

Risk governance for sustainable management of water

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Title slide

Thank you.

Agenda

I am hoping to bring a different perspective to the issue of risk management and governance.

I want to talk first about how three years with Metrowater led to thoughts about how to build a more effective and collaborative risk governance.

Good systems for collaboration make an organisation more effective internally. They also benefit relations with external parties. And so I want to talk about how an improved, more collaborative risk governance provides the key to managing whole catchments to achieve sustainable management of water.

Perspectives -1

At the start, coming into Metrowater was something of a culture shock.

Here I was, having previously led a relatively ordered existence, focused on long term issues, and with a skill-set in geotechnical engineering, sustainable development, and sustainable land management.

I also had picked up a fair amount of knowledge about urban environmental management and low impact stormwater, especially from an association with Waitakere City.

Perspectives -2

And here was Metrowater, at the tail end of their most recent restructuring, with all manner of things going on. The sort of things any water utility faces, but all the more challenging when you're just emerging from a 30% staff turnover.

Among the roles I inherited was being the departmental representative on the company's Risk Governance Team. This met on a monthly basis, and I was keen to see the practical, day to day side of risk management.

I also wanted to see what links were being made to concerns about sustainability.

Moving towards a better world-1

I think we can all see now, how we're all in this great period of transition. We're moving from what is to a large extent chaos, to a future state which just has to be much more harmonious, ordered, and sustainable.

So here we are now. It's warming. There are water scarcities. Many of us are still in ecological denial. Governance is fragmented. There's not a lot of trust around. And we have a legacy of infrastructure designed for a world of unlimited resources, with minimal competitive pressure from low cost Asian economies.

Moving towards a better world-2

But I do believe we are headed for something better. A more harmonious world, built on shared values.

And that world will have fairer and more efficient allocation of resources, especially water. There will have to be some form of global integrated governance. There will have to be more trust, to expedite global business relationships.

And our infrastructure systems will be more flexible. They will have a mix of hard and soft solutions – a blend of centralised and distributed. They will be more adaptive, and resilient to change.

And that change will be ongoing.

So I was interested to see what signs of this new world existed in a company that had just been redesigned and reconstructed.

Risk

First, we need to be clear what we mean by risk.

Risk involves the possibility of loss, not just through harm, but perhaps also through a lost opportunity. The outcomes and likelihood of occurrence may both be uncertain. Risk also involves a specified timeframe.

For a performance-managed organisation, a set of performance measures and targets represents a risk portfolio. It represents what the organisation cares about. And it provides the basis for integrating risk management into the fabric of the organisation.

Scientific risk management

Here is the old view of science-based risk management. Risks are identified from a variety of sources. They are captured in a risk register, and assessed and prioritised against company criteria. Controls are amended or put in place, and the results are monitored.

This process is especially suited to last century's less dynamic environments.

Today's complex environments

Now the situation is different. Organisations function as archipelagos of collaborating, semi-autonomous units. People must display a great deal of initiative and take on more responsibility for important decisions. This creates a need for something to guide people as they exercise more autonomy. And this brings us to the idea of governance.

Governance

Governance is what governments do. For an organisation, it is the actions that determine whether it achieves or fails in its objectives.

It is the body of policies, procedures, tools, guidelines, standards, and behaviours that collectively determine the actions taken by the organisation.

And so risk governance is what an organisation does to manage risk. For a water utility, virtually every decision or action has a risk dimension to it. Its business is risk management.

Values and culture

Metrowater cultivated a culture and set of values that facilitated risk management. This was the foundation for the behaviours that staff brought to their job. It provided the glue that helped to bind a highly networked, collaborative organisation. And the networks extended beyond the walls of the company's premises.

Clarity on values makes it much easier to define and prioritise performance measures, KPIs, and so on. And Metrowater was a company that had taken performance management to a high level. The CEO reported back, monthly, on cross-company performance. Trends in each performance measure would be analysed, and potential improvements identified.

The process provided much insight into how the company worked.

Current deficiencies

Despite this, from my perspective, there was room for improvement.

Firstly, the approach didn't handle correlated, interacting or systemic risks. Undoubtedly the risks and accountabilities identified in the risk register were a useful summary for the CEO and the Board.

But it seemed to me they didn't reflect the day to day realities. And the format used encouraged an unrealistic, machine-like view of the organisation, where risks are managed through an array of tidy technical patches. Yet we all know that organisations today are unruly and dynamic beasts. They are built around a constantly evolving array of human relationships, and they seem always to be in a state of flux.

Secondly, the approach gave only a nod to sustainability, and the company's interpretation of the term was left unclear.

Thirdly, there was no sense of engagement in a civic mission. For Metrowater, the nearest thing that we had in that regard was a set of KPIs that came from the LTCCP process.

Innovation phases

So, this new sustainable world is out there beckoning, if we only knew how to create it. It demands innovation, more involvement with science, and seeing further than narrow measures of efficiency. We can define our world narrowly, or be part of the global drive to achieve these improvements. If we want to create innovative, dynamic organisations, what better mission could we choose? And the evidence is there that we will need, and are entering into, a whole new phase of innovation. Information technologies and networks provided the basis for the most recent wave of innovation. Sustainability, and whole systems thinking, will be among the driving forces for the next.

Sustainability

Of course, there is the usual uncertainty about what sustainability means. But a sustainable city is made up of sustainable businesses and communities. So it is reasonable to take the perspective of the sustainable water utility.

Increasingly, people are inclined to phrase sustainability in terms of resilience, which really comes down to risk management – anticipating adverse circumstances and events, and putting in place measures to deal with them.

So a sustainable system is one which maintains its internal systems and processes. It is resilient to change, and continues to deliver its functions and meet needs.

And, this comes down to behaviour that is consistent with axioms of healthy, sustainable systems.

Axioms

We need to adopt as our values, the axioms of health and sustainability. Where do these come from? They follow directly from the requirement that our organisations and systems need to behave as ecosystems, if they are to be in harmony with the world around us.

There are seven of these axioms. These are the properties of systems that are healthy, maintain internal systems and processes, and continue to carry out their functions and meet needs in the face of ongoing change.

All systems that are healthy, resilient, and sustainable are nurturing, supportive, and stable. They contribute positively to their world. They know what they are about, they respond to change when it occurs, and if it persists, they adapt to it. And these definitions say what you'd expect them to say, and they provide a lot of guidance for selecting performance measures, in consultation with stakeholders.

UEHM

An organisation can and must be viewed from different perspectives. It can be viewed as a social system, an economic system, an ecological system, or as a cultural system.

So the sustainability axioms provide the basis for a complete 7 by 4, 28-sector systems health model. This is a universal health model. It can be used by any entity to assess, monitor, manage, and improve itself. Creative Decisions first produced it in back in 2004. We used it in work for Waitakere City Council in 2005, and presented it to the 2005 Auckland Stormwater Conference, and to the 2006 Conference of the Environment Institute of Australia and New Zealand.

We have been promoting it as a future NZ2100 standard for sustainability reporting, to help move beyond the mixed bag of reporting that we see today.

It's really just an expression of common sense.

28 ways

And so, for a whole range of entities, there are the same 28 ways of improving health, wellbeing, and sustainability.

The model applies to all kinds of systems – whether a water utility, a wastewater system, the entire water industry, a city, or a stream, river, or other natural ecosystem.

This generality provides enormous scope for building collaboration, trust, and unity of purpose, across a community.

Shared concern for the financial bottom line

Of course Metrowater's risk governance involved interactions with other entities - the consultants, the construction and maintenance contractors, the city council, Watercare, other utilities, and so on.

For some of these relationships risks were managed contractually. We used shared values statements, we might jointly identify and agree on risks, we used financial incentivisation using the NEC3 contracting process, and we even used alliancing.

The reality is that, with the possible exception of alliancing and NEC3 arrangements, other entities prioritise their own values.

What organisations have in common is a concern for the financial bottom line. This is the real shared value, the real common language of interacting organisations. And it is never more apparent than when it comes to the hard talk of cost sharing formulas.

Shared values – CSL

How much better it would be, if the values of health and sustainability were this common language.

These values should be applied explicitly. They should be shaping our performance measures, our risk portfolios, our improvement strategies, and our prioritisation processes. Right across the industry.

Benefits

To summarise, the benefits of this approach to risk governance are:

- It reduces the chances of omissions, and widens the scope of the risk portfolio
- It will deliver sustainability
- It allows an organisation to integrate its processes and plans
- It makes accountability possible, even for systemic risks

- It is dynamic, and always current
- And it creates a platform for relationship-building within the industry, and the community.

Rural issues

I'd like to talk now about how this axiom-based risk governance can help at the catchment scale to deliver sustainable management of water.

Firstly, the rural areas. At present, the big question we face is how far we can go in expanding dairying across the landscape to boost the economy.

Agricultural land use brings higher nutrient loads in streams. It brings higher suspended sediment concentrations, and higher concentrations of pathogens. All of these have impacts on communities and ecosystems. Intensifying land use, including associated irrigation works, is creating decision-making problems for councils. Yet increasing demand for food, worldwide, is an opportunity we can't ignore.

We need to find ways of moving forward that respect the axioms of sustainability.

Urban issues

And then of course we have the urban catchments. Urban development has destroyed stream ecosystems, the feeders systems of our estuaries and harbours. Reticulated drainage and the spread of impervious surfaces provides a fast track for pollutants to reach aquatic environments - many of which are low energy systems that accumulate pollutants.

And our continuing population growth means this is not going to stop. We have progress in low impact methods, but many of the problems require source controls, but so far these have been difficult to implement.

NPS

In May this year, the Government released its National Policy Statement on Freshwater. This requires Councils to establish objectives, limits, and environmental flows for all water bodies. It requires them to specify targets and ways to achieve them, and to ensure best practice. And it requires them to manage development in an integrated and sustainable way.

At the moment there is some debate and concern that the NPS fosters thinking that sees the health of stream systems and economic progress in terms of tradeoffs, rather than a collection of objectives to be advanced at different rates.

Whatever the result, the Government is evidently committed to an approach that is collaborative, integrated, and delivered catchment-by-catchment.

Integrated management rationale

We all want integrated management for a variety of reasons, both process and outcome related.

It offers the possibility of fair and sustainable management of water resources. Achieving outcomes invariably involves collective action, and if we get this going right, we can set quite ambitious rehabilitation and development goals. So, integrated catchment management supports a creative and visionary view of resource management.

In terms of process, there are the benefits of gaining efficiencies and synergies, and of providing a means for expanding out from nuclei of innovative management. And of course putting public funds into an integrated programme of catchment improvements is more defensible than simply investing in a project which just benefits a section of a community.

So the benefits of an integrated approach are pretty clear, but the question is how to roll it out efficiently across the country.

ICM requirements

Last year, MfE funded a review of integrated catchment management processes in New Zealand. The report gives a pretty good picture of what's needed for success. You need to have strong, ethical leadership, and clear goals. You need access to funds and to have the personal compatibilities that allow long term action plans to be implemented, monitored, and changed, if necessary. You need science involvement, and the involvement of local iwi.

All of this amounts to a big challenge for governance, especially if it is to be replicated in catchments across the country.

Integrated management efforts can be undermined by power imbalances and quick fixes. They can also come unstuck when they are not well integrated with existing governance. And commitment to underpinning values and principles can be weak and equivocal.

The one thing that the MfE report didn't highlight as a requirement, was a creative sense of opportunity. If these ambitious efforts are to succeed, people really must come together with the sense of making a contribution to the community, the economy, and the environment.

This sense of mission and opportunity is what creates momentum, and lies at the heart of successful governance.

Accountable networks - 1

Integrated management hinges on the effectiveness of a collaborating network of stakeholders, such as this. There will be a whole range of member entities, including subcatchment community groups, farmers, local and central government, iwi or hapu.

There are two broad views of what's required for accountability. One is that all the entities just need help to identify a shared future and what needs to be done to achieve it. The other is that people need help to build the sense of shared responsibility to ensure commitments are actually followed through.

Accountable networks - 2

So, you can see right away, that if everyone signs up to the same axiom-based values model, this will bring them together under a framework geared to performance management for sustainability. They will each be aware of, and use as second nature, the 28 ways of improving their health and sustainability.

And they can collaborate in applying the model, and in developing tools and methods.

Collaborative risk governance for ICM

Here we can see how the contributions of each of the players delivers catchment scale sustainability.

Across the top we see the set of catchment-level performance measures and risks arising from the agreed future. These are obtained by considering what healthy performance means, for each of the 28 risk areas.

Down the side is the list of catchment network components – the farms, the councils, the government agencies, and so on. Each of these has a set of functions in relation to the catchment and its performance measures. And by applying the sustainability axioms to themselves, they will identify sources of risk for their own performance. And so the chart shows the full set of stakeholder commitments to achieving the shared future.

Needed: social networking infrastructure

To make all this work efficiently and effectively, we really need a social networking website with spatial capabilities, that links together stakeholders that sign up to our sustainability model. This would provide an innovation infrastructure, open to international collaborators, and dedicated to sustainable management of water. As more and more entities embark on formal sustainability performance reporting, there will likely be a demand for verification services, and eventually for some form of certification to help members gain market benefits.

KiwiGrow

And we just happen to have a brand ready for that certification.

Conclusion

In conclusion, an axiom-based ecological health model provides a way for organisations and other entities to transition to risk governance that is more comprehensive, and more attuned to the needs of sustainability.

It can provide a platform for working with the community and the industry as a whole, and providing improved accountability

It's also a way of putting multiple stakeholders and entities onto a common footing, for framing the debate, and for identifying and helping to secure commitment to shared goals and actions.

With the help of social networking technology, we can build a nationwide urban-rural sustainability network and an international sustainability brand for this country.

Better World

.... and do our part in creating this better world.