A Balancing Act - Flood Risk v Food v Environment

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Introduction

This paper seeks to explore the likely conflicts that will arise across policies and plans such as flood risk management plans as the climate changes and we have added demands on land use from arenas such as food production and the natural environment. Further, the paper has been developed in light of the UK governments recent Food Strategy Document 'Food 2030' [1] and initiatives to address the new issues arising out of food security.

Between 1998 and 2004, Europe suffered over 100 major damaging floods, including the catastrophic floods along the Danube and Elbe rivers in summer 2002. Severe floods in 2005 further reinforced the need for concerted action. Since 1998 floods in Europe have caused some 700 deaths, the displacement of about half a million people and at least €25 billion in insured economic losses (Europa, 2009). Thus Flood Risk Management (FRM) is currently a key focus of many national infrastructure programmes with flooding from rivers, estuaries and the sea posing a serious continuing threat to millions of people around the world as we enter a period of extreme climate variability

This paper looks at how Strategic Environmental Assessment (SEA) is being used in practice within the UK to quantify potential risk, and how flexible or practical tool it is in addressing other interacting or conflicting anthropocentric demands, namely food security and environmental protection arising through related climate change phenomena.

What is Food Security ?

The World Food Summit of 1996 in Rome (World Health Organisation) defined food security as existing "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life". Food security is built on three pillars:

- Food availability: sufficient quantities of food available on a consistent basis.
- Food access: having sufficient resources to obtain appropriate foods for a nutritious diet.
- Food use: appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation.

In 2009, Defra published a new Food Strategy for the UK entitled 'Food 2030'. The new strategy talks about a vision of what future UK food system should look like in 2030. This covers a number of central themes relating to consumer choice, food production, food security, sustainability and a low carbon food system. This strategy was brought about in reaction to sharp increases in food prices, a perceived lack of resilience in the UK food production networks and public concern over recent food scares.

So what is food security and how can SEA evaluate it at a strategic level during FRM strategies? Strategic FRM action plans and strategies will consider some aspects of

[1] HM Government *Food 2030* report January 2010

food security indirectly, for example a flood risk policy or plan may propose setting back of a flood defence alignment within a geographic area and allowing previously defended agricultural land to inundate. This land could potentially be producing a number of crops and also include a number of strategic roads that during periods of high water would be impassable. There are clear links here with both food production and food security. The issue for the SEA professional is although neither of these aspects are commonly addressed in SEA framework as receptors in their own right, in future their significance may have to be.

How FCRM is managed in the UK and the role of SEA

Where SEA[2] is applied currently to address fluvial flood risk issues in the UK, this is most frequently managed by the Environment Agency (EA), the leading flood risk management authority in England and Wales and by Local Councils in Scotland. Strategic Shoreline Management Plans (SMPs) to mitigate against the risk of coastal flooding are prepared in partnership groups between a small number of Local Authorities and the EA around the English & Welsh coast, with a small number of coastal authorities in England producing their own specific coastal flood risk assessments.

At the catchment scale within the UK, flood risk is managed through policies derived through Catchment Flood Management Plans (CFMP). These are applied across 'policy units' that relate to selected geographic or existing FRM asset defended sections and imply a general approach to flood risk management such as 'no active intervention' required for the foreseeable 50-100 year time scale. These policy units are generic and as stated applied across substantial geographic areas It must therefore be accepted that there is the potential over such a timescale for other societal developmental policies and plans to arise that may conflict directly with the chosen general approach to flood risk.

For CFMP's within England and Wales, software was produced called 'Modelling Decision Support Framework' [3] to help in calculating estimated damages on factors within a flood plain including agricultural land. This considered aspects such as frequency, seasonality and duration of floods and attributed different rates of damages to different types of crops which were set by central government. Policy decisions made using this tool were often challenged during consultation periods of the SEA process by organisations such as the National Farmers Union [4]who believed that the values attributed to the damages were too low and did not realise the true value of agricultural land in its current or future capacity.

How well SEA manages 'agriculture'

Although the EU's SEA Directive, and UK SEA Regulations, make distinct reference to agriculture as one of the obligated sectors of activity whose strategic policies, plans and programmes may fall under the Directive, the authors were unable to identify visible take up of SEA by either private or public sector bodies whose primary business role involved agricultural production. In contrast, most identified references

[2] SEA is based on a European Directive (2001/42/EC) which has been transposed into English and Welsh Regulations (SI 1633 / 1656, 2004
[3] http://www.mdsf.co.uk/documents/mdsf_procedures_version3.pdf
[4] http://www.nfuonline.org

to agriculture were contained in SEA Environmental Reports prepared in respect of rural development or regional development plans.

In respect of FRM strategic planning, and in the absence of any national food strategy relating to FRM and food security, there is currently no one clear category within the SEA Directive's guidance that comfortably encompasses agriculture and food issues as an effective receptor of policy or plan development when FRM issues such as hold the line, advance or managed retreat are to be considered. The concept is too broad and crosses the boundaries of a number of environmental parameters notably soil, water, material assets, landscape, water, and has a direct interaction with human health (through reduced food production levels, food quality, disease). This multi-disciplinary cross-over makes it potentially difficult to focus assessment impacts, impact identification and secondary impacts within the SEA evaluation process and obscure potential evaluation or adverse impacts in agriculture and food security at a local or regional level.

In developed countries such as the UK it is unlikely that this lack of emphasis on agriculture and food as a receptor within the SEA process will alter significantly unless there is a dramatic shift in the perceived security of food by the general population placing pressure on central government to react.

Case Study - River Trent CFMP[5]

At the catchment scale, few CFMPs have given detailed consideration to the protection of agricultural production systems and food security in general. However, objective setting within CFMP policy cells is not rigid, and the EA has on occasion included specific objectives that do allow for more detailed agricultural assessment to be applied where it is deemed necessary. In the case of the River Trent CFMP which addresses one of the UK's most significant river catchment basins and a significant population and agricultural centre within England, a number of high level objectives relating directly to land use and agriculture were identified.

- To support and encourage land management and land use that will reduce run-off rates from upland areas

- To reduce soil erosion resulting from surface run-off

These objectives are not clearly aligned to any specific national policy for food production, increased intensity of production or the securing of vital infrastructure essential for importing food, they focus entirely on the movement of water across and within the land. This provides an indication of the minimal level of evaluation and consideration given to food production/security within this plan and demonstrates the gap likely to exist across many policies and plans of this type where objectives are focussed entirely on receptors that are familiar to SEA practitioners such as soil and water.

Trade off with EU and national nature conservation legislation

The SEA Directive makes clear reference to biodiversity, fauna and flora, with clear linkage to the EU's Habitats Directive. Across most SEA, the natural environment is comprehensively assessed and is afforded a large amount of legislative support in terms of International, European and National designations with regard to

[5] http://www.environment-agency.gov.uk/research/planning/114350.aspx

biodiversity, flora and fauna. The legislative strength of this protection for natural ecosystems and species significantly guides SEA professionals and decision makers to consider the implications of plans and programmes of work (such as CFMPs) and indicate any processes that may need to be followed should a designated site be affected by proposals.

Currently agriculture within the UK receives substantial funding from the government for environmental projects/protection to be integrated within their activities. In addition the contribution of agriculture to the UK economy is low, producing less than 1% GVA. This has afforded environmental groups a stronger political position with respect to governmental priority of funding and policy decision making.

Thus SEA as currently applied is in a far stronger position to provide a balanced objective view of the risk to, and future well-being of, the natural environment arising from flood risk management policies, than it is to provide an assessment of one of the basic necessities for human wellbeing - food.

Conclusions and lessons to be learnt

It is clear that the concept of food security, in comparison to that of nature conservation and flood risk management, is not as clearly identified within current Government policy and its evaluation within sectors obligated under the SEA Directive. Within the UK no major plans/programmes exist currently to propose wide scale strategic approaches to types of food production which could be dependent on geography, geology and soil types and societal pressures. In addition this type of generic approach would be hard to achieve as farms are held locally by individual landowners or consortiums and overarching approaches would inevitably be by negotiation. The absence of references within existing Environmental Reports suggests that the issue of agricultural production or food security have either not been evaluated, overlooked or at best scoped out of the assessment.[6]

With this new pressure of food security the challenge facing impact assessment practitioners is to consider whether current SEA methodology and frameworks established particularly in the EU and UK are adequate to consider this new receptor or plan (depending on the angle of the evaluation)

In the UK DEFRA[7] has recently (at the time of writing this paper) evaluated its position with regard to food security and flooding and has concluded that there is no evidence UK food security is sensitive to changes in flood and erosion risk management policy. In addition there is 'no demonstrable need for greater intervention by the Government in relation to agriculture.'….'The Agency[8] will continue to use Defra's guidance (2008) on land valuation in project appraisal.' In the short term therefore current UK approaches to agricultural land use encompassing food security issues and flood risk management will not change.

[6] SI 2006/2522 The EIA (Agriculture) (England) (No2) Regulations 2006
[7] Department of Environment, Food and Rural Affairs (UK)
[8] The UK's Environment Agency.

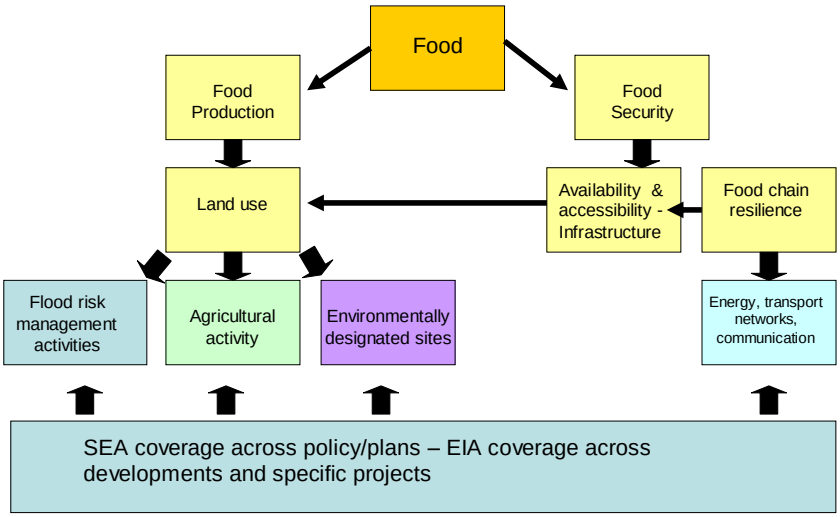

Figure 1 - Illustration of how SEA covers factors at policy level associated with food production/security but not as a direct receptor itself

Summary of lessons for SEA practitioners

As IA practitioners we need to be considering food as a potential receptor and where appropriate incorporate it into any new policies or plans through the SEA process.

It may be that tools such as comparative risk assessment (developed initially in the USA by the Environmental Protection Agency) could help in the future to evaluate the relative severity of the environmental issue in terms of balancing out objectively which ranks the highest in priority where conflicts arise between flood risk, food and the environment. This is likely to be more critical in poorer developing countries where food is less plentiful or affordable and the impacts of flooding are more severe in terms of risk to life and human health.

We need to be advising central governments on the links between their proposed food strategies and land use pressures such as flood risk management and conflicts that are likely to arise through previously derived prioritisation criteria which do not take account of current food security issues. As evidence for this we can use documents such as CFMPS to demonstrate the impact of land value calculations.

IA practitioners must become more adept at working with organisations concerned with food production, distribution and protection. For example in the UK groups such as the National Farmers Union (UK) to discuss and agree on ways to measure the impacts and to understand what data might be required as part of this process.

The benefits of considering ‘food’ now in the impact assessment process are that we will prevent activities/developments working in isolation from each other, drawing together potentially divergent but cumulative significant issues.

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