

18-POINT PLAN

FOR WATER POLICY REFORM IN VICTORIA V.2



FOOD AND FIBRE GREAT SOUTH COAST INC.
AUGUST 2022



**THE
GREAT SOUTH WEST'S**

WELL OF WATER
OPPORTUNITIES

*18-Point Plan for Water Policy Reforms
to drive Jobs, Growth and Sustainability*

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EXECUTIVE SUMMARY



GREAT SOUTH COAST AT A GLANCE

The Great South Coast is Victoria's largest food and fibre region by value, and top three in Australia. Our research shows that a 10 percent increase in the productive use of groundwater will generate \$54 million per annum in additional value for the region. This means jobs, economic growth, and prosperity at a regional level – without compromising our precious natural environmental resources. Government policy urgently needs updating to stop holding the region back.

We're asking the Victorian Government to consider 18 water policy reforms to unleash growth, jobs, and sustainability.

Water is vital to a range of industries, including agriculture, aquaculture, manufacturing, and processing. The production of food and fibre is both the largest water user and the largest employer in the Great South Coast, accounting for over 21.6% of all jobs and more than 60% of the economy. The value of Great South Coast's food and fibre production is roughly \$12.6 billion per year (2013-14).

We recognise that safe, affordable, and reliable water services are essential for people, jobs and the economy. We support the effective management of water for a healthy environment, a prosperous economy and thriving communities, now and into the future.

RECOMMENDATIONS

Groundwater take and use licensing

APPLICATION PROCESS

1. Current groundwater take and use licensing application processes be streamlined to enable producers and landholders to create efficiencies and reduce complexities.
2. Invest in measures that support license holders to navigate the application process, particularly environmental, legal and procedural aspects.

LICENSE TENURE AND INVESTOR CERTAINTY

3. Initial and ongoing government commitment to transparent publishing of license applications and renewals for the improvement of investor clarity, with an understanding that any license term will not guarantee access at the expense of sustainability of the water supply.
4. License renewals where compliance with license conditions is demonstrated – 100% of which were granted between 2016 – 2021 – should be guaranteed. This is achievable through a streamlined, robust, and reportable process that should be accessible to investors to ensure satisfactory license assessments against sections 40(1) (b-m) of the Act, to ensure that eligible 15-year take and use renewal applications are immediately granted and effected. This process should include an ongoing review of water resource arrangements and early consultation and a collaborative approach to jointly resolve any matters of concern between the license holder and the water authority.
5. The processes and negligible risk profile for license renewals should be clearly communicated to the investment community. A 3-5-year awareness-raising horizon should be resourced to allow certainty to translate through to investor risk portfolios.

OPTIMISING LICENSE ASSETS

6. Establish a water trading platform to be managed by the relevant local water management authority. The aim of the trading platform will be to aid and assist license holders and investors with trade visibility and investment management. It should be supported by a water trading facilitator role (5-year position), to address the current market failure in regional water trading, which is leading to 'sleeper license' underutilisation of licensed water assets in the region. The aim of the facilitator role will be to help trade water to its highest value use, without requiring additional water licenses.
7. Support the water trading platform by establishing an on-farm practice change and investor attraction project, which will focus on promoting on-farm water efficiency, trade options, policy and practice change education materials, workshops and water investor briefings.

TRADING

Surface Water Upstream Trading

8. Regulatory barriers to upstream trading should be removed where circumstances present zero environmental risk, noting the provision for environmental protection is addressed earlier in the process under the Act.
9. Decommissioned and unmonitored water monitoring sites should be reinstated with a view to their critical role in ensuring optimal resource management.
10. Transparent and accessible surface water and groundwater trading systems should be introduced to allow for the efficient and effective trade of water entitlements. Appropriate infrastructure to support this trading should be introduced alongside these systems.

GROUNDWATER TEMPORARY TRADING

11. Flexible temporary entitlement trading should be streamlined in the region to reduce market risk and increase efficient use of water resources.

12. Provisions for the agile approval of temporary license trades should be introduced during dry years.

13. Trade boundaries should be reconsidered to simplify temporary trades where appropriate.

14. Changes to trade rules should be communicated and stakeholders educated to encourage participation and uptake in the temporary trade market.

REGIONAL MANAGEMENT AND STRATEGY

15. A program to undertake detailed mapping and measurement of the region's surface water and groundwater assets should be introduced to assist with planning and to ensure monitoring investment equity with other regions.

16. Water authorities should undertake hydrological surveys in the region with the frequency informed by environmental risk and data made publicly available. Pending cost estimates and license-holder consultation, consideration of a model which allows the cost of these surveys to be covered by a reasonable increase to licensing fees, and offset by reduced application costs for any independent hydrological surveys conducted.

17. Water authorities should manage an open database of regional water resources to enable the use of existing assessments in license applications to inform improved water management decisions.

THE GREAT SOUTH COAST SUSTAINABLE WATER STRATEGY

18. A standalone Sustainable Water Strategy for the region is required to address its unique challenges and opportunities. The Great South Coast region requires a locally relevant implementation plan to set appropriate timelines and targets for strategic actions.



WATER AND THE GREAT SOUTH COAST

The Great South Coast (GSC) is a predominantly agricultural region of unique cultural heritage, environmental significance, and commercial opportunity. The impressive physical scale of the region, 23,000 km², encompasses coastlines and aquaculture of global significance, as well as productive and rich agricultural soils. Economic success in the region is exemplified through its annual gross regional product of \$5.5 billion, supported by its diverse business enterprises across, among others, food and fibre, tourism, and fisheries.

The local biodiversity and natural landscapes are highly valued, with rivers, estuaries, wetlands and marine environments of high ecological significance, home to hundreds of threatened and near-threatened ecological species [1]. The temperate climate, high rainfall, and desirable environmental ecosystems make them a true regional asset.

These healthy surface water and marine ecosystems are supported and maintained by an extensive and sustainable groundwater system. Whole-of-catchment ecosystems depend on groundwater for their health, and – managed sustainably – boast abundant water supplies. Our research shows that a 10 percent increase in the productive use of groundwater will generate \$54 million per annum in additional value for the region.

Additionally, the strong agricultural economy is similarly supported by regular rainfall and reliable and abundant groundwater supply, with six catchment basins across the region underpinning 16,790km² of agricultural land (Basins: Corangamite, Otway Coast, Hopkins, Portland Coast, Glenelg and Millicent).



Figure 1. Great South Coast government areas, Victorian Government



Figure 2. Victorian Basin system, Victorian Government

REGIONAL ECONOMIC STRENGTH AND VALUE

Agriculture represents a significant economic backbone and local identity for the Great South Coast community. Impressively, export linkages and well-connected access to markets from the Great South Coast to Victorian, interstate, and international economies make it Victoria's highest-value agricultural region. The agricultural industry generates \$2.3 billion annually, and agriculture, fishing, and forestry combined provide 21% of local employment. The region's rich resources and strong agricultural enterprises are buoyed by increased, high-value investment underway in new energy, such as wind, solar, and gas-fired plants. Despite the strong economic standing of the agricultural sector in the region, the potential to better utilise accessible and sustainable water resources cannot be denied.

As a means of comparison, the Great South Coast Economic Futures Report notes that the region of Holland in The Netherlands, which has the same size area of land actively used for agricultural production as the Great South Coast, is able to produce 62 times the amount of economic value. A key difference in the economic value of production between the two regions is driven by the ability of growers to access fully-secure water supplies. It has been found that year-round access to water, as experienced in Holland, is critical for ensuring high-value production and investment in large-scale processes. Thus, the management of resources to support agricultural enterprise in the Great South Coast unlocks great potential to increase regional value for the future.

THE ECONOMIC IMPORTANCE OF REGIONAL WATER RESOURCES

The importance of groundwater - a significant resource for the region's economy - should not be understated. More than 1000 groundwater licenses are held by local business owners, landholders, and investors to supply water for industry, agriculture, and stock.

Commodities exported from the region (including dairy, beef, sheep meat, wool and grain), while high in export volume, depend on processes that are not water-secure. Fully secure water supplies would benefit regional agriculture to meet ongoing commodity demand and develop forward-looking business ventures. Indeed, the future of agricultural enterprise in the region has the potential to develop with new technologies and business models to sustainably increase regional economic prosperity. Future investment in advanced technology and processes is required for regional farmers to

adapt their enterprises towards higher-value food systems. In the absence of fully secure water supplies, regional producers will be unable to diversify their future products from commodities towards higher-value, advanced enterprises. The Great South Coast Economic Futures Report states that the region's groundwater systems play a significant role in advancing the region to shift part of its commodity production towards high-value, integrated agricultural enterprises and industries.

The groundwater resources of the Otway Basin are significant, with nine out of the ten major aquifers detailed in the Victorian Government's Victorian Aquifer Framework represented in the region [2]. However, despite the scale of these aquifer resources, allocated groundwater resources are not being fully used according to their entitlement.

The groundwater resources, grouped as Upper, Middle and Lower aquifers, provide different economic resources for the region and are subject to access and entitlement rules as defined in the Local Management Plans.

These rules are designed to enable the access of surface water and groundwater supply for use while maintaining the sustainability and health of the groundwater and surface water-dependent ecosystems – meaning the state of the resource and access varies across the region.

AQUIFERS	RESOURCE	ACCESS
<p>Upper Aquifers (Basalt & Bridgewater sands)</p>	<p>Locally important for stock and domestic water. Resource also has greater connection to groundwater dependent environments.</p>	<p>New applications for access are discouraged due to protection of stock and domestic water and potential environmental risks.</p>
<p>Middle Aquifer (The Limestone)</p>	<p>The major groundwater resource in the South-West. There is also the potential for interactions with groundwater dependent environments.</p>	<p>The aquifer is fully allocated. Trading of entitlements is the only means of new participants accessing groundwater from this aquifer.</p>
<p>The Lower Aquifers (Dilwyn Sandstone)</p>	<p>5 GL is currently available in the Warrnambool area. The water quality is variable.</p>	<p>The aquifer is not used much to date. The aquifer is deep, and drilling costs are incredibly high.</p>

Groundwater levels demonstrate the physical basis for the availability of entitlements, with new entitlements increasingly unavailable. Despite the Limestone aquifer being fully allocated, it has the greatest opportunity for improved water use in the region.

The Limestone Aquifer uses only about 30 – 50% of its entitlements, which opens significant trade opportunities. Also, carryover of unused entitlements is available for license holders up to a 30% limit per year, allowing them to manage business risk and better utilise their water.

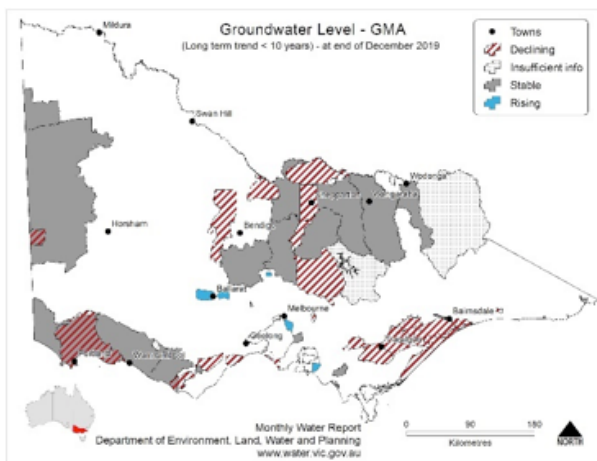


Figure 3. Groundwater December 2019 [3]

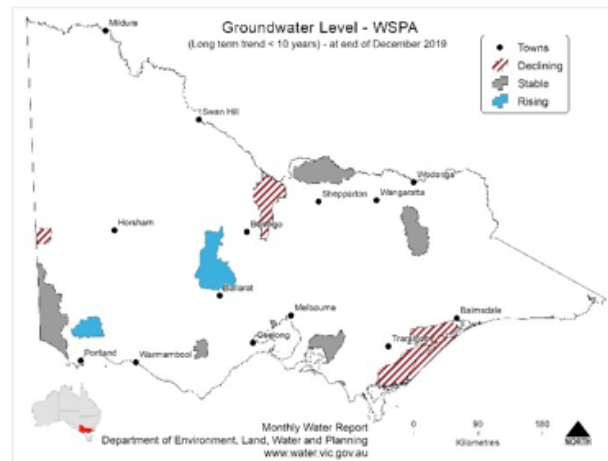


Figure 4. Groundwater December 2019 [3]

Increasing efficiencies in water use is beneficial for economic and environmental outcomes. Economic opportunities can be realised and expanded by using water more efficiently, and growing produce in

a less resource-intensive way, benefiting the industry and the environment. A small increase in water use can result in drastically altered opportunities for higher-value food production.

THE NEED TO STRATEGICALLY DEVELOP A HIGH-VALUE AGRICULTURAL FUTURE

A commitment to utilising new technology and contemporary skill development is required to achieve a high-value agricultural future in the region. However, the region's future depends on improving access to water resources in a sustainable way for the economy and the environment.

The region is facing many issues that act as barriers to efficient and sustainable access to water resources. The issue of access drives this issue of underutilisation. Firstly, water allocations must be based on clear science and understanding of the total available resource. Currently, there are some areas where knowledge of the total available resource is incomplete, and more investigation, monitoring and modelling is required.

The result of this lack of data is the enforcement of conservative licensing terms and regulation in attempts to avoid over-allocation and environmental damage.

Additionally, the current water allocations which exist are currently being underutilised. 120 GL total groundwater is currently licensed in the region, with only 50 GL of licensed bore groundwater being used per year. This is because traditional farming enterprises are not using their full allocations due to the nature of the traditional farming practices themselves and high rainfall levels not requiring the use of the licenses. As license trading is not common practice, the potential economic return to the region from its water and related resources is not being fully realised.

There are many other reasons for access issues:

- Water management and policy reform in the GSC have not been given the attention that other Victorian irrigation regions have received from policy makers and governments. This is largely a result of the comparatively high rainfall, rendering GSC issues as less urgent during state-wide drought years, combined with policy attention being focused on irrigation areas, particularly within the Murray Darling Basin.
- Licensing - which is required to utilise and manage the taking of water resources - can be a complex process particularly during the application stage as it can create barriers to access or misunderstandings of the process for community and business.
- Although some local management plans have been developed for the region, there are an insufficient number of management plans to ensure comprehensive regional sustainability goals are met.
- Insufficient understanding of the treatment of seasonal allocation plans for existing licenses or any future license grants in South-West Victoria. The seasonal allocation plans for south-west Victoria are 100% every year. These usage limits are set based on long-term assessments of the available resource – this defines water availability for trade and how new users can access water (if it is fully allocated, they need to trade).

There has been no reason to issue anything other than 100% on a seasonal basis in the South-West. There is a nearby aquifer, Deutagam at Werribee - where SRW restricts allocations depending on aquifer levels. Issuing formal advice on these allocation practices would assist new entrants, investors, and allow financiers to appraise risk more accurately.

- The access rights to resources have been limited due to dormant and underutilised licenses.
- The lack of clarity around water license tenures restricts the advancement of investment interests in the region.

A significant number of barriers to access are issues of planning, regulation, and management. However, it is essential to ensure that environmental management and regulations are understood as key compliance requirements for the agricultural sector's ongoing water access and commercial success.

High-value groundwater-dependent ecosystems are a significant part of large areas of the Limestone Aquifer, which are also areas of the highest density entitlements and best quality groundwater. This aquifer's risk to these groundwater-dependent ecosystems through groundwater extraction will result in potential risk to surface water ecosystems. New monitoring measures and modelling of the resource is required to support new extractions.

WHAT NEEDS TO OCCUR TO ENSURE A PROSPEROUS, SUSTAINABLE REGIONAL FUTURE

There is significant potential for the Great South Coast to develop a prosperous and sustainable regional future. However, a well-managed future-focused strategic plan must be implemented to provide a balanced pathway to improved access to water resources to raise the regional economic productivity while ensuring the environmental health of the region's ecosystems.

The region already has some plans underway, with the current Local Management Plan for the South-West Limestone undertaken with extensive stakeholder and community input. Plans like this indicate a promising move towards implementing rules and strategies to enable trade. In saying this, additional management plans need to be developed for the region to utilise the available potential efficiently, and could drive the regulatory changes required to optimise sustainable access. There are three priorities that, if addressed, could significantly aid the region in realising its economic potential:

ONE

REGULATION

Review the regulatory system to assess the appropriateness of current licensing arrangements.

TWO

PLANNING

Develop comprehensive annual allocation systems and sustainability plans for surface water and groundwater resources.

THREE

TRADE

Introduce surface water and groundwater trading systems that enable the efficient and effective trade of allocated resources - with the development of appropriate infrastructure to support trade.

Considering these priorities, the Great South Coast is seeking policy and management changes to increase water usage, particularly groundwater, and increase regional productivity. Key policy areas which require immediate review include:

- Groundwater take and use licensing
- License asset optimisation
- Upstream trading
- Temporary trading
- Resource monitoring
- Sustainable strategy

While seeking regulatory and policy reform, the values of long-term sustainability, community equity and policy consistency must provide the framework for strategic reforms for the future. The intention of seeking these policy changes is to ensure regional sustainability for the economy and environment.

FACT SHEET

'Take and use' licensing

'Take and use' licensing (section 51 licensing) is the primary mechanism for providing fixed-term entitlements to take and use water from groundwater aquifers [4] and surface water in the GSC region. New licenses are limited by the Permissive Consumptive Volume (PCV) of the area [5], with license applications not allowed to exceed the entitlement limit of the given region [6]. Therefore, it is common that new permanent entitlements are unavailable to be granted. Under these circumstances, the only way to obtain additional resources is through the sale and trade of entitlements [6].

For a take and use license to be granted, renewed or traded, the application must adhere to the requirements under section 40 and section 53 of the Water Act 1989, where the environmental and third party effects of the application must be considered [5]. An assessment of take and use applications must include an interference assessment on the risk of impact to neighbouring users, the aquifer, the environment, and any other matters to be considered.

Allowing for flexible trading within the GSC water market would encourage more productive use of water, which has been identified as a means to reduce the market risk [7] while contributing to sustainable water management. Section 7(4) requires the aquifer to be maintained in accordance with the environmental water reserve objective [8], and all take and use license applications are considered against their potential risk to high-value groundwater-dependent ecosystems (GDEs) [9].

In Victoria, the Water Act 1989 determines control of groundwater and surface water management through the implementation of water management plans and extraction limits [6]. The Act also enforces protections against undesirable impacts of extractions. If an extraction puts a given resource area at risk, the Act requires a cap on licenses, the development of a management plan and the establishment of a Water Supply Protection Area (WSPA) [6].

Entitlements are capped at a level set by the Minister. As ministerial delegates, water authorities are responsible for developing local management rules to ensure equitable and sustainable use of the surface water and groundwater resources. Local management rules must address trading, zonal caps, metering and license compliance, groundwater monitoring of intensive use areas and water-sharing arrangements during drought. Water authorities are also responsible for assessing license and trade applications in accordance with the requirements of the Water Act (1989). Applications can only be approved if they can be shown to have no adverse impact on the environment and existing users.

GROUNDWATER TAKE AND USE LICENSING

APPLICATION PROCESS

The responsibility for the management of groundwater resources in Victoria is shared across numerous agencies. The Department for Environment, Land, Water and Planning (DELWP) oversees the development of Groundwater Management Areas (GMAs), set Permissible Consumptive Volumes (PCVs) and monitor the groundwater resources, water allocations and levels [10]. Applications to access groundwater resources are also managed through statutory management plans, and local management plans to mitigate risk, as defined under the Water Act 1989. Local management plans are developed to guide water corporations, as Ministerial delegates are responsible for groundwater licensing, through approvals in compliance with the Act [11]. Water corporations as ministerial delegates maintain and manage a large proportion of the process, with the DELWP having an overall resource management role.

THE ISSUES

The process for mitigating the risk associated with take and use is complex as the application process for take and use licenses is multi-faceted. An initial assessment of this risk is conducted by water authorities when the landholder applies. If an application is considered high-risk, a further impact assessment and pumping test will be required to understand the quality of the aquifer at the point of take.

Due to the monitoring, analysis and local consultation that may be required, the application process can involve assessments being undertaken by many different authorities to assess the potential third party impacts and sustainability of take.

This process can quickly become complex and time-consuming, incurring significant costs to individual applicants, creating a barrier to applications. Fee structures for application processes are based on the work required by water authorities to undertake assessments in accordance with their legal obligations [12]. This can often mean that the cost of the application is too great for individual applicants, with the complexity of assessment criteria sometimes acting as a disincentive to potential applicants who require additional support to provide a successful application.

If landholders are deterred from submitting applications due to financial reasons or from difficulty in navigating the application process, there is a risk of loss of investment in the Great South Coast to regions with more efficient and well-established processes. This potential loss of investment would flow through to future investment, economic and social losses, and reduce the likelihood of the Great South Coast developing into a high-value agricultural precinct of state and national significance.

THE SOLUTIONS

1. Current groundwater take and use licensing application processes be streamlined to enable producers and landholders to create efficiencies and reduce complexities.
2. Invest in measures that support license holders to navigate the application process, particularly environmental, legal and procedural aspects.

We note that the Glenelg Hopkins Catchment Management Authority (CMA), through funding from the Sustainable Irrigation Program will facilitate improved coordination of the regulatory agencies. In conjunction with this, the CMA has partnered with agencies and industry representatives to develop guidance materials relating to the take and use licence application process.

LICENSE TENURE AND INVESTOR CERTAINTY

Take and use licenses for surface water or groundwater in the Great South Coast region are limited to 15-year periods. Applications for license renewals may be made and granted prior to the expiry of the current license. The intention of the 15-year license tenure is to ensure ongoing monitoring and assessment of the groundwater and surface water resources under the take and use conditions.

Under sections 56(3) and 58(5) of the Act, emphasis is correctly placed on the dependence between the license tenure, the level of uncertainty about the resource, and the impacts of taking regulated groundwater. Under these conditions, issuing, renewing or approving permanent or temporary entitlements is limited to a maximum term of 15 years, with reduced tenure terms in the exceptional circumstance that there is uncertainty about the aquifer. In the case of unregulated surface water systems, take and use licenses are also subject to the 15-year term, generally with a cap limit applied to the volume of water allowed to be taken over a single year.

THE ISSUES

While the rationale supporting the 15-year limited term is understood and supported on the grounds of sustainable use and appropriate water monitoring, it must be acknowledged that the 15-year license terms are causing uncertainty for investors.

In the case of groundwater, current conditions and tenure of groundwater take and use licenses in the Great South Coast region are argued to be hampering innovation in the area. In Great South Coast regions where the groundwater resource is sufficiently monitored and surveyed, with little uncertainty on the extent of the aquifer system and the potential impacts of take and use, the 15-year tenure is acting as a barrier to innovation and business development. The investment community has indicated that the current license terms do not align with the typical length of time required for return on investment in the region, which is approximately 30 years. Although successful investments can be implemented across a range of time periods, investors prefer licenses

of 30 years to provide investment confidence for the development of new projects and enterprises in the area.

However, it is true that the renewal process for 15-year licenses is relatively low-risk, does not require a formal application, and in effect, a renewed license would provide physical groundwater access for a 30-year period. For the years 2016 – 2021, a water authority has reported that all 455 expiring licenses which requested a renewal were granted a further 15-year term. However, the on-the-ground experience of water holders and authorities does not translate through to the managed risk assessments of investment portfolio holders seeking robust assurances and guaranteed outcomes. The perception of risk in the investment community is high, with the 15-year tenure negatively impacting the ability to secure finance for new investment. Where the aquifer yield is certain, investors seek an increase in clarity around groundwater take and use licenses to secure finance for investment in horticulture development in the region.

CASE STUDY

Precedent for a change to license tenure has already been established within Victoria, with jurisdictions across Victorian and wider Australia issuing take and use licenses for longer tenures than available in the Great South Coast. For instance, aquifers in northern Victoria have been allocated improved security of tenure.

Similarly, Queensland has also issued secure licenses through legislation. Changes to the Water Act 2000 (Qld) have extended license expiry terms to 99 years. This legislative change has considered that it does not apply expiry dates for water licences stated in water resource plans, resource operations plans or wild river declarations.

THE SOLUTIONS

The best approach to reconcile this perceived risk from the investment community and the need to maintain compliance with sustainable resource management goals is through increased transparency of license tenures and renewals. It is suggested that through increased understanding and visibility on the extremely high rate of successful license renewals that investors will have greater clarity and comfortability on 15-year license terms.

It is recommended that this issue be resolved in the immediate term through an ongoing commitment from government to transparently publish license applications and renewals on a publicly available source. Publication of applications and renewals will work to improve clarity for investors, who are seeking assurance that licenses will extend for a 30-year period. The ability for investors to have visibility of the reality that 15-year licenses are routinely renewed for 15-year term upon 15-year term will provide the investor clarity needed to support increased certainty in investment decision-making and long-term environmental sustainability. Water authorities already have the power to amend annual allocations and remove water entitlements from holders who breach reliability or environmental terms and conditions.

In the case where the impact of groundwater or surface water take and use is uncertain, then resources should be engaged for additional monitoring and analysis prior to issuing of licenses under any tenure.

3. Initial and ongoing government commitment to transparent publishing of license applications and renewals for the improvement of investor clarity, with an understanding that any license term will not guarantee access at the expense of sustainability of the water supply.

4. License renewals where compliance with license conditions is demonstrated – 100% of which were granted between 2016 – 2021 – should be guaranteed. This is achievable through a streamlined, robust, and reportable process that should be accessible to investors to ensure satisfactory license assessments against sections 40(1) (b-m) of the Act, to ensure that eligible 15-year take and use renewal applications are immediately granted and effected. This process should include an ongoing review of water resource arrangements and early consultation and a collaborative approach to jointly resolve any matters of concern between the license holder and the water authority.

5. The processes and negligible risk profile for license renewals should be clearly communicated to the investment community. A three to five year awareness-raising horizon should be resourced to allow certainty to translate through to investor risk portfolios.

OPTIMISING LICENSE ASSETS

The Great South Coast is experiencing an under-utilisation of licensed water entitlements, as water allocated and licensed for 15-year terms is often being unused due to inactive license holders. These license holders often retain their unused licenses as they are motivated by the prospect that significant water allocations add to property values, and /or provide insurance by ensuring the water allocation is available to support future growth in production levels.

THE ISSUES

The impact of inactive or dormant licensed water allocations is manifold. Firstly, dormant water licenses fail to utilise the precious water resource to grow local agribusiness, meaning that the potential economic benefits of efficient water use across the region are lost. Further, inactive licenses may create an opportunity cost by limiting the creation of new licenses. The decision to create a new license is determined based on a calculation of the environmental impacts of already-allocated water of current licenses, rather than actual water usage. As the environmental impacts of the allocated water are greater than the environmental impacts of the actual water used, new licenses are being unnecessarily denied.

The lack of interest in activating dormant licenses has created market failure – there is no commercial driver for water brokerage skills, education or services. This is despite the potential of temporary water leasing to achieve additional income, as well as preserve the presumed drivers of holding inactive licenses, such as optimising property value and insuring against future productivity growth. As such, water holders in the GSC are not realising the potential for water assets to provide extra security and increased equity. Addressing this situation is urgent from both a productive and an environmental perspective as it requires no new water allocation, and maximises the use of this precious and valued resource.

THE SOLUTIONS

The perceived barrier to activating dormant licenses has the potential to be removed through an increased understanding and use of the option of voluntary trading of water rights. The trade of water rights from landholder to investor represents a better optimised use of license assets, whilst bringing benefits to the water license holder. This improved use of licensed assets can assist in reducing the perceived risk of water and land asset ownership for investors, encourage the use of licensed water and promote water being directed to its highest value use.

Licence Asset Optimisation, with increased transparency of information for trade, is a strategy recommended to increase the use of water license assets in a more efficient way for the benefit of landholders and investors.

Licence Asset Optimisation should be encouraged as a means of supporting four outcomes:

- i.** water is streamed to its highest value use;
- ii.** productivity is encouraged;
- iii.** participation is voluntary (licence holders retain choice); and
- iv.** both temporary and permanent trading is valued.

This approach allows investors the choice to trade license assets temporarily or permanently, with this increased choice helping to reduce the perceived risk of investment in bundled land and water assets.

Investors previously cautious regarding bundled land and water assets have an option to temporarily trade to realise the value of the assets, whereas investors certain about the asset value have the option to seek permanent trades.

As such, this increased activity of voluntary trade is likely to encourage the use of licensed water and promote water being directed to its highest value use.

6. Establish a water trading platform to be managed by the relevant local water management authority. The aim of the trading platform will be to aid and assist license holders and investors with trade visibility and investment management.

It should be supported by a water trading facilitator role (5-year position), to address the current market failure in regional water trading, which is leading to 'sleeper license' underutilisation of licensed water assets in the region. The aim of the facilitator role will be to help trade water to its highest value use, without requiring additional water licenses.

7. Support the water trading platform by establishing an on-farm practice change and investor attraction project, which will focus on promoting on-farm water efficiency, trade options, policy and practice change education materials, workshops, and water investor briefings.

TRADING

Trading of take and use licensing between entitlement holders occurs through buying, selling or exchanging access water rights [14]. A trade can occur on a temporary basis, for up to 5 years or on a permanent basis, where the water entitlement is permanently transferred to a new owner [14]. Landholders across most of Victoria can engage in well-established trading systems to manage their water entitlements. However, although trade is possible in the Great South Coast, the processes for trade across this region are not as well-established [14].

Regarding unregulated water systems, or surface water systems not regulated by public dams, trade between entitlements holders is restricted. Under the Ministerial Policies on Take and Use, upstream trade in unregulated surface water systems is prohibited.

The Great South Coast region is defined as a region of available surface water with neighbouring landholders and regions of high demand. However, the assessment of take and use licenses is a Victoria-wide model, which does not account for the unique surface water conditions across regions. This universal approach to licensing is currently disadvantaging the Great South Coast region.

THE ISSUES

A primary issue for permanent entitlement trades is the difficulty in obtaining approval to sell a water entitlement upstream. Upstream trading, where the location of the entitlement buyer is physically upstream of the seller, is not readily supported by approval agencies [15]. Surface water is generally not available under the license condition to transfer upstream. This is because the net impact to overall flows of downstream trading is negligible, whereas upstream trading risks adding pressure to the water system. The generalised view is that transferring an entitlement upstream will result in less available water along that transfer route [16], impacting reliability and environmental values.

Upstream trading applications also present more complex assessment requirements [17]. Under section 40 of the Act, the application must be technically assessed to determine the risk of bore interference and negative impact on surface water bodies [18].

Assessing the potential for undesirable impacts from upstream trading requires detailed modelled analysis on the system [16]. This analysis is often unavailable due to a lack of data or resource constraints on the landholder applicant and water authority. The outcome of this is the administration of the Act and associated trading rules often resulting in adverse outcomes for Great South Coast entitlement holders, who are unable to trade locally within their region due to the lack of an upstream trading condition.

There is strong potential for upstream trade to maintain the productivity of unregulated surface water systems, such as the Merri River. At this downstream location of the system, license holders cannot sell their annual licenses upstream, which have not been utilised due to land-use change and urban development, and these entitlements remain underutilised.

CASE STUDY

Case study 1. An application for an upstream entitlement trade license was rejected under the Water Act. The entitlement application was seeking to trade between properties, with the potential buyer and seller located 12km upstream of the gauging station. Despite the short distance of the upstream trade, the application was rejected due to the universally applied assessments of upstream trade applications.

Case study 2. The Upper Ovens River Water Supply Protection Area Water Management Plan permits upstream trading under specific upstream trading rules, which ensures that adverse upstream environmental and reliability impacts to summer flows are effectively mitigated through the requirement of a winter-fill license [14].

THE SOLUTIONS

Any option to remove the barrier to upstream surface water trading would need to ensure that shifting of entitlements upstream does not cause environmental risks.

The Ministerial Policies for Managing Take and Use Licenses is the defining framework that determines the approach of water authorities to assess take and use license applications. Under section 62(6) of the Act, any application for transfer of entitlements which risk adverse environmental impacts as defined by the environmental water reserve objective [19], must be rejected. Additionally, applications must be assessed in accordance with the Ministerial Guidelines for groundwater licensing and the protection of high-value Groundwater Dependent Ecosystems [9] according to sections 40 and 53 of the Act. These legislative conditions must be met when any applications for upstream trades are considered.

8. Regulatory barriers to upstream trading should be removed where circumstances present zero environmental risk, noting the provision for environmental protection is addressed earlier in the process under the Act.

License holders in the South-West have a proven record of cooperation with respect to water rules and regulations. License holders have participated in consultation and planning processes for Ground Water Management Plans and Stream Flow Plans and welcomed the introduction of meters for pumps and the establishment of monitoring sites in the interests of a healthy, sustainable environment.

9. Decommissioned and unmonitored water monitoring sites should be reinstated with a view to their critical role in ensuring optimal water management.

10. Transparent and accessible surface water and groundwater trading systems should be introduced to allow for the efficient and effective trade of water entitlements. Appropriate infrastructure to support this trading should be introduced alongside these systems.

GROUNDWATER TEMPORARY TRADING

The leasing, or temporary trading, of groundwater relies on a well-established, streamlined trading system. For landholders and farmers to efficiently manage their seasonal allocations, they must be able to access trade platforms and execute sales and bids with data-driven, simple processes.

Temporary groundwater trading offers many potential benefits to landholders, including market flexibility and resilience to seasonal shocks. Additionally, activity on the temporary license market and trades improves data and determination of aquifer capacity [21], which acts to continually improve license assessments.

THE ISSUES

To effectively lease groundwater, entitlement holders must have the resource available, understand the trade options available and trust the trading frameworks available to provide them with the best available market information. In the Great South Coast, there is anecdotally a strong interest in trading of groundwater entitlements, particularly on a seasonal, temporary basis.

However, there are significant factors that are currently limiting temporary groundwater trades:

- i.** licence holders wanting to hold on to their entitlement
- ii.** lack of understanding about how trade works
- iii.** local PCVs limiting trade in areas with a high density of entitlement
- iv.** perception of inefficiencies and complexity in the temporary trade market

Generally, the application approval process for temporary licenses is completed within 14 days [22]. However, the process can take longer depending on the level of technical work required to make an assessment, and whether a public feedback process is required. There is anecdotal feedback that the approval process can take up to 3 months.

Although temporary transfers can be assessed for a term of up to 5 years [23], the primary intention of a temporary license is to ensure groundwater resources are available during seasonal dry periods where an entitlement holder is unexpectedly short of resources. The current timeline for application approvals for temporary licenses does not align with this objective. Due to the above, the time taken for a completed application process is lengthy and ineffective. Entitlement holders seeking to temporarily trade during a shortage experienced in the summer months cannot receive approval until the autumn months when the license is no longer required.

In addition to timelines for temporary trade approvals, there are instances where groundwater management boundaries are providing barriers to trade in the neighbouring regions. There are regions within GSC that have PCV levels defined and set, which are providing barriers to temporary trading in the region. For instance, Nullawarre WSPA and Yangery WSPA have levels set at 21,280 ML/yr and 14,352 ML/yr, respectively [24, 25]. The implications of these set WSPA levels are that available water in regions external to the WSPAs cannot be used to trade.

CASE STUDY

Timelines for approvals of temporary licenses can vary across all Victorian regions. In northern Victoria, approvals may be delayed depending on whether technical assessments and analyses are required [12]. Anecdotally, it has been noted that temporary trade applications can be approved within three days. This indicates that water authorities can reduce the length of time of an approval process if the application is straightforward or if the data and information required for an assessment is readily available.

THE SOLUTIONS

11. Flexible temporary entitlement trading should be streamlined in the region to reduce market risk and increase efficient use of water resources.

This will enable more entitlement holders to participate in the temporary market, reducing market risk and increasing efficient use of water resources.

Availability of data and information can delay temporary trade application approvals. However, it could be argued that although limited, there is currently enough data available on the South-West Limestone aquifer to conduct faster temporary trading arrangements safely.

For example:

The South-West Limestone storage capacity is 8,400,000 ML, with a 1% aquifer allocation of 84,000 ML. Based on current meteorological datasets, the average rainfall across a 5-year period can be confidently estimated, allowing for an average recharge volume across a 5-year period to be estimated.

While keeping the allocation amount constant, if the recharge volumes are known, there should not be a hurdle and large background work requirement for temporary trades during a dry year.

12. Provisions for the agile approval of temporary license trades should be introduced during dry years.

The consideration of Nullawarre WSPA and Yangery WSPA as discrete aquifer units creates complex boundaries and barriers to trade in regions outside of these WSPAs. To reduce these barriers and simplify temporary trading, the Nullawarre and Yangery WSPAs should be considered as one aquifer unit for trade. This would require new PCVs to be set for this aquifer system.

13. Trade boundaries should be re-considered to simplify temporary trades, where appropriate.

Increased communication and education of new and updated trading arrangements within the community is required. For instance, section 8.4 of the South West Limestone Local Management Plan [25] outlined updated and simplified trading assessment requirements and new rules for temporary trading which act to reduce trade barriers. They allow for a temporary trade to occur for a single year period within some limits of existing entitlements and provides for a yearly pump test while the water is being used to prove up the extraction.

14. Changes to trade rules should be communicated and stakeholders educated to encourage participation and uptake in the temporary trade market.

REGIONAL MANAGEMENT AND STRATEGY

Any regulatory or policy changes to realise expanded water resource opportunities depend on data-driven management strategies based on science. Sustainable aquifer capacities and surface water ecosystem health are key priorities to consider when undertaking changes to take and use within a groundwater system. To ensure these priorities are being met, comprehensive modelling and monitoring of the water resource ecosystems are essential to ensure environmental risk is adequately assessed, minimised, or removed. Increased water level and ecosystem health monitoring also assist landholders and water authorities to reduce collective costs and increase efficiency across the take and use licensing process.

WATER MONITORING

Take and use licensing terms in the Great South Coast depend on monitoring surface water and groundwater availability and quality. The applicant must provide a professional hydrological report for new take and use applications, including an impact assessment on neighbouring users, waterways, the aquifer, and the environment [26]. This hydrological reporting requires the construction of a bore, which is a cost to the landholder due to works and licensing fees. In Victoria, the Water Act 1989 determines that for all take and use licenses, a well construction license is also required for water extractions, other than for stock and domestic water use [6]. Hydrological reporting undertaken for applications assists water authorities with their monitoring programs, ensuring compliance with license conditions and gaining detailed information on aquifer levels to inform groundwater management [27]. Therefore, licensing conditions and approvals are dependent on adequate monitoring and reporting of groundwater availability and quality. This is both in terms of the hydrological surveys undertaken by the landholder, as well as the required ongoing monitoring by water authorities.

THE ISSUES

The costs of the hydrological survey are currently borne by landholders individually, with benefits from the improved data and information not easily shared with the local community. The results of hydrological surveys undertaken on a private landholding are rarely able to be shared with neighbouring landholders, who may then be required to incur the costs of undertaking their own surveys for license applications.

As it currently stands, when a water authority assesses a new application, existing reports of nearby locations are rarely able to be made available to applicants and their consultants. There are currently less than 20 hydrogeological assessments across the South- West Limestone region. This lack of hydrological survey reporting creates increased monitoring costs for landholder applicants individually, as all applicants must pay for hydrological surveys to be undertaken on their respective plots of land. Additionally, hydrological surveying reports and water system mapping studies are not publicly published on a shared platform. This lack of transparency hampers landholders seeking to make future business risk assessments before applying for groundwater and surface water take and use.

This does not remove the requirement for private hydrological surveying to be undertaken. Although water authorities are required to undertake routine water monitoring protocols as per their legislated responsibilities, current water monitoring protocols undertaken are not adequate to sufficiently identify all available groundwater and groundwater quality across the extensive region of the Great South Coast.

Water monitoring resources and procedures have been reduced under the State jurisdiction, with ownership being shifted to water authorities to manage local water monitoring programs. The result of this has been the need for local water authorities to optimise the frequency and efficacy of water monitoring programs against the resultant increase in costs to the customer. Therefore, opportunities for identifying valuable agricultural land and sustainable groundwater resources are missed due to inadequate water monitoring procedures.

THE SOLUTIONS

There is a clear need to increase water monitoring resourcing and improve the availability of hydrological data across the Great South Coast. The community must have a clearer understanding of groundwater resources in their key productivity regions. Water authorities' increased monitoring will provide improved information to support resilience, adaptability, and investment decision-making in the region. As such:

15. A program to undertake detailed mapping and measurement of the region's surface water and groundwater assets should be introduced to assist with planning and to ensure monitoring investment equity with other regions.

16. Water authorities should undertake hydrological surveys in the region with the frequency informed by environmental risk and data made publicly available.

Pending cost estimates and license-holder consultation, consideration of a model which allows the cost of these surveys to be covered by a reasonable increase to licensing fees, and offset by reduced application costs for any independent hydrological surveys conducted.

Optimal water access and sustainable use long-term requires a well-developed, open, and user-friendly information database about local water resources, including current water availability, locations, and an accessible trading scheme.

17. Water authorities should manage an open database of regional water resources to enable the use of existing assessments in license applications to inform improved water management decisions.

GREAT SOUTH COAST SUSTAINABLE WATER STRATEGY (SWS)

The Great South Coast region is unique in Victoria with respect to water management requirements. Despite its high-value economic and environmental potential, it faces challenges from under-developed regulatory processes and immature access and trading frameworks, which are not shared across the broader Victorian region. As the Great South Coast is external to the regulatory frameworks of other dominant Victorian regions, it is argued that the Great South Coast be considered as strategically distinct from the rest of Victoria in terms of policy, regulation, and environmental management.

Section 22B and 22C of the Act specifies that a Sustainable Water Strategy may be implemented for any Victorian region. It must provide planning for improvements and priorities for water reliability, volume and quality, and environmental outcomes. The current South West Sustainable Water Strategy also includes a region covered by the MDB plan, with its own regulatory requirements. Due to the unique attributes of the region, a specific Sustainable Water Strategy (SWS) for the Great South Coast region is required.

THE ISSUES

The current and future high agricultural value of the region relies on groundwater management and adaptation of farming practices that are key regional priorities that must be planned for and managed with data-driven strategies to ensure future land capability for high-value agricultural enterprises.

Landholders and current and prospective investors will increasingly require strategies to adapt. It is essential for the region's reputation as land and environmental managers that increasing efficiencies in water resource use are demonstrated, irrespective of seasonal or climate-driven supply constraints.

Landholders will also need strategic options to diversify their enterprises within the context of environmental, climate and sustainability limits. This must occur based on a thorough understanding of the availability and quality of the regional groundwater system. Locally-specific sustainable strategies and planning are required to identify the agricultural zones of lowest risk and highest productivity for water take and use and involve the community and landholders in collective data and information-sharing.

THE SOLUTIONS

The Great South Coast region requires the development of comprehensive annual allocation systems and sustainability plans for surface water and groundwater resources. The local strategic sustainability plan could increase data on available water and water quality while putting safeguards in place to ensure any take and use procedures place negligible risk on surrounding ecosystems (particularly groundwater-dependent ones). A local plan could also implement strategies to identify the optimal agricultural soils and topography available for sustainable agricultural production.

In the immediate term, the aims of a Great South Coast Sustainable Development Strategy could fast-track enhancement of water monitoring and data-discovery efforts, and:

- a.** Identify where strategically important agricultural land and sustainable groundwater sources intersect,
- b.** Develop an assessment tool for decision-makers to understand groundwater quality and quantity, and
- c.** Establish greater certainty of water supply to enable sustainable intensification of production.

18. A standalone Sustainable Water Strategy for the Great South Coast region is required to address the region's unique challenges and realise its unique opportunities. The Great South Coast region requires a locally relevant implementation plan to set appropriate timelines and targets for strategic actions.

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