

# **Report of April 18 Meeting 2013**

## **Royal Society**

### **Southern Highlands Branch**

**Speaker:** Dr Andrew Ash, Director, CSIRO Climate Adaptation National Research Flagship

**Topic:** Managing extreme weather and climate impacts: Fiddling while Rome burns

Dr Andrew Ash works closely with government agencies, businesses and communities, raising awareness of the need to adapt to unavoidable climate change. He oversees a nationwide portfolio of research projects, partnerships and collaborations. Dr Ash has a keen interest in better integrating our understanding of climate science with decision-making and developing ways to mainstream climate adaptation into policy and industry. Throughout his career, a feature of Andrew's research has been a systems approach that strives to examine both biophysical and management aspects of environmental sustainability.

Australia is a continent beset by climatic extremes – of droughts and flooding rains. There is a perception that we have adapted well to this climatic variability. However, drought, bushfires, floods and cyclones cause significant disruption to the economy, to the communities they affect and to livelihoods. Moreover, our settlement patterns mean that risk and exposure has been growing over the last few decades. Climate change will exacerbate these risks. In this presentation, Dr Ash examined these risks, and outlined how Australians can better adapt to climate variability and change. He also identified the cognitive and institutional barriers to change.

Adaptations our society has made to reduce risks associated with variable climatic conditions have involved changes to our building codes, emergency management and information dissemination. Dr Ash chose Innisfail in Far North Queensland to demonstrate the effectiveness of these adaptations. When a category 5 cyclone hit Innisfail in 1918, there were only 12 houses left standing and the death toll was approximately 75-100 deaths. In the recent category 5 cyclone Yasi which struck near Innisfail in 2011, there was only one cyclone-related death. Despite our reactive adaptations, or perhaps because of them, disasters are still costing the nation billions of dollars in natural disaster relief and recovery arrangements. In 2010-11, the cost was \$6116bn and for the following year \$3204bn.

The average wheat yield in WA was held up as an example of an adaptation to climate change in Australia agriculture. From 1940-1970, the average rainfall was 283mm falling to an average of 250mm in the following 40 years. Due to the adaptation of introducing new wheat varieties over these years, producers were able to more than double the

average wheat yield per hectare during the drier years. There is only a certain amount of improvement that can be achieved this way however.

Dr Ash emphasized the huge problems many of our cities now face because local councils in the past have allowed so much development in flood prone areas. Present owners of these properties, fearing falls in their property valuations, are now voicing opposition to any moves to have their ownership documents annotated that the property may be subject to flooding. Most councils are heavily engaged in sophisticated flood studies to examine both biophysical and management aspects of the problem.

Regarding South East Queensland, Dr Ash described the situation as “the perfect storm in waiting”. In 1946, there were approximately 500000 residents. Today there are 3.3 million people. The frequency of cyclones crossing the coast must be considered a changing risk to be urgently addressed.

The lecture was followed by a long question session from the 45- person audience. Dr Ash agreed to deliver a future lecture to expand further on new systems under development to mainstream climate adaptation into policy and industry.