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Twenty Years of Integrated Catchment Management in Victoria

Celebrating the achievements
of the Catchment and Land
Protection Act (1994) and looking
to the future



Project Team

Lead: Dr Annie Bolitho

Dr Annie Bolitho is an independent consultant conducting stakeholder engagement and related research activities. Annie's research collaborations highlight local and community governance, water management and social vulnerability to impacts of climate change. She is an associate of the Institute for Sustainable Futures at the University of Technology Sydney, and has taught Coastal and Catchment Management at RMIT. Previously Annie worked on the development of the University of Melbourne's interdisciplinary Melbourne Sustainable Society Institute and at the Department for Sustainability and Environment, managing a statewide 'Social Capacity Building Project' in collaboration with Catchment Management Authorities and other regional service delivery partners.

Associate: Dr Brian Coffey

Dr Brian Coffey is a Postdoctoral Research Fellow at Deakin University. His research interests centre on environmental policy and governance, and science – policy relations. Brian's research is published in a variety of Australian and international policy, planning, and management journals. Brian was previously a Research Fellow on a national CSIRO funded project investigating the uptake of science in coastal management. In this project he contributed to the development of a diagnostic model for analysing how the operating environment within which science takes place influences the ways in which science is, or isn't, used in decision-making. Prior to completing his PhD, he worked within the Victorian public sector for 17 years in a variety of environmental policy and planning roles.

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Introduction

2014 marks the 20th anniversary of the establishment of Victoria's benchmark Catchment and Land Protection (CALP) Act (1994). The CALP Act's rationale of integrated catchment management (ICM) is a unique and evolving model of land and water management, and has influenced Australian resource management planning in all states, and developments in catchment management worldwide. It has created a wealth of knowledge and experience, and this report provides an outline of the overall Victorian achievements in the period, 1994-2014. It draws on the knowledge and experience of influential members of the catchment community over this time, from different geographical regions and role perspectives.

The project was supported by the Victorian Catchment Management Council, and invited regional catchment management and statewide policy leaders to provide perspectives on different aspects of catchment management. They spoke of the intent behind the framework, what was put in place to roll it out, key elements of change and how the framework has worked, as a partnership, to manage many of the resource management difficulties that became evident in the late 1980s. They spoke about their experience with making a reality of integration, working together with communities, leveraging investment, working with available knowledge and innovating, and how things have changed as a result¹.

Looking back to 1994. In the words of the then Minister for Agriculture and Resources, the Hon. Geoff Coleman, the Catchment and Land Protection legislation highlighted the need to provide:

Statewide capacity for the coordinated management of land and water and assist joint action across the state by the community and governments to improve productivity and environmental values of our natural resources. [It] also improves our capacity to take a long term strategic approach to catchment management, clarify responsibilities and streamline regulatory provisions as part of the range of measures to encourage the sustainable use of our resources. As a result there will be improved capacity to manage the state's natural resources for the benefit of present and future generations (Coleman 1994, p1624)

Further it was recognised that:

The time by which we measure the effect of what we do with land must be more than one generation, so we need to understand that although only few changes are obvious over a period of 10 or 12 years a greater period may see a profound influence on the land (Pullen 1994, p1204).

As one participant suggested, 'once you write about integrated catchment management it becomes extremely abstract'. The intent of this document is to show the way a regional model of integration is used, and how, in the voices of those who are and have been involved in it.

¹ Note that quotes are not attributed.

In 2014, reflecting the intent of the legislation, participants in this project also highlighted the importance of working together strategically, and the long-term nature of catchment management:

By putting initiatives, interest groups and issues together, and setting up Catchment Management Authorities, I believe that that gives you much better value financially, but also you bring in a lot more people to natural resource management; because natural resource management is really about the land and the community. It's not about people as individuals. If it's not collective, it doesn't work².

The reality with natural resources is you don't get the two-minute results so you've got to work strategically and build around priorities.

People forget what the problem was before it was tackled. You have to be on guard to make sure that there is continuous effort when resource management problems seem not to be as sharp in the community's mind.

² For clarity, quotations from interviews are provided in italics and indented.

Why Catchment Management Authorities exist: physical linkages, partnerships, efficiency and effectiveness

Integrated catchment management can be considered to include the philosophy, processes, and practices, which inform the management of natural resources within a catchment area. Translating the concept into practice requires a practical understanding of the social and biophysical processes and dynamics involved; it needs to make sense to the people who have interests in it. This grounded two-way approach is widely recognised as a key ingredient for the efficient and effective management of natural resources. A central process in Victoria has been the development of Regional Catchment Strategies in consultation with regional stakeholders and communities.



The adoption of catchment management was a realisation that in a very old country like Australia – I'm talking of its soils – that to be a successful resource manager, to be a successful farmer, you need to look after your resources.

[Prior to ICM] you'd be assessing a project, and it might be for improving the biodiversity somewhere, but no one had done anything about the weeds, or nobody had fenced the river off. And so it was pretty obvious that you had to do all of these things and stop people saying 'This is my side' and 'This is my side'. By doing the Regional Catchment Strategies and the action plans underneath them, people in regional areas then realised: If we want to fix that bit of the river, we've got to get rid of the weeds first and then get a waterway management grant for the erosion work, and then work on the biodiversity.

The culture [of ICM] is to think about things in an integrated systems approach and think about partnerships, working together. So, whenever a new project comes up, instantaneously it should be: who else needs to be involved in this?

Part of our role is to try to take these departmental silos, mix them up and put them on the ground in a way that the community actually says, 'this makes sense to me. I want to be a part of it.'"

We have to get those multiple outcomes from everything we do, and because not everyone is interested in everything, the only way you can bring all those things together is to bring people together who may have different interest or different priorities or different objectives.

How CMAs deliver: a regional model

Achieving integrated catchment management represents a considerable challenge, involving diverse stakeholders, in distinctive regions, working together to address issues particular to each region. This means that not only do different regions experience different issues, but the solutions required need to be appropriate to the communities with a stake in the issues. Victoria's regionally focussed approach to catchment management reflects this understanding.

Integrated catchment management satisfies the regional management approach. What works in Shepparton doesn't work in Hamilton, and it shouldn't in fact, because the cultures of the communities are completely different ... the different CMAs have handled those things differently. You build on the strengths in your community.

The importance of landscape-scale management has not diminished so the focus on 'regional' remains important.



CMAs have got the right regional relationships.

Make the decisions as close as you can to where the actions need to take place, is a strong underpinning component of the model.

The CMA framework has demonstrated the success of regional delivery and being connected through the community with disparate groups.

The ongoing endorsement of the regional model at the state level, by both sides of politics, is outstanding.

I've got friends who work internationally and they say, the rest of the world would kill for this sort of thing.

Achievements

The success of the catchment management framework is visible in the landscape, in planning, in farming methods and in the approaches farmers take. One of its most significant achievements has been in working with the community over the long term and managing differing views when there is a lot at stake for towns and communities.

CMA's have undertaken landscape-scale revegetation, been innovators in water management, and specialist participants in regional decision-making. Above all CMA's have grown with communities, agencies and regional centres, developing relationships that enable projects to be rolled out in regional localities with minimum needless difficulty.

There's no doubt that the major achievements of catchment management has been that the catchment has been looked at as a whole. Now, you see signs: You are entering the Corangamite Catchment. You are entering the Goulburn Broken Catchment. You're entering the Mallee Catchment. It communicates. I think that our understanding of, and knowledge of where we are in this state, and indeed Australia now, has improved thousand per cent.

Any of the CMA's could take you and show you creeks and rivers that have been transformed from weed infested, neglected banks to revegetated, fenced off long continuous stretches of waterways that are in much better condition now than they might have been a decade ago. So I think that's an enormous achievement.



Whole farm planning right across the Goulburn Broken area. The Australian Government has leveraged huge value through their investments.

If you have a sustainable farming system, you've got a capacity then to keep people on the farm; and keep them on the land; and keep them managing on the land. So it's from that perspective that we've realised social benefit.

At the centre you tend to hear about what goes wrong. You don't hear about things avoided because someone is being smart and cobbled together something to avoid a problem arising. I think the most respected CMA's have always been good at that. Though it's hard to create the evidence for that achievement.

The CMA can be in the same room as the dairy industry. It's natural, because those community people in the early days were dairy farmers, but they would bring a lot of those people together with us. So, to take as an example the Murray-Darling Basin Plan was an interesting process with a lot of conflict. In Shepparton, there was a hell

of a lot of conflict but no-one burnt books. The conversations in the community were, we're not happy, but we want you to listen to us and we want you to come back. So, we don't want to burn a book and scare you off that you'll never come back. We want you to come back [as] part of the conversation. These conversations, and the processes that happened, happened because you're actually there for the long run.

Basically at one stage they were fixing and revegetating and getting rid of weeds on 1,000 kilometres of waterway a year. Great progress in terms of improving the condition of rivers, absolutely fabulous! Some of the work has been wonderful, and during a drought as well.

The amount of trees that were planted in the Goulburn Valley, unbelievable.

They got the environmental water reserve up. Nobody had those skills. Nobody had managed environmental water. They've been absolute frontrunners at that. They've developed a discipline that never existed and they're excellent at it. They're committed people who are smart and innovative.



As a decision system, a more robust decision can be reached by getting a series of people around the table over however long it takes to think about what the options are and to determine an agreed position to go forward. You get learning coming out of it, you get ownership. Every decision is potentially a good decision or potentially a bad decision. But they are all learning opportunities that can help you make decisions in the future.

Where CMAs came from: the salinity experience and inception phase, 1989 - 1996

Victoria's integrated approach to catchment management was not created over night, it emerged and evolved over time in response to a looming crisis in Victoria's productive agricultural land, and later to changing needs. Along the way, the experience and expertise gained in confronting new challenges and changing priorities has been built on, and innovative ways of working embraced. The shift to a strategic, interactive, and more integrated catchment governance, away from a reactive, top down, siloed approach to managing catchment problems, became the norm. Each region took responsibility for a Regional Catchment Strategy, a novel new regional planning approach.

Victoria has created the blueprint for integrated catchment management. Pre-existing models were not available when it became so important to deal with salinity. They could not be found and transferred from elsewhere. Today Victoria has a resilient yet flexible framework that is well positioned to meet current and future challenges and opportunities.

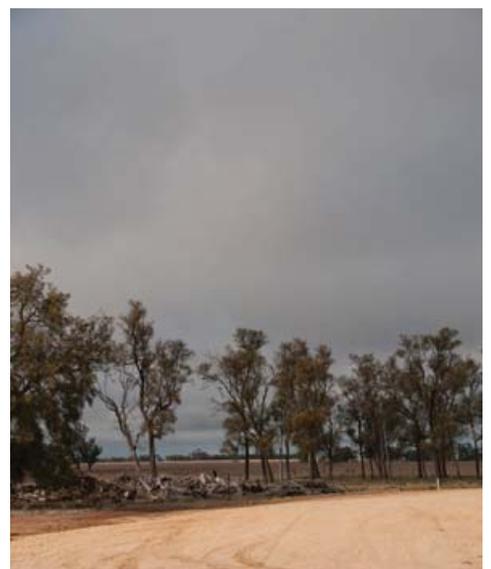
The germ of it was there before the CALP Act and Landcare. We realised that most of the damage was on private land, and governments can't do much about that. And you'd have to have a huge army if you were going to do it by regulation. And so you had to do it by bringing people along.

Mobile phones had just come in. Nonetheless, to get the message back out to the community was not easy. Hence, we had all these little meetings in little areas and schools and all over the place, to give people the opportunity of understanding. It was a time of supreme support, community support and financial support. So we had the three, we had government working, we had the community working and it was being adequately funded. That was a dream.

I can remember one of the catchment pioneers taking the Treasurer out to show him the catchment model, up there to the Goulburn area. And the Treasurer said, 'Thank you. This is the first time I've actually seen where my money is actually doing something!'

I was part of the tail end of the salinity program of the 1990s. There was a commitment to a decade of funding to go to dealing with that issue. There were plans developed and then there was a really strong implementation and monitoring phase. People got behind that, communities got behind it, and it had a high profile. It was a long-term commitment and the investment that went along with it.

If you have a problem like salinity, which mobilises everyone's concern, it provides



a focus for a whole lot of things and then other activities which require similar types of approaches get bolted onto that. I think that's characterised by both having the necessary information but also, having local leadership ability to set priorities to get essentially joint action, collective action, to deal with problems. Individuals can do a bit but they need neighbours to do it as well. You need that collective action.

With community involvement, Goulburn Broken built on the salinity movement, and East Gippsland built on the river improvement trust.

It was an odd beast. We were there to coordinate the first Regional Catchment Strategy. We had no authority, really, to lead anything. We had to engage, try and develop priorities across ... I can't remember how many different organisations there were. But there might have been 10. Parks, DSE, DPI or CNR they were then. It just went on and on and on ... local government as well. Of course, with no authority, no resources and no power. At that time I was sitting on a milk crate! The whole thing had to be done on relationships and goodwill. So I think in the first round appointments of CALP boards, they did do a really good job, selecting people that could carry that off.

Why integrated catchment management?

The word integrated means to put everything together and that was what we wanted to do. By integrating all aspects of land and water management, then you have your integrated catchments.

They don't want silos. You go to talk to a farmer, you don't talk to the farmer just about a salinity problem or a biodiversity problem. Their whole thinking is about systems. So, the fact that you had farmers and community people, and they were nearly all farmers ... they forced you to think systems-wise or you'd look like an idiot. If you walked into a meeting and you wrote a paper about a biodiversity direction or a fencing incentive and you hadn't considered other things, you were knocked on the head.

You integrate for potentially four reasons. Firstly, that physical linkage. You can't afford to mess it up, or you will see consequences. The next one is making sure the planning occurs so that what happens on land is taken into account in the water impacts. The next one is you can integrate at the higher activity level, so 'I'm doing this, you're doing this, are there multiple synergy benefits?' So that's an efficiency integration. There's an integration at an operational level. The public land manager's killing weeds today and if we do the private land managers together we'll kill the weeds, but if we don't or we do them separately six months apart ... well the effort will just be useless. That's an effectiveness integration. Then there's an integration with the community, in that if the community is not brought into these processes then you're not actually getting true commitment and therefore longevity of commitment to it.

Working together

Catchment management is often seen as a complex biophysical management challenge. However, an equal or greater challenge is establishing and activating the governance structure to enable good ways of working together. Firstly, relating with local people and secondly, in setting up collaborations between diverse stakeholders to build capacity in organisations, communities and partnerships, and get results in natural resource management. In other words, as expressed by an experienced participant, *'the social license to operate is what you've got to win'*. Finally, this approach is founded on the ability of different players at different levels of government and in the regions, to develop and maintain effective linkages, investment regimes, and accountability mechanisms.

If it was about just fencing off creeks the state could write a contract for a single provider to fence off all of the state's creeks. It's not what you're getting the CMAs to do really; it's something much more subtle.

That's the bottom line of this framework that it's built on communities having a sense of being part of the bigger framework. For integrated catchment management to happen it's about the people who are managing that resource. So unless we attend to those people and have some sense of keeping them going in their ambition, keeping them on the land and accessing their knowledge; unless we attend to the people sufficiently, we're not going to achieve what we want to with catchment management.



All of the CMAs have got a really strong ethos that working with our communities and for our communities is our reason for being there. So there's never any question about whether we should be passing money through the CMA, to Landcare groups, councils and others to do work on the ground. Everybody would say, absolutely. In each region there's slightly different circumstances, but a CMA can slot in amongst the others and work out what niches and gaps it can fill most effectively for the local community and do that. We don't want to be getting in the way of, or tripping over locals that can do that work as well as, or better than a CMA.

I'm thinking back as a public servant, at the way we worked together. For a community person - I'm thinking of the Chair of the Shepparton Irrigation Committee at that time - to get up in front of the Minister and say: The best thing we've got here is these departmental staff - they're wonderful'. Gee, it used to make your chest blow out. You felt like you were really making a contribution and at the same time it was never soft either. They would challenge us all the time 'why are you doing that? Why is this a priority? Have you thought about this?'

CMAAs have been put in some difficult positions by various governments in terms of directions such as 'we want you to do x. We think you're the community face. Well, go and face them on a whole range of very difficult issues.'

If you haven't got good people with you, you can have all the money in the world, but it doesn't get spent properly, and you don't really achieve any of your objectives, because you do need, even though you're out of the community and you may be passionate, but without top quality support from the various departments within government, it doesn't work.

Resourcing and leveraging investment

Resourcing governance structures enables programs and initiatives to be developed and implemented, in this case river and wetland rehabilitation, drainage works which take account of community values, water quality and riparian zone monitoring, dealing with weeds of national significance, providing advice on irrigation and agricultural innovation investing in habitat for threatened species and auspicing steering committees on projects for example on soil care.

Victoria's catchment management framework has experienced phases of large investment, shrinking investment and consolidation, influenced by Australian Government and state priorities and investment. Short-term funding regimes have dominated the CMA experience. An early funding source, 'The Catchment Waterway Levy', variously termed 'the levy', 'the rating base' and 'the catchment tax' was abolished in 1999. This was seen to have had deleterious consequences for the catchment management framework, changing their orientation from an accountable local governance structure, to another part of government.

The model gives a massive capacity for government to leverage off their investment. It certainly has been my experience that if someone gets \$100 to do some work on their property, they'll spend \$300 of their own. I'm talking in the abstract by saying hundreds, because it's always thousands! There's a massive leverage in terms of government both in-kind through volunteer labour, but also through other things that property owners buy and do.

We still hear how difficult it is for the department to mount a case at Treasury. I agree, because we don't have the accounting structure to make the case in a world where economic decision-making has such a strong bearing. So that's where current work on environmental accounts and creating a common environmental currency could be used in a way that has got a lot of merit.

In my vision for regional development, I was thinking of local people working for CMAs but that didn't happen so much because of that project funding. Difficulty in planning forward, dependence on different streams of revenue and a project orientation means you've got a lot of churn in the jobs. You can only put people on for a year while there's funding.

Amazing things have been done with limited funds. Having all the money in the world doesn't always get outcomes. It's like rich dad, poor dad. And I think those involved in catchment management have been extraordinarily good at building on the resources available.

We saw the renovation of the irrigation system, the channels, the leaking channels, the poor management, whole of farm plans. These things had never been heard of. People, then rushed and got them. Government dangled the carrot with some help financially, which was good, and we saw properties completely transformed from some of them bog holes, to really productive land. On-farm water storage and recycling systems, things no one had ever considered. But in doing all this, someone, either a community or departmental person said, ah, we can do that.

If you do a plan that you want to be an integrated plan and create a beacon for people to get behind and work together, you need an implementation phase for that plan. What we see now is phases of planning and then a few years of scratching around doing what we can and then another phase of planning. Communities and those at the centre of it get sick of it after a while. So the step one is that you really probably should only be making a plan – and the RCS is a particularly big one – if you've got investment that really clearly backs it up.



Without their own source of revenue, it is nigh on impossible for chairs and boards to ensure that funds are spent on the priorities that were established through the community consultation process.

The central guys need to trust that CMAs will fulfil their plans and that their objectives are aligned. I think the tightness of the funding rules, diminishes one of the most important things CMAs can do. The potential for them to build support locally is diminished because they say, 'oh yeah, that's nice, but we haven't got the money to do it.' They lose responsiveness locally.

We've had a trend here of 127 years of loss. Experts will say, well, you've lost a bit more in five years. The length of timeframe you need to measure is enormous. None of our systems can cope with that currently. So whether it's a funding system or the knowledge capture system or the reporting system, very difficult. So you've got that quite different perspective where governments want to spend money and get a report that shows a difference. In a timeframe of three years, that is almost impossible.

Knowledge and innovation

Having the right information and being able to make effective use of it are critical elements in catchment management. Knowledge in this area is often drawn from what is termed 'adaptive learning', with practical experience informing theoretical perspectives.

Decision-making

Knowledge, broadly speaking, underpins all of the decisions and directions that we make at all scales. There's often still a requirement to be drawing on people's situated knowledge, the knowledge that comes from experience and their intuition based on that experience, and their foresight and their insight into situations more than working out a numerical system that makes X a priority over Y.

You need to have a process, and be clear about who is going to tackle problem the community have identified ... and be able to say you've done it in the not too distant future! It is about tying together the social, environmental and economic imperatives. At the same time it's about nailing particular problems and using those particular problems to help illustrate the principles you're trying to apply more generally.

Investment

In order to make a larger scale targeted investment you've really got to have access to the data that's going to tell you that the [desired] change can happen. So it's a real chicken and egg thing that in order to be able to make that decision you need access to good information that says yes ... if you put energy into these streams or into this landscape, the effects are going to be tangible elsewhere, or in a certain timeframe.

Knowledge exchange

I think you have to invest time upfront. In my work, I've used quite a lot of modelling which is pretty complex but we've always invested time in explaining models to people and letting them become clear about what they can and can't do and that type of stuff. Making sure the model is right, papers on the results of models ... You've got to be prepared to be open. You've got to understand that you don't have all the answers. You've got to be interested in listening.

The role of many CMA staff out on the ground has changed to become more of what we might call knowledge brokering. [It's not] 'I've got information; I've got advice, hey! You might do this!' It's the kind of culture where there's a sense of give and take, rather than having an expert and a naïve landholder.

Between CMAs, the information's available but I reckon in a lot of cases it's not necessarily utilised as well as it could be. I don't think it's fully taken up. You don't necessarily adopt it as well as you should, perhaps. You don't go with open ears. You hear but you don't listen.

Trust in knowledge source

I think the working together is very much about honest consultation and trust in a longer-term timeframe. Because there's a lot of information hitting people all the time, they're bombarded with information. So, often, it's not the information that's important, it's the person. It's, 'who do I go to, to help me understand what this issue's about?'



Research

The irrigation modernisation process that's happening now, is taking a lot of our learnings from 10 years ago, 15 years ago. We didn't know how we could get water off our farms quickly. We didn't know how to get water to farms quickly. We now can get water to farms four times faster than we could four or five years ago.

I think there are lots of examples where knowledge is being applied and research undertaken. But, I think the key to it is really about articulating what is the problem that is trying to be solved. There's a lot of fundamental research which I think is important, but this is really thinking about 'here is a particular problem, how are we going to solve it?', and then applying the scientific method to help solve those particular problems.

Recurring challenges

Because catchment management is a complex and dynamic undertaking, it is necessary to continually refine and adapt, in order to deal with emerging circumstances. Responses must change according to changing circumstances, such as developments in agricultural and irrigation technologies, policy innovations and climate trends such as less and more erratic rainfall and increases in bushfire risk. Available knowledge is changing all the time. In addition, complex issues can only be addressed, once local level issues have been dealt with, and requisite management capacities and relationships are in place. Therefore, because of the complex, dynamic and evolving nature of catchment management, there will always be challenges that need to be addressed, in order for the full benefits of investment and other efforts to be realised.

Integration

I think integration is really important but you've got to be incredibly cautious about it. Make it concrete and find ways of dealing with it and then members of the community will be quite generous in selecting the ways to deal with it, providing broader benefits. It doesn't matter whether it's rabbits or salinity or something else, preferably something which affects them rather than affects someone else somewhere in some other place. But, I think people tend to want to do tangible things and integration is often not sort of very tangible and it can rapidly lead into this sort of cult of coordination where people sit round in meeting rooms and get driven crazy except for the bureaucrats who want to put their bloody noses in everyone else's business.

[Mechanisms for integration] included: community based boards, a regional structure, that is, the right sort of geographic area and regional catchment strategies. Then flowing on from that was the idea of a catchment-based levy or tariff that would mean you've got local money to help implement your local priorities. So I think with those sorts of mechanism all in place, the idea of integration and regional co-ordination was really going to flourish. But one of those dropped off then – the levy dropped off.



Resourcing and investment

I think because CMAs have had to put in so much energy to chasing the dollar for the next job rather than having a revenue stream, a lot of the energy that they might have been put into awareness raising and education and establishing relationships, has actually had to be focused on submission writing and lobbying and a whole range of other things.

Just because you've got an Act, doesn't mean the issues are being dealt with ... it's the implementation of the Act, that's important.

Working Together

That's the bottom line of this framework that it's built on communities having a sense of being part of the bigger framework ... for integrated catchment management to happen it's about the people who are managing that resource. So unless we attend to those people and have some sense of keeping them going in their ambition, keeping them on the land and accessing their knowledge; unless we attend to the people sufficiently we're not going to achieve what we want to with catchment management.

Communication still today is the hardest thing to achieve. If everyone understands what's going on around them, and nothing jumps up out of a hollow log, then they're comfortable. They mightn't agree with it, but they can understand the reasoning behind it.

Knowledge and innovation

We've got to be able to measure these changes much better, to show people.

At the centre you tend to hear about the stuff-ups. You don't hear about things avoided because someone is being smart and cobbled together something to avoid a problem arising. I think the most respected CMAs have always been quite good at that. But it's hard to create the evidence for that. It's hard to put a value on that to work out how much money in an investment framework satisfies the Treasurer. Even to work out how to do that, particularly when with that critical dimension - you can't put it in 'we'll do that in the three year corporate plan'. Rather, it says, 'here comes an opportunity now and we have to be quite adept on our feet to respond'.

Looking to the future

This project has identified significant benefits from Integrated Catchment Management as a regional model of resource management, and documented the strengths of the ties CMAs have developed with stakeholders and communities over the last 20 years. Today, some important stakeholders such as water authorities and local government also take up the catchment model, which contributes to CMA efforts to highlight resource management values and deliver on catchment management priorities.

The transcripts highlight the particular culture of ICM, and a unique way of seeing and working with problems. All interviewees spoke of this culture being based on CMA practice of bringing together people around bio-physical problems, and of thinking from a systems perspective. A way of working has become established, with recognised ways of understanding and acting that have evolved from Victoria's approach to salinity, and subsequent responses to resource management challenges and policy developments. What this means is that collective action is required to effect change.

In looking to the future, participants spoke of the value of the regional model, and the CMAs' capacity and perseverance with building connections to agencies, communities and governments. Many participants also highlighted CMA leadership in working with the function of dynamic systems, based on the interdependence of humans and the natural environment. This was seen as experience gained in the salinity era that should not be lost, but re-invigorated. One interviewee described their CMA's recent initiative in community engagement, to recognise demographic change and start to act on a new approach to community engagement for more effective natural resource management. Many participants highlighted the need for more and better use of knowledge than is currently available. Knowledge was seen as urgently needed to correctly prioritise initiatives, especially in a changing climate, and to measure progress at a statewide level.

In general, while responses from participants revealed a strong interest in renewal for statewide catchment management practice at the 20-year mark, it appears that when environmental problems are diffuse, it is much harder to gain people's attention or to attract investment for significant innovation, yet this attention is necessary if problems are to be managed effectively. Further, in some circumstances, shared ways of understanding the business of catchment management, may have led to a tendency to assume or generalise values held among practitioners, and also to take the benefits of the regional model for granted. This appeared to hamper participants' capacity, for example, to specifically describe successes or to critically address the function and usefulness of aspects of the approach in looking to the future. While acknowledging areas for improvement, the overall commitment to Victoria's longstanding, evolving, approach to catchment management remained strong.

Those aspects of the model that are seen as invaluable include:

- regional model and continuity of the CMA framework in regional Victoria (capacity to work with community stakeholders on issues that matter)
- unique capacity to work as agents and initiators within socio-ecological systems, gained over 20 years
- adaptive capacity to meet changing needs (being able to identify and manage current and emerging challenges).

Given the strengths highlighted above, it is unlikely that the knowledge required is purely of a technical or abstract modelling nature. Rather the integration of social, economic

and biophysical aspects of regional systems continue to be economically important, and an evidence base highlighting this, would add value.

Looking ahead, there are a number of challenges for players in the CMA framework. One is to refresh the commitment to institutionalise support for the framework, while continuing to make the most of existing processes and available knowledge.

It would appear that the best way to identify elements of renewal would be to engage in public discussion to fine tune a joint understanding of what the model offers in terms of established strengths; relationships; and approaches to investment planning. This would enable players to refine messaging. Engaging in conversations with partners, stakeholders such as Regional Development Australia, industry bodies, water authorities and local communities, would be a first step before undertaking wider conversations about future reforms.

Further, to amplify the CMA value message, as well as for framework development, it would be useful to draw on available knowledge in DEPI and the CMAs, drilling down further than this project was able to, in the area of statewide achievements. This would likely highlight patterns and connections between social, environmental and economic benefits.

The Victorian Catchment Management Council would be ideally suited to demonstrating the benefits of the model at a landscape scale, and making it tangible through facilitating a series of forums and enabling knowledge development on the regional socio-environmental model that integrated catchment management affords.

In summary,

If it was about just fencing off creeks the state could write a contract for a single provider to fence off all of the state's creeks. It's not what you're getting the CMAs to do really; it's something much more subtle,

and the players in the Catchment Management framework need to meet the challenge inherent in articulating this value.



Attachment 1: source of data

The data for this report were derived from 10 semi-structured interviews conducted with people who have occupied significant roles in the establishment and implementation of Victoria's approach to catchment management. Semi-structured interviews are useful because they not only allow respondents to use their own voice in responding to questions, but also allow complex questions to be asked, and offer flexibility in the way that interviews are conducted (Dunn 2004, Sarantakos 1994).

Working collaboratively with the VCMC Executive, the team used a purposive sampling strategy (Bryman 2008) to identify ten suitable candidates for interview, based on criteria such as location (metropolitan and regional), types of experience, gender, and position in the CMA system (executive, managerial, operational). Collectively the people interviewed encompassed a range of positions (head office staff, regional office, and community representatives) and areas of expertise (salinity, water, soils, community engagement, etc).

The interviews, conducted between December 2013 and February 2014, were taped with the permission of the interview subjects and then professionally transcribed. All participants were provided with a plain English summary of the project and an interview schedule to ensure that they understood the project and the types of questions to be asked.

The data collected were analysed qualitatively using a strategy of identifying insights and themes iteratively through engaging with issues covered in policy documents and literature and a close reading of the views expressed in the interviews. This enabled multiple perspectives on the catchment management framework to be drawn out.

Gender	Focus	Role	Area of expertise
Male 7	Statewide 8	Advisory 6	Land 2
Female 3	Regional 2	Policy 2	Water 4
		Delivery 2	Community 1
			General 3

Attachment 2: interview protocol

Prologue

At the 20th anniversary of the Catchment and Land Protection Act (1994), this project explores the philosophy, practices and processes associated with integrated catchment management in Victoria, focusing on four main theme areas: Integration, Resourcing, Working Together, and Innovation and Ideas.

In each theme area, we are interested in understanding different aspects of elements of the framework: what was the intent; what was put in place; what has changed and how has it worked? I will be asking you for examples from your experience as much as possible.

Warm up phase - role and Involvement

- Can you outline how you have been involved in catchment management?
- How would you characterise your role over the time you've been involved?

Integration

Integration is key to catchment management – between levels of government and community, across sectors, across regions and issues. We are interested in your views on the framework as a whole and its achievements in 'doing integration'.

- Can you say something about the experience of integrating responses to different environmental objectives such as land, water and biodiversity?
- How have you seen environmental objectives integrated with economic and social objectives?
- What have been challenges associated with promoting integrated catchment management?

Working together

Opportunity to explore the people dimension of the integrated framework, linkages between levels of government, collaborations between diverse stakeholders to get NRM outcomes, engaging people at ground level and building capacity

- What do you see as the role of community engagement and working together in integrated catchment management? How well has it worked in the past? What changes have occurred and what are your thoughts on these changes?

Resourcing the framework

Resourcing is critical for implementing catchment management practices, involving cost sharing (polluter pays, user pays, beneficiary pays), roles and responsibilities, issues of coordinated funding, funding sources, program vs project funding, and funding cycles

- Can you outline what you have seen as an issue in resourcing catchment management? How has it been dealt with? Other issues? What are changes you have seen over the past 20 years?
- Are there any reforms you would like to speak about?

Ideas and innovations

Having the right information and being able to make effective use of it (knowledge and wisdom) are critical elements in catchment management.

- How do you see the role of knowledge in integrated catchment management, how important is it? What do you see as some of the key issues the catchment management framework has grappled with to ensure information and knowledge is used effectively? (E.g. Setting research priorities, supporting innovative projects, promoting knowledge exchange, etc.)
- What have been influential ideas, concepts, and innovations that have contributed to

positively to catchment management?

Reflecting on what has been achieved? (What has changed as a consequence of Victoria's catchment management framework?)

- How successful do you think the integrated framework has been?
- Can you suggest three significant achievements that have resulted from the framework?
- What three areas would you identify as needing further work?

Looking to the future

- Briefly, what would your advice be to the Minister/s on taking catchment management into the future?

Wrap up

- Any other points that you would like to make or clarify?

Attachment 3: biographies

Alex Arbuthnot AM is a former member of the Victorian Catchment Management Council and the West Gippsland Catchment Management Authority and a past President of the Victorian Farmers Federation. He is currently a Board member of Landcare Australia Limited, Regional Development Australia Gippsland, and is Deputy Chair of the Victorian Agribusiness Council, and a member of the VFF Land Management Committee.

David Buntine has been the CEO of the Port Phillip & Westernport Catchment Management Authority and its predecessor organisation, the Catchment & Land Protection Board, for the last 15 years and prior to that had worked in strategy development, salinity management and agricultural extension with the CALP Board and the Departments of Agriculture and Natural Resources and Environment. David was working in this industry when the CALP Act was introduced and the first Boards were established, the three iterations of Regional Catchment Strategies were developed, the Catchment Management Review was undertaken and led to the formation of CMAs, and while various iterations of Victorian and Australian Government funding programs came and went. He is now the longest serving of the current CMA CEOs and is the Chair of the CMA CEOs' Forum.

Jane Doolan is currently a Professorial Fellow in Natural Resource Governance at the University of Canberra and a Commissioner with the National Water Commission. Prior to this, she was the Deputy Secretary for Water in the Victorian Department of Environment and Primary Industries and has more than 27 years' experience in the sustainable management of catchments and water resources.

Sarah Ewing was a member of the Victorian Catchment Management Council for 15 years; she is currently a Board member of the Port Phillip and Westernport CMA. She has a long-standing research, and practical, concern for the effective engagement of community in catchment and land management.

Campbell Fitzpatrick has worked within the water sector since the late 1980s and has taken a leading role in Victorian water resource and catchment management including key decisions on surface and groundwater allocation issues, the development of water markets and river health. Campbell was one of the public faces behind the Farm Dams legislation review, as well as the Government's White Paper on water and its associated water reform measures. More recently he has been responsible for the preparation of the regional water strategies covering all of Victoria. He is currently working in the EPA assisting with a review of the State Environment Protection Policy for the Waters of Victoria.

Christine Forster AM was Chair of the Victorian Catchment Management Council from 2000 - 2006 and a member of Council since its inception till 2009. She was also Chair of the Victorian Water Trust and the Regional Water Strategies Independent Panel and is an independent Director of VicSuper Pty Ltd.

Jeremy Gaylard has spent most of his life working with the Community. Jeremy was Chair of SPAC, Chair of the Victorian Catchment Management Council, Mayor of the City Of Shepparton, Chief Commissioner Shire of Moira, Chair of the State Assessment Board, Member of the MDBC Community Advisory Council, Chairman Melbourne Market Authority, Chairman of AUF, Life Councillor VASA, and currently Chairs an Export Business.

Cullen Gunn has been involved in the Catchment Management Framework (CMF) since 95/96 when he compiled the Corangamite CaLP Board's first Regional Catchment Strategy. Over the years since Cullen has participated in several CMF associated roles including CMA priority setting for NHT funding, a short stint as a Board member on the Corangamite CMA and two years as the Executive Officer of the VCMC. Since 2006 Cullen has been a member of the VCMC. He has been actively involved in the compilation of VCMC Catchment Condition Reports in 2002, 2007 and 2012.

Mick Murphy OAM has been the Chair of the Victorian Catchment Management Council since February 2006. For the six years prior to that, he was the Chair of the Glenelg Hopkins Catchment Management Authority. He is also the Chair of the Sustainability Fund Advisory Panel, and chairs DEPI's Riparian Advisory Group and the Victorian Waterway Management Strategy Stakeholder Reference Group.

Chris Norman has been the Chief Executive Officer of the Goulburn Broken Catchment Management Authority (CMA) since mid-December 2009. In this role he represents Victoria on the National Organisational Performance Excellence Working Group and the newly established MERI Reference Group, as well as participating on the Steering Committees for the Victorian Floodplain Management Strategy and five year Catchment Condition Report with VCMC. In 2013 he chaired the Regional Catchment Strategy Reference Group which resulted in 10 high quality documents being produced by each CMA in Victoria. Prior to the role with the CMA, Chris led the development and implementation of a new Statewide community relationships model for the Department of Primary Industries linking regional communities to policy development and Ministers. Chris is also on the Board of the Fairley Community Leadership Program and vice-President of the Benalla Racing Club.

Attachment 4: references

Hon Geoff Coleman (1994) Catchment and Land Protection Bill, Second Reading Speech, Victorian Parliamentary Debates, 5 May.

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