedback

Do you support allowing trade into these water sources at high flow? And the limits to ensure risk remain lows at these higher flow classes?: Our catchments are to short of available flow to be economical of justifiable in implementing.

What factors would encourage you to buy/sell water? Other comments?: Once again our catchment is unique as to size and availability to many buyers or sellers,

Your feedback

Do you support allowing Aboriginal Community Development Licences in these select areas? Why/why not? :

Of no concern as long as there is no confiscation of existing licenses or reductions as these are now tied to valuations and bank guarantees.

Your feedback

What do you think of these proposed changes and the reasons for them? :

To low Also uneconomical

Do you think this is appropriate? Why/why not? :

Flows are not suited As above

Your feedback

Do you have any comments on this aspect of the draft plan? :

redirect all water for town use only

Your feedback

Do you have any comments on this aspect of the draft plan? :

Royalties to be paid to the Queen of England

Your feedback

Do you have any comments on this aspect of the draft plan? :

If its only town use. There is not sufficient water as is in long durations of drought. More Dam Capacity or others to supplement

Your feedback

Do you have any comments the drought reserve rules or other operational aspects of Cochrane Dam? :

Build extra capacity

Your feedback

Do you support the new LTAAEL (Long Term Average Annual Extraction Limits) definition? Why/why not? :

No Restrictions will ultimately impact future agricultural development

Your feedback

Do you support inclusion of this Groundwater Source? Why/why not? :

No comment as this is not in my zone

Your feedback

Do you think these proposed rules and distance conditions are appropriate? :

making it more uneconomical in the future landscape

Your feedback

Do you have any comments on this aspect of the draft plan? :

Once again it is in how to be economical. As we have experienced in the past and as we look to the future it is likely that no concern in being economical as those above don't have to absorb additional expense in their production costs.

Your feedback

Do you think this is appropriate? Why/why not? :

Not from our region

Additional feedback

Comments on any aspect of the

draft plan?:	Third order should be able to have a dam
Attachments:	No file uploaded
How did you hear about the Public Exhibition?:	Other (specify)
If you selected other, please specify.:	neighbour

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

NSW Department of Planning & Environment
NSW Department of Primary Industries

To Whom It May Concern,

I am writing to object in the strongest possible terms to the draft Water Sharing Plan for the Bega River Area Regulated, Unregulated and Alluvial Water Sources 2023.

I am writing in a personal capacity as an affected landholder, but also on behalf of my community, and my industry as a dairy farmer. I currently hold a position on the Dairy Committee of the NSW Farmers' Association, on the Board of Directors of Dairy NSW, and as Deputy Chair of the NSW Government Dairy Action Plan Implementation Panel. This submission does not represent those bodies, but I mention these roles to give credibility to my understanding of the needs of the dairy industry in the Bega Valley, and hopefully of good policy and process.

I object both to the draft plan, and the process through which it was developed.

The process did not consult with the community affected by the plan, to help develop a plan suitable for the affected community, it told us what was going to happen. It did not listen, it offered no flexibility, it offered no opportunity for change, revision, or improvement.

The proposed plan does not meet the needs of the Bega Valley and will not meet the objectives of the plan. It shows very limited understanding of the local river system and our rainfall and topography. It shows no recognition of the work done in the valley, and improvements made to our river system and water management.

The Bega Valley typifies the characterisation of Australia as "a land of droughts and flooding rains". We experience regular periods of dry, and intense periods of rain. A sensible and flexible water sharing plan would recognise this, and provide for the capture and storage of water in as many storages as possible during high rainfall/high flow events. Ideally this would be in a diverse system of on farm storages, as well as increased capacity of central or major storages such as Brogo and Cochrane dams.

Intense rainfall may fall in parts of the catchment, and not in others. Smaller, distributed, on farm storages, could make use of this rainfall, where it does not fall in the catchment of major dams. This could reduce flooding, increase water availability during droughts, and provide a distributed source of water for fighting fires, which was sadly lacking during the 2019/20 fires after a period of intense drought.

[REDACTED]

The State Government recently announced an increase in Harvestable Water Rights from 10% to 30%, partially in recognition of this. However, restrictions on dams placed on 3rd order streams largely render this change irrelevant, as the appropriate and effective dams to take up this change are not allowed, and there is no process available for case by case review and approval of such dams.

I strenuously insist that the provision for a case by case assessment of a given dam be included in the proposed Water Sharing Plan/legislation. There needs to be flexibility built into these rules – not one size fits all.

There is no point in allowing theoretical capture of water, if the only practical places to capture it are disallowed by black and white rules with no capacity for case by case review. I would be comfortable with an individual farmer bearing the cost of such a review, but the provision for the review and approval needs to be there.

The Natural Resource Commission 2021 recommended investigation into on farm water storage as a means of reducing pressure on low flows and that DPIE Water as part of the Draft Southern Regional Water Strategy included on farm water storage in their shortlist of options to improve water resilience for communities and industry. Yet DPIE Water as part of the remake of the Bega Water Sharing Plan are proposing to make the implementation of on farm water storage impossible across most water sources for the next 10 years.

The draft plan significantly increases cease to pump flow rates, which I strongly object to. In the Dry and Narira water sources the increase makes irrigation direct from streams unviable with out on farm water storage, which are not viable to implement the under current and proposed WSP. In the Bega Bemboka, the increase is unjustified given, during the current WSP period, flows only dropped below 2ML/day at Kanoona, at the very end of the second worst drought on record. Rather than imposing increased risk on irrigators the focus should be on increasing the Drought Reserve in Cochrane Dam and encouraging the implementation of on farm water storage.

I urgently request that DPIE Water return to the Bega Valley and work together with water licence holders and the community to identify and agree on rules that are appropriate for our landscape and will help encourage on farm water storage and reduce irrigation pressure on low stream flows. The proposed WSP in its current form will result in further dairy closures during the next dry period and will put at risk food manufacturing in this region. We need the Govt to urgently work with the local community to change the plan so it will achieve its objectives and assist the Bega Valley transition to a circular economy.

Yours sincerely,

[Redacted signature block]

[Redacted signature block]

[Redacted signature block]

20 August 2022

[REDACTED]
[REDACTED]
[REDACTED]

Via Bega NSW 2550

[REDACTED]

NSW Department of Planning & Environment
NSW Department of Primary Industry

To whom it may concern,

We strongly object to the draft water sharing plan for the Bega River Area Regulated, Unregulated and Alluvial Water Sources 2023.

The proposed plan does not meet the needs of the community and therefore will not be successful in meeting its objectives. We find it appalling that after all the work we have done, and money spent, to improve the condition of our water ways that we are now being penalised for our efforts. By the Govt renegeing on the Cease to Pump agreement at Kanoona and by making the implementation of on farm water storage unviable in most water sources.

The capture of water in high flows following major rainfall events in on farm storages for use during prolonged dry periods, makes a lot of sense in this region. Through the right licencing options there is also significant opportunity to reduce irrigation pressure on low flows to further improve the condition of our water ways.

It is difficult for us to reconcile that;

The Natural Resource Commission 2021, recommended investigation into on farm water storage as a means of reducing pressure on low flows and that DPIE Water as part of the Draft Southern Regional Water Strategy included on farm water storage in their shortlist of options to improve water resilience for communities and industry. Yet DPIE Water as part of the remake of the Bega Water Sharing Plan are proposing to make the implementation of on farm water storage impossible across most water sources for the next 10 years.

We strongly object to the proposed increases to the cease to pump rules in all water sources. In the Dry and Narira water sources the increase makes irrigation direct from streams unviable with out on farm water storage, which are not viable to implement the under current and proposed WSP. In the Bega Bemboka, the increase is unjustified given, during the current WSP period, flows only dropped below 2ML/day at Kanoona, at the very end of the second worst drought on record. Rather than imposing increased risk on irrigators the focus should be on increasing the Drought Reserve in Cochrane Dam and encouraging the implementation of on farm water storage.

We urgently request that DPIE Water return to the Bega Valley and work together with water licence holders and the community to identify and agree on rules that are appropriate for our landscape and will help encourage on farm water storage and reduce irrigation pressure on low stream flows. The proposed WSP in its current form will result in further dairy closures during the next dry period and will put at risk food manufacturing in this region. We need the Govt to urgently work with the local

community to change the plan so it will achieve its objectives and assist the Bega Valley transition to a circular economy.

██████████

Yours sincerely