



Analysis

Perceptions on equity and responsibility in coastal zone policies

Valérie Clément^{a,*}, Hélène Rey-Valette^b, Bénédicte Rulleau^{c,d}^a LAMETA, Faculté d'Economie, Avenue Raymond Dugrand CS79606 34960 Montpellier Cedex 2, France^b LAMETA, Faculté d'Economie, Avenue Raymond Dugrand CS79606 34960 Montpellier Cedex 2, France^c CEARC, Université de Versailles-Saint Quentin en Yvelines, OVSQ, 11 boulevard d'Alembert, 78280 Guyancourt, France^d UR ETBX, IRSTEA, 50 avenue de Verdun, 33610 Cestas, France

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ABSTRACT

This paper studies public perceptions of fairness in managed retreat policies. We try to empirically test the acceptance of the following four principles of fairness: efficiency, need, responsibility and priority to property rights. Using responses from a questionnaire, the objective of the paper is to generate information on the issue of solidarity between people exposed to the risk of climate-change-induced flooding and those who are not, as regards to funding managed retreat policies and damage compensation. To that end two population zones (Coastal and Hinterland) were surveyed in order to characterise personal preferences of stakeholders and distributive preferences of third parties. Results show (i) a support for national solidarity in the funding of managed retreat policies, (ii) a difference in people's support for the responsibility principle depending on whether it is embedded in a general principle of justice or in a particular compensation scheme and (iii) a difference between distributional judgments of the coastal inhabitants (stakeholders) and those of the Hinterland (third parties) according to the choices of the funding principles of damages on private assets and the choices of the general principles of fairness in managed retreat policies.

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1. Introduction

The sea-level rise expected to occur due to climate change will accentuate the beach erosion process and increase the risk of flooding for sea-front constructions. Coastal vulnerability is a matter of concern as the areas potentially affected are densely populated. In Languedoc-Roussillon (South of France) studies suggest that climate change will not affect the frequency of storms but will greatly magnify their impacts due to the additional water height (40 cm by 2060 (Lecacheux et al., 2011; Magnier, 2013)). Such impacts may be similar to those of 50-year storms, which, by 2060, may have become decennial. The prospect of sea-level rise calls for adaptation policies at national and local levels. Such policies are faced with major redistribution challenges concerning both sharing the financial burden of adaptation between exposed and non-exposed populations and the damage compensation process.

To begin with, current adaptation funding systems may become unsustainable in the face of increasing demands for compensation. This applies in particular to countries where flood insurance systems are based

on the solidarity principle through which everybody, regardless of their risk exposure level, contributes to the reimbursement of damages. In France, since 1982, natural disaster risks are covered by an insurance system in which compensation payments come from a national fund financed by a compulsory contribution paid by all households (home and car insurance premiums are increased by 12% and 6% respectively). This principle of solidarity may be called into question given the expected rise in the cost of damages and the strong concentration of risks in a few geographical areas. For instance, between 1982 and 2009, 6.9 natural disasters occurred in French Mediterranean coastal communities, compared with 2.5 in the country as a whole (CGDD, 2011). Moreover, currently-recommended adaptation policies (Abel et al., 2011; Boateng et al., 2007; Cooper and Lemckert, 2012; Cooper and Pile, 2014; Gibbs et al., 2013; Kelly and Adger, 2000;) seek to reduce asset vulnerability through the managed retreat of coastal constructions and developments; the reconstruction of beaches and dune systems providing a natural protection system which is more resilient in the long term. Nevertheless, despite financial compensation, such managed retreat policies face important problems of acceptability. The constraints linked to the acceptability of these policies have been examined through perception surveys of local residents. These surveys show the importance of socio-demographic criteria, such as age, income level and education (Myatt et al., 2003; Rey-Valette et al., 2012) and of various factors

* Corresponding author.

E-mail addresses: clement@lameta.univ-montp1.fr (V. Clément), helenereyvallette@univ-montp1.fr (H. Rey-Valette), benedicte.rulleau@irstea.fr (B. Rulleau).

such as the tenure status (tenant or homeowner), the length of residence, the relocation area and job opportunities in the relocation zone, the recollection of earlier storms, the sensitivity to climate change and the proximity of the family (King et al., 2014). Glenk and Fisher (2010) also show the significance of efficiency, solidarity and sustainability in the implementation of these policies. Finally, acceptability also depends on institutional factors related to the magnitude of restructured area and the budget required to compensate the displaced persons and the procedures and conditions relating to expropriation.

According to Turner (2007), these issues are reflected in significant redistributive conflicts which, if ignored when evaluating coastal zone policies, may undermine the relevance and position of cost–benefit analysis in public decision-making. Numerous studies agree that equity, i.e. the way the costs and benefits are distributed, plays a decisive role in both the implementation and the evaluation of environmental policies. In international negotiations on climate change in particular, the fairness principle may facilitate collective action and help achieve objectives shared by different countries (Lange and Vogt, 2003; Miller, 2008; Ringius et al., 2002). Beyond this instrumental role, equity also counts in a more substantive way in that people have distributive preferences which influence their willingness-to-pay for climate change adaptation policies (Atkinson et al., 2000; Cai et al., 2010). Studying individual distributional judgments is thus an important step in evaluating the social welfare generated by environmental policies (Johansson-Stenman and Konow, 2010). In this perspective, social justice theories provide the general justice principles on which individual distributional judgments can be built (Konow, 2003; Schokkaert and Gaertner, 2011).

This paper studies public perceptions of fairness in managed retreat policies. Using responses from a questionnaire, the study sought to investigate the issue of solidarity between people exposed to the risk of climate change-induced flooding and those who are not, as regards funding managed retreat policies and damage compensation. In addition to the issue of perceived fairness, the paper raises the question of whether people's elicited distributional judgments are independent of how they are affected by the chosen principle.

The article continues as follows: section 2 identifies the dimensions of equity from the main justice theories then examines how the principles apply in the context of adaptation policies defined at local and national levels. Four principles are examined: efficiency, need, responsibility and priority to property rights. Section 3 presents our survey protocol. The results are presented and discussed in the fourth and fifth sections, focusing on funding and compensation issues. Section 6 concludes the paper.

2. Social Justice Principles and Fairness Criteria in Managed Retreat Policies

The particular characteristics of climate change related risks (e.g. myopia, the lack of recollection, the progressive nature of the risk, the scientific controversies) reinforce optimism and status quo biases (Pfister and Böhm, 2001). In addition to the question of “how to adapt?” the question of “when to intervene?” is crucial as there is a strong postponement propensity given the problems of acceptability and the expected improvement in technology and in risk assessment in the future (Dutt and Gonzales, 2012). This issue of timing raises the issue of intergenerational solidarity and fairness which is not addressed here. We focus instead on territorial solidarity which is less frequently discussed but is nonetheless a key-feature in the implementation of managed retreat policies: given the funding requirements, these policies involve a redistribution of tax receipts well beyond those who are directly affected. An important question then concerns the geographical scale at which such taxes are acceptable. Moreover, planning managed retreat policies requires inter-communal solidarity in order to define threatened areas and manage expected migration patterns and fiscal and activity transfers.

These issues led us to focus on the fairness principles to which individuals refer in the distributive context of national and local adaptation policies so that they may be taken into account in the practical implementation of such policies. It is clearly established in the literature that preferences for equity depend on the distributive context, including the set of individuals being compared, the variables being used to define and interpret the principles, and the type of asset being distributed (Favarelli, 2007). In other words, depending on the domain considered, the relative significance of each justice principle, its implementation and the trade-offs between individuals will not be the same. The main theories of justice can then be used as a guide to define the general ethical principles that will be valid in different contexts. Within a specified distributive context, the general justice principles will translate into precise rules to define the sharing of costs and compensation.

Most of the work concerning equity in climate change adaptation takes an international perspective focussing on the countries themselves. In this case, the issue is to determine how and in how far the responsibility for emissions from developed countries legitimises compensation for Southern countries and on which criteria such compensation should be based. These studies draw on the principles of justice to justify (i) taking into account the countries' responsibility in climate change impacts when establishing the level of contribution to an international adaptation fund and (ii) the vulnerability criterion for the allocation of these funds (Grasso, 2010b). Moreover, as there are no supranational institutions to implement the principles, each country will only participate in the agreement if the latter is seen as fair and procedural justice principles then have a key role to play (Grasso, 2010a; Paavola and Adger, 2006).

In the case of national adaptation policies, the subjects of the justice system are the individuals and three contextual elements appear to be crucial for the issue of equity in coastal management policy. First, the issue of asset and activity relocation in the coastal zone calls for a compromise between the maintenance of recreational services offered by beaches to both local residents and tourists and the respect of property rights. This becomes a central argument when positions are taken on compensation (Cooper and McKenna, 2008). Moreover, the literature on strategic retreat policy acceptability has highlighted the anti-redistributive effect of compensation as one reason for the rejection of these policies (Pilkey, 1990). In fact, front-line residents who suffer the most significant damages and are likely to benefit from compensation through the solidarity principle are also, in many cases, the wealthiest. Therefore, it may be appropriate for compensation criteria to allow for a preferential treatment based on criteria other than individual property rights, such as income or information about the risk incurred.

Four general principles of social justice¹ can be considered in order to resolve distribution dilemmas: efficiency, need, responsibility and priority assigned to property rights. Table 1 relates these principles to broad approaches in social justice and transposes them into the context of coastal defence management policies. Each general principle is embodied in different equity criteria which serve as a reference in the funding of retreat policies and damage compensation.

The efficiency principle calls for maximising social welfare in the Utilitarian tradition which is dominant in welfare economics (Harsanyi, 1955). This principle is implemented through standard cost-benefit analysis that seeks the greatest return in terms of overall social net benefits from public investments or expenditure. This principle can be found in studies on burden-sharing rules of mitigation in international climate policy in the form of a vertical equity criterion based on the ability to pay (Klinsky and Dowlatabadi, 2009). The aim is to integrate the differing capacities of countries to reduce their emissions or to adapt at lower cost. In this context, the efficiency principle is reflected in an equality criterion in the effort to reduce emissions where effort is measured in terms of financial or opportunity cost. The efficiency

¹ The paper focuses on universalist, individualistic and liberal (plurality of conceptions of the good life) theories of social justice.

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