COASTAL COMMUNITIES 2150: BUILDING RESILIENCE & REDUCING VULNERABILTY THROUGH COMMUNITY ENGAGEMENT

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Introduction

Climate change is expected to affect coastal communities globally over the coming century. Sea Level Rise (SLR), although only one part of climate change science, will be one of the greatest consequences seen at the coastal zone, with increasing flood risk, coastal erosion and saline intrusion posing a host of socioeconomic and environmental pressures. The successful integration of the natural, physical, social and economic processes occurring at the coast will be a major challenge (Nicholls and Branson, 1998) and will be key to ensuring the sustainable management of coastal systems. Gaining public support for climate change adaptation policy depends on a clear understanding of how people process information and make decisions (Center for Research on Environmental Decisions, 2009) this equally applies to any future alteration to current shoreline management practice.
Coastal Communities 2150 (CC2150) is a three year €2.9million communications project, co-funded by the INTERREG IV A Two Seas Programme, engaging and helping vulnerable communities who are at long term risk from coastal climate change. The project is a partnership between Hampshire County Council (UK), Kent County Council (UK), Alterra (part of Stichting Dienst Landbouwkundig Onderzoek, the Netherlands), the Province for West Vlaanderen/Coordination centre for ICZM (Belgium), the Agency of Coastal Maritime Services – Coastal Division (Belgium), and the lead partner, the Environment Agency (UK). The project has been extremely well received by the chosen priority communities and has been strongly supported by INTERREG programme.

Coastal Resistance, Vulnerability, & Resilience

Whilst there has been increasing progress towards more sustainable shoreline management over the last decade or so, and more specifically in the UK through the recent second round of Shoreline Management Plans (2010), there is still public pressure towards maintaining the perceived status quo at the coast. This attitude conflicts with some of the ongoing changes in policy concerning erosion and flooding and in effect reduces coastal resilience by influencing political process in favour of established protection policies which hold the line; many of which are not economically or environmentally sustainable in the long term. This attitude was identified as a problem by Leafe et al in 1998 and is a problem that still persists now, some 13 years on.

Coastal systems and communities in Europe can be viewed as less vulnerable to climate change and SLR than other global regions, given that socioeconomic vulnerability is determined by impact potential and society's technical, institutional, economic and cultural ability to prevent or cope or adapt to risk (Klein et al 1998). There is however a pressing need to redress the balance between the protection of people and the economy against the costs of degradation to the coastal environment. The process of increasing coastal protection has arguably increased the resistance of the coastal system at the expense of resilience (Klein and Nicholls 1999). Methods aimed at reducing the physical risk of flooding and erosion in the longer term may increase the vulnerability of populations to such events in the future. Vulnerability therefore, is registered not by exposure to hazards and risk alone; it also resides in the resilience of the system experiencing the hazard (Turner et al 2003). Resilience in its original form is the capacity of a system to maintain itself despite a disturbance (Holling 1973, 1986). Human systems

are naturally resilient and, despite the uncertainty surrounding the rate and extent of sea level rise and the inherent difficulty this poses for decision and policy makers, we can be fairly certain that communities will adapt to them through necessity. However the amount of disturbance can be managed, in human terms, in order to reduce the overall loss and to embrace the disturbance as an opportunity for positive change.

Tompkins and Adger (2004) outline that building resilience into human-environment systems is an effective way to cope with change characterized by future surprises or unknowable risk. Understanding how to reduce social and natural vulnerability to climate change and sea level rise, by building resilience, then becomes an exercise in adaptation planning. (Dolan and Walker 2004).

The CC2150 Project

Resistance, resilience and vulnerability were once concepts related more to philosophy than with devising real solutions to the problems of coastal systems (Stratton, 2006) however, over the past five to ten years there has been a notable filtering down of the concepts from academia into policy. The CC2150 project is one such example that looks forward to the year 2150 and aims to help communities increase their understanding of how long term climate change will affect the coast line they live on and how they can adapt to these changes. Through engagement, the CC2150 project aims to reduce the vulnerability of coastal communities by building their long term resilience to future coastal change. The year 2150 was chosen because it encourages people not to focus wholly on the short term issues without being so far in the future that they cannot relate to the time frame.

Berkes (2007) outlines the four clusters of factors relevant to building resilience, all of which underpin the thinking behind the CC2150 project. These are (1) learning to live with change and uncertainty, (2) nurturing various types of ecological, social and political diversity for increasing options and reducing risks, (3) increasing the range of knowledge for learning and problem solving, and (4) creating opportunities for self organisation, including strengthening of local institutions and building cross scale linkages and problem solving networks.
Set in a European context the CC2150 project takes a strategic cross border approach and looks at the issue of SLR from within a variety of political frameworks where the historical evolution of coastal management has been influenced by different culture, society and economics.
Each partner has established their own community engagement groups building in careful consideration of the social and physical barriers to engagement on climate change issues (Sutton, 2012). They will develop and test a suite of new communication tools, chosen in consultation with their local communities, that will increase awareness of coastal climate change and the economic, environmental and social sustainability of the shoreline management options available in the future. From this position of knowledge communities will develop their own long term coastal visions and adaptation plans. CC2150 partners will learn from each other's pilot communities and use this to improve integrated working and how they plan for coastal climate change issues at a local, regional and national level. Experience and best practice will be shared at the end of the INTERREG funded project with the hope that the lessons learnt and communication toolkits will be transferable and used beyond the life of the project funding.

Conclusions

It is clear that decisions about future coastal management options concerning SLR and its implications cannot easily proceed without a strong grounding in coastal climate change science and equally decisions regarding mitigation and adaptation by government institutions and society, cannot easily move forward without a sound understanding of social values. CC2150 is a genuinely interdisciplinary project aiming to bring together the

natural and social sciences. Future coastal management in the face of SLR will ultimately and unsurprisingly be governed by the degree and speed of changes seen to relative sea level and any alterations to extreme weather such as storm surges. Hopefully though, as a result of the CC2150 project, it will also be influenced by an increased understanding of coastal climate change and SLR within the CC2150 priority coastal communities. This will involve not only the consideration of how SLR effects communities physically, socially and economically but also how the choices communities make in terms of adaptation will affect the natural system and its resilience, and ultimately then the long term vulnerability of coastal communities.

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