CLIMATE CHANGE ADAPTATION: MEASURING INDIVIDUAL COMMUNITY RESPONSE IN COASTAL AUSTRALIA

MAJOR FINDINGS AND OUTCOMES:

With climate change and its impacts accepted by the scientific community and majority of society alike (Clark 2011; Mummery 2011; Philp *et al.* 2011, Nelson *et al.* 2007), focus is now shifting toward action (Hedger *et al.* 2008). One approach to attenuating the impacts of climatic change is through 'adaptation' and the development of policies that promote 'adaptation'. With over 85% of our population living within the coastal region (DCC 2009), it is argued that adaptation to climate change for coastal Australian communities is not desirable, but *vital*. Many coastal communities are heeding this warning by developing strategies to attenuate the impact of future changes to our climate. What remains a fundamental gap in our knowledge however is the level to which coastal communities have adapted and/or complied with adaptation plans. This research attempts to address this gap by developing an adaptation evaluation matrix for coastal communities in an attempt to highlight comprehensive approaches to adaptation and identify areas of inaction.

Through a review of published adaptation plans, and coastal adaptation theory, a collection of adaptation measures were defined and categorized by impact sector. A metric was then linked to each individual measure and combined to develop an evaluation matrix. The viability of the matrix was tested through an application to two Australian communities exhibiting varying degrees of adaptation. The Western Australian City of Bunbury, lacking an adaptation plan, demonstrated the matrix's use as a first pass or baseline assessment, whilst the Victorian City of Greater Geelong, highlighted compliance to an adaptation strategy already in place.

Although the City of Bunbury has not yet implemented a formal adaptation strategy, autonomous adaptation is occurring through bottom-up action. Bunbury's highest sector score was in Education indicating that action at a local scale to a locahas n

SIGNIFICANCE:

The Adaptation Assessment Matrix presented in this research is the beginning of what will be an effective tool to effectively facilitate adaptation. With use as a baseline to evaluate existing adaptation, and to focus ongoing adaptation as an auditing tool, local governments will have access to the guidance that has been lacking. Vertical and horizontal integration will be enhanced and scientific integration facilitated, having been highlighted as limiting factors to effective adaptation action. Lastly, as a by-product in application of this framework, adaptive capacity will be verified, highlighting local government areas lacking the resources of impetus to adapt effectively.

FURTHER RESERCH SUGGESTIONS:

There is a great potential to improve this research and increase to robustness of the argument presented, the Adaptation Measures Table and the Adaptation Assessment Matrix. The nature of this dynamic field dictates that additional literature and strategies develop regularly, all of which could contribute to the validity of this research. It is proposed by the author that further application of the Assessment Matrix will allow a more accurate scoring system to be developed, due to the qualitative and often subjective nature of the evaluation methodology utilised. Further research into more specific comparison of case studies at similar stages of adaptation is also required. This honours thesis aims at a first attempt of sorely required research, but cannot be fully addressed in such a limited time period. Further time, development and resources are required to improve the veracity and robustness of this research.

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