SENATE INQUIRY INTO EXTREME WEATHER AND CLIMATE CHANGE

January 2013

AGAG is a regionally based Climate Action Group, one of many now operating throughout Australia. Our members are very concerned about maintaining a safe and sustainable climate & environment for the area in which we live, as well as considering the wider Australian and global scene.

Our group appreciates the opportunity to contribute to the Senate Enquiry into Extreme Weather Events. We would particularly like to address the issues of projected frequency and severity of extreme weather events, and their impacts on communities such as ours.

We are aware of the recent Bureau of Meteorology Special Climate Statement 43, as follows;

"The last four months of 2012 were abnormally hot across Australia, and particularly so for maximum (day-time) temperatures. For September to December (i.e. the last four months of 2012) the average Australian maximum temperature was the highest on record with a national anomaly of +1.61 °C, slightly ahead of the previous record of 1.60 °C set in 2002 (national records go back to 1910). In this context the current heat wave event extends a four month spell of record hot conditions affecting Australia." [1.]

This upward temperature trend fits IPCC projections from 2007. It is difficult though not impossible to say how individual events are influenced by climate change, but it is simpler to tell that the overall numbers are increasing.

For Victoria, the following scenario is forecast-

Victoria's climate is becoming warmer and drier. The daily maximum temperatures has increased by 0.8C (degrees Celsius) since 1950. In the extreme heat event of early 2009, both Adelaide and Melbourne set records for the most consecutive days above 43 degrees, and health authorities found that the heatwave contributed to the deaths of 374 people in Victoria.
Rainfall in the Murray-Darling Basin over the last decade is lower than 50% of the long-term average. Victorian rainfall in the last decade has decreased 13% compared to the 30 year average (1961-1990). The decrease in rainfall is amplified three-fold in reduced runoff to storage. Water inflow into Melbourne's storages over the last decade is one-third lower than the long-term average. Melbourne's water storage record low-water mark was broken in mid-April 2009, when storages reached 28.3 per cent of capacity, and the state experienced the equal driest start to the year on record. At winter's end, storage was lower at 27.8 percent.
The effect of lower rainfall is evident in agricultural production across Victoria and is affecting the viability of rural communities. More than 20 per cent of the fruit trees in the Goulburn Valley have been pulled up in recent years due to lack of water. DSE executive director Campbell Fitzpatrick has warned that a lot of communities in northern Victoria "are pretty close to Australia's first climate change refugees".
There has also been a general trend to more fire weather over the last 30 years. Global warming loads the dice in favour of more extreme fire events, so that higher temperatures, lower rainfall and declining soil moisture can combine to produce a "perfect storm", as happened in February 2009 when a record State temperature of 48.8C following 35 days of virtually no rain unleashed a firestorm with rating index of 190 (compared to 120 on Ash Wednesday, 1983 and 100 on Black Friday 1939) and with the energy of 1500 Hiroshima bombs.[2.]

Predicted climate change in Victoria
Based on IPCC figures, predicted "business as usual" impacts to 2070 include extreme impacts on water supplies, high impacts on building in coastal settlements, a 92 per cent decline in value of irrigated agriculture in the Murray-Darling Basin, and the disappearance of snow-based tourism in Australia. Under high-emissions scenarios, the temperature increase to 2070 in Victoria is estimated at 3C (range 2.1–4.1C) compared to 1950, and the average number of days over 35C would increase from 9 to 20 (Melbourne), from 11 to 28 (Bendigo) and 32 to 59 (Mildura). By 2070 Melbourne's average temperature would be similar to that of Echuca today.
Rainfall is predicted to decrease and the frequency of drought is likely to increase by between 10–80 per cent in the southern half of the state and by between 10–60 per cent in the northern half by 2070. Run-off into rivers is likely to decrease by up to 45 per cent in 29 Victorian catchments by 2030. It is forecast water levels in south-west Victoria's rivers will drop by one-third in the next 50 years.
By 2020, days of extreme fire danger are forecast to increase 5–25 per cent if climate change is low and by 15–65 per cent if it is high. In 2050, for a high emissions scenario, there may be 100–300 per cent more days of extreme fire danger a year. [2.]

Rainfall charts for Ararat show a trend line for 2050 of 350mm annual rainfall, compared with a current average of 550mm. This does not allow for forecast accelerating climate change, which will have even more dire results. There may be occasional large rainfall events, such as January 2011, but the average will be declining.

Locally, our communities have suffered several major impacts of changing climate, including;

1. 2006 Mt Lubra bushfires (2 dead, burnt 184 000 hectares, 25 homes destroyed, over 60 000 livestock killed, 1500 km fencing destroyed.) Some parts of the local community are still in recovery from this fire 6 years later.
   This fire followed 10 years of drought and was the result of a lightning strike which was not able to be managed by an under-resourced DSE, and caused enormous direct economic disruption to Halls Gap and other tourism facilities.
2. Floods in January 2011 caused $20.5 million damage in Northern Grampians Shire infrastructure alone, similar for Ararat Rural City ($13.4 million) and many homes and livelihoods were affected. Repairs to infrastructure such as 550km of roads and 30 bridges and culverts are still ongoing.

We are well aware of the need for adaptation and preparedness within the community for massive infrastructure disruption and health impacts.

A recent report by the Centre for Housing, Urban and Regional Planning, University of Adelaide titled "Australia's Country Towns 2050: What Will A Climate Adapted Settlement Pattern Look Like?" [3.] has analysed the vulnerability of country towns throughout Australia up to 2050 and examines their ability to adapt to climate change. This project has shown that Australia's country towns will be subject to a range of new pressures as a consequence of climate change. Some of the critical transitions include:

1. There will be increased pressure on health services, as some diseases and some risk factors spread to a larger proportion of the Australian land mass. Services that may already be stretched in country towns will then face greater difficulties in meeting need;

2. Infrastructure in some country towns will be found to be inadequate because of extreme events, or long-run pressures such as increased demand or more rapid deterioration. Examples of likely infrastructure deficits include:

3. Road and bridge infrastructure in the face of greater levels of flooding;

4. Electricity supply as a consequence of more frequent and extreme heat waves; and

5. Emergency services (including/predominately volunteer-run services) required to respond to a growing number and range of events.

6. Reduced rainfall and reduced river flows affecting communities dependent upon irrigation;

7. Potential impacts on mental health as communities are confronted by both more challenging climatic conditions and an increased incidence of emergencies; and,

8. Labour market/economic change as economic activity is affected by climate change.

Local Actions-
AGAG has recently been a partner in the Refit n' Save Project [4.] the aim of which was to build a network of product suppliers and services to support and engage 1000 households in retrofit activities.
The key finding from this program was-

"The Refit n' Save project has confirmed our theory that the general public do need support, guidance and tailored information to assist them in making sustainable choices. Questions posed by the public to our project officers and the feedback from our surveys and case studies, all indicate the need for a trusted third party to navigate the complexities of sustainable choices. We have also learnt that retrofitting homes takes place over many years as time and money allows and programs seeking to support this activity need to provide support and advice over the longer term."

Conclusion-
Clearly there is a need and demand for climate change adaptation measures, including security of water, food and energy supplies and their availability and affordability, and improvements in bushfire mitigation and safety.
All this needs to be achieved in an atmosphere of rising temperatures, decreasing rainfall and "energy descent", meaning that regional communities will have to be more self-sufficient.
The "Transition Towns" movement has a lot to offer in this regard, and their initiatives should be given more prominence in planning schemes.
We realise that our region is not as vulnerable as some other areas of Australia, but we intend to do all that we can to maintain a sustainable climate for ourselves and globally.

Yours faithfully,
Russell Pearse,
Chairman, Ararat Greenhouse Action Group Inc.

References-

1. Bureau of Meteorology, Special Climate Statement 43.
2. Environment Victoria- The People's Climate White Paper, A Community Action Plan for our climate.
3. University of Adelaide, Centre for Housing, Urban and Regional Planning, Australia's Country Towns 2050: What Will A Climate Adapted Settlement Pattern Look Like?
4. Central Victorian Greenhouse Alliance Incorporated, Refit n' Save Final Report, February 2012