

# Social justice in coastal erosion management: The temporal and spatial dimensions

J.A.G. Cooper \*, J. McKenna

Centre for Coastal and Marine Research, School of Environmental  
Sciences, University of Ulster, Coleraine BT52 1SA, Northern  
Ireland, United Kingdom

- Coastal erosion management is primarily based on economic considerations;
- public intervention - private property
- high density urban developments easily outweighs the costs of defence;
- Venice, New Orleans
- this paper we examine the social justice arguments relevant to coastal erosion management;

## Conceptions of social justice

-“social justice reflects the way in which human rights are manifested in the everyday lives of people at every level of society”. (Edmund Rice Centre, 2002)

- “justice is about distributing benefits and burdens, while sustainability is about maintaining life support systems” -(Dobson, 1998, 1999). Dobson (1999, p. 2)

-Social justice is regarded by Novak (2000) as being social in two ways. ... individuals working together ... the goals can only be achieved by the group ... It is thus social in its means and in its ends.

-Social justice is taken by Miller (1999) and Dobson (1999) to relate to a system of principles that govern the distribution of benefits and burdens that arise from that system.

-Achieving equity in the distribution is key to the social justice goal and Barry (2005) notes that “social justice is, a question of equal opportunities”

-the justice of a situation is determined by how it was arrived at rather than what it actually is (Dobson, 1998)

-Novak (2000) argues that labelling unfortunate results as “social injustices” is inappropriate.

-the core social justice problem is a conflict in which one party bears a cost in order that another party or group may benefit. Hardin (1987)

-A related concept is that of 'environmental justice' which is based on the supposition that environmental ills are disproportionately suffered by the poor or marginalised.  
(Dobson, 1999).

## Coastal erosion and its management

-Current estimates are that 1,062,000 flats and houses, 82,000 businesses, 2.5 million people, 2 m acres of agricultural land worth about £120 billion are at risk from flooding and coastal erosion in England and Wales (Defra, 2001). Of this at least £10 billion of assets are at risk from coastal erosion (Office of Science and Technology, 2004).

Indeed, erosion has several natural and societal benefits: it liberates sediment for the coastal system that leads to deposition elsewhere, thus maintaining beaches, barriers and dunes (Clayton, 1989); it is a mechanism by which the coastal topography adjusts to minimise wave energy levels at the coast (Woodroffe, 2002); it provides materials upon which coastal ecosystems depend (Newsham et al., 2002) and it creates the scenic cliffed coastal landscapes (Beachy Head, White Cliffs of Dover, Dorset's Jurassic Coast) that are so valued by society for their aesthetic appeal as well as their geological interest.

- (a) to physically intervene to resist coastal erosion or
- (b) to accept the changes and adapt.

Intervention involves either the construction of structures to attempt to halt erosion (e.g. seawalls, groynes, breakwaters) or the application of 'soft engineering' approaches (e.g. beach recharge/nourishment, beach drainage).

Accepting and adapting to the changes requires that the coast be permitted to evolve and existing structures are either abandoned or relocated.



The engineering approach to coastal erosion that threatens infrastructure has been prevalent worldwide for the past two centuries. This has led to large scale armouring of the coast. (Currently about a third of the coastline of England and Wales is protected, CIWEM, 2006.)

Current practice in England and Wales under the system of shoreline management plans (SMPs) is to designate each stretch of the coast according to one of four basic options:

- Hold the Line;
- Retreat the Line;
- Advance the Line; and
- Do Nothing.

-Coastal defence in Great Britain is a permissive activity that may be engaged in by public authorities; there is no legal obligation for public funding of sea defences;

## Social justice and coastal erosion

In the context of widespread concern over coastal erosion in Great Britain, the concept of social justice has recently been raised.

It has been invoked in the specific context of a policy *decision to discontinue maintenance* of coastal defences; (CCAG, 2005; Marinet, 2005; North Norfolk District Council, 2005)

## European Convention on Human Rights and Fundamental Freedoms

-peaceful enjoyment of possessions and general protection of property rights (Article 1 of the First Protocol)

-the right to respect for private and family life (Article 8), which also extends to a right of access and occupation of the home.

Under Article 1 of the First Protocol, no one shall be deprived of their possessions (including property) except in the public interest and subject to the conditions provided for by law.

## **Social justice and coastal erosion: a local level, short-term perspective**

-At the local level the plight of individuals who stand to lose their property as a result of coastal erosion is often Emotive;

-Government's consultation on *Making Space for Water* (Defra )

-” if one property gets public defences so should all.”

-direitos X favorecimento

The crude equality argument could force a governing authority to maintain a policy that it knows to be wrong, non-optimum, environmentally damaging, non-sustainable, financially crippling, and unfair to future generations.

“Equality” is breached only if there is a clear unfairness in the treatment of people in similar circumstances;

It is also true that erosion is not usually an overnight occurrence; often such coasts have been eroding for centuries, and that in these circumstances the individual has a personal responsibility to plan for the inevitable.

If the principle of public intervention is accepted on the basis of short-term, local social justice arguments:

-hard defences... loss of scenic quality, loss/difficulty of access (Clayton, 1993), loss of resilience to storm attack and reduction of sediment supply to the coast (Pontee et al., 2004). The full implications of these defences (beach narrowing, loss of sediment elsewhere, loss of amenity, loss of natural habitat) are usually evident only in the medium term and therefore do not feature in short-term social justice arguments

Soft defences...

short-term alternative that does not produce the immediate negative impacts associated with hard defences.

- financially compensate the property owners

- United States Federal Flood Insurance

- ...combination of personal responsibility and public intervention, however, there is substantial public cost with a concomitant gain for coastal property owners.

- If the principle of public intervention is rejected, the natural sedimentary system is free to adjust to changing energy levels, sediment supply and sea level change with no loss to society as a whole

Social justice and coastal erosion: a regional level, long-term perspective;

...implications for coastal users who may live some distance from the coast, for other property owners on adjacent coasts, and also for future generations of users and residents.

Hard coastal defences are not only costly to construct but they have a finite lifespan and design specifications that determine the conditions they are expected to withstand.

This cost will have to be borne by future generations.

The net effect is to require yet more coastal engineering intervention. The ultimate manifestation of this approach is the replacement of all sandy coasts with hard defences. Taiwan, where almost the entire coastline has been subject to hard engineering, probably represents the most extensive modification of this type of any nation (Lin, 1996).

Seaside towns and cities that have developed in the shelter of a seawall have very limited options for dealing with sea level rise and continuing erosion; they are committed to defence for the foreseeable future. The extent of development behind them means that cost–benefit analysis can never find in favour of anything but defence.

-soft defence option may preserve the amenity value of the coast and its sedimentary system.

...must be continued indefinitely..

...ecological value of nourished beaches...



...also encourages development to landward;

...increased development reduces further future options for dealing with ongoing sea level rise;

*From a long term perspective it appears that there is a stronger argument for non-intervention on the basis of the scale of costs to society as a whole and to future generations. These costs will be both financial and environmental.*

## Scale considerations in social justice

..the erosion costs suffered by individuals in the community can be argued to be very great and of high local impact in comparison to the immediate costs of coastal protection. The physical and ecological impacts on distant areas, non-resident coastal users, and future generations are discounted and the costs to individuals of non-intervention are maximised.

... focusing only on the immediate social justice arguments ignores the unsustainable situation that may be handed on to future generations.

As the temporal scale increases, the negative environmental impacts of intervention become larger and the costs to future generations are more evident;

As the spatial scale increases, the negative implications of sea defences for larger sections of society (e.g. non-resident coastal users) become more evident, as do the implications for more distant sectors of the coastal sedimentary system.

The same is true of compensation...

Any of these interventions would promote continuing development in high-risk locations.

There is a different set of criteria when erosion is demonstrably caused by other actions (defence of adjacent sediment supply areas, removal of sediment, etc.). It would seem in these cases that there would be some form of social justice-based obligation on those responsible for the offending action to compensate those affected.

At larger spatial scales and long time scales, the intergenerational equity question and the losses suffered by non-coastal residents appear to reduce any social justice argument on the part of coastal property owners...

...at longer time scales public intervention of any sort encourages development in desirable but high-risk locations. For long-term sustainability construction in sensitive zones is inadvisable.

## Discussion

-The social justice argument for coastal defences/ compensation is relatively new (2005) and was probably prompted by recent human rights legislation.

Governments usually operate at the larger scales of strategic perspective...

Exceptions:

- (1) There is risk to life or limb.
- (2) Cost-effectiveness i.e. a relatively small one-off (or even recurrent) outlay brings substantial relief to those in need. (Even then, government tends to work at the larger scales e.g. cold weather payments to the elderly are national not local.)
- (3) The activity or property protected is of national significance, e.g. protection of food supply justifies assistance to farmers, and subsidies to industry create/protect jobs.
- (4) Relief of distress. Where suffering is of such a scale or intensity, and so highly publicised, that intervention becomes a political imperative. Non-intervention carries much more political risk than intervention. However, these events tend to be national or international in scale e.g. the Asian Tsunami, the 1953 North Sea Storm Surge.

Social justice to future generations is denied if, when no vital national interest is at stake, they are forced to pay for:



- The knock-on effects of present day coastal defences in terms of lost amenities and eroding beaches.
- The future maintenance of defences constructed today. These costs will rise steeply due to SL rise and increased storminess.
- Compensation schemes which are effectively open-ended because the compensation zone will shift landwards with the erosion zone.
- Property compensation to people who can afford to live at the coast and enjoy its many attractions while they (the contributors) cannot.

*“...social justice argument becomes clouded and then reverses as the social rights of many distant and future taxpayers and many distant and future beach visitors loom larger than those of a relatively few at-risk property owners.”*

## social justice X sustainability

The differences evident on the basis of scale, converge at large temporal and spatial scales.

