THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

Centre for Social Responsibility in Mining

Sustainable Minerals Institute
Level 4, Sir James Foots Building
Cnr College and Staff house Road
St Lucia QLD 4072 Australia

Director
Professor Saleem Ali

18 January 2013

Submission to the Senate Inquiry on 'Recent trends in and preparedness for extreme weather events' from the Centre for Social Responsibility in Mining (CSRM), Sustainable Minerals Institute, University of Queensland.

This submission focuses, in particular, on addressing the following terms of reference of the Inquiry:

(b) (ii) the costs of extreme weather events and impacts on natural ecosystems, social and economic infrastructure and human health;

(c) an assessment of the preparedness of key sectors for extreme weather events, including major infrastructure (electricity, water, transport, telecommunications), health, construction and property, and agriculture and forestry;

(d) an assessment of the preparedness and the adequacy of resources in the emergency services sector to prevent and respond to extreme weather events;

We would like to bring the Committee's attention to a recently completed research project that we undertook for the National Climate Change Adaptation Research Program. The final report titled "**Extractive resource development in a changing climate: learning the lessons from extreme weather events in Queensland, Australia**" will be published on the 21st of January 2013, shortly after the closing of the public submission period.

In the project we examined past extreme weather events (droughts, floods and cyclones since 2000) in the coal mining-intensive Bowen Basin region of Central Queensland. We explored the direct and indirect impacts of these events on the mining industry, governments and downstream communities and examined the preparedness of these actors with reference to extreme weather.

For a copy of the full report please visit (after the 21st of January, 2013): http://www.nccarf.edu.au/publications/building-damage-following-2010-11-floods

Alternately a copy can be provided to the committee on request.

Project Rationale

Australia is not only a location of extreme climate variability but is one of the world's most vulnerable regions to anthropogenic climatic change. The dependence that national and regional economic structures have on mining-led export earnings combined with the resource sector's potential to impact significantly on environments and communities during extreme weather events makes the minerals sector an important area of focus for climate adaptation research. The project investigated coal-mining operations in Queensland, and examined both climate-influenced drought (water quantity) and flooding (water quality) challenges relevant to the future viability of the industry and local communities.

The project was based on two key premises:

- Adaptation to climatic variability can help inform the mining industry's long-term adaptation to anthropogenic climate change;
- There is the potential that dialogue about industry adaptation to climate change and variability can lead to greater industry engagement around the contribution of the industry to climate change – and enhance mitigation efforts.

Data for this project was drawn from a variety of sources, including a systematic review of literature, targeted interviews and workshops with representatives of relevant stakeholder groups, including mining organisations, local governments, state government agencies, other industry groups and regional planning bodies.

This submission presents key research findings with particular relevance for policy making across all levels of government. The project identified four important implications for policy and decision makers that are vital to assessing current adaptation efforts in the mining sector, as well as identifying opportunities that can further strengthen these efforts to deal with future changes more effectively:

1. Role of government

Clear articulation of the roles and responsibilities between state and local government is vital to preventing service gaps or overlap, and to prevent a top-down governance approach without consideration for local priorities, capacities and aspirations. The regional expertise and experience that local governments hold should be capitalised in developing climate change adaptation policies and strategies.

2. Role of communication, cooperation and collaboration between and among various stakeholders

Extreme events arising due to climatic variability require stakeholders to consider climatic challenges as a 'common' concern that can be best addressed by pooling available resources, exchanging information on climate data, sharing knowledge, skills and expertise in managing risks and disaster events, and rallying together at a local and regional level to demand improved services from state government agencies. Policy makers at the state and national levels can play a key role in encouraging and coordinating stakeholders to operationalise effective partnerships for climate adaptation.

3. Acknowledging extreme events as opportunities to drive innovation

Extreme events provide a unique policy opportunity to trigger innovative thinking, problem-solving, and a more resilient set of entrepreneurial skills. Policy makers at the national and state level can systematically encourage long-term innovation and creativity in building new relationships, networks, and knowledge for improved local adaptation to changing climatic conditions.

4. Learning the lessons from past climatic variability to inform future adaptation to climate change

Past attempts at responding to extreme events and climatic change can be examined to evaluate what worked, what did not work, and what adaptations to past approaches are necessary to better respond to a future repeat of similar events. Lessons from past climatic disaster experiences can generate organisation-level appreciation for proactive planning and flexible risk management strategies to deal with the underlying scientific uncertainty about future climate change.

The project was funded by the Synthesis and Integrative Research Program of the National Climate Change Adaptation Research Facility and was a collaboration between the University of Queensland's Centre for Social Responsibility in Mining (Vigya Sharma, Shashi van de Graaff, and Daniel Franks) and the CSIRO (Barton Loechel).

The authors are available should the committee wish to discuss any aspect of the research further,

Sincerely,

Dr Vigya Sharma, Post-doctoral Research Fellow, Centre for Social Responsibility in Mining, Sustainable Minerals Institute, The University of Queensland

Dr Daniel Franks, Senior Research Fellow, Centre for Social Responsibility in Mining, The University of Queensland