2004 Chief Health Officer Seminar Series

Seminar Seven – 9 November 2004
Dr Stephen Dovers, Senior Fellow, Centre for Resources and Environmental Studies, Australian National University

Abstract:

Current Issues in Health Protection

Dr Stephen Dovers will take a more long-term view of risk and uncertainty in environmental management, also considering related issues in other policy sectors, including health.

Transcript:

Some of the things I'll talk about are discussed in a recent paper – S.Dovers (2004) "Sustainability and disaster management" in the *Australian Journal of Emergency Management* Vol 19, No 1, pages 21-24.

I should explain where I come from. I'm with the Centre for Resources and Environmental Studies, which is an interdisciplinary research unit (www.cres.anu.edu.au). Most people have a discipline. I'm supposed to have a discipline of public policy, but having travelled through ecology, law and geography and a few others I'm actually undisciplined in that way. It may show.

I don't really have a topic, but I have a question in terms of coping with risk and uncertainty and surprise and ignorance - and I'll explain those terms in a moment. I want to raise the question, not really try and answer it, of whether emergency management, resource and environmental management and, more broadly, sustainability and public and community health, are really natural partners. I will to portray three different ways of painting the common ground between those three domains – emergencies, health and environment.

I work mostly with environment and resource management. I also work a fair bit in emergency management and I know very little about public health so I want to see whether other people agree with what I believe are the connections between them.

At the broadest level the three domains are about managing interactions in and between complex natural and human systems with a lot of uncertainty – throwing in very often what scientists call 'non-linear change' or what other people might call 'those bloody horrible things that happened which we really didn't expect to happen and we've got to cope with'. All three are about the long-term viability and well-being of communities and I think there's been shifts in the three areas which are not dissimilar.

In emergency management there has been a shift from responding to acts of God - so-called natural disasters, which are often very unnatural - to managing human created risk. We no longer try to put, or we try not to put, dwellings in floodways and then respond to what happens. We actually see that we construct our risk. In public health as I understand it, there's been a move from reacting to the disease and problems to a more proactive approach. What we are really

doing is managing human behaviour that creates risks. If you have an unhealthy or vulnerable community you've got an unsustainable community.

Substantively there's a lot of common ground between the three domains in terms of substantive interactions during and straight after events and the interactions aren't always particularly constructive. With a bushfire we are trying to balance both before and after events, enduring issues of biodiversity, human safety, risk and health, traumas, excess smoke and so on. In flood control we've got river management, ecological issues as well as risk, water quality issues and so on. Very often people in the agencies meet too late. With climate change we're dealing with all three areas again, interacting at least where they should interact. Similarly, in major pollution events, on the ground policy management areas merge where health emergencies and environment coincide.

They're shared issues, or they should be, and I think they could be much better handled in a proactive sense before events than they are. We tend to get hung up on issues. We put issues and we put our agencies into silos. What's interesting is to think of the attributes of the problems that we face. Attributes of sustainability problems include:

- *broader and deeper spatial and temporal scales*
- possible ecological limits to human activities
- *irreversible and/or cumulative impacts*
- *complexity and cross-problem connectivity*
- *pervasive risk and uncertainty*
- poor information base, appalling monitoring
- *important assets not traded and thus not valued economically*
- new ethical dimensions (other species, future, distant communities)
- *systemic problem causes – embedded in lifestyle and behaviour*
- poorly developed theory, methods and techniques
- poorly defined policy and property rights
- novelty as a policy field

Now that's a list of the attributes of sustainability problems that make them from a public policy point of view really difficult. The ones that I have put in italics are the ones that I think are particularly shared between emergencies, health and environment/sustainability.

The phenomena we deal with cut across multiple scales and space of time. They are not neatly discrete in space or time. Often we're dealing with irreversible and/or cumulative impacts. We're not dealing with discrete impacts. They tend to be irreversible and cumulative. There's a lot of complexity and the problems tend to be connected to each other. In environment you cannot cope with an estuary if you're not managing the fishery, the upstream forestry, the stormwater from urban areas. You can't separate the issues and I think that's very similar in emergencies and health. A lot of the assets or a lot of the things we're dealing with are not traded in informal markets and therefore are not given economic value, or it's very difficult to assign economic value, and in the world we live in that's a problem. And finally in italics on the list are systemic problem causes, the issues we deal with, the problems they represent. The causes of those problems are deeply imbedded in production and consumption patterns, in lifestyles, settlement patterns, in the way we govern.

So it's very easy to only treat symptoms rather than causes. Yet getting below the attributes of problems we can see that we're dealing with quite similar sorts of problems, even though they

may manifest very differently. If you look at problems of that kind, they do not fit very well in a neo-liberal managerialist administrative world, in what can get funded for research, in what policy agencies can do and in the politics of discussion.

Unfortunately, many things that cut across space and time are complex and don't have an economic value on them so don't get handled very well in political sense. John Salter, who worked for many years in emergency management at the Macedon Emergency Management Institute, stated in a 1998 article in the Australian Journal of Emergency Management where emergency management had been, where it was heading and set out the trends (see slide).

EM used to focus on hazards and threats and now focuses much more on the vulnerability of communities. It used to be very reactive to events, it now seeks to be more proactive. It used to reside most of its responsibilities in single agencies. Now it looks to develop partnerships across government and with communities. It used to be very science driven and is now far more multi-disciplinary. Particularly it has moved away from actual risk and trying to measure that risk. It used to be about response management. Now it's about risk management, or is trying to be. It used to be about planning for communities, although some people would correct that and say it used to plan at communities, and is now much more about planning *with* communities. The shift is from a single issue/hazards approach to a much more all-hazards-integrated approach.

We can change the words in that slide fit natural resource management and environmental management instead very well – and I suspect public health as well. I won't say how far we are in the progression because that's very variable, and that is probably the case also in public and community health.

I hope I've made the point that the three fields – emergencies, health and environment - are very similar in many ways and very dissimilar in others. But there are strong similarities in the sort of problems, the sort of phenomena and the sorts of trends which we've been trying to put in place.

Now I'm going to deviate because I should clarify some words: risk, uncertainty and ignorance. Risk is where we can assign a believable probability distribution to the possible outcomes. We know the odds, or at least think we do. With uncertainty, we know the direction of possible outcomes and changes, but we really can't define probability distributions. In the realm of ignorance, the direction of change is unknown. Even with something that we can believably - or make ourselves believe - we know about, there is a possibility of large-scale non-linear change and surprise. Increasing intractability of the uncertainty is very much influenced by complexity and the connections between problems.

Now I think, certainly in the environment and certainly in emergency management, there's much more attention now being paid to the less tractable end of that spectrum.

In my own domain where does that uncertainty and that possible surprise come from? Basically, from the status of natural systems. We are incredibly ignorant about processes in the environment and change in those natural systems independent of human intervention - climate change, nutrient cycling, population fluctuations, changes in human interventions in natural systems, what we are doing to natural systems now which may create pollution or fire or extinction or nutrient collapses, or whatever, and the implications of those interventions. How serious are they?

A very uncertain area that many people often identify is the efficacy, or the results and the implications, of what we are doing in terms of policy interventions. We have a very unknown, a

very dynamic, system in which we are trying to intervene - and that makes it even worse, though we don't really look at the uncertainty of policy intervention very much.

Now I suspect the health sector might be better at that. In terms of decision making in the face of risk uncertainty and ignorance, in environment and sustainability, traditionally we were reactive to emerging problems. Research was a strong response but there has been a severe lack of long term environmental monitoring or monitoring of policy interventions and the efficacy of those interventions.

A reliance on quantitative risk assessment, a very strong reliance on that, and largely regulatory or educative policy styles are the policy instruments most used. Where we seem to be heading, although it's very variable, is a much stronger recognition of complexity and irreducible uncertainty. We know that in any practical timeframe we will still have to make policy commitments in the face of uncertainty – we still have to make decisions.

Then there's a much more proactive approach emerging, which is in some circles driven by the legal adoption of the precautionary principle that uncertainty should not be an excuse not to take preventive measures. Other emerging approaches include more research, but not a lot more monitoring, and a mix of qualitative and quantitative approaches. This is extremely challenging.

Comprehensive risk management is very much evident in quite a lot of environmental protection arenas as defined by Australian standard 4360. The latest innovation involves a move to what are known as 'NEPIs', 'new environmental policy instruments', many of which aren't that new, but involve self-regulatory, participatory and community based approaches and market mechanisms.

So, the big challenges in facing up to uncertainty in environment echo across all fields. Certainly modelling and responding to uncertainty and complexity in these dynamic link systems is one challenge. Sorting out the qualitative and quantitative approaches is another.

Then there's the question of implementing the precautionary principle, which is really just a codification of the social value that we should be more cautious with environment and probably with human health. But there is a need to turn that into operational tools for decision makers because the precautionary principle, as it is stated in the law, is not very instructive. It says 'thou shalt be cautious' and a decision maker says 'well what does that mean?' Risk management approaches and other decision support methods, which actually allow us to implement them, are a challenge.

Participatory policy designs and community-connected approaches are also key challenges and then there is the reconciling of different knowledge systems. Destroy trust and you're not doing well. One great way of destroying trust is not to set community knowledge as a valid information input to a policy process if you first said it would be participatory.

There are many challenges in institutions and governance. Creating inclusive processes in a fair and effective way and maintaining them over the long term is something that modern governments and political systems are not very good at. Next week is too far away to think about, let along 10 years off.

Then we must consider empowering institutions at new organisational scales. We have become very inventive in the environment at working at local district level and catchment scale and I think a lot of fields are trying that in all sorts of policy areas. But how do we empower that idea and make it work when the existing political and administrative units usually don't want to give up too much of their power and sovereignty?

My last challenge is really what the topic here is - comparative analysis of policy interventions.

We need to monitor policy interventions in the face of uncertainty because we don't know if they'll work. The idea of adaptive management which emerged from ecosystem management says it all – policy interventions are experiments, let's treat them as that in a rigorous sense.

Monitoring policy interventions may be done *within* fields - I suspect health professionals would all like to be able to know more about the efficacy of the policy interventions in health, we certainly would in environment - but also I think it may be done *across* the policy fields.

Can we, in addressing these sorts of challenges, learn across what I'm proposing are cognate policy fields? Can we learn across the fields of public health, environment and sustainability, natural resource management and emergency management? There is a lot of commonality yet they are largely dealt with as silos, which is a common problem in modern administrative systems.

They have similar problems and similar policy experiments so there should be an ability to expand the catchment of lessons. We don't know enough in our own fields, we don't have a lot of capacity to really look closely at what we're doing and to evaluate it, so if we can expand the catchment of knowledge by linking across fields, then that should be a good thing.

But we have to be quite cautious about transferring lessons from any management or policy context to another one. However, if we identify the similar underlying problem attributes (see list above) and the similar sorts of policy styles or instruments that are being experimented with, such as community based or market based, then that gives us a basis for framing links and looking for lessons a bit more rigorously.

There's nothing worse than people who want to take a smart policy blueprint from somewhere else and plant it in foreign soil where it will cause a disaster. An example would be the Cochrane collaboration in evidence-based medicine.

I'll put up three possibilities where I think things could happen between these policy fields.

One is for joint policy analysis projects, particularly of the communicative aspects of community based programs, where one can get greater insights by looking at the application of particular approaches in different fields.

The second is whole of government structures and processes. Whole of government is a very fashionable phrase and one would have to say that in a city state like the ACT we would expect it would be much easier than in the large unwieldy states such as NSW where I live. But I will give no judgement of how the inter-agency coordination of policy coordination in the ACT administrative system is. I'll let other people make that comment if they wish, though I think current experiences with water and fire and catchments has shown us that it could be improved.

Thirdly, we could learn from the institutional links that allow communication between the research community, the policy community and professional communities.

I hope I have indicated that there's at least the potential for more comprehensive linkages and there's a lot of joint learning waiting to happen between the three domains.