

# WENTWORTH GROUP

OF CONCERNED SCIENTISTS

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## Submission to the Productivity Commission Public Inquiry into Natural Disaster Funding Arrangements

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Given the costs and losses to society caused by bushfires, floods, coastal storms, hail and other hazards,<sup>1,2,3</sup> the Wentworth Group welcomes the opportunity to make a submission to the Productivity Commission's public inquiry into Natural Disaster Funding Arrangements. This submission outlines three main points:

- 1. Extreme Events, Climate Variability and Climate Change**  
The occurrence and/or intensity of extreme events leading to natural disasters will increase as the climate continues to change. This means that it is increasingly important for Australia to have institutional arrangements in place to effectively *prepare* for the impacts of natural disasters, as well as recover from them.
- 2. Importance of Strategic Planning for Natural Disaster Mitigation**  
To most effectively prepare for extreme events, disaster planning must be integrated into strategic land use planning systems, infrastructure and asset management at a regional scale.
- 3. Reform of Australia's Land Use Planning Systems and Funding Arrangements**  
Grants from the Commonwealth to the states should be issued on the proviso that funds will be reduced if local and regional governance arrangements, including statutory land use plans, allow development or redevelopment in areas known to be vulnerable.

### Extreme Events, Climate Variability and Climate Change

The geological and archaeological record of the last 5000 years and the historical record of the past 200 years point to the incidence of irregular, high magnitude extreme events in Australia. Many of these events are so rare and exceptional that planning for them is extremely difficult. However, there are many extreme events that do demand action by governments to address adverse consequences to human life and livelihoods, the economy and environmental conditions.

Climate change has the potential in Australia to change the historic pattern of climate variability and thereby exacerbate the impact of extreme events.<sup>4</sup> This potential, coupled with the inevitability of natural disasters under the current pattern of climate variability, will require a change in response and preparedness strategies.

Small changes in mean climate lead to larger changes in extremes. Over the last fifty years there have been increases in heat waves, very hot days, heavy rainfall events, very high fire danger days and reductions in cold extremes in Australia.<sup>5</sup> These trends will continue due to global climate change and the magnitude and impacts of these events will increase.<sup>6</sup> At a global level, the world's leading re-insurer, Munich RE, has stated:

“Whereas the increasing losses are primarily due to socio-economic developments (population growth, rising values, settlement patterns), the strong rise in the number of weather-related catastrophes can probably not be fully explained without climate change, especially as the number of earthquakes, volcanic eruptions and other geophysical events has only increased slightly”.<sup>7</sup>

These climate-driven trends point to serious negative impacts on the condition of our natural assets (soil, water, biodiversity and coastal zone). Now and into the future, extreme events will cause great damage to these natural resources, as well as to infrastructure and public and private property.

Our natural resources, their condition, extent and how they interact, have developed in response to the historical long-term climate and the extreme weather events that were part of it. They have developed a capacity to deal with the shocks of these extreme weather events and in some cases these shocks have become a critical part of maintaining a healthy system.

Failure to understand the long-term consequences of exploitation of our natural resources has meant that the viability of those resources, and the ecosystems they support, no longer have the capacity to recover from the extremes of the current climate. One example is the adverse effects of over-clearing deep-rooted native vegetation and the subsequent rise of water tables bringing salt to the surface following high rainfall events.

Urban development on highly arable flood plains, or in fire prone forests, provide additional examples of where past decisions have had disastrous consequences. In particular, the impact of climate change in increasing the severity and frequency of devastating bushfires in urban and peri-urban areas is now a matter of great concern.<sup>8</sup>

Infrastructure and properties exposed to sea level rise may be modified to withstand gradual change. Present evidence suggests that the rise in mean sea level is generally the dominant cause of the observed increase in the frequency of impacts from extreme coastal flooding events, even if there is no change in the variability of the extremes.<sup>9,10</sup>

Our failure to effectively manage natural resources under the current climate raises serious questions about our ability to manage these natural resources in the future, as extreme events become more intense and/or more frequent.

### **Importance of Strategic Planning for Natural Disaster Mitigation**

The nation suffers from lack of long-term planning that considers cumulative impacts. Individual developments may have a relatively small impact on the environment, but when combined, their cumulative impact can result in significant increased pressures or long-term damage to Australia’s land, water and biodiversity assets.<sup>11</sup> The focus on individual projects within the current planning system fails to consider wider cumulative impacts of activities on ecosystems,<sup>12</sup> many of which only manifest themselves many years, sometimes decades, after a decision to exploit the natural resource has been made.

Development decisions made in isolation of long-term consequences cause damage to property because of the long-term costs of extreme events, such as flooding, storm damage and bushfires. These dangers are not given sufficient priority in short-term planning decisions. For example, when housing estates or hospitals are built on floodplains where agriculture, recreation or conservation is a more sustainable land use, or when new homes are built in areas of high fire danger or in highly vulnerable coastal zones. There is now sufficient documentation of the costs of natural disaster to the Australian economy.<sup>13,14</sup>

Any regional planning must incorporate the potential impacts of extreme events linked to the changing climatology and hydrology of our regions. The increasing availability of regional-scale climate modelling should be used in integrated land use planning to incorporate likely risks due to extreme events.

When disaster planning is not incorporated into land use planning it causes problems of recovery and resilience and, potentially in the future, of maladaptation to climate change. Examples which highlight the critical need to understand the potential for maladaptation in any rush to build disaster defences without the consideration of long-term impacts, can be found in the 2013 publication *Natural Disasters and Adaptation to Climate Change*.<sup>15,16</sup>

To improve resilience to disaster impacts, it is important that disaster recovery actions take a holistic approach so that efforts do not renew risks or create new and different risks from extreme events.<sup>17</sup>

A growing economy and population implies increased competition for land. Australia has massive mining, coal and gas resources and many infrastructure developments in the pipeline; there are plans to double Australia's agricultural output;<sup>18</sup> and we expect to accommodate many million more people along our coasts. A lack of careful planning for these pressures, combined with the impacts of climate change, will create a series of compounding effects that will result in significant long-term degradation to Australia's natural capital.

Strategic planning also offers an opportunity to engage communities and decision-makers. Although challenging, it is important that communities and decision-makers acknowledge present and future change and have the willingness to implement adaptation actions and policies to address the changing risks associated with natural disasters.<sup>19</sup>

### **Reform of Australia's Land Use Planning Systems and Funding Arrangements**

Multiple independent reviews have recommended the wider use of strategic planning<sup>20,21</sup> as an efficient and effective way of addressing cumulative impacts on the environment.<sup>22</sup>

Good planning takes time: time to understand where and how development can safely operate without degrading land, water and biodiversity assets; time to align these priorities with other land use planning and infrastructure investment priorities; and time to engage with the community.

The Commonwealth should exercise its legal and fiscal powers to support a national partnership with state, territory and local government to invest in long-term integrated regional land use planning in those areas of Australia that are either the subject of the cumulative impacts of development (urban growth centres, sensitive coastal areas, and resource development areas), and/or are subject to significant risks from natural disasters and climate change. Grants from the Commonwealth to the states should be issued on the proviso that sums will be reduced if local land use plans allow development or redevelopment in known vulnerable areas.

Regional governance arrangements for the Productivity Commission to consider that are consistent with this recommendation, and that evaluate the risks associated with poor land use planning, could follow a model similar to that used in Canada (see Appendix).<sup>23</sup>

The Wentworth Group recommends the following steps to drive reform of Australia's land use planning and asset management systems:

1. Commonwealth, state, territory and local Governments should agree on a set of national standards for managing the cumulative impact of development on the environment, natural

disasters, and the risks posed by existing climate variability and the projected regional changes associated with global warming;

2. State, territory and local governments should reform their strategic land use planning systems against this agreed set of national standards;
3. The Commonwealth should tie future funding to states for infrastructure, disaster management and environmental programs being conditional upon states meeting those standards; and
4. An independent National Environment Commission should also be established to audit and report biannually to the Australian Parliament on compliance with these reforms.

## References

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- 13 As for note 2.
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- 17 As for note 16, p 246.
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- 21 Productivity Commission. 2011. *Performance Benchmarking of Australian Business Regulation: Planning, Zoning and Development Assessments*. Research Report. Canberra.
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## APPENDIX

### Governance Structure for the Canadian Natural Disaster Mitigation Strategy

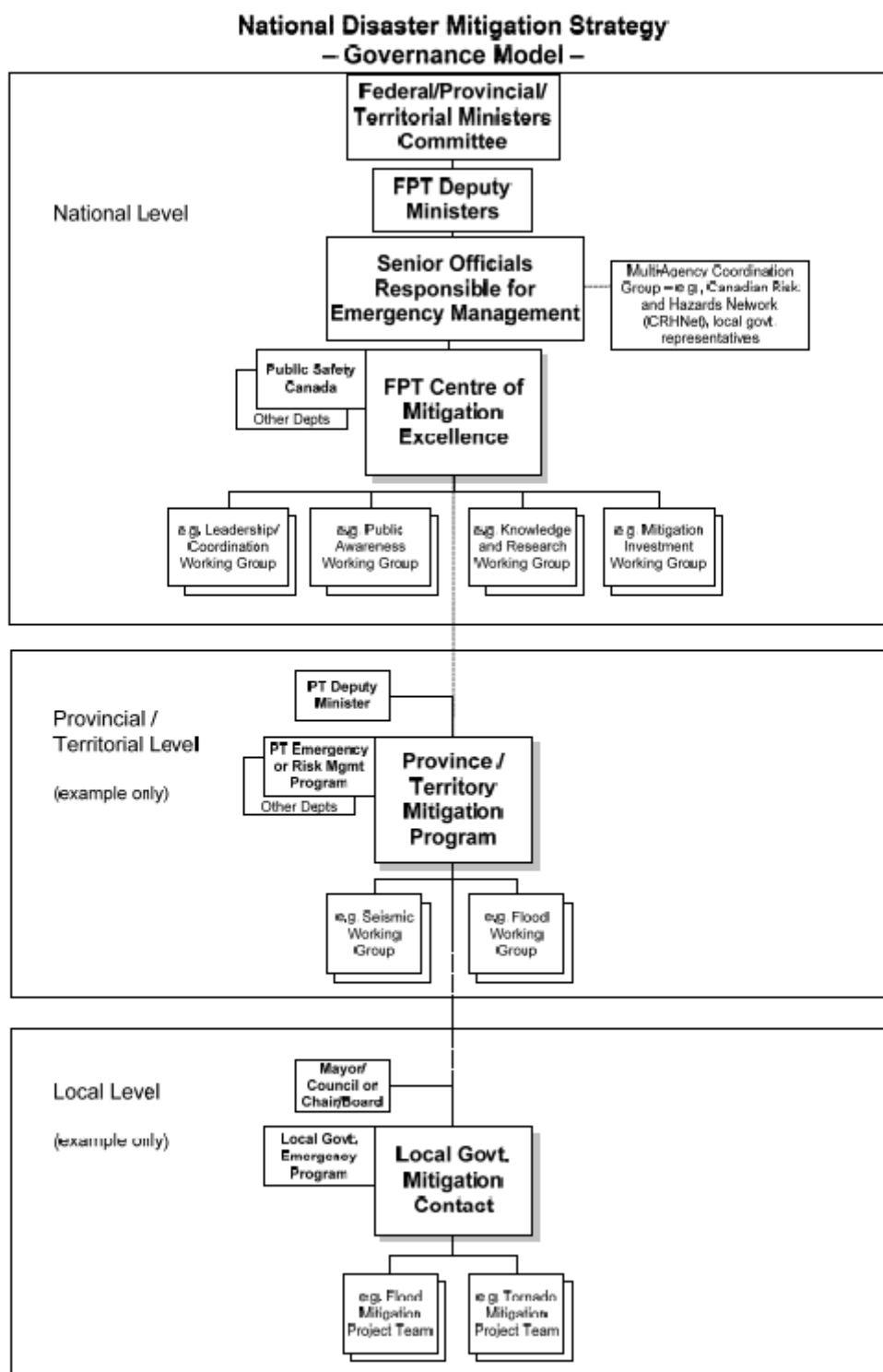


Figure 1: Governance Structure for the NDMS.

Source: Canadian Government. 2008. *Canada's National Disaster Mitigation Strategy*. 9 January 2008, p 5. Available at <<http://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/dsstr-prvntn-mtgtn/ntnl-dsstr-mtgtn-strtg-eng.aspx>>