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GW047-07

Ms Karyn Paluzzano MP  
Chair  
Standing Committee on Natural Resource Management (Climate Change)  
Parliament House  
Macquarie Street  
SYDNEY NSW 2000

**Att:** Mrs Cheryl Samuels

Dear Ms Paluzzano MP,

**Re: Standing Committee on Natural Resource Management (Climate Change)**

## 1. INTRODUCTION

The Sydney Coastal Councils Group Inc. (SCCG)<sup>1</sup> would like thank the Legislative Committee for the opportunity to provide comment in regards to the Standing Committee Inquiry on Natural Resource Management (Climate Change).

Recognising that coastal areas will face some of the greatest impacts from enhanced climate change it is surprising that the Inquiry's 'Terms of Reference' is seemingly focusing specifically on rural issues. Evidence and opinion concludes that coastal areas require a significant focus in any assessment and investigation into climate change vulnerability and management, for example:

- **Australia Greenhouse Office, 2006, "International assessment of vulnerability of the coastal zone to climate change, including an Australian perspective" page iv Executive Summary:**

*"... assessment by the Intergovernmental Panel on Climate Change (IPCC) identify that Australian coastal systems are threatened by climate change and a disproportionate percentage of the population lives along the coast, climate impacts on coasts will be amongst those environmental issues of most concern to Australia over the 21<sup>st</sup> century".*

- **IPCC, 2007 Summary for Policymakers (Ch19: Assessing key vulnerabilities and the risk from climate change)**

*"Key vulnerabilities are associated with many climate-sensitive systems, including food supply, infrastructure, health, water resources, **coastal systems**, ecosystems, global biogeochemical cycles, ice sheets and modes of oceanic and atmospheric circulation. [19.3]"*

and

*Coasts are projected to be exposed to increasing risks, including coastal erosion, due to climate change sea level rise and the effect will be exacerbated by increasing human induced pressures of coastal areas D [6.3, 6.4].*

## • NSW Government 2003, NSW Government Statement

*'that coastal NSW is a special place in need of special recognition. It is facing a range of complex challenges arising from the increasing pressure of human settlement & tourism activity and requires a special management focus'.*

It is well acknowledged that the NSW coast is a very significant contributor to the state's GDP and requires specialist and focused attention to ensure that this is sustainable including the consideration of climate change impacts.

The coastal zone also contains much of the state's critical infrastructure of both state and national significance. Based on Department of Planning and ABS assessments, the NSW coast also constitutes more than 80% of the State populus and it is also visited by millions of visitors annually. The State's coastal zone is also facing an alarming population growth and is forecast to increase rapidly by up to 60% over the next 20-25 years (NSW DoP) creating many very significant planning and environmental pressures.

The SCCG therefore strongly engages the Inquiry to ensure full considerations of climate change issues in the coastal zone with a particular focus on vulnerability and the associated issues and needs to increase reliance of the community, industry and the environmental values within this region.

## 2. CURRENT SYDNEY COASTAL COUNCIL GROUP CLIMATE CHANGE ACTIVITES

The SCCG provides the below information in relation to key activities the Group is undertaken to assist its member councils and their communities understand and deal with impacts associate with climate change. These included:

- "A Systems Approach to Regional Climate Change Adaptation in Metropolises".
- "Quantifying the Value of Sydney (NSW) Beaches in order to assess cost / benefit of necessary coastal protection works / abatement measures as a result of enhanced climate Change impacts"
- "An assessment of Australian and NSW legislation and government policy provisions in relation to Climate Change relevant to regional and metropolitan NSW coastal Councils".
- Climate Change Fact Sheets

In addition to providing an overview of the above, this submission will briefly view some of the identified issues, needs and limitations facing Local Government in relation to managing the impacts of climate change. These have been identified by the SCCG through:

- Master's Student member council survey undertaken in 2005
- Outcomes from the SCCG Climate Change Workshop 2006
- Ongoing direct consultations with member council over the last 3 years and
- Preliminary outcomes of the recent SCCG / CSIRO Climate Change Adaptation workshops held in each of the 15 member council during August – November 2007.

Also attached to this submission are comments on the Inquiry's Terms of Reference provided by Clr. Natalie Stevens (Pittwater Council) SCCG Executive Committee delegate.

## 3. KEY SCCG PROGRAMS

### 3.1 A Systems Approach to regional Climate Change Adaptation in Metropolises.

As part of the Australian Greenhouse Office (AGO) National Climate Change Adaptation Program, the Sydney Coastal Councils Group (SCCG) have partnered with two CSIRO Divisions (Sustainable Ecosystems, and Marine and Atmospheric Research) working in collaboration with the University of the Sunshine Coast to undertake research on regional approaches to managing climate vulnerability in the Sydney region. The program is funded by the Australian Greenhouse Office with co-investment by the CSIRO and the SCCG.

## **Project Objectives:**

The aim of the project is to develop and trial a method for a systems approach to regional climate change adaptation strategies in large urban areas. The project aim directly addresses AGO priorities through:

- Developing and testing an integrated (systems) method to generate information about the likely impacts of climate change and feasible adaptation strategies in the Sydney region;
- Deepening the understanding of the likely impacts of climate change and resulting adaptation options in the Sydney region through integration of existing models, generation of new knowledge where there are significant gaps, scenario analysis, an analysis of adaptive capacity, and assessment of demonstration projects.
- Assessing the transferability of the integrated (systems) method to other large urban areas, with transfer to be facilitated through the project National Reference Group.

## **Project Outcomes:**

The project will benefit stakeholders in the Sydney region through:

- Generating information about the likely impacts of climate change (eg. flooding, coastal erosion and temperature) and feasible adaptation strategies (eg. capital works, education, and planning) in the Sydney region;
- Deepening the understanding of the likely impacts of climate change and resulting adaptation options in the Sydney region through integration of existing models, vulnerability mapping, and an analysis of adaptive capacity;
- Building the capacity of stakeholders in the Sydney region to implement, and monitor the success of, adaptation strategies (eg. for infrastructure, health, and biodiversity);
- Working with stakeholders (eg. SCCG member councils and other stakeholders) to build adaptation strategies into institutional structures and processes (eg. asset management plans, coastal management plans, estuary management plans, floodplain management plans, local environment plans, and regional environmental plans).

## **Elements of the Research Project**

### **a. Creation of a template for vulnerability mapping in the SCCG.**

In order to provide an initial basis for awareness raising and discussion, a template for vulnerability assessment and mapping in the SCCG has been created. This template utilises existing outputs from CSIRO and other relevant projects (e.g. UPRCT project) and presents them as simple spatial overlays. A major aspect of this phase is also to collate information on ongoing or planned studies and also identify possible impact models for application in the analysis of existing adaptive measures and capacity latter in the project.

### **b. LGA priorities and capacity for adaptation and determination of local contextual variables**

Workshops have just been completed in each LGA represented by the SCCG (15 LGAs across Sydney, representing over 1.3 million people). These workshops discussed the output of the regional vulnerability mapping process and used this tool to discuss individual priorities for adaptation and determine local contextual variables which may affect adaptation. The workshops also highlighted perceived specific local strengths and weaknesses with regards to building future capacity for responding to climate change.

A regional synthesis report is currently being prepared. Some initial outcomes of the workshop phase have included:

#### **Key Barriers identified by member councils:**

- Funding / Resources
- Lack of political will
- Lack of social cohesion

- Public awareness / perception
- Constraints of State and Federal policy
- Topographic/geographic constraints
- Poor planning for future needs
- Aging infrastructure
- Uncertainty of science
- Historical planning decisions
- Asset management and ownership
- Reluctance to change/accept new technology

### **Key Opportunities**

- Political will – clear leadership
- Opportunity for education and awareness
- Availability of funding and research
- Strong sense of place / Social cohesion
- New Technology and innovative ideas
- Opportunity for regional approaches
- New development
- Funding
- Regional advocacy
- State and Federal policy direction
- Partnerships – Government, Utilities, Education, Business

### **Some of the key learnings that Council delegates highlighted from the workshops included:**

- Climate change is a regional issue that requires a regional approach to management
- Barriers and opportunities for a council to respond to climate change
- Heightened awareness of vulnerability and adaptive capacity of Council
- The complex and varied impacts of climate change
- Link between climate changes and long term strategic planning
- Complexity and variability of issues surrounding impacts of climate change
- Identification of key focus areas for council

### **c. Analysis of existing adaptive measures and capacity**

3 Case studies will be conducted starting January, examining local council's adaptation strategies for three key cross sectoral issues that emerged from the regional and local workshops (eg. water, infrastructure / asset protection, public health). Recommendations will be made to councils on how to improve their adaptation strategies. Local councils will also be provided with monitoring and evaluation frameworks to help benchmark and improve those strategies into the future. The analysis will also help select and design demonstration projects for the 2nd stage of the project (2nd stage currently unfunded).

### **d. Write up of method, results, and transferability to other large urban regions**

The write-up will include detailed discussion of the application of a systems method to understanding climate vulnerability and adaptation strategies. The major focus of the final report will be the discussion of the transferability of the method to other large urban regions.

For more information on this project see:

<http://www.sydneycostalouncils.com.au/documents/AdaptationProjectSummarySheet2007.pdf>

### **3.2 Quantifying the Value of Sydney (NSW) Beaches in order to assess cost / benefit of necessary coastal protection works / abatement measures as a result of enhanced climate change impacts**

The Sydney Coastal Councils Group (SCCG) has engaged the University of NSW to undertake a valuation of Sydney beaches, and develop a process to assist Local and State Governments to make more informed decisions on how to protect coastal property, infrastructure, beach environments and amenity at threat of coastal erosion due to enhanced climate change impacts.

This project is to be undertaken as a three-year PhD project, supported by a grant from the NSW Greenhouse Office Community Action Grants Program worth over \$220,000. The project began in December 2006, following the appointment of the PhD candidate.

#### **Project Objectives:**

This project will determine the total economic value of selected Sydney beaches, in three different local government areas. These beaches have now been chosen after a rigorous specific selection process. The sites are intended to represent different biophysical environments: oceanic, estuarine and urbanised coastlines (sites are Narrabeen-Collaroy, Manly Ocean Beach, and Brooklyn-Dangar Island). This will provide a baseline value against which changes (natural or otherwise) may be tracked. The results of the valuations, including identification of stakeholder preferences for coastal attributes, will also be key knowledge inputs to the future management of the NSW coastal zone, particularly in the decision of how to protect coastal assets in response to sea level rise and other enhanced climate change impacts.

These results will then be used in developing a process for assessing coastal protection measures against social, environmental and economic criteria. This will enable more efficient utilisation of available beach management resources at a state and regional level, and explicitly demonstrate consistency with the principles of Ecologically Sustainable Development.

#### **Project Outcomes:**

The project will benefit stakeholders in the Sydney region through:

- Enhancing the understanding of the likely impacts of climate change and available coastal protection measures in the Sydney region
- Working with stakeholders (eg. SCCG member councils and other stakeholders) to improve the management of coastal assets in response to climate change impacts
- Developing a baseline value for coastal assets in three study sites to inform management actions, and against which management effectiveness can be assessed
- Identification of a process to value coastal assets, transferable between locations and at different spatial scales
- Developing an open and transparent decision making process to assess coastal protection options against social, environmental and economic criteria

#### **Elements of the Research Project**

##### **Stage 1: Calculation of Total Economic Value of selected Sydney beaches - Calculation of value from existing data sets within Sydney and NSW**

Existing proxy data sets from a number of key sectors (housing, tourism, fisheries etc.) will be identified, and information sharing arrangements with relevant data holders will be established. Environmental values captured by surrogate markets (such as the effect of proximity to the coast on housing values) will then be calculated for the three study sites, using a range of methods. Expected completion: June 2008

## **Estimation of willingness to pay (WTP) for coastal goods and services**

Key stakeholder groups will be involved in the development and testing of a questionnaire to determine willingness to pay for coastal amenities. Stakeholders will include: domestic and international tourists, residents of 'at risk' coastal locations, local business owners, and decision-makers in Local and State Governments. A number of survey delivery methods will be employed to capture values for both users and non-users. Questionnaires will be designed in such a way that they can be used at other sites in the Sydney region and elsewhere on the NSW coast. Expected completion early 2009.

## **Integration of values derived from previous steps**

The results of these valuations will then be combined to give an estimate of the Total Economic Value (TEV) of beaches in the three study sites, to be displayed graphically. The spatial distribution of values can be used to identify key privately and publicly owned coastal assets threatened by enhanced climate change impacts, and prioritise sites for allocation of coastal protection resources. The method/s of coastal asset valuation, including identification of publicly available and controlled information sources, will be transferable between locations and at a number of spatial scales. Expected completion early-mid 2009.

## **Stage 2: Development of process for assessing coastal protection proposals**

### **Analysis of existing coastal management framework and decision-making process**

The next component of the project is to develop a decision-making process in partnership with the coastal councils that will allow them to prioritise beach protection works necessary to respond to enhanced climate change impacts.

A key objective is to identify a process that allows for rapid assessment of projects against a range of environmental, social and economic criteria, and is transferable between locations and at different spatial scales. The selection of criteria will be informed by the values of coastal assets and social preferences identified during the valuation process.

### **Write up of method, results, and transferability to other coastal locations**

The findings will be presented in a final report to the SCCG and the NSW Greenhouse Office and will be broadly distributed to all interested stakeholders. Regular project updates will also be available via the SCCG website.

### **3.3 An Assessment of Australian and NSW legislation and government policy provisions in relation to Climate Change relevant to regional and metropolitan NSW coastal Councils.**

The SCCG has recently engaged the NSW Environmental Defenders Office to undertake a project titled *An assessment of Australian and NSW legislation and government policy provisions in relation to climate change relevant to regional and metropolitan NSW coastal councils*.

The aims of the project are:

- Identify where the terms **climate change, greenhouse and sea level rise** occur within all Acts, Regulations, Environmental Planning Instruments and Policies at Commonwealth, NSW and (NSW) Local Government levels.
- Provide an analysis and interpretation of the responsibility and necessary actions of Councils in NSW to implement the provisions identified.
- Examined potential common law liability

The SCCG and the NSW EDO are currently finalising the report after a targeted consultation. The final report will be freely available early in the New Year. The SCCG and the EDO are to also scope a series of state wide workshops for those interested to present outcomes of the investigation. Supporting funding for this project element is yet to be identified.

### **3.4 SCCG Climate Change Fact Sheets**

The SCCG Climate Change fact sheets have been produced as part of the Macquarie University / SCCG Memorandum of Understanding. 3<sup>rd</sup> year Environmental Science students were asked to prepare the fact sheets.

The Fact Sheets have been prepared for use by SCCG member councils to assist and inform their elected representatives and communities of the potential impacts of Climate Change.

The five Fact sheets include:

- Coastal communities in the Sydney coastal region
- Biodiversity in the Sydney coastal region
- Human health in the Sydney coastal region
- Sea level rise in the Sydney coastal region
- Storm intensity and frequency in the Sydney coastal region

Final facts sheets are available for download via the SCCG web page:

[www.sydneycoastalcouncils.com.au/climatechange\\_factsheets.htm](http://www.sydneycoastalcouncils.com.au/climatechange_factsheets.htm).

## **4. CURRENT LIMITATIONS AND NEEDS OF LOCAL GOVERNMENT**

Through various consultations with member councils over the last 3 years, the SCCG has identified some general limitations and needs of Local Government.

### **4.1 Limitations of Local Government**

- Capacity and expertise (technical knowledge, interpretation ability and staff turn over)
- Political will and lack of acknowledgement by some Councillors and Staff of issues generally
- Current workloads of professional staff limiting willingness and ability to address issues
- Historical decisions (ie development decisions, land use zonings)
- Historic practices, systems and management approaches (eg councils structures – (ie “silos”)
- Willingness to push the agenda / innovation (by themselves)
- Costs of capital works / infrastructure refurbishment
- Developer pressures / legal uncertainty / legal challenges
- General lack of support & directions from other Governments

### **4.2 Needs of Local Government**

(Information, Model Policy and Model Best Practice, Partnerships and Whole of Government Support and Demonstrations and Pilot Projects)

### **4.3 Information**

- General information on climate change impacts (applicable at regional and local scales)
- Consistent and digestible information at all levels and for various audiences:
  - Professional staff (planners, DA approval, asset managers)
  - Elected representatives
  - Community (inquiries and associated education programs)
  - For the development / infrastructure industry
- Needs for “standards” (ie best guess) estimates endorsed by Government(s) including State Governments for: temperature, Sea Level Rise, storm surges, rainfall and flooding for preparation of Local and Regional Management Plans, State Regional Strategies, NRM strategies and Investment Strategies and Environmental Planning Instruments

- Development of mechanisms and processes for the continuous review and updating (above)
- Relevant information to be available centrally, be consistent and be “marketed” to various audiences
- The provision of broad Policy(s) and Practice(s) gap analysis, both on a nationally and regional basis.

#### 4.4 Model Policy and Model Best Practice(s)

- Development of a National Framework – so to define actions and responsibilities (At all levels of Government to focus on mitigation and adaptation - A *Climate Change Act* ?
- Strategic Planning (policy integration, new / infill development, infrastructure provision and renewal)
- Standard Development Controls / Planning Controls
  - Set backs (Foreshore building lines) , flooding, storm surges, building codes, building design, and land use zoning
- Providing the ability to prioritise adaptation activities via a ‘systems approach’ (by sector & investment type)
- Biodiversity management (ecosystems / species)
  - Threatened species / ecological functions
    - Priority management (effort & investment)
    - Invasive species (effort & investment)
- Insurance Risk Assessments (will insurance be available & affordable)
- Emergency management planning and response. (*ie NSW Coastal Protection Act*)

#### 4.5 Partnerships and Whole of Government Support

- Between Governments (integrated Government responses – Whole of Government)
- Within Governments (multi-disciplinary / cross sectorial approaches)
- Between Governments and
  - Science, Industry, Community
- Development of regional based support mechanisms and services. For example, associated networks and regional support / coordination organisations (to provide peer support, research and pilot projects)
- Needs for legal / legislative compliance & associated whole of Government support in courts to defend development decisions / actions
- **Ongoing commitments of Federal and State Governments** to provide leadership, encouragement and incentives to Local Government, community and industry.

#### 4.6 Demonstrations and Pilot Projects

- Science / investigations at both regional and local scales
- Modeling Scenarios & Local interpretation processes, methods and tools
- Provision of standard building designs, building codes and their implementation processes
- Risk management systems, processes, guidelines and monitoring methodologies
- Decision support tools (priority setting, cost benefit analysis, life cycle assessments)
- Provision of hazard (exposure) and vulnerability mapping – eg storm surges, sea level rise, and inundation and flooding, public health, ecosystems) (eg including the urgent need from the state wide roll out the Hunter Region high definition digital terrain mapping project completed by the Department of Planning 2007 (include near shore areas).
- Policy implementation, (documenting processes and also failures),
- Monitoring, auditing and review processes.

## 5. CONCLUSION

The SCCG hopes that the above information is of use by the Inquiry. The SCCG also looks forward to seeing the outcomes of the Inquiry and providing any further information on request.

If you wish to clarify any matters raised in this submission please contact the Group's Executive Officer, Geoff Withycombe on phone 9246 7791 or email [geoff@sydneycoastalcouncils.com.au](mailto:geoff@sydneycoastalcouncils.com.au).

Yours sincerely,



Clr. George Copeland  
Chairperson



**ATTACHMENT1**  
**Comments provided by Clr. Stevens (Pittwater Council)**

**b) options for ensuring ecologically sustainable natural resource use, taking into particular account the impacts of climate change:**

The largest factor contributing to Australia's Ecological Footprint is carbon dioxide emissions from fossil fuels. An improved and integrated public transport system powered by renewable energy could assist in dramatically reducing this footprint.

Every home in temperate Australia produces about 15 tonnes of greenhouse gases annually. Heating and cooling homes adds cost to energy bills and impacts climate change. The amount of energy needed to stay warm in winter and cool in summer can easily be reduced by the good design and construction of homes.

Recommended measures to reduce greenhouse gases in building design include:

- \* Five - Ten star NatHERS rated homes
- \* the orientation of windows and shading to the sun's path and local breezes
- \* including adjustable shading mechanisms
- \* appropriate location and suitability of landscaping
- \* Development Control Plans requiring water tanks, solar generating devices, waste recycling initiatives and sustainable materials of building construction.

Adequate consultation regarding appropriate uses of a system of marine parks along the NSW Coast and its estuaries could assist to ensure sustainable habitat of fish stocks.

**c) Approaches to land and water use mgmt practises on farms and other natural resource mgmt practises, having regard in particular to the role of such practises in contributing to climate change or as a tool in helping to tackle climate change:**

The transportation of food products contributes significantly to climate change. To assist in tackling this aspect of climate change Council Local Environment Plan's (LEPs) could require sufficient land on site is available to enable self sufficiency in food production and/or local community gardens for food production.

A reduction in public domain energy consumption could be facilitated by the widespread introduction of energy efficient street lighting.

The facilitation of local community renewable energy co-operatives could dramatically reduce the demand and use of fossil fuels whilst enabling public energy provision to continue.

**d) The effectiveness of mgmt systems for ensuring that sustainability measures for the mgmt of natural resources in NSW are achieved, having particular regard to climate change.**

The Introduction of Quadruple bottom line accounting is required - the true costs of environmental impacts are an essential component in the valuation of assets and services, the environment is also a valued asset which performs essential services.

The NSW State Government has introduced the requirement for local Councils to have a ten year Strategic Plan. Local Councils could also be required to develop and include a Climate Action Plan in their strategic plans delivery program. This could assist with the effectiveness of strategic planning in communities in regards to climate change.

Education, research and development is an essential component to tackling climate change. Facilitating the introduction of local climate change research, development and learning centres could assist in ensuring that sustainability measures for the management of natural resources in NSW are achieved.

**e) The likely consequences of national and international policies on climate change and natural resource mgmt in NSW.**

Comprehensive legislation and budgetary review is required to account for climate change. It is necessary to examine the consequences of signing the Kyoto Protocol and to respond accordingly.

Kind Regards,

Cr Natalie Stevens  
Pittwater Councillor  
Ph:0415 221 239