



Are we all on the same boat? The challenge of adaptation facing Portuguese coastal communities: Risk perception, trust-building and genuine participation



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ARTICLE INFO

Article history:

Received 11 April 2013

Received in revised form

14 November 2013

Accepted 17 November 2013

Keywords:

Coastal change in Portugal

Adaptive coastal governance

Public participation

Financing coastal adaptation

ABSTRACT

The Portuguese coast is experiencing severe erosion and loss of beachfront, processes which are expected to become worse with climate change impacts. These additional alterations are beginning to show at a time when financing for conventional coastal protection is no longer guaranteed at scales of investment which are likely to be required if future coastlines are to be maintained. This paper looks at how residents and key stakeholders of three coastal communities in Portugal perceive such possible changes, how far they judge and trust current coastal management, and how they perceive their current participation and foresee future forms of involvement on adaptive coastal change. The evidence from these surveys and interviews suggests that there is a strong commitment in each location to maintaining current levels of coastal protection, and to preserving the integrity of local societies and economies, even though there is also recognition that adaptation in some form will eventually be required. However, our research reveals that there is not yet sufficient trust between coastal stakeholders, especially towards public institutions and policies, for any degree of progressive coastal adaptation to take place. Building trust in creative learning processes of progressive adaptation could lead to improved science and participation along with a meaningful dialogue over cooperative coastal planning and financing. The research undertaken for this paper lays the groundwork for such a process of trust-building to begin.

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Introduction

Inhabitants of Portuguese coasts are facing difficult choices. Over the past three decades, rates of erosion have measurably increased. This is a consequence of a reduction in nourishing coastal sediment flows due to sand extraction; construction-derived alteration, inland, of rivers and estuaries; and deployment of shoreline groynes (Dias, 2005). The conduct of coastal policies in the country has been characterised by a lack of policy continuity, ill coordinated management, and patchy political support. This has led to unplanned urban sprawl along much of the Portuguese coast, including illegal construction (Carneiro, 2007; Schmidt et al., 2013a). Portuguese coasts are locations of social transformation

and economic investment. They are threatened by unavoidable risk, but do not yet enjoy the local commitment for socially and economically fair and viable transformation. This case study based paper encapsulates these dilemmas.

Major assessments of coastal change (Nicholls et al., 2007; Dawson et al., 2009) provide evidence for increasing vulnerability of people, economies and ecosystems. According to Dawson et al. (2009), over 1.2 billion people are nowadays at risk in coastal economies, especially in coastal areas where population densities lie well above the global average. The IPCC Fifth Assessment Report (2013, 13–47) emphasises the increasing vulnerability of communities and economies to coastal change, particularly over the medium term. The report offers a range of possible sea level rise projections based on various scenarios of greenhouse gas emissions to 2100. The most likely increases lie between 40 cm and 72 cm. The IPCC also reports the tendency for increased storminess and wave heights and encourages the use of more scenario-based coastal modelling so as to take into account the inevitable uncertainties attached to these predictions (Nicholls et al., 2007). The need for adaptive coastal response is urgent, but in a manner which is sensitive to local coastline changes and local cultures; hence the setting for this paper.

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Portuguese coastal settlements are very popular and, until recently, very attractive for development. Since the 1960s the Portuguese economy has been increasingly dependent on the coastline due to its attractiveness for tourism, housing and other economic activities (Freitas, 2010). By the end of the 1960s, Portugal received roughly 1 million tourists, a number that grew steadily, reaching 12.3 million foreign visitors in 2007 (INE, 2013). Although official policy was to encourage tourist related investment so as to attract international revenue, the Portuguese themselves also started to use their beaches to a previously unknown extent (Schmidt and Prista, 2010). In spite of the economic recession, tourism economic activity continues to increase in the country, having contributed 9.2% to GDP (around 16 billion Euros) in 2010 (Tourism Institute, 2011).

Mass tourism and the suburbanisation of the coast are well in tune with another major motor of the Portuguese economy: construction. This sector (gross production) normally represents around 10% of Portuguese GDP, but a decade ago (2002) it reached 20% (Euroconstruct, 2012). Portugal is, after Spain, the Eurozone country with the highest rate of second homes, mostly concentrated on the coast. In the wake of the economic recession, more than 12% of total dwellings are currently empty (INE, 2013). The economic vitality of coastal communities is a significant issue for determining the future prosperity of the nation. Yet cutbacks in public spending and the general deficit in growth add a second front of danger for the viable future of Portuguese coastal economies, namely underinvestment in protection and adaptation.

Financing for coastal protection is available from both the Portuguese national budget and European Union Regional Funds. These sources pay for expensive engineering projects to maintain beaches and to retain overall shoreline integrity. An investment plan for the Portuguese coast was approved for the period 2007–2013 with a total budget of 550 million Euros, of which approximately 55% were from EU funds, within the National Strategic Reference Framework (NSRF). By May 2012, around 100 million Euros had been spent, the biggest share in coastal defence (41%), mostly in sand nourishment. Another 75 million Euros is likely to be spent on coastal defence by 2015, primarily (64 million Euros) in high risk areas (Ministry of Agriculture, Sea, Environment and Spatial Planning, 2012). The EU authorities are looking for more fundamental understanding of coastal change with a sound evidence base, and a higher level of capacity for managing financing (personal communication, 2012). The weak economic status of Portugal has resulted in a progressive increase in EU co-financing rates, reaching 85% in August 2012 (NSRF, 2012). Although environment and coastal protection will continue among the main priorities for EU funding, there is no official guarantee that the necessary support funds will be available either at the regional or local level from national budgets, given that public expenses have been cut in all sectors, except for military and foreign affairs.

It is clear that conventional planning and top-down decision models based on overlapping local, regional and central institutions do not adequately address the kind of challenges which most coastal communities nowadays have to face (Schmidt et al., 2013a). The complexity of processes – physical, social, political and economic – affecting urban coastal areas requires proactive and adaptive forms of governance. These complexities are necessarily variable according to the geography and history of coastal experiences. This is why we adopt a case study approach following up on our earlier work at the national level (Schmidt et al., 2013a). The emerging national coastal adaptive strategies require much sensitivity towards local economic, cultural and political circumstances.

Objectives

We present three main objectives for this paper. These are set in the context of three coastal communities, located in the Central, Lisbon, and Southern regions of Portugal.

- To gather and characterise the views of a sample of people regarding the risks they face for their coastlines and for their economies.
- To elicit how people judge and trust current coastal management institutions in dealing with the threat of coastal change.
- To explore the potential for genuine participation and local engagement, including innovative forms of financial collaboration, as the basis for a more adaptive coastal management process in the communities concerned.

Adaptive coastal governance and participation

At its heart, adaptivity requires a supportive relationship between democratically accountable managers and policy delivery, and the informed consent of all relevant interests whose support for both prospective planning and financing is vital if flexible progress is to be achieved. What seems to be critical to initiate adaptation is a credible mechanism, based on a trusting sense of fairness, for bringing the science of coastal change into alignment with the hopes and fears of the various coastal publics. Consequently local coastal perceptions of possible danger and safeguard need to be set in terms which are scientifically underpinned, yet consistent with culturally acceptable rates of physical and policy adjustment. In essence the requirement is to combine the knowledge of expertise with the knowledge of social learning. This delicate relationship is vital since real economies and jobs are at stake, important levels of investment are involved, and collective social agreement has to be achieved.

Given the context of policy fragmentation, economic vulnerability and increasing need for cooperative financing in coastal areas, *genuine participation* by local stakeholders and the public is crucial, building on existing and potential social capital (Adger, 2003; Dolan and Walker, 2004). Indeed, it has been shown that natural resources in general – and specifically in relation to coastal zones – can often be better managed when stakeholders are directly involved in the management process (Edwards et al., 1997). Participation by stakeholders who are most directly affected by management decisions can increase compliance, reducing the need for enforcement (Smith, 2012). Furthermore, it has also been demonstrated that the actual quality of environmental decisions tends to improve when all relevant stakeholders are involved in the decision process (Beierle, 2002).

The perception of a *common risk* – in the case of coastal zones, the impacts of extreme weather events and coastal retreat – may contribute to the development of a stronger *sense of community* and thus better prepare coastal populations to respond and adapt (Webler et al., 2001; Dolan and Walker, 2004; Manzo and Perkins, 2006). But to achieve an adaptive governance approach, a consistent *trust* between different institutions dealing with coastal issues, as well as between these and the range of interested stakeholders, has to be brokered (Milligan et al., 2009).

Urban coastal areas like the ones we will present in this paper are characterised by different types of social groups and a multitude of actors, often with competing interests – tourism, fishing, local business and environmental organisations – and with very different stakes on the coast. With overlapping interests in such a relatively small area, it is often the case that interventions aimed at benefiting one group can interfere with another group's activities (Baker, 2002), carrying obvious challenges to the successful implementation of public participatory processes.

These critical social justice aspects are also addressed by O'Riordan and Nicholson-Cole (2010). They highlight the need for

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