

## Commissioner presentation

### *NRM planning for resilience conference - June 2012*

#### **Introduction (Slide 1)**

This morning, I'd like to discuss planning in the context of New South Wales's regional model for natural resource management, and how it can help improve the resilience, health and productivity of our landscapes.

In particular, I'm going to talk about why the Natural Resources Commission has encouraged a shift towards resilience and systems thinking in regional planning for natural resource management.

First, to provide some context, I will briefly outline the New South Wales regional model for natural resource management -- including the role of regional catchment action plans, which are key planning instruments supporting devolved regional planning and investment.

Next, I will explain why these plans are currently being upgraded, including what has motivated us to encourage the application of resilience and systems thinking in the upgraded plans.

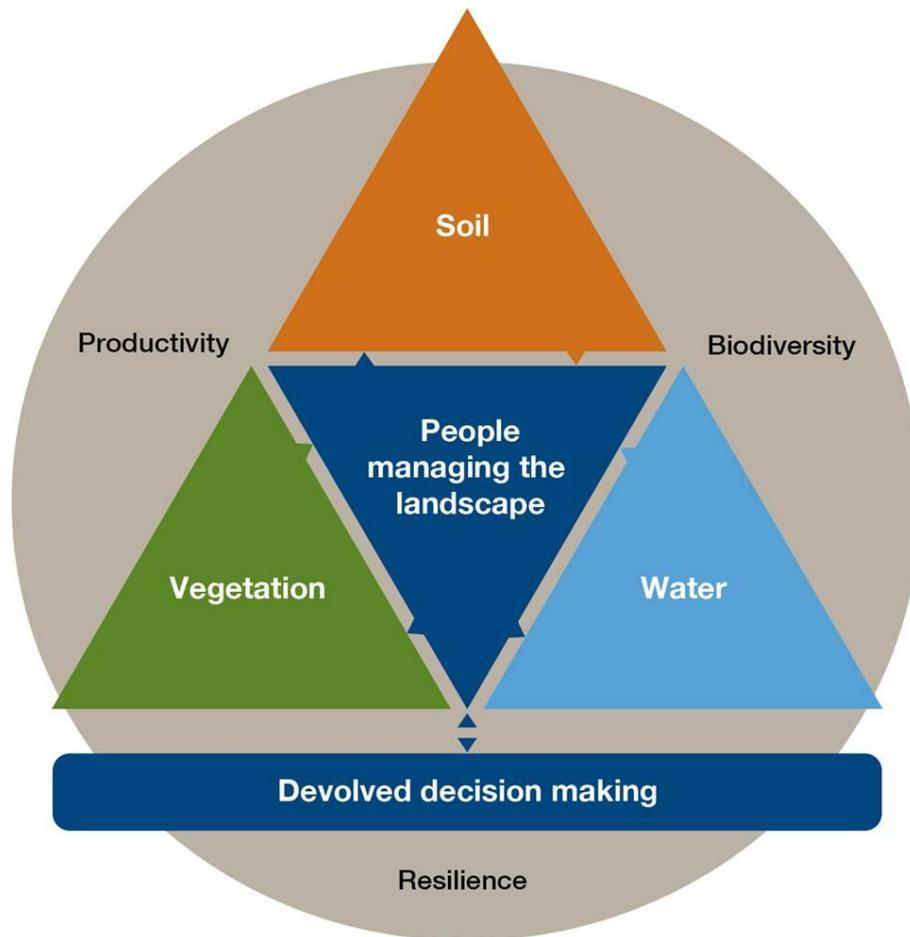
Finally, I'm going to talk about the benefits we expect from the new focus on resilience and systems thinking in catchment action planning.

In doing so I will draw on what we've learnt about applying resilience concepts in regional planning through two pilot catchment action plan upgrades.

#### **The New South Wales regional model for natural resource management (Slide 2)**

Many of you will already be familiar with New South Wales's regional model for natural resource management, but I think it is important to start by reflecting on the broader framework in which regional strategic planning sits.

As you can see from this slide, our model for integrated, regional natural resource management hinges on the importance of people managing the landscape.



**Figure 1: Model for managing landscapes**

This means giving local communities a say in how their landscapes are managed, and helping landholders manage the land for both their own private benefit, and for the public good.

The model does this by devolving planning and investment responsibilities to the regional scale through 13 Catchment Management Authorities, and their regional catchment action plans.

The framework for the regional model gives CMAs and government important guidance, and provides key accountability mechanisms. It includes several elements:

- The first element is the **state-wide goal and targets**. This goal and targets help to ensure that NRM efforts at the local, regional and state scales align with state-wide priorities. They also provide a means of tracking progress. The targets are based around the approach to managing landscapes shown on the slide.
- The second element is the *Standard for Quality Natural Resource Management*. This standard sets out best practice in NRM and assists CMAs and other stakeholders to work more effectively towards the state-wide goal and targets.
- The third element is the state-wide strategy for **monitoring, evaluation and reporting (MER)** that helps ensure that MER efforts support ongoing improvement in NRM outcomes, inform sound policy and evidence-based decision making, and assess progress against the state-wide targets.

The final element of the framework is the NRC, which plays a key role as an independent evaluator and auditor within the regional model for NRM.

Through its program of assessing catchment action plans and auditing their implementation, the NRC informs government and other stakeholders about what is working in NRM, what needs fixing and how the regional model is progressing towards its stated policies and targets.

### **Role of catchment action plans (Slide 3)**

I've already touched on how catchment action plans are a key mechanism for empowering communities to engage in managing their landscapes. I'd now like to explain their role as the regional model's primary planning instruments in more detail.

Catchment action plans act as a prospectus for investment in natural resource management in each region. Government agencies, community groups and landholders should all be able to pick up their region's catchment action plan and understand how the landscape functions to support the community and government's values, which might include food, fibre or fuel production, amenity and recreation values, biodiversity and so on.

The plan should also identify the biggest issues and challenges facing the catchment. Are the region's landscapes and way of life most at risk from invasive species? From sea- or tree-changers? From increased mining, or decreasing farm viability?

And finally, the plans should tell everyone in the region what needs to be done to address these issues and maintain or restore the landscape and its values. The plans identify priorities and targets that all stakeholders can contribute to in their own way, in line with their interests and capacity, so that everyone is pulling in the same direction.

CMAs lead this planning process, but they collaborate with community and government partners in both developing and implementing the plan.

We know that devolving decision making and planning to the regional level will lead to diversity amongst the regional plans. This is fine - each plan should address specific regional issues, and reflect the region's community and cultural values, dominant land uses and past history.

That said, these diverse regional strategies will come together at the state scale, as all their targets and objectives should align with the overarching state-wide targets.

### **Upgraded catchment action plans (Slide 4)**

The first catchment action plans were developed between 2004 and 2007.

In 2009 the NRC, CMAs and agencies initiated a pilot process for upgrading the plans in the Namoi and Central West regions. The next presenter, Caroline Raine, will deal with this pilot process in detail. Suffice it to say here that the process was successful, and the remaining 11 CMAs are now upgrading their region's CAPs. The upgraded CAPs are to be completed by March 2013, in line with the New South Wales Government's *NSW 2021* plan.

The upgraded catchment action plans differ from the previous plans in two important ways.

First, the new plans are working towards being both whole-of-government and community plans, so we now have a more inclusive and integrated approach than the community and CMA focus of the previous plans. Whole-of-government involvement in planning is essential when responsibilities are devolved to the regional scale. All the relevant agencies and local governments need to 'own' the plan for it to be properly supported and implemented.

Second, the new plans are a first step towards better understanding and managing the landscape as an integrated system, which includes social, economic and biophysical components. In the past, NRM has focussed mainly on the biophysical parts of the landscape – such as land, water and biodiversity – and often managed these components in isolation from one another. In contrast, the upgraded plans take a broader view by looking at landscapes as systems made up of human communities and biophysical processes that interact and shape each other.

The upgraded plans seek to:

- recognise the important social and economic factors, as well as the biophysical factors, that play a critical role in our landscapes
- identify the linkages between, and within, the social, economic and biophysical parts of the landscape
- understand how the landscape functions as a system to support a range of productive, cultural and environmental values.

Importantly the upgraded plans also recognise that landscape systems are constantly changing. They are subject to natural cycles and variability, such as drought and flood cycles. They are also affected by short-term shocks, such as disease outbreaks or natural disasters, and longer-term threats like climate change and population growth.

By understanding the landscape as a dynamic system, we can start to think about how to make these systems more resilient, healthy and productive in the face of future change and uncertainty.

### **Why resilience? (Slide 5)**

My last few points should have started to give some insight into why we think systems and resilience approaches are valuable in regional planning. I'd now like to elaborate on why the NRC has chosen to champion systems and resilience concepts in catchment action planning.

The term 'resilience' refers to how well a landscape can cope with shocks and undergo change while still supporting desirable values and ecosystem services.

In simple terms, this may mean ensuring agricultural regions can remain productive under changed climatic conditions or in the face of increased mining. It may also mean ensuring that the lifestyle and tourism values of coastal regions are not compromised by population growth and development.

In the planning context, land managers can use systems and resilience frameworks to help work out what matters most in the landscape when it comes to maintaining and supporting these values.

Often there may be just a few key factors which are critical to how the landscape functions, and understanding these can show us where we should intervene in a system to have the most effect.

For example, in the Murray-Darling Basin water underpins both the productive and ecological values of the landscape; water for irrigation, and water to drive natural floodplain inundation cycles. It therefore makes sense that so much effort is currently being put into deciding how we manage this key resource within that landscape.

Taking this example further, the basin landscape is subject to a huge range of natural variation and change; in recent years we have seen it go from drought to flood, from being barren to flourishing.

Systems and resilience thinking highlights the need to manage landscape systems within these natural boundaries, but without constraining or removing natural variation all together. In the Basin, it is about making sure the system does not reach a point where it isn't able to rebound from disturbances like drought and flood. This principle applies just as much to the social and economic systems in the basin as to its ecology, as the whole landscape and its communities are affected by these threats and disturbances. It is the classic triple bottom line!

The NRC also encouraged the use of systems and resilience thinking in the catchment action plan upgrades as these frameworks align with many of the principles in the Standard. For example:

- the support of a strong evidence base
- the importance of scale – be it temporal, biophysical, social and institutional scales - and the interactions between different scales
- a risk-based approach, managing known risks to system function and emphasising preparedness for uncertainty.

Finally, taking a systems and resilience approach encourages people to bring fresh eyes to old problems, leading to innovative solutions.

Feedback from both the Namoi and Central West pilot upgrades was that resilience concepts helped the CMAs and their partners re-focus their limited resources on addressing the most important priorities in their regions. Effective prioritisation is critical in natural resource management, as we have big issues to address with limited resources.

The upgraded plans' targets and actions now focus on managing around their systems' critical thresholds – for example, focusing efforts on retaining groundcover to either move above, or avoid crossing, an identified 70 per cent groundcover threshold that affects biodiversity and productivity outcomes.

This renewed focus benefits all stakeholders, not just CMAs. For example, one local government representative involved in the Namoi upgrade reported that:

*“the resilience model has given us something tangible. I now have those critical thresholds in the back of my mind when I am making decisions.”*

### **Applying resilience concepts in planning (Slide 6)**

As you can tell from that positive feedback from the Namoi region, the pilot upgrades showed that there are a lot of good concepts within the resilience discipline, which can be applied within catchment action planning to improve the quality of the plans and their outcomes.

However, we need to keep in mind that catchment action plan upgrades are a strategic planning process, not a research project.

This means planners should apply systems and resilience concepts strategically and pragmatically, in line with their resources and capacity.

The plan's 'resilience assessment' should focus on what information is required to make informed decisions on regional priorities, targets and strategies for building resilient landscapes. The scope of this process will depend on the CMA region, its values and objectives and its planning capacity and resources, and the time and resources invested in the upgrade should reflect the expected benefits of the strategic planning process.

### **Encouraging integrated landscape management (Slide 7)**

I believe a key strength of systems and resilience thinking is that it prompts land managers to look at the whole landscape system when working out where and how they can best intervene to keep their landscape operating effectively.

A good example of taking a landscape approach comes from the Hunter-Central Rivers region.

MidCoast Water relies on the Manning River Catchment for their town water supply business. Its downstream water supply off-takes are being affected by turbidity, which comes from upstream sources in the Barrington and Barnard catchments.

Instead of focussing on downstream treatment solutions, MidCoast Water have developed the Manning River Catchment Management Program<sup>1</sup>, a focus of which is delivering or supporting projects that will restore the health of the catchment to improve downstream water quality. These projects include fencing work, riparian rehabilitation, soil health improvement, promotion of sustainable agriculture practices, and community education.

MidCoast Water have aligned the Manning River Catchment Management Program with the guiding principles for managing natural resources set out in the Hunter-Central River Catchment Action Plan, and are working with the Hunter-Central Rivers CMA to deliver catchment-based projects.

An important aspect of this program is that it generates both ecological and economic returns – the health of the catchment is improved, while the cost of water treatment downstream is reduced.

This brings me to my next and most important point. That is this. We need to put more emphasis on deriving multiple benefits for management actions, particularly social, cultural and economic benefits. We need to focus on the triple bottom line.

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<sup>1</sup> MidCoast Water (2011) *Working With Our Catchment: Manning River Catchment Management Program*, available at: <http://www.midcoastwater.com.au/site/index.cfm?display=275306>

### **Focusing on the triple-bottom line (Slide 8)**

I mentioned previously that natural resource management used to focus on biophysical elements – this approach overlooks and fails to capitalise on the critical role that people play in the landscape.

The relationship between people and their landscapes runs both ways.

On one hand, people and their livelihoods rely on healthy and productive landscapes. We need healthy land and water resources to sustainably support industries like agriculture, mining, tourism, fisheries and forestry.

On the other hand, people have a vital role to play as stewards of their land.

At present almost 90 per cent of land in New South Wales is privately managed. Increasing the amount of voluntary private land stewardship is critical if we are to achieve integrated landscape management.

The role of private land holders and industry becomes even more important when we consider the limited government resources there are to deal with complex challenges across the state.

Successful landscape management depends on the willingness of private landholders to help work towards the region's catchment action plan priorities. CMAs therefore need to understand what motivates or discourages voluntary stewardship, and draw links between landscape priorities and landholder priorities like increased productivity and returns.

This slide shows a large property where the farmer is trialing new sowing methods, drainage arrangements and biodiversity corridors. The landholder is seeking improved profitability through these approaches, but is happy for the public, and his family, to realise the associated biodiversity benefits.

In some cases, supporting land stewardship and practice change will require overcoming barriers such as capital or resource availability, helping to reduce red tape or providing education and information.

In western New South Wales clearing invasive native scrub and fencing for rotational grazing requires an initial capital investment, but leads to longer-term productivity and biodiversity outcomes through better management of grazing land.

CMAs can promote fencing and invasive native scrub clearance by helping landholders find the initial resources required - one approach is to help landholders fence and trap feral goats, which can then be sold to fund fencing and clearance works. This has the added benefit of tackling the widespread feral goat issue in the region.

CMAs across the state should seek to apply similar models in their own regions – identifying mutually beneficial arrangements that can work for their own landholders and landscapes.

However - as a word of caution - linking the ecological parts of a system with social and economic considerations has initially proven challenging in upgraded catchment action planning. While biophysical systems analysis was strong in both the Central West and Namoi plans, both CMAs found it more difficult to integrate social elements into their biophysical systems.

Improving these analyses and linkages is a complex task, but there are important long-term benefits to be gained.

Most importantly, working with landholders to encourage and support ongoing voluntary private land stewardship will build resilience within the community. This will put communities in a good position to adapt and respond to future challenges, even if institutional and government funding arrangements change over time.

### **Evidence-based decision making (Slide 9)**

Another way the systems and resilience based approach is leading to better planning outcomes is through evidence-based decision making.

When tackling the 'wicked problem' of natural resource management, planners will always be faced with imperfect knowledge and different, often competing, stakeholder values. Planners struggle to find an optimal solution to the issues faced, when often an optimal solution may not exist at all.

Systems and resilience thinking accepts and embraces uncertainty within the decision making process. It helps planners bring together the best available knowledge about a region and the region's stakeholders to develop and implement a satisfactory management solution – with full understanding of what we do and don't know.

Being transparent about what we do and don't know about a region also helps stakeholders make informed decisions.

As such, both plans identify information gaps and key assumptions that are yet to be tested – this is where the CMAs' Monitoring, Evaluation, Reporting and Improvement, or MERI, process plays a critical role in addressing these knowledge gaps.

Over time this cycle should help drive continuous improvement and ongoing adaptation – an important cycle that I will now discuss in more detail.

### **Adaptive management (Slide 10)**

Improving the health and resilience of our landscapes and communities is a long-term business which requires us to continually learn and improve as we go, following an adaptive management approach.

Focussing on the planning process to begin with, it is important to consider the role of these upgrades in supporting a paradigm shift in regional strategic planning – we're moving towards a more collaborative, integrated approach to managing natural resources.

Linked into this adaptive cycle are the monitoring, evaluation and reporting processes I mentioned earlier – both CMA programs, but also the work being done at the state scale under the New South Wales Monitoring, Evaluation and Reporting Strategy.

Unfortunately, it is not possible for us to 'turn back the clock' – we can't undo the multitude of past land-use decisions, or start from scratch if our first management strategies don't work as well as we'd expect.

Instead, we have to ensure the next decisions we make and strategies we try improve on the last. Just like manufacturers, we need to practise continuous improvement in our planning, implementation and monitoring processes.

In a longer-term context, we must also accept that landscape change is inevitable, and that we will always need to adapt to new challenges. MER and catchment action planning should help us understand current landscape trajectories. Developing resilience-based catchment action plans then allows regional communities to think strategically about their region's current and desired trajectories, identify possible alternative futures and develop appropriate management options.

### **Conclusion (Slide 11)**

In conclusion I would like to reiterate the importance of using resilience concepts to improve how we manage landscapes' triple-bottom line – a well-functioning landscape should balance social, economic and environmental needs and values.

I am sure we are all keenly aware that our communities and industries rely on the services, functions and materials provided by our natural landscapes. However, we are only just starting to properly appreciate and plan for the significant role people play in how these landscapes function.

By better understanding the links between communities and their natural systems, we can start to harness the full capacity of private land managers and make real progress towards healthy, productive and resilient landscapes across the state.