The changing governance of UK flood management policies 1998-2010: a comparative analysis of local approaches in Scotland and England

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Abstract

There have been a number of devastating flooding events in the United Kingdom during the last two decades, leading many stakeholders to conclude that flooding is becoming more frequent and more damaging. The governments of Scotland and England have responded to the apparent increase in flood risk by introducing sweeping legislation intended to change the policy emphasis from a narrow focus on using hard engineering defences to try to prevent flooding to a wider approach that recognises that flooding cannot be prevented everywhere and uses instead portfolios of structural and non-structural measures to manage present day flood risk and to avoid future flood risk from increasing unacceptably. This thesis evaluates how the new policy regime has evolved and been implemented in Scotland and England, focusing particularly in Local Authority areas, and using contrasts between flood risk in rural and urban settings to reveal how the policy has had to be adapted to apply effectively in these different physical and administrative environments. Based on discourse theory and the institutionalisation features of policy networks, it is argued first that the new policy regime is subject to multiple interpretations and, second (and more importantly) that policy change occurs as a result of the transformation of institutional practices of the multiple flood governance discourses by policy narratives in the policy process. Further, the concept of the advocacy coalition framework is applied to reveal how contrasting local governance approaches (and the differences between them), result from continuous interactions between national policies and distinctive, local factors. These arguments are supported by the results of empirical research that examined policy change and local governance interpretation through textual analysis of relevant policy documents, interviews with key institutional stakeholders and participant observation of a local stakeholder meeting. Research findings reveal how the more pro-active local governance approaches serve as innovators in informing future national policies. This process stems from local interpretation of existing national policy through the mediating effects of distinctive local policy factors that result in the introduction of new and putative policy ideas and actors who engage in local flood governance. These ideas and the involvement of new actors are in turn transferred through revisions to national policies of flood risk governance. Consequently the policy mediating features of Local Authority areas are manifest through the utility of policy narratives in driving national policy change, on the one hand, and in shaping policies in local governance approaches, on the other.

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Contents

Chapter 1 ..... **1**

Introduction **1**

Rationale for the research 4

Aim and Research Questions 6

Structure of the Thesis 8

Chapter 2 ..... **11**

Research Design and Methodology **11**

Introduction 11

Analytical Framework 11

Research Approach and Methodology 29

Data Recording and Analysis 34

Conclusion 36

Chapter 3 ..... **38**

Historical Review of Flood Governance in Scotland and England **38**

Introduction 38

Historical flood paradigms in Scotland and England 38

Conclusion 57

Chapter 4 ..... **58**

The new Paradigm in England **58**

The Old Settlement 58

Drivers for Policy Change 71

The New Settlement 78

Conclusion 96

Chapter 5 ..... **98**

The New Paradigm in Scotland **98**

Introduction 98

The Old Settlement (1961-1998) 98

Drivers for Policy Change (1999-2009) 111

The New Settlement (Post 2010) 119
Conclusion 137
Chapter 6 139
Local Governance Approaches to Flood Risk Management in Scotland and England 139
Introduction 139
Summary of current institutional arrangements 139
Local Flood Hazard Governance 144
Birmingham Flood Risk Management Policies 144
Somerset Flood Risk Management Policies 159
Glasgow Flood Risk Management Policies 175
Moray Flood Risk Management Policies 186
Comparing National and Local Policies: An Evaluation of the Interplay between Central Government Policy Structure and local governance Agency 198
Conclusion 210
Chapter 7 212
Local Flood Risk Management Governing Coalitions 212
Introduction 212
Conceptualising Local Flood Governance 213
Birmingham Strategic Flood Risk Management Board 217
Somerset Strategic Flood Risk Management Partnership 222
Metropolitan Glasgow Strategic Drainage Partnership 228
Moray Flood Alleviation 232
Analysis and Implications of the Different Governing Coalitions 235
Conclusion 245
Chapter 8 247
Conclusions and Recommendations 247
Introduction 247
Addressing the objectives and research questions 247
Critical Review of the Analytical Framework and Methodology 258
Contribution to knowledge 262

Recommendations for Future Research 265

References and Appendices 268

List of Figures

Figure 2. 1 Advocacy Coalition Framework Template 22

Figure 2. 2 Modified Advocacy Coalition Framework Template 24

Figure 3. 1 Regional Water Authorities in England and Wales (1973) 42

Figure 3. 2 IDB areas in England and Wales 43

Figure 3. 3 National Rivers Authority Regions in England 47

Figure 3. 4 Regional and Highland councils in Scotland (1973) 54

Figure 3. 5 Local Authorities in Scotland (1996) 56

Figure 4. 1 Defence management policy community 61

Figure 4. 2 Planning policy community 64

Figure 4. 3 Bureaucratic policy community 68

Figure 4. 4 Environmental management policy community 71

Figure 4. 5 Defence management policy community 82

Figure 4. 6 Planning policy community 86

Figure 4. 7 Bureaucratic policy community 91

Figure 4. 8 Environmental management policy community 94

Figure 5. 1 Defence management policy community 101

Figure 5. 2 Planning policy community 105

Figure 5. 3 Bureaucratic policy community 108

Figure 5. 4 Environmental management policy community 111

Figure 5. 5 Defence management policy community 123

Figure 5. 6 Planning policy community 127

Figure 5. 7 Bureaucratic policy community 130

Figure 5. 8 Environmental management policy community 134

Figure 6. 1 Green Spaces in Birmingham 156

Figure 6. 2 Designated Main Rivers in Somerset 160

Figure 6. 3 District and Borough Councils in Somerset 167

Figure 6. 4 Internal Drainage Board Areas 169

List of Tables

Table 2. 1 Coding Framework 35

Table 4. 1 MAFF priority scoring system 61

Table 4. 2 Flood defence funding in England 1990-1997 67

Table 7. 1 Birmingham Strategic Flood Risk Management Board 221

Table 7. 2 Somerset Strategic Flood Management Partnership 227

Table 7. 3 Metropolitan Glasgow Strategic Drainage Partnership Board 231

Table 7. 4 Moray Flood Alleviation 235

Table 8. 1 Flood defence policy networks in Scotland and England 249

Table 8. 2 Flood risk management policy networks in Scotland and England 250

Table 8. 3 Local interpretation of FRM policies 255

Table 8. 4 Local governing coalitions 256

List of acronyms and abbreviations

ABI	Association of British Insurers
ACF	Advocacy Coalition Framework
BCC	Birmingham City Council
BSFRMP	Birmingham Strategic Flood Risk Management Partnership
CAP	Common Agricultural Policy
CAR	Controlled Activities Regulation
CCTV	Closed Circuit Television
CFMP	Catchment Flood Management Plan
CLA	Community Land and Business Association
COSLA	Confederation of Scottish Local Authorities
CPRE	Council for the Protection of Rural England
CSR	Comprehensive Spending Review
CSO	Combined Sewer Overflows
DAF	Department of Agriculture and Fisheries
DCLG	Department for Communities and Local Government
DEFRA	Department of Environment, Food and Rural Affairs
DoE	Department of the Environment
DETR	Department of the Environment, Transport and Regions
EA	Environment Agency
EC	European Commission
EEC	European Economic Community
EFRA	Environment, Food and Rural Affairs
FAG	Flood Action Group

FAS	Flood Alleviation Scheme
FCERM	Flood and Coastal Erosion Risk Management
FLAG	Flood Liaison Action Group
FPS	Flood Prevention Scheme
FRM	Flood Risk Management (2009) Scotland Act
FWMA	Flood and Water Management Act
FWAG	Farming and Wildlife Advisory Group
GCC	Glasgow City Council
IDB	Internal Drainage Board
IUD	Integrated Urban Drainage
LA	Local Authority
LLFA	Lead Local Flood Authority
LLA	Lead Local Authority
LPA	Local Planning Authority
LFDC	Local Flood Defence Committee
MAF	Ministry of Agriculture and Fisheries
MAFF	Ministry of Agriculture, Food and Fisheries
MFA	Moray Flood Alleviation
MSP	Member of Scottish Parliament
MP	Member of Parliament
MSW	Making Space for Water
MGSDP	Metropolitan Glasgow Strategic Drainage Partnership
NC	Nature Conservation
NFF	National Flood Forum
NFM	Natural Flood Management
NFU	National Farmers Union

NRA	National Rivers Authority
NPPG	National Planning Policy Guidance
ODPM	Office of the Deputy Prime Minister
OFWAT	The Water Services Regulation Authority
ONS	Office of National Statistics
PFI	Private Finance Initiative
PCP	Parrett Catchment Partnership
PPG	Planning Policy Guidance
PPS	Planning Policy Statement
PFRA	Preliminary Flood Risk Assessment
RFDC	Regional Flood Defence Committee
RFCC	Regional Flood and Coastal Committee
RSPB	Royal Society for the Protection of Birds
RPB	River Purification Board
RSG	Revenue Support Grant
SAB	SuDS Approval Board
SAC	Special Area of Conservation
SCC	Somerset County Council
SEPA	Scottish Environmental Protection Agency
SFF	Scottish Flood Forum
SFRA	Strategic Flood Risk Assessment
SMP	Shoreline Management Plan
SNH	Scottish Natural Heritage
SuDS	Sustainable Urban Drainage System
SNP	Scottish National Party

SSSI	Sites of Special Scientific Interest
SPA	Special Protection Area
SPP7	Scottish Planning Policy 7
SSFRMP	Somerset Strategic Flood Risk Management Partnership
SSRM	Strategic Sewer and River Model
SW	Scottish Water
SWCCIP	South West Climate Change Impact Partnership
SWMP	Surface Water Management Plan
UK	United Kingdom
WA	Water Authority
WEWS	Water Environment and Water Services (Scotland) 2003 Act
WFD	Water Framework Directive
WICS	Water Industry Commission Scotland
WLMP	Water Level Management Plan
WWF	World Wildlife Fund

Chapter 1

Introduction

Flooding is not only the most costly hazard in the United Kingdom (Tunstall et al. 2004); it is also considered to be the most dangerous and damaging (Wheater, 2006). Unsurprisingly, therefore, it is one of the most studied natural hazards (Brilly and Polic, 2005). Five million people and two million properties in the England and Wales, valued at £200 billion, are at risk of flooding and a recent estimate of Annual Expected Damage (AED) put this at £1.1billion (National Audit Office, 2011). In Scotland, while the magnitude of the flood problem is smaller, over 170,000 residential and commercial properties (which is 10- 12% of the total), are considered to be at risk (Werritty et al. 2007). Estimates of the AED in Scotland attributable to inland flooding vary between £20 million (Murdoch, 2005) and £185 million (Kenyon, 2007).

The damage done by flooding is not solely financial or economic, however, and further damage results from social, psychological and health impacts due, for example to, disruption of normal life, anxiety, depression, difficulty experienced by dislocated people in adjusting to new surroundings, the spread of infectious and water borne diseases, and other physical and emotional traumas (Werritty et al. 2007; Whittle et al. 2010). By global standards, UK floods have historically been comparatively mild and rarely result in loss of life (Tunstall et al. 2009) but the hydrological effects of climate change are expected to increase the frequency and severity of flooding from all sources (Robson, 2002; Parker, 2003; Tunstall et al. 2004; Penning-Rowsell et al. 2006; Priest and Johnson, 2008).

The vulnerability of the UK to flooding may be attributed to its island nature, mid-latitude location, humid climate, varied topography and the isostatic subsidence of southern England (Scrase and Sheate, 2005). The historical flood record dates back to 1607 AD when the Bristol Channel suffered a coastal flood that has not, to date, been exceeded (Horsburgh and Horritt, 2006). The documented history of flooding in Scotland dates back 250 years with the most notable event being the 1829 flood which affected a large area in the north east of the country (Werritty and McEwen, 2007).

There were several significant UK floods during the 20th century including the event in March 1947, which is regarded as the most catastrophic UK river flooding episode in at least the

last 200 years. Widespread river flooding was caused by a rain-on-snow event that rapidly thawed deep snow across southern, middle and northern England (RMS, 2007). The floods affected thirty out of forty English counties, 283,280 ha of land were inundated, thousands of hectares of crops were lost, tens of thousands of people were temporarily displaced from their homes and around 27,000 properties were flooded (RMS, 2007). Another notable flood occurred on the night of 31st January 1953. The 1953 coastal flood was triggered by a North Sea storm surge that inundated the east coast of England and the south west coast of the Netherlands (RMS, 2003). This flood has been described as the worst national peace time disaster to hit the UK, with the impacts exacerbated by exceptionally bad weather and poor communications. Impacts in England included 307 deaths, 65,000 ha of land flooded, 200 industrial facilities damaged and 24 000 houses damaged (500 of which were totally destroyed) (RMS, 2003). More floods of national significance occurred at Easter 1998. These floods were fluvial in nature and affected large parts of central England and Wales. Reported impacts included five deaths and, £300 million worth of damage to 4,500 homes, 522 industrial premises and 2000 caravans (Penning-Rowsell et al. 2006). The Easter 1998 floods particularly affected towns, villages and rural land in Warwickshire, Northamptonshire and Oxfordshire (Horner and Walsh, 2000).

In autumn 2000 further devastating flood occurred. The 'Millennium Floods' were caused by record rainfall, with autumn 2000 being the wettest since records began in 1766 (POST, 2001). Both surface water and river flooding were reported, with more than 10,000 properties being flooded in England and Wales and weather related insurance claims totalling about £1 billion (POST, 2001).

Bad though the Millennium Floods were, the most costly floods in recent memory are those of summer 2007. These floods were attributed to persistent, intense rainfall between May and July 2007, which made this the wettest period since records began (Pitt, 2008). Locations affected centred on South Yorkshire and Hull, in June, and Gloucestershire, Worcestershire and the Thames Valley, in July (Pitt, 2008). Damage included 13 deaths and loss of essential services such as mains water and/or electricity by almost half a million people (Pitt, 2008). Over 55,000 homes and businesses were flooded with insured losses estimated to be around £3 billion. Notably, around two thirds of the homes and businesses affected were inundated due to surface water flooding (EA, 2007).

Flooding in November 2009 was not as widespread but caused destruction and long-term disruption to Cumbria. These floods were again caused by record breaking rainfall. During a

three day period between the 18th and 20th of November, up to 372mm of rain fell in Cumbria affecting the communities of Allerdale, South Lakeland, Eden, Copeland, Cockermouth, Workington and Carlisle. A total of 2,239 homes and businesses were flooded and transport was disrupted for months due to no less than 17 bridges having to be closed due to structural damage. In addition, the flood resulted in the death of police constable Bill Barker (Watts, 2010).

Historically, Scotland has not suffered the same degree of river and coastal flooding as England mainly due to its lower population density, contrasting physical geography and the fact that the isostatic rebound is causing relative sea level to fall. Even so, damaging flood events have resulted in significant events in Scotland (Werritty, 2005).
For example, in January 1993 a spell of unusually warm and wet weather pattern led to excessive precipitation and rapid snowmelt around Perth (Black and Anderson, 1994). Resulting runoff in the River Tay generated the highest flood discharge ever recorded in a British river and caused damage estimated at £30 million (Black and Anderson, 1994). The very next year, another significant flood occurred on the River Clyde. This event was caused by unusually high rainfall between 10th and 12th of December 1994, with up to 200mm falling within a 48 hour period (Black, 1996). The River Clyde reached its highest stage for 150 years (Black and Bennett, 1995) causing three deaths, damage estimated at about £100 million (WWF, 2008) and disruption to essential services and road and rail networks along a corridor more than 50km wide in and around the city of Glasgow (Black and Bennett, 1995; Black, 1996).

More recent floods have impacted smaller catchments and, though not as devastating, they have been significant nonetheless. For example, Moray, and particularly the town of Elgin, experienced severe flooding in 1997 and 2002 attributed to unprecedentedly intense rain falling on a small catchment (Werritty et al. 2007). The 1997 flooding had an estimated return period of 1 in 40 years and affected 600 residential and 170 commercial properties, while the 2002 flooding had an estimated return period of 1 in 60 years and affected over 650 residential and 180 industrial properties (Crichton, 2004). Both events disrupted services and the everyday lives of residents, transport services such as roads were closed, while in 2002 over 200 households were evacuated and 10 people had to be airlifted to safety (Crichton, 2004). Combined flood damages were in the excess of £100 million.

During most of the 20th century, responses to flooding and the damage so caused were dominated by engineered measures to protect low lying areas using hard defences, piped

land drainage and channelization (Penning-Rowsell et al. 2006; Werritty, 2005). However, by the 1990s this had begun to change as the limitations of the traditional approach became increasingly apparent. Calls for a move away from a structural approach became more strident during the early years of the 21st century, in response to the continuing series of severe floods (Johnson et al. 2007), the escalating costs of engineered solutions and growing realisation that rely solely on structural measures was uneconomic and socially unjust (Priest and Johnson, 2008). Adoption of the European Habitats and Water Framework Directives added a further impetus because they highlighted the adverse environmental impacts of hard flood defences (Werritty, 2005). Consequently, for nearly two decades policy in the United Kingdom has been evolving away from over reliance on hard-engineering of rivers and coasts and towards more sustainable approaches involving portfolios of structural and non-structural measures that include planning controls, better preparedness, improved flood warnings (Johnson et al. 2006) and enhanced event management (Priest and Johnson, 2008). In essence, the new approach aims to reduce the probability of flooding (recognizing that this cannot be eliminated) while managing the consequences should a flood occur and conserving and restoring the natural environment. The shift from attempting to prevent floods using hard defences to striving to achieve sustainable flood risk management provides the backdrop for this thesis and in this context the remainder of this introductory chapter has three aims. First, it seeks to explain the rationale for the research. Second, it sets out the research specific questions to be addressed and, third, it describes the structure of this thesis.

Rationale for the research

The origins of the research lie in the long history of damaging and devastating floods in the UK and the equally long history of the government's efforts to prevent or at least manage flooding and its impacts on people, property and infrastructure. The thesis was prompted by legislation passed by the Scottish and Westminster parliaments that invoked radical institutional changes to flood risk management and its governance, particularly with respect to the emphasis on local governance of flood risk (Flood Risk Management (Scotland) Act, 2009; Flood and Water Management Act 2010; Krieger, 2012).

The history of flood events in the UK features multiple incidences of fluvial and coastal flooding. Significantly, it also reveals that incidences of surface water flooding and sewer flooding have become increasingly prominent and damaging. Indeed, during the 21st century it seems to be increasingly commonplace for flooding to result from various combinations of pluvial, fluvial, coastal, surface water, ground water and sewer flooding as evidenced in the

2007 summer floods (Pitt, 2008) and the events of winter 2013/14 (Thorne, 2014). As outlined in DEFRA's discussion document, *Making Space for Water* (DEFRA, 2005), emphasis shifted from a focus on structural solutions to portfolios of measures and from centralised governance towards a more devolved system (Priest and Johnson, 2008). The new strategy recognises the need for clarity concerning, and respect for the roles of central and local governments, other stakeholder organizations and agencies and individuals at risk of flooding in managing flood risk, effectively and sustainably. The need for coordination between multiple actors was stressed in the Pitt Review and underpins several of its main recommendations (Pitt, 2008). The new strategy also proposed that the public be made more aware of flood and coastal erosion risks and be empowered to self-organise and act where appropriate. In Scotland, the impetus for the adoption of the new FRM (Scotland) Act (2009) was the notion of sustainability, in terms of its social, economic and environmental dimensions. The key deliverables are heightened awareness, avoidance, alleviation as well as assistance (Werritty, 2005). In a pre-Bill report produced by Werritty et al. (2007) it was shown that public awareness of flood risk management measures as well as the willingness of communities vulnerable to flooding to take responsibility for their own risk, was low and the recommendations included increased community engagement to address these issues.

The paradigm shift from 'flood defence' to 'flood risk management' has variously been characterised as 'a change in ideology', 'a radical policy change', 'a policy shift from a focus on structural flood defences to an approach in which a broader range of means for managing flood risk are supported' and, a shift to sustainable flood management (Johnson et al. 2007 pp 374–390; Tunstall et al. 2009 pp 159-160). As a result, the flood risk management agenda in the UK is currently dominated by policy themes urging communities to 'make space for water', 'live with floods' and 'prepare for floods' (Johnson et al. 2007 p 214). The new paradigm is characterised by a more prominent role for local governance (Penning-Rowsell et al. 2006), and this thesis seeks to make an original contribution to knowledge by examining the implications and interpretations of the policy change at sub-national and specifically in Local Authority (LA) area scale, while seeking to establish a basis for comparing local flood governance approaches in Scotland and England with the view to contributing towards improvements in future flood hazard management. Therefore, the foundation of this research stems from the need to explain and compare the implications of re-organisation of roles and responsibilities of LAs in Scotland and England that resulted from the paradigm shift from 'flood defence' to 'flood risk management', as institutionalised respectively in Scotland through the FRM (Scotland) Act 2009 and, in England, through the Flood Water Management Act 2010.

Aim and Research Questions

Institutionalisation of the policy transition from 'flood defence' to 'flood risk management' and subsequent expansion of the role of local flood governance underpin the overarching aim of this research, which is to conduct a comparative analysis of the local flood governance approaches adopted in urban and rural Local Authority areas in Scotland and England under the 'flood risk management' governance paradigm. More specifically, the thesis investigates how a range of local policies advocating and facilitating adoption of risk-based approaches to flood hazard governance emerged within the contexts of national institutional frameworks that developed somewhat independently in Scotland and England between 1998 and 2010, and how these local policies reflect the urban and rural contexts within which they evolved. This leads, on the one hand, to assessment of the implications of differences in local flood governance on future flood risk management and, on the other, to appraisal of the flood policy process itself.

The main objectives of the research are therefore to:

- account for the national policy transition from 'flood defence' to 'flood risk management' in Scotland and England;
- evaluate the implications of the changes in national policy for risk management authorities, including LAs, in both countries;
- compare and contrast local flood management practices adopted in rural and urban LA areas (while recognising the influence of the respective national flood risk management policies);
- develop a conceptual basis through which local flood governance approaches in Scotland and England can be analysed, explained and differentiated;
- assess the theoretical and policy implications of observed differences in local approaches for future flood hazard governance and flood policy studies.

To achieve these objectives, a number of research questions must be identified and addressed. In this context, and given that fundamental differences exist between institutional arrangements for flood hazard governance in Scotland and England, any attempt to elucidate, compare and contrast local flood risk management practices in these countries must start by considering traits in governing and policy making structures unique to each country. This was appreciated by Krieger (2012), who argued that risk-based governance in flood management in Germany and England is variously promoted, filtered or constrained by

administrative structures, norms, and political and cultural expectations that are embedded within the flood management and the wider polities of each country. Therefore, accounting for the policy transition in Scotland and England must take into consideration the context specific structures unique to each political entity and this leads to the first research question to be addressed in this thesis:

1. How can the transition from 'flood defence' to 'flood risk management' be explained in the Scottish and English contexts?

To address the implications of any change in policy on risk management authorities, including LAs, a further research question must be addressed:

2. How does the policy transition influence the roles and responsibilities of flood risk management authorities, including LAs, in Scotland and England?

To address these questions, empirical data and the literature will be used to conduct qualitative analysis of policy change in both countries. This will be achieved by situating the process of flood hazard governance within each country's distinctive, policy making structures and institutional processes. Addressing Questions 1 and 2 will elucidate important aspects of the policy process responsible for the policy transition to 'flood risk management' in Scotland and England by identifying the factors that drive policy change, analysing the processes of policy change and investigating policy implementation through which the paradigm shift has been delivered.

Addressing the first two research questions provides the foundation upon which an examination of local flood governance policies in Scotland and England can be carried out. This will be accomplished using a case study approach that provides opportunities to investigate the implications of policy changes by focusing on concrete policy practices in particular rural and urban LA areas of Scotland and England, thereby providing the basis on which a comparative analysis of the local flood risk management policies adopted in urban and rural Local Authority areas in the two countries can be conducted. The significance of using selected LA areas north and south of the border as case studies lies not only in the fact that LAs have been key players in flood governance in Scotland and England for at least half a century (Penning-Rowsell et al. 1986), but also because the new legislation designates LAs as Lead Local Authorities (LLAs) and Lead Local Flood Authorities (LLFAs), respectively, thereby entrusting them with a more prominent role in the delivery of flood risk

management. This focus on examining the expanded role of local governance in flood management leads to three further research questions:

3. Are national flood risk management policies in Scotland and England interpreted differently in urban and rural LA areas and, if so, how can these differences be explained?
4. How do distinctive local factors influence local flood risk governance approaches adopted in urban and rural LA areas in Scotland and England?
5. How can the implications of these differences in local flood risk management policies be conceptualised and explained?

The research questions focus attention on what the transition from ‘flood defence’ to ‘flood risk management’ means in urban and rural LA areas of Scotland and England, and how these meanings are manifest through local flood risk management practices. Addressing these issues requires that flood management practices in each case study LA area be examined in order to elucidate how the respective central government flood risk management policies have been reproduced and transformed thereby potentially revealing differences in flood risk management approaches in each respective case study.

These further questions also highlight the importance of local factors in influencing local actor agency in the flood risk management policy process. To address this issue, it is necessary to evaluate how the prevalent local institutional factors identified in each LA case study act to influence policy formation, transformation and implementation at the local and national levels.

Structure of the Thesis

The research aim, objectives and questions set out above are addressed in the remainder of this thesis.
Chapter Two presents the research design and examines the methodological aspects of the work. The analytical framework used to conceptualise policy change and implementation, which draws on Marsh and Rhodes’ (1992) notion of policy networks and, Hajer’s (1988) discourse coalitions and Sabatier’s (1991) Advocacy Coalition Framework, is set out. The discursive nature of the analytical framework necessitates use of qualitative and interpretive methods to assemble and analyse the data, including the case study approach. Hence Chapter 2 also recounts the rationale for selection of the case study LAs. Lastly processes of

data collection and analysis are reported and discussed, including accounts of how challenges faced were overcome and opportunities utilised.

Chapter Three provides the backdrop for the 1998-2010 period by providing a chronological account of the changes that occurred in flood policies in Scotland and England during the twentieth century. This is achieved through analysis of the emergence and transformation of successive flood hazard governing paradigms, characterised by Penning-Rowsell et al. (2006) as 'land drainage' and 'flood defence', in Scotland and England respectively. The flood management paradigms, are deconstructed to reveal, first, the underlying beliefs and values embedded in the policy discourse and, second, how these paradigms were institutionalised in Scotland and England. By this means, Chapter Three reveals the origins of the 'land drainage' and 'flood defence' paradigms in Scotland and England which contributes to explanation of the process of policy change and highlights institutional differences in flood hazard management between the two countries.

Chapters Four and Five provide an empirical account of the policy transition in flood hazard governance from 'flood defence' to 'flood risk management' in Scotland and England respectively. This is achieved by conceptualising policy change between 1998 and 2010 as the transformation of flood defence discourse coalitions into flood risk management discourse coalitions. In addition, the implications of the policy transition are evaluated as manifest in the changing roles and responsibilities of key policy actors, thereby providing answers to the first two research questions. It is argued that policy change can be explained through the transformation of values embodied in the various policy discourses through which issues in flood management such as the problem definition, policy solutions and institutional practices, are constructed, reproduced and transformed. It is concluded that drivers for policy change influence both reproduction and transformation of the values embodied by the flood management discourses.

Chapter Six compares and contrasts the interpretations of national flood risk management policies in the urban and rural LA case study areas of Scotland and England. This is undertaken by detailing the current institutional arrangements that influence local flood risk governance in Somerset, Birmingham, Glasgow and Moray. Following this, each LA area's interpretation of the relevant national flood risk management policies is considered within the context of the national flood management discourses identified in Chapters Four and Five. Finally, differences between national and local policies, on one hand, and LA areas, on the other, are elucidated and accounted for to answer the third research question.

Chapter Seven examines the factors that influence the contrasting approaches adopted in interpreting national flood risk management policies in each of the case study LA areas, further establishing the importance of local factors in policy making and changing processes. This is achieved by conceptualising local policy making and implementation as dependent on governing coalitions made up of local actors (including LA functional departments and other local non-governmental actors) working in concert, as institutions, with the aims of both shaping policy outcomes and influencing the behaviours of individual actors. Governing coalitions in each LA area are detailed to (1) provide the basis for analysing, comparing and differentiating the approaches adopted in different localities for delivering flood risk management and (2) facilitate discussion concerning the theoretical and concrete implications of these different approaches for future flood hazard governance, thereby providing answers to the fourth and fifth research questions and addressing the aim of the research.

Chapter Eight closes the thesis by drawing together insights gained from the preceding chapters, summarising the evidence gathered in the course of the thesis, and reflecting on the aim, objectives and research questions posed in Chapter One. The analytical framework and methodology applied in conducting the research are critically reviewed and the original contribution to knowledge made by the thesis is described. Finally, recommendations for future research are suggested.

Chapter 2

Research Design and Methodology

Introduction

Addressing the key research questions requires that the methods, methodology and research design to be utilized are suitable to the ontological leanings of this thesis which emphasize meanings and social realities as experienced by multiple policy actors in multiple levels of governance across national boundaries in the cross-cutting policy field that is flood risk management. The requirement is to unpack the processes of flood risk governance policy making and change, which can appear chaotic and unstructured, and discern order and causality in the multifaceted policy landscapes of Scotland and England. The approach begins by reviewing and creating a chronological account of changes in policy objectives and institutional arrangements during the past century (Bowers, 1998; Sheail, 2002; Johnson et al. 2005; Scrase and Sheate, 2005; Penning-Rowsell et al. 2006; Watson et al. 2009). With that intention in mind, the purpose of this chapter is to explain and justify the methods, methodology and analytical framework used in conducting this research in order to make it fit for the purpose of establishing a sound understanding of the policy process and how national flood risk management policies have been (and to an extent still are being) construed and implemented at the scale of the LA area.

The chapter is divided into three sections. The first section details the analytical frameworks which are based on Marsh and Rhodes' (1992) writings on policy networks, Hajer's (1998) discourse coalitions and Sabatier's (1991) advocacy coalition framework. The second section outlines the research methods and methodology which is based on Yanow's (2000) interpretive policy analysis and Section Two also provides the process of data collection; opportunities and limitations encountered during data collection process and justification for the Local Authority areas selected as case studies. Finally the third section explains how the data were analysed.

Analytical Framework

The analytical framework adopted had not only to be capable of accounting for changes in national flood management policies over decadal periods of time but also, and more importantly, suitable for analysis of varying forms of policy implementation and governance adaptation in different LA areas in different flooding and environmental contexts. The

emphasis on local governance in the aims of this thesis calls for an underpinning concept that defines governance as involving multiple actors, operating across multiple levels of government. This is in line with the broader argument made by Rhodes (1996) that there has been a shift from a focus on 'government' in policy studies to 'governance'. Perhaps the most important aspect of the governance analysis is the capacity to recognise and account for the transition from the previous linear power structure between the policy actors to a 'complex structure based on networks, as sub-national organizations such as local government and the voluntary sector can communicate directly with supranational organizations such as the European Union, and *vice versa*' (Walker et al. 2010 p 9). The shift from government to governance has been theorised as 'hollowing out of the state' by enabling 'the loss of functions upwards to the European Union, downwards to special-purpose bodies and outwards to agencies' (Walker et al. 2010 p 9). In an attempt to impose some order on the Australian climate change policy process, Bulkeley (2000 p 728) stated that 'a policy network approach, which takes into account linkages across scales from the international to local, can provide a useful analytical framework'. Hence, in building the analytical framework, the concept of policy networks was found to be crucial and this is examined further in the next sub-section.

Policy networks

The term 'network' has been used to denote complex phenomena; this applies to fields ranging from the natural sciences to the social sciences (Borzel, 1997). However, this concept, as an analytical tool for state and interest group relations originated from criticisms in political science of the pluralist and corporatist views of governance (Smith, 1990; Smith, 1993; Borzel, 1997) and has roots in the early works on sub-governments in the United States and inter-organisational studies in Europe (Mayntz, 1993; Smith 1993; Marsh, 1998; Smith, 2000). It was borne out of the perceived theoretical and empirical inadequacies of the pluralist and corporatist traditions of policy making and the failure to reform these theories to reflect the reality of state-interest group relations (Kenis and Schneider, 1991; Borzel, 1997). However, policy network advocates argue, the policy process is dominated by a limited number of actors from multiple organisational affiliations who have specialised interests (Rhodes and Marsh, 1992; Weilbe, 2005).

The nature and scope of policy networks has been contested (Smith, 1993; Jordan et al. 1994). This is evident in the distinction between the approaches taken by American and British scholars (Jordan et al. 1994; Rhodes, 1996) as opposed to those adopted by German and Dutch scholars (Borzel, 1997; Marsh, 1998; Marsh and Smith, 2000). The main

distinction is in the scope of the application of the concept. The German and Dutch literature is the more ambitious with a wider scope that treats networks as a new and separate form of governance (Mayntz, 1993; Marsh and Smith, 2000). In contrast, the British and American literature interprets policy networks as a typology for forms of relationships between interest groups and the state within any kind of governance system (Marsh, 1998; Greer, 2002). However the distinction between the two schools is not clear-cut and they are not necessarily mutually exclusive (Borzel, 1997) especially in terms of the effects of structure and agency within a network and their implications for the policy outcome (Marsh, 1998).

The British and German schools on policy networks have some commonalities. Both include public and private institutions in the public policy making process thus increasing their influence on policy making and implementation (Marsh, 1998). In this context policy network analysis can be applied either as an analytical tool (through which conclusions about an actor's behaviour in a policy process can be explained by the structures that exists within a network) or as a model through which the structure and processes involved in a policy process can be mapped out (Borzel, 1997; Marsh and Smith, 2000; Toke and Marsh, 2003). In the context of the German or European schools of policy network, discourse revolves around the view of policy networks as a form of governance, as an alternative to markets and hierarchies (Marsh and Smith, 2000) or a combination of both (Mayntz, 1993). Factors responsible for the emergence of this new governance system include

- Societal differentiation and sectoralisation of modern society (Borzel, 1997)
- The apparent failure of hierarchies and markets to provide an explanatory framework for the increasing interdependence between the state and private sectors (Marsh, 1998) and contemporary features in public governance which include hollowing out of the state (Walker et al. 2010)
- Contradictions of new public management and the rise of intergovernmental management (Rhodes, 1996).

In the application of policy networks as a governance model through which to analyse policy processes and outcomes, there are a number of crucial assumptions about modern society which must be highlighted. These are:

1) The state is fragmented, does not act corporately and is characterised by divisions between departments and different levels of government (Hill, 2005; Luzi et al. 2008);

2) The process of societal and functional differentiation and sectoralisation in modern society leads to a collection of sub-systems of actors with specialised tasks and limited competence and resources (Mayntz, 1993; Kenis and Schneider, 1991; Borzel, 1997);

3) The existence of autonomous but unequal organisations within societal sub-systems that have the capacity for self-regulation (Mayntz, 1993).

These characteristics result in no state agency having the resources to implement policies singlehandedly (Smith, 2000). Therefore out of necessity, different divisions of the state form relationships and interact with other corporate actors and formal organisations that have particular interests and resources in a policy domain (Smith, 1993). The underlying assumption of this theory is that the logic of the relationship in networks is based on power dependency theory (Smith, 2000) or resource dependency theory (Weilbe, 2005; Compston, 2009). This led Compston to define policy networks as 'a set of political actors who engage in resource exchange over public policy (policy decisions) as a consequence of their resource interdependencies' (Compston, 2009 p 11). Therefore, it is argued that the modern state needs the resources and at least acquiescence or preferably, the active support of societal actors for effective governing while non-state actors need access to the policy process to influence policy making and also to seek legitimacy. Consequently this results in a conceptualisation of the governance process where policy actors from all levels of government ranging from the local to the supra-national, exchange resources towards the achievement of certain policy goals.

As an analytical device, policy networks provide a toolbox with which the policy process can be analysed. However policy networks have been criticised for being descriptive, rather than explanatory with respect to the policy process (Hill, 2005) and also as being more adept at explaining policy *continuity* rather than policy *change* (Toke and Marsh, 2003). Its utility as an explanatory tool for policy outcomes has also been criticised and it has been referred to as a mere heuristic device with no utility in this respect (Marsh, 1998; Marsh and Smith, 2000). However this criticism appears to be a component of a larger disagreement concerning the ontological nature of the policy process which has resulted in a debate over the most suitable methodology to adopt when explaining the policy process (Marsh and Smith, 2000). This has led to attempts by some authors to give emphasis to the role of structures in policy networks and their implications for policy outcomes (Smith, 2000; Hill, 2005) while others choose to highlight the role of actors in a policy network focusing on the interpersonal skills of the actors. However as Marsh and Smith (2000) and Toke and Marsh (2003) have shown, policy network approaches in explaining policy outcomes that

emphasize solely the roles of policy structure or actor agency are unsuitable. Rather approaches that take into consideration the iterative relationship between structure and agency in policy networks are more suitable devices for policy analysis.

It is important to provide an empirical mechanism that captures the dynamic of policy change or implementation within the policy process. In order to address this, it is crucial to highlight the institutional characteristics of policy communities. Marsh and Rhodes (1992) outlined a typology of policy networks that could be broadly categorized as a continuum from policy communities at one extreme to issue networks at the other. Policy communities are characterized by stable relationships between policy actors, highly restricted membership, very frequent exchange of resources, frequent interactions, shared values and insulation from other networks and the public in general (Marsh and Rhodes, 1992). It must be noted that this definition of policy communities contrasts with the notion highlighted by Jordan and Richardson (1987) who used the term policy communities more broadly to express a range of policy relationships of varying stability. At the other end of the continuum, issue networks are characterised by a large number of participants with a limited degree of interdependence, unequal power, varying resources and limited collective action (Hill, 2005). Issue networks are highly unstable and continuity is uncommon (Marsh and Rhodes, 1992).

As touched on above, Marsh and Rhodes (1992) highlighted the institutional nature of policy communities using agricultural policy as an example. In particular they defined the Annual Review in England established under the Agriculture Act (1947) as an institutional structure which not only determined the future agricultural prices but also provided a platform for the Ministry of Agriculture and Food (MAF) and the National Farmers Union (NFU) to decide policy outcomes while simultaneously excluding other actors from the policy making process. This concurs with the view of policy communities held by Bulkeley (2000) as strongly institutionalised forms of policy-making arrangements within which there are shared values, world-views, and resources and wherein members tend to agree on what specific problems justify a policy response and how, in turn, that response should be structured. Bressers et al. (1995) highlighted the importance of policy networks in modelling the policy changes that occurred in the English water policy sector during the 1970s and 1980s. They explained that *'institutional structures'* had proved important in creating both constraints and opportunities for different policy actors. Indeed the persistent technocratic paradigm that dominated the English water sector during the 1970s despite institutional changes and reforms was attributed to the presence of 'a relatively closed policy making arrangement, akin to a professionalised network or a policy community' (Bressers et al. 1995 p 113).

Studies by Smith (2000), Weilbe (2005) and Weilbe and Sabatier (2005) have placed more emphasis on the role of ideas, beliefs, values and consensual knowledge in policy networks. Weilbe and Sabatier (2005) concluded that the nature of the relationship within a policy network is likely to be based on shared beliefs rather than being strictly resource dependent. On this point it is important to note the warning given by Marsh and Rhodes (1992 p 259) concerning the process of policy change, 'just as economic change is mediated through party ideology, so technical change is not a functional imperative but is mediated by economic and professional interests …. Analysis of change cannot be reduced to a simple environmental stimulus-policy network response model' rather 'actors in a network shape and construct their world, choosing whether or not (and how) to respond'. It follows that policy change can also be influenced by meanings, beliefs and policy concepts shared between actors in a policy network. This also led to incorporation of concepts such as advocacy coalitions and discourse coalitions into policy networks studies to provide a basis for explaining policy change (Borzel 1997; Bulkeley, 2000). Smith (2000) posited that dominant coalitions will be formed by well-resourced actors who share the same belief system, because this determines how policy problems are perceived (making some solutions more acceptable than others), and because it informs the 'rules of the game' that govern interactions between network members and between the network and non-members.

Discourse Coalitions

In pursuance of local approaches to the implementation of national flood risk management policies, it is appropriate to adhere to the central axiom of discourse theory as defined by Hajer, namely that; political problems are socially constructed (Hajer, 1993). This position is in stark contrast to the positivist (or realist) theory of knowledge and a bureaucratic-rationalistic policy orientation (Jasanoff, 1999). The contrast can be attributed to the shift in social science away from the positivist paradigm to an era which has been defined as post-positivist. Hitherto, traditional approaches to policy analysis such as the assumptions of positivist informed and value-free science are viewed as being inadequate and anachronistic. Policy language is consequently not viewed as a neutral means of describing the world, rather as a medium through which policy makers and actors create, recreate and transform the world (Hajer, 1993; Yanow, 2000). The shift in social science from a positivist-informed to a post-positivist view has had implications in the field of policy analysis and has contributed to a better understanding not only of the sociology of scientific knowledge and risk analysis, but also the behaviour of policy-relevant publics. Indeed the importance of 'local knowledge' in policy implementation studies has been highlighted by empirical work on

the sociology of scientific knowledge. An example of this, supplied by Wynne (1992) was the effects of radio-active materials in sheep in Cumbria. Wynne framed the disagreement between sheep rearing hill farmers and government scientists as a clash of social realities. Applying models that suggested Caesium was immobile and would be eventually absorbed by the alkaline clay soil type found in Cumbria, the scientists believed that caesium levels would fall over time. However, the science upon which the government relied failed to take into account the acidity of soils in the upland areas and hence variability of Cumbrian soils, which meant that Caesium remained mobile and could be absorbed by plant roots. This led to the science and government losing credibility among the farmers. The impacts were exacerbated because the government enacted policy on the basis of this flawed scientific evidence, against the advice of the farmers:

> ‘The same time the scientists ignored farmers’ own knowledge of their local environments, hill-sheep characteristics. And hill-farming management realities such as the impossibility of grazing flocks all on cleaner valley grass, and the difficulties of gathering sheep from open fells for tests’
>
> (Wynne, 1992 p 287)

This example does not question the credibility or utility of science to policy making especially with regard to risk-based decision making. Neither does the point lie in use of inapplicable data by government scientists. Rather the example serves to extend the boundaries of the knowledge of policy analysis by acknowledging that although dispassionate and rigorous science is possible and indeed very useful, it is neither neutral or value free (Yanow, 2000) and can be characterised as just one of many ways of constructing reality. Hence as Jasanoff stated ‘faced with the same ‘facts’ about nature, different publics such as Americans, for instance, fear cancer more than the British, the French tolerate nuclear power better than their German neighbours, and Americans are more receptive to biotechnology than Danes, Norwegians or Germans’ (Jasanoff, 1999 p 3). There are many ways in which reality can be viewed and as a corollary to this policy problems and solutions are also subject to multiple interpretations. Therefore in the formulation and implementation of policy, in addition to the reliance on experts (e.g. physical scientists and statisticians), local knowledge, expert understanding of and practical reasoning about local conditions derived from lived experience, should also be considered (Yanow, 2000).

Accepting this raises question of how these competing realities are produced, re-produced, transformed and propagated. The answer lies in the central axiom of discourse theory. Not only are political problems socially constructed but more importantly the policy process is

replete with actors holding different views of reality and thus competing visions of the future. Hajer (1988), in his work on environmental politics, detailed the empirical origins of the competing views of reality in the policy process. Hajer realised that contemporary European policy controversies, such as management of acid rain and steps to prevent the spread of 'mad cow disease' went far beyond being conflicts over the science of pollution or the clinical understanding of 'mad cow' disease, but represented broader, institutional crises in the field of environmental *politics* (Hajer, 1988).

To demonstrate the utility of the social construction of reality, it is instructive to examine how policy meanings influence policy problems. Adopting the approach of Yanow (2000), a symbol, usually something concrete or tangible, is representative of something else, meaning, usually an abstraction. Hence, a dove symbolizes 'peace' in some contexts and to some groups of people and yet, when interpreted in other contexts or by other groups, it could be interpreted as a sacred symbol, a type of bird or dinner. That should not be taken to mean that a dove is determinedly a social construct, but rather that its symbolic use and significance are situated in historical, cultural and spatial contexts. Furthermore, in environmental politics, Hajer (1988) showed that even though an area of dying trees is not a social construct, how one makes sense of it is dependent on multiple political realities. Specifically, dying trees could be attributed to 'natural stresses' caused by drought, cold, forest fires or wind, or they could be interpreted as evidence of 'pollution'. The importance of meaning is that it shapes whether there is a problem to begin with and, if so, what course of action should be taken to solve the problem. It follows that if tree death is interpreted as part of the natural 'circle of life' then no political response is required because there is no problem to be solved. However, if the dead trees are victims of pollution, then for every victim there has to be a perpetrator and for every crime, there has to be a punishment. According to Hajer (1988), the acid rain narrative labels dead and dying trees as victims of pollution and therefore, casualties of an uncaring industrial society. By framing the problem of dead trees in a narrative of acid rain, a policy crisis ensues because it establishes that attempts to solve the problem will be futile unless broader institutional problems related to industrial society (seen as the root problem), are addressed.

Having argued that policy problems are socially constructed, it is pertinent to outline how the views of policy making individuals and groups are translated into policy goals and outcomes. As explained above, policy meanings are abstract but are manifest in concrete actions (such as policy preferences and social practices) adopted by policy relevant publics. Hence, policy meanings must be translated and expressed by the actors who hold the relevant views.

Wildavsky (1987), Wildavsky and Dake (1990) and Tansey and O'Riordan (1999) employed cultural theory in defining policy preferences as a means for reinforcing group cultural values and biases and thus promoting group cohesion between policy relevant publics. However it is important to note that, while the cultural theory of risk provides a basis for identifying the values which underlie social practices by policy relevant publics, it does not specify how the transition of ideas into policy outcomes actually occurs. Hence, while social practices are useful in identifying deeply and tacitly held values among policy actors, they are insufficient alone to determine how those values are translated into policy preferences. Hajer (1988) sets out an approach to identifying how policy meanings become entrenched and, thus, result in policy outcomes. In this context, the role of language in the policy process (especially in shaping and transforming social constructions of reality between policy relevant publics) is important. According to Hajer (1988 p 300), 'Language has the capacity to make politics, to create signs and symbols that can shift power balances and impact on institutions and policy-making. It can render events harmless but it can also create political conflicts.'

It follows that if policy makers assign responsibility for dead trees to droughts the course of action they select will be completely different to that chosen if dead trees were believed to be the victims of pollution. Hence, how a phenomenon is represented discursively has repercussions for political issues such as; who is responsible? What can and should be done? Who should pay? This comes as no surprise given recognition in post-positivist social science of the role of language as the medium through which policy actors create the world. The analytical concept that takes into consideration not only the language in which one creates meaning, but also the social practices which embody those meanings, can be termed *policy discourse*. This embodies a particular ensemble of ideas, concepts and categorizations that are produced, reproduced and transformed through a specified set of practices which give meaning to physical and social realities (Hajer, 1988; Hajer 1993; Hajer 1995; Bulkeley, 2000). These concepts, ideas and categorizations may originate from normative or analytical convictions, historical references, or even myths, about nature.

Hajer (1995) also provided a framework for the process through which policy discourse or point of view becomes an established or even widespread practice - namely discourse structuration and discourse institutionalisation. Discourse structuration occurs when a policy discourse gains widespread acceptance in the public domain, largely as a result of policy actors drawing upon its ideas and concepts in order to gain credibility in the policy process and to advance their policy positions. Discourse institutionalisation occurs if a given

discourse is translated into institutional arrangements, in other words if the theoretical concepts of a given discourse have been translated into concrete policies and actions such as organisational practices. Discourse structuration and institutionalisation require that policy actors develop and deploy narratives, storylines and metaphors. However as Marsh and Rhodes (1992) suggest policy practices should not be seen as immutable, permanent or set in stone, but rather as part of a continuous process of negotiation and re-negotiation that may be characterised as coalition building. This leads this line of argument to the concept of discourse coalitions.

Discourse coalitions are defined as the ensemble of (1) a set of storylines, (2) the actors that promulgate these storylines and (3) the practices that conform to these storylines, all organised around a specific discourse (Hajer, 1988; Hajer 1993; Hajer 1995). This usually operates through an interactive process within which members of a coalition (be they scientists, environmentalists or government officials) come to use the same cognitive mechanisms, rely on the same 'facts', engage in the same practices and use similar languages to talk about policy thoughts and/or actions. Group activities usually reinforce this operation and often promote internal cohesion (Yanow, 2000). Notably, discourse institutionalisation facilitates the reproduction of a given discourse during the policy making process. Actors who have been socialised to work within the frame of an institutionalised discourse will use their positions to persuade or even compel others to interpret and view policy reality according to their institutionalised insights and convictions through policy negotiation and re-negotiation highlighting the importance of an institutionalised discourse in the policy making process. This was underlined by Marsh and Rhodes (1992), who stated that institutions are made up of social practices which, in turn, enable or constrain policy agendas and shape policy outcomes. Furthermore, the policy making process can be envisioned as comprising of multiple discourse coalitions, which are analogous to Marsh and Rhodes' (1992) policy communities (Bulkeley, 2000). Each coalition has its own storyline and narrative concerning a particular policy issue and it seeks discursive hegemony in order to have its concepts, ideas and discourses widely accepted and institutionalised into policy practice as this increases its capacity to influence policy outcomes.

To better conceptualise the process of policy change it is useful to incorporate the discourse coalition analytical framework into the policy networks model. However, while the notion of discourses facilitates a better explanation of both the multiple political realities held by actors in the policy making process and the institutionalisation of these realities, in explaining the process of policy change, Szarka (2004) noted that Hajer underplayed the notion of

‘coalitions’ when explaining policy change through discourse structuration and institutionalisation. This is problematic because, if the role of discourse institutionalisation in influencing policy outcomes is affected, then the significance of ‘coalitions’ or policy communities becomes apparent. Moreover, coalition behaviour is understood as concerted action directed at mutually beneficial goals (Szarka, 2004). It follows that unpacking ‘coalitions’ or policy communities is necessary to explain the behaviours of policy actors. This was underlined by Bulkeley’s (2000) claim that, institutionalised patterns of interaction within a policy network in turn structure policy outcomes and more importantly individual actor behaviour. Hence, while Hajer (1988) correctly noted the need for shared concepts and beliefs in a discourse coalition, he underplayed the importance of the nature of cooperation within coalitions. Consequently, a concept that captures how actors in a coalition cooperate is needed to provide a more robust analytical framework.

Advocacy Coalition Framework

The ACF was proposed by Paul Sabatier and Hank Jenkins-Smith (Sabatier, 1991; Sabatier and Jenkins-Smith, 1994; Sabatier, 1999; Hill, 2005) and was developed in response to the needs to:

- better explain the policy process,
- provide a causal theory of the policy process,
- include a wider range of stakeholders such as local officials in policy generation and implementation and
- Incorporate technical information in the understanding of the policy process.

The ACF is conceptualised as involving a geographical or functional policy sub-system wherein actors from different parts of the policy system (including policy actors from all levels of government) can be empirically aggregated into anything from one to four ‘advocacy coalitions’ (Hill, 2005), who share a set of normative and causal beliefs about a particular policy issue and engage in a non-trivial degree of coordinated activity over an extended period of time (Sabatier, 1999) in order to translate their beliefs into policy outcomes (Figure 2.1).

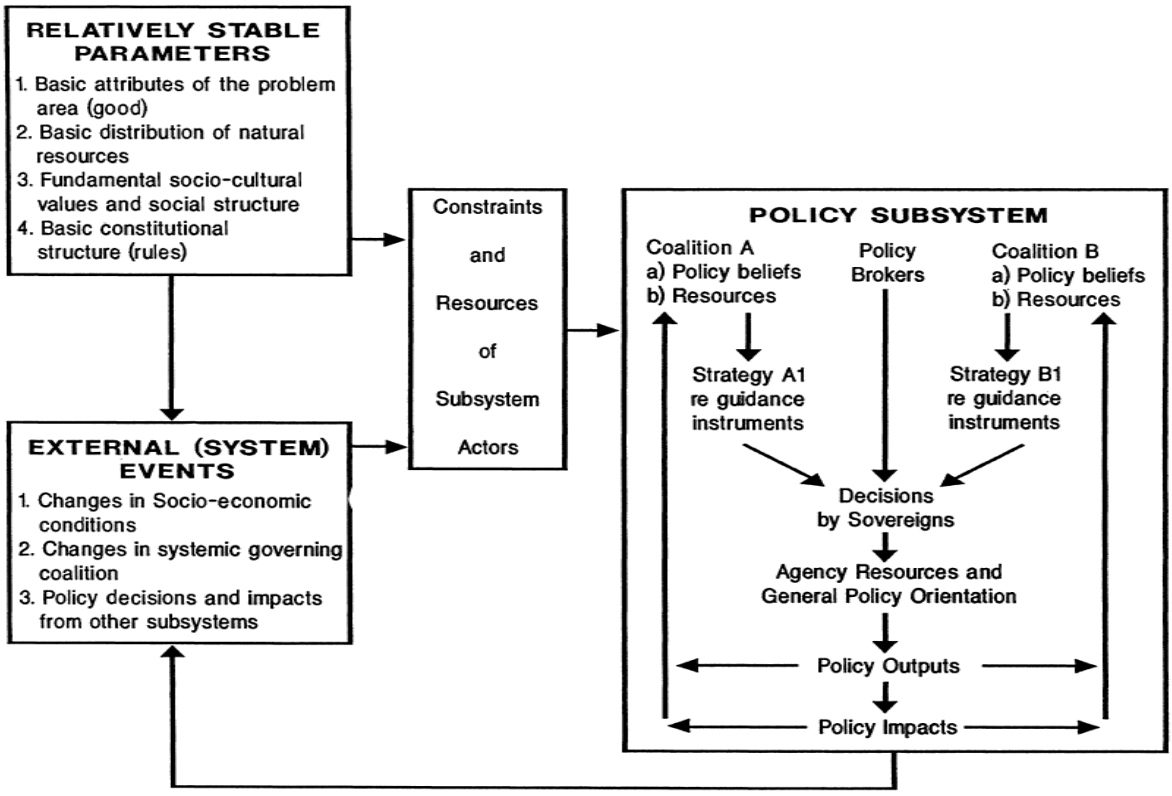


Figure 2. 1 Advocacy Coalition Framework Template

Adapted from Sabatier (1991)

According to Sabatier and Jenkins-Smith (1994), the advocacy coalition framework has five basic premises which distinguish it from other policy process theories:

1) The incorporation of scientific information in the policy process;

2) The need for policies to be analysed over a decade or more;

3) The unit of analysis is a policy domain and not a political institution,

4) The composition of a policy domain or sub-system is greater than the iron triangle made up of government agencies, legislation and interest groups, and also includes other actors such as the press, researchers and actors from different levels of government and;

5) The policy domain conceptualises public policies in the same way as belief systems.

According to the ACF approach, the policy process starts with the belief system of actors in a policy sub-system. These can be aggregated into coalitions based on a shared set of normative and causal beliefs. There may be a number of coalitions in the policy sub-system, normally up to four; these coalitions deploy resources and strategies in their attempts to alter the behaviour of governmental institutions and so achieve policy goals based on their beliefs over time (Sabatier, 1991). This process is usually mediated by a set of actors in the policy sub-system called policy brokers whose intentions are to minimise conflict and resolve

disputes (Hill, 2005). These policy brokers can either be elected politicians or high ranking civil servants. The brokered policy outcomes will certainly reflect the beliefs and policy goals of the dominant coalition, but may also include some compromises sought by opposing coalitions. Within this framework policy change is attributed to events external to the policy sub-system that may include socio-economic changes, policy outcomes from other policy sub-systems and system wide changes such as the outcomes of elections that alter the distribution of political resources within the sub-system to either constrain or empower policy change (Sabatier and Jenkins-Smith, 1994).

The belief systems of various coalitions are organised into hierarchical tripartite structures (Sabatier and Jenkins-Smith, 1994). This is apparent when a coalition organises itself around common set of core beliefs, made up of deep core, ontological and normative beliefs (akin to religious beliefs) and policy core which represents the coalition's causal perceptions and extends across the policy domain. The final belief system is the secondary belief system, which can be modified in light of new scientific evidence accumulated over protracted periods of time, through policy learning. Policy-oriented learning has been described as changes in the beliefs and/or behaviours of policy actors resulting from newly obtained information and experience that is geared towards attaining or revising policy objectives (Sabatier and Jenkins-Smith, 1994). This involves the coalitions in a policy subsystem that utilises formal policy and technical analyses to better understand and evaluate the policy outcomes while reinforcing deep core and policy core beliefs. New technical information may be reviewed either within or between different coalitions. This cognitive process can be responsible for belief changes at the secondary belief level, but can only change beliefs at the policy core level if sustained over a long period of time (Weilbe et al. 2009). Policy oriented learning also affects the stability of coalitions within a policy subsystem. This occurs within the context of bounded rationality, wherein policy-oriented learning enlarges the differences and increases conflicts between opposing coalitions (Sabatier, 1999).

This theory has been applied to a wide range of policy areas including those involving substantial political conflict and high technical complexity across different geographical regions and various political contexts (see Sabatier, 1999; Weilbe et al. 2009). The theory has been modified with the unearthing of new evidence from empirical studies carried out by various researchers (Sabatier, 1999) leading to the revision of some of the components of Sabatier and Jenkins-Smith's original theory (Weilbe et al. 2009). Modifications include the adaptation of the framework from its origins in the more pluralist systems ubiquitous to the

United States to the more corporatist regimes of Europe the addition of two more paths to policy change: specifically those brought about by internal sub-system events and policy changes stemming from cross coalition agreements respectively. These modifications are illustrated in Figure 2.2 (Weilbe et al. 2009).

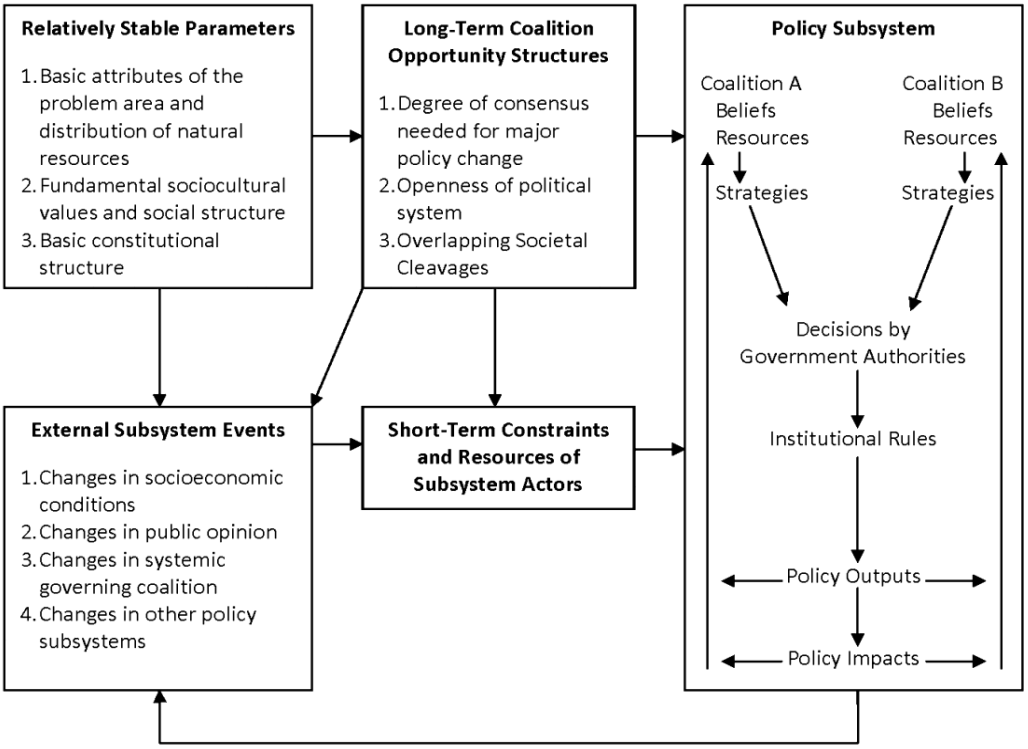


Figure 2. 2 Modified Advocacy Coalition Framework Template

Adapted from Weilbe et al. (2009)

The ACF has been used to explain policy change in flood hazard governance in England and Wales over the past 50 years and to categorize changes in flood hazard governance policy into three phases: 'land drainage', 'flood defence' and 'flood risk management' (Tunstall et al. 2004; Johnson et al. 2005; Penning-Rowsell et al. 2006; Johnson and Priest, 2008). A similar grouping has been proposed in Scotland (Werritty, 2005) but with a different timescale (Crichton, 2004). The implications of these changes in policy or paradigm can be observed in the changing roles that central government has played as well as in institutional arrangements and their relation to other stakeholders such as local councils or authorities, developers, land owners, utility companies, insurance companies and the general public (Watson et al. 2009). Penning-Rowsell et al. (2006) further defined the three phases as reflecting the dominant advocacy coalition terming them the land drainage, the flood defence and flood risk management advocacy coalitions.

The fundamental questions that arise from these characterisations are why certain coalitions or ideas dominate the policy process at particular periods, how resulting policy outcomes impact the policy domain and the effects of other drivers in creating conditions responsible for particular coalitions dominating the process. It is to be expected that there would be a number of theories that would seek to provide a framework explaining why actions occur in response to external phenomena at particular times. In the literature on flood hazard policy change in the UK, emphasis is placed on policy drivers (such as devastating flood events) and wider political events that alter relationships between policy actors by empowering some actors, providing new policy resources and even introducing new actors and new ideas into the policy sub-system (Johnson et al. 2005; Watson et al. 2009). However the ACF takes a holistic view of the policy process, providing the frame through which the continuous process of policy learning and change can be observed to occur via the generation, competition and negotiation of ideas alongside the influence of other drivers of policy change including the occurrence of extreme events, changing public opinion, changing socio-economic conditions and the impacts of other policy sub-systems.

Having outlined the suitability of the ACF as an analytical concept for framing the process of policy change, it is also necessary to consider a number of criticisms that have been levelled against the ACF. The character of these criticisms (see Hajer, 1995; Bulkeley, 2000) is not surprising considering the ontological bias of this approach. Even though the institutionalisation effects of a policy community, a discourse coalition or indeed an advocacy coalition are accepted, Marsh and Rhodes' (1992) warning not to conceptualise policy change using a simple policy driver stimulus-policy network response model should be heeded. In this context, the social construction of policy realities axiom of discourse theory suggests that a number of the features of the ACF are, indeed, problematic. For example, the axiom that actors in the policy process are amenable to changing their *a priori* beliefs by accepting neutral 'scientific facts' through the process of policy learning and change is incompatible with the analytical theme of this thesis. As Marsh and Rhodes (1992) and Hajer (1988; 1993; 1995) have noted, policy ideas are not free floating. Indeed Hajer's (1995) analysis centres on the ways in which the interactions of existing policy actors (agency) and institutions (structure) create a context through which policy beliefs and values are constantly defined and redefined, and actors and institutions shaped and re-shaped (policy change) through the discursive modifications of narratives and storylines and not the acceptance of putatively neutral scientific facts .

It follows that several axioms implicit to the ACF (such as policy actors holding *a priori* beliefs outside social contexts, the role of 'scientific facts' in policy learning and the role of the policy brokers) do not lend credence to Hajer's notion that political realities are socially constructed. However, as Yanow (2000) has shown, although rigorous science is possible it is by no means neutral and value free. Moreover, in the ACF the putative role of science in policy learning regards language as a way of describing the world (Bulkeley, 2000). However, as Hajer (1995) and Yanow (2000) have shown, policy meaning is represented in language and at the same time language shapes changes in actors' perceptions and understandings of policy meanings over time. Thus, if we are to accept first the value laden nature of language in the policy process and, second, the view that reality is socially constructed, then the supposed neutral roles of 'scientific facts' and the policy brokers in the ACF are clearly problematic. This criticism was highlighted by Hajer (1995), who noted that the differences and boundaries between policy actors and policy brokers in ACFs are poorly defined and unclear.

It is, therefore, important to explain how the ACF approach is applied in this thesis. Firstly, the utility of ACF adoption of a decadal time-scale in analysing policy change is accepted, as is the idea that the appropriate unit of policy analysis is the policy sub-system which includes an inter-governmental dimension and conceptualises policies as being analogous to belief systems. Perhaps the aspect of the ACF which best captures the conceptualisation of the policy process used here is that of framing the coalitions in which policy actors engage as facilitating a 'non-trivial degree of coordinated activity in pursuit of common policy objectives' (Sabatier and Jenkins-Smith, 1999 p 127). The emphasis on coordinated activities in coalitions highlights the role of concerted action which Hajer (1988) and Hajer (1995) downplay. The challenge is then to find a way of accommodating the activities of discourse coalitions within the analytical approach provided by the ACF.

Conceptualising Policy Change and Implementation

This section defines the conceptual framework that will be used in this thesis, which is derived by amalgamating concepts drawn from policy networks and, discourse coalitions within an ACF. However, before elaborating on this approach, it is necessary to match the analytical concepts mentioned above to the objectives of the thesis. Matching begins by framing the flood hazard policy process using a policy network approach, which allows policy actors across governing scales ranging from local to supranational to be properly located within the policy process. Perhaps more importantly this step also defines the relationship

between the actors as one of resource interdependence between groups that hold and share common terms and concepts concerning the particular policy issue at hand. It follows that, according to this approach, policy actors must negotiate with each other through the exchange of resources such as legitimacy, authority, expertise, public opinion and capital in order to secure the policy outcomes they all desire. An important corollary to this is the subsequent institutionalisation of patterns of interaction within policy communities that influence, first, the behaviours of individual actors and, ultimately, the policy outcomes themselves. This reasoning justifies adoptions of a policy network approach in a thesis that seeks to understand, explain and compare local flood governance adopted in urban and rural LA areas Scotland and England by seeking to explain first the process of national flood policy change in each country and, second, the genesis and evolution of local flood risk management networks in both countries.

Hajer (1988; 1993) highlighted the possibility that multiple policy communities could exist within the same policy networks, citing the example of 'traditional pragmatism' and 'ecological modernisation' discourses coexisting within British air pollution policy network. Similarly, Bulkeley (2000) noted that the Australian climate change network was sufficiently broad to accommodate both 'environmental' and 'resource' policy communities simultaneously. According to Bulkeley's analysis, the policy process can be conceptualised as comprising of different policy communities or discourses within a tiered policy network that seeks to influence policy outcomes in a negotiated manner acceptable to all the actors. Policy change is then conceptualised as the attainment of discursive hegemony by competing discourse coalitions or policy communities. According to Hajer (1988) discourse coalitions are able to translate their policy ideas into concrete policy practices through the institutionalisation of the discourse. The utility the discourse coalition approach to this research is that (notwithstanding the limitations detailed above) it provides a base from which to account for the policy transitions from 'land drainage' to 'flood defence' and then 'flood risk management' by opening up possibilities of unpacking each paradigm into a number of discourse coalitions.

Further, while the ACF was examined in terms of its usefulness in explaining how concerted actions between policy actors within coalitions can change policy, there are other features of the ACF that provide an analytical framework suitable for investigating the role of policy actors at the local level. As this thesis conducts a comparative analysis of flood governance approaches in LA areas, Jenkins- Smith and Sabatier's (1994 p 179) conclusion on the role of local actors in the policy process that 'two decades of implementation research has

conclusively demonstrated that sub-national implementing officials have substantial discretion in deciding exactly how national policy gets translated into thousands of concrete decisions in very diverse local situations' is particularly useful. Jenkins- Smith and Sabatier's appraisal suggests that adopting the ACF would broaden the basis for research on multi-decadal policy change in the domain of flood management in two important ways. First, the ACF approach facilitates investigation of policy implementation in a space that spans a national boundary. Second, it provides the platform for teasing out and examining examples of how local conditions and the concerted actions of individuals and small, like-minded groups not only respond to, but also shape and (in time) stimulate new policy at national and trans-national scales through demonstrating innovative 'best practice' within a virtuous cycle of vertically integrated policy making.

For these reasons methodological development sought to fuse together theoretically compatible analytical concepts from the policy network and discourse coalition analysis within the ACF to provide a suitable vehicle for systematic analysis of policy change and implementation at a range of geographical scales and against contrasting regional backdrops. This is novel though not entirely untested. For example, Borzel (1997) used a policy networks approach in combination with the ACF and discourse analysis, justifying this as a means of avoiding the shortcomings of the policy network approach. Later, Szarka (2004), in analysing wind power discourse coalitions in Britain, France and Denmark, differentiated between policy actors in discourse and advocacy coalitions by describing the former as 'singing the same chorus but not necessarily in the same choir' while the later 'are singing the same chorus from the same choir'. His point was that advocacy coalitions are more strongly and durably bonded – making them far more effective in delivering their common messages through orchestrated team working towards mutually agreed goals, that uses a well-rehearsed delivery of shared arguments and common beliefs Szarka (2004 p 319) further conceptualised the analytical bridge between the ACF and discourse coalition analysis by claiming that: 'advocacy coalitions are taken to be a sub-set of discourse coalitions but of a significant and powerful kind'.

Building on the foundations laid by Borzel (1997), this thesis will apply the policy networks approach to the policy process and discourse coalitions in order to provide the basis for explaining flood hazard policy changes in Scotland and England. Further, the research will examine Szarka's (2004) characterisation of advocacy coalitions as a powerful subset of discourse coalitions. In conceptualising national flood hazard policy change and local interpretation, this thesis will frame the flood policy process as a policy network that will be

examined in terms of multiple, competing discourse and advocacy coalitions. Essentially policy change will be framed as a function of the transformation of multiple flood hazard discourses. Additionally, local policy making will be regarded as emerging from complex interactions between local governing coalitions and concrete practices will be conceptualised as a function of the hegemony of certain local governing coalitions.

Research Approach and Methodology

Case study area selection and justification

Exploration of contrasts in the ways national policy are interpreted and implemented locally lies at the heart of this thesis and to facilitate this a comparative approach, based on case studies performed in parts of the UK with contrasting systems of flood risk governance was adopted. Hence, case study areas were selected in England and Scotland based on criteria set by Parker (2000), which define flood disasters as outcomes of interactions between environmental and social processes. Parker's criteria are:

- social factors,
- vulnerability,
- exposure,
- response systems,
- flood characteristics, and
- environmental processes.

The LA areas used in this thesis were therefore selected to cover a diverse range of flood types and social-environmental interactions. To meet this requirement, two of the study areas, Glasgow and Birmingham, were selected because they are major urban, financial and industrial conurbations, significant at a European as well as a national scale. Conversely, Somerset and Moray are predominantly rural areas dominated by agriculture but replete with Areas of Outstanding Natural Beauty (AONBs) and Sites of Special Scientific Interest (SSSIs) (EA, 2009). Rural-urban contrasts abound between the two pairs of study sites with, for example, open countryside making up over 70% of the Moray LA area (Moray Council, 2008), but only 14% of Birmingham, where housing predominates, accounting for 52% of the land area (Birmingham City Council, 2008). In addition to the rural-urban divide, the LAs have important administrative characteristics that differentiate them. For example, Glasgow, Moray and Birmingham are unitary councils – that is they have complete control over their domains. In contrast, Somerset County Council is not a unitary council, but a conglomerate

of several significant administrative units including South Somerset, West Somerset, Mendip and Sedgemoor District Councils, plus Taunton Deane Borough Council.
An environmental interaction that differentiates the LAs is the type of flooding to which they are prone. In this respect Birmingham, which is land locked, differs from the other three LAs which are susceptible to coastal as well as inland flooding. However, a trait common to all four of the selected areas is that they have experienced numerous flooding incidents. For instance, Birmingham suffered wide-scale flood events in 1998, 1999, 2000, 2005, 2007 and 2008, with the two most recent being especially severe in Whitton and Frankley, respectively. Somerset experienced significant floods in 2000, 2008, 2011, 2012 and 2013/14, while in Moray significant flooding occurred in 1997, 2002, 2009 and 2014. Glasgow was hit by major urban floods in 1994 and 2002. However, perhaps the most distinctive flood statistics that justify selection of these LA areas are the number of people and properties at risk from flooding. In Somerset, 26 700 people and 8 600 residential and commercial properties are at risk of flooding by a 1% annual probability event. In Birmingham, over 5 000 properties are at risk from a 1% river flood and 25 000 properties are at risk of surface water flooding, while in Moray 5 355 of inland properties and 3 780 coastal properties are currently at risk of flooding (EA, 2009a; EA, 2010a; Moray Council, 2007). Moreover, Birmingham has been identified as being 'at considerable risk of flooding from Main River, Ordinary Watercourses, surface water, sewer flooding and groundwater' (Birmingham City Council, 2010a, p. 7), while Glasgow has been designated as the 'UK city most at risk' from flooding, with 23 000 properties at risk of fluvial flooding and a further 23 000 at risk from a tidal surge (RSPB, 2004).

Methodology

Consistent with the ontological predisposition of the analytical framework adopted in this thesis, a qualitative methodology was adopted. As the research involves the analysis of the flood hazard management policy process, and elucidation of the actions and practices of the institutions and actors involved, an interpretive approach was identified as being most suitable (Bevir and Rhodes, 2003). This allowed policy analysis to include the actors' framing of the policy issue, their belief systems, and normative ideas as well as their perceptions of other actors. Qualitative research encompasses a number of techniques (Bryman, 2004) and in conducting the research, textual analysis of policy documents, semi-structured interviews and participant observation have been employed to generate a rich data set that captures the views, actions and interpretations of policy actors as well as the contexts and nuances of the flood hazard management policy process.

The qualitative methodology gave policy actors at the national level and from each case study area freedom to define the implementation of national flood risk management policies in their own terms. Allowing policy actors to relate their respective perspectives on flood governance through time and space meant that, temporal account of the change in paradigm from 'flood defence' to 'flood risk management' could be explored, interactions between local-national flood risk management policy implementation were revealed and contrasting local approaches could be analysed.

Within this methodology, interpretive policy analysis (as espoused by Yanow, 2000) was applied. This involves introducing a set of key questions concerning how policy meanings are communicated to multiple policy actors, addressing fundamental issues such as the basic meaning of policy. As this study concerns implementation as well as conception of policy, interpretive analyses extended to consideration of how different interpretations of the meaning of policy lead to differences in implementation. Therefore the interpretive policy approach provides a basis for understanding how multiple interpretations of national policies may indeed facilitate or impede policy implementation. The approach characterises the policy process as constituted of organisational artefacts, agency names, policy acts, buildings, programmes, annual reports and organisational meetings (Yanow, 2000) as the vehicles through which policy meanings are conveyed and solidified. Hence, these policy artefacts reveal what members of a polity value and are viewed as symbols representative of meanings that reveal tacit knowledge and underlying assumptions which can then be mapped.

Empirical work

Empirical work carried out in the study areas of Scotland and England included main activities

- Semi-structured interviews
- Document analysis and
- Direct observation

This is aligned with Yanow (2000 p 31) who argues that 'interviews, observation and document analysis constitute the central interpretive methods for accessing local knowledge and identifying communities of meaning and their symbolic artefacts'.

Semi-structured Interviews: were conducted to gain insights into how different stakeholders interpret policy documents (Richards, 1996) and the process involved in the policy formulation by the parties involved. Semi-structured interviewing was selected due to

the flexibility it affords for interview subjects to reflect in detail on their views and positions. The interviews were structured around a template (see Appendix 2) which provided a framework for the interviewees to

- Situate their organisations within the flood governance policy space
- How this has changed as a result of the change in policy from ‘flood defence’ to ‘flood risk management’
- Their perceptions of the implications of the change in policy
- How this compares to past approaches to flood governance and
- The policy drivers the actors attribute the change in policy to

These themes were interspersed with several follow up questions; these were needed to fully tease out ‘local knowledge’, ‘policy meanings’ and ‘institutional practices’ the actors attached to flood hazard governance. Candidates for interview were selected based on an initial desk study, which involved perusal of policy documents produced by flood hazard policy organisations mentioned in the literature. The interviewees could be categorised as either flood governance team leaders or policy officers within their respective organisations. A significant proportion of representatives of these actors were initially met with during networking sessions at flood risk management policy conferences and workshops. The candidates selected were then contacted by email. In the initial email I introduced the aims of the research and requested an interview with the subject. Most of the candidates responded positively and the majority of interview requests were accepted. However some emails elicited no response. This created an early challenge to the research. As the interviews progressed, this problem was alleviated, however, because interviewees provided alternatives to the unresponsive candidates. This is consistent with the experience of Yanow (2000). In her work, policy analysts were instructed to ask interviewees to suggest other persons who could also be interviewed.

Some of the interviews were conducted in person, others by telephone depending on the geographical location and availability of the candidate. The interviews conducted including dates and duration are listed in Appendix 2.

Document analysis: was performed on documents produced by policy actors. This is in line with Yanow (2000) who argued that interpretive policy analysis often begins with analysis of the transcripts of committee hearings, various reports, and legislation or agency documents. Documents analysed here include annual reports from the EA, structure and development plans produced by Local Authorities and governmental and non-governmental guidance.

During initial setting up of the interviews, it became apparent that some candidates, especially those from private organisations such as the water and sewerage companies, would not be replying to requests for interviews. To address this problem, it was decided to add other sources of information to complement the data set which is consistent with the interpretive methods outlined in Yanow (2000). These sources included verbatim testimonies, memoranda, evidence and arguments presented by a broad range of policy actors in various flood management parliamentary sessions and reports dating from 1997 to 2010 in both Scotland and England. The parliamentary reports and investigations were usually conducted after devastating flooding events or in preparation for forthcoming flood management legislation (see Appendix 3). These sources provided the platform for the views and arguments of a wide array of policy actors who could not be interviewed to be incorporated into the thesis. Full details of all parliamentary sessions, evidence, memoranda, reports and debates utilised in this thesis are all available on the archival sections website of the UK parliament and the Scottish assembly, respectively with just a summary being provided in Appendix 3.

Workshop Observation: included as part of the empirical work undertaken during the thesis was observation of a meeting of the Birmingham Water Group. Despite numerous attempts, gaining access to such meetings was challenging as they are closed to the public (due to the confidential nature of the discussions which involved discussing information not available to the public). Nevertheless, an opportunity to observe one meeting arose when I was invited by the flood risk manager of Birmingham County Council (BCC) to observe one of the meetings conducted as part of the preparation of the city's Preliminary Flood Risk Assessment (PFRA). The meeting was chaired by the flood risk manager of BCC and attended by specialists from the city council, the EA regional area office in Nottingham and Severn Trent Water. Technical specialists at the meeting included:

- BCC engineers and scientists responsible for drainage, flood resilience, climate change and adaptation, planning parks and conservation
- EA flood risk mapping and
- Severn Trent Water flooding and asset management

Observing this meeting provided a window not only on to how flood risk management manifests at a local level but also on to flood hazard governance within and across different local organisations. Insights gained through observing the Birmingham Water Group meeting were significant for two reasons. First they contributed to the empirical dimension of thesis

but second and with wider consequences, they disabused the observer of the notion that *organisations* were synonymous with *institutions*. Specifically, I observed at first hand that within BCC organisation, departments such as flood resilience, planning and parks and conservation effectively function as separate institutions, each possessing distinct and often opposing cultures, values, norms and policy goals (Kenis and Schneider, 1991; Mayntz, 1993). The opportunity to observe how different parts of a single organisation constitute and act in concert with other local actors as separate institutional players highlighted and reinforced its significance to understanding and explaining how national policy is interpreted and implemented locally.

As a result of the confidential nature of the discussions held during meetings between flood governance stakeholders such as the one that was observed, it was unworkable to replicate this method of data collection. Therefore greater emphasis was placed on other methods such as semi-structured interviews and document analysis of the transcripts of committee hearings, various reports, and legislation or agency documents. Documents analysed here include verbatim testimonies, memoranda, evidence and arguments presented by a broad range of policy actors in various flood management parliamentary sessions and reports dating from 1997 to 2010 in both Scotland and England.

Data Recording and Analysis

Interviews were recorded using an Olympus Digital Recorder. All subjects were informed that the interviews would be recorded beforehand and only one declined to their interview being recorded. The reason given for this was that the interviewee wished to speak frankly but would be unable to reveal confidential details deemed to be commercially sensitive by his employer (a private company). In that particular case, notes were taken during the interview and the subject was later sent a questionnaire, which was completed and returned accompanied by other supplementary documentation. It was agreed with interviewees that while they themselves would remain anonymous, the contents of the interviews could be attributed to their organisations.

The recorded interviews were transcribed and uploaded into NVivo software, together with the policy documents. Analysis began by breaking down of the information into themes, some of which were predetermined, based on a review of the policy process, flood management and governance literature and the preliminary analyses of policy documents. This procedure for generating these themes has been referred to as mapping out communities of meaning in policy analysis (Yanow, 2000). The themes provided the

structure for the empirical element of the research and framework within which obtained from different actors and sources was were unpacked to reveal policy beliefs.

In line with Yanow (2000), the aim of the analysis was to map out the different ways flood management was conceptualised by policy actors from all levels of government and society. Preliminary analysis of policy developments and institutional changes in flood management in Scotland and England over the past 40 years unearthed a number of discourses in flood management. These are embodied in institutional practices that have influenced flood management policies and are manifest in a number of key documents and most importantly, have resulted in a number of concrete policy initiatives. The purpose of this preliminary analysis was to understand how actors and institutions coalesced around shared points of view on the policy issue of flood governance to implement policy and drive paradigm shifts (Yanow, 2000). This was necessary to identify criteria for categorising the flood management discourses to be used in the subsequent analysis of flood policy discourses conducted at national and local levels in the main body of the research. The coding framework established on the basis of the preliminary analysis is set out below, in Table 2.3.

Table 2. 1 Coding Framework

Problem definition • Blame • Description	Flood hazard framed as a policy problem, i.e. floods as a discursive construction of physical or social phenomena. This allows examination of the degree to which flood hazards are seen as 'out of place' and problem that needs to be solved. This also facilitates discursive attribution of blame and responsibility (Hajer, 1997).
Impact • Economic • Social • Environmental	The degree to which the policy problem has adversely or malevolently affected social or economic actors or has driven adverse environmental impacts (Szarka, 2004). This is the discursive construction of whom or what is the 'victim' or 'cost' of the policy problem.
Threats	Discursively framed physical or social phenomena perceived as factors that can exacerbate what has been framed as the policy problem and which must be addressed with the utmost urgency (Hajer, 1997).
Reckless behaviour	Actions by peripheral policy actors that are regarded as being outside the norms set by the prevailing ideas, beliefs and values associated with a particular discourse (Hajer, 1997).

Responsible behaviour • Policy changes • Administrative changes • Introduction of new policy actors	Policy mechanisms embodying the norms of a particular discourse. These are framed as the response to the policy problems or prescribed roles of policy actors who make up a particular discourse. They are seen as the solution to the policy problem which is consistent to the social order of a particular discourse (Hajer, 1997).
Practices • Funding mechanisms • Guidance • Roles and responsibilities	Institutionalised, social processes, through which norms, values, policy beliefs and policy objectives are produced, reproduced and transformed. These enable or constrain new understanding of a policy problem and shape policy outcomes. They have been referred to as 'policy communities' and 'advocacy coalitions' (Bulkeley, 2000).
Information, knowledge and communication • Public awareness • Scientific evidence produced to support discourse • Public opinion	Nature of the information used to propagate the views and policy preferences of actors resulting from the discourse, as well as the various modes of dissemination.

Conclusion

Initial research was performed to characterise and account for processes of policy change in flood hazard governance in Scotland and England governance 'flood defence' to 'flood risk management'. The empirical work uses the understanding gained from this chronological research to conceptualise the policy process in Scotland and England as flood policy networks, comprising a diverse range of policy actors and involving different flood governance discourses. The process, through which these flood discourses are produced, reproduced and transformed influences how policy changes occur at the national level. Local governance, through the process of local coalition building is envisaged as a crucial component of the policy process. This explains how contrasts in national and local interpretation of flood risk management policies continue to produce differences between local interpretations of flood risk management in Scotland and England.

Furthermore, local governing coalitions can act as advocacy coalition policy sub-systems within which local policy actors work in concert with functional departments within and between local flood management organisations. Hence, the main body of the empirical work is designed to explore not only how local governing coalitions interpret respective national flood risk management policies but also to elucidate the ways that governing coalitions

structure the behaviours of individual local actors. It is argued that hypothesising differences in the interpretation of national policy and changes in flood risk management policy over decadal scales as the outcomes of local governing coalitions (including, but by no means exclusively, LAs) can provide the theoretical and practical basis for comparative analysis of flood hazard governance approaches in Scotland and England. The chapter has sought to justify this approach and the methodology stemming from it, the results of which are reported in the following chapters.

Chapter 3

Historical Review of Flood Governance in Scotland and England

Introduction

The aim of this chapter is to conduct a review of the paradigms that have preceded the 'flood risk management' in order to seek a better explanation of the reasons for historical policy change in both countries as well as flesh out the origins of the institutional differences in flood governance north and south of the border. These paradigms have been characterised as 'land drainage' and 'flood defence' (Scrase and Sheate, 2005; Werritty, 2005; Johnson et al. 2007; Penning-Rowsell et al. 2006; Johnson and Priest, 2008). This chapter unpacks these paradigms in the Scottish and English contexts and conducts a review, based on the analytical framework of the thesis, in order to account for their context specific emergence and transformations.

Historical flood paradigms in Scotland and England

England

The Land Drainage paradigm

The emergence and persistence of this flood paradigm can be attributed to a number of factors. These include the transition from an agrarian to a capitalist industrial economy, the adoption of *laissez faire* economic policies towards agriculture epitomised by the repeal of the Corn Laws and the electoral and local government reforms of the 1880s which changed the electorate as well as the composition of landowning interest (Scrase and Sheate, 2005). The prominence of *laissez faire* economic policies culminated in the repeal of the Corn Laws in 1846. This allowed the industrial class to benefit from the cheap importation of agricultural produce while domestic food production could not keep up with the competition. This element of free trade was in line with the broader *laissez faire* economic policies pursued by the government in relation to agriculture (Cox et al. 1991). The resulting effect was a depression in the agricultural sector which began in the 1870s. This rendered land drainage, a hitherto profitable endeavour unprofitable and led to a lack of investment in field and arterial drainage in the late 19th and early 20th centuries (Bowers 1998, Scrase and Sheate, 2005; Penning-Rowsell et al. 2006). To illustrate the implications of the depression, Bowers (1998) showed how the investment in agricultural drainage declined in the late 19th century from a peak in the 1850s where investment levels in the preceding decades totalled about

£27.5m to only £531 000 between 1883-92 and even lower to only £90 000 in the two decades after.

Other important events, with implications for flood management occurred by the turn of the century. These include increasing industrialisation of the country which resulted in rapid urbanisation of the population. By 1851 half the population of England lived in urban centres and this grew to four out of every five people by 1911 (Sheail, 2002). In reaction a number of country-side preservation organisations emerged which framed the rapid urbanisation of the country as a threat. Such organisations include the CPRE which was formed in 1926. Others such as the National Trust and the RSPB emerged in the late 19th century in different circumstances and were involved in the drive to preserve the English countryside (Lowe et al. 1986; Cook and Inman, 2012). The threat posed by food shortages during the First World War made the importation of agricultural produce an unsustainable policy and prompted a significant change in the hitherto largely *laissez faire* policy towards agriculture. Therefore central government had to intervene by issuing price guarantees to encourage an increase in domestic food production during the war years (Winter 1996; Scrase and Sheate, 2005). As a result the Land Drainage Act of 1918 was passed and this allowed for the creation of 50 new drainage districts and the promotion of about 552 drainage schemes by the 1920s (Sheail, 2002; Scrase and Sheate, 2005). This was an attempt at improving the poor state of drainage in the country.

In order to realise additional aims of easing peacetime unemployment through Unemployment Relief Programmes, the Ministry of Agriculture provided grants to drainage boards as well as the agricultural committees of county councils for drainage schemes. The policy actors involved in land drainage included the land owning interests that dominated rural governance at the time (Woods, 1997) as well as the NFU whose membership in the 1920s stood at over 100 000 (Cox et al. 1991). The dominant belief system at the time was an agricultural productionist discourse based on the exploitation of land in order to expand and modernise agricultural production (Marsh and Rhodes, 1992; Penning-Rowsell et al. 2006). It must be mentioned that this belief system was shared by conservationists at that time whose interest was the preservation of the English countryside and agriculture against the spread of urban industrialism. The depressed state of agriculture was linked to the decline of rural communities (Lowe et al. 1986). Therefore Cox et al. (1991) reported that after the First World War, local governance discourse by landowners and farmers was based on ‘agriculture’ and ‘community’ while the sense of loss of valuable land to flooding and erosion was expressed by a Ministry of Agriculture and the Royal Commission report in England in1926 justifying the need for engineering works ‘or this once rich agricultural area

could be permanently lost and return irretrievably to its original condition of swamp' or 'vast unhealthy washes' (Scrase and Sheate, 2005 p120).

The land drainage policy network set about to achieve their aims by seeking to improve the previously neglected land drainage infrastructure. This was mainly achieved through clearing water courses of any obstructions or undesirable growth and raising and strengthening of sea defences (Sheail, 2002). The 1930 Act created 46 Catchment Boards with permissive powers to carry out works on 'main river' channels with LAs and Internal Drainage Board (IDB) being responsible for 'non Main River' channels (Scrase and Sheate, 2005). The modification of the 'no benefit, no rate' principle was achieved by the land drainage network by framing the policy problem of land drainage as hindrance to the expansion of domestic agriculture thus expanding the beneficiaries of land drainage from rural landowning interests to the general tax payer. Therefore the Ministry of Agriculture was able to transfer the cost of river engineering and land drainage to the general public (Bowers, 1998; Scrase and Sheate, 2005). This occurred through a system of a combination of grant aid from central government and rates from landowners. The Agriculture Act 1937 laid the foundation for further institutionalisation and greater change in agricultural policy in the forms of the provision for price insurance for sheep, barley and oats as well as further extension of land drainage grants (Marsh and Rhodes, 1992).

During the Second World War and in the immediate post war years; there was an impetus on the part of the Ministry of Agriculture and Fisheries (MAF) to promote the expansion of domestic agriculture in order to boost production for economic and social reasons (Lowe et al. 1986; Marsh and Rhodes, 1992). In addition to this, efforts were made to curb the expansion of urban development into rural spaces. However it is important to note that agriculture was framed as vital to the revival of the rural landscape especially since 'good farmland' had been lost at a rate of 25,000 hectares per annum to industrial and urban development in the years 1927-39 (Lowe et al. 1986). At this point there was no antipathy between the farming and nature conservation interests as expressed in a report produced in 1942 by Lord Scott, a former vice president of the CPRE

'Farmers and foresters are unconsciously the nation's landscape gardeners'
'There is no antagonism between use and beauty'

(Cited in Lowe et al. 1986 p 16)

The Town and Country Planning Act 1947, complemented by the Agricultural Act 1947 laid the foundation for closer links between MAF and the NFU thereby institutionalising the belief structure which united the land drainage policy community (Marsh and Rhodes, 1992; Sheail, 2002). This was achieved through a combination of guaranteed prices, institutionalised as the 'annual review' for certain agricultural products and subsidies for agricultural land drainage and other forms of agricultural improvement (Parker and Penning-Rowsell, 1980). The implication of these to farmers who were quoted in Shoard (1980 p 15-21); 'every undrained wetland represents forfeited profit'. Bowers (1998) argued that technical and not economic considerations were responsible for the intensive land drainage that occurred post Second World War. The highly technocratic approach to flood management at the time has been attributed to the sectorisation of British policy making which enhanced professional power and the proliferation of engineers in the management ranks of the water sector (Parker and Penning-Rowsell, 1980; Bressers et al. 1995). The consequence of this was the prominent role of engineers in the Ministry of Agriculture thus resulting in a technocratic and managerial approach to flood management (Cunningham in Marsh and Rhodes, 1992). This sentiment was shared again by the Chief Engineer to MAFF regarding river works

'Engineers must frequently be prepared to take a lead'

(Johnson 1954 in Scrase and Sheate, 2005 p 123)

It is important to note that the engineers also shared the same view of the environment as landowners and farmers as evidenced in the words of the Chief Engineer to MAFF

'there can be no dispute about the amenity value of rivers and the consequent need to keep them tidy, but there is a tendency for attention to be focused too much on the state of the river channel and perhaps on its capacity to take flood flows than on the results of any flooding that may arise and on the real value of any improvements in terms of food production and the like'

Johnson (1954 in Scrase and Sheate, 2005 p 123)

However the nature of the policy actors in the land drainage policy community was changing. The need for more efficiency resulted in the removal of water management functions from local authorities to Catchment based non-departmental bodies such as the River Boards in

1948 (Watson et al. 2009; McCulloch, 2009). In addition the legacy of the agricultural depression and land reform instruments such as death duties resulted in a decline in the number of landowners. However increasingly important were owner occupier farmers with small and medium sized properties.

All the while, land drainage continued apace, largely in the east of England for the cultivation of arable crops. Drainage was proceeding at a rate of 113 000 acres per year in 1966-67 rising to 250 000 acres per year by 1974-75 (Scrase and Sheate, 2005) and in the years between 1971 and 1980, an annual average of 207 217 acres were drained (Purseglove, 1988) resulting in the dependence on drainage of more than half of the 11 million hectares of agricultural land in England (Watson et al. 2009). The criteria for the drainage of land were the consequential increase in financial returns to farmers and by extension the nation as a whole regardless of the real economics in terms of the grant aid provided for land drainage and the price supports for crops grown on the land, both provided directly or indirectly by central government and from 1973 the EEC (Scrase and Sheate, 2005). EEC funding for land drainage occurred through the CAP's European Agricultural Guarantee and Guidance Fund (Penning-Rowsell et al. 1986). The persistence of the land drainage policy can be attributed to the composition of institutions such as the Catchment Boards, River Boards and River Authority as bodies which were dominated by either MAFF or local government appointees (Sewell and Barr, 1977) representing landowning interests and the NFU. Furthermore at the time, local government in rural areas was dominated by landowners and farmers who framed rurality and the protection of the countryside through the lens of agriculture and productivity (Woods, 1997; Woods 2003).



Figure 3. 1 Regional Water Authorities in England and Wales (1973)

The strength of the land drainage policy community was manifest in the formation and designation of local and regional Land Drainage Committees (Figure 3.1) with executive powers for land drainage and flood defence within the newly formed Water Authorities (Parker and Sewell, 1988; Marsh and Rhodes, 1992; Scrase and Sheate, 2005). The potency of the land drainage policy community was clearly manifest in the concessions made by the newly formed Department of the Environment in the negotiations leading up to the passage of the Water Act 1973. The DoE, which was established in 1970, was meant to administer the proposed 10 regional Water Authorities. At the end of the negotiations, MAFF remained directly responsible for both approving and funding schemes brought forward by the executive local and regional Land Drainage Committees within the Water Authorities as well as making appointments in conjunction with the LAs. The network of agricultural interests that fought for this was referred to as the MAFFia by their opponents (Parker and Penning-Rowsell, 1980; Parker and Sewell, 1988; Purseglove, 1988). This seems to reaffirm the policy core of the land drainage network and the MAFF Chief Engineer remarked in 1976

> 'Land drainage is the first function of a river'
>
> (Cole, 1976 p 345)

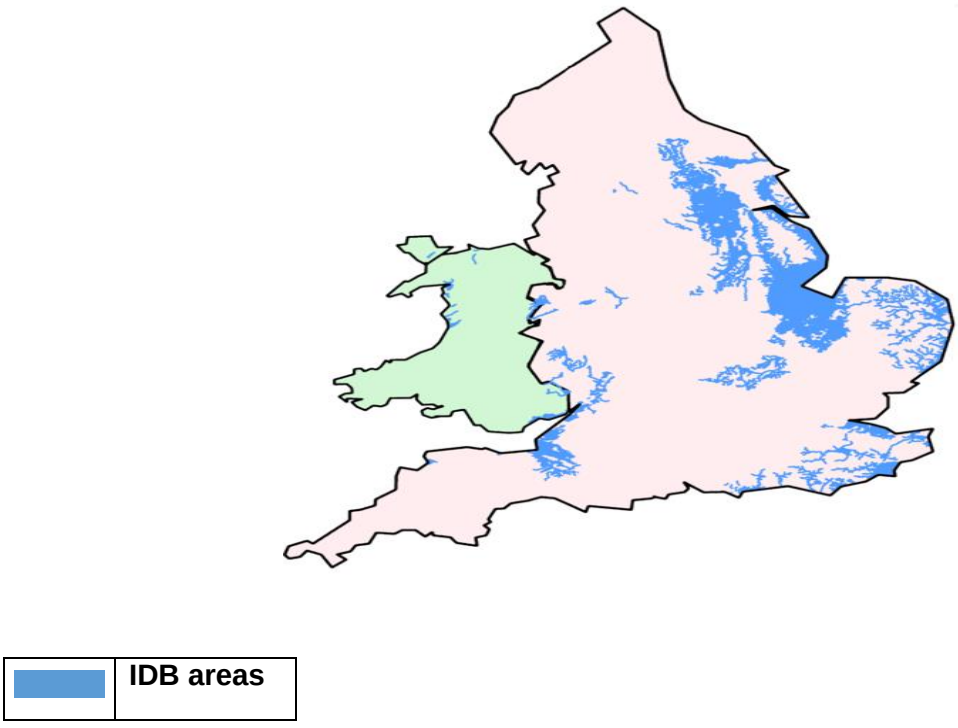


Figure 3. 2 IDB areas in England and Wales

The Flood Defence paradigm

It is instructive to note the policy response to the1947 and 1953 floods was mainly to adopt an engineering approach of physical flood defences. This comes as no surprise as water policy, as mentioned earlier, was dominated by engineers who shared the belief that humans had dominion over nature and they had the power to defend people and property from flooding (Penning-Rowsell et al. 2006). In response to these floods, The Waverley Committee was set up and mainly made up of senior civil servants and scientists. The proceedings over the change in policy direction were dominated by scientists such as J.A Steers (Steers, 1953; Penning-Rowsell et al. 2006). In keeping with the dominant belief at the time of protecting agriculture and keeping the water out, the Waverley Commission recommended that 'for the protection of human life reliance must be placed on an effective warning system . . . in considering the margin of safety for sea defences we have therefore had the protection of property mainly in mind and the natural and indeed inevitable course in these circumstances is to relate the standard of defence to the character and amount of property to be protected' (Scrase and Sheate, 2005 p 124). The main policy response recommended by the committee was to reinforce the structural defence paradigm. As a result, the 1953 flood heralded an era of hard flood defences, culminating in the Thames Barrier, and the creation of a warning system for the East coast (Crichton, 2005; Scrase and Sheate, 2005).

Perhaps the most significant factors responsible for the changes in policy on land drainage were the economic situation in the country in the 1970s and the accession of the United Kingdom into the EEC, particularly the effects of the adoption of the CAP. Another significant shift in policy positions occurred among the conservation groups in the late 1960s who accepted the view that land drainage and intensive agriculture were damaging the countryside. This culminated in the realisation that the frames of 'country-side preservation' held by farmers and conservationists were in fact by then mutually exclusive. The NFU's framing of the countryside was that of 'agriculture' and 'spaces for production' (Woods, 1997; Woods, 2003) with the aim of achieving farm profitability while the conservationists (Lowe et al. 1986), then viewed intensive agricultural practices as the latest threat to the preservation of the environment and countryside.

The Water Act (1973) represented central government's efforts at introducing a new management paradigm by introducing new economic and administrative managerial concepts to improve efficiency within the water sector (Hogwood and Keating, 1982; Parker and Sewell, 1988; Marsh and Rhodes, 1992). The consequences of this included the near

total loss of water supply and sewerage responsibilities for elected LAs in England (McCulloch, 2009), the rise in prominence of economists in a field which had been hitherto dominated by engineers (Bressers et al. 1995) and the cutting of WA and LA expenditure on storm sewerage investment, non-main river flood alleviation and sea defence schemes. The latter came about as a result of the need for central government to curb the growth of public sector expenditure. This was in reaction to the economic crises of the 1970s and the WAs' budgets became instruments of central government macro-economic adjustments while, for electoral reasons, water prices were not increased to raise additional funds (Summerton, 1998). It is important to note that the MAFF flood alleviation budget was immune to the cut backs; this has been attributed to the strength of the land drainage policy community supported by an agri-centric productivist countryside paradigm (Penning-Rowell et al. 1986).

The newly created WAs were required to be self-financing (Parker and Sewell, 1988) and later operated more or less as private businesses (Bressers et al. 1995). Nature conservation organisations such as CPRE and RSPB were able to utilise this window of opportunity to influence flood governance. Parker and Penning-Rowsell (1980), Penning-Rowsell et al. (1986) and Scrase and Sheate (2005) all give accounts of various conflicts that occurred between the WAs and the nature conservationists in the 1980s with Purseglove (1988 p 75) describing the disagreements in the flood management policy sub-sector as a 'conflict of values'. However this was not a fair fight as the land drainage policy community was more organised and more resourced than the nature conservation groups and more importantly had institutionalised land drainage practice. The transposing of European environmental directives and regulations into English legislation empowered organisations such as the RSPB to gain access into the land drainage policy process. The RSPB had been active in the formulation of the Birds Directive and had been consulted by the European Commission as far back as 1974 and thus in transposing it, the DoE was in close consultation with the RSPB (Lowe et al. 1986). The Wildlife and Countryside Act 1981changed policy practice by providing an avenue for better cooperation, albeit voluntarily, between farmers and nature conservation groups through the requirement for owners and occupiers to notify park authorities of any potentially damaging operations on designated areas (Lowe et al. 1986). Furthermore, the EEC made funds available for member states to comply with the requirements of the Wildlife and Countryside Act 1981 (Parker and Penning-Rowsell, 1980).

The level of governmental support for farmers changed from the Annual Review in the 1940s on entry to the EEC (Parker and Penning-Rowsell, 1980; Scrase and Sheate, 2005) to

guaranteed prices and tariffs on agricultural produce imported from outside the EEC, although subsidies for land drainage continued (Parker and Penning-Rowsell, 1980; Marsh and Rhodes, 1992). This resulted in massive farm surpluses built up in the 1970s (Purseglove, 1988; Marsh and Rhodes, 1992; Watson, 2009). Prior to the Second World War, domestic production supplied a third of food supplies for a population of 47 million. This had risen to two thirds in the 1980s with an increased population of 56 million (Lowe et al. 1986). Observable implications of extensive land drainage, river management and other intensive agricultural practices started to emerge. Streams which had been either culverted or had concrete-lined banks and rivers flowing in enlarged trapezoidal channels set within flood banks had begun to emerge (Werritty, 2005). The extinction of certain freshwater species and loss of habitat, loss of cultural heritage and increased risk of flooding from unplanned development on floodplains, the so-called 'escalator effect' (Purseglove, 1988; Penning-Rowsell and Handmer 1988) were observed. Thus viewed within the frame of nature under threat from the effects of the industrial economy and more importantly modern agricultural practices, the dominant rural discourses changed from 'agriculture' and 'community' to that of 'environmentalism' (Woods, 1997; Scrase and Sheate, 2003). This was acknowledged by the NFU in a review conducted in 1984 as a response to the imposition of quotas on milk production

'Over recent years there has been a significant (and perhaps accelerating) change in the British political, economic and social scene which affects the public acceptance of agricultural support. There has been a particularly important public reaction to the impact of agriculture on the environment. Against this background it seems right to conclude that we are now at a watershed and that the era when agricultural expansion was widely accepted as a desirable goal has passed.'

(Cited in Lowe et al. 1986 p 109)

The water supply and sewerage parts of the WAs were privatised in 1989 into 10 catchment based water companies (McCulloch, 2009). Summerton (1998) outlined the drivers behind the privatisation efforts and these include the possibilities of introducing private capital into the water industry as other priorities such as education and health dominated public expenditure and European water quality and waste water directives adopted in the 1970s required capital investments in the water sector. The partial privatisation of the water sector resulted in the formation of a new agency, the National Rivers Authority (Figure 3.3) to oversee and regulate the river functions aspect of the water sector and water quality

(Kinnersley, 1998). This was carried out through the Water Act 1989. The duties of protection and conservation by flood authorities resulted in a policy of central government ending grants for lowland field drainage in 1983 and for Less Favoured Areas in 1984 (Lowe et al. 1986; Scrase and Sheate, 2005). This change in policy was conveyed by the Prime Minister Mrs Thatcher, who in 1984 ordered a review of countryside policies with the intentions of replacing 'the policy of food production with one that emphasises conservation of the countryside' (Marsh and Rhodes, 1992 pp 42-43). Furthermore the former Minister of Agriculture, Michael Jopling also acknowledged in 1984 that 'we cannot go on and on producing more and more food which we can neither eat nor sell' hence signalling that 'the era of open-ended guaranteed prices is at an end' (Marsh and Rhodes, 1992 pp 42-43). These factors signalled an important change towards agricultural policy by central government and indeed signified the end of agricultural expansion as a policy goal (Lowe et al. 1986). The policy structures of land drainage were transferred to the flood defence policy through the executive local and regional Flood Defence Committees under the newly formed National Rivers Authority in 1989 (Scrase and Sheate, 2005).



Figure 3. 3 National Rivers Authority Regions in England (1996)

In summary flood management in England evolved from a situation where a dominant land drainage policy had been persistent for almost half a century (Scrase and Sheate, 2005) to a flood defence oriented policy. This occurred as a result of a number of political, social and economic factors enabling previously marginalised policy actors such as nature conservation organisations being able to take advantage of the policy windows created by the factors

mentioned above to utilise their policy resources such as an environmentalism framing of the countryside, scientific and economic expertise (Parker and Penning-Rowsell, 1980; Scrase and Sheate, 2005) to gain access into the flood management policy system and thus effect policy change. Factors external to land drainage such as socio-economic conditions, a change in the political landscape and the transposing of European directives into national legislation provided more resources to nature conservation organisations. This ensured that the era of land drainage as a policy paradigm was ending due to a change of the dominant discourse on rurality and the countryside from that of an agricultural productionist to an environmental narrative. However a new paradigm of flood defence emerged particularly in the urban areas. The policy goals were articulated, in descending order, as the provision of flood warning systems, urban coastal defence (sea defence and coast protection), urban flood defence, rural coastal defence and existing rural flood defence and drainage schemes, new rural flood defence and drainage schemes (MAFF, 1993).

Scotland

The Land Drainage paradigm

In Scotland, the equivalent of the Internal Drainage Boards never materialised. This has been attributed to physical factors as historically Scotland has not been exposed to the same degree of river or coastal flooding as England mainly due to its different topography and geology (Ison and Watson, 1997; Werritty and Chatterton, 2004). However Scotland has a very long and rich history of land drainage (H.M Cadell, 1929; Symon, 1959; Green, 1979; Smout, 2000). Dating back to the late 18th century, during the repeal of the Corn Laws, private loans were made available to landowners by the government to carry out land drainage on their estates through the Private Money Drainage Act of 1849 (Symon, 1959; Smout, 2000). Historically, the need to exploit the agricultural potential of land was the main factor responsible for the widespread drainage which took place in Scotland (Smout, 2000). Indeed the view of wetlands at the time is put in a nutshell in the comments of naturalist Charles St John while referring to the Morayshire plain in 1847

'The best part of this ground for wildfowl is gradually getting drained and what was a dreary waste of marsh and swamp has now become a range of smiling corn land'

(Smout, 2000 p 99)

A ‘great spurt’ of land drainage occurred in Scotland in the mid-19th century (Holmes and Crofts, 2000; Symon, 1959). Factors responsible include a productivity narrative of rurality and nature held by most farmers and landowners and the technological improvements in land drainage made by the Victorian engineers. Other drivers were the relatively advanced state of agriculture and funds made available in the form of loans to landowners (Symon, 1959). It is important to note that at the time most of the country was divided up into large estates involving few landowners so it was easier to carry out land drainage on a cooperative basis (Symon, 1959). This period in Scottish agricultural history has been described as its golden age characterised by the innovations of Scottish farmers and self-sufficiency (Symon, 1959; Holmes and Crofts, 2000). However this came to an end with a depression brought about by the repeal of the Corn Laws in 1846 and the agricultural depression which occurred from the late 19th century and lasted until the Second World War (Scrase and Sheate, 2003). Therefore a reversal from the ‘great spurt’ of land drainage was experienced mid-19th century resulting in a return to ‘boggy fields’ in the time period between 1875 and 1940. The drop in the price of grain rendered the drainage of land for agricultural purposes uneconomic (Smout, 2000). As further evidence of the decline of agriculture, the country’s cropland area dropped from 849,435 hectares in 1918 to 598,935 in 1939 and conversely the area of permanent grassland increased by 127,476 hectares. In addition the effects of the agricultural depression included a failure to maintain drainage infrastructure. To ameliorate this, the Land Drainage (Scotland) Act 1930 provided a framework whereby the Department of Agriculture for Scotland could undertake large drainage schemes by levying rates and seeking State grants (Symon, 1959).

The new policy approach by the government was prompted by the immediate post war socio-economic conditions in Britain and to an extent Europe. Central government support took the form of guaranteed markets and prices for agricultural products. This was carried out through the provisions in the Agriculture Act 1947 which placed a duty on the Secretary of State for Scotland to consult with producers while conducting price reviews. The provisions of the Agriculture (Scotland) Act 1948 also required land management and utilisation as landowners were expected to keep their land in optimal condition (Symon, 1959). This was supported through agricultural subsidies in the form of Farm Capital Grant Schemes in 1948, which were aimed at providing grant aid for up to 60% of the costs to landowners who wanted to drain land for agricultural purposes (Parker and Penning-Rowsell, 1980; Holmes and Croft, 2000) through the Department of Agriculture for Scotland (DAFS) (Laird, 1949). The policy aims were articulated in the report, Agriculture in Scotland 1939-1948, produced by DOAS as ‘to secure the most appropriate development and use of

the land involving the general promotion of rural development in the light of a positive policy for the maintenance of a healthy and well balanced agriculture' (Symon, 1959 p 267). As the war demands had greatly depleted the timber reserves of the country, the bare and unproductive upland areas of Scotland were identified as promising locations for tree planting. Although the policies of the Forestry Commission, created in 1919 to boost domestic timber production, were UK wide, half of the entire tree planting undertaken by the Commission post World War Two took place in Scotland (Oosthoek, 2001). Apart from the obvious benefits of self-sufficiency in terms of Britain's timber reserves, the Forestry Commission in Scotland framed the need for afforestation as a way of rejuvenating and revitalising the rural parts of Scotland (Mackay, 1995; Oosthoek, 2001). This productionist narrative of the rural environment was also expressed by the Nature Conservancy in Scotland. This is unsurprising as the first Director for Nature Conservancy (NC) Scotland, Dr John Berry, was also a prominent member of the Scottish Landowners Federation (Mackay, 1995).

It could be argued that land drainage policies emerged due a number of factors including the desire for food security and the alleviation of rural employment by the Department of Agriculture and the Forestry Commission in Scotland (Robinson et al. 1990; Mackay, 1995). The narrative of rurality held by farmers and landowners was crucial and even some in the conservation community held the same views, as with noted nature conservationist, Fraser Darling, arguing in 1960:

'Utilisation of natural resources and particularly of wildlife, I feel to be one of the main foundations of its ultimate conservation'.

(Mackay, 1995 p 109)

The policy outcomes included an increase in the provision of funds from central government to landowners and farmers from £142,471 for 10 schemes in 1948 under the Land Drainage (Scotland) 1941 Act to £339,498 for about for up to 50% of the costs of 5,162 drainage schemes in 1950 and these did not include expenditures on drainage works carried out by the Department of Agriculture's own engineers (Symon, 1959). This culminated in a peak in land drainage within the decade 1943 to 1953 (Robinson et al. 1990). It is perhaps no surprise that the peak of the Forestry Commission's planting was attained in 1954 (Oosthoek, 2001). It can be said that the entry of the United Kingdom into the EEC was also responsible for a second peak in land drainage in Scotland in the 20th century as a result of

greater agricultural support due to the CAP (Robinson et al. 1990) resulting in an annual drainage rate of 35,000 hectares per year by 1976 (Green, 1979). The strength of the land drainage policy community could be attributed to the institutional arrangement which allowed for strong central government involvement in providing subsidies for farmers and landowners, the foundation for which was laid by the implementation of the Land Drainage (Scotland) Act 1930 (Symon, 1959). In contrast to England this mechanism totally circumvented local authorities as schemes are brought forward by landowners while costing and designs were carried out by central government and the responsibility for maintaining the completed scheme was with the landowner or a committee of landowners (Parker and Penning-Rowsell, 1980; Penning-Rowsell et al. 1986).

The land drainage discourse began to be contested by other actors such as voluntary bodies and nature conservation organisations such as the RSPB being able to purchase partially drained land and return it to its former conditions in order to serve as habitats for endangered bird species (Smout, 2000). This provoked conflicts between farmers who wanted to exploit wetlands and marshes and nature conservationists interested in preserving such habitats. Robinson et al. (1990) document a decrease in land drainage activities in Scotland in the early 1980s. It was observed that economic factors such as perceived declining agricultural prosperity were important drivers in determining drainage investments. However it is important to take note of the context within which this happened. Nature conservation organisations were beginning to come to the fore as awareness about environmental issues increased even though the memberships of groups remained low compared to their English counterparts (Mackay, 1995; Smout, 2000). However it was becoming increasingly difficult for authorities to plan developments on SSSIs (Smout, 2000). The transposing of EC directives into national legislation in the form of the Wildlife and Countryside Act 1981 was significant. Perhaps the most important effect of the EC directives was the start of arrangements for agri-environmental schemes via the Agriculture Act 1986 which by 1992 had been taken up on 70% of the eligible land (Robinson, 1994).

The 1980s was also the era of relative decline in the importance of agriculture as a national economic priority as a result of food surpluses which reinforced the growing framing of rurality as a space for recreation rather than agriculture (Robinson et al. 1990; Smout, 2000; Ison and Watson, 2007). This also manifested in a growing realisation of the harmful effects of afforestation on the environment, as was evident in the Flow Country episode where extensive drainage, necessary for afforestation, had led to the loss of blanket peat (Hanley and Craig, 1991; Mackay, 1995). In addition the growing economic significance of the

utilisation of rural Scotland for non-agricultural purposes, particularly tourism, and the declining importance of agriculture (Slee, 1998) could be seen as factors which contributed to the ending of the land drainage paradigm. The slowing down of the pace at which land drainage was conducted can be linked to the framing of rural Scotland as a national resource with wider socio-economic, recreational and environmental benefits which needed to be protected against the malevolent effects of narrow land drainage practices for agriculture or forestry. A further demonstration of the change in the land drainage policy network is the steady erosion of agricultural subsidies by central government and the resultant effect of some land drainage schemes falling into disrepair later in the 20th century (Werritty and Chatterton, 2004).

The Flood Defence paradigm

The emergence of flood alleviation schemes in Scotland can be linked to the origins of the provision of water supply and sewerage. Instances of this include the provision of potable water to the city of Glasgow from a country reservoir through the Glasgow Corporation Water Works Act of 1855 (Smout, 1986; SNH, 2001). This laid the foundations for more involvement of Local Authorities in the water sector as additional responsibilities were gained through the Water (Scotland) Act 1946 (SNH, 2001). The Coast Protection Act 1949 and the Flood Prevention (Scotland) Act 1961 gave local authorities the power to carry out measures for the prevention or mitigation of flooding of non-agricultural land (Penning-Rowsell et al. 1986; Werritty et al. 2002; Werritty and Chatterton, 2004). Therefore it can be seen that flood alleviation in Scotland was a much more decentralised matter with the LAs playing vital roles in bringing forth schemes which would then be supported by central government through the provision of civil engineering expertise and grant aids (Werritty, 1995; Werritty with Chatterton, 2004). The management response to the 12th of August 1948 floods which affected east Lothian in Scotland was to ‘control the future behaviour of the River Eye’; this was carried out by drainage engineers in the Department of Agriculture for Scotland (Learmonth, 1950 p 152). Other devastating floods include the 1953 coastal storms though they attracted less attention compared to other affected areas in England and the Netherlands (Hickey, 2001; Werritty and Chatterton, 2004) and the Moray floods of 1956 and 1970, whose impacts prompted improved flood warning systems through schemes provided by the River Purification Boards (Werritty and Chatterton, 2004).

Perhaps the most important factor which influenced the flood defence policies was the reorganisation of the Scottish water sector which occurred as a result of system wide

changes to the nature of Scottish local government (Parker and Penning-Rowsell, 1980; Penning-Rowsell et al. 1986; Fairley, 1995; Sawkins and Dickie, 2000; Sawkins, 2012). Prior to the passage of the Water (Scotland) Act 1967, water management in Scotland was carried out through about 210 separate water authorities including 170 town councils, 32 county councils, 6 water boards and 2 non-statutory water companies (Sawkins and Dickie, 2000). Some of these bodies were either too small or too weak to employ specialist staff for water management (Parker and Penning-Rowsell, 1980) and some appeared to have little interest in drainage and sewage matters (Greer, 1976). Therefore the Water (Scotland) Act 1967 created thirteen independent catchment based Water Boards, made up of elected councillors within authorities in their areas, with responsibilities such as water supply, drainage and sewage systems and the Central Scotland Water Development Board with responsibilities for water supply to the regional Water Boards in central Scotland (Greer, 1976; Parker; Penning-Rowsell, 1980; Maitland et al. 1994).

Reform took place in the form of recommendations from the Wheatley Commission which was established in 1966 (Sewel, 1987). The Local Government (Scotland) Act 1973 reformed the water management structure in Scotland by disbanding the catchment based independent Water Boards, internalising most water management functions into the newly created Regional and Island Councils (Figure 3.4). Regional Purification boards were charged with water pollution control functions (Parker and Penning-Rowsell, 1980; Penning-Rowsell et al. 1986). The boundaries of the regional and district councils were based on the geographies and economics of factors such as public transport service networks, traffic movements, employment statistics, local migration trends and travel to work patterns (Sewel, 1987). As a result of the range of services the local authorities were expected to deliver, the management units that emerged were administrative and political.



Figure 3. 4 Regional and Highland Councils in Scotland (1973)

The outcomes of the flood alleviation network with its engineering ethos have been protection of at risk urban dwellers and agricultural land through the provision of hard engineering defences and other practices such as the channelization of rivers and the construction of flood embankments (Maitland et al. 1994; Werritty, 2006; Howgate and Kenyon, 2009). However under the Flood Prevention (Scotland) Act 1961, as of 2004, only 70 schemes had been built thus providing protection to less than 10% of the 77 191 properties estimated to be at risk from inland flooding in Scotland (Werritty and Chatterton, 2004). This has been attributed to a number of factors including the localised nature of urban flood management in Scotland (Werritty and Chatterton, 2004) and the perception that urban flooding is less of a problem in Scotland than England (Penning-Rowsell et al. 1986). After the privatisation of parts of the water industry in England in 1989, the conservative government sought reforms in the water sector in Scotland as well. However there were a number of stumbling blocks to the conservative government's preferred choice of reform, privatisation. These included vociferous opposition from the public in Scotland (Kinnersley, 1998) manifest in a referendum carried out in Strathclyde Regional Council, the most populous in the country, on water privatisation. The results were instructive, with a response rate of about 70%, an overwhelming majority of 97% emphasised the desire to keep Scotland's water in the public domain (Lynch, 1994; Coleshill and Sheffield, 2000). Other

factors militating against central government reforms included the fact that majority of the water sector assets in Scotland remained in the hands of LAs. This was in contrast to the situation in England and Wales where the main drainage assets belonged to the regional WAs, non-departmental public bodies whose main source of funding came from central government (Summerton, 1998). Besides water policy in Scotland had always been under the responsibility of the Scottish Office rather than the DoE (Summerton, 1998). Furthermore, the Flood Prevention (Scotland) Act 1961 and Local Government (Scotland) Act 1973 placed flooding and water supply and sewerage responsibilities firmly with the local authorities.

However reform took place in 1996 via the Local Government (Scotland) Act 1994. This involved the transfer of water supply and sewerage services from local authorities to three newly created independent Public Water Authorities made up of central government appointees (Sawkins and Dickie, 1999; Sawkins, 2012). This reorganisation has been described as analogous to the Water Act 1973 which transferred water and waste water services from local authority control to the ten regional WAs in England (Summerton, 1998). An important implication of the local government reforms that took place in Scotland in 1994 was the breakup of the Regional and Island Councils and the creation of 32 all-purpose and single tier local authorities (Figure 3.5) (Fairley, 1995). Flood mitigation functions on non-agricultural land were retained by the newly created local authorities with central government providing up to 50% grant aid for flood protection schemes approved by the local authorities (Werritty and Chatterton, 2004).

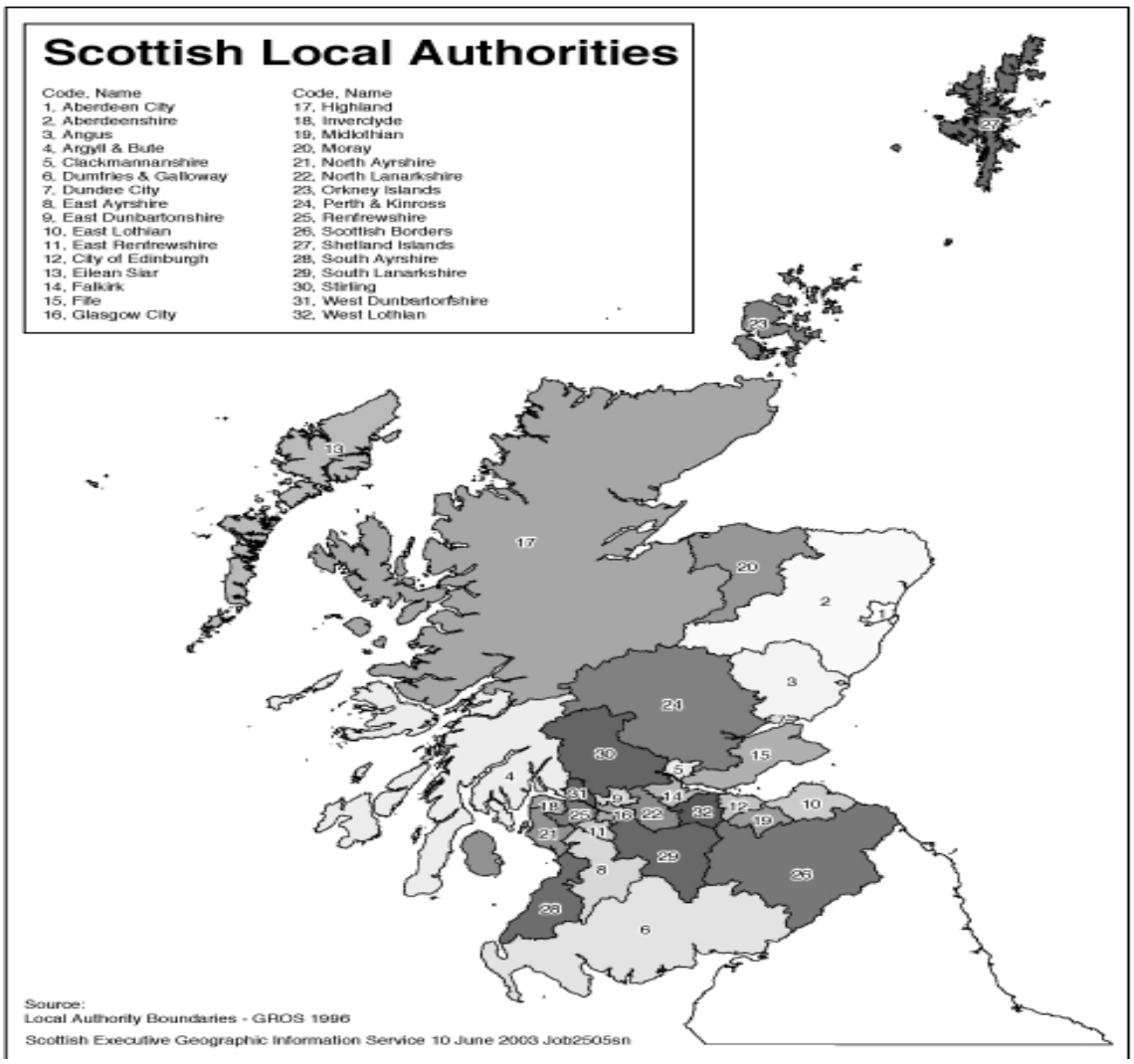


Figure 3. 5 Local Authorities in Scotland (1996)

In summary, it is important to note that there have been a number of significant developments which have had effects on flood alleviation policy in Scotland. These include a culmination of the Local Government reforms of the 1970s and the move towards centralisation of power by the conservative government of the 1980s which resulted in, perhaps, paradoxically, greater central government control of local government expenditure in Scotland through the Secretary of State (Sewel, 1987). The local government reforms led to the acquisition of flood alleviation duties by Regional Councils and the need to re-train regional council staff who lacked the necessary expertise as detailed by Parker and Penning-Rowsell (1980). The policy context of local democracy and local service delivery which formed the intellectual foundations of the Wheatley Commission was manifest in the sound rejection of the water sector privatisation reforms proposed by the conservative government in Westminster (Sewel, 1987; Fairley, 1995). However this belief system

seemed to have been eschewed as the Local Government (Scotland) Act 1994 resulted in the loss of water and sewerage services from the local authorities to newly established quangos, the Public Water Authorities even though flood prevention remained primarily the responsibility of the newly formed local authorities (Fairley, 1995).

Conclusion

This chapter has reviewed historical approaches to flood governance in Scotland and England, articulated as 'land drainage' and 'flood defence' paradigms. It has been shown that these paradigms did not emerge in a vacuum but culminated due to factors distinct to the individual countries. Institutional practices that emerged from land drainage in both countries were markedly different. This is both in terms of the policy actors involved and the factors that influenced the transformation of the networks. It has been shown that land drainage flourished in England as a result of the institutional arrangements made up a combination of central government agencies, LAs and IDBs. In Scotland land drainage was carried out by the DAF financing schemes brought forward by landowners or a group of them. This difference in approach can be attributed to the significance attached to domestic agriculture production in Scotland and the relatively concentrated nature of landownership in Scotland.

The origins of the flood defence networks in both countries were also different. While the policy output for both networks was the need to protect properties and lives from floods, flood defence in England emerged from the institutional practices and structures of the land drainage policy network. Therefore there was an evolution from land drainage to flood defence as manifest in the activities of central government agencies, LAs and IDBs. This is evident in the transformation of the executive regional and land drainage committees of the RWAs into the regional and land defence committees of the NRA. In contrast flood defence in Scotland emerged from its framing as a local service to be undertaken by local authorities alongside other services such as education and healthcare and thus remain the exclusive responsibilities of LAs. Thus in total contrast to the network in England, flood alleviation in Scotland was provided by Regional Councils and later LAs defined by administrative and political boundaries. Having accounted for the historical differences and evolution in land drainage and flood defence policy networks in Scotland and England, the following chapters unpack the flood defence paradigm and chart the evolution of policies to the flood risk management paradigm in both jurisdictions while linking the implications of this paradigm shift to the roles and responsibilities of relevant policy actors.

Chapter 4

The new Paradigm in England

Introduction

The overarching aim of this chapter is to account for the emergence of 'flood risk management' in England and to access its implications for risk management authorities in England. The objective is to analyse the transition from 'flood defence' to 'flood risk management' by unpacking these paradigms, revealing the discourses which embody the various contested and dominant values and the institutional practices which produce, reproduce and transform these discourses and thus embody the change in the new paradigm. This will provide a basis upon which the change in policy can be conceptualised. The chapter is divided into four sections. The first section characterises the policy discourses which embody the values, norms as well as the institutional practices which structure policy outcomes as well as individual actor behaviour in the 'flood defence' paradigm. The second section identifies the policy drivers responsible for the change in paradigm. The third section outlines the new policy paradigm as embodied in the FWMA (2010). The final section includes a discussion of the implications of the new settlement for the management of future flood hazards.

The Old Settlement

The Flood defence policy paradigm

A preliminary analysis of policy developments and institutional changes in flood management in England over the past 40 years has resulted in the unearthing 'land drainage', 'flood defence' and 'flood risk management' as discourses in flood management. These are embodied in institutional practices that have influenced flood management policies and are manifest in a number of key documents and more importantly in a policy network of actors. The nature of these discourses will be fleshed out consequently highlighting

- how the policy problems of flood management are framed or defined,
- what range of options are considered as the expected policy responses,
- what is considered to be reckless behaviour by other policy actors and perhaps most crucial,

- the institutional practices through which the values embodied in these approaches to flood management are produced, reproduced and transformed.

The institutional practices will also be utilised to delineate policy actors of each discourse.

Defence Management Discourse

Problem definition: 'Flooding and coastal erosion can endanger lives, homes, places of work and play, and productive farmland; and can also have an impact on other environmental interests'

(MAFF and Welsh Office, 1993 p 2)

This discourse frames flooding events as disrupting people's lives and activities albeit on infrequent basis. It is therefore not surprising that flood events are described and indeed treated as major, rare, unpredictable, unprecedented, extreme, epic, severe or outrageous events (House of Commons, 1998; Bye and Horner, 1998). There was an unambiguous emphasis on the anthropogenic consequences of flooding events. This utilitarian framing of the consequences of flooding can be observed in the descriptions of English wetlands by a Royal Commission on land drainage in 1927 as 'swamps that needed to be eliminated by draining' (Scrase and Sheate, 2005 p 114). Thus the devastating floods that occurred in England 1998 were said to have impacted mostly in terms of lives lost and perhaps most tellingly in terms of economic losses especially in the number of homes and businesses destroyed as well as the destruction of agricultural land. The Bye and Horner Report (Bye and Horner, 1998) into the England 1998 floods estimated losses from the floods to be around £350 million and rising. However apart from the economic argument a moral argument was also made about the impacts of flooding and people impacted were presented as victims. The impacts of the floods, beyond financial losses, were expressed by a victim of the England floods in 1998

'On Good Friday 10 April 1998 I was forced to leave my home of some twenty plus years because of flooding. I am now, at the age of 78 years, having to seek alternative accommodation and deal with the many difficulties of insurance claims to rebuild and refurbish my home. The flood water, which I was told was polluted, rose rapidly to a depth of about 18"-24" and I had to be evacuated from my home by boat, this in itself caused me great distress, which added to my history of poor health caused me to suffer from shock'

Bye and Horner (1998 p 3)

Suggested policy response: (NFU) 'In much of lowland UK, the maintenance of a viable and competitive agricultural industry and the upstream and downstream businesses dependent upon it relies on the provision and maintenance of an efficient and effective system of flood and coastal defence.'

(Cited in NFU Memo to House of Commons, 1998 para 1)

The policy response of protecting people and property against flooding through the provision and maintenance of flood warning and flood defences can be framed prima facie as a moral response borne out of the need for a society to defend its vulnerable members from seemingly unpredictable flooding events. It is therefore unsurprising that when faced with the devastating floods of 1947 and 1953, the policy response was the development of the Storm Tide Warning System for the East Coast and 'that flood defences should be raised to the level of the 1953 flood, in areas of high property value and agricultural importance . . . . . where economically justifiable' (Johnson et al. 2005 p 569). Therefore structural defences and river improvements seemed to be appropriate policy responses to these floods (the perpetrators) which threatened the lives and economic wellbeing of the society (the victims).

Institutional practice: (Elliot Morley) 'the policy approach that is taken is a cost-benefit analysis, as I say, based on indicative scores taking into account property, taking into account people's lives, risks, infrastructure, industry, and, indeed, yes, agriculture comes into it as well'

(House of Commons, 1998 para 567)

Cost-benefit analysis has been characterized as a branch of welfare economics which aims to maximise the economic efficiency of investments (Penning-Rowsell et al. 1986). Given flood defences are seen as investments, it comes as no surprise that in the Strategy for Flood and Coastal Defence in England and Wales (MAFF and Welsh Office, 1993 p 29), guidance to the other operating authorities on the appraisal of flood alleviation projects emphasised that 'schemes should have a benefit to cost ratio of at least unity to be considered for grant . . . . . It is the Ministry's and Welsh Office's normal approach to seek to maximise the benefit to cost ratio from the options available.' In addition to the rigorous use of cost-benefit analysis in deciding where to defend and to what standard (Werritty, 2005), a priority scoring system, as illustrated in table 4.1, was introduced by MAFF in 1997.

Table 4. 1MAFF priority scoring system

Components	Description	Score
Priority	Rural coastal/tide defence	4
Urgency	Failure already occurred	10
Economics	Between 2 and 3	6
Total score		20

(House of Commons, 1998)

The aim of the scoring system was to ensure that public money for flood and coastal defence was invested in the areas of highest priority (EA, 2000b; MAFF, 2001). Therefore every flood alleviation project was screened against national criteria made up of economics (cost-benefits), urgency and ministerial priorities. This provided a mechanism whereby schemes with the highest scores were brought forward and if need be, the weights assigned to each criterion could be adjusted accordingly to give a measure of flexibility (House of Commons, 2000). The policy actors who engage in concerted action to promote the policy goals of the defence management discourse are shown in figure 4.1.

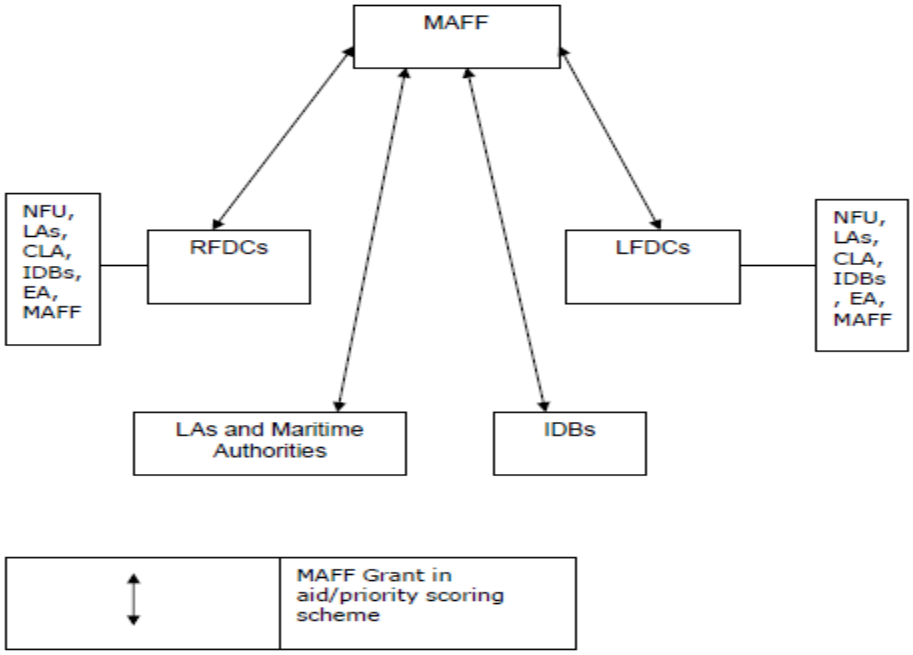


Figure 4. 1 Defence management policy community

Planning Discourse

Problem definition: 'The lack of integration between flood defence policy and the planning system is perhaps best illustrated by the substantial legacy of inappropriate urban and industrial development on flood plain land in England and Wales'

(House of Commons SCA report, 1998 para86)

The policy problem could be defined as a clash of values between the precautionary approach to planning advocated by the EA who are responsible for flood defence and the socio-economic pressures on LPAs, who are responsible for planning and development control, to approve new developments (Ashley et al. 2007). This clash of values is manifest in the incentives of policy actors in the planning policy process; 'in most circumstances, local authorities stood to gain significantly more from permitting flood plain development than from prohibiting it while the dangers of incremental development of flood plain land' could according to the EA 'all too often the result in the need for significantly increased flood defence investment at the taxpayer's expense in future' (House of Commons SCA report, 1998 para87). Consequently led to reports by the EA of 'numerous examples of instances where authorities had effectively disregarded its advice while in turn LPAs have acted in accordance with EA advice but seen their decisions overturned on appeal to the Planning Inspectorate' (House of Commons, 1998).

Suggested policy response: (MAFF) 'The Government looks to LPAs and the EA to maintain effective liaison on flood risk matters, both in terms of preparing development plans and commenting, as necessary, on individual planning applications'

(MAFF Response to SCA report, 1998 p 12)

This would prima facie suggest the policy response adopted the precautionary principle of guiding developments away from flood risk areas. However as Howe and White (2002 and 2004) point out in practice residential and industrial properties have been constructed on floodplains. It is important to put this apparently glaring 'implementation deficit' into the context of planning policies being the responsibility of LPAs. Indeed it has been suggested that LPAs often make final decisions on planning applications based on other social and economic criteria wider than just the risks posed by flooding (MAFF, 1998; Howe and White, 2002). Therefore given these competing claims, it is not surprising that the policy response revolves around bridging the gap between the need for development as well as avoiding

development on floodplains or avoiding development in areas which would exacerbate flooding elsewhere. This sentiment was expressed by Mrs Melville of the RSPB who agreed that the EA needed to be much more involved with the planning system (House of Commons, 1998).

Institutional Practice: (MAFF) 'These circulars (circular 30/92 and PPG20) encourage local planning authorities to consult the EA, and where appropriate IDB's, and take account of surveys of flood risk areas and other relevant guidance prepared by the Agency.'

(House of Commons, 1998 para 49)

In an effort to reduce flood risk and restrict development on floodplains by attempting to forge closer ties between the LPAs and the land drainage or flood defence authorities, a series of legislations and guidance provided a mechanism for these policy aims to be implemented. These include the aforementioned guidance Development and Flood Risk (MAFF, DoE and Welsh Office, 1992) and Planning Policy Guidance: Coastal Planning (DoE and Welsh Office, 1992) as well as legislation such as the Water Resources Act (1991) and the Town and Country Planning Act (1990). The input of the NRA, later the EA, into the development planning process was through surveys which they are required to prepare, as part of their flood defence functions, for the LPAs in section 105(2) of the Water Resources Act (1991) (MAFF, DoE and Welsh Office, 1992; Wynn, 2005). The EA is also a statutory consultee on developments set out in Article 10 of the Town and Country Planning (General Development Procedure) Order 1995 but this did not include specific aspects on flooding (House of Commons, 2006). It was stated clearly in Circular 30/92 that the powers of the NRA and indeed other drainage bodies encompassed only areas that were adjacent to water courses (Wynn, 2005). Hence it was up to the LPAs to use their planning powers to guide development away from areas that may be affected by flooding (MAFF, DoE and Welsh Office, 1992). The LPAs could do this by consulting the EA on individual applications before granting permissions on developments (Wynn, 2005).

However crucially as the EA were only recommended and not statutory consultees on flood risk aspects of planning applications, the LPAs were under no statutory obligations to tailor their final decisions to the EA advice (Ashley et al. 2007). The fragmented nature of the relationship between the LPAs and the drainage authorities seeks to emphasise the significance of local decision-making and local democracy in matters of development planning. Indeed this was underscored by Elliot Morley while commenting on the possibility

of alternative development control procedures that there are complicated issues here also to consider because, in relation to planning as part of the devolved decision-making to local communities, to local authorities (House of Commons, 1998). This is not to say that the EA cannot take further action if a LPA is acting 'irresponsibly', they have the option of asking the Secretary of State for the DETR to call in those plans in order to be apprised by an independent inspector (House of Commons, 1998). However as mentioned earlier, there are examples where LPAs had acquiesced to the EA only to have their decisions overturned by the central planning inspectorate. The fragmented, devolved, piecemeal and voluntary approach to development control had contributed to the 'implementation gap' in policy; this sense of disillusionment was expressed by Dr Mance of the EA as being very frustrating to see their planning advice on flood risk areas overlooked (House of Commons, 1998). The policy actors who engage in concerted action to promote the policy goals of the planning discourse are shown in figure 4.2.

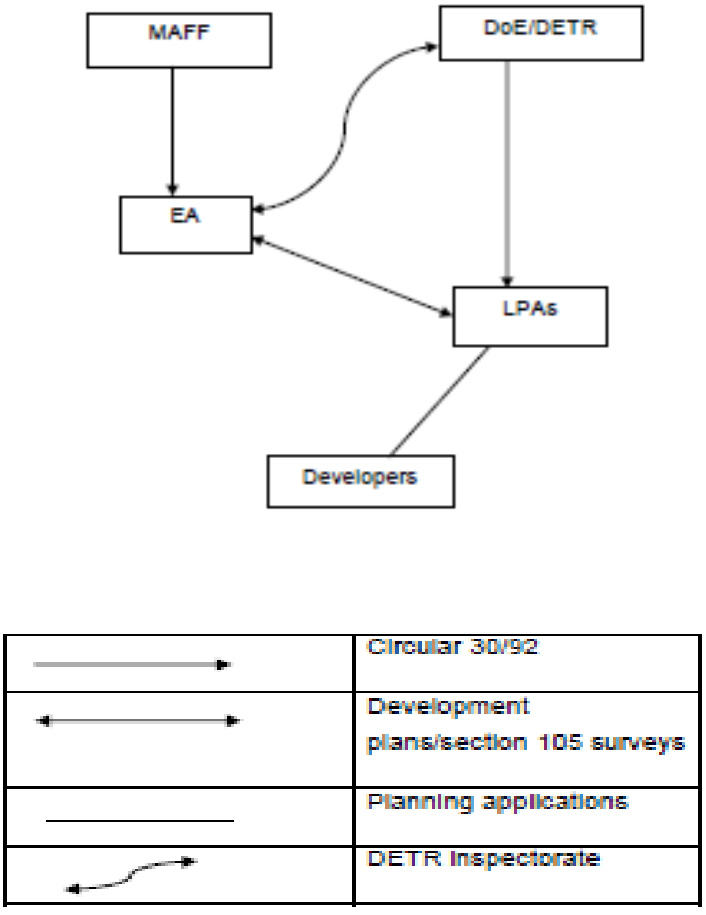


Figure 4. 2 Planning policy community

Bureaucratic Discourse

Problem Definition: (MAFF) 'the Government recognises that these arrangements are complex and that there are a large number of bodies involved in delivering flood and coastal defence.'

(MAFF Response to SCA, 1998 p 1)

The fragmentation, devolution and localisation of land drainage and flood management in England have been commonplace (Bowers, 1998; Watson et al. 2009). And even more common place is various attempts which have been made at reforming the flood management institutional arrangements (Jordan et al. 1977; McCulloch, 2009; Watson et al. 2009). The Land Drainage Act 1930 institutionalised the principle of organising and funding land drainage and flood defence on a catchment basis. Though this institutional arrangement has remained largely intact, it must be noted that in the subsequent decades following the 1930 Acts, other water management functions were added to the responsibilities of the catchment boards' and their successors. In the 1980s the water supply and sewerage functions of the Water Authorities were sold off to private water companies and the NRA created (Watson et al. 2009). It can be argued that these actions further exacerbated the policy problem by making the water sector more fragmented.

Suggested policy response: 'we therefore urge the Government after proper consultation with operating authorities radically to simplify the existing funding procedures for flood and coastal defence activities, with the aim of achieving measurable improvements in policy efficiency through cutting out unnecessary bureaucracy and administration'

(House of Commons SCA report, 1998 para51)

The policy aim within the bureaucratic discourse has always been centred on devising a more efficient system within the mosaic of operating authorities for the delivery of flood management. The organisation practices of the Regional Water Authorities created through the Water Act 1973 were largely influenced by the Ogden Report which advocated 'a technically and managerially efficient industry through … corporate management principles' (Bressers et al. 1995 p 113). In the lead up to the creation of the private water companies, the NRA and OFWAT in the Water Act 1989, a 1985 MAFF document on the Financing and Administration of Land drainage recommended the 'simplification of the institutional

arrangements and aimed to strengthen application of the beneficiary pays principle' (Scrase and Sheate, 2005 p 130).

Institutional Practice: (Elliot Morley) **'**I do think that there is a role for local involvement in terms of deciding priorities and deciding local expenditure on flood and coastal defence. I would be reluctant to move away from an element of local accountability and democracy'

(House of Commons, 1998 para 561)

The impediment responsible for the apparent policy inertia prevalent in the bureaucratic discourse is rooted in the embodiment of the principles of the local, regional and devolved approach to flood management in England. These embodiments are manifest in the EA's Regional and Local Flood Defence Committees. These committees are the sixth generation successors of the catchment boards which were created as a result of the Land Drainage Act 1930. This policy network has been through numerous attempts at reform but according to Scrase and Sheate (2005 p 121) 'the institutional arrangements for land drainage created in 1930 were left largely unchanged . . .' and these committees have been referred to as the power base in flood management (Penning-Rowsell et al. 1986). Therefore even though the EA are responsible for working on 'main' river channels, these functions are carried out through its network of executive Regional and Local Flood Defence Committees (House of Commons, 1998). A further illustration of the local framing of flooding that dominates the bureaucratic discourse is the fact that the majority of the funding for flood defence works in the 1990s came from the Department of Environment, Transport and the Regions via the Revenue Support Grant to local authorities who, alongside IDBs also had flood defence and land drainage responsibilities for non-main river channels and drainage districts.

Table 4. 2 Flood defence funding in England 1990-1997

Year	MAFF Grant and other expenditure (£m)	DETR funding through RSG (£m)	Total (£m)
1990-91	54.4	167.0	221.4
1991-92	72.5	197.1	269.6
1992-93	65.3	214.4	279.7
1993-94	65.3	211.7	277.0
1994-95	73.6	200.4	274.0
1995-96	94.9	177.4	272.3
1996-97	102.6	207.1	309.7
1997-98	87.2	225.4	312.6

(House of Commons, 2000 p 3)

Therefore there was an unambiguous institutional preference for regional and local delivery of flood defence through a network of RFDCs, LFDCs, local and maritime authorities and IDBs, with MAFF, who drove flood defence policy in England, providing some strategic guidance. The emphasis on local democracy was expressed by Elliot Morley who emphasized that local authorities represented on the IDBs and Regional Flood Defence Committees who in turn charge levies on the local authorities (House of Commons, 1998). The policy actors who engage in concerted action to promote the policy goals of the bureaucratic discourse are shown in figure 4.3.

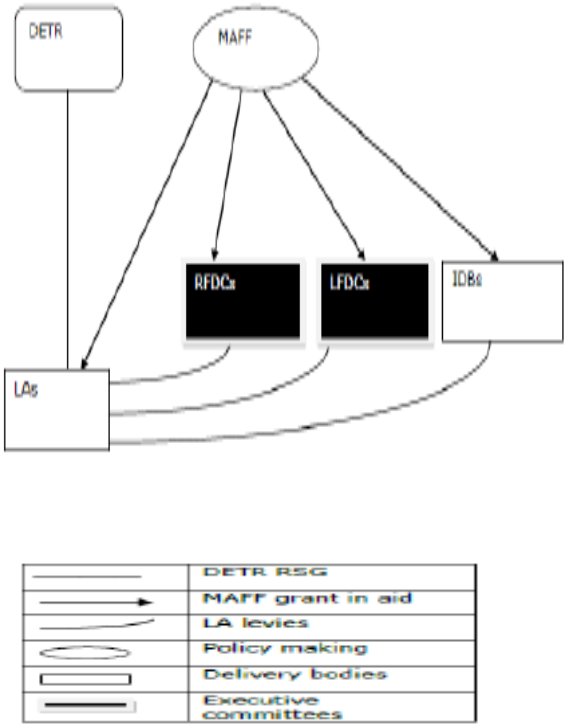


Figure 4. 3 Bureaucratic policy community

Environmental Management Discourse

Problem definition: (Paul Murby The Wildlife Trusts) 'The causal problems, Chairman, were firstly a lack of appreciation at the time that functioning floodplains and coastal habitats actually help dissipate energy and therefore reduce risk and a lack of appreciation of the functional value of these natural habitats for flood and coastal defence.'

(House of Commons, 1998 para 291)

This framing of the environment can be said to have originated out of the need to protect and preserve the countryside. Indeed the countryside was valued as 'not only one of the great treasures of the earth; it is also a vital part of our national identity . . . for hundreds of years our English countryside has given us such ideas as we have had of what paradise might be like' . . . (Shoard, 1980 p 9). This framing recognised the damage of past flood defence practices on the environment as intensive flood defence and land drainage work during the last two centuries has left a legacy of environmental damage which continues to affect society and wildlife (House of Commons, 1998). At the same time it accepts that 'traditional defence structures might be appropriate where population density is above some threshold'

and also elsewhere ‘allowing land to flood and wetlands to regenerate’ (Scrase and Sheate, 2005 p 133).

Suggested policy response: (EA) ‘Salt marshes in estuaries, beaches on the open coast, create very good buffer zones for taking out wave energy and that is the start, we believe, of the sustainable approach to coastal management’

(House of Commons, 1998 para 56)

In this framing of the flood problem, the environment is intrinsically valued (Scrase and Sheate, 2005), therefore it is equally a ‘victim’ of flooding as much as human beings, and thus there is a moral duty to ‘restore’ the environment. However in the environmentalists’ framing, the perpetrator is anthropogenic in nature through activities such as intensive agricultural practices, the built environment and flood defence management measures for instance swamp drainage, river modifications and straightening and the construction of concrete flood walls or embankments. The initial response to this problem came in the form of activities by organisations such as the National Trust and the RSPB, which purchased and managed reserves to preserve the natural beauty and prevent other anthropogenic encroachments (Lowe et al. 1986; RSPB interview 8/6/12). This approach was augmented with the designation of some areas as Sites of Special Scientific Interest (SSSIs) through the National Parks and Access to the Countryside Act 1949. However this had only weak institutional mechanisms to prevent MAFF from continuing its policies of grant aiding ‘improvement’ works in these designated areas (Goyder and Lowe, 1983). Nonetheless with the decreasing significance of agriculture as a national economic priority in the 1980s opportunities were created to work with farmers and landowners on agri-environment schemes funded through the CAP, working with flood defence operating authorities in espousing managed retreat and habitat creation as alternative approaches in flood management (Lowe et al. 1986; Scrase and Sheate, 2005). Contrary to the lack of enforcement mechanisms which characterised activities on designated areas in the 1950s and 1960s (Goyder and Lowe, 1983), MAFF in the Strategy for Flood and Coastal Defence in England and Wales (MAFF, 1993) had the aim to protect statutory sites (e.g. SSSIs) from flooding. Therefore there was recognition that some flood defence activities could have negative impacts on parts of the environment ‘particularly wildlife habitats, some of which depend on relatively high water levels and/or periodic flooding’ (MAFF, 1993 p 5).

Institutional Practices: (MAFF) 'the Government agrees that a wide range of issues need to be considered in the implementation of national policy. Holistic management is facilitated through policy initiatives such as SMPs, WLMPs and LEAPs.'

(MAFF Response to SCA, 1998 p 3)

The mechanisms for delivering an environmental approach towards flood management lay in the various management plans promoted by MAFF in order to encourage the different operating authorities involved in flood defence management to take into account the potentially negative effects of traditional flood management measures. Initially these centred on designated areas such as SSSIs which qualified as Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites as well as Environmentally Sensitive Areas (EA, 1997). These areas have been designated mostly as a result of the combination of national legislation such as the National Parks and Access to the Countryside Act 1949 and also the transposition of the European Habitats and Birds Directives into English law. This can be traced back to the Wildlife and Countryside Act 1981, which transposed the latter into English law and which enabled greater cooperation between the NFU and the CLA on one hand and the Countryside Commission and the Nature Conservancy Council on the other in designating nature conservation areas (Lowe et al. 1986).

With the explicit flood defence aim of protecting and preserving designated sites, MAFF proceeded to produce guidelines for the production of management plans such as WLMPs, SMPs and Coastal Management Plans (House of Commons, 1998). It must be mentioned that although MAFF promoted these plans and guidelines, they were however not officially adopted by MAFF. This comes as no surprise as although preservation of designated sites was a policy aim, in the list of priorities for MAFF grant aid, the provision of funds for works on environmental assets listed for environmental assets of international importance as third, fourth for environmental assets of national importance fourth and for environmental assets of local importance fifth (MAFF, 1993; House of Commons, 1998). However it should be pointed out that in 1998, MAFF announced that the need to protect internationally important habitats and species designated under the European Habitats and Birds Directives would override the prevailing spending formula for flood defence (House of Commons, 1998). The policy actors who engage in concerted action to promote the policy goals of the environmental management discourse are shown in figure 4.4.

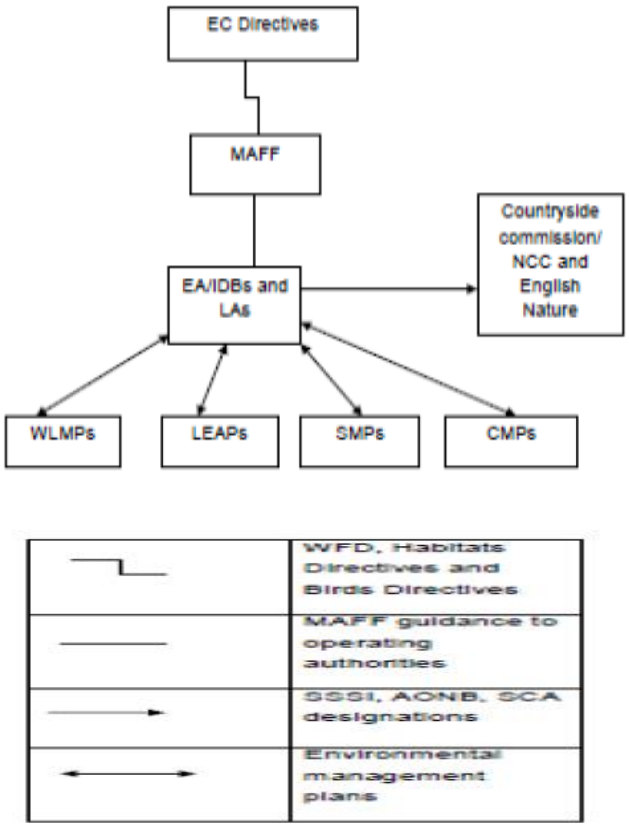


Figure 4. 4 Environmental management policy community

Drivers for Policy Change

This section seeks to outline the policy drivers which have transformed the discourses in flood management in England and contributed to a change in policy paradigm. These drivers have allowed for the introduction of new ideas into the flood management discourse and these are evident in their incorporation into the institutional practices which sustain these discourses. One of these ideas was the reframing of sustainable developments and the shift in emphasis from a narrow definition focussed on economic growth to a more holistic view which called for not only economic growth but also improved social conditions as well as environmental improvement. This view was highlighted by Tony Blair in the policy document *Sustainable Development: A Better Quality of Life* (DETR, 1999):

'Focusing solely on economic growth risks ignoring the impact both good and bad on people and on the environment. Success has been measured by economic growth – GDP- alone. We have failed to see how our economy, our environment and our society are all one. And

that delivering the best possible quality of life for us all means more than concentrating solely on economic growth.'

(DETR, 1999 p 1)

Sustainable development was framed by the Blair government as a new paradigm or a new way for developing the economy without jeopardizing the quality of life, the environment and well-being of the country. The effective protection of the environment emerged as part of the aims in the government's strategy for sustainable development. Therefore highlighting the priority to direct development and promote agricultural practices to protect and enhance the countryside and wildlife (DETR, 1999). This resulted in the enshrining of principles including respecting environmental limits; the precautionary principle; taking a long term perspective and making the polluter pay in government policy. The influence of the government's adoption of this framing of sustainable development was reflected in the EA's commitment to the protection of the environment in *An Environmental Vision* (EA, 2000a) the EA's contribution to Sustainable Development. Here it was realised that 'there is a growing awareness that a healthy environment is vital for the future of business competitiveness' thereby bringing forward concepts such as 'sustainable defences' and 'wetlands' in reducing flood risks and promoting environmental benefits (EA, 2000a p 1).

An event which served as another driver for policy change was the 2000 autumn floods. This event strengthened the view that climate change was an established factor in British flooding (Tunstall et al. 2004). However the framing of the performance of the operative authorities during this event seem to reaffirm the policy changes made two years earlier as there was a much improved flood warning, forecasting and awareness raising system. The policy of carrying out surveys, resulting from the 1998 Easter floods, with the aim of improving flood defences seemed to have been vindicated as it was estimated that almost 280 000 properties were successfully protected from flooding by flood defences during the autumn floods (EA, 2000b). A very useful demonstration of the policy response to the autumn 2000 floods was encapsulated in the House of Commons Agriculture Select Committee third flood report (House of Commons, 2000). This reaffirmed the issues raised during the 1998 report and called for further simplification of Byzantine arrangements for flood management, strengthening development control and providing more funds for flood defence (House of Commons, 2000).

The policy response of providing more flood defence funds was endorsed by Elliot Morley, while giving evidence to the House of Commons SCA: 'we accept that advice and it is why we are on the rise in relation to our Spending Review, it is why we have the additional £51 million, and we are going to have to use that report to guide future expenditure, there is no two ways about that' (House of Commons, 2000 para 74). However what *prima facie* seemed as a continuity of the defence management discourse was actually an avenue for the proliferation of non-structural approaches in response to these floods. The problem of development control had been of concern regularly in the flood policy process. However given the re-emphasis on sustainable development by the Blair government and the adoption of policy principles such as the precautionary approach by the DETR in *A Better Quality of Life* (DETR, 1999), it comes as no surprise that these flood events provided a window of opportunity for development control to re-emerge as a viable policy option (Johnson et al. 2005). This is not to say that development control was not included in the policy debate in the aftermath of the Easter 1998 floods (Wynn, 2005) or even earlier (MAFF et al. 1992), the difference however is that the *Planning Policy Guidance 25* and the *Building Regulations* (2001) further strengthened the planning discourse in the flood policy process.

A further demonstration of the institutionalisation of the sustainable development narrative in the wider government policy was evident in the creation of a new central government department, DEFRA in 2001. In many ways the eschewing of the old MAFF was very much representative of the change of paradigm that was called for by Tony Blair in *A Better Quality of Life* (DETR, 1999). Therefore 'the announcement of the creation of the new department came on the Friday afternoon after the Blair government had emerged victorious in the general elections of 2001' (EA Interview 14/11/12). After all included in the manifesto of the Labour Party was the commitment to create a new 'Department for Rural Affairs' (House of Commons, 2002). The new department had explicitly two policy roles, the first sustainable development and the second the promotion of rural interests (House of Commons, 2002). However the seminal document which heralded the institutionalisation of sustainable development principles in flood hazard governance was Making Space for Water (*MSW)* (DEFRA, 2005). This document outlined that the government would incorporate the effects of climate change as well as the European Union's Water Framework Directive into future flood management policy (DEFRA, 2005).

This new framing manifested as a holistic approach which resulted in the introduction of new policy actors and new roles for the existing actors. The most important was giving the EA a strategic overview of matters relating to flood and coastal erosion risk in England including

risk from sources such as groundwater, urban drainage and overland flow (DEFRA, 2005). This new framing brought forward existing ideas that had previously been raised such as emphasising more the social aspects of flood management such as flood warnings but also improving human and community resistance and resilience (Brown and Damery 2002).

‘Making space for water also discusses and seeks views on the ways in which the risk to both new and existing buildings from floodwater can be managed both by resistance and resilience.’

(DEFRA Response to EFRA report, 2004a p 12)

This made way for new actors and institutional practices such as the insurance industry’s Statement of Principles, which enabled insurers to offer financial protection for those low frequency events that exceeded flood management design standards (House of Commons, 2004). There was also more impetus for a much more rigorous application of development control. Rural land use solutions to flood management such as wash lands, wetlands and managed retreat, ideas that had been in the discourse as far back as when MAFF took over flood policy making in England in the 1980s, were to be actively promoted by DEFRA. The promotion of integrated urban management was also evident in the *MSW* (DEFRA, 2005).

A corollary of the strategic and long term approaches espoused the sustainable development principles resonates in the Foresight Flood and Coastal Defence Project initiated by the Office for Science and Technology. The aim of this project was to produce a long term vision for the future of flood and coastal defence in the UK taking into consideration uncertainties such as climate change and future socio-economic conditions, both issues of concern in sustainable development, with a view to inform policy development (Evans et al, 2004). Flood Foresight established climate change as a *fait accompli* that would have to be dealt with in any flood management policy. The implications of this further entrenched the realisation that, given the inevitability of climate change and its resultant effects. These include wetter winters and the possibility of more intense rainfall in England thus increasing the risk of more flooding (House of Commons, 2004). This had the implication of bringing more urgency to the need for better development control as an important device in managing future flood risk, the Foresight study also brought forward sewer flooding as an important policy problem (House of Commons, 2004).

In line with the environmental pillar of sustainable development, it can be observed that some policy developments embodied the change in approach to flood management. Following on from the pivot to sustainable development principles underscored in *A Better Quality of Life* (DETR, 1999), in 2004 DEFRA produced a new strategy, *Delivering the Essentials of Life* (DEFRA, 2004), which further emphasized DEFRA's role in championing sustainable development as the norm in central government policy practice. Historically the environmental aspect of flood management has been influenced by developments in European environmental policies such as the Habitat and Birds Directives. Although *MSW* was influenced by the European WFD, it could be observed that *Delivering the Essentials of Life* (DEFRA, 2004b) espoused the principles behind the new approach adopted by DEFRA to tackle the increased flood risk and to adapt to climate change. However in an effort to fulfil the objectives set for DEFRA, the promotion of sustainable development and rural development, an independent body, Natural England was established (House of Commons, 2006). This followed on from the emphasis on the environmental pillar of sustainable development as well as the need for government agencies to undergo reforms so as to achieve efficiencies.

Following on from the increase in funds available for flood defence from the Comprehensive Spending Review (CSR) in 2000 which was a response to the Easter 1998 and autumn 2000 floods (House of Commons, 2000; HM Treasury, 2002), the CSR in 2004 resulted in consequential changes in flood management in England (HM Treasury, 2004).

(Tony Blair) 'Investment must be accompanied by reform, and throughout this Spending Review the Government's requirement is clear: for more provided in resources, more is expected in results. With the reforms agreed in this Spending Review the Government is extending devolution, increasing choice, supporting flexibility and ensuring greater personalisation in public services.'

(HM Treasury, 2004 p 1)

The governance approaches adopted by New Labour included concepts such as devolution, focusing on communities, socio-economic empowerment and inclusion and arm's length control by the state (Burnham, 2001; Stoker, 2002; Fuller and Geddes, 2008). Therefore priority was given to achieving greater efficiency in the public sector so as to generate extra resources for local services such as schools or hospitals (HM Treasury, 2004). It is instructive to note that the CSR of 2004 was published alongside Sir Peter Gershon's report;

Releasing resources to the front line: Independent Review of Public Sector Efficiency (HM Treasury, 2004). The recommendations from this report which aimed to secure sustainable efficiencies in the use of resources from both central government and the wider public sector were largely adopted.

In what had been termed as the DEFRA review, carried out in 2003 (EA Interview14/11/12), this central government department proceeded to reform itself in line with the CSR of 2004. The DEFRA review brought about a significant reduction in the flood management delivery footprint of DEFRA. The policy driver for this was described as 'a pressure to reduce resources within government departments' (EA Interview14/11/12). The implications of the percolation of these concepts into the departments of the central government are embodied in the changing nature of both the operations of the EA and DEFRA but also in the relationship between these two policy actors. Therefore the relationship between DEFRA and the EA has been framed as:

'We have a lot of power over the EA really because we define what we should give them, we define the money, the policy and it's not the EA's job to define government policy it's the EA's job to deliver government policy'

(DEFRA Interview 9/11/12)

The emphasis on efficiency is embodied in the targets which DEFRA sets for the EA:

'We've got the outcome measures from government and they tell us the direction and this is one of the shifts again particularly this last government has very much said you know DEFRA do policy, we do the delivery. So in a sense a lot of our policy goals are actually what's given down to us from DEFRA.'

(EA Interview 14/11/12)

Creating efficiencies in the delivery of flood hazard governance resulted in changing and streamlining the flood management funding system in which block grants were allocated by DEFRA to the EA to fund flood management, effectively devolving the appraisal process. Another crucial reform to the EA relates to its role *vis a vis* development control. Where hitherto, under the PPG 25, introduced in 2001, the EA was not a statutory consultee on development planning regarding flood risk areas, this changed in October 2006 (White and

Richards, 2007; DCLG, 2006; DCLG, 2010). The change came about as a result of the introduction of PPS 25 in 2006. This national planning policy document on flood risk was influenced by the principles of a more holistic approach towards the management of flood risk espoused in *MSW* (2005) as well as the perceived inability to control unwise developments on floodplains under the PPG 25. As evidenced by Crichton (2005) who stated that in England and Wales, in 2003; at least 21% of planning applications to which the EA issued formal objections on the grounds of flood hazard were overruled. In addition to this, between 2005 and 2006, 136 applications to develop on high risk floodplain locations were permitted despite objections from the EA on flood risk grounds (White and Richards, 2007).

PPS 25 resulted in a change of the policy. In many ways, it further institutionalised the risk based approaches adopted in the PPG 25 through the introduction of the sequential and exception tests and thus the application of flood risk assessments in all the stages of the planning process (White and Richards, 2007). However in addition to the risk based approach embodied in the preparation of the Strategic Flood Risk Assessments (SFRA) at all stages of the planning process, in keeping with the principles of MSW (2005) of integrated urban drainage management, LAs were charged in the PPS 25 to prepare Surface Water Management Plans (SWMP) in areas where there are critical drainage failures or problems. And also keeping with the sustainable development narrative and its delivery of sustainable flood management, the encouragement of the use of Sustainable Urban Drainage Systems (SuDS) in urban areas was further institutionalised in the PPS 25 (DCLG, 2006). In the aftermath of the 2007 summer floods, central government asked Sir Michael Pitt to conduct an independent review of what could be learned from the summer floods of 2007. The review reported that climate change was likely to result in more extreme weather patterns than those experienced in the summer of 2007 (Pitt, 2008). In addition it was reported that no organisation took responsibility for managing flood risk from surface water flooding.

(Sir Michael Pitt): 'We are calling upon local authorities to take up a big leadership role as far as flooding is concerned. That for me is the most significant change that is required; but there is a whole series of other things that need to be captured in some way in statute.'

(House of Commons, 2008 p 252)

Therefore it was recommended that LAs take on the responsibility for leading the coordination of flood risk management in their areas by working more closely with other

stakeholders to ensure that the right local action is taken. This policy change could *prima facie* be viewed as somewhat radical and indeed a throwback to the pre Land Drainage Act (1930) flood management. However given the recommendation that there should be a coordinating role for local authorities, it seems entirely consistent with the principles of new Labour namely devolution, social inclusion and participation as well efficient local governance. These policy changes were not new ideas but were brought forward as a result of the summer 2007 floods creating a window of opportunity for these policies to be adopted.

The recommendations from this review of the 2007 summer floods formed the part of the basis for *Future Water*, the Government's water strategy for England (DEFRA, 2008c). This took on board the recommendations from the Pitt review and emphasized the increasing surface water and sewer flood risk. In many ways the Government's water strategy for England (DEFRA, 2008c) amalgamated the flood management policy developments which had occurred over the previous decade in a coherent manner, most particularly the Pitt review which central government stated they would respond positively to (DEFRA, 2008c). Another significant impact of the Pitt review can be observed in the House of Commons Environment, Food and Rural Affairs Committee report on the draft Floods and Water Management bill. It was acknowledged that the draft bill addressed 16 of the Pitt review's recommendations which required legislation. Therefore it can be seen how these policy drivers inform the foundations of the FWMA (2010). This legislation represents the transition in flood hazard governance from flood defence to flood risk management.

The New Settlement

Flood Risk Management paradigm

'So we wanted to shift from flood and coastal defence to risk management and our strategy did that in 2003 and, of course that was taken up by the Pitt report and is now captured in law through the FWMA (2010).'

(EA Interview14/11/12)

The précis of the policy effects of the drivers considered in the section above is embodied in the Flood Risk Regulations (2009) and the FWMA (2010). The narratives which embodied this change in paradigm derived from an alteration in the framing of the policy response to the flooding problem in the various discourses. The shift in paradigm and hence policy change is exemplified in the institutional changes that occurred in the flood policy discourse.

In line with discourse structuration and institutionalisation (Hajer, 1997), the narrative of sustainable development, effective governance and devolution became widely accepted and the FWMA (2010) institutionalised these policy narratives. In this section each flood policy discourse is examined in light of the changes codified in the passage of the Flood Risk Regulations (2009) and the FWMA (2010).

Defence Management Discourse

Suggested policy response: (Richard Benyon): 'Flooding and coastal erosion can have a devastating impact on communities. Whilst we cannot fully tame the forces of nature we can better understand the risks we face, and make ourselves more resilient as a society.'

(DEFRA and EA, 2011 p 3)

It can be argued that the new framing had been influenced by a better understanding of climate change and a realisation it would increasingly manifest as more frequent flooding thus increasing flood risk in the future. Another important factor was the realisation that surface water and sewer flooding were increasingly gaining prominence as was demonstrated in the summer floods of 2007 and these events would become more frequent in the future due to climate change. It is also important to note that at the time, DEFRA's budget was heavily influenced by what was described as a finite supply of money in any year to fund flood and coastal erosion risk management activities (DEFRA, 2009).

The change in approach not only resulted in a change in the institutional practice of this discourse, more importantly, it resulted in the inclusion of other policy actors into the discourse such as the Water Services Regulatory Authority (OFWAT), the water supply and sewerage companies, the Association of British Insurers (ABI) and the National Flood Forum (NFF). The entry of new concepts and actors into this discourse allowed for the introduction of new policy ideas in alleviating the flooding problem. Also conversely, practices which were once taken as a given or even an act of faith are now framed as being irresponsible. A prominent example of this can be found in the practice of river dredging or cleaning out river banks, as Baroness Young of Old Scone of the EA put it

'Now with our risk based approach we do look at where the £13 million or so that we spend on dredging and bank maintenance is best spent to make sure that it is focussed on reducing flood risk.'

(Cited in House of Commons, 2008 p 30)

And even more striking is the fact that the practice of dredging was framed as being to blame for the exacerbation of flooding particularly in urban areas

'In many cases dredging systems simply erodes banks; it moves water further downstream and floods urban areas more quickly and very often simply corrects itself very rapidly. If a river wants to silt up it will silt up.'

(Cited in House of Commons, 2008 p 30)

Institutional practice: 'It's introduced a tariff system and the tariffs have been set to reflect the probability of flooding, so the more frequently a property floods the higher the tariff and also in terms of social deprivation. So if you live in a property in a socially deprived area that floods very frequently you get the highest rate of tariff and therefore more money from the central government through ourselves go into the scheme than if you are doing that locally.'

(EA Interview14/11/12)

The transformed institutional practice has been heavily influenced by the principles of sustainable development. The outcome measures were developed by DEFRA for operating authorities to cover the period of the 2007 CSR (April 2008 to March 2011) (EA, 2010). It is expected that any flood risk authority seeking funds for schemes achieves a set of targets which include the following criteria: economic benefits, number of households protected, deprived households at risk, nationally important wildlife sites and UK Biodiversity Action Plan habitats. It is important to note here that benefit-cost analysis has retained central importance and remains a routine institutional practice despite the transformation. However the DEFRA outcome measures embody the call in the recommendations in the Bye and Horner report on the 1998 floods (Bye and Horner, 1998) for a focus on social issues. Furthermore, the criteria for these outcome measures mirror the three pillars of sustainable development as outlined in *MSW* (2005), the economic, social and environmental pillars (DEFRA, 2005).

As a result of increasing risk of sewer and surface water flooding, the OFWAT price reviews provided an avenue to expand the funding to manage sewer flooding. Although the risk of

sewer flooding was highlighted in the OFWAT price review 2000-2005 the cap for spending per flood problem was set at £52 000. In arriving at this allowance, the cost effectiveness of preventing sewer flooding was a major criterion. It had been suggested in OFWAT (1999) review 2000-2005 that priority was given to other plans such as the need for water and sewerage companies to comply with central government's environmental regulations (OFWAT, 1999). However this changed in the next review of 2005-2010 to reflect the increasing risk of sewer flooding and the need to adapt to climate change. Funding for sewer flooding works by the water and sewerage companies was increased from £370 million in the previous review to £1.1 billion (OFWAT, 1999; OFWAT, 2004). The change in approach can also be observed in the review making allowance for other mitigation efforts for properties which would not have a capital solution as a result of not meeting the cost benefit criteria

'There will still be some flooding problems which will not receive a capital solution before 2010. To recognise the position of these customers, we have made allowances for mitigation measures for existing problems where funding for capital schemes is not included in price limits.'

(OFWAT, 2004 p 208)

An additional institutional practice which has both perpetuated the construction of flood defences but also promoted the utilisation of alternative defences, implicitly or explicitly is the Statement of Principles (ABI, 2003) agreed to by central government and the ABI on behalf of the flood insurance providers in the UK. The ABI represents 94% of the UK insurance market for property insurance (ABI Interview 29/05/12). At the root of the agreement is the provision of domestic insurance covering flood risk in England by private insurance companies on one hand and the continued provision of more accurate flood maps and adequate flood defence measures by the EA on the other. The initial statement of principles was agreed to in January 2003 largely as a result of the 2000 autumn floods however as with most developments in the flood policy discourse, the 2007 summer floods triggered a review of the statement of principles in 2008. During the review, the ABI sought as a condition for the continuation of the agreement

'Adequate investment in and management of flood risk measures would enable flood insurance to continue to be widely available, as envisaged under the Statement of Principles for the Continuation of Flood Cover. Insurers need to see significantly greater commitment

from the Government, or substantial areas of the country will face much higher premiums and deductibles in the near term, and become uninsurable over the longer term.'

(House of Commons, 2008 p 133)

The policy actors who engage in concerted action to promote the policy goals of the defence management discourse are shown in figure 4.5.

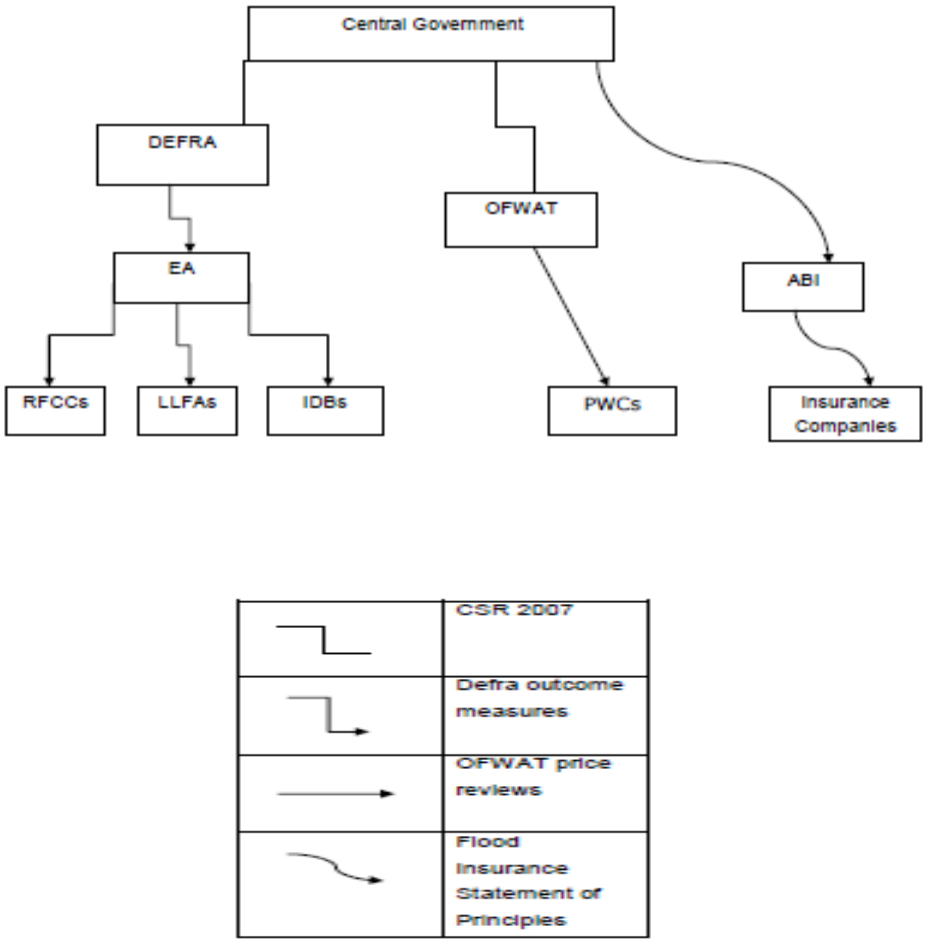


Figure 4. 5 Defence management policy community

Planning Discourse

Suggested policy response: 'A presumption in favour of SuDs should be included in the Planning Bill, to add weight to Planning Policy Statement 25.'

(House of Commons, 2008 p 13)

The transition in the approach espoused in the planning discourse can be framed as a shift from a reactive position to the adoption of the precautionary principle and finally to the managed adaptative principle. It can be argued that the shift in emphasis from an approach based on the precautionary principle to the inclusion of managed adaptation stem from the influence of economic factors as well as uncertainty of the effects of climate change on the policy problem. Therefore it comes as no surprise that SuDS were highlighted, promoted and actively encouraged as viable policy solutions to the flooding problem in PPG 25 (DETR, 2001). However it is important to note that the principles espoused in SuDS were not entirely new; in fact some forms of SuDS were mentioned as possible solutions to the problems of run-off from new developments. Circular 30/92 (DoE, MAFF and Welsh Office, 1992) highlighted this problem. However sustainable drainage or rather soft alleviation as it was framed in the Circular 30/92 (DoE, MAFF and Welsh Office, 1992) was articulated in a rather advisory manner, although this provision was strengthened in PPG 25 (DETR, 2001). In many ways PPG 25 was a policy response by central government to concerns highlighted in the Bye and Horner report (1998) regarding development control. However the principle of local democratic control of planning decisions prevailed with a caveat in the form of the adoption of risk based approaches in deciding whether a development would proceed or in granting planning applications to areas at risk of flooding.

Concerns emanating from surface run-off from new developments were mentioned in Circular 30/92 (DoE, MAFF and Welsh Office, 1992). Yet in many ways, the framing of the policy problem at the time resulted in a policy response which could be best described as lukewarm. In *MSW* (DEFRA, 2005), however, the policy response was framed in a more holistic and integrated manner which not only included a consideration of current flood risk in the planning process but also future flood risk and flood risk emanating from developments on floodplains as well as other sources.

Institutional practice: ‘The Government introduced new powers for the EA to challenge planning authorities that overrule our advice based on the basis of riverine or coastal flooding and flood risk from surface water drainage.’

(Cited in House of Commons, 2008 p 13)

The alteration in the role of the EA is very significant. In Circular 30/92 (DoE, MAFF and Welsh Office, 1992) and also in PPG 25 (DETR, 2001), the role of the EA was defined within the context of the primacy of elected bodies, the LPAs, making local planning and

development decisions. This was manifest in the fact that the EA was not a statutory consultee for development proposals in flood risk areas. The failure of policy to integrate the planning process and flood management was articulated by the House of Commons Special Committee on Agriculture report into the 1998 floods as a significant gap in the delivery of national policy priorities at the local level (House of Commons, 1998). The EA also stated that:

'In 2005–06, we objected to more than 4,000 planning applications in England because of concerns about flood risk. In the end, only 10 major developments went ahead against our advice in 2005–06, but that is 10 too many'

(Cited in House of Commons, 2008 p 13)

With the increasing need to adapt to the effects of climate change including increased risk from surface water flooding, PPS 25 (DCLG, 2006) made the EA statutory consultee on development proposals in flood risk areas. However in recognition that development control not only involves the prevention of developments on floodplains but also that general development in urban areas increases the amount of drainage and thus exacerbates surface water flooding, the EA became a consultee on major developments beyond floodplains.

This change in policy represents a balance between the retention of local discretion in planning matters and the need to further integrate flood management and the planning process. Hence the risk-based approaches to planning appraisal which had been introduced in PPG 25 were further institutionalised in PPS 25 with the addition of the exception test to the sequential test to be carried out by LPAs when deciding on developments in flood risk areas. In further recognition of the increasing risk of surface water flooding, local authorities were required in PPS 25 to prepare SWMPs in areas with drainage problems or critical drainage failures. This represented an enormous departure from previous arrangements where the EA only supplied section 105 surveys to the LPAs during the planning process. The new settlement can be captured in the articulation of the renewed role of the EA in development control:

(Baroness Young of Old Scone): 'I suspect that what we need to press for is first of all to make sure that no new development goes ahead with inadequate drainage and sewerage and we have some powers under PPS25 in that, and secondly to make sure that re-development redevelops the sewerage and drainage systems as well as the actual

properties themselves. Thirdly, focusing on the priorities—the hot spots—where traditionally we know there have been problems. If we can make fast progress in solving those three priorities the remainder of urban drainage systems can come along behind that.'

(Cited in House of Commons, 2008 p 34)

This has led to the institutionalisation of SuDS as part of the tools of managing flooding in urban areas. However in line with the prevailing notion of local control in planning decisions and devolution principles in governance, there seemed to be a consensus that the operating authorities best equipped to manage and maintain SuDS are the LAs:

(Huw Irranca-Davies): 'It is our intention that local authorities in their role as the approval bodies for SuDS can also if they wish to—and this does come back to partnership as well delegate the responsibility for the maintenance of SuDS if they so choose. They could delegate for example to water and sewerage companies if they had the necessary skills to do it or they could use consultants if those were not in-house'

(Cited in House of Commons, 2009 p 132)

The institutionalisation of the use of SuDS has thus resulted in the introduction of new policy actors into the planning discourse such as the ABI and the water supply and sewerage companies. The policy actors who engage in concerted action to promote the policy goals of the planning discourse are shown in figure 4.6.

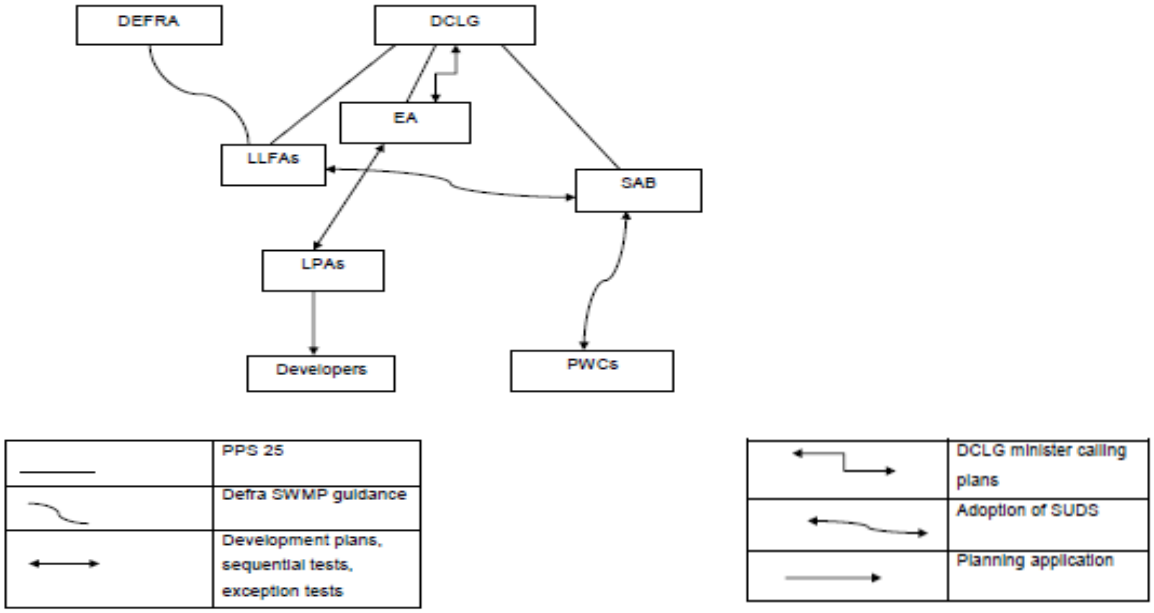


Figure 4. 6 Planning policy community

Bureaucratic Discourse

Suggested policy response: (EA) 'The key issue here is that bodies involved in delivery of flood and coastal risk management need to have clearly defined roles and responsibilities so that there is no room for confusion or inaction. We believe that the draft (FWMA) Bill would achieve this, providing clearly defined roles for the EA and Local Authorities.'

(Cited in House of Commons, 2009 p 23)

The framing of flood governance as a local problem which needs a component of local democracy in its resolution has long been manifest in the bureaucratic discourse. However equally enduring are calls for the reform of flood governance in England, especially in the wake of devastating flooding events. The policy problem has been framed as one of numerous, often disparate and seldom cooperating operating authorities in flood governance resulting in confusion amongst the public and even between operating authorities. However the framing of this policy problem has been transformed within the context of the drive to reform government services to achieve more efficiency. This was embodied in the CSR 2004 (HM Treasury, 2004). Hence ideas and concepts hitherto regarded as reckless in the

bureaucratic discourse such as arguments about reforming the EA have made way for the transformation of the discourse.

However the shift in the policy paradigm came in the form of the centralisation of the functions of the EA. The drive to achieve efficiency in government was not the only policy driver in this regard; as moves to rationalise or rather manage floods on a nationally consistent basis were highlighted in the government strategy *MSW* (DEFRA, 2005). Together these drivers resulted in the introduction of new public management principles into the governance of floods in England, with flood management functions such as funding delegated to the EA Board:

(ABI) 'Insurers welcomed the move to allocate the majority of flood management expenditure directly to the Agency by way of block grant, reducing bureaucracy and ensuring greater accountability'

(Cited in House of Commons, 2006 p 15)

This transformation was possible because the framing of the policy problem had adopted a narrative of achieving efficiency in flood governance. This has manifested in the centralisation of responsibility in the EA, such as funding, away from the RFDCs to the Board. Paradoxically the localised approach to flood governance had not been eschewed either. This is clearly evident in the recommendations of the Pitt Review. Within the context of the 2007 summer floods, the problems were framed by the EA as:

'Before the introduction of the FWMA (2010), after the 2007 floods in the Pitt Review there was a recognition that all forms of flooding weren't managed to the same quality or weren't managed at all. So things like groundwater were managed in some respects by us but only in terms of availability and quality not in terms of groundwater flooding. And surface water wasn't the responsibility of anybody'

(EA - Midlands Interview 11/05/12)

This resulted in policy responses such as emphasis on the local approach recommended in the Pitt Review in the management of surface water flooding as well as coordinating responses in flood events generally:

Sir Michael Pitt: ‘What might be the right solution for Hull or the East Riding may not be right for Gloucestershire or somewhere else; so the first thing is to differentiate between different parts of the country. That is what led the review to recommend so strongly the importance of local government discovering local solutions to local problems.’

(Cited in House of Commons, 2009 p 252)

Institutional Practice: ‘the big change in the 2010 Act was that unitary, counties and London boroughs were given direct surface water and ground water and ordinary water courses, some of them were obviously already had water courses before but some didn't.’

(EA - Midlands Interview 11/05/12)

The resulting change in institutional practice in the bureaucratic discourse represents a significant departure from the past and paradoxically it also reinforced the framing of floods as a local problem which needs to be managed locally. In the characterisation of the changing institutional practice, what can be observed is an increasing centralisation of flood management; this is manifest in the gradual erosion of the powers of the hitherto RFDCs and the LFDCs of the EA. This began with the decision in April 2004 to fund almost all of the EA’s flood defence works through DEFRA grant-in-aid rather than local authority levies. This effectively ended the role DETR played as the largest sponsor of flood defence in England as DETR were responsible for rebating LAs on their flood defence expenditures through the revenue support grant. This centralisation continued apace with the establishment of single tier RFDCs in April 2005, effectively abolishing the LFDCs and further reducing the role of local authorities and their appointees in managing Main River flooding. This change in approach can be attributed to the drive to achieve efficiency in the public sector as embodied in the CSR 2004 (HM Treasury, 2003). The changing role of the EA vis-a-vis DEFRA was characterised by the EA as follows:

’This came about because of a thing called the DEFRA review. So the last government made an announcement during one of the budgets or autumn statements. And each department had to radically reduce its size including DEFRA. DEFRA gave us greater delegated powers to take decisions ourselves rather than having to refer a lot to DEFRA for approval. . . . . we took on a lot of the responsibilities and we’ve still got that responsibility today and I think it’s worked really well because it removed a lot of duplication of effort’

(EA Interview14/11/12)

In addition to the strategic role that was given to the EA regarding the management of floods from all sources in *MSW* (DEFRA, 2005), in April 2006, the EA became responsible for the provision of grant-in-aid for flooding to other operating authorities such as the LAs and the IDBs (House of Commons, 2006). The usurping of powers from the RFDCs was complete with the passage of the FWMA (2010) which abolished RFDCs and replaced them with non-executive Regional Flood and Coastal Committees (RFCCs) with significantly reduced influence:

'Prior to the FWMA (2010), the RFDCs were executive and they had all the powers in relation to flood and coastal risk management apart from a very few which were reserved for the board. . . . . So it is now very clear under the Act that the Board is responsible for all of flood and coastal risk management except for specific powers that were given to the RFCCs and so we basically turned this thing round'

(EA Interview14/11/12)

Paradoxically, while the EA was consolidating its flood management powers, there was a drive for the devolution of surface water flood management and some aspects of flood management funding. As a result of the recommendations of the Pitt Review as well as the EC Floods Directives (Pitt, 2008; Flood Risk Regulations, 2009), LAs are responsible for coordinating the activities of operating authorities in their areas during flood events and also responsible for the production of local flood risk assessments, maps and management plans. This change in policy, especially regarding the management of surface water flooding, reaffirms one of the principles of flood governance in England, the view that floods should be governed locally. This has been institutionalised in the FWMA (2010) which created the LLFAs to manage local flood risk.

While this principle cannot be strictly applied to the funding of most flood management schemes as these are funded centrally, there have been efforts to devolve flood funding. This is not a new idea as it had been mentioned in policy documents such as the Circular 30/92 (DoE, MAFF and Welsh Office, 1992). However the renewed emphasis on the devolution of flood management funding has been attributed to the financial crisis that occurred in 2007 and the localism agenda of the current conservative government. This was framed as partnership funding:

‘Partnership funding was introduced by the government last year. It was set up, really sort of two drivers; the first one was a significant reduction in funding right across the public sector as a result of the economic and financial crises’

(EA Interview14/11/12)

This aims to enable operating authorities, especially the LLFAs to fund local flood priorities which otherwise might not be funded as a result of not achieving the criteria set for the receipt of EA grant aid. This has been institutionalised in various avenues available to LAs to raise funds locally:

*‘*So we’ve opened that pot of money up if you want to LAs and then they've also got powers to raise funds themselves if it’s a local priority. They can either spend their own money they raise through council tax or they can do things like Community Infrastructure Levy, Business Improvements Districts or taxing from other funding. There are various mechanisms they, we’ve, put in place that would allow them to raise or borrow money in order to finance the local priorities’

(DEFRA Interview 9/11/12)

The policy actors who engage in concerted action to promote the policy goals of the bureaucratic discourse are shown in figure 4.7.

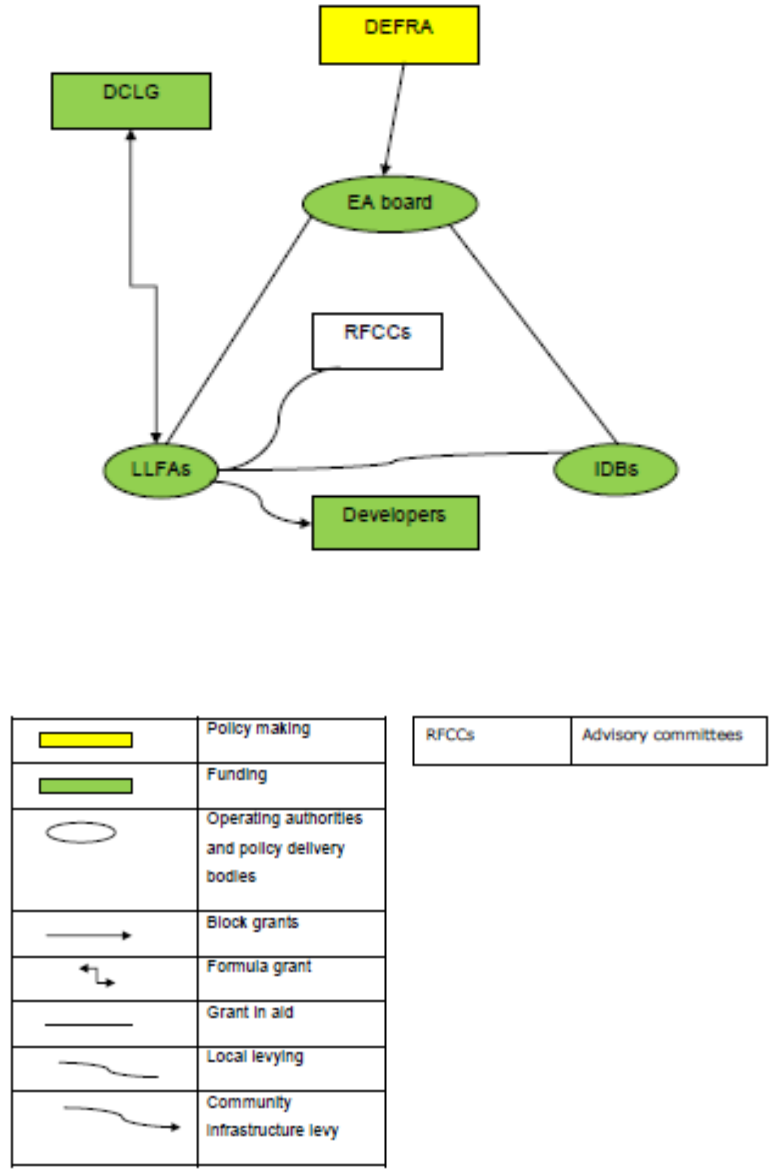


Figure 4. 7 Bureaucratic policy community

Environmental Management Discourse

Suggested policy response: (DEFRA) **'**The Government agrees that working with natural processes to mitigate flood risk has an important role to play in the management of risk. The creation of washlands and the realignment of defences will be considered on an equal footing with other options to reduce flood risk.'

(DEFRA Response to House of Commons Flood Report, 2008 p 14)

The policy response to the flooding problem in this discourse has changed from the approach of protecting designated sites to the more proactive one of creating habitats as an alternative method of managing floods. This represents a progression in values from an emphasis on 'conservation' to 'environmentalism' which views the natural environment as an intrinsic and beneficial part of nature thereby resulting in the promotion of the narrative of working with natural processes risk (Scrase and Sheate, 2005). The EC WFD introduced the catchment approach to the management of inland water bodies. Hence this approach to managing the natural environment was transposed into the management of floods through the introduction of the CFMPs in *MSW* (DEFRA, 2005). In this case the EC WFD, served as the source of the catchment approach to environmental management and the sustainable development narrative espoused in *MSW* (DEFRA, 2005; RSPB Interview 8/6/12), enabled the adoption of this approach in flood management. The catchment approach has been framed, in the narrative of sustainable development, as a viable economically, environmentally and socially management unit for natural flood management. This was highlighted by the House of Commons report on climate change and flooding (House of Commons, 2004).

Another significant driver responsible for the change in approach is the establishment of Natural England. This agency created through an amalgamation of English Nature, the landscape, access and recreation elements of the Countryside Agency, and the environmental land management functions of the Rural Development Service (House of Commons, 2006), had among its principal responsibilities nature conservation and biodiversity. As part of the Habitat Action Plan, both the EA and Natural England became the lead organisations responsible for the creation of saltmarsh, mudflat and wetland habitats respectively (House of Commons, 2006). Both organisations had an annual target for creating 200 hectares of new saltmarsh, mudflat and other wetland habitats through the EA flood risk management work.

Institutional practice: 'The CFMP and SMP, they are two main strategic planning documents for flood risk management. They aren't quite on a high level but they set out approaches for different parts of the catchment and they embrace working with natural processes so they will recommend for different parts of the catchment increased flooding rather than more defences.'

(Natural England Interview 23/03/12)

The institutional practice in the environmental management discourse has been transformed from an emphasis on the conservation of the natural environment to a narrative of 'working with natural processes' with the aim of managing flood risk as well as improving the natural environment. More broadly the institutional practices in this discourse manifest as natural flood management schemes with multiple benefits. A key example of the integration of working with natural processes and multiple benefit initiatives is a flood management scheme on the Humber Flats (EA – Midlands Interview 11/05/12). Schemes like the Humber Flats are made possible because of the Biodiversity Action Plan requirements that have been transposed into the EA's outcome measures for flood management schemes. Hence the likelihood of flood management schemes such as the Humber flats being created does not depend solely on the multiple benefits being offered but on the score from the EA outcome measures for appraising flood alleviation schemes. However, it must be mentioned that there are numerous organisations and schemes that have been set up as a result of the promotion of sustainable development by DEFRA (Birmingham Wildlife Trust Interview 08/06/12). Therefore schemes which do not explicitly have flood risk management as a main goal but have a broader remit of promoting sustainable development through habitat creation or catchment sensitive farming are promoted and funded through the Catchment Restoration Fund, agri-environment schemes and land restoration funds. These schemes are promoted by DEFRA and the EA and delivered by organisations such as the Wildlife Trusts, RSPB, EA and National Trust.

However it must be highlighted that the delivery of these schemes is ephemeral in nature. An illustration is the ephemeral description of agri-environmental schemes given by a NT respondent . . . . 'And at the moment that mechanism isn't really there and there is some mechanism within the agri-environment schemes for farmers to work on their farms to manage water in a better way but there is such an uncertainty about these schemes at the moment because of CAP reform, so that's a great uncertainty at the moment and I think two or three years down the line we don't know what's going to happen to that' (National Trust Interview 11/12/12). The implication of this is somewhat disconcerting with actors such as the RSPB highlighting the importance of multiple benefits schemes and the inability of the DEFRA funding system to promote these on a sustained basis (House of Commons, 2008). In fact one actor described the inability to sustain funding as 'a fig leaf to show that they are actually doing something but in reality they are totally driven by budgets and financial constraints' (Somerset Wildlife Trust Interview 13/06/12). The policy actors who engage in concerted action to promote the policy goals of the environmental management discourse are shown in figure 4.8.

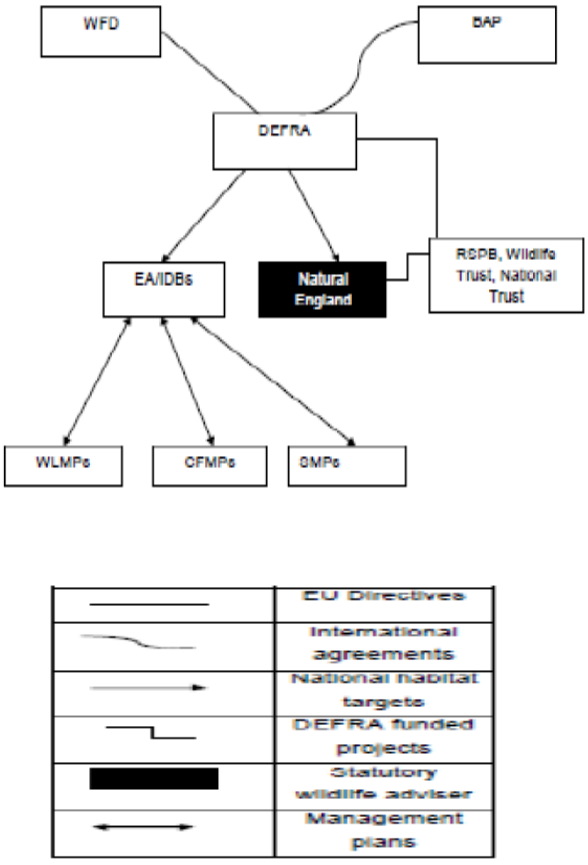


Figure 4. 8 Environmental management policy community

Implications of Flood Risk Management in England

It can be observed that the transition in flood governance from defence to risk management was influenced by policy drivers rooted in the principles of sustainable development, efficiency in public service delivery and localism. These policy drivers were also greatly influenced by improved knowledge of the effects of climate change, devastating floods such as those in the summer of 2007 as well as the financial crisis of 2007/2008. Therefore this policy evolution was influenced by factors internal and external to the flood governance policy subsystem. This has resulted in changes to the institutional practices prevalent in flood governance through the introduction of new policy actors, the re-emergence of new ideas as well as alteration of the responsibilities of operating authorities.

Perhaps the most crucial policy event was the creation of DEFRA, a government department dedicated to the promotion of sustainable development and rural affairs in England (House of Commons, 2002). This marked a departure from MAFF and its dominant role in the

promotion of the flood defence paradigm. DEFRA promoted sustainable flood management contrary to MAFF which saw its main remit as chief promoter of agriculture. The hollowing out of DEFRA was manifest in the DEFRA review (2001) which resulted in the downsizing of DEFRA, the loss of its chief engineer, its 12 regional engineers, streamlining of its flood management research program with that of the EA and the loss of its flood scheme funding allocation responsibilities. DEFRA did promote the sustainable development principles in the formulation and delivery of flood risk management as embodied in *MSW* (DEFRA, 2005). However the DEFRA review resulted in the devolution of the majority of these responsibilities sideways to a non-departmental public body, the EA, thereby re-affirming the notion in policy networks literature of hollowing out of the state. However this should come as no surprise as the prevailing narrative in government was achieving efficiency and savings within the public sector. One of the ways of achieving efficiency was to avoid duplication of the flood management policy formulation and delivery responsibilities of DEFRA and the EA by transferring policy formulation and delivery roles to the EA with DEFRA retaining a supervisory role. This has resulted in DEFRA achieving its goal of permeating sustainable development principles in flood governance in England by re-defining the scope within which the EA operated.

The significance of the altered role DEFRA plays is characterised by the targets and outcome measures for flood risk management set by the government for the EA to achieve. This is a steering mechanism through which flood management priorities and funding are directed through the EA, which has the strategic responsibility to manage floods from all sources. The evolution of the role of the EA in flood governance perhaps mirrors best the change in paradigm in flood governance in England. Hitherto, the flood management functions of the EA were implemented by RFDCs and the LFDCs made up mostly of constituent local authority appointees. However as a result of the Easter 1998 floods and the Bye Report (Bye and Horner, 1998) calls for nationally consistent approaches began to be heard. MSW (DEFRA, 2005) called for the EA to have a strategic role in the management of floods in England and this was manifest in the centralisation of flood management functions in the EA. The devolution of flood governance responsibilities from DEFRA to the EA occurred and in addition to this, there was a progressive usurping of flood governance responsibilities from the RFDCs to the EA Board.

It is also important to note that in the area of planning, where the primacy of decisions taken by the LPAs was almost accepted as dogma, practice has also been altered as a result of the expanded responsibilities of the EA. This came in the form of the EA being made

statutory consultees on not only development applications in flood risk areas but also on any major development applications to the LPAs. A manifestation of the expanded role the EA has assumed is the EA's publication of the policy document FCERM appraisal guidance (EA, 2010a). This area had been the exclusive preserve of MAFF since it took over flood defence policy in 1986, manifest in the previous flood defence appraisal guidance to operating authorities and practitioners, *Flood and Coastal Defence: Project Appraisal Guidance Notes* (MAFF, 1993) and *Flood and Coastal Defence Project Appraisal Guidance* (MAFF, 2001), having both been produced by MAFF. Therefore it can be observed that the EA has assumed both a policy formulating and implementing role in delivering flood risk management.

The role of the LAs *vis-a-vis* flood risk management also represents a significant departure from the past. In terms of the funding of major flood defence schemes, the LAs provided the bulk of the funds levied by the EA even through these were usually reimbursed by DETR in the form of RSGs. However actions to rationalise flood governance in England resulted in the transfer of a majority of the funding for flood schemes to DEFRA and later to the EA in the form of block grants, and the severe curtailment of the levying powers of the RFDCs. However it was in the planning area that LAs increasingly had more responsibilities, the most crucial of which were the requirements to prepare SWMPs for areas with drainage problems as well as the adoption of SAB approved SuDS for new developments. Therefore in a somewhat paradoxical manner, while LA representatives were losing powers to influence major flood management schemes undertaken by the EA, the emergence of surface water flooding created a window of opportunity to institutionalise localism principles into flood governance. The policy drivers for this were the recommendations from the Pitt Review into the 2007 summer floods and the EC Floods Directives (Pitt, 2008; Flood Risk Regulations, 2009).

Conclusion

Transition from flood defence to flood risk management policy paradigms occurred as a result of the permeation into the flood governance discourses of narratives of efficient governance, sustainable development and localism. These narratives have been generated and influenced by policy drivers such as the flood events in 1998, 2000 and 2007, European legislation such as the WFD in 2000 and the EC Floods Directives in 2009 as well as domestic policies seeking efficiency in the central government. These narratives in turn have enabled the transformation and reproduction of the institutional practices prevalent in flood

governance by providing a platform for the introduction of new ideas, re-emergence of existing ideas as well as the introduction of new policy actors in flood hazard governance in England. Hence flood defence was undertaken by interactions between the following policy actors MAFF, EA, RFDCs, LFDCs, IDBs, LAs, DoE/DETR, LPAs, Developers, NFU, CLA, NCC and English Nature. While flood risk management was carried out by policy interactions between DEFRA, EA, RFCCs, LLFAs, LPAs, IDBs, PWCs, SABs, OFWAT, ABI, PWCs, Developers, Natural England, RSPB, Insurance Companies , Wildlife Trust and National Trust. This has in turn resulted in a change in the flood governance paradigm and the emergence of ‘flood risk management’. The next chapter accounts for the transition from flood defence to flood risk management in Scotland.

Chapter 5

The New Paradigm in Scotland

Introduction

The overarching aim of this chapter is to account for the emergence and implications of 'flood risk management' in Scotland. The objective is to analyse the transition from 'flood defence' to 'flood risk management' by unpacking these paradigms, revealing the discourses which symbolize the various contested values and the institutional practices which produce, reproduce and transform these discourses and thus embody the change in the new paradigm. This chapter is divided into four sections. The first section characterises the policy discourses which embody the values, norms and the institutional practices which structure policy outcomes as well as individual actor behaviour in the 'flood defence' paradigm. The second section identifies the policy drivers responsible for the change in paradigm. The third section outlines the new policy paradigm as embodied in the FRM (Scotland) Act 2009. The final section includes a discussion on the implications of the new settlement for the management of future flood hazards in Scotland.

The Old Settlement (1961-1998)

The Flood defence policy paradigm

As has been highlighted in the earlier chapter, the nature of governance in the United Kingdom is fragmented, with governments and government departments hardly ever acting corporately (Hill, 2005). Therefore it comes as no surprise that in a cross cutting and devolved policy area such as flood governance, different departments in a devolved Scottish government possess contending and sometimes conflicting frames of the policy problem thus resulting in different policy discourses, different understandings and perceptions and potentially different courses of action (Yanow, 2000). Therefore this section uncouples the 'flood defence' policy paradigms in order to tease out and characterise the different meanings, perspectives and discourses held by the relevant policy actors. The nature of these discourses will be fleshed out consequently highlighting how the policy problems of flood management are framed or defined, what range of options are considered as the expected policy responses, what is considered to be reckless behaviour by other policy actors and perhaps most crucial, the institutional practices through which the values

embodied in these approaches to flood management are produced, reproduced and transformed. The institutional practices would also be utilised to delineate policy actors who form the core of each discourse.

Defence Management Discourse

Problem definition: (Mr. Malcolm Chisholm MP) 'Paisley, which was badly affected by floods in the winter of 1994, a light engineering company called Tercet was badly flooded. The flooding arose from a blocked culvert on an adjoining vacant site, which was owned by a private development company, whose whereabouts were not known at the time. Ownership had changed and was initially denied. The flooding rose to a depth of 0.5 m within two hours. The company closed its operations for about six weeks and the damage cost £1.5 million to repair.'

(Cited in House of Commons, 1997 p 2)

The framing of flood hazards in this discourse is as a disruptor of normal life, wherein a flood afflicts human life, property and activities with a myriad of damages. The attribution of blame; from a blocked culvert, implies anthropogenic culpability or at least negligence. The presence of unwanted water is viewed as an obstruction to important economic activities such as agriculture and thus an impediment to making a living. Hence it is unsurprising that the flood which occurred in Paisley in the winter of 1994 was framed as an impediment to economic activities, with the damages and losses appraised in monetary terms. In addition, the effects of the 1993 winter flood in Perth were framed in terms of damages in the excess of £10 million and at least 780 residential properties (Black and Anderson, 1994). There is also another aspect to the framing of floods as a disruptor beyond the economic argument. This aspect frames the hazard as disrupting and invading the daily lives and routines of its victims, human beings, especially vulnerable people, reduce the quality of life of the victims. Floods are viewed as an indignity which ought not to be afflicted upon members of the community, especially vulnerable ones. Referring again to the 1994 floods, Scottish MP Thomas Graham (Renfrew, West and Inverclyde) stated:

'I visited a family at 1.30 am. We waded through 2.5 Ft. of stinking sewage which surrounded my constituent's house. Families could not get out and about.'
'Just a week ago, a constituent of mine was going bananas because the river outside her house had nearly reached flood level, and she was imagining what it would be like when the

water came over. Madam Deputy Speaker, you are a woman. You can imagine how my constituent felt when she got up and saw sewage all over her house, her carpets and kitchen stinking of bog and human dirt.'

(Cited in House of Commons, 1997 p 4)

Suggested policy response: (Dr. Norman Godman MP) 'a local authority should have the power to take decisive action to defend our constituents where say, a neighbour . . . is acting irresponsibly'

(Cited in House of Commons, 1997 p 5)

Inherent in the policy response are important norms which further reveal the framing of floods in this particular discourse. Key is the attribution of responsibility to LAs. The emphasis on local delivery of flood protection could *prima facie* be viewed as a corollary of the legacy of various local government reforms in Scotland over the years (see Parker and Penning-Rowsell, 1980; Sewel, 1987; Sawkins and Dickie, 1999). However the local approach of the policy response embodies the values enshrined in the principles of British land drainage laws which cast land drainage as predominantly a local problem and argues that decisions should be made locally (Penning-Rowell et al. 1986). Another important principle embodied in the policy response is that the responsibility of land drainage rests first and foremost with the individual riparian owner (Penning-Rowell et al. 1986) something which has been emphasized by Sarah Boyack, Minister for the Environment and Transport, Scottish Executive in 2000. Therefore an appropriate action by local councils would be to take action against negligent riparian owners or landowners who fail to honour their obligations to their neighbours (Dr Norman MP, House of Commons, 1997).

Institutional practice: (Sarah Boyack MSP) 'the Scottish Executive makes funding available to local authorities on a case by case basis for approved coast protection schemes and confirmed flood prevention schemes. Schemes constructed by councils under the Coast Protection Act 1949 or the Flood Prevention (Scotland) Act 1961, to protect coastal towns from erosion or flooding respectively attract grant (funding) subject to them meeting cost-benefit criteria.'

(Scottish Parliament, 2000)

The provision and financing of flood defence schemes in Scotland was institutionalised in Scotland in the following pieces of legislation, the Coast Protection Act 1949, the Flood Prevention (Scotland) Act 1961, later amended in the Flood Prevention and Land Drainage

(Scotland) Act 1997. The Flood Prevention (Scotland) Act 1961provides discretionary powers to LAs to mitigate the flooding of non-agricultural land in their areas (Werritty and Chatterton, 2004) this is in line with the permissive and local approach prevalent in the British land drainage laws (Penning-Rowell et al. 1986).

Although flood prevention schemes are provided by local councils, funding comes in the form of a 50% grant aid from central government, under the Flood Prevention Grant Scheme, based on the fulfilment of mostly economic benefit-cost criteria and certain design criteria (Parker and Penning-Rowsell, 1980; Scottish Parliament, 2000; Werritty and Chatterton, 2004; Crichton, 2005). The utilisation of cost-benefit criteria for funding flood schemes is not surprising given that the impacts of floods are appraised in terms of human lives and economic damage; hence flood schemes are viewed as investments by councils against the economic consequences of flooding. This is in line with the origins of cost-benefit analysis as a branch of welfare economics which aims to maximise the economic efficiency of investments (Penning-Rowsell et al. 1986). The importance of the benefit-cost criteria is underpinned by the fact that every flood prevention scheme that is confirmed is potentially eligible for grant following construction (Scottish Parliament, 2000 http://www.scottish.parliament.uk). The policy actors who engage in concerted action to promote the policy goals of the defence management discourse and the nature of the relationship between them are shown in figure 5.1.

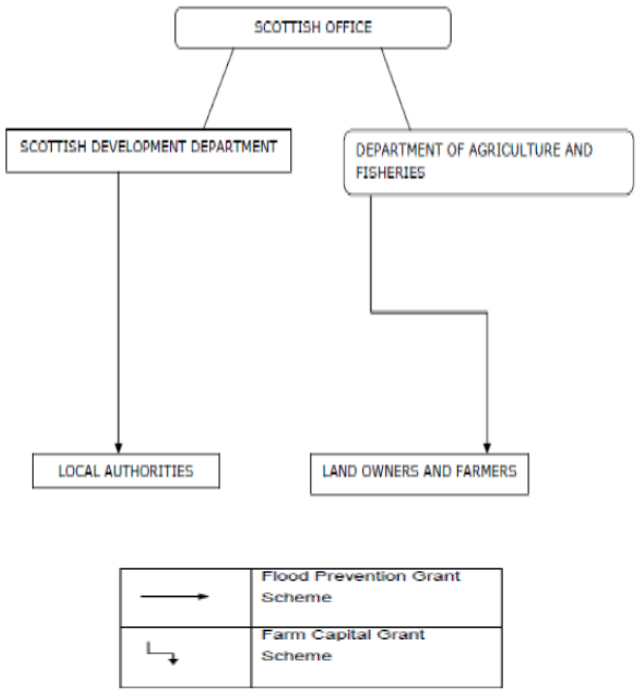


Figure 5. 1 Defence management policy community

Planning Discourse

Problem definition: (Ross Finnie MSP) 'There is flooding where the problem relates to river basin management and there is flooding in the heart of urban areas that relates to excessive housing development. In such urban areas, the planning process has rather let us down in relation to the volume of water that has to be coped with when there is a lot of rain water.'

(Scottish Parliament, 2002)

Scotland has a documented history of the development of dwellings and economic activities on floodplains (Werritty, 2005). This was accelerated during the industrial revolution which increased the rate of urbanisation in the country. However it was not until the mid-twentieth century that unplanned urban growth on floodplains materialised (Werritty, 2005). Since the Elgin and Moray floods of 1997, all major flooding which has occurred has been predominantly pluvial in origin (Crichton, 2004; Crichton, 2005) thereby leading to the characterisation of the policy problem in terms of the consequences of

1. increasing urbanisation:

'And the second one which is actually even bigger is urban creep. I don't know if you've heard that before. Creep is basically what we call the increase in impervious surfaces caused by people just paving over their driveways, putting an extension to the sewage system.'

(Scottish Water Interview 27/07/12)

2. uncontrolled urban development:

In this discourse has been further exacerbated by the state of the sewer systems in Scottish towns. As the Asset Management Director of Scottish Water remarked in a press release in 2002:

'Scottish Water is acutely aware that it has inherited sewers – some dating back to Victorian times which for years have had little or no investment. These are now in critical need of upgrading and replacement.'

(Cited in Crichton, 2004 p 7)

Suggested policy response: ‘Flood prevention may be achieved by avoiding development in areas of risk, and in coastal areas by managed retreat. Development of an area which is exposed to frequent or extensive flooding is likely to be unsustainable and should be avoided.’

(NPPG7 Planning and Flooding, 1995 p 6)

The appropriate policy response in this discourse was the incorporation of the ‘precautionary principle’ to planning and flooding (Tavendale and Black, 2003). The adoption of the precautionary principle in planning and development is in line with the Government’s commitment to the concept of sustainable development (Scottish Office, 1995). Another important feature of this discourse is the primacy of the local councils and hence local democracy in making planning decisions which can be traced back to the Town and Country Planning (Scotland) Act 1947 which introduced the concept of local planning authorities having the primary responsibility for strategic planning. This was further reinforced by subsequent acts, most crucially the Town and Country Planning (Scotland) Act 1997. Although local government in Scotland had undergone various reforms and restructuring, the responsibility for planning and development control had always been the responsibility of either Regional and District Councils or now Unitary LAs. Therefore it seems paradoxical that in the policy response to the flooding problem, in addition to the precautionary approach which has been advocated to prevent development on areas at risk of flooding, there is recognition in the NPPG 7 for local councils for what have been framed as development pressures that may be locally important. This has provided a loophole through which some developments in areas at risk of flooding could proceed if deemed locally important to the local council. Therefore the policy aim was framed as a combination of hazard avoidance and hazard management within flood risk areas (Tavendale and Black, 2003).

Institutional Practice: (Sarah Boyack MSP, 22/06/2000) ‘guidance contained within National Planning Policy Guideline 7 advocates wide consultation and encourages the creation of Flood Appraisal Groups. A number of such groups have been formed, some based on catchment considerations rather than local authority boundaries.’

(Scottish Parliament, 2000)

The NPPG 7 (Scottish Office, 1995) set the framework for the promotion of local council involvement in Flood Appraisal Groups (Tavendale and Black, 2003, Crichton, 2004; Crichton, 2005). The remit of the FAGs were highlighted as follows:

'Flood Appraisal Groups can be formed to provide the local authority with practical guidance and information on flood risk and its implications for development. This objective should be achieved through discussion and a consensus view taken, which can then be used by the planning authority in its development control and development planning functions. In addition the Group could also have a role to play in discussing flood prevention for the areas concerned.'

(Scottish Office, 1995 p 5)

The decision to earmark FAGs as a stakeholder forum for local councils to bring forward consultations on matters relating to flooding and planning does not come as a surprise. Organisations involved in the FAGs could be other relevant local authority departments, other agencies with flooding responsibilities and representatives from the private sector such as house builders and insurers (Scottish Office, 1995). Through the formation of FAGs, not only statutory bodies such as SEPA, who since 1996, provide the indicative flood risk maps, can be consulted by local planning authorities in reviewing structure and local plans but other policy stakeholders such as developers, environmental interests can also be included in the planning process. However there was no specific statutory requirement for local planning authorities to consult SEPA on flooding when preparing structure or local plans. Therefore even though, the NPPG 7 introduced mechanisms through which flood risk could be factored into plans and planning decisions 'the choice of acceptable levels of risk is a matter left for planning authorities to determine locally' (Tavendale and Black, 2003 p 12). This delegation of acceptable flood risk to local councils emphasizes the principles of local governance and local democracy which are pervasive in planning policy in Scotland. However this is not to say that unelected specialists agencies such as SEPA do not have an active role, as SEPA has a duty under the Environment Act 1995 to provide an assessment of flood risk should a LPA request for it. Figure 5.2.shows the different policy actors involved in the planning discourse of flood defence in Scotland. It can be seen that these organisations range from private to governmental institutions, from the central government to the RPBs to the local authorities. The various relationships between them have also been shown in Figure 5.2.

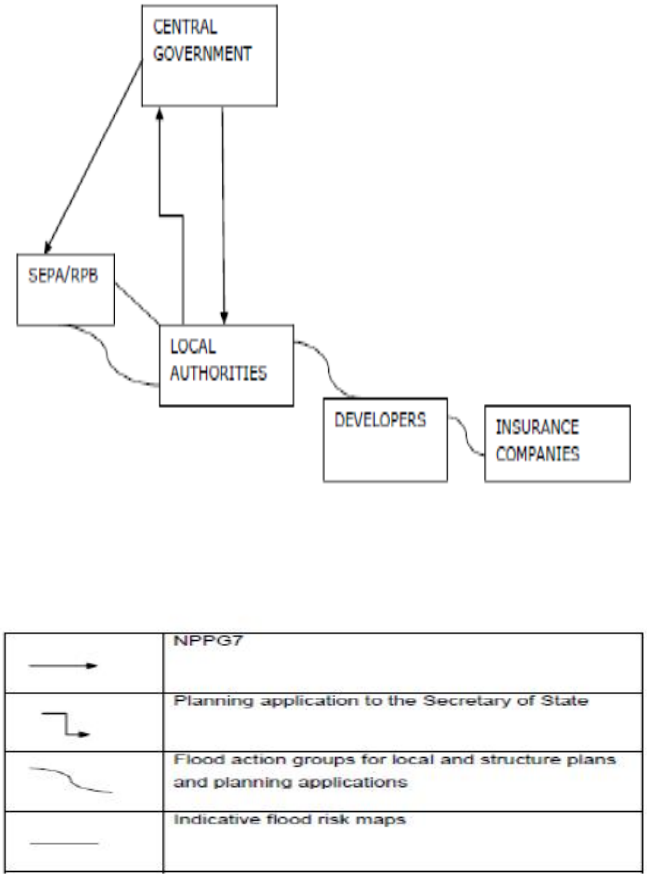


Figure 5. 2 Planning policy community

Bureaucratic Discourse

Problem Definition: (Scottish Environmental LINK) '150,000 Scottish homes are currently at risk from flooding and current estimates of annual average damage from inland floods are around £20million. This could rise 115% by 2080. Loss of vegetation and the majority of natural floodplains has turned our rivers into fast track, flash flood danger zones. Despite the severity of the issue, Scotland has no comprehensive systems in place to manage flooding and this Bill (Water Environment and Water Services) makes no proposals to tackle the currently fragmented system.'

(Evidence to Transport and the Environment Committee, 2002 p 3)

Flood hazard governance reforms in Scotland have been closely linked with other wider governance reforms such as reorganisations of local government (Parker and Penning-Rowsell, 1980; Penning-Rowsell et al. 1986). Indeed, the present governance system has its origins in the culmination of a series of reforms ending with the Local Government (Scotland) Act 1994. The significance of the framing of floods as a local problem is also manifested in the management of flooding and land drainage in agricultural areas. The Flood Prevention (Scotland) Act 1961 permitted local councils permissive powers to undertake flood prevention works on non-agricultural land in their areas (Werritty and Chatterton, 2004). However there is a significant dichotomy between agricultural and non-agricultural flood management in Scotland. Land ownership in Scotland compared to the rest of the United Kingdom is relatively concentrated and has been dominated by what have been characterised as large estates (Symon, 1959). Land drainage for agricultural land was organised through direct interaction between the relatively small number of riparian owners and the Department of Agriculture for Scotland who provided the grants.

Suggested policy response: (Mr. Thomas Graham Renfrew MP) the Minister must give local authorities real powers and real finance.

(House of Commons, 1997 p 4)

It should also be noted that there has always been very strong antipathy towards non-elected quangos undertaking water governance in Scotland (Penning-Rowsell et al. 1986). Hence it is unsurprising when asked about the possibility of SEPA undertaking engineering schemes to manage floods, a SEPA official Martin Marsden responded ‘We want to be clear that the idea of giving SEPA responsibility for engineering works is a non-starter. There is a range of alternative approaches that may be more appropriate’ (Scottish Parliament, 2002).

The exclusion of SEPA from becoming more directly involved in flood management has roots in the thirteen catchment based independent Water Boards created through the Water (Scotland) Act 1967. These were abolished in the governance reforms Local Government (Scotland) Act 1975, despite having elected councillors on their boards (Greer, 1976; Parker and Penning-Rowsell, 1980; Maitland et al. 1994). Instead flood hazard governance has been framed in terms of local governance; a framing articulated by George Kynoch, the Parliamentary Under-Secretary of State for Scotland in 1997 while remarking on the Flood Prevention and Land Drainage (Scotland) Bill:

‘However, it is fair to say that the floods in Paisley and elsewhere in Scotland in 1994 and 1995 were exceptional. They occurred at a time when some councils were not doing enough to prevent flooding. I am on record as saying that there is evidence that the situation has improved since local government reorganisation. I hope and expect that, when the Bill is enacted, the situation will be further improved.’

(House of Commons, 1997 p 6)

New statutory duties were sought in order to highlight flood prevention as a priority for local authorities by requiring more proactive approaches in maintaining water courses which might cause flooding as well as more transparency on the part of the LAs. This is in line with the framing of water planning in Scotland as having the potential for full democratic control and participation to promote fair resolution of conflict (Parker and Penning-Rowsell, 1980).

Institutional practices: ‘It was felt in government circles that the 1961 Act did not go far enough in addressing flood issues. There seemed therefore to be a need to place responsibility for more rigorous watercourse maintenance on some statutory body; and the political choice was the new local authorities created in Scotland in April 1996. In other words, there was a clear desire to place the responsibility for flood prevention, very firmly, onto local councils.’

(McRobert, 2010 p 259)

In an effort to ensure better management of floods by local authorities, the Flood Prevention and Land Drainage (Scotland) Act 1997 placed additional duties on local authorities. This is where the Flood Prevention and Land Drainage (Scotland) Act 1997 is salient because the additional duties placed on local authorities were statutory not permissive thus deviating from the permissive and discretionary element that had dominated land drainage and flood defence in Scotland and expressed in the Flood Prevention (Scotland) Act 1961 (Werritty and Chatterton, 2004; McRobert, 2010).

In addition to these Acts being an illustration of the decentralised nature of flood hazard governance in Scotland, even more significant are the values and beliefs embodied in the 1997 Act. These include the concept of local democracy and control illustrated in LAs being expected to deliver flood prevention as part of their general services such as roads, transport, education, social work and housing (Scottish Parliament, 2000), and in the

statutory consultation process, a public local inquiry, which must be undertaken by LAs for Flood Prevention Orders. However up to 50% of the funding for major capital schemes was ring-fenced grants from central government, subject to criteria set by the Scottish Executive Environment and Rural Affairs Department (SEERAD), (Werritty and Chatterton, 2004), thereby eliciting some form of central government steering of flood governance. Other values embodied in the 1997 Act include the requirement for more transparency, manifest in the requirements for LAs to produce biennial reports on steps being taken to reduce flood risk. It must be noted however that while the production of these reports was statutory, the management of floods remained a permissive duty thus LAs still had no duty to manage flooding. The various types and nature of policy actors who engage in concerted action to promote the policy goals of the bureaucratic discourse are shown in figure 5.3. These include the policy making and policy delivery actors. In addition the nature of policy interactions between them have also been shown.

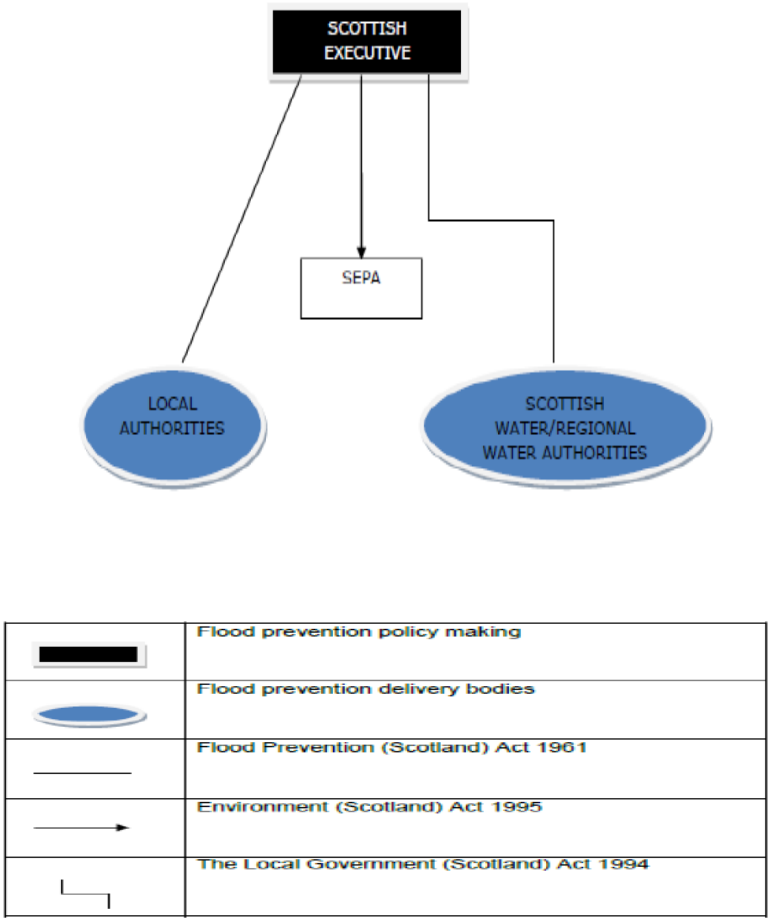


Figure 5. 3 Bureaucratic policy community

Environmental Management Discourse

Problem definition: (SEPA) 'Flood defence schemes often unnecessarily straitjacket rivers, fill in wetlands or remove islands, damaging rivers and their own ability to absorb flood impact.'

(Cited in House of Commons, 1997 p 8)

The meaning of the environment in Scotland is multifaceted and has been described as a heritage to the Scottish people (Scottish Parliament, 2000). On one hand it has been conceptualised in the tensions and somewhat paradoxical concepts of the use of and the delight in nature (McDonald, 1998; Smout, 2000). While by contrast, the approach to ownership of Scotland's land and its resources, including the natural environment, are closely linked to Scottish culture and democracy (Chenevix-Trench and Philip, 2001).

There is no doubt that Scotland has a unique landscape. Indeed its countryside has been described as magnificent (MacDonald and Thomas, 1997). Given the contending frames of the environment in Scotland as a space for production and consumption, it comes as no surprise that policy dilemmas have resulted. When the production paradigm was prevalent, the problem was the seemingly natural and fallow state of the environment, as articulated by Robert Rennie in his study of bog formations in 1807: 'innumerable millions of acres lie as useless waste, nay, a nuisance to these nations' (Smout, 2009 p 102). This framing of the environment is manifested in large scale industrial timber cultivation by the Forestry Commission in Scotland for the major part of the 20th century (Mather, 2001) with half of the entire tree planting undertaken by the Commission taking place there (Oosthoek, 2001). Conversely the manifestation of the framing of the Scottish environment as a space of consumption is the ubiquity of large sporting estates as spaces for recreational activities and tourism which contribute substantially to the Scottish economy (Cherry, 1975; Smout, 2000).

Suggested policy response: (Zoe Clelland: Scottish Environment LINK) 'The use of soft engineering alternatives, such as flood plains or biological effluent treatment, has proved to be cost-effective. As well as being viable methods for the water authorities to use, those also carry substantial benefits relating to biodiversity, recreation and tourism. It is not just a case of the water authority making financial savings; the wider financial benefit is often overlooked if improvements are considered to be just environmental.'

(Scottish Parliament, 2000 p 192)

In line with Scrase and Sheate (2005), the environmentalist's intrinsic framing of the natural environment involves the management of nature as an ends and not merely a means. It is thus logical that the policy response in this discourse would reflect the cultural meanings attributed to the Scottish environment, thereby emphasising a course of action that seeks to protect and work with rather than against the environment. This framing is embodied in the language used by Scottish Environment LINK to describe water management in Scotland 'Water is not a commercial product like any other, but rather a heritage which must be protected, defended and treated as such'(Scottish Parliament, 2000 p 120).

Institutional Practices: Scottish Natural Heritage can award grant aid for any project which helps secure the conservation and enhancement of landscape features, wildlife and habitat.

(Scottish Office, 1994)

The Wildlife and Countryside (Scotland) Act 1981 initiated the designation of SSSIs which serve as a platform through which actors such as LPAs, landowners and occupiers could come into an agreement on a course of land management which would be the least harmful to designated sites. Financial incentives, including 'management agreements', were sometimes made available to the owners of such sites (Maitland et al. 1994). The ability of the SNH to participate in flood governance was dependent on a designated site being affected:

'Some of the water management issues would have been covered by SSSI consents or it would have gone through planning and we would have been, if it affected a Natura site, we would have been statutory consultees on the planning process.'

(SNH Interview 12/09/12)

However a clash of values resulted in a contest between the voluntary principle pervasive in Scottish governance and the precautionary principle espoused by the conservationists. An attempt was made to reach a compromise between these values in both the Wildlife and Countryside (Scotland) Act 1981 and the National Policy Planning Guidance 1 and 7 (Ross et al. 1995; Holmes and Crofts, 2000). However this has resulted in the protection of designated sites only, this has been termed a somewhat reactive approach to environmental management (Ross et al. 1995) and has led to calls for a new approach:

(Scottish Environmental LINK) 'We need to adopt a more holistic, sympathetic system of water and land management that works with, rather than against, natural ecosystems.'

(Scottish Parliament, 2000 p 119)

The policy actors who engage in concerted action to promote the policy goals of the environmental management discourse are shown in figure 5.4. This shows how EC Directives are transposed into UK law and delivered into local flood defence policies through designating authorities and implemented through management authorities.

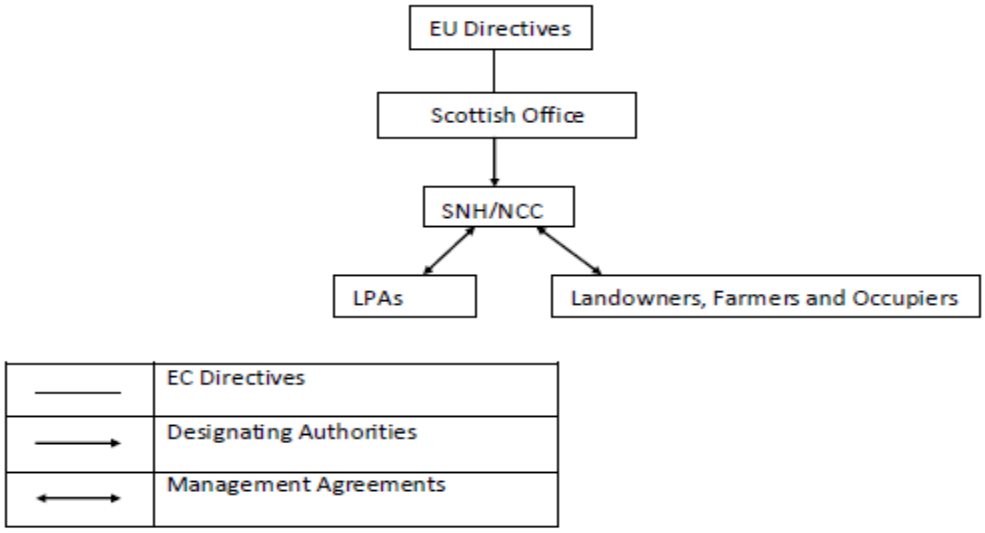


Figure 5. 4 Environmental management policy community

Drivers for Policy Change (1999-2009)

This section will highlight those policy drivers responsible for the transformation of the flood governance discourses characterized in the section above. These drivers have allowed for the introduction of new ideas and subsequently modified roles for policy actors into the flood management discourse such as the SEPA, Scottish Water and LAs. These new roles are evident in their incorporation into the institutional practices which sustain these discourses. This is achieved by critically examining the interpretations and ramifications of political, social, scientific, environmental and economic policy developments which have occurred in Scotland between 1999 and 2009. These events range from the establishment of a Scottish

parliament, to the 2002 floods in Glasgow and Elgin, the transposition of the EC Water Framework Directives (2000) in the Water Environment and Water Services (Scotland) Act (2003), the ascent of the Scottish National Party to power in Holyrood in 2007and finally the transposition of the EC Floods Directives into Scots law via the FRM (Scotland) Act 2009.

However the transposition of the aforementioned European Directives into Scots law was made possible as a result of the re-establishment of the Scottish parliament and the devolution of some powers away from Westminster to Holyrood by the Tony Blair Labour government in 1999.

(Tony Blair) 'Well done. This is a good day for Scotland, and a good day for Britain and the United Kingdom…the era of big centralised government is over!'

(Cited in White and Yonwin, 2004 p 3)

Devolution paved the way for Scotland to pursue a somewhat different and independent environmental policy from the rest of the United Kingdom by having the power to debate and pass legislation on environmental matters in the Scottish parliament, particularly in response to European Directives. This became possible because as a corollary to devolution, certain functions such as flood and environmental policies became devolved matters for Holyrood and thus were not reserved by Westminster (Bradbury and Mitchell, 2005). Therefore the decentralised approach to flood governance pursued hitherto by the Scottish Office would be subject to legislation passed in the newly formed Scottish Parliament and overseen by the newly formed Scottish Executive thereby cutting off direct links to Westminster or Whitehall.

The practical implications of devolution on the process of policy making in Scotland became in effect the dispersal of powers and responsibility within the newly constituted Scottish Executive whereas hitherto Scottish affairs were overseen and managed from the Scottish Office under the supervision of Westminster and the direct control of Secretary of State for Scotland. The Scottish Government is headed by the first minister, elected by MSPs, who appoints individual ministers to the Scottish Executive (Government since 2007). More consequential however is that the Scottish Government is made up of minsters that are responsible to the Scottish Parliament and are responsible for individual departments such as the Environment and Rural Affairs Department which oversees the flood policies for Scotland. This is a significant departure from the past where the Secretary of State for Scotland had de facto responsibility for all the government departments in Scotland. Hence

devolution brought about a governing process in Holyrood which is analogous to that in Westminster. However perhaps the most important role devolution played as a policy driver for flood risk management was that it served as an opening for an independent environment policy path for Scotland and thus future flood risk management policy drivers as evident in the transposing of the European WFD into Scots law in the form of the WEWS Act 2003.

The transposition of the EC WFD into Scots law introduced the concept of 'sustainable flood management' into flood governance. It must be highlighted here that Scotland was the first jurisdiction within the UK to formally adopt the WFD (Ioris, 2008). However perhaps more consequentially, the duty to promote sustainable flood management in the WFD was interpreted by some policy actors as a mechanism through which 'sustainable flood management' practices could be more fully adopted in Scotland (WWF Scotland Interview 16/11/12). Therefore the aim of the WEWS (Scotland) Act was framed as an avenue to control the quality of Scotland's waters, including its rivers and lochs which have been described as 'the lifeblood of our communities' (Scottish Executive, 2001 p 12).

'Now the environmental groups saw the WFD which became the WEWS act as an opportunity to introduce what they called sustainable flood management into Scots law. And they lobbied hard and they got it in there around 2003.'

(WWF Scotland 26/11/12)

The use of 'soft engineering' techniques such as the use of SuDS, wetland, washlands, marshes and managing floods on a catchment scale were highlighted as viable flood management techniques (Scottish Parliament, 2000; Environmental Link, 2002). In addition to the duty placed on responsible authorities to promote sustainability, the permeation of the sustainability principles is manifest in the responsibilities of Scottish Water in the adoption of SuDS:

'We've always been advocates of SuDS. Really advocates of keeping surface water on the surface which can be better managed than putting it underground where you can't see it and also at some point it's going to come out because there's only finite amount of water you can pipe'

(Scottish Water Interview 27/07/12)

Another implication of devolution was the establishment of a new flood policy actor in Scotland. Scottish Water was established as a statutory public body through the Water Industry (Scotland) Act 2002 and is responsible for water and sewerage services for the whole of Scotland. The increasing significance of pluvial floods, seemingly exacerbated by climate change, has made the sewerage functions of Scottish Water an important component in flood governance as evidenced by the fact that since the Elgin and Moray floods of 1997, all major flooding which has occurred in Scotland has been predominantly drainage in origin (Crichton, 2005). The importance of Scottish Water in providing flood management services was underlined by a representative when asked to define the aims of Scottish Water:

'We aim to ensure our customers receive a level certain of service which we usually define as a 1:30 year service and if there are instance of flooding caused by rainfall events or smaller rainfall events we address that by looking at sewer systems'

(Scottish Water Interview 27/07/12)

However while the shift in the framing of flood management from a focus on rivers and the coasts to considering floods from all sources has brought Scottish Water into the flood governance discourse as a responsible authority, this has also resulted in the introduction of new ideas on flood management principally through the activities of the Water Industry Commission for Scotland (WIC) in costing the capital programs of Scottish Water which include flooding. The significance here is illustrated by the fact that while as a responsible agency under the FRM (Scotland) Act 2009 (Scottish Government, 2011), Scottish Water has a duty to promote sustainable flood management, and its regulator the WIC does not have such duty. Rather its duty is to find the most cost effective way, in line with the Treasury's Green Book, for Scottish Water to achieve its objectives while at the same time charging its customers the lowest rate possible for water supply and sewerage services. Therefore the values espoused by the WIC are not congruent with those of sustainable flood management. This clash of values is illustrated in discussions between the WIC, the Scottish Environmental Link and Scottish water and even LAs:

Sandy Gillon (GCC): Sewers are designed to deal with a one-in-30-year storm return period. Flood prevention and watercourse management systems look for a much higher return period of one in 100 years, so there is an imbalance straight away.

(Cited in Scottish Parliament, 2008 p 158)

'We had a long discussion with the WIC about using more sustainable solutions to address issues rather than just using the cheapest solutions. And at the beginning this wasn't, well they are economic regulators so they didn't care about sustainable issues just about economics.'

(Scottish Water Interview 27/07/12)

In addition to the activities of the newly formed Scottish Parliament, other events acted as drivers for policy change in Scotland. The physical and social costs of the widespread floods in Glasgow and Elgin were discussed in the previous section; however it is important to highlight the policy events that resulted from the 2002 floods. In addition to the provision of increased funding for flood prevention schemes, the 2002 floods were interpreted in a different context to those of earlier events. While the floods of the 1990s did not result in a change in the status quo in flood governance in Scotland, the 2002 floods resulted in the beginnings of a change in the bureaucratic discourse where for the first time a national approach to flood governance in Scotland was discussed:

'The Scottish government was starting to think about their flood risk management policy, recognising that the legislation, policies and tools they had in place perhaps weren't quite fit for purpose, they were too reactive and didn't allow for enough flexibility in terms of types of approaches that could be taken to manage flooding and that came off the back of a couple of big floods sort of around the year 2000 in Scotland, one in particular in Glasgow, a couple of big floods in Glasgow created a lot more attention and increased the profile of flooding as a problem.'

(SEPA Interview 16/11/12)

In response to the 2002 floods, an ad hoc committee of ministers produced a Statement of Commitments and an action plan to be implemented in the form of a National Flooding Framework (NTAG, 2004). What is significant here is the change in emphasis in the

principles of flood governance from flood prevention to flood alleviation. The National Technical Advisory Group on flooding issues was established to provide technical guidance and advice on the delivery of sustainable flood management by the end of 2004. The Scottish executive planned to achieve this through four action plans of alleviation, awareness, avoidance and assistance. Membership of NTAG was drawn from a wide range of stakeholders, drawing on expertise from central and local government, SEPA, SNH, Scottish Water, Scottish Environment LINK, EA, DEFRA, the ABI, industry and academia (NTAG, 2004). Furthermore, the Flooding Issues Advice Committee (FIAC) was established in April 2005 to continue the NTAG work and provide the Scottish Executive with expert advice on flooding issues (Scottish Parliament, 2008). Sustainable flood management was defined by the Scottish Executive as follows:

'Sustainable flood management provides the maximum possible social and economic resilience against flooding, by protecting and working with the environment, in a way which is fair and affordable both now and in the future.'

(Cited in Scottish Executive, 2005 p 4)

The output of Future Flood Scotland (Werritty and Chatterton, 2004) provided the scientific basis that helped make the case for a change in policy direction in flood management in Scotland. The realisation that a warmer and wetter Scotland would face increasing flood risks especially in the west with the1 in 50 year river flood likely to become a 1 in 20 year event and the 1 in 50 year coastal flood a 1 in 5 year event (Werritty and Chatterton, 2004). The prospect of increased future flood risk necessitated a change in approach, hence the ushering of policy concepts such as 'avoidance' and 'alleviation' into flood risk management. A manifestation of the concepts of 'avoidance' and 'alleviation' in the flood governance action plans of the Scottish Executive was the issuing of the SPP7 and the Planning Advice Note 69 (Scottish Executive, 2004). The guidance provided a framework through which planning authorities could adopt a systematic and risk based approach to not only preventing development in flood risk areas but also to providing tools for adaptation and resilience. Such guidance links to the factors which had come to prominence in the policy process notably the need for sustainability, an awareness of the effects of climate change and the increasing significance of pluvial flooding (Scottish Executive, 2004 and Werritty with Chatterton, 2004) which had been permeating the discourse and the 2002 floods accelerated the introduction of new ideas. Therefore the precautionary approach was strengthened with the introduction of the Risk Framework in SPP7 (Scottish Executive) 2004

based on based on up-to-date flood risk maps provided by SEPA; a classification of flood risk on land to be developed ranging from 'little or none' (1:1000), 'low to medium', (1:1000 – 1:200) and 'medium to high', (1:200) (Scottish Executive, 2004 p 8). This provided planning authorities with new tools with which planning decisions could be made in order to better avoid flood risk areas. In addition to the 'avoidance' action plan, the 'alleviation' action plan was also introduced to the planning discourse. This manifested itself as requirements in the SPP7 and PAN 69 (Scottish Executive, 2004) for developments constructed in at risk sites to incorporate resilience measures for flood risk adaptation:

Every building must be designed and constructed in such a way that there will not be a threat to the building or the health of the occupants as a result of flooding and the accumulation of ground water

(Cited in Scottish Parliament, 2008 para 214)

The importance of the resilience component of the tool kit available to planners in reducing flood risk is highlighted in the introduction of SuDS as a viable policy option in the planning discourse (Scottish Government, 2011). This was not framed as a panacea for preventing floods but rather as a means of reducing the rate of runoff in conventional watercourses and urban drainage systems during flooding episodes:

Surface water run-off from development should be fully or partially drained by a sustainable drainage system unless this is impracticable.

(Cited in Scottish Executive, 2004 p 6)

When framed as an attempt to reduce the footprint of developments on urban drainage systems by reducing sewer flooding, it can be observed that the principles of sustainability have percolated into the flood hazard governance practices. It must be noted that with the change of government that occurred in Scotland in 2007, there was also an accompanying change in approach in Scottish flood hazard management. This sentiment was supported by an official of the Scottish government:

'And in 2007 two things happened. We had a change of government and they decided to change the way that we funded flood risk management as well.'

(Scottish Government Interview 1/08/12)

The principles of more efficient governance were embodied in the Comprehensive Spending Review (CSR) for the period from 2008-2011. Among the goals of the SNP led Scottish Government CSR 2007 was to deliver efficiencies in government expenditures by reducing bureaucracy to free up more resources to reinvest in the delivery of better services (Scottish Government, 2007).

'The drive for more effective government is a central part of the Spending Review and is underpinned by a new Efficient Government Programme for 2008-11'

(Cited in Scottish Government, 2007 p 5)

These reforms were manifested in the change in the relationship between the Scottish central government and Scottish LAs as represented by the Scottish LAs funding concordant known as the Single Outcome Agreement (Scottish Government, 2007). These reforms, giving local councils more flexibility and hence responsibility in managing their affairs, impacted greatly on Scottish flood hazard governance. It can be argued that the putative de-centralisation of governance is a corollary of devolution however this is not surprising given that local government in Scotland has had a different remit in terms of n the delivery of public services:

'The local government settlement for 2008-11 provided local authorities with block grants towards capital and revenue expenditure. However, it is for each authority to allocate the total financial resources available to it for flood risk management. This must be done on the basis of local needs and priorities having first fulfilled its statutory obligations and it's Single Outcome Agreement with the Scottish Government.'

(Cited in Scottish Parliament, 2009 p 104)

Therefore LAs were given more autonomy on how the funds were spent thus ending the ring fencing of capital grants for FPS (Scottish Government, 2007). This provides more flexibility to LAs needed for deciding local priorities and responses. Potentially this could make the councils more responsive to flooding problems, yet at the same time flood management would have to compete with other local services such as education, health and justice. Nonetheless what can be observed is that there has been further institutionalisation of the view that floods should be managed locally.

The New Settlement (Post 2010)

Floods Risk Management paradigm

Michael Russell MSP (Minister for Environment) 'I think that the committee recognises that the current legislation governing flood risk management is prescriptive, outdated and does not interact well with the promotion of sustainable flood management. Flooding policy in the past has concentrated on funding hard engineering solutions such as embankments and flood walls However, there is increasing recognition of the need for more sustainable flood management involving a more diverse and—I stress this—integrated catchment-based approach that draws on the opportunities provided by rural land use planning and land management practices to slow down run-off, enhance flood storage and contribute to more traditional defences.'

(Cited in Scottish Parliament, 2008 p 239)

The précis of the policy drivers highlighted in the previous section is the institutionalisation of a new approach to flood hazard governance in Scotland. This new approach was epitomised in passage of the FRM (Scotland) Act 2009. The 2009 Act transposed the EC Floods Directives into Scottish law however it must be noted that the Floods Directives was not the only impetus leading to the passage of the 2009 Act. The new paradigm, flood risk management, has been brought about as a result of the institutionalisation of narratives such as Scottish devolution, sustainable flood management and public sector efficiency. These narratives have resulted in the introduction of new ideas and actors into Scottish flood management discourse and thus resulted in the transformation of the various discourses within which policy responses to the flooding problem is framed. As the policy developments in the last section highlighted, the various institutional practices in flood management underwent crucial changes from 1999 to 2009.

The key innovations and concepts emanating from the FRM (Scotland) 2009 Act are a more systematic, strategic and sustainable approach to the reduction of flood risk across Scotland. These innovations are to be achieved through

- the production of a national flood risk assessment, informed by national and local assessment by SEPA in order to identify areas vulnerable to flooding
- the production of strategic flood risk management plans by SEPA in consultation with LAs and Scottish Water

- finally, the preparation of more detailed local flood risk management plans by Lead Local Authorities, in consultation with SEPA and Scottish Water, for the delivery of flood risk management schemes (Scottish Government, 2011a)

This new approach to flood hazard governance in Scotland has resulted in removing the demarcation between the drainage of agricultural land and flood management on non-agricultural land. In addition, SEPA, LAs and Scottish Water have had new roles and responsibilities including promoting sustainable flood management (Scottish Government, 2011b). In this section, each policy discourse institutional practiced is examined in light of the changes codified in the passage of the FRM (Scotland) Act 2009.

Defence Management Discourse

Suggested policy response: 'The transfer of funding for flood risk management to the block grant to local authorities would appear to make it logical to rely wholly on local authority based procedures for flood prevention schemes and remove the Ministerial confirmation process …. Consistent with a development plan-led approach'

(Cited in Scottish Parliament, 2008 pp 61-62)

The policy solution sought a rationalisation of the statutory processes which LAs have to go through before flood prevention schemes are confirmed. This comes as no surprise as it can be observed that the very processes which allowed for the provision of flood prevention schemes under the Flood Prevention (Scotland) Act 1961were recast as obstructions. While this can be attributed to a number of factors it must be noted that other processes such as SEPA's Controlled Activities Regulations (CAR) under the WEWS Act 2003 contributed to somewhat onerous procedures which LAs must undergo before flood prevention schemes are approved. The presence of these obstacles was highlighted by the Scottish Parliament Rural Affairs and Environment Committee:

'The length of time that it can take to gain approval for the construction of a flood prevention scheme may generate uncertainty among businesses and also means that they are exposed to higher insurance premiums and/or reduced cover until a scheme is in place and, critically, is shown to be effective. The Committee is struck by the fact that areas at risk of flooding may be economically disadvantaged if adequate flood defences are not in place or are not

planned to be built and this may thwart other publicly funded efforts to stimulate economic development.'

(Scottish Parliament, 2008 p 12)

The provision of flood defences has been tied to economic growth, especially in deprived communities. This has supported a moral argument for the provision of flood defences in order to stimulate economic growth, a key target in the National Performance Framework agreed to by central government and COSLA. In a similar way a range of central government grants, such as Housing Support grants, Community Regeneration Fund and Regional Transport Partnership Capital Grant and Flood Prevention and Coast Protection Grants are provided to help LAs meet High Level Targets such as economic growth (Scottish Government and COSLA, 2007). This is unsurprising as flood protection is framed as a local delivery service in Scotland. The policy of persuading more LAs to bring forward more FPSs is manifest in the decision of the Scottish Executive to increase the grant-in-aid to LAs from 50% to up to 80% in 2004. This is a consequence of the general increase in grant funding for FPS by the Scottish Executive CSR 2005-08 to £89 million partly reflecting Barnett Consequentials following increased expenditure on flood alleviation in England and Wales following the 2007 summer floods (House of Lords, 2008).

Rhona Brankin MSP (19/07/2005): 'All flood prevention schemes confirmed by the Scottish ministers will benefit from the increased grant rate of 80% of eligible costs, announced by the Executive in September 2004. This, coupled with the increase in the funds available to local authorities for flood prevention schemes – to a total of £89 million over the next three years - demonstrates the Executive's commitment to reducing flood risk to vulnerable communities.'

(Scottish Parliament, 2005 available from http://archive.scottish.parliament.uk/business/pqa/wa-05/wa0719.htm)

However as mentioned earlier, with the change of government in Scotland in 2007, the funding mechanism to LAs also changed thus allowing for greater freedom on how to determine funding for local priorities, flooding included. With the removal of one obstacle, a rigid ring-fenced funding structure, it is unsurprising that the three statutory processes required for the confirmation of FPSs were framed as burdensome to LAs despite the change in the nature of Scottish governance as confirmed in the Scottish LAs funding

concordant. Along with the simplification of the funding process, the policy response of a simplification in the statutory process of confirming FPS was deemed appropriate.

Institutional Practice: 'we've changed the legislation now so that once you got an approved flood protection scheme that has deemed planning permissions so you don't have separate processes, it was part to streamline the process then it also means that planning has to take into account flood risk management and vice versa and they are the same authority.'

(Scottish Government Interview 1/08/12)

The new legislation, the FRM (Scotland) Act 2009 effectively changed the statutory process through which FPS are confirmed. The simplification of the statutory process of confirming FPSs was institutionalised in the 2009 Act:

'Where a local authority can proceed by agreement to carry out new works, they can do so without the need to follow a statutory process under the Act, but they would still need to fulfil other relevant statutory consents. This provides for greater flexibility than was available under the 1961 Act, which always required the local authority to complete a statutory process for approving a flood protection scheme in order to be eligible for grant funding.'

(Scottish Government Interview 1/08/12)

Thus the 2009 Act has allowed for a putatively expedited process through which FPS could be brought forward. This is achieved through eschewing ministerial confirmation for FPS; instead these have to conform to District plans prepared by SEPA and only have to give notice to stakeholders such as SNH and the LPAs. The primacy of the cost benefit ratio as a criterion for deciding FPS has not however been contested, rather it has been further reinforced in the 2009 Act as Lead Local Authorities, in the preparation of District plans, have to apply a cost benefit analysis (Scottish Government, 2013). The change is that FPS which hitherto could take up to three months before obtaining a deemed planning concept could now take as little as a month (Scottish Government, 2007). The policy actors who engage in concerted action to promote the policy goals of the defence management discourse are shown in figure 5.5.

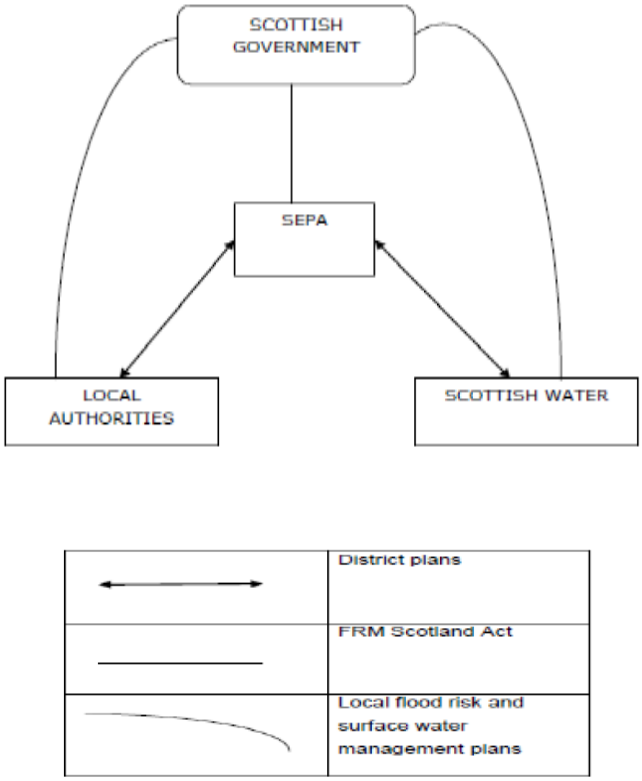


Figure 5. 5 Defence management policy community

Planning Discourse

Suggested policy response: 'if there was a new development or a redevelopment of a Brownfield site you would make sure that the rate of runoff was no greater post development than it was pre development. So if you're using a Greenfield site, you made sure that it was still the same runoff rate so you're not making flooding any worse.'

(SEPA Interview 16/11/12)

The significance of the drainage problems in urban areas was highlighted by Michael Russell Minister for Environment, in evidence to the Scottish Parliament:

'This is particularly the case in urban areas where there is currently a complex interaction between different components of the drainage system and fragmented responsibilities. The existing arrangements can lead to piecemeal investment and a lack of coordinated actions. Future impacts of climate change, which include increased frequency of high intensity

rainfall, could further increase the risks of pluvial and sewerage flooding caused by surface water runoff.'

(Scottish Parliament, 2009 p 10)

The framing of the problem of surface water runoff in urban environments is strengthened by the phenomenon of urban creep. As a SEPA official remarked during an interview, urban creep is caused by uncontrolled development:

'The biggest problem is designing a housing scheme and somebody with a certain amount of green space around it and somebody builds an extension or somebody puts a patio in and instead of only 50% of that site being taken up by the property you find that 75% of the site is taken up by property plus the extension plus tarring the drive way plus tarring over your front garden so you get all that extra runoff coming off the system into the sewers or surface water drains.'

(SEPA Interview 16/11/12)

In light of such views the appropriate policy response to reducing the risk of flooding in the planning discourse is being framed in terms of not only avoiding inappropriate development but also adaptation to runoff in urbanised settings. Therefore concepts such as SuDS, originally viewed as a pollution control apparatus, are incorporated into flood management. These have now been adopted as a means to mimic the natural process of rainfall infiltration and percolation and perhaps slow down the run off process. This adaptative approach has been framed in the sustainability narrative. Sustainable flood management was a statutory requirement in the WEWS 2003 Act and hence it is no surprise that responsibility for SuDS was apportioned to Scottish Water. In line with the adaptative approach, in addition to the avoidance of inappropriate developments in flood risk zones, the need for new developments to be flood resistant and resilient have also been highlighted as viable flood management tools (Scottish Executive,2004). This represents a change in emphasis from a hitherto precautionary approach to a managed adaptative approach. However perhaps the most significant concept put forward to prevent developments on floodplains is the introduction of a new approach, the risk based approach. This is based on the 'presumption against development on floodplains; it's not to say it never happens because flooding doesn't trump everything else. If you are a planner you have to look at all the issues are in a particular area' (Scottish Government Interview 1/08/12). This new approach relies on much

more detailed flood risk assessments in the planning process and more significantly an increased role for SEPA to play because of the need for more accurate flood risk maps (Scottish Executive, 2004).

Institutional Practice: (SEPA) 'Following the avoidance principle and sticking to the risk framework set out in SPP7 maintains the sustainable approach to planning and flooding that must underpin flood risk management plans. Objections by SEPA to development plans and planning applications are based on SPP7 and are a clear indication of the presence of an unacceptable flood risk.'

(Cited in Scottish Parliament, 2009 p 148)

SPP7 represents the institutionalisation of the sustainability narrative in the planning discourse (Scottish Executive, 2004). Indeed the risk based approach espoused in SPP7 embodies an implicit commitment to the social pillar of sustainable development. This has resulted in the policy focus on the adaptation and resilience of vulnerable people to the effects of climate change which is expected to include increased future flood risk. However there has been wider legislation providing for the institutionalisation of sustainable flood management. A manifestation of this institutionalisation is the duty to promote SuDS as a viable option for flood risk management in the WEWS Act 2003. Therefore the changes that occurred resulted in Scottish Water and the local councils being encouraged to adopt SuDS. Hence it can be seen how the introduction of policy actors such as Scottish Water into the planning discourse of flood risk management came about. It must be noted that the primacy of the local approach has been re-emphasized in the institutionalised practices in the planning discourse. This has been re-affirmed by the role to be played by Local Plan Advisory Groups has remained crucial as a means of maintaining a consensual approach in Scottish planning policy, thus maintaining the status quo to an extent (Scottish Government, 2011). In addition, in line with Section 17 of the FRM (Scotland) 2009 Act, LAs remain responsible for identifying, mapping and repairing SuDS in their areas (Scottish Government, 2013). Rather there has been a significant change in the role SEPA plays in the planning process. SEPA has become a statutory consultee in the planning process for development at risk of flooding, a significant departure from the role ascribed in the NPPG7. However it must be noted that democratic control is paramount *vis-a-vis* the activities of SEPA:

'If SEPA object and the LA intend to grant planning permission contrary to SEPA's advice, they have to refer it to the Scottish ministers; Scottish ministers then decide whether or not

they want to make a decision. But SEPA cannot veto it; again it comes back to your democratic situations.'

(SEPA Interview 16/11/12)

It is interesting to observe the attempt to tie the procedures outlined in the SPP7 to the flood risk planning procedures of the FRM (Scotland) Act 2009. Both procedures are based largely on the application of risk based approaches to flood risk management.

(Michael Russell MSP) 'The development account of local flood plans must take of development activities, and vice versa.'

(Scottish Parliament, 2009 pp 138-139)

The policy actors who engage in concerted action to promote the policy goals of the planning discourse are shown in figure 5.6. It can be seen that the actors involved in the discourse range from government to non-governmental sectors and central government to local government.

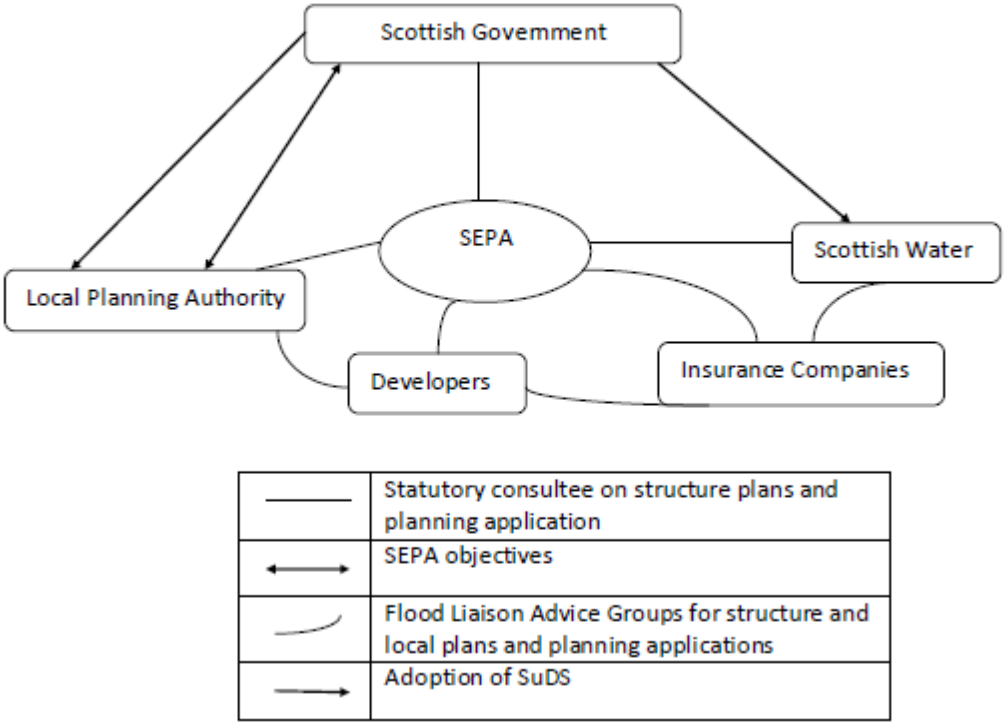


Figure 5. 6 Planning policy community

Bureaucratic Discourse

Suggested policy response: 'We have the two tiers, the high level strategy are a strategic overview, looking at where the flood risk is, looking at the science, this is all, it's taking a national view based on the evidence that they have available but when it comes down to actual on the ground implementation that's when it comes down to its still a local responsibility it's still the local authority that decides.'

(Scottish Government Interview 1/08/12)

The use of terms such as 'strategic overview' and 'national view' by national actors were alien to Scottish flood governance, considering that Sam Galbraith MSP, Minister for Environment, Sports and Culture emphatically stated in 2001 that there would be no plans for a national strategy for flood prevention in Scotland. Whereas hitherto the discourse had been dominated by an emphasis on local authority responsibilities and implementation and an almost dogmatic repudiation of a greater role for central government agencies, there has been a transformation of the discourse. This can be traced to transposing the EC WFD into

Scots law and the implementation by SEPA through RBMPs. In addition to the implementation of the EC WFD, the findings from the Foresight Project on Future Flooding in 2004 and the subsequent introduction of the term 'sustainable flood management' into Scottish flood governance discourse, there was a growing realisation of the need to modernise flood governance in Scotland:

'We were looking at sustainable flood management from the introduction of the WEWS (Scotland) act in 2002, because that put in a requirement to look at sustainable flood management within the context of water quality which is what WEWS is all about. And when that requirement went in it was fine at the time then everyone said 'what does this actually mean? What are we going to do, what does sustainable flood management actually mean?'

(Scottish Government Interview 1/08/12)

This must be framed as the modernisation of Scottish flood hazard governance policy in order to achieve sustainable flood management as a policy outcome. Hence the Flood Prevention (Scotland) Act 1961 Act was framed as rather antiquated and anachronistic, an act for another time (Scottish Parliament, 2009) and 'not fit for purpose and not quite flexible enough' (SEPA Interview 16/11/12). Referring to the Flood Prevention (Scotland) Act 1961 Act, the Minister for Environment stated:

(Michael Russell MSP) **'**I think that the committee recognises that the current legislation governing flood risk management is prescriptive outdated and does not interact well with the promotion of sustainable flood management.'

(Scottish Parliament, 2008 p 239)

The knock on effect of sustainable flood management cannot be overestimated; it was the framing of the flood defence paradigm as unsustainable that led to the questions about overhauling flood governance in Scotland in the first place. Hence it can be said that policy change occurred in the process of the pursuit of sustainable flood management. However the policy response can be defined in dual processes. The first deals with the origins of a national and strategic approach to flood governance in Scotland. This is significant considering that a strategic role for SEPA had been strongly opposed in the past yet this role was ascribed to SEPA, perhaps not surprisingly considering that the EC WFD 2000 were to be implemented and enforced by SEPA, and was defined as 'setting out objectives for

identifying the measures for managing flood risk' (SEPA Interview 16/11/12) thereby implying a strategic role in flood risk management. The second element was in line with the framing of floods as a local problem that should be solved locally. Hence the role of LAs as deliverers of FPS did not change.

Institutional Practice: 'All the different organisations involved in flood risk management now have a duty to work together, that was one of the first things we put into, the duty to work together and a duty to reduce overall flood risk within Scotland.'

(Scottish Government Interview 1/08/12)

In highlighting the policy practices that have led to the evolution of this discourse in flood governance, the change in local governance policy brought about by the SNP government cannot be disregarded. This change in policy introduced the concept of the Single Outcome Agreements (Scottish Government, 2007) which led to more flexibility for LAs in carrying out their local functions so far as objectives set by central government were met, flood management included. Therefore it is against this backdrop that the roles of central government and its agencies and the LAs are defined in the FRM (Scotland) Act 2009. While the principle of local implementation of flood schemes is still adhered to, the role of central government and SEPA have been modified somewhat and the local strategies and plans being implemented by the LAs are required to accomplish objectives set in District plans prepared by SEPA (Scottish Government 2011 and Scottish Government, 2013). In many ways the duty of responsible authorities to work together in the 2009 Act is a reflection of the transformation of the bureaucratic discourse of flood hazard governance in Scotland, with central government setting objectives, central government agencies implementing these objectives in high level and strategic plans and LAs preparing detailed local plans and delivering schemes:

'SEPA is responsible for producing the high level strategies, so high level strategy which will identify objectives for reducing flood risk and actions that can be taken to reduce the flood risk. And they would have to be done in agreement with the LAs and Scottish Water.'

(SEPA Interview 16/11/12)

The policy actors who engage in concerted action to promote the policy goals of the bureaucratic discourse are shown in figure 5.7. This reveals the complex interactions

between SEPA, with a new floor risk management role, LAs, Scottish Water and the Scottish Government.

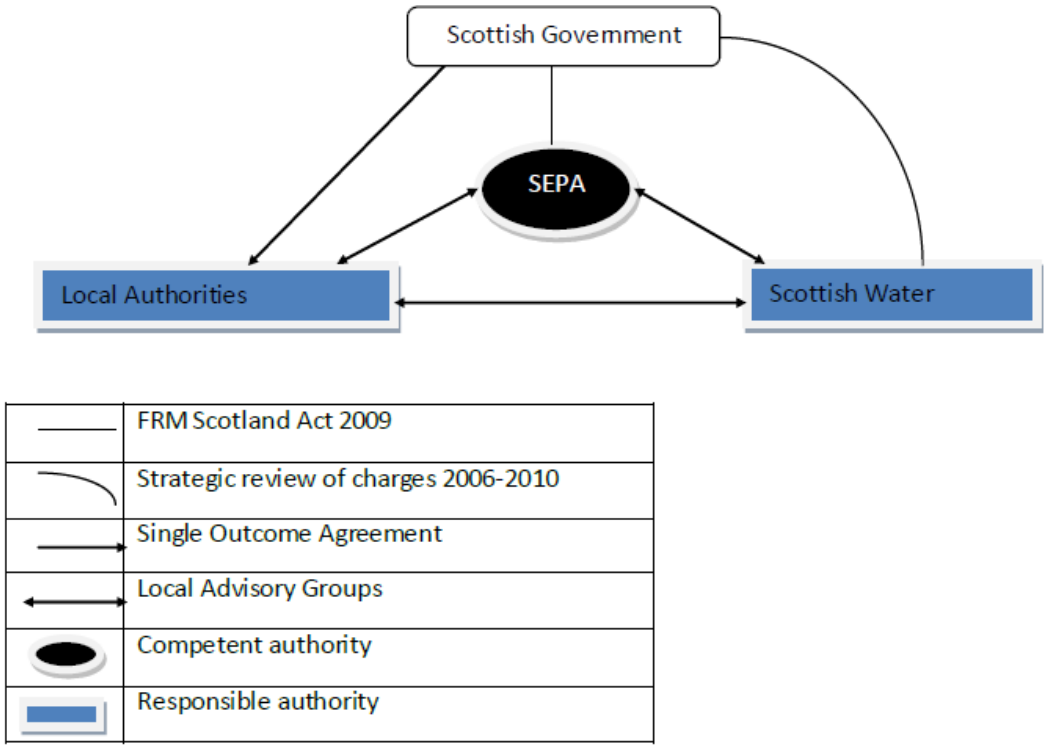


Figure 5. 7 Bureaucratic policy community

Environmental Management Discourse

Suggested policy response: 'Natural flood management is simply a component of sustainable flood management, Sustainable flood management is doing things like policy, laws, it's planning, it takes in insurance, engineering but it's all done on a catchment approach and it's all based on risk and we start looking to see what contribution risk taking, the natural processes, would bring and that's the component would never solve all your problems in flood management but will make a contribution and then there's all the additional benefits that come from biodiversity and for ecosystem services.'

(WWF Scotland Interview 26/11/12)

It can be seen that sustainable flood management has been framed as the appropriate response to the problem of flooding in this discourse. As the statement above shows, this entails a portfolio of approaches towards the management of flood risk. Hence the Flood Prevention (Scotland) 1961 Act would prove to be problematic:

'The problem was that there was still the 1961 Flood Act in order to achieve your flood management schemes and it still did not allow anything, even with pressure from the WEWS act, it still didn't really allow things to happen.'

(WWF Scotland Interview 26/11/12)

The statement above is a testament of the meaning attributed to the 1961 Act in the environmental discourse. In this discourse the policy problem of flooding has been framed in the context of the 'culture' which the 1961 Act has fostered in Scotland over the years. This has been articulated as 'engineering, I think it's that thing of 'let's build a hard defence to protect a town' (RSPB Scotland Interview 26/07/12). Hence that culture embodied in the benefit costs requirements inherent in the statutory processes of the 1961 Act for attracting central government grant-in-aid for flood schemes, was framed as the root problem. This is because these statutory processes result in the construction of single purpose hard engineering flood defences.

However it would be remiss not to consider the policy implications of the EC WFD on the environmental discourse of flood hazard governance as it highlighted the limitations of the 1961 Act in terms of restraining responsible authorities in discharging their WFD duties. In addition to the hard engineering culture, the 1961 Act also created a somewhat artificial distinction between agricultural and non-agricultural flood management and hence restricted flood schemes in practice to urban areas. This dichotomy effectively restricted any environmentally friendly flood management scheme because such schemes need a catchment approach as well as extensive rural land use changes:

'For years the environmentalists had realised that the 1961 Flood Act was very constrained about how you could approach flood management. It constrained you to be only able to put only engineering schemes into areas under local government control or local authority areas. So they were effectively only urban areas and also just within the town limits. You couldn't do things outside the local authority.'

(WWF Scotland Interview 26/11/12)

The Flood Prevention (Scotland) 1961 Act, was rigid in promoting FPS for non-agricultural areas and thus urban areas and often hard engineering schemes, gave way to the paradigm of sustainable flood management. This language was incorporated into the WFD however it is instructive to note its interpretation in the environmental discourse. Sustainable flood management was interpreted as including natural flood management since NFM seeks to work with the environment rather than against it. This represents a shift in approach from a hitherto preservationist approach which was somewhat reactive and sought to conserve the environmental heritage of Scotland to a new approach which is more proactive. NFM allows for the creation of habitat and biodiversity and therefore improves the environment via the delivery of ecosystem services. This proactive approach espouses not only reversing the damage done by previous hard engineering flood schemes but also the delivery of multiple benefits schemes, as articulated by RSPB Scotland:

'Things like managed realignment, that can be good for salt marsh and all the dependent species and likewise if we start to use natural flood management measures, re-meandering rivers it can create nice wet areas for lapwings and other species.'

(RSPB Scotland Interview 26/07/12)

Institutional Practices: 'in terms of putting options together for managing risk, we are encouraging a kind of hierarchy where we are promoting the use of non-structural management first, so we look at those options first and see how well that helps in managing a particular flooding problem before then looking at structural options.'

(SEPA Interview 16/11/12)

The 2009 Act does not however include any duty to implement NFM; something which was vigorously rejected by central government. The reason given was that a duty to implement NFM would be too prescriptive, precisely the problem of the Flood Prevention (Scotland) 1961 Act. Michael Russell emphasized this while giving evidence in the Scottish Parliament:

'Natural flood management is not the solution to every flooding problem, and that must be borne in mind. I have a slight resistance to your idea because, if we have an extremely heavy rainfall event in an urban setting, natural flood management will almost certainly not be the

answer. Other engineering solutions are in place, or need to be put in place, to deal with such events.'

(Cited in Scottish Parliament, 2009 p 137)

Therefore the institutional change that was sought avoided the prescriptive language, in other words of earlier legislation and embraced a portfolio of approaches to flood management. However Mike Donaghy (WWF Scotland) and John Thomson (SNH) gave evidence to the Rural Affairs and Environment Committee highlighting the importance of incorporating an explicit reference to Natural Flood Management in the Flood Risk Management Bill (Scottish Parliament, 2009). The result of which is SEPA's Section 20 FRM (Scotland) 2009 Act requirement to assess the potential of Natural Flood Management in the preparation of national flood risk management plans (SAIFF and SEPA, 2009).

Therefore flood management has changed in two significant ways. The first is in the promotion of 'alternative' options such as soft engineering FPS and greater use of land management based solutions. These NFM techniques are to be fed into the national flood management and local plans to be prepared and updated every six years by SEPA and the LAs respectively. The inclusion of NFM reflects the institutionalisation of the principles of sustainable flood management. The other significant change which paves the way for NFM approaches is the management of flood risk on a catchment basis thereby dissolving the artificial boundaries between agricultural and non-agricultural land which had hitherto pervaded Scottish flood hazard governance and creating a basis through which NFM schemes could be enacted. The FRM (Scotland) 2009 Act thus provides a flexibility that had never really existed before in Scottish flood governance allowing the promotion of NFM, although this is being framed as sustainable flood management, of which NFM is just one component. The policy actors who engage in concerted action to promote the policy goals of the environmental management discourse are shown in figure 5.8. This captures the changed nature of the actors and interactions in the discourse.

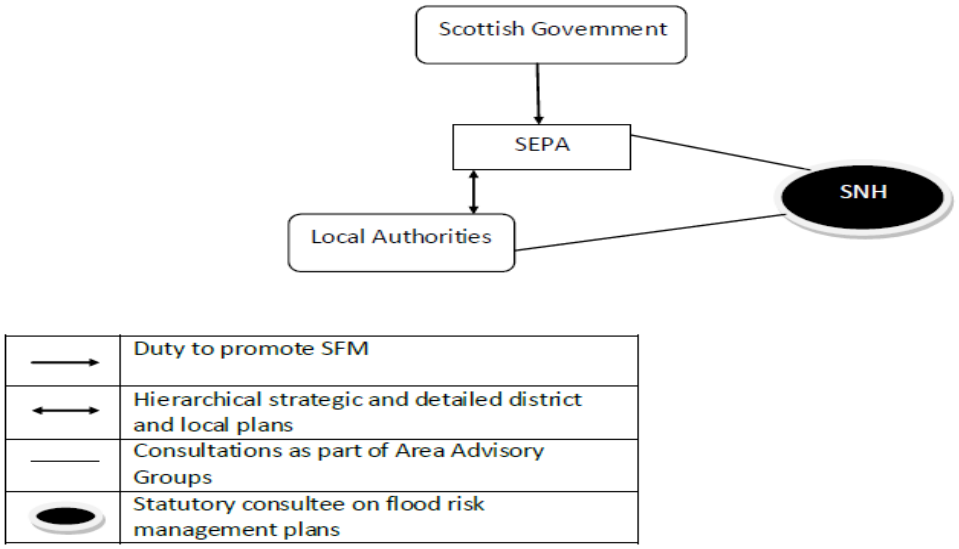


Figure 5. 8 Environmental management policy community

Implications for Flood Hazard Governance in Scotland

In the period from 1999 to 2009, Scottish flood hazard governance underwent far-reaching policy changes. Policy change can be briefly summarised as the introduction of strategic risk based approaches in lieu of the previous case by case basis of flood management. The policy aims have been transformed from 'flood alleviation' to 'flood risk management'. This change was framed by policy makers as the modernisation of flood management in Scotland. However the policy transformation was brought about by the influence of narratives deriving from Scottish political devolution, particularly the creation of the Scottish Parliament, the permeation of sustainable development into Scottish governance and reforming governance relationships between central government and LAs, particularly the introduction of new public management principles into Scottish governance. These narratives provided the basis through which policy actors interpreted various internal and external policy drivers such as increasing knowledge of the effects of climate change, the EC WFD, the 2002 floods, the CSR 2007and the EC Floods Directives. This resulted in the transformation of institutional practices within the various discourses prevalent in Scottish flood management thereby resulting in policy change.

One of the most significant policy drivers responsible for the introduction of new ideas into the flood management discourse was the EC WFD which was introduced in 2000. This Directive, transposed into Scottish law as the WEWS Act in 2003 introduced the concept of

sustainable flood management. The very act of transposing the European directive into law was greatly enhanced by the creation of the Scottish Parliament and the devolution of environmental policy making away from Westminster to Holyrood. The introduction of the concept of sustainable flood management into Scottish flood hazard governance discourse resulted in the beginning of a change in approach. This change was manifested after the 2002 floods when central government decided to convene an ad hoc committee of ministers to set about changing Scottish flood policy. This resulted in a National Flooding Framework, developed initially by the NTAG and followed up by the FIAC, of Awareness, Assistance, Avoidance and Alleviation action plan. However even while government was contemplating policy change, the role of central government vis-a-vis flood management was not significantly altered. While for the first time there was a national strategy for the management of flood risk promoted by central government, the only change that occurred was in the funding arrangements whereby ring fenced capital grants to LAs were replaced with block grants in 2007. Paradoxically this represented a push for greater flexibility in local governance rather than more involvement of central government in flood governance as evidenced by the fact that flood management indicators were not included in the Single Outcome Agreements agreed to between COSLA and central government (Scottish Government, 2007).

Perhaps the most significant departure from past policies is observed in the transformation of the role of SEPA (Scottish Government, 2011a). Its role as regulator of the water environment was further enhanced through the WEWS 2003 Act, and it had no flood defence functions other than the dissemination of flood warnings. However as a result of the introduction of the National Flooding Framework, the WEWS 2003 Act and finally the FRM (Scotland) 2009 Act, SEPA began to assume a strategic role in flood management as a result of having to prepare strategic flood risk management plans and develop flood hazard maps, in line with the EC Floods Directives 2007 and the FRM (Scotland) 2009 Act (SAIFF and Scottish Government 2011; Scottish Government, 2013):

‘We now have this new responsibility of setting out objectives for identifying the measures for managing flood risk’

(SEPA Interview 16/11/12)

In addition SEPA, due to the SPP 7, also became a statutory consultee in the planning process for developments at risk of flooding in 2004 (Scottish Executive, 2004). This

represents the first time a central government agency has become involved in the implementation of flood management in Scotland. In some ways this has been inevitable as sustainable flood management requires a catchment approach to the management of floods and SEPA had produced the RBMPs, therefore it seemed logical for SEPA to be the 'competent authority' in the strategic implementation of the FRM (Scotland) 2009 Act:

*'*SEPA was given the duty of implementing the Flood Risk Management Act. We are the competent authority so that SEPA is responsible for producing the National Flood Risk Management Plan and SEPA is responsible for producing the River Basin Management Plan.'

(SEPA Interview 2-27/07/12)

However implementing both the RBMPs and the National Flood Risk Assessments could prove quite challenging as outlined by a representative of the SNH:

'It has been the plan I believe is to have the area advisory group for example meet in the morning and the flood advisory group later in the afternoon. So that it would be the same contact as it would be for SNH so a person can stay the whole day, if it's different people like LAs may have different people attending for different purposes.'

(Scottish Natural Heritage Interview 12/11/12)

Perhaps the most stable feature of flood management in Scotland is the primacy of local government in the implementation, construction and maintenance of flood prevention schemes and local development control. The LPAs also have responsibility for preventing development on areas prone to flooding. However a feature of local governance in Scotland is the pervasive consensual and cooperative approach which is present in the planning process in the implementation of the FRM Act as Area Advisory Groups:

'It is important to remember that Scotland is a small country and that those of us who are involved in flood management have seen the same faces every week for the past few years—in other words, we are not talking about the creation of new groups. It is often simply a question of the same people wearing different hats.'

(WWF Scotland interview 26/11/12)

This feature therefore creates a platform through which lines of communications with other stakeholders could be established in the formation and implementation of what has been described as the 'hierarchical' approach to flood governance (SEPA Interview 16/11/12). The implications of the policy change for LAs means more cooperation in the preparation of both catchment based Area and Local Flood Risk Management Plans, as the policy space between central government and the LAs has widened as a result of the LA concordant which allocated the Flood Prevention and Coastal Defence Grants as a non-ring fenced funding settlement (Scottish Government and COSLA, 2007). The need for closer links between the LAs, SEPA and Scottish Water has increased significantly as a result of the requirements of the FRM Act for the production of the strategic District plans and the more detailed Local Flood Risk Management Plans. Therefore it can be observed that although the implementation of the FRM (Scotland) Act 2009 has implications for SEPA, the role of LAs as the primary delivery mechanism for flood risk management in Scotland has remained unchanged.

Conclusion

It can be observed that the transition from flood defence to flood risk management in Scotland between 1998 and 2010 was aided by policy events such as the EC WFD and the Floods Directives and devastating flood events as well as the change of government from Labour to SNP. However these policy events were interpreted within a policy context dominated by narratives such as the need for sustainable flood management, governance reforms as well as greater Scottish political autonomy. These narratives in turn allowed for the introduction of new ideas into the flood governance discourse such as the utilisation of risk based approaches in granting planning applications for developments and in identifying Potentially Vulnerable Areas in District plans. Existing ideas such as SuDS were also brought forward as viable options in the flood management toolkit. However the policy transition has ascribed new roles to policy actors. Hence flood defence was undertaken by interactions between the following policy actors Scottish Development Department, Scottish DAF, LAs, SEPA/RPB, Scottish Water/Regional Water Authorities, Developers and Insurance companies and Landowners/Farmers. Flood risk management was carried out by policy interactions between Scottish Government, SEPA, Lead Local Authorities, Scottish Water, Insurance Companies, Developers and SNH. Perhaps the most important change is that in SEPA, which hitherto was accustomed to playing a regulatory role in flood management. This has been changed to a dual role as both a regulator and an implementer in flood hazard governance. Having accounted for the transition in Scottish flood hazard governance from

flood defence to flood risk management, the next chapter will seek to evaluate the impact of national flood policy change in Scotland and England in urban and rural LA areas.

Chapter 6

Local Governance Approaches to Flood Risk Management in Scotland and England

Introduction

In the previous chapters the transformations of the respective national flood management policies, from flood defence to flood risk management were discussed and the implications for the roles and responsibilities of risk management authorities were also highlighted. This chapter examines the meanings and implications of national flood management policies for local actors in Scotland and England. The agency of local actors, both as flood risk management policy making and delivery bodies is examined within the context of the policy structure provided by the national flood policies and institutional practices. The overall purpose of the chapter is to identify and elucidate the interpretation of flood risk management through local governance approaches in Scotland and England. This will be achieved by identifying the flood management practices undertaken in selected urban and rural LA areas thereby revealing how they make sense of flood risk management as a policy paradigm. Such a comparison between national flood policies and local flood governance approaches has the potential to reveal differences in the implementation of flood risk management in each respective case study.

The chapter is divided into four sections. The first provides a summary of the current LA governance institutional arrangements in Scotland and England. The second presents a background to the LAs selected as case studies. The third unpacks the local interpretations of flood risk management in the context of the national policy structures highlighted in the previous chapters. The final section provides a platform where national policies and local flood governance approaches can be compared and differences expounded and conceptualised.

Summary of current institutional arrangements

It is important to locate the unique position of local authorities in the space of governance in the United Kingdom. This unique position is embodied in the principles of *ultra vires*, meaning ‘beyond the powers’ (Wilson and Game, 2006). This principle essentially limits the roles of local authorities in Britain to do only what they are statutorily permitted to do (Bulkeley and Kern, 2006). This situation pertains to local authorities in Britain, in contrast to

most countries in Europe, are creations of central government through legislation (Bulkeley and Kern, 2006; Wilson and Game, 2006) and more importantly the state can change their shape, size, functions, powers, duties, the way they are elected and even who can be a councillor (Crowther, Martin and Shaw, 2003). A history of the management of floods in Britain especially in relation to local government reforms serves as a demonstration of the *Deus ex machina* role central government plays (see Penning-Rowsell et al. 1986; Bressers et al. 1995; Scrase and Sheate, 2005; Watson et al. 2009). Hence in the broadest sense, local authorities operate within the framework set by central government directly through legislation, regulations, guidance and other forms of steering through central government agencies (Stewart, 2000). With this context, it is important to consider the relationship between central government and local authorities in Scotland and England with regards to flood management. As has been mentioned earlier, the responsibility for individual protection lies with the individual house or riparian owner and the flood defence powers bestowed on local authorities are and indeed remain permissive.

The salience of the permissive nature of the implementation of flood management is highlighted in the set of duties imposed on local authorities by central government. Bulkeley and Kern (2006) classified these statutory duties into compulsory and discretionary duties. Compulsory duties are activities LAs must undertake while discretionary duties allow for greater flexibility in implementation. The permissive nature of LA flood management policy implementation provides an empirically rich platform to evaluate the agency of LAs. Another important rationale for evaluating the role of LAs in flood management is the seeming similarity which exists between LAs in Scotland and England. These similarities include the sovereignty of the state (in this case the same state but different parliaments), the democratic form of local government, the planning responsibilities bestowed on LAs, permissive nature of flood risk management and the designation of LAs as LLFAs in England via the FWMA (2010) and LLAs in Scotland via the FRM (Scotland) Act 2009. However it is important to note a functional difference here, LLFAs in England are responsible for the management of flood risks emanating from ordinary water courses, surface water and ground water while LLAs in Scotland are responsible for the management of flood risks from all sources (Parker and Penning-Rowsell, 1980; Penning-Rowsell et al. 1986; Werritty et al. 2002; Werritty and Chatterton, 2004). However the putative similarities between LAs in Scotland and England provide a platform for a qualitative comparison of LA approaches to flood risk management.

Background of the LA areas selected for case studies

Birmingham

Birmingham is a highly urbanised area located in the centre of the West Midlands region. It is the largest unitary authority in both the United Kingdom (Birmingham City Council, 2008; 2010b) and in Europe with a population of over 1 million people. The administrative area of BCC is nearly 270km^2 or 27 030 hectares. Birmingham is located at the heart of the country and owes much of its development and success to its strategic position at the centre of canal and railway networks (Birmingham City Council, 2008). It is bounded by other large towns such as Solihull, Wolverhampton and Coventry. It has been designated as a LLFA in England by the FWMA (2010) (DEFRA, 2010).

Birmingham has a population of 1 033 400 (2010 estimate) (ONS, 2009). It has a relatively young population with the age groups 0-19 years making up 28% of the total population while the over 60s make up 17.6%. A population increase of 13.6% has been projected for the year 2030 with the over 60s estimated to make up 18.8% and the age group 0-19 likely to comprise 29% (ONS, 2009). Birmingham is the second largest urban conurbation in the country (Birmingham City Council, 2010); it is situated on relatively high ground rising to between 150-300 metres above sea level. The area lies within three main catchments of the Rivers Tame, Rea and Cole (Birmingham City Council, 2008)

The growth of Birmingham as a large urban centre was as a result of both its location and also its industrialisation. Though this has waned in recent years it is still a centre for manufacturing especially of vehicles. However the biggest employers are the public administration, education and health sectors accounting for a total of 31.2% of workers while manufacturing is responsible for 10.6% of employment (ONS, 2009). In terms of land use housing makes up about 52% with public parks and open spaces accounting for 14% (Birmingham City Council, 2008).

Somerset

Somerset is a rural county in the south west region of England with a relatively low population density and an important agricultural economy. Somerset County Council is made of five districts namely South Somerset, West Somerset, Mendip, Sedgemoor and Taunton Deane. Settlements are dispersed and it possesses a unique landscape of rolling hills such as the Mendip Hills and Quantock Hills; it is also home to the Exmoor National Park and the Somerset Levels and Moors (EA, 2009). Somerset has a total population of 528,800 with a third living in the four largest towns of Taunton (59,779), Yeovil (42,557), Bridgwater (36,079) and Frome (27,282) and it has been projected that by the year 2030 its population

will increase by 16% to 608,500 (Somerset County Council, 2012). The demographics of Somerset are unique in a number of ways: people aged 65 years and over make up about 25% of the population while those aged between 5-19 years account for about 18%. Moreover the percentage of over 65s is expected to rise to 27% by 2026 and 40% in 2030 when 23% will be aged 75 or over (Somerset County Council, 2012).
The county covers 3,452 square kilometres or 1,333 square miles. The majority of the Exmoor National Park lies within Somerset and the upland areas of the Quantocks, the Mendips, the Blackdown Hills, and a small part of Cranbourne Chase are classed as Areas of Outstanding Natural Beauty (AONBs) (EA, 2009). The Somerset Levels and Moors is the largest expanse of low lying land in the county and supports over 70,000 waterfowl. The county has many rivers such as the Axe, Brue, Cary, Parrett, Tone and Yeo, and the coastline of the Bristol Channel and Severn Estuary, which forms part of the county border. The geology of the area is varied and ranges from the limestone Mendip Hills which make up major aquifers to the areas of low permeability in West Somerset which facilitate a high level of overland flow and a rapid response of the rivers to rainfall (EA, 2009). The relatively strong sectors of employment in the county include energy and manufacturing (advanced engineering, aerospace and environmental technology), agriculture and fishing, construction and tourism. The importance of agriculture is not surprising considering the rural nature of the county. The importance of tourism is highlighted by the fact that there are more than 11.7 million visitor trips annually and this contributes over £800 million to the local economy (Somerset County Council, 2012).

Moray

Moray is the eighth largest council area in Scotland (Moray Council, 2008a). It is located between Aberdeen and Inverness and bordered on the north by the Moray Firth with its coastal plain extending approximately 12 miles inland (Moray Council, 2005). It covers an area of 2 238km^2 (Moray Council, 2008a) and is mostly rural with a total population of 86 870. The largest town in Moray is Elgin which has a population of about 22 000, about a quarter of the entire population; other towns include Buckie, Keith, Lossiemouth and Forres (Moray Council, 2005). The area's total population of 86,940 (Moray Council, 2007a) is about 1.7% of the Scottish population but it is sparsely populated with only 39 people per square kilometre (Moray Council, 2005). More than half of the population resides in the five major towns where the population density is approximately 2,500 people per square kilometre (Moray Council, 2008a). The population trends suggest the proportion of the population under 16 years will reduce by 9% from 16,074 in the year 2007 to 14,627 in 2011

while that of over 65s will increase by 10% from 18,208 to 20,029 over a similar time period (Moray Council, 2005).

Moray is a very rural county with the countryside comprising 70% of the land area while woodlands make up 25% (Moray Council, 2008a). There are four main catchments in the area namely the Lossie, Spey, Findhorn and Deveron with the Spey being the largest river system (Moray Council, 2005; Moray Council, 2007). Moray has the lowest average wages in Scotland (Moray Council, 2008a) with the median gross weekly wage calculated at £388.40 compared with £461.80 nationally. The local economy is highly dependent on the Ministry of Defence, the local council and the food processing industry. There is one major Royal Air force base in Moray which account for about 12% of the total workforce, while the area generates 9% of all the food and drink industry Gross Value Added in Scotland. In terms of employment by sector the biggest employer is the service industry with almost 75% of all employee jobs followed by manufacturing and construction (Moray Council, 2005).

Glasgow

Glasgow is the largest city and local authority area in Scotland with a population of 584,240 in 2008 while the larger Glasgow and Clyde Valley conurbation has a population of 1,755,310 (Glasgow City Council, 2012). Glasgow is a major contributor to the national economy and alongside Edinburgh has been responsible for most of the recent economic development in Scotland (Glasgow City Council, 2008). Its administrative boundary is nearly 175 km^2 and it is widely recognised as the commercial capital of Scotland and the second largest retail centre in the United Kingdom after London (Glasgow.gov.uk accessed 2011). Over the past eight decades Glasgow has experienced a steady decline in its population: the population of the city in 1951 was 1,089,555 compared to 578,710 in 2001. However since the turn of the century, the city has been experiencing a slight increase in its population. The demographic structure of Glasgow is peculiar compared with the surrounding areas, with the proportion of the population aged 20-29 being 19% in 2008, 42% higher than the national average. By contrast the proportion of the retirement and dependent aged demographic continues to fall. The fall in the proportion of the population aged 0-14 has been attributed to the general decline in birth rates of industrialised countries while the fall in the proportion of those aged 65 and over has been attributed to the migration of residents out of the city after retirement and also higher death rates. It should be noted that between 2001 and 2006 the mortality rate for Glasgow was about 29% above the Scottish national rate which in turn was higher than the rates in England and Wales (Scottish Government, 2010). The city is located on the banks of the River Clyde with tributaries such as the White Cart River and River Kelvin (Black and Bennett, 1995) and it is predominantly a lowland area

surrounded by hill ranges. The area also includes five SSSIs, seven Local Nature Reserves, 49 Local Sites and 46 City wide Sites of Importance for Nature Conservation (Coyle, 2012). Glasgow is of economic importance to both the UK and to Scotland, contributing about £13 billion to the Scottish economy annually and supporting about 420,000 jobs. The structure of the economy of Glasgow has evolved over the years from a dependency on traditional mercantile, engineering and maritime activities to an overwhelming dependence on the service sector (Glasgow Economic Forum, 2006). The city's average earnings in 2006 were £353 weekly which is comparable to those obtained in England. Despite being located at the heart of a large conurbation, green space in Glasgow accounts for over 20% of the city's land area.

Local Flood Hazard Governance

This section examines the meaning of flood risk management in the selected LA areas by elucidating the policy practices undertaken in response to the flooding problems within their respective administrative areas. It must be noted, however, that these policy practices do not occur in a vacuum. In accordance with the analytical framework of this thesis, local flood governance approaches are viewed against the structure of the flood management discourses identified in the previous chapters. These local approaches, and indeed the national flood policies should not be seen as immutable, permanent or set in stone but rather as part of the continuous process or as Marsh and Rhodes (1992) put it a continuing process of policy re-negotiation. Therefore just as the respective national flood management policies have evolved over the past decade from 'flood defence' to 'flood risk management', it should not be taken as a given that these policies are enacted by policy actors in a manner devoid of any value judgements. Rather in line with the interpretive approach adopted in this research, policies, whether legislative documents or state intentions, should be viewed as constructed texts open to multiple meanings at the hands of policy actors (Yanow, 2000). Having evaluated and unpacked the 'flood defence' and 'flood risk management' paradigms, it is crucial to examine the frames through which actors in LA areas make sense of the new flood management paradigm. This is important because 'frames highlight and contain, at the same time they exclude, that which is highlighted or included is often that which the framing group values' (Yanow, 2000 p 11).

Birmingham Flood Risk Management Policies

Defence management policies: It is important to note that in addition to the highly urbanised and populated nature of the Birmingham area there are also numerous water

courses, culverts and sewers within the city limits. There are twelve EA designated Main rivers in BCC area in addition to numerous ordinary watercourses and countless unnamed streams and ditches (Birmingham City Council, 2012a) which lie within the catchment areas of the rivers Tame, Rea and Cole. In adverse weather conditions this results in significant simultaneous localised flooding incidents. In response to the flood risks from the rivers and watercourses, the urban landscape in Birmingham is dotted with anthropogenic features such as re-routed rivers, flood defences in the Witton area, sewers, embankments along the River Rea at Middlemore Road, pipes, fences, sluices, road gullies on the highways and culverts. These features are constructed with the intention of increasing the flow of water in the watercourses as well as preventing excess water from overtopping on to the streets of Birmingham (Birmingham City Council, 2010a).

The flood defence measures listed above, which would be termed as hard engineering solutions to flood hazards, are analogous to the land drainage that dominated rural Britain in the 19th and 20th centuries (Scrase and Sheate, 2003). While the intention of land drainage, at least in the 20th century was to encourage domestic agricultural production as well as improve productivity, this 'hard engineering' is currently undertaken to increase the flow of watercourses and drain the city of standing water. These actions are 'being achieved to reduce flood risk and minimise and mitigate the harm caused by flooding, through a risk based approach based on a detailed understanding of where the flood risk is greatest.'

(Birmingham City Council, 2010a p 5)

In addition to the hard engineering solutions, the risk based approach is manifest in a number of activities undertaken by BCC. These provide an indication of the flood risk management approaches adopted by the BCC:

'In looking to reduce the risk of flooding, we should not overlook the obvious: the city's numerous watercourses, culverts and sewers need regular maintenance to ensure water can flow through freely, as intended'

(Birmingham City Council, 2010a p 33)

This is no surprise given the initial designation of BCC as a land drainage authority under the Land Drainage Act 1991; and expected to continue after the passage of the FWMA (2010) because the Council has also been designated as a LLFA. Hence in keeping with the British land drainage laws under which riparian owners are responsible for the maintenance of their

watercourses, the Council, which manages 57,238 linear metres of brook courses within the BCC limits, is hence responsible for watercourse maintenance. The problems associated with flooding in the context of watercourse maintenance, have been described as follows:

‘The entrances to culverts are generally protected by metal grills to prevent debris from entering. Without the grills there is the possibility of a major internal blockage that could, even with a small watercourse, cause significant local flooding.’

(Birmingham City Council, 2010a p 33)

Therefore, by framing the natural state of watercourses as free flowing bodies, with problems arising when the flows are interrupted or impeded, it comes as no surprise that the solutions to these problems are defined within the context of clearing the pathways of watercourses to always encourage free flow and reduce the likelihoods of blockage problems arising:

‘BCC operates a trash screen cleansing programme, where screens are cleared on a frequency of either weekly, monthly, three monthly or six monthly depending on the risk and potential for blockage. Additional clearances are also carried out before and/or after severe rainfall events.’

(Birmingham City Council, 2012a p 45)

In addition to the watercourse cleansing and maintenance programs, BCC has also undertaken engineering schemes such as that along the River Rea in the Middlemore Road area of the city (Birmingham City Council, 2010a). An ideal illustration of actions taken to reduce the risk of flooding in Birmingham is in the Spark Brook area. This was described as a much polluted body of water with blockages caused by fly-tipping, litter and debris which prevented free flowing water and resulted in the water body being stagnant. The solution to this problem was achieved through ‘clearing the brook of debris and rubbish in order to allow the water to flow freely and thus reducing the flood risk’ (Birmingham City Council, 2010a p 36).

These measures are being undertaken in the public interest and have been institutionalised in the BCC through the activities and responsibilities of the Birmingham City Council Drainage Services Team. BCC has three flood risk management budgets. Apart from the local levy paid to the RFCC for the funding of EA ‘main’ rivers, there are the BCC rivers and

brooks budget as well as the EA contract to the BCC for the maintenance of the River Rea (Birmingham City Council, 2010a). These allow for both reactive and proactive approaches to flood management. The reactive approach includes activities such as the provision of flood defences to areas that have been flooded, improving flood defences and also maintaining flooded watercourses. The current institutional structure allows for a more pronounced reactive approach due to a statutory duty on LAs to maintain flood defences. However there exists only a permissive duty to provide these defences in the first place. There is a shift to be more proactive in dealing with flood management and this has resulted in the adoption of a risk based approach. This is manifest in the development of a PFRA, a SWMP and a Local Flood Risk Strategy for Birmingham (Birmingham City Council, 2012a). These are aimed at identifying the parts of the city which are at significant risk of flooding and evaluating the appropriate management response. The implications of the shift to a more proactive and risk based approach were captured in the following statement:

'Land drainage functions have not always been a priority for capital funding. However, the (2010) Act will change this significantly. We have been advised on the cost implications of the changes, and that the Government assumes some of the work will be paid for in savings made elsewhere by the City Council – an assertion challenged by local authorities across the country. It is important to note that the costs would be balanced by the intangible benefits accruing from a proactive approach – i.e. reducing the number of people and properties affected by flooding, and assisting those that are affected to recover more quickly. However, these are difficult to measure.'

(Birmingham City Council, 2010a p 7)

Hence flood management is dominated by the framing of flood hazards as exacerbated by the heavily urbanised nature of the Birmingham area. Thus human activities such as fly tipping or the modification of water bodies are the prevailing problem definition. Perhaps because of the highly urbanised and industrialised nature of the Birmingham area, the framing of the natural state of a watercourse is that of constantly free flowing water and thus the solutions considered are approaches which improve the water flow in rivers and also the provision of flood defences. The policy response can be viewed within the following context of the Council delivering cost beneficial local services to taxpaying residents by maintaining and monitoring watercourses within the city limits:

‘When flooding occurs, or is threatened, people often look to the local authority to take responsibility and take steps to prevent or reduce flooding . . . . Even though the powers are permissive . . . In reality, most local authorities recognise the benefits of some flood defence activity’

(Birmingham City Council, 2010a p 30)

Planning policies: As a result of being a major industrial and urban centre not only within the UK but also in Europe, the planning policies adopted in Birmingham have important implications for flood management. BCC is a LPA with powers not only to restrict and control developments in flood risk areas but also to prepare planning documents such as the SFRA (Birmingham City Council, 2007). BCC is also responsible for the development of the Birmingham Core Strategy on which future development and investment in Birmingham would be based (Birmingham Core Strategy, 2010). In terms of the problem definition, there is recognition that flooding can be exacerbated by uncontrolled developments on floodplains; this was clearly articulated in the official BCC response to the passage of the FWMA (2010):

‘Urbanisation has a real impact, with faster run-off rates from upstream urban areas resulting in an increase in flow in the rivers downstream’

(Birmingham City Council, 2010a p 17)

However despite the fact that urbanisation is viewed as one of the factors responsible for the exacerbation of flooding, the planning response to the flooding problem has been framed within concepts such as economic revitalisation, urban and social regeneration and environmental quality (Birmingham Core Strategy, 2010). In this context it is important to consider that although the population of Birmingham sits at around one million people, there has been still considerable loss of population, especially within the professional classes, to surrounding areas. In light of the recent recession, this represents a loss of productivity and perhaps more importantly revenue to the Council to meet future challenges including increasing population due to international migration. It has been estimated that by the year 2026, the population of Birmingham will increase by one hundred thousand people (Birmingham Core Strategy, 2010). Therefore in order to mitigate the loss of the professional class to surrounding areas and to be prepared for the future challenges, Birmingham has officially taken a development path that emphasizes the ‘growth agenda’. This will involve encouraging the redevelopment of brownfield sites within the city in order to reap

regenerative benefits. A major policy component of this involves the Core Employment Area which has the aim of stimulating new investments and creating employment opportunities (Birmingham Core Strategy, 2010). Even though the service sector in Birmingham, as in the rest of the country, is the increasingly dominant industry highlighting the importance of the development of the city centre, the Core Employment Area will reflect the industrial heritage of Birmingham:

'Birmingham remains an industrial city and it will continue to be important to ensure that the city's industrial base is maintained and modernised'

(Birmingham Core Strategy, 2010 p 32)

The policy response of BCC to the use of planning to manage the flooding problem has been to adopt a risk based approach to the assessments of vulnerable areas within the city. This has resulted in the development of strategic planning documents such as the SFRA and the SWMP, both in accordance with the PPS 25 (DCLG, 2006) guideline. These planning documents especially the SFRA, have introduced new risk based ideas as well as tools to better assist the LPA in determining the vulnerability of development areas as well as the residual flood risk presented by developments themselves. As noted earlier, BCC is aware of the effects of urbanisation on increasing flood risk, especially surface water and sewer flooding, and was granted DEFRA funding to conduct a SWMP thereby furthering the risk based approach to development control.

It follows that the need for development, redevelopment and regeneration within the Birmingham area will be at odds with the precautionary principle inherent in the risk based approach espoused in the PPS 25 (DCLG, 2006). This contradiction was highlighted in a joint pilot study into the Upper Rea Integrated Urban Drainage conducted by DEFRA and the BCC in 2008:

'However, government proposals for new housing targets may conflict with the objective of *Making Space for Water*, whereby greater volumes of wastewater are produced, more impermeable areas are created and less space is available for the storage and attenuation of surface water.'

(DEFRA et al. 2008a p 12)

This apparent clash of values was reportedly articulated by stakeholders when consulted on their views on the PPS 25 (DCLG, 2006) and other flood management legislations during the Upper Rea IUD pilot:

‘Stakeholders also identified that the current flooding legislation is not strong enough and is not fully preventing inappropriate development in floodplains. Many schemes have progressed due to the perceived ‘get-out’ clauses contained within the Sequential and Exception tests. These allow wider economic sustainability issues to have greater predominance than longer term economic issues to do with flood risk, including the inability of purchasers to have adequate and reasonable insurance cover.’

(DEFRA et al. 2008b p 13)

The prevalence or dominance of the economic pillar of sustainable development can be attributed to the fact that the prime document or strategy which guides investment and development in the Birmingham area remains the Birmingham Core Strategy. This comes as no surprise as the development of Core Strategies is a statutory duty in contrast to flood management which remains permissive. It also follows that economic sustainability themes dominate planning policy as the economic revitalisation of the Birmingham area is a key theme of the Core Strategy (Birmingham Core Strategy, 2010). A demonstration of this clash of values is embodied in the housing requirements in the Birmingham area and an acknowledgement that land within identified flood zones will indeed be developed:

‘It is important to consider that although there is a range of housing sites available within the Authority area, these are not sufficient to meet housing requirements. Therefore use of land within Flood Zones is necessary to avoid the allocation of Greenbelt land.’

(Birmingham City Council, 2012b p 17)

Perhaps more surprising, the results of the sequential tests in the SFRA prepared by BCC reveal the dominant values in the planning discourse in Birmingham. In addition to the need to develop on flood plains in order to avoid developments on Greenbelt land, there is also an overriding priority to develop and redevelop on brownfield sites. This applies even if the land to be developed is located in a flood zone 3b, which has been designated in the SFRA as a functional floodplain. It is instructive to note how sustainability is being framed in the justification for developing on functional floodplains. Thus while justifying the development of

a residential area in the Station Road Stechford area of Birmingham, designated as a functional floodplain; sustainability of the development was framed as

*'*Sustainable location on major public transport route close to rail station and shopping and community facilities at Stechford Local Centre'

(Birmingham City Council, 2012b p 27)

Thus reflects an emphasis on a narrow interpretation of the economic pillar of sustainable development or as it has been framed, 'regeneration benefits' in the statutory planning document, the Birmingham Core Strategy (2010). As developments have been proposed on flood risk areas, it is not surprising that adaptation and attenuation measures such as SuDS highlighted in the PPS 25 (DCLG, 2006) have been highlighted as flood management options. Hence the planning policies of BCC can be encapsulated as incorporating elements of risk based development control, adaptation and attenuation measures for proposed developments in flood risk areas especially on functional floodplains. However these policies have been developed within the context of BCC's need to achieve economic sustainability through the regeneration and redevelopment of brownfield sites within the city limits. This leads to a view of planning developments as a means of not only achieving economic sustainability but also a medium through which wider flood management problems can be addressed:

'The site is previously developed Brownfield land. Flood Zone 3 only affects a minority of the site, and the flood risk can therefore be addressed through good design and the distribution of uses. In addition, given the scale of the site it likely that it will be feasible to incorporate flood mitigation measures within the site'

(Birmingham City Council, 2012b p 26)

The narrative of 'regeneration' and the 'growth agenda' are the dominant themes in the planning policies enacted by BCC. While the risk based approaches to flood risk assessments identify the flood risk areas, development itself is not prohibited on functional floodplains. Indeed as stated in the results of the exceptions test above, a housing

development on a functional floodplain would only be approved subject to provision of flood defences from the EA or indeed BCC.

Bureaucratic policies: The clarifications of responsibilities and the proactive approach embodied in the Pitt Review into the 2007 floods and the FWMA (2010) have implications for the BCC. The fragmented nature of flood hazard governance so prevalent throughout the country is somewhat attenuated in the Birmingham area. This is due to BCC being a unitary authority and hence the responsible LPA. The responsible authorities for flood risk management within the Birmingham area are the council, the EA and Severn Trent Water. However it must be noted that the BCC has adopted a proactive stand in terms of partnership working with other stakeholders:

'Whilst roles are fragmented between agencies – in particular the City Council, EA and Severn Trent Water – the City Council has taken a lead within the area, both in terms of flood risk management and in responding to flooding when it occurs'

(Birmingham City Council, 2010a p 63)

However BCC previously faced a complex mosaic in flood governance particularly in terms of urban drainage management:

*'*Current institutional and regulatory frameworks are inefficient and complicated, detracting from integrated urban drainage management. A strategic overview and direction for storm water management and a clear definition of responsibilities is required'

(DEFRA et al. 2008b p 3)

BCC welcomes the clearer and indeed stronger role demanded of the LLFAs in the FWMA (2010). The Upper Rea IUD pilot indicated in its conclusions articulated the need to cement new relationships and generate a sense of inclusiveness with stakeholders (DEFRA et al. 2008b). This is not to suggest that there are no problems with the regional and local approach to flooding central government. On a national scale, the delivery of flood management on main rivers is carried out by the EA through its RFCCs. There seems to be a gap between this approach to flood management and BCC's interpretation of more local control especially in relation to the payment of the local levy by the BCC to the Midlands

RFCC while accruing no tangible benefits. This gap was highlighted in the BCC official response to the FWMA (2010):

'For clarity we therefore need to understand why so little funding from the RFDC is spent in Birmingham and whether, if the City Council did not pay the local levy, the city could retain that money to spend on flood defences within its own boundaries. We therefore ask the Executive to consider our membership of the RFDC and whether the benefits outweigh the costs'

(Birmingham City Council, 2010a p 67)

Indeed the gap between central government policy and BCC manifested in other forms. The new responsibility for the management of surface water flooding was not accompanied by increased funding from the central government. Thus in response to the passage of the FWMA (2010), BCC raised concerns that,

'There are no plans from Government to increase the RSG allocation in line with the new duties. The Government is currently relying on local authorities saving money as the sewers they currently manage pass to water companies. However, that does not take into account that fact that these savings are, at best, difficult to identify, and in practice have already been made – in other words, local authorities have not tended to have a budget for this for many years and little maintenance is currently carried out. These concerns have been raised with the Government. However, the latest indications from the Government seem to be that it is for local authorities to determine what their priorities are and direct spend accordingly.'

(Birmingham City Council, 2010a p 31-32)

A demonstration of the relationship between BCC, EA and DCLG can be found in the nature of flood management funding in Birmingham. As mentioned earlier, the BCC has three flood risk management budgets; these are the rivers and brook revenue budget, the local levy paid to the RFCC and the EA contract on the maintenance of the Rea catchment. The first and second budgets are part of the formula grant central government reimburses to LAs. As a result of the proactive approach inherent in the BCC approach to flood risk management as well as the retention of drainage experts within the Council, BCC is contracted by the EA to undertake the maintenance on EA Main River Rea. This is somewhat unusual as it is usually

the other way round and in fact in 2008/09 BCC generated £380,000 from the EA contract (Birmingham City Council, 2010).

The FWMA (2010) will raise the status of flood management within BCC although it will be competing with other LA services for resources. As shown in the budgets above, the majority of funding is reimbursed by central government. In this context it is important to highlight the institutional practices through which BCC delivers an emphatic role in flood governance as well as its partnership working as defined in the FWMA (2010). A prominent feature of flood governance in Birmingham is the proliferation of various contracts through which policy delivery is being undertaken. This suggests the pervasiveness of new public management methods that define modern governance in Britain, both at central and local government levels. Therefore just as the EA contracts its main river maintenance for the River Rea to BCC, possibly as a result of it having retained a capable pool of drainage expertise when other LAs had lost theirs (Birmingham City Council, 2010), paradoxically BCC also contracts out its other flood management functions:

‘The City Council will enter into a 25-year contract for highway maintenance and management services from June 2010 (the 'Highway Maintenance and Management Private Finance Initiative). This means that maintenance of the city’s highway infrastructure (including highway drainage) will be carried out by a private sector partner. This contract specifies standards to be met, including maintenance responsibilities for network drainage. For example, the contract requires that the road network should be ‘free from standing water’. This means that highway drainage should be clear and functioning properly under normal conditions’

(Birmingham City Council, 2010a p 34)

However other forms of governance such as the formation of Flood Action Groups in Birmingham reflect the ethos inherent in the prevailing flood risk management paradigm wherein individuals are being encouraged to take more responsibility for managing their own flood risks:

‘One of the best ways a neighbourhood can prepare for flooding is to set up a Flood Action Group. These are community led groups, led by volunteers that help residents in the flood watch area prepare and cope with incidents of flooding’

(Birmingham City Council, 2010a p 54)

The BCC does provide some financial support to aid the activities of the FAGs in the Birmingham area. However not all vulnerable neighbourhoods have formed FAGs and in some cases BCC has had some trouble maintaining these voluntary groups and capturing the attention of residents in areas that have suffered from flooding recently. A member of BCC described the problem FAGs are experiencing as:

'They've had some problems with maintaining their groups so they are trying to push to get that running and get more numbers on board so we've just been looking at their plan and try to make it a plan that works for smaller groups of flood wardens since they've had problems recruiting new people, people just dropped off and disappeared since people's memories fade.'

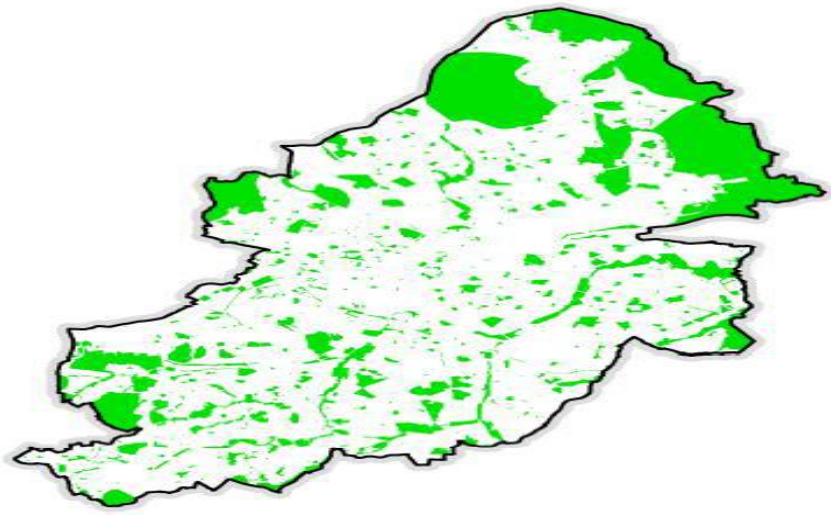
(Birmingham City Council Interview 30/11/11)

This clearly illustrates the partnership working that BCC is undertaking as part of the new flood risk management paradigm. Overall the meaning of the FWMA (2010) has been institutionalised in BCC policies through the narratives of 'a clearer and stronger role for LAs' and 'improving partnership working' (Birmingham City Council, 2010a). These have manifested as contracting out flood risk management policy delivery as well as working with and encouraging vulnerable communities to help themselves through the support of FAGs.

Environmental management policies: The Birmingham area is characterised by various watercourses, canals and rivers and although it comprises one of the most urbanised spaces in Europe, these water bodies are important in terms of biodiversity and, perhaps more crucially, amenity and recreational value. However the central government policy of encouraging the creation of habitats to reduce the risk of flooding is somewhat challenging in the Birmingham area. This is not surprising as environmental schemes designed to reduce flood risk need space for the creation or enhancement of habitats. As a member of the Birmingham and Black Country Wildlife Trust stated:

'We have quite a small area 6000ha and we've got 2.1 million people and they are living in amongst the landscape and it's the protection management and enhancement of that landscape that's difficult for our landscape scale conservation'

(Birmingham and Black Country Wildlife Trust Interview 08/06/12)



	Green spaces • open spaces • parks • nature reserves • playing fields • golf courses

Figure 6. 1 Green Spaces in Birmingham (source: Birmingham City Council, 2013 p 170)

This is not to suggest that there are no conservation areas in the Birmingham area, as evident in the green spaces highlighted in the figure 6.1. Indeed more than a fifth of Birmingham comprises open spaces such as parks, nature reserves, allotments, golf courses and playing fields (Birmingham Core Strategy, 2010) and 16% of the land area is designated as Greenbelt where development is strictly prohibited (Birmingham Core Strategy, 2010; Birmingham City Council, 2012). The importance of nature conservation is further highlighted by the presence of two SSSIs within the Birmingham area.

The environmental management approach to the reduction of flood risk in Birmingham is being achieved through different framings of the natural environment. These views are articulated in emphasizing the amenity value of the natural environment in abating the effects of flooding:

‘The option of using specific green space sites (with little or no amenity value) to mitigate the risk to residential areas or other high value economic land is investigated’

(Birmingham City Council, 2010a p 5)

And emphasizing the inherent value of these natural features:

‘The rivers, Cole, Rea and the Tame, together with the canals, pass through the city and serve to link different parts of the city . . . . . These linear corridors join other open spaces which enhance and provide variety to the natural environment.’

(Birmingham Core Strategy, 2010 p 53)

On one hand, there is a view of the natural environment as a platform for the provision of services such as flood reduction or indeed recreational use. ‘Green spaces’ are conceptualised as either having little or no amenity value and limited economic value. This has led to the suggestion that green spaces should be utilised as a service through which flood reduction on other ‘residential’ or ‘high economic value land’ could be accomplished. The other statement provides a somewhat paradoxical view in which open spaces and watercourses are viewed not only as a foundation for flood reduction services but also as enhancing the environment in general. Indeed it is believed that ‘green infrastructure helps support biodiversity and makes an important contribution to the quality of the city’s environment’ (Birmingham Core Strategy, 2010 p 52). In terms of policy implementation, these frames can be identified as being embodied in practices such as changing land use or management patterns within the city limits in order to reduce flood risk and the restriction on development on Green Infrastructure Network areas in line with the Biodiversity Action Plans (BAPs) for Birmingham and the Black Country thus preserving and enhancing the natural environment within the city limits.

‘Parts internally within Birmingham and the Black Country are very protected through green wedge or green belt policies so the urban area at the moment from a planning perspective is pretty tight’

(Birmingham and Black Country wildlife trust Interview 08/06/12)

The utilitarian view of the use of the natural environment to reduce the risk of flooding is also manifest in the plans for creation of wetlands within the Birmingham area. These schemes

are being framed within the view of multiple uses and not just the reducing the risk of flooding. However it is important to acknowledge that the creation of wetlands is not included in the normal flood management budget of BCC; rather a source of funding for the proposed creation of wetlands in the Hall Green Constituency area of Birmingham has been secured from Europe (Birmingham City Council, 2010). However, driven by the climate change narrative, there has been an increasing drive to frame environmental solutions to the flooding problems as adaptation to the expected extreme effects of climate change and thus the subsequent development of green infrastructure. This has the stated aims of managing urban storm water as well as mitigating climate change:

'Birmingham's Climate Change Action Plan 2010+ supports the creation of a Green Infrastructure network covering open spaces and parks and green roofs.'

(Birmingham Core Strategy, 2010 p 46)

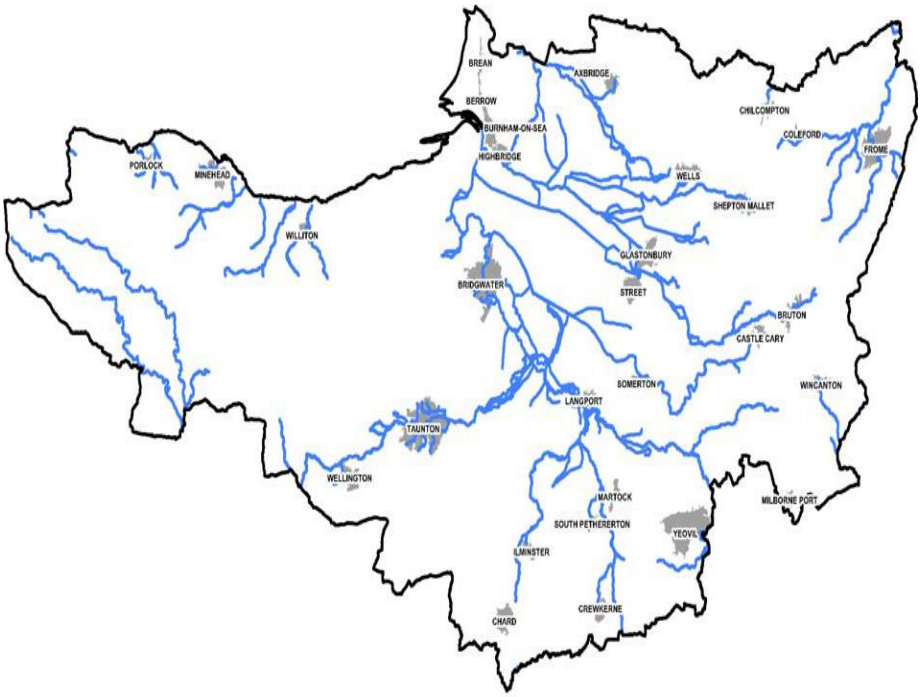
Summary

Flood risk management policy delivery in Birmingham is characterised by activities such as an institutionalised program of watercourse maintenance and inspections, the construction of hard engineering defences in the aftermath of floods and the modification of watercourses. These activities are implemented with the aim of keeping the waterways within the city limits as free flowing and unimpeded as possible. Another prominent feature in Birmingham is the utilisation of major developments as avenues for not only improving the drainage infrastructure in brownfield sites but also as a means of embedding adaptation and attenuation measures such as SUDS and green roofs. All of these are taking place as BCC increasingly assumes a more prominent role in the management of floods within the city limits. This is clearly manifest in the delivery work undertaken by the Council on the River Rea which should normally be the preserve of the EA.
However it is important to note the underlying values which BCC flood risk management policies symbolize. It can be observed that these values are expressed through key policy narratives in Birmingham such as the need to maintain drainage and flood defence infrastructure which is in line with the principles of riparian owners being responsible for their watercourses. It can be argued that BCC has built upon this responsibility by improving its partnership working with different stakeholders and also welcoming the clearer and indeed stronger role demanded of the LLFAs in the FWMA (2010). In addition, the planning policies in the Core Strategy highlight the need for development, needed to promote the growth

agenda and yield regenerative benefits to the city, to serve as a basis for addressing flood risk problems on brownfield sites. Hence it can be seen that the components of flood risk management in Birmingham are being promoted under the narratives of the growth agenda, watercourse maintenance and a clearer and stronger role for LAs in flood risk management.

Somerset Flood Risk Management Policies

Defence management policies: In the interpretation of the defence management discourse of the flood risk management paradigm in Somerset, it is impossible not to take into account its unique topography and environment. The Somerset landscape is characterised with various rivers such as the Axe, Brue, Cary, Parret, Sheppey, Tone and Yeo as can be observed in the figure 6.2. In addition to these, the Somerset Levels make up a substantial part of the physical geography. The Levels cover an area of land that lies below the mean high water mark and thus is constantly in danger of being flooded; perhaps this is the reason land drainage has been conducted there since medieval times (Somerset County Council, 2013). The threat posed by flooding is framed not only as a threat to the lives of human beings and their properties but also a threat to the natural environment. Hence it comes as no surprise that there are various flood defence solutions which are carried out by different flood management organisations within the Somerset area. These range from the sluice gates and pumping stations which the IDBs utilise to manage the flood risk on the Levels, thus protecting 30 000 properties, to the annual weed cutting and watercourse de-silting carried out by the Taunton Deane Borough Council (Somerset County Council, 2010; Somerset County Council, 2013).





	Main Rivers

Figure 6. 2 Designated Main Rivers in Somerset (source: Somerset County Council, 2010 p 14)

While the EA is responsible for managing the flood risk from main rivers and the sea, surface water, ground water and ordinary water course flooding is defined as 'local flooding' and hence is the focus of SCC in response to the FWMA (2010) (Somerset County Council, 2013). However the framing of watercourses as drainage conduits is still pervasive and thus local flooding is described in the following way:

'Without the sea defences and effective arterial watercourses, many of the local watercourses would be unable to discharge, resulting in wide areas becoming flooded'

(Somerset County Council, 2013 p 8)

This framing reinforces the view that nature can be controlled and as a result of towns such as Taunton and Bridgwater being constantly at the risk of flooding, SCC has designated itself as the 'flood risk reduction service provider' (Somerset County Council, 2010 p 5). Hence the provision of effective arterial watercourses to the public is viewed as part of the general services provided by LAs alongside others such as education and sanitation. The provision of this service is important because the consequence of not doing so results in damage to property and infrastructure, and in significant stress and disruption to people's lives and wellbeing (Somerset County Council, 2010) or as a drainage official in Sedgemoor District Council put it, 'to serve the residents as best we can, to provide capital schemes to alleviate flooding'

(Sedgemoor District Council Interview 10/06/12)

Serving the residents of Somerset includes the following flood defence practices:

'All highway-related service requests are managed through the Team together with highway service delivery. Specifically to surface water drainage, this includes cyclic gully emptying, jetting works, new drainage, surveys and so on'

(Somerset County Council, 2013 p 1)

Some of these flood defence services, such as highways maintenance, are statutory duties of SCC; however most of the flood defence powers are permissive, as with the rest of the UK. In order to justify the provision of these services, the flood defence activities of the risk management authorities have been framed as investments in the local economy. In SCC Floods and Water Management Strategic Business Plans, part of the primary purpose is that,

'The County Council should take a benefit/cost approach to everything they do to make sure the costs of plans and investments are well justified'

(Somerset County Council, 2010 p 25)

Thus in the Local Development Framework produced by Sedgemoor District Council, the need for flood defences in Bridgwater was framed as fundamental to the survival of the town:

‘Without the necessary flood defences in place, much of Bridgwater will be at risk of flooding and investor confidence and property values will decline within the town as a whole’

(Sedgemoor District Council, 2009 p 2)

However the meaning of the flood risk management paradigm to SCC is manifest in the changes in the institutional practices for the provision for future flood defences and the implications. This is because Somerset, being a largely rural and sparsely populated county, would attract fewer defence schemes if these are solely appraised using Benefit-Cost Ratio (BCR) analysis. The BCR disproportionately favours large population centres. As a rural county which must invest limited resources and achieve maximum benefit for every pound spent (Somerset County Council, 2013), the flood management priorities were schemes that would, ‘Contribute to achieving the objectives of the local strategy, protect homes from internal flooding, in particular where flooding has occurred before, contribute to the reduction of an established flood risk based on robust data and evidence, offer an opportunity to secure funding contributions from other sources to maximise investment’ (Somerset County Council, 2013 p 18)

However some changes, such as the priority given by central government to schemes that would attract external or private funding, are viewed as unfair by SCC and have implications for the provision of flood schemes. This is paradoxical because the FWMA (2010) is widely seen as empowering LLFAs to become more active in the management of floods. This concern was articulated by the drainage officer for SCC:

‘cost-benefit sort of it would now be distorted by any external funding that it can attract because under the new funding regime, any external funding is effectively distorting that cost benefit whereas previously it never used to no matter who was paying for it, the cost benefit was on the total cost and the total benefit but now it seems as though the cost benefit analyses is going to be the cost minus contributions against central government funding part of it’

(Somerset County Council Interview 30/11/2011)

Therefore it can be observed that the provision of flood defences in Somerset is framed as the provision of public services, services that prevented the adverse effects of local flooding.

Hence it is unsurprising that schemes such as ‘adopt a gully initiative’ or the ‘Parret Surge Barrier’ are framed as solutions to the flooding problems. As a result of not being a statutory duty for the LAs but a service that needed to be provided nonetheless, the justification for the provision of flood defences is framed as investments based on the expected benefits of not only protecting the public but also encouraging investment in Somerset.

Planning policies: The implementation of planning policies for flood risk management in the Somerset area is bound to be somewhat disparate and fragmented. Although SCC is a planning authority its responsibilities are dissimilar to district and borough councils as its planning responsibilities apply only to minerals and waste issues and not residential planning and development control (Somerset County Council, 2013). Hence the planning and development control policies, the local development frameworks, are implemented by the various District and Borough Councils within the Somerset area. This means that local development control and local planning policies in Somerset will be implemented through a range of Core Strategies, Supplementary Planning Documents and SFRAs produced by the District and Borough Councils. Thus flood risk development control and flood risk planning will reflect the local policies adopted and implemented by the LPAs in the District and Borough Councils in Somerset.
Nonetheless there seems to be a defined framing of the problem as well as how it should be solved, as evidenced by SCC:

‘Planning policy aims to prevent new development from increasing flood risk. Development can provide opportunities to address surface water flooding, through the use of measures to reduce flood risk, such as sustainable drainage systems. Development can be designed to make it resilient to the impacts of flooding, which can help to reduce the risks to the buildings and their occupants. This ensures that natural drainage routes are not impeded.’

(Somerset County Council, 2013 p 10)

The absence of development planning and control policies by SCC leaves a policy conundrum regarding the implementation of planning policies in Somerset. The FWMA (2010) has designated SCC as a SuDS Approval Body (SAB). This is crucial as SuDS embody the adaptation approach to the flooding problem. As a result of the precautionary approach espoused in PPS 25, it is inevitable that the principles of development control implemented by the LAs will result in contending values espoused by both the central government and LAs in terms of planning. The contending values and agendas were

highlighted in both the Supplementary Planning Documents and the Core Strategy document produced by Sedgemoor District Council:

‘However PPS25 aims to ensure that all new development is not at a high risk of flooding over the lifetime of the development. In more rural areas there may be the potential to remove development from flood risk by either rebuilding it or relocating it elsewhere. In Bridgwater this option is often not practical or desirable in spatial planning terms.’

(EA and Sedgemoor District Council, 2009 p 12)

This reveals the split between the need to manage the risk from flooding as a result of proposed developments as well as an appreciation of the role developments play in the growth of cities and towns. This particular policy gap is representative of the planning discourse of flood risk management. In the context of the Somerset area, although planning policies are implemented by the district councils and to some extent, SCC, there are narratives which direct the path of policy implementation. These are the need for sustainability, the need to regenerate cities and towns in Somerset as well as the need for towns to adapt to the effects of climate change. Unpacking these narratives reveals the drivers for planning policies. As mentioned earlier Somerset is a largely rural council with an ageing population and other contributing issues include the apparent shortage of affordable housing in Somerset, particularly in West Somerset where ‘the current need for affordable housing is well in excess of the total number of additional new dwellings required by the Regional Spatial Strategy to 2026’ (West Somerset Core Strategy, 2010 p 6).
Hence it comes as no surprise that the planning documents are dominated by the themes of regeneration and re-development, particularly in relation to the main urban centres such as Bridgwater:

‘Bridgwater will be regenerated, diversify its economy and increase self-containment, while reducing the risk of flooding, by providing for the re-use of redundant employment sites improving the town centre’

(EA and Sedgemoor District Council, 2009 p 6)

Regeneration has been framed as an opportunity to provide the necessary infrastructure not only for the growth of urban and rural areas in Somerset, but also for the management of future flood risk:

‘The sustainable regeneration of Bridgwater can only be achieved if flood risk is managed in the town, and appropriate flood management infrastructure provided. This is supported by national, regional and local planning guidance’

(EA and Sedgemoor District Council, 2009 p 42)

It is important to examine how national planning policies are permeating into local planning policies within the Somerset area as it is within the context of local narratives that the national policies are implemented through local planning. As directed by PPS 25, the LPAs within Somerset have conducted the SFRAs in order to identify the areas within their respective administrative boundaries that are at risk of flooding and the respective categories of flood risk have been assigned. In addition to this, in view of the urbanised nature of Taunton, SCC has developed a SWMP in accordance with the PPS 25 (Somerset County Council, 2013). What can be observed is that different approaches have been adopted by the LPAs in Somerset.

This can be illustrated by detailing and contrasting the policies adopted by Sedgemoor District Council and other LPAs in Somerset. The LPAs except Sedgemoor have largely conformed to the precautionary approach espoused in PPS 25. Hence developments on floodplains and other flood risk areas are mostly prevented through the application of the sequential and exceptions tests. In addition to encouraging the development of brownfield sites, LPAs are also considering development on greenfield sites particularly in Yeovil and Bridgwater (South Somerset Core Plan, 2010; Sedgemoor District Council, 2011), perhaps because Somerset is largely rural. This precautionary approach was articulated in the SFRA prepared by South Somerset District Council:

‘Unless absolutely necessary, flood defences should not be used as an option to make development within higher flood risk areas permissible due to the risks of flood defence failure’

(South Somerset District Council, 2008 p 62)

The exception to this is Bridgwater. Even after the SFRA in which the sequential and exceptions test were undertaken, it is widely accepted that future developments will be located in flood risk areas and will need flood defences as a result of the current defences

not being up to standard. This contradicts the approach emphasized by the South Somerset District Council. The reason given for this is simply that there is no other available land to develop:

'if we want to keep Bridgwater as a viable major settlement and keep it growing as an economy we have to develop on the flood plain, that's their conclusion they've done the test, the sequential test to show that's their only real option'

(EA South West Interview 09/03/12)

However as a result of favourable geological conditions, the use of SuDS is viewed very positively by the LPAs in Somerset. This is also in line with the adaptation measures espoused in the PPS 25 and the FWMA (2010). It is accepted that additional developments will increase the rate of run off especially in urban areas such as Taunton. SuDS are an appropriate approach to deal with the residual flood risks especially within the context of the removal of the automatic right of new developments to be connected to public sewers. In terms of the institutional practices for the provision of SuDS, the SCC has been designated as the SAB. This means different things to the planning authorities in Somerset. To the district and borough councils, this designation has been met with a sense of additional uncertainty in the planning process:

'The SuDS is going to come in October or next April depending on whether the government decides there is a good time to recommend that. That's going to include the SAB, that's going to be involving the planners. The planning and the SuDS process are going to run parallel to some degree before the overall approval. There are a lot of unknowns at the moment and it could be that the District Council's drainage functions could come down to very limited or it could stay the same, very depressing'

(Sedgemoor District Council Interview 10/06/12)

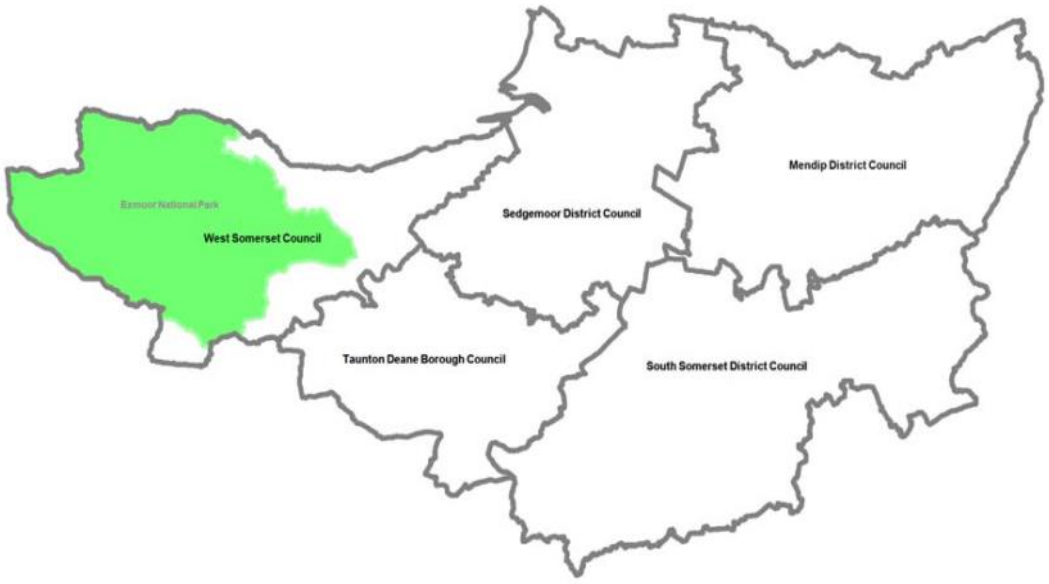
In contrast to this SCC views the SAB role as part of the local strategy for flood risk management, in line with the increased local involvement of LLFAs in the management of flood risk. This was confirmed by the drainage officer of SCC in response to discussion over the translation of the FWMA (2010) into local policy:

‘In the future when the SuDS approval body role, when that gets enacted, it’s not yet, we don't know when it would be but then that would be another major part of the work’

(Somerset County Council Interview 30/11/11)

Therefore it can be seen that as a result of the institutional arrangements of LPAs in Somerset, central government planning policies are being implemented differently by the different LPAs in Somerset. This is manifest in the approach adopted by Bridgwater in terms of planning and development control for flood risk management. However development policies are driven by regeneration and growth agenda narratives which dominate the Core Plans produced by the LPAs in Somerset. Lastly, the contrasting understanding of the SAB held by the District Councils and SCC is clear. These differences in interpretation of planning policy will have implications for the implementation of flood risk management in the Somerset area.

Bureaucratic policies: The Somerset area is a perfect case in point in detailing the mosaic of risk management authorities responsible for managing ‘local flooding’.





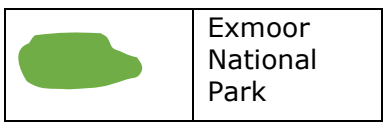


Figure 6. 3 District and Borough Councils in Somerset (source: Somerset County Council, 2010 p 16)

Figure 6.3 shows the different LAs and their administrative boundaries in Somerset. Flood management in Somerset is carried out by the district and the borough councils who are the LPAs and also responsible for the management of ordinary water courses, though planning responsibilities in West Somerset Council are shared with Exmoor National Park. Almost uniquely for LLFAs, except in the Anglian region, IDBs, as shown in figure 6.4, have a very prominent role in the management of water levels in Somerset with the aim of reducing the risk of flooding and protecting both agricultural land and homes (Somerset County Council, 2013). Another defining feature of water governance in Somerset is the split responsibility of sewerage services between Wessex Water and South West Water. Therefore responsibility is divided between different levels of government and across public and private organisations, resulting in different approaches to the management of different types of floods. Perhaps more consequentially, this allows for multiple interpretations or meanings of the FWMA (2010) by the various policy actors in Somerset. This view was expressed by SCC flood risk manager:

'I think up till now the districts have looked at their problems and decided on how to tackle theirs, the EA have looked at theirs completely independently'

(Somerset County Council interview 30/11/11)

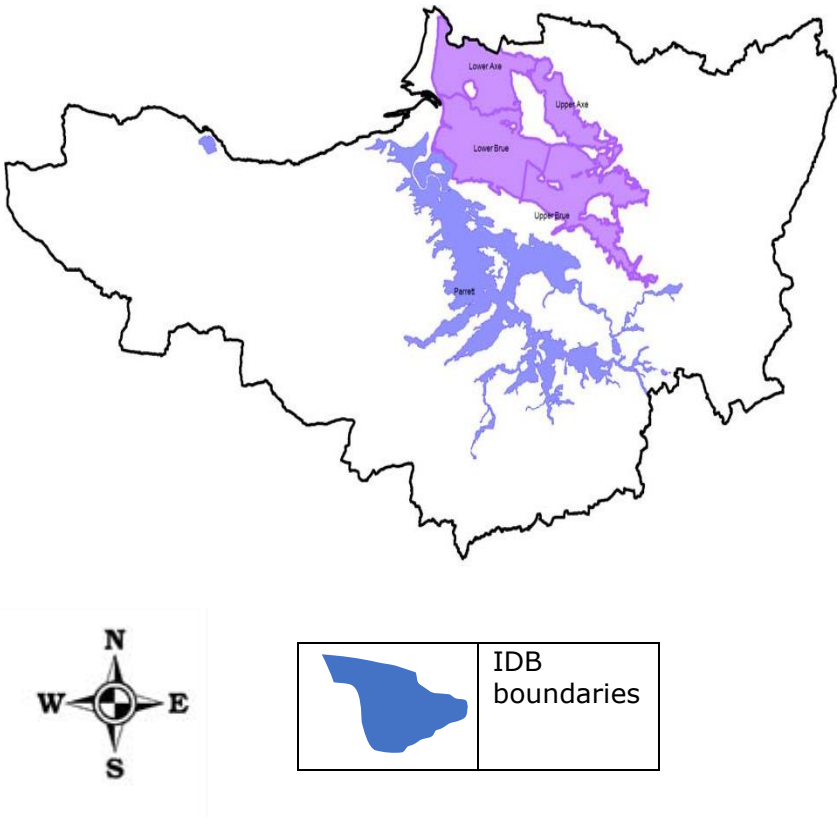


Figure 6. 4 Internal Drainage Board Areas (source: Somerset County Council, 2010 p 20)

The Pitt Review into the 2007 floods recommended, and the FWMA (2010) codified, LAs taking a leadership role in the management of floods in their administrative areas. The designation as a LLFA has implications for SCC. Prior to the designation, SCC never had a flood risk management team, and the flood management responsibilities for the area were carried out by the Highways Management Team and the Countryside and Coast Team (Somerset County Council, 2010). What this highlights is the apparent absence of a structured approach to flood management. When asked about the absence of flood risk management plans, SCC flood manager stated,

'The county didn't have any flood risk management responsibilities that's why so they weren't required to. It was EA for main river and coastal, districts for ordinary water courses, surface water was nobody (laughter) usually the districts picked it up as part of the ordinary water courses because the council in their remit it wasn't something that they were allowed to do, they didn't have the powers to do it'

(Somerset County Council interview 30/11/2011)

When pressed further, the SCC flood manager elaborated on the flood management delivery mechanism in Somerset

‘the districts, it was always that the local flooding was up to them but some of the districts did works and some didn't you know even though they had the powers, they disbanded all their drainage teams and things some kept them, which is why we are starting all these things we’ve only come into existence’

(Somerset County Council interview 30/11/2011)

What is interesting to note is that some of the districts within the Somerset area have further subcontracted out their flood management functions to IDBs. This is as a result of the aforementioned staff cuts and general cut backs that LAs are currently undertaking. This is the case for Sedgemoor Council, and when the drainage manager was asked about the management of floods and their relationship with IDBs, he stated,

‘I think IDBs are quite well set up in my opinion, districts are losing resources and staff hand over fists really especially districts compared to the new county arrangement but the IDBs aren’t really cash restricted because they get their money from the districts and from the landowners because they've got to do a job and if they don't do their jobs then people will get flooded. So they are not cash restricted so much, they don't raise money, they've got more resources than most districts. For our area it’s good news from that aspect. Where everyone else is being cut back, theirs seems to be pretty standard or going up a little bit’

(Sedgemoor District Council Interview 10/06/12)

This has implications for flood risk management as IDBs only manage floods in their respective areas and hence if IDB areas do not coincide with other LA districts, this results in a somewhat uneven approach to the management of floods in Somerset.
However making SCC assume a leadership role, as set out in the Pitt Review and the FWMA (2010), seems to be a panacea to the seemingly uneven approach to flood management in Somerset. Therefore in anticipation of the new LLFA role, SCC has responded by establishing a flood management team for the first time and also hiring five new staff for the role (Somerset County Council, 2010). However what can be observed in SCC’s governance is an emphasis on a strategic approach. This is being deployed by focusing on building and

sustaining partnerships with the various stakeholders in the Somerset area with the aim of fostering a cooperative governance environment. When asked how SCC would use the tools available to carry out flood risk management in the context of multiple stakeholders, SCC flood risk manager responded,

'it's got to be the strategic approach because that's the way we are going to get the best outcome out of working together if people are trying to look after their own problems in isolation it's not going to be as effective they won't be able to afford to solve the problems that they used to be because there is going to be less money so we have got to work together to come up with smarter ways of working to achieve the same outputs for less money as it were'

(Somerset County Council interview 30/11/2011)

In a further demonstration of the policy planning role anticipated by SCC as LLFA, the drainage manager of the Taunton Deane Borough Council articulated the principle of devolving some flood risk management responsibilities down to the District and Borough Councils in response to the implications of the FWMA (2010) for its flood management responsibilities:

'It hasn't as yet changed a great deal because the County Council as you would probably know are now the LLFA and they are taking on obviously some of the responsibilities under the Act but some of them they are trying to see whether they can devolve them back to ourselves that's mainly on the section 25 you know, the responsibilities for ordinary water courses, and the County Council have contacted Taunton Deane to see whether they would be prepared to carry on and do that duty on their behalf but the decision has not yet been made by Taunton Deane'

(Taunton Deane Council Interview 08/06/12)

Therefore SCC interpret the leadership role espoused in the FWMA (2010) as a more devolved form of governance with SCC taking a more strategic role and this is its main governance narrative. The flood risk management role envisaged by SCC could be summarised as the investigation of local flood risk and notifying the responsible risk management authority on that risk. In specific instances where schemes can be brought forward, where the cost benefits ratio is favourable, SCC would undertake schemes.

However in a further manifestation of the devolved nature of governance in Somerset, SCC is encouraging its district councils to utilise tools such as the Community Infrastructure Levy, wherein LAs seek contributions from developers for the construction of flood defences. This is particularly crucial to the development of Bridgwater (Sedgemoor District Council, 2009). SCC has been encouraging the formation of Community Flood Action Groups especially in Pitcombe. This is particularly important in the provision of property level protection schemes (Somerset County Council, 2013).

Environmental management policies: Somerset has a unique landscape dotted with SSSIs, AONBs, SACs, Ramsar sites, and other numerous conservation areas. In documents produced by LAs in Somerset, this unique landscape has been characterised as of high environmental quality and of exceptional environmental interest and two thirds of West Somerset is covered by the Exmoor National Park (South Somerset District Council, 2008; West Somerset District Council, 2010; Sedgemoor District Council, 2011). With regard to flood policies, an appreciation of the uniqueness and international importance of the natural environment in Somerset is an important factor. This has resulted in a somewhat paradoxical view of the effects of flooding. On one hand, it is seen as beneficial to the natural environment, maintaining habitats, while on the other hand it is recognised as having potential detrimental effects on aquatic and riparian habitats (Somerset County Council, 2010; Somerset County Council, 2013)

As noted earlier SCC has a Countryside and Coast Team which serves as a conduit through which ideas and policies from environmental groups permeate into the flood management policies. This is evidenced in the flood management business plan SCC produced in response to the FWMA (2010). Listed as one of the actions to be undertaken was to:

‘Identify opportunities to work with environmental organisations to integrate flood management with environmental management’

(Somerset County Council, 2010 p 22)

However and perhaps an indicator of the importance of pursuing an environmental approach to flood management, the action referred to above was ranked as medium on the scale of priorities in SCC flood management business plan. This is not to say that there are no examples of collaboration between SCC and environmental groups. Perhaps the most important is the scheme on the Steart peninsula which interestingly has been framed as a

flood protection scheme. The Steart scheme is protecting communities in Sedgemoor by removing the existing flood defences which have come to the end of their useful life and conducting a coastal realignment, creating over 203 ha of intertidal habitat and thereby providing an opportunity to enhance the environment as well as protect the surrounding communities. The significance of schemes such as the Steart cannot be overstated in Somerset as it is a largely rural county with a very low population density and hence unlikely to attract much funding from central government based on the sole criterion of economic cost benefit analysis. However the habitat creation component of the DEFRA outcome measures (EA, 2010) has provided an avenue for schemes to be brought forward in Somerset. The drainage manager in Sedgemoor Council alluded to this while justifying the Steart scheme:

'There wasn't sufficient cost/benefit there to provide more coast protection but there was money there for habitat creation or change of habitat I suppose, I suppose it's almost a government policy to provide habitat creation on this type of scale and there's money there to do that but we can't afford coastal defences anymore obviously in some areas but again it's all down to resource and cost benefit isn't it?'

(Sedgemoor District Council Interview 10/06/12)

In addition to the Exmoor National Park, situated within West Somerset Council, other organisations, especially environmental groups such as the National Trust and Somerset Wildlife Trust manage nature conservation sites in Somerset. As a representative of Somerset Wildlife Trust put it, the aim and policy goals involve 'not just nature conservation in its own right but also an additional connection that we want people to value and enjoy nature' (Somerset Wildlife Trust Interview 13/06/12). Hence the significance of this view of an environmental approach to flood management is manifest in land restoration projects carried out by the Somerset Wildlife Trust with the aim of:

'Trying to create the wildlife habitats that are linked and interact with the surrounding water system So in peak flows we would have water coming in from the rain bed system for example which may be carrying a high silt and perhaps high phosphates as well…. hopefully the water we release back into the system will be of better quality. So it's mainly a water quality argument and a fish habitat argument it deals with a major part of the WFD in our area but you could also make the flood risk argument as well.'

(Somerset Wildlife Trust Interview 13/06/12)

The prominent presence of these groups in Somerset, as evidenced in partnerships such as Somerset Local Nature Partnership, the Somerset Biodiversity Partnership and the Somerset Water Management Board as well as the duty on risk management authorities to promote habitat conservation and creation, thus provide opportunities to cooperate and undertake multi-benefit schemes, hence making projects such as that at Holnicote feasible:

'I should mention that the project, all three projects including Holnicote were multi-objective projects, so while the key driver is flood management, reducing flood risk, it's also pretty much about other ecosystem services say water quality, soil conservation, nature conservation, public conservation and so on'

(National Trust Somerset Interview 11/12/12)

It can be observed that the environmental approach to flood management in Somerset is influenced by factors such as the rural character of the area as well as an in-depth appreciation of the contribution of the natural environment to the character of Somerset. The duty on risk management authorities to promote nature conservation has reinforced this view and even organisations such as IDBs, whose activities can be seen as being in conflict with some of the goals of conservation, have changed their approaches to land drainage. Indeed as a representative of the Somerset Drainage Board remarked:

'Because in Somerset in the moors we have probably 75% of SSSIs from a low land moor areas so we have to be very aware, we employ our own ecologist within the Drainage Board to advise us on how to carry out our work without compromising hugely the wildlife and the ecology in the Somerset levels'

(Somerset Drainage Board Interview 23/08/12)

Summary

Flood risk management in Somerset is characterised by activities such as watercourse maintenance, gully emptying, weed cutting, de-silting, tree management, mowing of bank-side vegetation and structural inspections. These are characteristic of the need to keep 'local flooding' away from interfering with the lives of Somerset residents. However the planning policies in Somerset are not coherent and unified as a result of SCC not being a unitary

authority. Therefore development control policies within SCC convey a degree of inconsistency most notably in the difference in the planning policies adopted by Sedgemoor Council in contrast to the other LPAs in Somerset. While other LPAs generally adhered to the precautionary principles espoused in the national planning policies towards flood risk, Sedgemoor Council views development on areas of high flood risk as an opportunity to invest in flood risk management infrastructure. SCC is involved in partnerships with other conservation organisations in the quest of possibly reducing flood risk through the creation of habitat. This has resulted in coastal realignment and habitat creation schemes such as the Steart project.

The underlying values which these policies embody provide an additional insight into better understanding the basis for flood risk management policies in Somerset. The watercourse maintenance activities undertaken by SCC are consistent with the axiom of the Council being the flood risk reduction service provider. However this is not to imply that SCC intends to be involved in the day to day delivery of flood risk reduction rather the Council views its LLFA role as a strategic coordinator of flood risk management policies while delegating and devolving the delivery to the various risk management authorities in Somerset. This is manifest in the partnership arrangements such as the Somerset Water Management Board which is involved in sustainable land use management in Somerset. This also creates conundrums and uncertainties for the various risk management authorities within Somerset who might have a different interpretation of the FWMA (2010).

Glasgow Flood Risk Management Policies

Defence management policies: Glasgow has a very long flood history and perhaps of more consequence it also has a very long history of defending itself against both tidal and fluvial flooding. Indeed extensive river engineering works have been reported on the River Clyde since the mid-18th century. These include the deepening of the river, construction of quay walls and raising of adjacent land. The absence of overbank flooding in the centre of Glasgow over the past century has been attributed to these flood defence works (Glasgow City Council, 2007). The watercourses within Glasgow city limits have been heavily modified with between 85-90% of the water courses culverted (Glasgow City Council Interview 25/07/12). However this does not in any way suggest that the risk of flooding is non-existent, and there have been devastating incidents in 1994 and more recently 2002.
Yet it is interesting to note how the framing of the problem prescribes the solution to the flooding. This framing views flooding events as hazards about which it is the moral duty of

LAs to help members of the public who cannot help themselves. Although it is the responsibility of the individual home owner to defend themselves and their property, there are some flooding incidents with magnitudes so great that an individual response would be inadequate, hence the need for LAs to intervene and provide protection to those at risk of flooding. This is in line with the Flood Prevention and Land Drainage (Scotland) Act 1997 which places a statutory duty on LAs to reduce flood risk by maintaining watercourses. This view was further articulated by a member of the Land and Environmental Services team at the Council:

'If you tell people every two years they will have water up to their front window ledge it's not right so these are the big schemes where people can't deliver themselves and the LA are provided with an element of funding through the normal funding process in Scotland for flood risk management, we bid every couple of years for a series of things as a council'.

(Glasgow City Council Interview 25/07/12)

The provisions of flood defences are framed as society's response to the plight of some of its members who have been affected by floods. This is underpinned by the moral argument to help those who cannot help themselves as flood defences are very capital intensive and expensive. However the approach taken by the council follows a somewhat dual track. This was confirmed by a member of the drainage team at the Council who framed the approach as strategic as well as practical activities to reduce flood risk. The practical activities include practices such as watercourse and flood defence asset maintenance which are carried out to enable faster flow for water in watercourses within Council limits in order to reduce flood risk. These activities are carried out by the watercourse maintenance team in the Council.

'Our inspections involve things like CCTV surveys, pipe repairs, culvert cleaning'

(Glasgow City Council Interview 25/07/12)

The strategic activities involve carrying out of flood defence schemes in order to reduce the risk of flooding within Glasgow:

'We also have, our work its more the strategic element which we are more involved in looking at forward planning sort of situation for the Council which looks at things like the White Cart flood prevention scheme, don't know if you've heard of that one, which is a flood

prevention scheme that's worth £53 million prevention scheme delivered in the White Cart Water. We've also got other projects like Camlachie Burn Overflow which is a £13 million flood bank pass channel'

(Glasgow City Council Interview 25/07/12)

It must be noted that whilst these schemes are being led and promoted by GCC, they are being delivered through the MGSDP (MGSDP, 2011). The strategic approach has resulted in the construction of expensive hard engineering schemes. In addition to the White Cart and Camlachie Burn overflow schemes, the River Clyde Flood Management Strategy, conducted to investigate flood risk from the River Clyde which drains the Glasgow area as well as surrounding LAs, concluded that:

'The provision of direct defences has been considered the most suitable and sustainable strategy for protecting the existing areas identified at risk of flooding in Glasgow and other neighbouring local authorities'

(Glasgow City Council, 2007 p 5)

However, as with the rest of Scotland, the provision of flood defences is subject to, among other things, a favourable cost benefits ratio. It is interesting to note that the Council's interpretation of the change in paradigm to sustainable flood management is manifesting in a change in practice in the watercourse and flood defence maintenance program and the provision of flood schemes. Therefore concepts such as the assessment of watercourses with the view to identifying areas of the greatest risk have been introduced into the practice of the watercourse maintenance team of the Council:

'A cyclical watercourse cleaning programme has been implemented along the watercourses paying particular attention to known trouble spots. Primarily, this is to remove the rubbish, vegetation and debris which cause blockages at sensitive locations identified from an ongoing assessment. Where isolated blockages or maintenance works are identified during the assessment process, remedial measures are either implemented or prioritised in line with available resources'

(Glasgow City Council, 2009 p 4)

The flood defence practice of watercourse maintenance is therefore being carried out in a proactive manner which emphasizes the identification of risk with the aim of targeting the Council's response. In addition, the Glasgow Surface Water Management Study meant to provide a strategic direction to drainage improvements across the metropolitan Glasgow area (MGSDP, 2012). So that the most sustainable choices are made between managing surface water at source, improving sewerage capacity, improving watercourse capacity and managing surface water above ground in different parts of the area is also an illustration of the risk based approach to flood governance.

These policy actions undertaken in Glasgow are in line with the emphasis on the assessment and plans of flood risk espoused in the EC Floods Directives and transposed into Scottish law as the FRM (Scotland) Act 2009. These principles also apply to other aspects of water management undertaken by the Council in terms of the appraisal of flood management schemes. This was articulated by a member of the Land and Environmental Services team at the Council:

'Some of the concepts about managing water, is it better to flood a football field down the road? Is it better to flood someone's house? Is it better for the football field down the road to flood every five or ten years? Then we have to clean it up, the cost of even, the cost of even the top soil of the football field may be £20-£30 000 compared to the cost of the houses £300-£400 000, it's a no brainer'

(Glasgow City Council Interview 25/07/12)

Thus the provision of flood defences, and perhaps more importantly the maintenance of flood defence assets and watercourses, are seen as crucial in reducing the risk of flooding. However the practices undertaken to carry these out have been modified by the pervasive adoption of principles of risk assessment. As a result, this is seen as the best approach in the allocation of scarce resources to reduce flood risk. Nonetheless not everyone at risk would secure flood defences as a result of not meeting the benefits cost criteria. However as a result of improved knowledge of the flood risk, other forms of defence such as flood resistance and resilience measures including property level protection in the form of temporary and removable flood barriers and flood pumps can be pursued (Scottish Executive 2004b). This promotes an ethos of proactive approaches to the management of flood risks, not just reacting after incidents have occurred:

‘If you also look at the flood risk management act and you look at the hierarchy and the first element of protection should be the individual so we also encourage local things like flood gates, you should be doing that right away.’

(Glasgow City Council Interview 25/07/12)

Planning policies: Flood risk management planning policies in Glasgow cannot be divorced from the regeneration policies of the city in general and the River Clyde corridor in particular. It is striking to note how the policy problem is framed *vis-a-vis* the threats to the development of the city. Therefore contrary to national planning policies, the flooding problem has been characterised in the following way:

‘Glasgow’s lack of capacity in its surface water drainage infrastructure is part of a wider national problem caused by decades of under investment. This is currently forcing the agencies with statutory responsibilities to refuse development that would impose additional infrastructure burdens on the system. This represents a serious threat to the ability of the City to progress its development and regeneration programmes and achieve the environmental, economic and social inclusion benefits they offer’.

(Glasgow City Council, 2006 p 8)

What can be observed from the statement above is the association of the development and regeneration of the city with the achievement of the three pillars of sustainable development. Hence the constraining ability of the threat of flooding is framed as the policy problem to the narrative of development and regeneration. The origin of the regeneration narrative is rooted in the history of the industrial age of Glasgow. The Clyde corridor was characterised by various industrial activities such as ship building and trading and thus this gave the city of Glasgow its character and its link to the River Clyde (Glasgow City Council, 2003). As these industries gradually declined by the 1970s, the importance of the Clyde corridor and its significance to the city seemed lost. However the planning policies of the city of Glasgow have subsequently emphasised the regeneration of the Clyde waterfront, as a way of recreating the character of Glasgow.

Investments and developments, framed as regeneration, in hitherto derelict areas are being viewed as opportunities to improve or at least address the drainage problems which have suffered under investment for decades. This view was further reinforced by a member of the

Council drainage team when asked for the reasons for the Council on embarking on some of its capital schemes:

'These are council projects which Glasgow City Council have promoted and delivered which also tie into facilitating our strategy of flood reduction, encouraging economic growth in terms of opening up areas for development because we have removed the flood risk or we've treated drainage capacity by doing some of these projects'

(Glasgow City Council Interview 25/07/12)

This is unsurprising as this theme is pervasive in planning policies such as the Glasgow City plan, the flood prevention and land drainage policies of the Council and the River Clyde Flood Management Strategy (Glasgow City Council, 2003). The resulting policies manifest in the widespread adoption of adaptation measures such as the adoption of SuDS, incorporating freeboard allowance in flood management schemes as well as the promotion of water resistant construction materials. This can be attributed to the steadfast determination of the Council to pursue policies for the development of the Clyde waterfront:

'This approach will also enable the River Clyde to regain its position as a vital part of the city and help create a strong sense of place and a stimulating environment. People will then want to live in, work in and visit the River Clyde corridor, bringing vitality back to the waterfront'.

(Glasgow City Council, 2003 p 1)

The importance of redeveloping the Clyde is not surprising as it has been framed as the 'revitalisation of three hundred hectares of prime riverfront land' (Glasgow City Council, 2003 p 8). This is resulting in new housing, hotels and leisure and retail outlets replacing the industrial and shipping infrastructures of the past.
SuDS are framed as a key measure to reduce the risk of flooding. However rather than being viewed as an adaptation tool for the management of increasing flood risk, in line with the narrative of regeneration, it is viewed somewhat differently in Glasgow:

'It takes it down a new route but we are also building a development capacity SuDS that became a floods project, a water course rehabilitation project and an opportunity to create new development and actually open up brownfield derelict land because we actually developed something within the catchment'.

(Glasgow City Council Interview 25/07/12)

The use of SuDS is viewed as another means to promote the policies of redevelopment and has been referred to as the blueprint for further development. However in addition to the promotion of SuDS, other adaptation measures that are pervasive include the incorporation of freeboard allowance in flood management schemes to provide for the effects of climate change and more importantly increased flood risk from increased developments:

'Well the challenges in the eastern part of the city where that pipe was sized to accommodate new development. We dropped a 2.7m diameter culvert needed about 1.8m diameter, it was actually a tunnel so the cost from going from 1.8 just to deal with the flooding issues to 2.7 the big cost of digging the tunnel to equipment machines, the men, the shaft and stuff. We oversize things'

(Glasgow City Council Interview 25/07/12)

The planning policies of Glasgow City Council are dominated by the need to develop and recover the historical character of the city primarily through the redevelopment of the Clyde corridor promoted by a narrative of its regeneration. The need to develop in this area, which is at considerable risk of flooding, has thus promoted the need to adapt to the effects of increasing flood risk resulting from either climate change or the proposed developments. Thus it is not surprising to observe concrete policies such as the promotion of SuDS as well as surface water management plans by developers in developments in flood risk areas. It therefore follows that adaptation measures are viewed as opportunities to modernize the drainage infrastructure in Glasgow. This is embodied in the Glasgow City plan:

'There may also be scope to maximise the effectiveness of existing water infrastructure through the design of new development'.

(Glasgow City Council, 2011 p 56)

Bureaucratic policies: The management of flooding in Glasgow from an organisational point of view is an aide memoire of the number of organisations involved in flood risk management in Glasgow. This is surprising considering that as with the rest of Scotland, LAs are responsible for the management of floods. As a result of being the major urban centre in Scotland, the Council works very closely with Scottish Water and SEPA. However the

approach taken by the parties in the working relationship is a result of the national policies as well as factors unique to events in Glasgow. These national policies include the requirements for councils to adopt a proactive approach to flood management by publishing records of watercourse maintenance activities. The implementation of this national policy directive is very instructive as revealed by a member of GCC Land and Environmental Services team:

'We've got the Cart scheme where we've got 10 contracts set up where the streams are checked on a regular basis and if we get a weather warning we've got contracts with the Met office. So if there's heavy rain forecast, it'll automatically get to the contractor and he will go out on the day of the heavy rain to do a double check'

(Glasgow City Council Interview 25/07/12)

What is observed is the use of contractors in executing the Council's watercourse maintenance and flood defence functions. This reveals the prevalent view of new public management which is promoted by central government in Scotland as evidenced by the national policy of efficient government. This practice is also manifest in the use of external experts in the preparation of policy documents such as the River Clyde Flood Management Strategy (Glasgow City Council, 2006; Glasgow City Council, 2011) as well as capital schemes such as the Camlachie Burn Overflow (Glasgow City Council, 2009). Another key manifestation of new public management principles is demonstrated in the conditions under which LAs request funds from central government:

'So say we're doing a £10million scheme, we need to make a bid to the government and they work out from the package available to the LAs and we've got to demonstrate that back on the KPIs (key performance indicators)'

(Glasgow City Council Interview 25/07/12)

Thus the central government monitors the flood management activities of the LAs through practices that are aimed at achieving efficiency in public governance. Another striking feature of the bureaucratic view of flood risk management in Glasgow is the proliferation of FLAGs. These groups have been promoted by central government to aid the process of implementing planning policies however their sustainability is dependent on the constituent LAs. Perhaps unusually, the Glasgow area is dotted with four FLAGs, namely the Clyde Catchment, Upper Clyde, Kelvin and the Carts FLAGs. The participation of GCC in FLAGs,

which cross-local authority boundaries, indicates a collaborative approach taken by the Council in the resolution of flooding issues. In some ways this is not surprising considering that the rivers named above all have catchments which cover multiple LAs and if a strategic approach to flood management is indeed adopted then it is entirely logical to utilise a collaborative approach which brings stakeholders together. The stakeholders in the Clyde Catchment FLAG are SEPA, Scottish Water, SNH, Homes for Scotland, Scottish Enterprise and all eight LAs in the Clyde area (Glasgow City Council, 2009). This view was made clear in the Glasgow City plan:

'The local authorities within the Glasgow and the Clyde Valley Joint Structure Plan area have accepted the value of having a permanent strategic advisory forum at which matters relating to climate change, flood prevention and land drainage can be mutually explored by representatives of appropriate stakeholder organisations'

(Glasgow City Council, 2011 p 58)

Hence it can be seen that flood governance in Glasgow, and indeed Scotland, is implemented in line with new public management principles aimed at achieving efficiency in the management of flooding. A further manifestation of this approach to flood governance is the MGSDP which is a collaborative coalition involving actors such as GCC, Scottish Water, SEPA and Scottish Enterprise. Schemes emanating from this governance coalition include White Cart Water and the Camlachie Burn Overflow. In addition, the Scottish Government's annual report to parliament on the implementation of the WEWS Act and the FRM (Scotland) 2009 Act stated

'MGSDP continues to embrace a holistic approach to managing surface water, which will reduce flood risk whilst unlocking development potential, improving water quality and allowing residential areas to co-exist with the natural landscape'

(Scottish Government, 2011 p12)

This is unsurprising as capital schemes are viewed as public investments and watercourse maintenance activities are viewed alongside the provision of other public services such as education, health and sanitation. The use of key performance indicators by central government and the use of private sector contractors by the Council demonstrate the pervasiveness of new public management principles. Perhaps the most striking feature of

flood governance is the collaborative approach adopted by the Council in implementing strategic flood management. They participate in FLAGs which cover a wide range of issues. An illustration is the Clyde Catchment FLAG which is reported to meet annually and where issues such as the FRM Bill, the Glasgow Strategic Drainage Plan, RBMPs and the EU Flood Directives are discussed (Glasgow City Council, 2009).

Environmental management policies: Although Glasgow is the major urban centre in Scotland, a fifth of the land area is made up of green spaces. This is manifested in the approaches to flood risk management, especially natural flood management techniques. The presence of sites of nature conservation within the Council limits represents the conservationist view of environmental management. These are in line with national (Local Biodiversity Action plans) and international directives (Birds and Habitats Directives). The utility of the natural environment in reducing flood risk has been articulated by the Council as one key policy to be delivered in the Glasgow City plan:

'Maximising the use of green spaces for flood attenuation and sustainable drainage purposes to help deliver enhanced biodiversity'

(Glasgow City Council, 2011 p 30)

The implementation of this policy has involved a shift from maintenance of the natural environment towards a more proactive approach of enhancing as well as creating natural habitat. However this change in approach, the green network in Glasgow, was promoted most forcefully by the narrative of the expected effects of climate change alongside human health benefits:

'It's going to make central Scotland a place where people can move about between green spaces actively so they are getting exercise, they are getting the health and wellbeing benefits at the same time species can move between habitats instead of being in isolation which is going to become increasingly important if climate change continues as people think and species need to be able to cross the central belt and at the moment connectivity doesn't allow that greatly'

(SNH Glasgow Interview 25/07/12)

The green network in Glasgow, in line with the Glasgow LBAP, is expected to connect the green spaces within the city limits. The green corridor includes rivers, streams, canals, hedgerows, trees, railway lines, motorways and trunk roads and most of it is used for agriculture, horticulture, forestry and recreation (Glasgow City Council, 2011). Of note is that the utility of the connected green spaces is viewed not only for the benefit of the natural environment and the species therein but also the activities and well-being of humans as well. Therefore in addition to creating a wildlife corridor for migratory species,

'The basic idea is to provide better connectivity of green areas so that you've got more connectivity for wildlife, for people moving about actively, not in cars but cycling and so on horse riding and for the landscape quality'

(SNH Glasgow Interview 25/07/12)

The promotion of the green network in Glasgow is also part of the tool kit for the management of floods, in particular achieving natural flood management through the use of wetlands and other features of the natural environment:

'The City Council will bring forward a framework addressing the creation, maintenance, management and integration of SuDS into the green network'

(Glasgow City Council, 2011 p 32)

The promotion of the green network is undertaken by a network of organisations under the auspices of the Glasgow and Clyde Valley Green Network. This Partnership has been established to oversee the development of the green network (http://www.glasgow.gov.uk accessed 11/03/14). The Partnership brings together the eight LAs in the Clyde Valley as well as Forestry Commission Scotland, the Scottish Environmental Protection Agency (SEPA), Scottish Enterprise, Scottish Natural Heritage and the Glasgow Centre for Population Health.

Therefore the environmental discourse to flood risk management in Glasgow can be seen as embodied in the creation of the green network, promoted with the narrative of the effects of climate change as well as the need for species to have access to interconnected habitats. This has created an opportunity for the Council to implement multi-benefit natural flood management schemes while at the same time adhering to the single outcome measures of

the central government for fulfilling national and European obligations. The promotion of the practice of green network creation is carried out by a cross-governmental and multi-agency partnership, the Glasgow and Clyde Valley Green Network, suggesting the presence of a strategic and collaborative approach in implementing environmental and planning policies.

Summary

Flood risk management is implemented in Glasgow through concrete and indeed institutionalised practices such as routinized watercourse maintenance undertaken by the Council and flood defence schemes within the city limits. However it is important to note that some development, especially in derelict parts of Glasgow, is viewed as an opportunity to upgrade the drainage infrastructure which has suffered due to lack of investment. As a result, Scottish Water and GCC, under the auspices of the MGSDP, have undertaken joint drainage management schemes for the purposes of freeing up moribund parts of the city for development. The inclination to engage stakeholders is manifest in the numerous FLAGs in the Glasgow area. Another avenue for stakeholder engagement is the partnership which has been set up for the promotion of the green network creation in Glasgow. The themes of regeneration and economic development have been used as a justification for undertaking drainage schemes aimed at opening up parts of the city for development and to justify re-development on the River Clyde corridor where adaptation and attenuation measures such as the utilisation of flood resistant materials for new developments and SuDS have been promoted in order to fully realise the potential of the area as vital to the city. The narrative of mitigating the effects of climate change is an important factor for the promotion of the green network, an initiative framed as a solution to the problem of habitat isolation hence creating a wildlife corridor for species adversely affected by climate change.

Moray Flood Risk Management Policies

Defence management policies: The Moray area has a very long history of not only flooding but also efforts to combat the effects of floods, with recorded history of flooding in as far back as 1710 (Moray Council, 2007b). The first flood protection embankments in Badenoch and Strathspey were constructed in 1788 and most of the embankments we see today were completed by about 1820 (SEPA, 2003). Therefore it is unsurprising that the implementation of flood risk management policies are manifested in the pervasive practice of hard engineering solutions to the flood problems:

‘One of the Moray Council’s corporate priorities is delivering effective flood alleviation schemes in response to several severe flooding events in the last decade, affecting many communities’

(Moray County Council, 2005 p 3)

That the Council views the prevention of future flood events as a priority can be related to its experience of a series of devastating flood events recently, in 1997, 2002 and 2009. Thus the framing of floods as ‘affecting’ communities represents a significant challenge for Moray Council as flood alleviation is seen as an important part of the delivery of public services to the people of Moray and is viewed in the same vein as sanitation, education or the delivery of health services. To further emphasize this framing of the local delivery of services, flood alleviation duties are carried out by the Environmental Services department of Moray Council. Within the context of the recent flooding events, Moray Council considers the delivery of effective flood alleviation schemes as the greatest challenge it faces (Moray Council, 2007).
Consideration of the implications of anthropogenic effects of flooding and indeed the humanisation of the hazards helps explain the response of the Council:

‘For those at risk of flooding, the fear of flooding is constant. The Council is taking robust measures to reduce flood risk through major schemes’

(Moray Council, 2007b p 4)

Therefore in addition to the ‘robust’ measures of pursuing major schemes to reduce the risk of flooding, the Council engages in flood defence practices such as cleansing, repairing or maintenance of any watercourse or embankment for defence against flooding (Moray Council, 2007). These actions are explicitly carried out to allow for the free flow of water in a river or watercourse as well as the construction of barriers in order to prevent the invasion or encroachment of anthropogenic space and activities, thereby keeping with the framing of flood defence as keeping the water out (Scrase and Sheate, 2005).

With the definition and the response to the flooding problem in the background, the manner in which the Council carried out its flood alleviation duties prior to the passage of the FRM (Scotland) Act 2009 was in a largely reactive manner. Flood risk management is now being interpreted by the Council as a significant change in approach to flood alleviation to a more proactive approach:

‘So we’ve put together a program of works on watercourses. We are working towards a more proactive approach slowly reducing the amount of work that we do that is reactive. So that ultimately we would like to have maybe say 90% of the work is work that we program and then only a small amount of work is when we are reacting to a flooding event actually happening. We’d like to be able to forecast what might happen and deal with it before it actually happens’

(Moray Council Interview 31/07/12)

This new proactive approach is being promoted within a narrative of sustainable flood risk management which encompasses not just the construction of major schemes but also inspection and maintenance work and other functions of the Council that impact on flood risk (Moray Council, 2007b). Arguably this has led to an increase flood alleviation schemes in Moray especially in response to the recent series of flooding events. These comprise the Moray flood alleviation schemes, made up of the Lhanbryde scheme, the Elgin scheme, the Burn of Mosset scheme, the River Findhorn scheme, the Rothes scheme and a proposed Garmouth scheme. This is quite a ‘robust’ response and the Elgin scheme at £86 million is the most expensive in Scottish history with the Scottish government responsible for eighty percent of the costs. The manner the project manager of the Elgin flood alleviation scheme defined this policy response, during the interview which took place on the project site is very instructive:

‘One of the big issues that we have with the, throughout the whole of the UK is we have a legacy of areas where development has been permitted on floodplains. And that's principally why we have a major program of capital works which is effectively correcting this’

(Moray Council Interview 31/07/12)

The ‘correcting’ or ‘restoring’ framing of Moray flood alleviation schemes reinforces the anthropogenic focus of the approach taken by the Council, thereby keeping to the theme of providing services that prevent communities from being affected by floods. However an implication of the ‘correcting’ is the transitory nature of the project:

‘Hopefully we won’t need to do large scale schemes. In Scotland there is, sort of, a legacy of schemes that were promoted under the 1961 act, when all these capital works are finished’

(Moray Council Interview 31/07/12)

Therefore the main concern going forward for the Council in terms of flood risk management is continuing maintenance of the various assets in Moray. This is particularly important considering the number of schemes currently ongoing. Maintenance of the flood management assets is in line with the Council's interpretation of sustainable flood risk management:

'The biggest issue I see from a legacy view point is councils may become complacent and not put enough resource into maintaining their assets in a steady state so deteriorate below standards. If you don't put enough resource into maintaining these assets that we're building now then they will deteriorate and their design standards effectively go downwards which I see as quite possibly a significant risk in the future'

(Moray Council Interview 31/07/12)

Planning policies: What can be observed in the flood risk management planning policies of Moray Council is a somewhat paradoxical approach to the prevention of flooding or the reduction of flood risk using planning policy tools. However before revealing these policy paradoxes, it is important to state that there is an accepted view of the problems arising from development on floodplains in increasing flood risk. Indeed the Moray Alleviation Schemes project manager referred to this when justifying the necessity of the flood alleviation projects in Elgin and Forres:

'Well what we are doing here in Elgin and also Forres in particular, two of the bigger towns in Moray, a lot of development has taken place on the floodplains or even adjacent to the floodplains which has made flooding worse than it would have been had there not been development there'.

(Moray Council Interview 31/07/12)

This statement highlights the acceptance that past planning policies did not have a material consideration of flood risk which now constitute a problem and have created the necessity of flood defence works to correct the errors in these 'legacy' areas. In addition to this, the flooding problem has also been framed as the problem of adaptation. This is in line with the risk based approach to defining flooding where it is not only the hazard that is examined but

also the consequences. Thus increase in flood risk is not necessarily as a result of floods of increased magnitudes but the increased value of properties damaged in the flooding process. Therefore managing vulnerability is an important factor in defining the flooding problem. This was highlighted by the project manager of Moray Flood Alleviation Scheme (FAS):

'And of course other issues with development nowadays on floodplains are the buildings are less durable than they were many years ago. Old buildings used to be made out of stones with the hard floors and easy to rectify if you had a flood. You could just wash them out, clean them out and they were not good as new but you know. Modern building construction using timber frame buildings the actual structure of the building gets damaged easily when you have a flood. And also people have got lots of personal belongings now, things like TVs, you name it, they've got it, soft comfortable furnishings people wouldn't have had 50 years ago. So our modern day lifestyle has contributed to this as well'

(Moray Council Interview 31/07/12)

Therefore it is logical to formulate a policy aimed at avoiding past mistakes and which adopts a more cautionary approach to planning. Indeed, Moray Council has taken a course of action that focuses on the precautionary approach. In the flood management biennial report produced in 2005, it stated that it

'Will adopt a cautious attitude in its planning policy based on managing the threat from flooding and requiring thorough flood risk assessments for development proposals in risk areas'

(Moray Council, 2005 section 4)

This policy response is in line with the planning directives from central government, SPP7 and Planning Advice Note 69 (Scottish Executive, 2004). This risk based, precautionary approach to flood risk management was introduced to the planning discourse with the narrative of sustainable flood risk management

'When you look at sustainable flood risk we've got to make sure that development is appropriate and people in the future ….. I used to give the planning officer advice on

whether this was an appropriate development for the area of land or not. And so planning and development is a key role in sustainable flood risk management'

(Moray Council Interview 31/07/12)

However sustainable flood risk management has been interpreted in somewhat other ways by Moray Council. This represents the paradox of planning polices in the Moray area. The planning policies espoused in documents such as the statutory Structure Plans developed by Moray Council indicate another approach to the planning discourse in flood risk management. This approach frames flooding incidents as an impediment to the development of Moray and Elgin in particular rather than something that should dictate development planning. This suggests the pervasiveness of the productionist view that values instantaneous economic development and growth over the sometimes time-consuming benefits of environmental sustainability. This view was articulated in the Moray Structure Plan in emphasizing the significance of Moray FAS:

'The Council has approved programmes for flood alleviation schemes for Elgin, Forres (Burn of Mosset, River Findhorn and Pilmuir) and Rothes. The flood alleviation scheme at Lhanbryde is now operational. Until their completion the Council will adopt a cautious approach in its planning policy based on managing the threat from flooding and requiring thorough flood assessments for development proposals in risk areas'

(Moray Council, 2007b p 29)

This policy response is meant not so much to correct the mistakes of development on floodplains in the past but rather to unshackle the economic development of urban centres in Moray from the constant threats of flooding. This was highlighted in the Moray Action Plan on the significance of Elgin FAS:

'The Elgin Flood Alleviation Scheme, essential because prime land and business assets within Elgin city centre cannot be developed without this in place. The current hiatus over the full funding requirement continues to blight business confidence in the city. This is a project of regional and national significance'

(Moray Council, 2011 p 21)

Hence it can be observed that the provision of flood alleviation schemes has been linked to the economic progress of Elgin. In addition, the provision of adaptation measures, highlighted earlier as part of the framing of the policy problem, has been institutionalised as sustainable flood risk management. This is particularly crucial in new developments in reducing the risk of surface water flooding which has been highlighted as a serious problem in the Moray area. The use of SuDS has been framed as an environmentally sustainable approach to the management of flood risks. Overall the interpretation of flood risk management by Moray Council reveals the contending values prevalent in the policy practices. These values include the need to manage floods in a sustainable manner through guiding developments away from flood risk areas and limiting the constraints of flood risk placed on economic growth by providing flood protection. The proliferation of flood defence works with the view of encouraging more development shows the dominance of the economic growth frame in the policies of Moray Council. This is perhaps why these defences have been framed as infrastructure assets aimed at encouraging investments and developments.

Bureaucratic policies: Flood risk management policies were being formulated and implemented at a time when the Scottish government was aiming for savings in public sector funding. Hence the delivery of flood risk management by Moray Council was viewed within the frame of the efficient government narrative as with other public services normally delivered by LAs. This is particularly important because, in response to a series of flooding events, Moray Council decided to undertake various flood defence schemes. However the important point to note is the approach being taken by the Council in delivering its policies. According to Moray Council, the passage of the FRM (Scotland) Act 2009 has several implications, chief amongst which is the need to create a team within the Council to comply with the new legislation:

‘So Debbie is looking forward to creating a team that would allow Moray Council to comply with the 2009 Act. And amongst all of these works are things like setting the asset management and creating new roles for people in terms of assessment of water courses, informal defences and all these types of things and also setting up local area working groups to deal with flood risk management, Liaising principally with SEPA and Scottish Water and then other people who come in from time to time, roads maintenance people and the ecological people such as the SNH, even the quango such as Historic Scotland’

(Moray Council Interview 31/07/12)

The new roles have been interpreted by Moray Council as not just taking into consideration maintenance of asset management but more crucially setting up local flood risk groups and liaisons with other stakeholders in order to implement the FRM (Scotland) Act 2009. This is important because as Crichton (in WWF Scotland, 2004) states Moray was the only council in Scotland that did not establish a Flood Liaison Action Group in line with the NPPG7 (Scottish Office, 1995). However Moray Council has acknowledged that it's history of lack of stakeholder engagement would be an impediment to implementing the FRM (Scotland) Act 2009. This uncertainty was expressed by a Moray Council official:

'Obviously what is hoped is that the groups that have been organised will be able to come up with a plan of work that would comply with the legislation. I can't really tell you much because I stopped doing the job as flood risk manager about a year and a half ago and Debbie took over recently. For about a year we didn't have anyone doing the post at all'

(Moray Council Interview 31/07/12)

As indicated above, at the time of the passage of the FRM (Scotland) Act 2009, the flood risk manager position was vacant at Moray Council. This further adds to the already established policy problem of the lack of stakeholder engagement on flooding problems in Moray. However the absence of key personnel in the flood risk management team need not necessarily result in lack of service delivery as the Council has adopted the approach of contracting out its services:

'But Moray Council in particular have relied on us quite heavily because they don't have any in-house expertise'

(SNH Moray Interview 24/07/12)

Hence the approach of contracting out services has been institutionalised in the practices of Moray Council. LA services ranging from regular cleansing of grilles, pipes, culverts and minor watercourses to modifications to drainage systems and the maintenance of flood defence assets are carried out by third party contractors (Moray Council, 2005) the basis of which have been framed by the Council as:

‘It is planned, for Best Value and Efficient Government reasons, to review procurement. A term contract for maintenance works is under consideration. It would include improvement schemes, emergency works and specialised works such as CCTV surveys, jetting and the like. To ensure urgent works can be attended at short notice response times will be set. Currently the contractor carrying out maintenance works, Morrison Construction Ltd is a partner in Moray Flood Alleviation. They were awarded the Construction Contract in November 2003. When specialist works such as tree trimming or removal is required separate quotations are sought.’

(Moray Council, 2007b p 34)

The pervasiveness of third party contractors working with Moray Council in the management of floods was manifested when asking a local SNH representative about who they partner with in the Council:

‘In the 10 and a half years I think we’ve always had engagement with the flood alleviation, the Moray Flood alleviation but also the officers that work for the Council that do the general not the day to day maintenance and looking at the smaller flood management and things like that so I think we’ve worked a lot with them actually whether they be Royal Haskoning staff or the Council staff. And we get involved with other bits of the Council staff but those are the main groups’

(SNH Moray Interview 24/07/12)

The prime institutional practice for the implementation of flood management policies in Moray is the Construction Contract. This ensures that maintenance of watercourses and flood defence assets is being undertaken. However this approach is pervasive as a result of the framing of effective governance by central government. Thus the reforming of public services by contracting out to make savings to third parties and hence achieving efficiency is an important factor here.

The bureaucratic discourse of flood risk management in Moray frames the FRM (Scotland) Act 2009 as an opportunity to reform the Council’s practices to involve more stakeholders in flood management as well as encourage the formation of local flood groups. It must be mentioned however that unlike most of Scotland, there is no precedent for these local groups or even substantive stakeholder engagement by Moray Council. This is due to the

prevalence of new public management principles manifesting in the use of third party contractors to carry out basic LA flood prevention practices. Therefore it is not surprising that in anticipation of requirements for stakeholder engagement in the FRM (Scotland) Act 2009, personnel changes are expected in the Council. The proposal is to go from a position of not having a flood risk manager for over a year to not only employing one but also adding new recruits:

'And Debbie's now in a position where she needs to recruit may be three new staff to fill the complement of the team that's needed to make sure that we can comply with the act.'

(Moray Council Interview 31/07/12)

Environmental management policies: The Moray area is characterised as the 'heritage of Scotland' and very tellingly its landscape is dotted with designated sites such as the Cairngorms National Nature Reserve and the main stem of the River Spey, designated as a SSSI (SEPA, 2003; Moray Council, 2007). In addition to the statutory designations, there are other sites which are also important such as the Spey Bay Nature Reserve, the Local Nature Reserve at Findhorn Bay, Sites of Interest to Natural Science and Biodiversity Action Plan areas (Moray Council, 2007). Unsurprisingly, Moray's environment has been described as its major asset and a unique selling point (Moray Council, 2007). Consequently it is clear that national and indeed local policies have emphasized the preservation of these assets and heritage and also enhance them wherever possible. There is a statutory duty placed on public bodies such as LAs to have regard for biodiversity interests something reinforced by the EC WFD and the WEWS (Scotland) Act 2003, in Scottish law as well as the CAR 2005. These legislations and regulations have introduced an additional procedure in the approval of flood defence schemes in order to avoid damage to the natural environment. The drive to promote the conservation of the natural habitat arises from the view that hard engineering flood defences and uncontrolled developments contribute to increasing flood risk. This view was manifested by a representative of the local SNH when defining the mission of the organisation in Moray:

'The main aim of our involvement there is to try and get a solution that is sustainable but that's a big word when you are talking about flooding and for us it meant really first and foremost if the rivers were important for salmon and things like that then these sort of things are not adversely affected but it also means using the natural processes of a river to work for you rather than against you'

(SNH Moray Interview 24/07/12)

In the process of complying with the Controlled Activities Regulation 2005 of the WEWS Act 2003, it is essential for the delivery bodies such as a council to engage with conservation bodies such as the SNH and enforcement and regulatory bodies such as SEPA. This is evident in the remarks made by the project manager of the Elgin alleviation scheme:

'And even now we have regular meetings with SEPA just to keep them informed about the work that we are doing, what impact it may have on the water course. The scheme has been designed such that we have very little work where we are working actually in the water'

(Moray Council Interview 31/07/12)

However the introduction of the concept of sustainable flood management and natural flood management in particular calls for not just merely avoiding damaging the natural environment or watercourses but also creating habitat with the aim of reducing flood risk. It follows that natural flood management should be a component of the flood schemes being brought forward by the Council. In practice however Moray Flood Alleviation Schemes are based on hard engineering. This is especially surprising considering the rural nature of Moray as well as the presence of designated areas. In addition to this, land, which is needed for the implementation of natural flood management, abounds in Moray. When pressed on the apparent absence of such schemes in Moray, the SNH representative stated:

'The problem is the economics, the cost benefits, it's difficult to sell to committees and councillors that they might have to have an unlimited budget but it might not be that much or might be quite a bit one year and hardly the next year, you know that's difficult to judge and it's not the way councils are used to looking at things, they like to have things neatly and I totally understand that from their point of view'

(SNH Moray Interview 24/07/12)

Therefore there are institutional barriers such as the narrow application of the benefits cost ratio for flood defence schemes. Moreover the main institutional practice for the promotion of natural flood management is the Scottish government's agri-environmental subsidies. Paradoxically, as a result of the rather rich agricultural land in Moray which is valuable for the cultivation of barley, for whisky production and other crops such as wheat and potatoes, most

farmers in Moray are quite reluctant to subject their valuable land to occasional periods of flooding in exchange for subsidies. The SNH in Moray expressed this view with regard to government agri-environmental and rural grants *vis* a *vis* adoption by farmers:

'It's a bit of a shame not to have seen enough farmers and land owners sort of taken up that option but then they don't want to have their land flooded'

(SNH Moray Interview 24/07/12)

Both the framing of hard engineering solutions to floods as exacerbating the problem as well as the solution of conservation and enhancement of the natural environment exist in the environmental discourse. However the practice that is prevalent in the Moray area is that of LAs consulting with SEPA and SNH with the aim of avoiding damage to the natural environment in the process of planning and constructing engineering flood schemes. The institutional practice that would encourage the promotion of natural flood management, though, defined and established is not utilised for the promotion of Flood Prevention Schemes. Therefore it is incumbent on bodies such as the SEPA and SNH in Moray to work with and consult the LAs to incorporate features of natural flood management as a component of mostly hard engineering schemes being undertaken in the Moray area.

Summary

It can be observed that flood risk management in Moray is manifest in the various Flood prevention schemes that were commissioned in response to some devastating flooding events. The Moray flood alleviation schemes represent a hard engineering approach to flood risk management. These schemes have also been framed as an avenue through which the economic potential of urban areas in Moray such as Elgin would be realised. It must be noted that the manner through which the Council delivers its flood reduction services is characterised by contracting out services as evidenced by the composition of the partners involved in the various Moray FAS. This is largely as a result of an apparent lack of flood management expertise within the Council. In addition to this, the efforts to incorporate natural flood management in Moray have been hampered by a shortage of farmers taking up the option of agri-environmental subsidies in exchange for having their land flood occasionally. This has been attributed to the importance of barley cultivation to the whisky industry in Moray.

However the actions mentioned above could be framed as representative of certain values. The hard engineering schemes embody the need to keep flood waters away from human habitation spaces even if these spaces are situated on floodplains or areas at high risk of flooding. Moreover the use of the schemes to unlock the economic potential of cities such as Elgin demonstrates the interpretation of planning policies of flood risk management in Moray. The emphasis on economic concerns could also help explain the reluctance of some farmers in Moray to take up government subsidies in exchange for flooding their land as the cultivation of barley, wheat and potatoes yield more value. In addition to this an effort to achieve best value and efficient governance, flood risk reduction services undertaken by the Council are usually executed by third party partners or specialised contractors. This is an embodiment of new public management principles in service delivery in Moray.

Comparing National and Local Policies: An Evaluation of the Interplay between Central Government Policy Structure and local governance Agency

This section explores relationships between the national flood risk management policies and their local flood governance approaches. This is necessary as a result of observed parallels and more importantly modifications of central government flood risk management policies by local actors. However these differences are not framed as policy gaps or implementation deficits but rather as a result of conceptualising policy implementation by local policy actors as policy making. Therefore this section reveals the interplay between the values of the respective national policies and local actors thereby highlighting the iterative nature of the flood risk management policy process occurring in Scotland and England. This policy process is made up of policy actors encompassing members from governmental and non-governmental bodies participating in on-going negotiations for discursive and policy hegemony. Therefore observed local actor interpretations and transformations of national policies can be attributed to the policy outcomes secured through the perpetual interplay between contending ideas, values, belief systems and narratives of the flood risk management discourses embodied both in central government policy structures and the respective local actor agency and institutions. By highlighting these contending values it is hoped that a better understanding of the diverse meanings of flood risk management in different places and local contexts will be established to aid the analysis of the policy making process.

Flood risk management in England

Defence management policies

National policy: In national policy there has been a modification in institutional practices in addition to the utilisation of the benefit cost ratio as a tool for appraising the feasibility of flood defence schemes. Social vulnerability as a crucial appraisal criterion has henceforth been enshrined into practice and this has been outlined in the DEFRA outcome measures developed for the CSR for the period between April 2008 and March 2011 (EA, 2010b). This is in line with the social pillar of sustainable development highlighted in *MSW* (DEFRA, 2005). According to these national outcome measures, properties located in socially deprived areas that flood frequently would attract more money for flood defence schemes from central government (EA Interview 14/11/12). Therefore there is an increasing emphasis on the vulnerability and deprived status of those at risk as well as the monetary values of properties at risk of flooding. Another crucial change in practice in flood risk appraisal has been the importance attached to LLFAs' sourcing for external funds in the appraisal process. Capital schemes which attract external funds have their appraisals accelerated somewhat when applying for funds from the EA. This point was articulated by a representative of the EA:

'However for those schemes where you do require a local contribution to enable them to go ahead then if a community, a business or a LA puts money in then that scheme can move up the queue and push back other schemes that then can't be afforded.'

(EA Interview 14/11/12)

This reveals the renewed emphasis on localism and encouraging LLFAs to have some autonomy in determining capital schemes in their areas. This reveals that the change in flood scheme appraisal practice has been largely driven by narratives of sustainable development and localism.

Local policies: The practice of regularly maintaining watercourses as well as flood defence assets has roots in the land drainage laws in Britain which holds the riparian owner responsible for any watercourses which they own. In addition to this, LLFA have a statutory duty to maintain flood defence assets which they own. Hence flood risk management means a systematic program of risk based inspections on watercourses or flood defence assets. As

a result of the addition of criteria such as vulnerability to the flood defence scheme appraisal process, BCC expects an increase in the number of capital schemes as a result of the policy change. This shift in policy has been framed as a proactive approach to flood management by BCC (Birmingham City Council, 2010). However the provision of capital schemes is viewed as investments which must maximise limited resources to achieve maximum benefits. Thus a more economic interpretation of sustainable development is emphasized and the increase in the number of schemes expected by BCC is seen as a source of concern (Birmingham City Council, 2010). This is unsurprising considering that LLFAs are expected to fund their contributions to capital schemes from savings made elsewhere rather than from increased funding from central government. This issue is more pronounced in SCC a largely rural, sparsely populated area which is not as economically vibrant as BCC. Furthermore, the emphasis on schemes with local contributions from third party sources having priority has repercussions for SCC and this is being viewed as a distortion of cost benefit procedures. The new tariff system is being viewed as an appraisal process filled with uncertainties:

'You are going to have that agreement for that additional external funding in place before you can apply for the government funding and so our people might be saying we are willing to contribute and they don't even know if it's going to qualify for flood defence grant aid or when it will get put into the programme so it's going to be very difficult, it'll be interesting times'

(Somerset County Council Interview 30/11/2011)

Planning policies

National policy: National planning policies on flood risk management reflect the shift that has taken place from a sole emphasis on the precautionary approach to a portfolio of approaches which include the aforementioned presumption against development in flood risk areas or on floodplains but also the incorporation of adaptation and resilience measures into the planning policies (DCLG, 2006). The new approach takes into consideration the effects of climate change and the increased need for housing in England. The adaptation, resilience and attenuation measures manifest in the emphasis on the development of infrastructure such as SuDS in PPS 25 (DCLG, 2006), a principle reinforced in the FWMA (2010). This removes the automatic right of new developments to connect to existing sewage networks. The precautionary approach is also manifest in the adoption of risk based methods in the location of developments. The use of tools such as the SFRA by LPAs, and the sequential and exceptions test, reflect the need to take into consideration flooding from all sources when planning developments. In addition to this, PPS 25 (DCLG, 2006) also requires LAs to

undertake Surface Water Management Plans in order to evaluate the risk of drainage problems or critical drainage failures (DCLG, 2006).

Local policies: The planning policies of both the LPAs in SCC and BCC emphasise the values of economic growth and urban regeneration (EA and Sedgemoor District Council, 2009; Birmingham Core Strategy, 2010). In Somerset there are contending values in the planning discourse between the LPAs. While South Somerset Council's SFRA explicitly discourages the provision of flood defences in order to make developments permissible, a contradictory approach is taken in Bridgwater. Regeneration in Bridgwater is seen as possible only with the provision of flood defences. Moreover the designation of SCC as the SAB is viewed by the various LPAs within Somerset as a disruption of the planning system, thus resulting in LPAs being very uncertain about their roles in the planning process. This sense of apprehension was expressed by a representative of South Somerset District Council:

'But when the county council's SAB, when they take on that role, we are not quite sure how we are going to fit in'

(South Somerset District Council Interview 10/06/12)

Therefore it can be seen that as a result of the institutional arrangements in Somerset, planning and development control policies are implemented by various LPAs. These policies, which reflect the different priorities of LPAs, are bound to be heterogeneous. Therefore it is no surprise that the designation of SCC as the SAB has been met with an air of uncertainty as different LPAS are indeed pursuing quite different planning policies. The uncertainty about the SAB does not exist in BCC as it is a unitary council. However regeneration in Birmingham is manifest in the drive to develop on brownfield sites within the city limits even if these sites are located on functional floodplains. Therefore flood mitigation measures in new developments are a viable policy alternative although some developments are currently being delayed until the provision of flood defences in the expected implementation of the EA's River Tame strategy.

Bureaucratic policies

National policy: The national bureaucratic policies represent an increasing devolution of flood risk management policy and delivery away from DEFRA to the EA, IDBs and the LLFAs, usurping responsibilities from the RFCCs and reassigning them to the EA Board. The

designation of some LAs as LLFAs also reflects the values of efficient government and an emphasis on local government determining local solutions to local problems. These policy changes reflect a somewhat paradoxical shift in central and local management of flood risk. On one hand, before 2003, the majority of the funding for flood defence schemes was disbursed by the DETR. However as a sign of the changes, funding is now being block granted to the EA by DEFRA. The relationship between the EA and DEFRA has been characterised by a DEFRA official as:

'We have a lot of power over the EA really because we define what we should give them, we define the money, the policy and it's not the EA's job to define government policy it's the EA's job to deliver government policy'

(DEFRA Interview 09/11/12)

This represented a departure from the past when MAFF was involved in not only formulating but also delivering flood policies. This changed with the DEFRA review which sought to achieve efficiency and more savings in government expenditure (EA Interview 14/11/12). In addition to devolving policy delivery downwards to the EA, the designation of LLFAs as responsible for managing surface water, ground water and ordinary watercourse flood risk is a manifestation of the emphasis on local democratic control and in keeping with the localism agenda (EA Interview 14/11/12). On the other hand, the drive towards centralising EA flood management functions, including funding the RFCCs, represents delegation of hitherto RFDC duties to the EA Board. This is a significant change from past policies. The FWMA (2010) has designated the RFCCs, formally RFDCs, only as advisory bodies, a departure from the executive status they had in the past. Therefore 'it is now very clear under the Act that the Board is responsible for all of flood and coastal risk management except for specific powers that were given to the RFCCs' (EA Interview 14/11/12). This effectively centralises funding within the EA. The funding of flood defence schemes of national priority is determined by the EA Board while the RFCCs are permitted to seek local levies to fund flood defence schemes of local significance (House of Commons, 2008).

Local policies: The central government policy of devolution of the delivery of flood management policies is analogous to the bureaucratic policies adopted in the study areas. However these also vary according to the institutional contexts of the LLFAs. Flood risk management means the development of partnerships as well as taking a strategic role in the management of floods in the case of SCC. The delivery of flood management practices is

new to SCC; this was hitherto carried out by the districts councils in Somerset. The apparent lack of flood risk management capacity in SCC was underscored by a representative of the Somerset Drainage Board:

'We are surprised that Somerset County Council were the elected people to do this. But it is a national thing by government well you have to go with it. The County Council haven't got the same kind of staff; they will probably look at it from a different risk approach than perhaps we would do at the Drainage Board'

(Somerset Drainage Board Interview 23/08/12)

SCC sees the changes brought about by the FWMA (2010) as an opportunity to achieve efficient flood management by working with stakeholders in Somerset and taking a strategic approach while devolving some of the actual delivery to the districts and the IDBs. This is unsurprising as the districts were designated as land drainage authorities under the Land Drainage Act (1991), and although the FWMA (2010) does not assign any duties to district councils, the flood risk manager for SCC detailed some of their responsibility as

'Any works on ordinary water courses is down to the districts but we are meant to keep an overview of what they are doing to make sure it all fits into the local strategy and things like that'

(Somerset County Council Interview 30/11/11)

District councils however are apprehensive as their flood management roles are not defined by the 2010 Act; with the situation described as *'very depressing'* for district councils (Sedgemoor District Council Interview 10/06/12).

In contrast BCC view their designation as a LLFA under the FWMA (2010) as a continuation of the recommendations prescribed to BCC in the Urban Flood Risk and Integrated Drainage pilots for the Upper Rea catchment in Birmingham which was sponsored by DEFRA and carried out in 2008 (DEFRA et al. 2008a). This reinforces the view of flood risk management within BCC that there is a need for a clearer and stronger role for LAs in managing flood risks. However the role of the RFCC is viewed by BCC as not being beneficial to the Council. BCC sought to re-evaluates its membership of the RFCC, within the frame of a stronger role for LAs, by making the case to spend the levy paid to the RFCC within the city limits

therefore seeking to value local priorities over the regional priorities of the RFCC. This is not surprising considering the flood management capabilities of the Council, manifest by the EA contracting out its main river maintenance functions within the Birmingham area to the Council. This is a rather unusual situation for LAs in the country but as highlighted earlier, it relates to BCC's resource base and its status as the largest LA in Europe. It can even be framed as BCC pushing the principles of devolution and localism so prevalent in the bureaucratic discourse.

Environmental management policies

National policy: National policies on environmental management have shifted from a focus on preserving and managing natural habitats towards the more proactive approach of creating habitats as a way of reducing flood risk. This represents a progression in values from an emphasis on conservation to environmentalism which seeks to treat the environment as an intrinsic and beneficial part of nature. This is reflected in the requirements in the Habitat Action Plan placed on both the EA and Natural England to create 200 hectares of new saltmarsh, mudflat and other wetland habitats annually through EA flood risk management endeavours (House of Commons, 2008). The practical implementation of this is manifest in the biodiversity criteria included in the DEFRA outcome measures for the appraisal of flood schemes (EA, 2010b). This has institutionalised the emphasis on the environmental aspects of sustainable development as defined in *MSW* (DEFRA, 2005). This represents the values of environmentalism which views the environment in not only aesthetic terms but also as an intrinsic part of nature, a view being promoted by the narrative of managing floods by working with rather than against natural processes. Therefore strategy documents such as CFMPs and SMPs are expected to promote schemes that emphasise natural flood management (Natural England Interview 23/05/12).

Local policies: There are different interpretations of this view of flood risk management by the respective LLFAs. This is not surprising considering that Somerset is a strongly rural and agricultural area while Birmingham is one of the major urban centres in Europe. The environmental policies in Birmingham have roots in the utilitarian view of nature which views green spaces as useful in the event of extreme weather events to attenuate adverse effects. Therefore an environmental approach to reducing flood risk is being driven by the narrative of adapting to the effects of climate change and manifests itself as the promotion of green infrastructure for the management of urban storm water. While there have been efforts to undertake habitat creation schemes in the Birmingham area, funding for the creation of wetlands is not included in the flood risk management budget of the BCC.

The view in Somerset is somewhat different. In addition to the presence of conservation areas, including a national park, there is recognition of the contribution of the natural environment to the unique character of Somerset. This appreciation has resulted in policies which seek to integrate flood management and environmental management. Therefore SCC has sought a collaborative approach in partnering with environmental and land management groups to promote nature conservation through an environmental approach to flood risk management. When asked about plans to work with such groups in the future, the flood risk manager of SCC remarked,

'They would be consulted as part of developing the local strategy because as well as the flood risk management part of the shift there is also the Somerset Water Level Management Partnership which involves more of those groups, the landowners, the environmental you know, Wildlife Trust, Natural England, NFU people like that.'

(Somerset County Council Interview 30/11/11)

The existence of these partnerships could be attributed to the presence of conservation and agricultural bodies and interests eager to maintain the unique landscape in Somerset.

Flood risk management in Scotland

Defence management policies

National policy: National policy has re-affirmed a localised approach and in effect has changed to make the process of implementing flood prevention schemes less burdensome to local authorities. One objective has been to prevent areas at risk of flooding from becoming more economically disadvantaged, hence the need for an increased provision of flood defences. This view affirms the alleviation value of flood defences, especially in areas of high vulnerability. The resulting policy changes include a more flexible funding arrangement between the Scottish Government and LAs via the Single Outcome Agreements and perhaps most importantly a simplification of the FPS approval process through the removal of the need for ministerial confirmation for a flood prevention scheme, (Scottish Parliament, 2005; Scottish Government Interview 01/08/12). Henceforth FPS brought forward by LAs only have to conform to SEPA District Plans (Scottish Government Interview 01/08/12). It is envisaged that this process should result in an increase in the amount of FPSs and thus a reduction of flood risk.

Local policies: *Prima facie* the response of Moray Council appears in line with the national policies. However the flood schemes in the Moray area are seen rather as correcting past mistakes of development on areas at risk of flooding and the Moray Flood Alleviation Schemes have been referred to as legacy projects promoted under the Flood Prevention (Scotland) 1961 Act. In future large schemes are not expected to be necessary and emphasis is placed on the maintenance of flood defence assets. Therefore flood risk management is being interpreted as adopting a set of practices within which watercourse maintenance and inspections could be carried out in the areas of greatest risk. When asked to clarify changes expected from the FRM (Scotland) Act 2009, the project manager of the Elgin FAS noted,

'We don't have budgets for instance that allow us to do anything with the water course but we use a risk assessment method to look at the likelihood of something happening and what the consequences would be should there be a flood. And we use this as a method to determine how to prioritise the funding that we do have available'

(Moray Council Interview 31/07/12)

Flood risk management is interpreted in GCC as the adoption of a more sustainable approach to flood management. This is manifested in the development of a programme of risk assessment in the provision and maintenance of defences with the aim of prioritising the Council's response in light of a scarcity of resources. However there is a component of flood risk management in Glasgow which is developed around the narrative of taking action in areas that have experienced flooding in the past. Therefore some flood schemes have been undertaken in conjunction with other infrastructure projects where the benefits of the schemes could be clearly defined. In fact when asked how flood defence schemes are promoted in Glasgow, a member of the Land and Environmental Services team at the Council stated,

'These are council projects which Glasgow City Council have promoted and delivered which also tie into facilitating our strategy of flood reduction, encouraging economic growth in terms of opening up areas for development because we have removed the flood risk or we've treated drainage capacity by doing some of these projects'

(Glasgow City Council Interview 25/07/12)

Planning policies

National policy: The national planning policies are defined within the narrative of sustainability, resilience and adaptation as well as keeping the emphasis on the primacy of LPAs. This manifests in the avoidance of developing on areas at risk of flooding, as well as adaptation, particularly in urban areas. National policy involves a change in emphasis from the precautionary approach to planning as manifest in the avoidance principle to a settlement on a combination of both the precautionary and managed adaptative approaches which emphasise resilience. These values are expressed through the risk based approach to development planning adopted in the SPP7 (Scottish Executive, 2004) as well as the duty to promote the use of adaptative and attenuation measures such as SuDS in the WEWS (Scotland) Act 2003 (Scottish Executive, 2004). The avoidance principle is further reinforced by the increased role placed on SEPA, a government agency, in development control but this is somewhat paradoxically offset by emphasising the role of democratic control in planning and the decisive role of directly elected Scottish ministers.

Local policies: Moray Council's approach to development control fits into the national policies of avoidance of development on areas at risk of flooding. Indeed, the flood defence projects which have been undertaken in Moray have been framed as correcting the past mistakes of uncontrolled development. Furthermore, the project manager of the Elgin FAS remarked 'If there are the right safeguards to development we shouldn't have to build more major flood prevention schemes' (Moray Council Interview 31/07/12). However there seems to be a paradox to this cautious approach. The development of Elgin has been framed as being contingent upon the use of flood defences to open up areas at risk of flooding for further development which it is hoped will result in economic growth (Moray Council, 2011). The emphasis on economic growth can also be observed in the planning policies of GCC. The provision of adequate defences is viewed as a means to develop prime water front real estate and thus key in regenerating the Clyde area of the city (Glasgow City Council, 2003). In addition, while justifying the need for flood defences, a member of the Land and Environmental Services team at GCC framed it in terms of economic and financial concerns:

'What we always try to do is, we always have to stay ahead of the competition, we want to attract business here, and we want to be able to meet the business needs and help them out as much as possible by having a strategy available. . . when somebody wants to build an office block in the city centre and they have problems going through a process because there

are infrastructure costs or there is drainage issues or there is a flood there, we have as much information available where we can start to focus and talk to these people'

(Glasgow City Council Interview 25/07/12)

Even the use of SuDS is framed as a regeneration of the drainage infrastructure, which has suffered from a lack of investment, in the Glasgow city area (Glasgow City Council Interview 25/07/12).

Bureaucratic policies

National policy: National bureaucratic policies are framed as modernising flood governance in Scotland. This represents a shift from a hitherto piecemeal approach to a more systematic and strategic approach to the management of flood risk. However concrete policy changes occurred as a result of the change in flood management funding introduced when the SNP came into power in 2007. This was confirmed by a representative of the Scottish government when asked to define the approach of the Scottish government on flood risk management:

'In 2007 two things happened we had a change of government and they decided to change the way that we funded flood risk management as well. So instead of there being a grant scheme all the money for flood risk management pretty much goes into the general capital grant to local authorities and it's up to them then to manage their budgets. In order to deal with whatever their priorities are within each local authority area'

(Scottish Government Interview 01/08/12)

These changes emphasize the primacy of LA discretion in funding for local priorities, flooding included (Scottish Government, 2007). In addition the new policy manifests itself in the emphasis on partnership working and the Flood Risk Management (Scotland) Act 2009 imposes a duty to reduce overall flood risk within Scotland. The values espoused in the 2009 Act underpin the collaborative approach to governance which is very pervasive in Scotland. However there is still a prime focus on local implementation of flood management and this is manifest in the local plans to be implemented by LAs even though a strategic role is placed on SEPA in the 2009 Act (SEPA Interview 16/11/12).

Local policies: The bureaucratic polices of GCC embody values such as the collaborative approach to flood governance espoused by national policies. In addition, new public

management values aimed at achieving the efficient delivery of public services are also pervasive. These collaborative approaches are manifest in the proliferation of three active FLAGs in Glasgow (Glasgow City Council, 2009). The need to achieve efficient delivery of local flood management services has resulted in the utilisation of private sector contractors for the routine maintenance of watercourses in Glasgow (Glasgow City Council Interview 25/07/12). Therefore GCC's approach to the bureaucratic practice of flood risk management in terms of seeking collaborations is in line with national policies.

The use of private sector contractors in the delivery of flood defence practices is also pervasive in Moray. This is manifest in the actors involved in the delivery of the Moray FAS, mostly consultants with world renowned expertise in the construction and maintenance of flood defence schemes. Thus the flood risk management policies embody new public management principles for achieving efficiency in service delivery another important dimension is the development of collaborative partnerships in Moray. This is a departure from past practices due to the previous absence of FLAGs in Moray. Under the partnership working requirements of the FRM (Scotland) Act 2009, Moray Council initiated the process of putting such structures in place. Although as the project manager of the Elgin FAS, these are recent developments

'We've only started setting up local flood risk groups so they haven't really had much opportunity to show any achievement. It's only in the past year that groups have been organised'

(Moray Council Interview 31/07/12)

Environmental management policies

National policy: The view that the natural environment could be utilised in flood risk reduction through the creation of natural habitats the restoration of wetlands, the re-meandering of rivers and changes in land management gained a foothold in Scotland through the promotion of a narrative of natural flood management. The values reflected in natural flood management entail working with the natural environment to reduce the risk of flooding. This view was institutionalised in the WEWS (Scotland) Act 2003 which placed a duty on risk management authorities to promote sustainable flood management. However this proved to be inadequate as a result of the perceived restraints of the Flood Prevention (Scotland) 1961 Act. The Act created a somewhat artificial dichotomy in the management of floods by location, on agricultural and non-agricultural land, in effect a divide between urban

and rural areas. This divide was removed in the FRM (Scotland) 2009 Act. This was achieved through the requirement in the 2009 Act for the preparation of strategic District and Local plans by SEPA and the LAs respectively. These would serve as a basis for the management of flooding problems. In addition and perhaps more importantly, the 2009 Act incorporates the promotion of natural flood management techniques in the local plans to be produced by the LAs (SEPA Interview 16/11/12).

Local policies: The environmental policies undertaken by GCC embody environmentalist principles which advocate the creation of natural habitats in reducing the risks of flooding. This is manifest in the promotion by GCC of the green network in the Glasgow area. This has been promoted through a narrative of a need to ameliorate the adverse effects of climate change such as habitat loss and species becoming isolated (Glasgow City Council, 2011). Thus the ethos of national policy is embedded in the green network in Glasgow which seeks to connect green spaces within the city area and in the process utilise these, through SuDS, to manage and reduce flood risk. The approach taken in the Moray area is somewhat different. The conservationist approach, which seeks to avoid flood defence schemes from damaging the environment, is evident in Moray. In practice this approach manifests itself in the LA consulting with SEPA and SNH in implementing the Moray FAS. This could be attributed to the absence of partnership working in Moray thereby resulting in an absence of a platform for environmental organisations to influence flood risk management through an environmental approach.

Conclusion

This chapter has examined local approaches to national flood risk management policies and investigated the interpretations by local actors and institutions of the multiple discourses of flood risk management. Evidence that flood risk management discourses present different meanings to respective LA areas has been elucidated. However what has been revealed in this chapter is that local policies are shaped, not only by national flood policies structures but by local factors such as the prevailing governance structures, the need for efficient delivery of local services, renewing and opening up deprived areas and brownfield sites, delivering on housing demands, conservation of green belt areas, statutory requirements to maintain flood defence assets, renewing and developing partnership agreements and the need to achieve other local priorities such as education, child-care, sanitation and health services. These LA flood policies have been identified in the flood risk management practices, driven by policy narratives, undertaken by local authorities.

To better appreciate the transformation of policies on a national level it is instructive to examine how such policies are implemented by various policy actors. By examining local approaches to flood risk management, it can be observed that different interpretations of flood risk management discourses have produced different policy practices which in turn have introduced and indeed institutionalised different policy ideas and actors into the flood risk management policy process. On one hand this signifies the important role local factors play in shaping the frames through which the respective local actors interact with the various discourses of flood risk management in Scotland and England. It also highlights the importance of the role of local actors in not only implementing national policies but also in the formulation of national policies by introducing new ideas and practices into the policy process. The importance of sub-national bodies in the policy process has been highlighted by Jenkins-Smith and Sabatier (1994) who noted that policy innovations occur at the sub-national level and continue to occur after national intervention. Therefore it is perhaps more apt to conceptualise the policy process as articulated by Hajer (1993) as a struggle for discursive hegemony in which actors try to secure support for their definitions of reality. While different local flood governance practices have been highlighted and examined in this chapter, the process of coalition building referred to by Marsh and Rhodes (1993) as necessary to achieve a state of consensus in a policy network and thus secure policy outcomes will be examined in the next chapter.

Chapter 7

Local Flood Risk Management Governing Coalitions

Introduction

The previous chapter fleshed out how flood risk management policies are interpreted and implemented in Scotland and England and accounted for the differences. This has established that putative transformation of national policies takes place in both countries as well as illustrating how local actor agency is mediated by local institutional factors unique to each location and context. Having characterised the multiple framings of the national flood risk management policies in the previous chapters, it is appropriate at this juncture to examine more closely the agency of local actors. Hajer's (1993 p 46) premise that 'social constructions do not float in the world; they can be tied to specific institutions and actors' has been accepted as an axiom in the analytical framework of this dissertation, hence it is insufficient simply to envisage that distinctive local factors alone influence, mediate local actor agency and thus determine local flood management policies. Rather, distinctive local institutional features express the meanings attached to local flooding issues and problems of flooding that become embodied in flood management practices actually undertaken locally.

In line with the interpretive and governance approaches adopted in this dissertation, local actor interpretation of national flood risk management policies is viewed as being conveyed through what Yanow (2000) termed 'communities of meaning' or 'interpretive communities', that create and invoke 'local knowledge' and add 'local meaning' to the policy problem. Analogous to the manner with which national policies are produced, reproduced and transformed, interpretive communities create, recreate and transform local knowledge or meaning through a process of consensus building concerning a policy problem, operating through and between networks or coalitions of local actors involved in the formulation and implementation of local flood risk management policies. This institutional process of coalition building involves the inclusion of some policy actors and ideas and the exclusion of others, thereby shaping approaches to local flood risk management in ways unique to each LA area.

Additionally, the institutional features of local flood risk management governing coalitions enable or restrict adoption of competing and contrasting ideas for flood risk management. Hence, local policies highlight the underlying values of the dominant discourses of flood risk management. The institutional features of local flood risk management governing coalitions,

in providing a policy structure, also influence the policy behaviour of individual members of the coalition.

This highlights the distinction between national and local flood risk management policy processes. However Bulkeley (2000 p 729) noted that different types of policy networks could exist simultaneously in relation to a particular policy issue, in what she termed a 'tiered policy network approach'. Moreover the notion of nested or multiple networks is not new. For example, as Dredge (2006 p 169) points out that 'networks are socially, culturally and historically situated and exist across multiple geographical scales'. It follows that the LA areas are viewed as policy domains or subsystems. Hence this chapter identifies LA areas in Scotland and England as the space within which networks of flood risk management policy implementation emerge and operate. Local policy networks provide a framework through which different interpretations, perceptions and implementations of national flood risk management policies can be better understood, and ultimately provides the conceptual basis for comparing different local approaches to flood risk management in Scotland and England. The significance of comparing local networks, (and hence local governance approaches), lies not only in identifying and comparing policy outcomes but also in investigating the ways in which these networks shape opportunities to foster or impede further flood management policy changes first through introducing new actors and new policy ideas into the network and, second through translation of policy ideas into putative new and innovative practices.

This chapter is divided into three sections. The first conceptualises the LA areas as spaces within which policy networks emerge and the policy process is undertaken through coalitions of local policy actors acting in concert and bound together discursively. The second highlights and examines the formal and informal institutional flood hazard governance structures adopted in each selected LA area and, in the process, elucidates and compares local policy networks. The final section outlines the implications of differences between flood governance approaches adopted in the case study LA areas with respect to the impacts that might be expected on future national flood risk management policy making and implementation.

Conceptualising Local Flood Governance

Local Authority Areas as Local Policy Networks

To conceptualise the policy networks in LA areas, it is first necessary to consider how policy networks influence local implementation of national flood management policies. Marsh and

Rhodes (1992 p 13) define a policy network as ‘a cluster or complex of organisations connected to each other by resource dependencies and distinguished from other clusters or complexes by breaks in structure of resource dependencies’ going on to describe how they provide meso-level intermediation between government and interest groups. It follows that that the policy network approach envisages the policy process as either a functional or territorial policy domain within which interest groups cluster around particular governing departments or authorities in the hope of influencing policy by building a policy network that includes the relevant government body (in the local case, the LA). Conversely, government bodies (including especially LA functional departments) need the assistance and cooperation of other groups to gain policy legitimacy and to deliver policy outcomes. Synergy between the LA and local interest groups then fosters formation of a policy network that both influences and helps implement policy. Accepting this, the need to understand the institutionalisation features of the policy networks in each LA area in order to explain the behaviours of local policy actors in interpreting and implementing national flood management policies becomes apparent.

Bulkeley (2000 p 729) described how policy actors follow ‘the institutionalised patterns of interaction within the policy network, which in turn structure policy outcomes and individual actor behaviour’. However, Marsh and Rhodes (1992) pointed out that the forms taken by policy networks constitute a continuum extending from integrated policy communities (made up of a limited number of policy actors that interact frequently in ways that extend beyond consultation to constitute routine activities underpinned by shared values) to loosely integrated and aligned issue networks.

In applying the policy network approach to local implementation of flood management policies, LA areas can be framed as territorial policy domains within which local actors such as interests groups and other governmental bodies cluster around LA functional departments (which act as semi-dependent conflicting *institutions* inside a single risk management authority) with the hope of influencing the policy process, i.e. implementation of national flood management policies. Frequent exchanges of policy resources (such as legal authority, legitimacy, knowledge, expertise, power, access, capital, public opinion and material interests) between the LA, its institutions and other local stakeholders is akin to the interactions that occur within a policy community and it is these exchanges that shape the behaviours of the policy actors and so influence policy outcomes. This is crucial because as noted by Hajer (1993) it means that social constructions can be traced back to particular institutions and actors.

The policy communities involved in local implementation of flood management policies can be conceptualised as institutions that influence and are, in turn, influenced by the social constructions of local policy actors. These interactions steer local interpretations of national policy and result in the transformation of national flood management policies. Recognising the important role played by policy networks in shaping the behaviours of local institutions and organisations, including LAs, complicates explanation of exactly *how, why and by whom* flood risk management has been transformed in the different LA areas because the institutions involved are themselves not *immutable* (Bulkeley 2000). Hence, it is necessary to understand the dynamics of the policy implementation process as it plays out in ways specific to each LA area. This requires explanation of how policy actors with disparate interests come together to act in concert, the effects of policy drivers on the local policy process, how the institutional actors within LA areas evaluate, internalise and respond to both the drivers and the interests of other organisations and actors, and how these dynamic interactions link specific policy actors to the policy outcomes that emerge.

Coalition Building as governance

As noted above, Marsh and Rhodes (1992) suggested that consensus within a policy network is achieved through a continuous process of negotiation and re-negotiation between policy actors known as coalition building. Applying the interpretive approach adopted in this thesis, it is logical to frame these negotiations as a synthesis of analogous social constructions concerning a policy problem (in this case flooding). This links neatly to the issue highlighted by Hajer (1993) that environmental problems are complex and comprise many different aspects and are communicated by people with widely varying backgrounds. Hajer's (1993) framing of communication in a policy process as a medium through which the world is constantly being created and re-created by policy actors is also appropriate in the context of consensus building in policy coalitions.

These considerations explain why local policy actors, who communicate different narratives concerning various aspects of the policy problem, can belong to the same discourse coalition. This is especially useful when addressing a cross-cutting policy problem like flood management, which involves policy actors with different and sometimes contending views on how local flooding should be managed. The implication is that, through negotiation and re-negotiation, policy actors who originate from positions ranging between those of a private water company and those of a wildlife conservation organisation can adapt their narratives to make them conformable, thereby reaching a common definition of the policy problem

(flooding) and a shared view on the actions that should be taken to manage it. This is consistent with Hajer's (1993 p 47) definition of a discourse coalition as 'the ensemble of a set of story lines, the actors that utter these story lines, and the practices that conform to these story lines, all organized around a discourse'. The policy process within a LA area can thus be conceptualised as the medium through which a wide array of governmental and non-governmental actors with dissimilar constructions of the flooding policy problem seek and find discursive hegemony over other coalitions and local actors in order to secure policy outcomes consistent with their respective views on the policy problem.

Having discerned the discursive mechanisms inherent to the policy process, questions remain concerning how discursive hegemony is actually achieved by local discourse coalitions. Hajer (1993) and Bulkeley (2000) outlined two conditions which must be fulfilled for a discourse to be dominant. These are namely,

- discourse structuration whereby a discourse acquires the rhetorical power to convince other policy actors and
- discourse institutionalisation whereby the policy process is conducted in accordance with the ideas of a dominant discourse

The concept of a discursively dominant coalition in a policy network has been supported in Bulkeley (2000) wherein a dominant discourse coalition is conceptualised as an integrated policy community within a wider loosely integrated issue network. While this supports the notion of policy communities as discursive coalitions influencing policy outcomes, it does not explain how coalition building actually takes place. This criticism was raised by (Szarka, 2004) who opined that Hajer had downplayed the notion of coalition formation as being necessary to effect political change.

This suggests the need to seek a more appropriate framework for the conceptualisation of coalition building and, hence, governance within the local flood management policy process. Szarka (2004) framed coalition building in the policy process as a concerted action directed at achieving mutually beneficial goals. This fits conformably into application here, which uses the ACF, developed by Jenkins-Smith and Sabatier (1994) as an analytical framework. The utility of the advocacy coalition is apparent from its recognition not only of the need for co-development of ideas and belief systems but also concerted action and the exchange of resources between coalition members to turn ideas into outcomes.

The utility of the Advocacy Coalition Framework as a tool with which to analyse local implementation of national policies is evident from Jenkins-Smith and Sabatier's (1994 p 179) conclusion that 'to examine policy change only at the national level will, in most instances, be seriously misleading. Policy innovations may occur first at a sub-national level and then expand into nationwide programs; even after national intervention, sub-national initiatives normally continue'. ACF is clearly suitable for analysis of both the local implementation and transformation of national policies and the influence of these transformations on future national flood management policies.

Adoption of an ACF in this thesis does not imply that the role of discursive affinity in coalition formation is being eschewed. Actually it reflects the realisation that both discursive affinity *and* resource dependencies are fundamental to the formation of coalitions in the flood risk management policy system. Hence, policy interpretation, implementation, reformation and transformation are seen as functions of competing advocacy coalitions within the policy subsystem or domain represented by the LA area. An ideal representation of this is the MGSGP which will be expounded upon in greater detail later in this chapter.

The theoretical strengths of the ACF lay in the emphasis it places on the need for policy actors in a coalition to work together and in concert if national policy is to be successfully adapted and implemented in the context of the local interpretation of the policy issue. ACF was conceptualised as a powerful subset of discourse coalitions by Szarka (2004). In the next section, the utility of the conceptualisation of ACFs as governance coalitions proposed in this section will be applied and tested through analysis and comparison of flood hazard governance in the case study LA areas.

Contrasting Forms of Local Flood Governance Coalitions

Birmingham Strategic Flood Risk Management Board

The local governance of flood hazards in the Birmingham area is carried out by the Birmingham Strategic Flood Risk Management Board. This is an operational level group made up of representatives from Birmingham City Council, Severn Trent Water and the EA. These local policy actors represent the cross cutting nature of flood hazard governance in the Birmingham area and include experts from other departments within BCC such as drainage engineers, planners, emergency planners, development control, flood risk mapping, asset management, climate change adaptation and green infrastructure (Birmingham City Council, 2011). However in order to evaluate the effectiveness of the

Birmingham Strategic Flood Risk Management Board as a policy making and implementing institution, it is instructive to examine its origins, the policy drivers responsible for its formation and the exchange of policy resources between coalition members as well as the narratives that have bound this advocacy coalition together thus mapping the architecture of flood risk management policy making and delivery in Birmingham.

The main policy driver responsible for the formation of the coalition which eventually morphed into the Birmingham Strategic Flood Risk Management Board was the Urban Flood Risk and Integrated Drainage pilots for the Upper Rea catchment in Birmingham sponsored by DEFRA in 2008. It must be noted here that these pilots were a crucial aspect of the delivery of integrated and holistic flood risk management as set out in the central government policy discussion document *MSW* (DEFRA, 2005). Undertaking this pilot provided a platform and an opportunity for the stakeholders involved in the management of flood risk in Birmingham to re-frame the problem of flooding; evaluating this in the context of the effects of the redevelopment of brownfield sites in the Birmingham area on increasing surface water flood risk. This was achieved through utilisation of new modelling tools such as the strategic sewer and river model (SSRM) and improved stakeholder engagement (DEFRA et al. 2008a). The SSRM provided for the analysis of pluvial, fluvial and sewer flood risk, all of which have occurred in the Birmingham area. However the main problem highlighted in the pilot project was an apparent dearth in institutional arrangements for the management of urban flood risk and the adaptation of urban areas to more intense rainfall events as a result of the effects of climate change. Although the new modelling tool highlighted an increase in surface water flood risk in Birmingham, the framing of the problem suggested a gap in institutional arrangements for flood management (DEFRA et al. 2008b).

Thus the consensus understanding of the policy problem was framed as institutional barriers obstructing the achievement of integrated urban management and disparities inherent in the incentives, accountabilities and capital programs of the various local actors as well as lack of frequent stakeholder communication (DEFRA et al. 2008a; DEFRA et al. 2008b). This further revealed the gulf in institutional practices undertaken by the various risk management authorities in the Birmingham area (DEFRA et al. 2008a). Given this framing of the problem the ideal solution to the policy problem as recommended in the final report of the pilot project was the maximisation of stakeholder engagement in order to achieve integrated urban management. Indeed the workshops and stakeholder meetings undertaken as part of the pilot study were framed as templates for future stakeholder engagement. This was partly due to the apparent absence of national legislation at the time to fill the surface water

management gap in urban drainage management (DEFRA et al. 2008b). The pilot study also recommended that a water group be formed in Birmingham in order to 'promote the principles of Integrated Urban Drainage Management principles' in addition, the proposed water group should include 'members from all the organisations that contributed to this pilot including members from Emergency, Local and Strategic Planning teams' (DEFRA et al. 2008b p 24). The formation of the proposed water group represents an institutionalisation of the common understanding of the policy problem, the concomitant policy solution and thus a platform for collective local action.

The proposed vision for the water group was to introduce a coordinated approach to different aspects of flood management such as climate change adaptation, emergency planning, and strategic development planning and water infrastructure provision. The institutionalisation of the proposed water group took the form of clearly defined roles and expectations between the coalition members manifest in a memorandum of understanding, in addition to a clear funding structure (DEFRA et al. 2008b). A significant claimed output of the Upper Rea Integrated Urban Drainage Pilot project was that it was 'successful in cementing new relationships and generating a sense of inclusiveness with stakeholders' (DEFRA et al. 2008b p 11). Having explored the origins and the policy driver of the flood hazard governing coalition, the composition of the coalition and its inherent resource exchange will be examined next.

During the course of the Upper Rea Integrated Urban Drainage Pilot project, a series of key meetings and workshops was carried out. These included eight steering group meetings where the key stakeholders were BCC, the EA and Severn Trent Water, the local actors responsible for the management of urban drainage in the Upper Rea Catchment area:

'The project steering group provided a forum for all parties to identify the roles, responsibilities and issues with the current surface water management framework. The group enabled sharing of information allowing each other to better understand the roles and, more importantly, the barriers that each of them face in working together'

(DEFRA et al. 2008b p 7)

In addition to the steering group meetings, three workshops were carried out to elicit the urban flood management views of wider stakeholders. There was a differentiation between the steering group responsible for the pilot project and other policy actors referred to as

stakeholders who contributed to the workshops conducted during the project. The implication of this differentiation was manifest in the solutions prescribed to confront the problem of urban flood management. The water group mentioned above was prescribed as an ideal solution and its composition was composed of local actors who prepared the report and participated in the steering group meetings. This effectively excluded other stakeholders from the policy making process, namely Flood Action Groups, the National Flood Forum, environmental organisations and even residents who had been flooded. These actors had been invited to participate in the workshops conducted in order to detail stakeholder frustration about flood hazard governance. Their level of engagement in the policy process can be referred to as merely consultative. The pilot project steering group policy boundaries were defined on the basis of the possession and perhaps more importantly the exchange of resources such as the legal authority to take action to manage flood hazards, the capital required to execute flood management schemes, and the expertise and information required to analyse future flood risk. Institutional changes such as the requirement in the FWMA (2010) for LLFAs to coordinate flood risk management provided more resources, legitimacy and authority, to policy actors in the group:

'The key thing for the group was, it's obviously come out of the FWMA (2010) part of it is about partnership working. We were already doing that through the IUD pilot and other projects that we had ongoing but I guess this is more of a formal structure to that. So it is sort of a reflection of all sorts of things but just made sense to go down that route'

(Birmingham City Council Interview 30/11/11)

Table 7. 1 Birmingham Strategic Flood Risk Management Board

Local flood hazard governance structure in Birmingham (Birmingham City Council, Severn Trent Water and the Environment Agency)		
Upper Tier	Birmingham Strategic Flood Risk Management Board	• Set strategic policy • Agree investment priorities • Set the governance rules (information sharing and confidentiality)
Middle Tier	Birmingham Water Group	• Operational level group • Includes senior officials and specialists • Coordinating Floods and Water management activities within and across member organisations
Lower Tier	Project Specific Partner Groups such as Birmingham SWMP and PFRA, River Cole Local Flood Risk Management Plan and Wood Brook SWMP	• Project specific groups • Meetings conducted regularly to share views and news between member organisations

(Birmingham City Council, 2011)

As part of the empirical work undertaken during the thesis, I was invited to observe one of the meetings conducted as part of the preparation of the Birmingham PFRA. The meeting was headed by the flood risk manager of BCC and attended by specialists from BCC, the regional area office of the EA in Nottingham and Severn Trent Water. The experts represented in the meeting included drainage, resilience, climate change and adaptation, planning and park and nature conservation from BCC, flood risk mapping from the EA and flooding and asset management from Severn Trent Water. In line with the original purpose of the IUD pilot, the flood risk implications of the implementation of the Birmingham development plan were discussed. Thus the possibility of utilising Section 106 agreements and Community Infrastructure Levies for the funding of future flood schemes was discussed between the flood manager and the planning division of the Council. The planning division of BCC and STW also devised plans for dealing with the waste water capacity from new developments and the EA and the flood management division of the Council collaborated on

the funding of schemes on the River Cole (Notes from observation of Birmingham Water Group meeting). This demonstrates not only the exchange of resources such as information and funding between coalition members who share a common understanding of a policy problem but also provides evidence of concerted action by coalition. Hence it can be seen that these interactions between local actors in Birmingham constitute policy implementation through interpretation by local actors.

Somerset Strategic Flood Risk Management Partnership

In Somerset, a network of organisations was established in response to recommendations from the Pitt Review of the 2007 floods, particularly the requirement for the local management of flood hazards. The resulting governing group was made up of representatives from organisations such as the IDBs in Somerset, the EA, Wessex Water, the District and Borough Councils in Somerset, the Chairman of the Wessex RFCC and the Chairman of the Somerset Water Management Partnership (Somerset County Council, 2010). Hence flood hazard governance and partnerships arrangements came under the aegis of the Somerset Strategic Flood Risk Management Partnership. Prior to the adoption of the recommendations from the Pitt Review, the flood hazard governance structure in Somerset was characterised by somewhat uncoordinated actions by disparate risk management authorities and other local actors. In many ways this is characteristic of local conditions within Somerset related to its rural, agricultural and governance characteristics which have resulted in the presence of a range of local organisations with interests in managing floods such as the county and district councils, IDBs, two PWCs, the EA and nature conservation organisations. Therefore it is unsurprising that flood risk governance was initially located within a wider network of water management in Somerset. This network, the Somerset Water Management Partnership, provided a forum where countywide water interests including environmental interests were represented and was characterised by an exchange of views during its quarterly meetings.

However the origins of the SWMP can be traced to the response to flooding that occurred in Somerset in 1999-2000. This response led to the establishment of a partnership between the disparate group of actors in Somerset with the goal of working together to reduce the flood risk to both communities and the wildlife. The Parrett Catchment Project (PCP) emerged, made up of 30 organisations within Somerset. The goals of this coalition were articulated in a South West Climate Change Impact Partnership document:

‘The Parrett Catchment Project was developed in 2000 to help manage deep and prolonged flooding, which is likely to become more frequent with climate change, in the River Parrett area in Somerset. A key objective of the project was to create new wet grassland, fen, reed beds and wet woodland, which help to restore the natural function of the catchment to attenuate flood waters. These sites provide improved habitat, thereby enabling ‘species permeability’ in response to climate change’

(SWCCIP, 2009 p 1)

Following on from this, the SWMP emerged

‘Somerset Water Management Partnership, it followed on from a group called the Parrett Catchment Management Group which looked at problems relating to the Parrett catchment and within that group we were quite proactive within subgroups, runoff, sustainable drainage systems, management practices and all sorts of different things. We had some very good successes in that group. It did what it wanted to do and it kind of ceased and it’s had other groups take off from it’

(South Somerset District Council Interview 10/06/12)

One of the goals of the Somerset Water Management Partnership was to ‘look at big solutions to do land management mainly, farming practices using European funding’ (South Somerset District Council Interview 10/06/12). The SWMP was a catchment based group made of representatives of SCC, EA, Taunton Deane District Council, Sedgemoor District Council, South Somerset District Council, NFU, FWAG, Somerset Wildlife Trust, RSPB, Somerset Consortium of Drainage Boards, South West Association of Drainage Authorities, Somerset Waterways Development Trust, Wessex Water, Natural England and catchment reps representing local communities. Its membership is consistent with that of the PCP thereby providing evidence of the continuity of the governing network in Somerset. However it lacked an internal mechanism for funding as noted by the flood risk manager of the South Somerset District Council:

‘This Somerset water management partnership, there is no internal funding within that group so we are the facilitators to try and make things happen’

(South Somerset District Council Interview 10/06/12)

In addition it was made up of disparate interests and perhaps more consequential to flood management in Somerset the coalition was not characterised by any routinized patterns of resource exchanges with the aim of managing floods. Therefore the SWMP provided a forum through which information could be exchanged between coalition members. Important flood risk management policy issues such as SuDS, CFMPs, the Severn Estuary Flood Risk Management Strategy and flood risk modelling in Somerset were discussed, however, the exchange of views has been characterised as:

'We are also involved on a countywide group, Somerset Water Management Partnership, among our group are representatives from the districts and county council, farming fraternity and drainage boards, quite a mix of interests, environmental interests as well and we have quarterly meetings with them which is quite good for the exchange of views'

(South Somerset District Council Interview 10/06/12)

The influence of SWMP was limited due to not only the lack of funding as highlighted earlier but also a lack of flood risk management authority and responsibility by some important members such as SCC. The disparate, dispersed and somewhat chaotic nature of flood hazard governance in Somerset was expounded upon by the flood risk manager of SCC when recalling flood governance and SCC flood management responsibilities prior to the Pitt Review and the passage of the FWMA (2010):

'The closest to that would have been the drainage engineers on the highways but they are focused on the water on the roads nothing on flooded properties or coming from the fields through people's houses'

(Somerset County Council Interview 30/11/2011)

In addition to this, some of the District Councils

'Did (flood management) works and some didn't, you know even though they had the powers, they disbanded all their drainage teams and things (while) some kept them'

(Somerset County Council Interview 30/11/2011)

Given the lack of governing resources such as legal authority, funding and expertise it is unsurprising that there was no concerted action by the members of the coalition to structure flood hazard governance in Somerset. This governance structure was to change with the Pitt Review providing a policy window for an alteration in the policy resources of actors such as the SCC and the EA. In its response to the recommendations of the Pitt review, central government made it clear that DEFRA would work with LAs to support and fund a local leadership role for local flood risk management (DEFRA, 2008b; Somerset County Council, 2013).

As a result SCC was designated a LLFA with new roles and responsibilities as detailed by the flood risk manager of the Council:

'The primary vehicle is the local strategy which we are developing at the moment that deals with surface water, ground water and ordinary water courses. Then there is the other duties in the act, duty to maintain a register of structures and investigate flooding incidents to see with risk management authority has responsibilities and that's the three main parts of the Act that there are at the moment. And in the future when the SuDS approval body role, also included in the new duties is a supervisory role over the districts and borough councils. Any works on ordinary water courses is down to the districts but we are meant to keep an overview of what they are doing to make sure it all fits into the local strategy and things like that'

(Somerset County Council Interview 30/11/2011)

The local strategy, highlighted as a key document and indeed the foundation for the future management of flood risk in Somerset, is being produced in line with the Flood Risk Regulation 2009; a transposition of the EC Floods Directives (2007). However the significance of the local strategy is in facilitating the formation of a local flood risk management governing coalition. This is evidenced in the preparation and the objectives of a local flood risk management strategy document produced by SCC. The process of preparation was characterised by engagement with 'officers from across Somerset, the district and borough councils, the EA, the water and sewerage companies, and the Internal Drainage Boards' (Somerset County Council, 2013 p 3). However more consequential, the objectives of the strategy note that

‘The Somerset Strategic Floods and Water Management Partnership will deliver this strategy and work with local communities to develop and deliver fully integrated flood risk and drainage management services, beginning with a co-ordinated works programme’

(Somerset County Council, 2013 p 6)

This reveals how the Somerset Strategic Flood Risk Management Partnership was established and that its policy goals emphasise integration and partnerships between the various risk management authorities and other responsible organisations. There is a change in narrative which was a departure from nature conservation which was the goal of Somerset Water Management Partnership to the effective governance and partnership working narratives of the Somerset Strategic Flood Risk Management Partnership. The effective governance narrative that bound the new coalition comes as no surprise given the disparate nature of flood hazard governance in Somerset, the proliferation of policy actors and the need for SCC to assume new responsibilities.

Having chronicled the emergence of a flood hazard governing coalition from the wider water management issue network, it is appropriate to map out the flood hazard governance structure in Somerset in table 7.2.

Table 7. 2 Somerset Strategic Flood Management Partnership

Local flood hazard governance structure in Somerset (Somerset County Council, All District and Borough Councils in Somerset, Wessex Water Services, South West Water, Somerset Drainage Boards Consortium, Somerset Water Management Partnership (NFU, FWAG, Somerset Wildlife Trust, RSPB South West Association of Drainage Authorities, Somerset Waterways Development Trust and Natural England) and Wessex RFCC)
Strategic Flood Management Partnership • Strategic group of stakeholders (EA, District Councils, Water Companies, Drainage Board Consortium and SCC) • Delivery of joint strategic actions and targets • Assist and coordinate effective communication
Strategic Flood Management Board • SCC board (Lead Cabinet Members, Corporate Director Environment, Corporate Director Resources, Head of Highways and Passenger Transport, Head of Environmental Management and Regeneration) • Provide strategic leadership, set vision, deliver overview and scrutiny and monitor performance
Flood Management Delivery Group • SCC officers to manage key areas of service delivery (Highways Group, Civil Contingencies Unit, Transport Development, Countryside, County Farms, Finance and Public Rights of Way) • To take the lead in delivery areas set by the Partnership and Board

(Somerset County Council, 2013)

The role of the Pitt Review of the 2007 floods, the Flood Risk Regulations 2009 and the FWMA (2010) in the formation of the governing coalition in Somerset cannot be over emphasized. The designation of SCC as a LLFA opened the window for SCC to for the first time assume a new role in managing and coordinating local flood risk (Somerset County Council, 2013). In accordance with the FWMA (2010) and in line with the administrative structure in Somerset, this was to be achieved through the establishment of key partnerships between all stakeholders. Evidence of the presence of a governing coalition is manifest in the exchange of resources such as flood management authority and funding between the newly designated LLFA, EA and the districts in the promotion and approval of flood management measures such as SuDS. Coalition characteristics are also observed in the

consultation between the Districts (LPAs) and the EA in deciding the flood risk effects from developments. The exchange of information between West Somerset Council, SCC, EA, Wessex Water Services, Somerset Drainage Boards Consortium and Taunton Deane Borough Council in the preparation of Surface Water Management Plans for the cities of Taunton and Minehead also suggests a functioning coalition. The sharing of data between the various stakeholders for the preparation of the PFRA, in line with the partnership guidance from the EA (EA, 2010), likewise provides evidence of a platform for flood risk management stakeholders in Somerset to further cement the establishment of a governing coalition.

Metropolitan Glasgow Strategic Drainage Partnership

Flood management in the largest city in Scotland, Glasgow, is carried out through a network of policy actors under the umbrella of the Metropolitan Glasgow Strategic Drainage Partnership. This partnership is made up of the following actors: GCC, Scottish Water, SEPA, Clyde Gateway Urban Regeneration Company, Scottish Canals, Scottish Enterprise, Scottish Government, Glasgow and Clyde Valley Strategic Development Planning Authority, South Lanarkshire Council, North Lanarkshire Council, East Renfrewshire Council, Renfrewshire Council, West Dunbartonshire Council and East Dunbartonshire Council. The convergence of these policy actors and the evolution of this governing coalition were brought about by an amalgamation of policy events which provided windows of opportunity and enabled the actors in Glasgow to acquire and exchange policy resources.

The Flood Prevention and Land Drainage (Scotland) Act 1997 required LAs to undertake maintenance on watercourses which were liable to flood as well as publish biennial reports on their watercourse maintenance and flood defence activities (Glasgow City Council, 2009). GCC set up a Corporate Working Group in response to the 1997 Act (Glasgow City Council, 2009). However the devastating 2002 floods became a window of opportunity to for policy actors to re-evaluate the problem of flooding in Glasgow, as the 2002 floods could not be categorized neatly into pluvial, fluvial or sewer flooding. The importance of the 2002 flooding event in Glasgow to the emergence of this governing coalition was outlined by a representative of Scottish Water when asked to define the approach through which SW manages its sewers in the Glasgow area:

‘The MGSDP, that's been looking at a basket of solutions for problems in Glasgow so what happened in 2002 was a big flood and the government got everybody together saying ‘you need to deal with this, you need to get everyone together’ which is actually the approach the

Flood Risk Management Act takes the working together and that kind of thing is based on that experience. So the first thing was to understand how the whole Glasgow drainage system worked including above river water courses, culverts, sewage systems whatever. Then develop a basket of options that can be used to deal with it'

(Scottish Water Interview 27/07/12)

However the emergence of the governing coalition was an laborious process, characterised by a state of contrasting views and disagreements about the nature, scope and attribution of blame about the 2002 floods between GCC and SW, as revealed by a member of GCC Land and Environmental Services team when discussing the aftermath of the 2002 floods:

'The common response was Scottish Water blaming GCC because they said earth covers didn't have the capacity to allow their sewers to discharge and all their CSOs did function properly, Glasgow City Council blamed Scottish Water because we said our water courses filled because we got so much water and foul stuff come down the CSO so there was no chance of the water courses ever working'

(Glasgow City Council Interview 25/07/12)

What could be observed in the immediate response to the 2002 Glasgow floods is evidence of a discursive struggle for policy hegemony between key policy actors the GCC and Scottish Water in the management of floods in Glasgow. However policy consensus was reached following a workshop carried out by Hyder Consulting which brought together all the stakeholders, where it was realised that there was a need to approach the flooding problems through joined up thinking and co-operation. The policy process progressed from a state of conflict, analogous to an issue network, to a state of consensus, analogous to a policy community and was chronicled by a member of GCC Land and Environmental Services team:

'For a number of days there was various parties making statements Scottish Water chief executive making statements in the papers while people's houses were flooded with living rooms six foot deep in water and stuff like that. Obviously that wasn't very clever; there was this tension between Scottish Water and Glasgow City Council at the time'

Reaching a state of consensus was expressed as

‘The Scottish government had a word with SEPA, so SEPA came in and they started to present some information about the storm and people started to realise multiple things went where systems probably maxed out by a hundred years storm because of the culverted nature of the water courses a lot of the water didn't actually enter into the water courses there was large areas that were just flooding because the road gully capacity wasn't enough to take it because the flows would just run out. We started off with a frosty agreement that we’d appoint a consultant to model to update some of the drainage plan network that Scottish Water built and the water courses and as the modelling process developed it was evident that the systems were so interactive’

(Glasgow City Council Interview 25/07/12)

Having reached a consensus on the complexities of the storm drainage systems in Glasgow, the MGSDP emerged as the governing coalition to deal with the city’s urban drainage problems. Therefore the emergence of the MGSDP provided a platform for key stakeholders to influence flood risk management policy in Glasgow through a shared definition of the policy problem and also to engage in the exchange of policy resources (as evidenced in Table 7.3). The nature of the influence and breadth of members of the MGSDP was articulated by a representative of Scottish Water:

‘There is a core group of people, of organisations, which are Scottish Water, the relevant councils Glasgow City Council, there are a few others, and then there is SEPA. These are the key people, particularly because they are paying for things and the government as well and then there are other groups that include others, I don't know to what extent they are partners, people like SNH, like environmental groups, there is a lot of offshoots, green belt partnerships and things like that were involved. And so there is a lot of communication, there is a whole website dedicated to the MGSDP, they have a whole communications strategy and a communications plan’

(Scottish Water Interview 27/07/12)

In addition to the inclusion of a diverse group of local actors who participate in the exchange of resources, more crucially, these actors engage in jointly funded flood risk management projects. This manifests in joint projects undertaken by GCC and SW and a better relationship between the council, SEPA and developers in guiding development away from

areas at risk of flooding. An embodiment of the exchange of policy resources such as capital was articulated by a member of GCC Land and Environmental Services team:

'Yes we have at times carried out some joint projects, Scottish Water have what's known as downs sewer, I think the overall project cost was I can't remember £6million, GCC paid £2.7million. so we made a significant contribution, Scottish Water might make contributions because its freed up our development land where we've gotten to oversize a sewer, we paid the extra, they built but it was cheaper for us to pay for the extra than two parallel sewers going on'

(Glasgow City Council Interview 25/07/12)

Table 7. 3 Metropolitan Glasgow Strategic Drainage Partnership Board

Local flood hazard governance structure in Glasgow (GCC, Scottish Water, SEPA, Clyde Gateway Urban Regeneration Company, Scottish Canals, Scottish Enterprise, Scottish Government, Glasgow and Clyde Valley Strategic Development Planning Authority)
Metropolitan Glasgow Strategic Drainage Partnership Board (GCC Development and Regeneration Services, SW Asset Management, SEPA Operations, Scottish Government Water, Air, Soils and Flooding, Scottish Enterprise Business Infrastructure,
Metropolitan Glasgow Strategic Drainage Partnership Steering Group • Implementing directives of the board • Achieving successful delivery of MGSDP strategy
Metropolitan Glasgow Strategic Drainage Partnership Technical Group • Implement the plans and instructions of the Steering Group • Provide technical input • Oversee projects which deliver the MGSDP strategy
Metropolitan Glasgow Strategic Drainage Partnership Project Management Office • Effective and efficient management and delivery of the MGSDP • This is undertaken by both Halcrow and MHW

It is instructive to examine the principles and concrete actions of the MGSDP as this reveals the narratives and discourse that manifest as the discursive glue that holds the governing coalition together. Thus the principles of the MGSDP espouse the reduction of flood risk,

improvement in water quality as well as watercourse habitat improvement (Glasgow City Council, 2009). However the promotion of economic development, the removal of drainage constraints to development and the promotion of optimised investment planning highlight the economic development and investment narrative of flood risk management in a narrative of 'freeing up' development land. This view is further manifest in the program of flood risk management schemes and works that have been established under the aegis of the MGSDP. These works demonstrate the importance of the link between urban drainage management and economic development in Glasgow. Therefore there are projects such as South Dalmarnock Integrated Urban Infrastructure, Toryglen Area Development Sites and Camlachie Burn Overflow, projects developed with the principal aim of allowing regeneration and developments in Glasgow as well as the reduction of flood risk (Glasgow City Council, 2009).

Moray Flood Alleviation

Flood management in Moray is undertaken through the Moray Flood Alleviation. The concrete actions of MFA are manifest in Moray by the presence of engineering flood prevention schemes such as the Lhanbryde Flood Alleviation Scheme, the Burn of Mosset Flood Alleviation Scheme, the Elgin Flood Alleviation Scheme, the Pilmuir Flood Alleviation Scheme, the River Findhorn Flood Alleviation Scheme and the Rothes Flood Alleviation Scheme (see Table 7.4). The proliferation of these flood prevention schemes in Moray can be attributed to a series of devastating flooding events which occurred in 1997, 2000 and 2002. These events acted as policy drivers and thus provided a window of opportunity for the establishment of a governing coalition in Moray which would eventually result in the formation of MFA. This is a functional group which includes both governmental and private sector local actors and made up of Moray Council, Royal Haskoning, Morrison Construction and E C Harris (Moray Council, 2007).

The history of flood governance in Moray is not however characterised by the emergence of governing or even consultative coalitions which is very unusual in Scotland (Crichton, 2007). MFA did not emerge from a wider issue network but rather as a result of a confluence of flooding events. The flooding events highlighted above were interpreted in Moray as having been exacerbated by the presence of developments on floodplains. The attribution of the flooding problem to the development on floodplains and the ameliorative nature of the policy response were expressed by the project manager of the Elgin Flood Alleviation scheme:

‘We have a legacy of areas where development has been permitted on floodplains. And that's principally why we have a major program of capital works which is effectively correcting this.’

(Moray Council Interview 31/07/12)

In order to prevent future flooding, action in Moray is influenced by the Flood Prevention (Scotland) Act 1961. The 1961 Act served as the tool of legitimacy and authority with which the Council was not only able to take action but also the glue that allowed for the cohesion of the coalition. In another demonstration of how interwoven the flood management activities of the Council are with Moray Flood Alleviation, the interview with a representative of the Moray Council took place at the site office of the Elgin Flood Alleviation project and the interviewee was the project manager who is also an employee of the Council, in fact he was the previous flood risk manager of the Council.

However the remarkable feature of MFA is the absence of direct involvement of other Scottish governmental bodies such as Scottish Water or SEPA despite the Scottish government being responsible for the provision of almost 80% of the funding for schemes undertaken by the MFA. This lack of involvement was expressed by the project manager of the Elgin Flood Alleviation scheme in describing the policy reaction to the 2002 floods:

‘It has been very much Moray Council that has promoted the schemes. The help we’ve got, we haven’t really had other organisations involved in promoting schemes at all. The nearest we’ve got to help is regular meetings with SEPA regarding our projects’

(Moray Council Interview 31/07/12)

The nature of the cooperation between the Council and its partners in the Moray Flood alleviation project Royal Haskoning, Morrison Construction and E.C Harris revolves around the exchange of resources such as the legitimacy, authority and capital from the Council and the expertise offered by the private sector organisations, these collaborations, akin to those in policy communities, are required to deliver the policy aims of the MFA. The consultations between the Council and SEPA on the environmental and conservation aspects of specific schemes suggest an issue network type relationship which is typified by the apparent disagreement between SNH on one hand and MFA on the other about the approach that

should be taken in managing flood risk. This disagreement is manifest in the discursive framing of the 1961 Act as not only constraining flood defence in urban areas but also limiting the options to only hard engineering solutions. This was revealed by a representative of the SNH while detailing the adverse impacts of the activities of the MFA on the river bodies in Moray:

'With a lot of the flood schemes because they were built under the old 1961 Flood Prevention Act, it still involves quite a lot of engineering and concrete and goodness only knows what'

(SNH Moray Interview 24/07/12)

This criticism is not surprising given the environmental preservation and enhancement mandate of central government agencies such as SEPA and the SNH under Controlled Activities Regulations 2005 which contrast with the narratives adopted by the Council in promoting MFA projects. Likewise, the inclusion of private organisations with world renowned expertise in the construction and maintenance of flood defence schemes should come as no surprise given the increase in emphasis on flood defence asset maintenance by the Council and its own lack of internal technical expertise (SNH Moray Interview 24/07/12):

'If you don't put enough resource into maintaining these assets that we're building now then they will deteriorate and their design standards effectively go downwards which I see as quite possibly a significant risk in the future'

(Moray Council Interview 31/07/12)

This provides evidence of a governing coalition in Moray for the management of flood risk characterised by the construction of flood alleviation schemes and provision of maintenance for these assets.

Table 7. 4 Moray Flood Alleviation

Local flood hazard governance structure in Moray (Moray Council, Royal Haskoning, Morrison Construction and E C Harris)					
Moray Flood Alleviation (Moray Council, Royal Haskoning, Morrison Construction and E C Harris)					
Lhanbryde Flood Alleviation Scheme	Burn of Mosset Flood Alleviation Scheme	Elgin Flood Alleviation Scheme	Pilmuir Flood Alleviation Scheme	River Findhorn Flood Alleviation Scheme	Rothes Flood Alleviation Scheme

The influence of the MFA has been highlighted by a representative of the SNH in Moray in addressing flooding issues in Garmouth, Moray:

'The main issue of flooding and concern is at Garmouth so you know I think any FLAG would continue after so the same people were taking up the Garmouth and Kingston issue and as I say that tends to be the Moray flood alleviation group that gets involved in that'

(SNH Moray Interview 24/07/12)

It is instructive to take into account the narrative which prompted the establishment of the MFA as well as the composition of the coalition, particularly the absence of nature conservation organisations. As noted earlier the 1961 Act has been framed by environmentalists as putting 'only engineering schemes into areas under local government control or local authority areas' (WWF Scotland Interview 26/11/12). Therefore it is not surprising that the policy outcomes pursued by the MFA is defined by the need to complete hard engineering flood defence schemes in the Moray area.

Analysis and Implications of the Different Governing Coalitions

Introduction

The preceding sections have provided evidence for the existence of flood risk governance coalitions in each of case study LA areas. These areas cover a wide range of geographical, flooding, political, and administrative contexts and environments and were selected to represent conditions in the UK more widely. In accordance with the objectives of this thesis,

this section presents theoretical and practical analyses of the different governance coalitions and a discussion of their implications for the behaviours of individual policy actors that have relevance nationally as well as in the case study areas themselves. In considering the roles of governance coalitions it is, however, important to remember that Local Authorities remain the lead policy actors because they are designated as such by the FWM Act 2010 in England, and the FRM (Scotland) Act 2009 in Scotland, respectively.

Emergence of the Governing Coalitions

The Birmingham Strategic Flood Risk Management Board emerged from a steering group established as part of a DEFRA pilot; itself an outcome of *MSW* (DEFRA, 2005). The steering group set up to produce the IUD pilot in Birmingham became the bases upon which a formal coalition would emerge (DEFRA et al. 2008b). The outcome of the DEFRA pilot in Birmingham was a call for closer stakeholder engagement between authorities responsible for managing pluvial, fluvial and sewer flooding. Given the history of fragmented flood governance in England, it was unsurprising that the steering group identified institutional barriers and gaps in surface water flooding management as the major policy problem. In describing this policy problem the steering group adopted the bureaucratic discourse of flood risk management in England and they suggested how it should be solved under the narrative of effective and functional partnership working between stakeholders, a key output of the IUD pilot. As a result, establishment and funding of the Birmingham Water Group emerged as a key recommendation of the Upper Rea IUD pilot (DEFRA et al. 2008b) and the discourse coalition established for the DEFRA pilot became embodied in Birmingham's urban flood governance coalition.

On first inspection, evolution of the Metropolitan Glasgow Strategic Drainage Partnership seems to have followed the same path as the Birmingham Water Group. However, significant differences exist in the nature of the drivers of policy change. The key drivers for emergence of the Birmingham governance coalition were the policy recommendations of a pilot study sponsored by central government. In contrast, it was an urban flood (the devastating floods of 2002) that acted as the key policy driver in Glasgow. Not only did he flood reveal disconnects between the flood management authorities (Scottish Water and GCC) more graphically than the desk study in Birmingham, it also exposed that categorising inundation of urban areas as being due to pluvial, fluvial or sewer flooding was highly divisive. This was apparent from recriminations between SW and GCC during and following the floods that stemmed from lack of a common understanding of the coincident nature of

flooding that emerged as a policy problem. Lack of institutional consensus and cooperation in the aftermath of the 2002 floods suggests that the discourse coalition initially failed to coalesce, preventing its evolution into a governance coalition.

Yet a more cohesive coalition did develop, thanks to an initiative led by SEPA wherein an external consultant was commissioned to produce enhanced and updated models of the complex network of urban drainage assets in Glasgow – assets owned by multiple stakeholders within the discourse coalition. The results of the model study not only allowed policy consensus to emerge but also provided the basis for conception of the shared principles underpinning the MGSDP. These principles constitute the discursive glue that binds the governing coalition; the need to upgrade and integrate urban drainage infrastructure in hydrologically-efficient and socially equitable ways that support urban renewal in moribund and derelict parts Glasgow which have been identified by planners as the principal barrier to continued economic development of the city. Comparison of the recent histories of flood governance in Birmingham and Glasgow reveals that in similar ways, a serious flood is as effective a policy driver for the establishment of local governance coalitions and hence agents of policy change as initiatives led by central government.

Hitherto the flood risk management policy subsystem in Somerset could have been characterised as analogous to an issue network: namely the Somerset Water Management Partnership. This was a coalition of disparate policy actors, each performing their duties with minimal cooperation on flood risk management. This is not surprising given that flood risk management was not the principal policy focus of the group and that until recently SCC had no significant flood risk management duties. The key policy driver responsible for the emergence of the SSFRMP as a governing coalition was the recommendations of the Pitt Review (2008) and, particularly the emphasis placed on LAs providing leadership on local flood risk management. The need to coordinate flood management authorities and activities in Somerset resulted in formation of a more cohesive governing network between policy actors in SWMP. However, rather than being characterised by the ‘environmental management’ narrative of flood risk management, the SSFRMP was characterised by the ‘effective governance’ and ‘local management of local flood risk’ narratives of the bureaucratic discourse on flood risk management. Institutionalisation of this discourse occurred with the passing of the FWMA (2010), which formally empowered SCC with flood risk management responsibilities, as a LLFA.

This represents a stark contrast to the manner in which Moray Flood Alleviation evolved. The key policy driver in Moray is essentially similar to that in Glasgow. Moray experienced devastating floods in 1997 and 2002. However the difference in Moray is that, unlike in Glasgow, there seems to have been no intervention by SEPA and there is no evidence of disagreements between stakeholders like those that plagued Glasgow during and following the 2002 floods. This could be attributed to the type of flooding that occurred in Moray, which was universally recognised as fluvial, and to the absence of major urban centres, which limits opportunities for coincident pluvial, fluvial and sewer flooding. For example, the Elgin flood alleviation project manager confirmed that the MFA evolved organically and without the need for any intervention from SEPA. Perhaps more significant is the nature of the discursive glue that binds the governing coalition in Moray. This is based on the 'defence management' discourse which emphasizes construction and maintenance of structural defences to protect communities that are living in areas at risk of flooding due to the legacy of past development on floodplains.

Coalition Membership

To better understand the process of policy change, it is essential to examine the context responsible for inclusion or exclusion of particular policy actors in a coalition (Bulkeley, 2000). This is significant because in an institutionalised setting, such as a policy community, discourse is not only constituted of but also constitutes the policy process (Hajer, 1993). It is important to note the significance of the institutional setting and local conditions in accounting for the composition of the resulting governing coalitions. These institutional settings have been classified as the relatively stable parameters which either enable or constrain the resources of policy actors in a given policy sub-system (Jenkins-Smith and Sabatier, 1994). In this thesis these relatively stable parameters can be classified broadly as the physical geography and the bureaucratic structures of the respective LA areas.

The influence of physical geography is clear in Somerset, where the presence of low lying areas such as the Somerset Levels, rich agricultural land and national and international conservation sites including Exmoor National Park dictates that the SSFRMP comprises a diverse array of policy actors ranging from the Somerset Drainage Boards Consortium to the Somerset Water Management Partnership. Yet this contrasts with Moray which is a similarly rural area and which also includes national and internationally designated conservation sites including three SSSIs, two SACs, an SPA and a Ramsar site in the mouth of the River Spey (SNH Moray Interview 24/07/12) but where diversity of local policy actors in the governing

coalition is narrow. This could be attributed to the more fragmented and dispersed nature of flood management in England which is not the case in Scotland but perhaps more consequentially, the framing of the policy problem widely differs in the two case studies. While flooding as a policy problem in Somerset has been largely framed in terms of lack of effective partnership and leadership, the policy problem in Moray has been largely ascribed to the past development on floodplains that cannot be reversed. In addition, the administrative structure in Somerset has resulted in the inclusion of the District and Borough Councils in the SSFRMP. Although these Councils are not designated as LLFAs, their role as LPAs and consequent responsibility for managing flooding from ordinary watercourses are essential policy resources in the local flood governance network.

The way that the flood governance coalition that has evolved in Somerset also contrasts with that in Birmingham, which evolved from the steering group that participated in and produced the IUD pilot report. This explains why BCC, STWL and EA are the members of the Birmingham Strategic Flood Risk Management Board. As a unitary council, BCC is the LLFA as well as the LPA and, thus, resource dependency in the coalition involves policy actors with different specialities who act as semi-independent *institutions* within the same risk management *organisation*.

In addition, the heavily urbanised nature of Birmingham results in limited availability of agricultural land and scarcity of conservation areas with the focal point of the IUD pilot that was the root source of the governing coalition being on the management of urban flooding. This is comparable to the membership of the governing coalition in Glasgow which also emphasises an ‘urban drainage’ discourse. The difference in Glasgow is extension of membership of the governing coalition to a wider array of actors, which can be attributed to consensus regarding the need to use improvements in urban flood and water management to lever vital urban regeneration. Linking urban flood management so clearly to socio-economic development and urban regeneration in Glasgow has led to an urban planning discourse of flood governance and this contrasts with the ‘partnership working’ narrative of the bureaucratic discourse in Birmingham. This explains why the governance coalition in Glasgow includes policy actors such as Clyde Valley Strategic Development Planning Authority, Urban Regeneration Company and Scottish Enterprise while their counterparts are notable by their absence from the Birmingham governance coalition.

Policy Outcomes

This sub-section addresses the relationship between policy outcomes, the policy actors in the governing coalition and the nature of relationships, interactions and exchanges of resources that occur between them. The significance of policy actors and their interactions was highlighted by Marsh and Smith (2000) and Toke and Marsh (2003) in examining how the dialectical model of policy network accounts for policy change. In this thesis, comparisons between the outcomes of governing coalitions in the four case study areas provide the basis on which to explore and better understand how the backgrounds and behaviours of policy actors' influence delivery of local flood risk management in practice. In line with the interpretive approach to policy analysis Yanow (2000) adopted in this thesis it is proposed that policy *artefacts* (such as relationships within a network), policy *acts* and policy *outcomes* are conduits for the expression of underlying policy *values*. In other words, as institutions, governing coalitions 'embody social relations and rules such as norms, values and behaviours, and institutions also encompass concrete and cognitive structures that are habitualised over time and attain a degree of permanence within society' (Bulkeley, 2000 p 731). On this basis, the analysis of the 'concrete actions' of a governing coalition provides a platform for a comparative analysis of the distinct coalitions governing flood risk management in the four LA areas and, thus, a window on the link between local flood risk management governance and flood risk management outcomes, more generally.

The research reported in this thesis has revealed the contrasting nature of policy outcomes in rural and urban LA areas in Scotland and England. In England, the outcomes of governing coalitions in the study areas include flood risk management projects in Birmingham, Minehead and Taunton Deane SWMPs, as well as longer term plans for future flood risk management in the form of the Birmingham PFRA and the Somerset LFRMP. These plans adopt and broadly apply the flood risk management paradigm, particularly in urban areas, through identifying areas at the greatest risk of flooding, identifying the responsible stakeholders and flood management authorities and evaluating the appropriate management options. The projects themselves emphasize the need for 'partnership working', 'effective governance' and 'stakeholder engagement', narratives that embody the *bureaucratic discourse* of the flood risk management paradigm. In Moray, outcomes appear, at least on first inspection, to follow the flood defence paradigm in that they rely on improved urban drainage and widespread construction of structural defences aimed at managing the flood hazard. This is, perhaps, understandable given that the governing coalitions studied in

Scotland emerged in response to multiple serious flood events, as was articulated by the project manager of the Elgin FAS:

'In Elgin and since I've been here we have had a number, three or four out of bank occurrences. We had a very bad flood in 2002, and then another flood in 2009. Before that it was 1997 that Elgin flooded which was about 1:60'

(Moray Council Interview 31/07/12)

This was further elaborated by a representative of SEPA when describing how the Elgin FAS came about:

'Well it wasn't risk based, but it was really who made the best case for getting a flood scheme in place and quite often it could be that something happened and I think the Moray Elgin scheme is a quite good example where there were two or three flood events over a ten year period that were quite significant therefore the publicity, the local MPs and MSPs, the local, everybody there, it was at the forefront of their minds therefore it got moved forward'

(SEPA Interview 27/07/12)

Similarly when asked about how priorities are set, a member of the Land and Environmental Services team at GCC stated:

'Generally the areas which have experienced (flooding), White Cart Water has experienced some flooding'

(Glasgow City Council Interview 25/07/12)

Notwithstanding the emphasis on flood defence, outcomes in Moray and Glasgow still demonstrate broad acceptance of the flood risk management paradigm. For example, in Moray, the Elgin scheme seeks to use set back defences to create an urban flood corridor, while in Glasgow, recognition by multiple actors that interconnections between urban drainage and flood management assets owned by the Council and by Scottish Water are immutable means that policy outcomes are joint projects undertaken and funded by both stakeholders. Further, common acceptance in both LA areas that the aim of reducing the flood risk is to allow urban renewal and new development allows all the policy actors to

adopt and promote an urban planning discourse that promises to be effective in delivering urban flood risk management that is both integrated and sustainable.

Implications for policy translation and institutionalisation

An important implication of policy change in both countries is the extent to which local implementation of flood risk management in the urban centres of Birmingham and Glasgow has served as a policy driver for changes in rural Moray and Somerset. For example, while the Upper Rea IUD pilot dealt with management of fluvial and sewer flooding in the heavily urban context of Birmingham, the findings emphasised the needs for both a clearer definition of the roles and responsibilities of different management authorities and more partnership working. The outcomes of the Upper Rea IUD pilot were translated from a local level policy to national policy via the recommendations of the Pitt Review (2008), a translation that was institutionalised through the FWMA (2010), which formalised LA responsibility for management of flooding by designating most LAs as LLFAs.

National institutionalisation of policy interpretations and outcomes that emerge from local flood governance policy implementation accords with the notion of the policy process articulated by Jenkins-Smith and Sabatier (1994) that policy change can occur at the sub-national level and then expand to national programmes. Empirically, the findings of the Birmingham case study demonstrate how the governance approach developed by BCC was influenced by the recommendations of the Upper Rea IUD pilot, how it was picked up and promulgated in the recommendations of the Pitt Review in the FWMA (2010).

The Pitt Review and FWMA (2010) acted as policy drivers that empowered SCC by giving it the authoritative resource of being a LLFA. This allowed it to adopt the policy interpretations that emanated from the Upper Rea IUD pilot in Somerset. The implications of this change in policy on local implementation are manifest in the fact that the roles and responsibilities of a LLFA (as prescribed by the FWMA (2010) had already been undertaken by BCC informally, through the Birmingham Water Group that was established in 2008. In contrast, SCC did not form SSFRMP until local responsibility for flood risk management was institutionalised by the FWMA (2010). The outcome of this ‘top down’ intervention in Somerset was that a flood risk management unit in the Council *had* to be established leading to schism between the anticipated roles and responsibilities of District Councils and the LLFA that has resulted in confusion over how flood risk management policy is to be implemented locally.

The ground-breaking role of the Upper Rea IUD and, by extension the Birmingham Water Group in the evolution of national policies in England is analogous to the effects of the governing coalition in Glasgow on the development of the FRM (Scotland) Act 2009. This further adds to the argument made by Jenkins-Smith and Sabatier (1994) that sub-national level policy change influences national policy and changes therein. However, in contrast to Birmingham's experience, the local policy driver in Glasgow seems to have been the occurrence of particularly severe urban floods. The 2002 flood provided a platform for policy actors in Glasgow to come together and build the relationship necessary to develop a shared vision of future flood risk management in the city. The importance of the response to the 2002 floods in Glasgow to the development of the collaborative principles of the FRM (Scotland) Act 2009 was highlighted by a representative of Scottish Water who stated that 'the working together and that kind of thing is based on that experience' (Scottish Water Interview 27/07/12). A member of GCC Land and Environmental Services team further elaborated on this:

'The grounds of the (2009) Act has taken on board a lot of things which Glasgow City Council had been promoting before for a number of years and quite often fed through a number of the guidance. They refer to the philosophy which Glasgow has promoted along with Scottish Water and SEPA as part of, what was originally, Glasgow Strategic Drainage Plan'

(Glasgow City Council Interview 25/07/12)

The governance approach developed in Glasgow of close cooperation between the local authorities, Scottish water, SEPA and other local partners, which was born out of local experience, has been noted as a potential national blue-print for future flood risk management in Scotland (Scottish Government, 2011). Despite this, in ways analogous to the different ways BCC and SCC have interpreted the new roles and responsibilities of LLFAs in the FWMA (2010) in England, it can be observed that there are differences in the manner national policy is interpreted in the governance approaches adopted by GCC and Moray Council.

Given that the 2002 floods could not be neatly categorized as pluvial or fluvial flooding and bearing in mind the extensively urbanised nature of Glasgow, it is not surprising that a collaborative approach was adopted between the policy actors responsible for managing floods in the Glasgow. However, institutionalisation of this approach is evidenced in the

establishment of the MGSDP and even the presence of several FLAGs in Glasgow, which re-affirm the prevalence of partnerships and collaborations between risk management authorities in Glasgow. This has had implications for interpretation and implementation of national flood risk management policy in Moray.

The FRM (Scotland) Act 2009 requires production of flood risk management local plans for local plan areas which in Moray Council's case also includes land administered by the Highland Council, presenting a unique policy problem (SEPA Interview). This problem can be attributed to the current governance approach adopted in Moray in which policy actors such as SEPA and Scottish Water have been effectively excluded from MFA.

Significantly, partnerships and collaborations between the key policy actors crucial to the implementation of the 2009 Act for the production and implementation of local flood risk management plans already existed in Glasgow prior to the passage of the Act as noted by a SEPA representative when describing the nature of the MGSDP:

'No it was done on an informal basis to get that sort of cooperation. I mean you're referring to the MGSDP and yes the LA, Scottish Water and SEPA came together because it was such as complex task. You're right there was pressure already on SEPA to get water quality aspects sorted out but then the floods were a catalyst and then the Commonwealth Games in two years' time which is a big area for redevelopment so it was to improve water quality and reduce flooding, taking the opportunity for redevelopment. So you can see why the partnership got together, it wasn't just; I think Scottish Enterprise was probably involved as well'

(SEPA Interview 27/07/12)

These drivers and the partnerships they produced did not exist in Moray prior to 2009, yet for effective delivery of sustainable flood risk management it will be essential for Moray Council to build them by bringing currently excluded actors such as SEPA, SNH and Scottish Water into future local flood risk governance coalitions. The significance of cultivating and developing these partnerships to the production of district plans and the implementations of local flood risk management plans was highlighted by a representative of SEPA:

'The lead LA has to produce an implementation plan which would say that they would take these actions that SEPA have identified in conjunction with them and they would work to

produce an implementation plan that says whether it's done in year 1, 2, 3, 4, 5 or 6 and that's where they would need to be working with Scottish Water to make sure that their investment is happening at the same time as the LA investment. Scottish Water investment is over a five to ten year period, the LAs are at the moment only having one year funding agreements so it's quite difficult to plan'

(SEPA Interview 27/07/12)

Therefore it can be seen that institutional patterns of cooperation, which is only possible in a governing coalition, is needed in Moray. These patterns of cooperation will be essential if differences, such as in funding programs, between local actors are to be minimised and collective action achieved.

Conclusion

Flood management governing coalitions and hence local policies in Scotland and England can be compared, analysed and differentiated based on the emergence, composition and policy outcomes of these coalitions. Furthermore, the natures of these governing coalitions have both theoretical and practical implications for future flood risk governance. In the emergence of a governing coalition and thus the process of policy change or transformation, the importance of policy drivers is instructive but the extent to which the policy driver serves as an agent for change depends on both the nature of the policy driver and the manner in which the policy problem is framed by actors in the policy subsystem. The inclusion, exclusion and behaviours of policy actors in the policy subsystem can be attributed to constant interplay between institutional structures and policy actor agency.

The implication is that policy drivers such as flood events or central government initiatives are insufficient in themselves to affect policy change at the local level. In the analysis presented above, it can be observed that flood risk management policy drivers such as flooding that occurred in 1997 and 2002 in Glasgow and Moray were interpreted differently by the relevant policy actors, resulting in the emergence of very different flood management governing coalitions and adoption of contrasting local approaches to flood risk management in different parts of Scotland. In Glasgow, the floods were framed as an urban drainage problem and hence management entailed SW and the Council working together. In Moray floods were framed as resulting from past development on floodplains and thus management entailed the construction of new defences and the exchange of resources with consultants and construction companies.

In England, the policy problem of a gap in the management of surface water flooding identified in the Upper Rea IUD pilot in Birmingham served as a component of national flood risk management policy drivers such as the Pitt Review (2008) and the FWMA (2010). However the interpretation of these policy changes took different paths in Birmingham and Somerset as a result of the contrasting institutional structures in these areas resulting in radically different flood management governing coalitions. Therefore, in trying to explain differences in the flood risk management implementation approaches adopted locally, it is useful to examine the origins and evolution of the flood risk management governing coalitions that eventually coalesce around the LA departments. Justification for using these coalitions is based on the institutional nature and the capacity of these networks to shape the behaviour of policy actors, including LAs. Hence, by comparing the origin, emergence, composition and policy outputs of the different governing coalitions, it is possible to map and explain the different pathways to flood hazard governance adopted in the LA areas.

Differences in local approaches to flood hazard governance can be attributed to the contrasting ways policy drivers are interpreted and framed by actors in the respective policy sub-systems. These frames do not float in a world outside the sub-system, rather they shape and are shaped by the physical, social, economic and political environments as well as the policy actors included in (and excluded from) the local flood governing coalition. These frames are crucial to the emergence and transformation of local flood hazard governing coalitions through their interactions with, and definition of, policy drivers. These policy frames are also significant in defining the terms and concepts through which a policy problem is interpreted and the appropriate solutions selected. Lastly, policy outputs are a function of the policy frames held by the policy actors in a governing coalition. This chapter has evaluated the flood risk management governing coalitions in four study areas based on their emergence, composition and policy outputs. It is concluded that in seeking an explanation of or indeed in comparing the local flood risk management implementation policies in Scotland and England, the institutional significance of governing coalitions is an important factor in determining behaviour and thus flood risk management policies.

Chapter 8

Conclusions and Recommendations

Introduction

This chapter is in four sections. The first summarises the results and findings of the thesis in order to address the objectives set for this research. This is achieved by answering each of the research questions posed in Chapter One. The second section critically reviews the analytical framework and methodology adopted in the thesis, in light of the outcomes of the research reported in section 1. The third section sets out the contribution to knowledge made by the thesis, within the contexts of flood hazard governance and policy studies, generally. The final section builds on the outcomes of the thesis to recommend avenues for future research.

Addressing the objectives and research questions

The first and second objectives specified in Chapter One required that the thesis account for the national policy transition from 'flood defence' to 'flood risk management' in Scotland and England while evaluating the implications of the changes in national policy on risk management authorities (including Local Authorities), in both countries. These objectives have been addressed through research that has provided the basis on which to answer the research questions connected to these objectives:

1. How can the transition from 'flood defence' to 'flood risk management' be explained in the Scottish and English contexts?
2. How does the policy transition influence the roles and responsibilities of flood risk management authorities, including LAs, in Scotland and England?

To address these questions, a detailed understanding of the evolution of flood governance in Scotland and England was necessary and this was acquired through the historical analysis of previous governing paradigms in flood management ('land drainage' and 'flood defence') that was reported in Chapter Three. This analysis revealed fundamental differences between the ways the paradigm shifted in Scotland and England in relation to (1) the way the flood policy problems were constructed, (2) the policy actors involved in flood governance, and (3) the institutional structures and practices adopted in flood management. The practical outcomes of these differences are manifest in ways that the 'land drainage' paradigm evolved in Scotland and England. In Scotland, the actors initially engaged in land drainage

were landowners, who performed drainage works through the provision of funding directly from central government, and who retained control over land drainage throughout the period that this paradigm was in vogue. In contrast, responsibility for land drainage in England passed from landowners to catchment-based, public bodies such as Catchment and Internal Drainage Boards. These differences were amplified during the shift to flood defence as the governing paradigm. In England, flood defence emerged from the catchment-scale institutional structures of the land drainage policy network and this was manifest through transformation of the executive Land Drainage Committees within the National Rivers Authority into executive Regional Flood Defence Committees operating at the catchment scale. This transition was completely different in Scotland, where framing of the flood problem as a local phenomenon divorced from land drainage, led to flood defence being addressed by the Local Authorities already responsible for delivering local services. Consequently, flood defence in Scotland became the exclusive policy preserve of LAs, while in England flood defence policy was formulated nationally and delivered regionally.

In Chapters Four and Five the meanings and values inherent to the policy processes involved were investigated by unpacking the flood defence paradigm to create four distinct discourses that (1) frame the flooding problem, (2) offer policy solutions and (3) engage policy actors in institutional practices that translate meanings and values into concrete policy deliverables. These discourses (defence management, planning, bureaucratic and environmental management) provide the means through which values and belief systems inherent in the flood defence paradigm can be mapped, allowing policy outcomes to be attributed to the hegemony of particular values and ideas, and allowing the inclusion and/or exclusion of certain policy actors from institutional networks to be explained (Table 8.1).

Table 8. 1 National Flood defence policy networks in Scotland and England

Flood Defence Discourse	Policy Actors in England	Policy Actors in Scotland
Defence management	MAFF, RFDCs, LFDCs (NFU, LAs, CLA, IDBs, EA, MAFF), IDBs, LAs and Maritime Authorities	Scottish Development Department, Scottish DAF, LAs and Landowners
Planning	MAFF, DoE/DETR, EA, LPAs and Developers	Scottish Development Department, SEPA/RPB, LAs, Developers and Insurance companies
Bureaucratic	DETR, MAFF, RFDCs, LFDCs, IDBs and LAs	Scottish Executive, SEPA, LAs and Scottish Water/Regional Water Authorities
Environmental Management	MAFF, EA, IDBs (NFU and CLA), LAs, NCC and English Nature	Scottish Executive, SNH, LPAs and Landowners/Farmers

In both countries, the paradigm shift from 'flood defence' to 'flood risk management' was manifest not only through the emergence of new policy ideas, but also through the introduction of new policy actors, as discourse coalitions sought to translate policy ideas, values and beliefs into radically different, concrete outputs. Introduction of new thinking into the policy process is attributed to the role of narratives in shaping the respective flood governance discourses in both countries. Analyses reported in Chapters 4 and 5 established that the transition from flood defence to flood risk management in England was prompted by the permeation of policy drivers that embodied policy narratives concerning the requirement for efficiency gains in governance, the need to encourage sustainable development in flood prone areas, and the political will to promote the localism agenda. While some of these narratives and policy drivers also operated in Scotland (for example the need for sustainable development was recognised north as well as south of the border), localism was already embedded in flood governance and reforms more closely associated with increasing political autonomy in Scotland more generally. That said, parallels can be drawn between the paradigm shifts in Scotland and England with respect to the emergence of new policy actors, their acceptance into policy networks and governance coalitions, and their effectiveness in not only changing but also broadening policy discourses on the flood problem and how it should be managed (Table 8.2).

Table 8. 2 National Flood risk management policy networks in Scotland and England

Flood Risk Management Discourse	Policy Actors in England	Policy Actors in Scotland
Defence management	DEFRA, OFWAT, ABI, EA, RFCCs (LLFAs, PWCs, EA, IDBs), LLFAs, IDBs, PWCs and Insurance Companies	Scottish Government, SEPA, Lead Local Authorities and Scottish Water
Planning	DEFRA, DCLG, EA, LLFAs, LPAs, SABs, PWCs and Developers	Scottish Government, SEPA, LPAs, Scottish Water, Insurance Companies and Developers
Bureaucratic	DEFRA, DCLG, EA, RFCCs, IDBs, LLFAs and Developers	Scottish Government, SEPA, LAs and Scottish Water
Environmental Management	DEFRA, EA, IDBs (NFU and CLA), Natural England, RSPB, Wildlife Trust and National Trust	Scottish Government, SEPA, LAs and SNH

The arguments developed in Chapters Four and Five established that prior to the paradigm shift to flood risk management, flood defence polices in England were characterised by:

- narrow application of economic criteria for the appraisal of proposed Flood Alleviation Schemes (FASs) by MAFF,
- reliance on funding raised from members of RFDCs and LFDCs and RSG from DETR to LAs, and
- dependence on Local Planning Authorities to accept advice from the Environment Agency and guide development away from areas at high risk of flooding.

The shift to flood risk management allowed these policies to evolve by first recognising and then adding social and environmental dimensions to the pre-existing, economic criteria applied in the appraisal of proposed FASs. As a result, flood funding is now block granted from DEFRA to the EA Board and, consequently, flood risk management authorities including LAs and LPAs must now consult more closely with the EA on floodplain management, including proposed development that could increase flood risk and the measures necessary to avoid this. This policy evolution has resulted in:

- increased devolution of responsibility for policy formulation and implementation from DEFRA to the EA including flood funding,
- a more prominent coordinating role for LLFAs, and
- loss of policy implementation powers from the RFCCs to the EA Board.

In Scotland, prior to the shift to flood risk management, flood defence policies were characterised by:

- emphasis on local delivery of flood defence services,
- institutional demarcation in defending non-agricultural and agricultural areas against flooding, a rather simple application of cost benefit ratio as the sole criteria for the appraisal of flood defence schemes, and

These evolved into flood risk management policies in Scotland that were characterised by the duty placed on all responsible authorities to promote sustainable flood management and adoption of a hierarchical approach in governance, whereby SEPA produces strategic flood risk management district plans, and LLAs implement (within their local plans) the flood management measures highlighted in SEPA's district plans. These policies represented a radical break from the past in Scotland as they removed the lasting legacy of the 'land drainage' paradigm that had previously separated flood risk management in rural (i.e. agricultural) and urban (i.e. non-agricultural) areas, and created a new strategic role for SEPA in guiding the policy process at the national level.

Accounting for and explaining the implications of paradigm shifts from 'land drainage' to 'flood defence' and then 'flood risk management' in both countries, sets the stage for addressing the third, fourth and fifth objectives of the research and so achieving the overall aim of the thesis. In Chapter One, the issues to be dealt with in addressing these objectives were framed as three further research questions:

3. Are national flood risk management policies in Scotland and England interpreted differently in urban and rural LA areas and, if so, how can these differences be explained?
4. How do distinctive local factors influence local flood risk governance approaches adopted in urban and rural LA areas in Scotland and England?
5. How can the implications of these differences in local flood risk management policies be conceptualised and explained?

The research underpinning the answers to these questions was reported in Chapters Six and Seven. It emerged that profound differences exist not only between the respective national and local policies, but also between the local policies themselves. These differences are framed as the outcomes of the transformation of national policies by distinctive local actors, through the mediating effects of local conditions. Consequently, local governance is conceptualised as the perpetual interplay between the contending ideas, values, belief systems and narratives of the flood risk management discourses embodied initially in national policies and, subsequently, the respective agency of local actors. Empirical data

and information collected in the case studies demonstrate that local interpretations of national flood risk management policies have been varied, and their outcomes mixed. While some aspects of local policy adhere to the relevant national flood risk management policy, there are also marked departures in local from national policy that lead to and explain the marked differences in concrete policy outcomes observed in the case study areas.

Turning first to the third research question, in England, differences between national and local policies are evidenced in interpretation of the emphasis on localism and the priority ascribed to flood schemes that include elements of local funding by, for example, a Lead Local Flood Authority. For example, in rural England, Somerset County Council views prioritisation of FASs, based on the availability of an element of local funding, as a distortion of the cost-benefit appraisal process. Conversely, the national policy emphasis on LLFAs taking on more flood management responsibilities has led Birmingham City Council to reconsider its membership of the Trent RFCC, which it views as detrimental. This belief stems from the fact that the Trent RFCC attracts central government funding contributions to regional flood risk management schemes that might not benefit BCC directly.

In Scotland, differences between national and local flood risk management policies in urban and rural areas were also discerned. These are evidenced in the planning policies and flood schemes undertaken in Glasgow and Moray, respectively. For example, in Glasgow, local policies and actions based on adopting systematic risk-based approaches are resulting in development in some areas at risk of flooding. Specifically, the Clyde Waterfront area of Glasgow is considered in Glasgow to be prime waterfront real estate whose redevelopment would reap regenerative benefits to the economy of the City, while also offering the opportunity to upgrade the drainage infrastructure in derelict areas. This simply reflects policymakers' awareness among policymakers in Glasgow that dealing with increasing flood risk must support rather than constrain economic growth, especially in areas of deprivation such as derelict urban land that is fit for regeneration.

In contrast, major FASs are viewed in Moray as corrective measures necessary to correct past mistakes in citing development in areas at risk of flooding. In the rural region, where urban settlements are relatively small and land is plentiful, the LA views future flood risk management actions as involving maintenance of existing flood management assets coupled with stringent application of planning controls to avoid development in flood prone areas that would otherwise escalate future flood risks. The divergent flood risk management futures emerging in Glasgow and Moray illustrate graphically how differences in the ways

national policies are interpreted lead to differences in the ways flood risk management policies are turned into actions. Localism is thus not only evident through differences in the ways national policy is interpreted in different LA areas and contexts, but also (and perhaps more importantly), the ways in which it is put into practice: a phenomenon best characterised as *transformative*.

Transformative differences between LA areas can be observed in England, through the different flood risk management practices performed in Birmingham and Somerset. Birmingham has been extremely pro-active in delivering flood risk management actions, as evidenced by the City Council having three separate flood risk management budgets and being contracted by the EA to maintain the River Rea. In contrast, SCC did not have a flood risk management budget or a team to deliver it at all prior to 2010, with the District Councils making up the SCC relying entirely on the EA or the IDBs to provide all their flood risk management functions. The inadequacies of this approach were tragically revealed by the winter floods of 2012 and 2013/14.

In addition, contrasting local interpretations and transformations of national policies are also evidenced in the planning policies in Birmingham and Somerset. In Birmingham, as in Glasgow, planning emphasises regeneration of brownfield sites within the city, even on floodplains, while resisting development of flood-free land in greenbelt areas. Planning policies in Somerset are uncoordinated, with different approaches being adopted in the LPAs within Somerset. As a result, while some LPAs in Somerset adhere to the national policy discouraging development in floodplains, towns in the Sedgemoor District (especially, but not only, Bridgwater) not only allow development in areas at high risk of flooding but also on greenfield sites. According to the CFMP for the Parrett and Tone Catchment (EA, 2009c), actions resulting from this local interpretation and transformation of national policy will result in around an additional 16,000 properties being at significant flood risk by 2050, with the probability of flooding in adjacent areas of the Somerset Levels being allowed to increase (Policy Option 6) in order to maintain the overall level of flood risk in the catchment at its current level.

A further contrast in the way national policy has been interpreted and transformed locally was highlighted by another difference between policy practices in Glasgow and Moray in terms of interpreting the Flood Prevention and Land Drainage (Scotland) Act 1961. This includes the apparent absence of a collaborative and joint approach to capital flood management schemes in Moray. This is in marked contrast to Glasgow where the need to

reduce flood risk which could not be neatly classified into categories such as fluvial, pluvial and sewer flooding has led to a markedly collaborative approach to flood management. The fullest manifestation of the approach has resulted in flood capital schemes in Glasgow being developed and promoted under the auspices of the MGSDP. What this demonstrates is, again, how the opportunity for local interpretation of national policy leads not only to divergence in policy interpretation but also in the way policy is transformed into flood risk management actions and practices.

In this light, looking across the four case studies reveals how local interpretation of the respective national flood risk management policies leads, inevitably, to differences in flood risk management outcomes (Table 8.3). While some differences may be explained and understood in terms of the contrasting rural and urban contexts of the case studies, others cannot be so explained, hinting at deeper differences in the discourse coalitions responsible for local interpretation and transformation of national policies and the actors included/excluded from those coalitions.

Table 8. 3 Local interpretations of national FRM policies and discourses

Flood discourse and policies	Birmingham	Somerset	Glasgow	Moray
Defence management	Hard engineered schemes and a programme of regular river and land drainage maintenance.	Watercourse maintenance, highway drainage and hard engineered schemes.	Provision of engineered defences and a regular watercourse maintenance programme.	Building low maintenance, flood alleviation schemes to protect existing settlements at risk of flooding.
Planning	Adaptation and flood attenuation measures for proposed development in flood risk areas - especially inner city, brownfield sites.	Contradictory development policies as evidenced by Sedgemoor District Council compared to other LPAs.	Levering funds for upgrading river and drainage infrastructure through urban renewal for economic growth/poverty alleviation.	Emphasis on using flood alleviation schemes to maintain status quo with new development focused outside floodplains
Bureaucratic	Pro-active, strategy of BCC partnering in building and maintaining flood defence assets: e.g. maintenance of River Rea (a main river) on behalf of EA.	Strategic approach to FRM, but lacks unitary control: policy divergent District Councils and special interest groups prevent building and sustaining of partnerships.	Collaborative approach to integrated FRM demonstrated by the existence of four FLAGs in the Glasgow area and multiple joint schemes with Scottish Water.	Centralised planning and decision making hence absence of FLAGs. Emphasis on winning funding for capital work, minimising and contracting out maintenance.
Environmental management	Aim to integrate flood and environmental benefits: e.g. maximising utilisation of Europe-funded wetlands for flood mitigation as well as for bio-diversity.	Partnerships between key stakeholders to promote habitat creation and conservation, clash with demands of recently flooded landowners for dredging.	Green network promoted by Glasgow and Clyde Valley Green Network to integrate goals for FRM, conservation & recreation (e.g. White Cart Water).	Focus on engineered, capital works means that agri-environment schemes and subsidies aimed at promoting natural flood management are under used.

Chapter Seven addressed the fourth and fifth research questions, regarding how distinct local conditions or factors shape local actor agency in terms of the formulation and implementation of local flood risk management policies, and how to conceptualise and explain the implications of the different approaches adopted in different LA areas in Scotland and England. The research was designed to provide the theoretical basis on which flood hazard governance at the scale of a Local Authority area can be conceptualised.

Conceptualisation involved extension of coalition building in a policy network (as highlighted by Marsh and Rhodes 1992) to the case study areas. Hence, flood hazard policies pursued in selected LA areas were framed as resulting from consensus building between the various stakeholders involved in flood governance in a particular LA area with respect to social constructions of the policy problem of flooding. The governing coalitions identified in Chapter Seven are summarised here, in Table 8.4.

Table 8. 4 Local governing coalitions

	Birmingham	**Somerset**	**Glasgow**	**Moray**
Governing coalition	Birmingham Strategic Flood Risk Management Board	Somerset Strategic Flood Risk Management Partnership	Metropolitan Glasgow Strategic Drainage Partnership	Moray Flood Alleviation Group
Coalition members	BCC Severn Trent Water PLC and the EA	SCC, District and Borough Councils, Wessex Water, South West Water, Somerset Drainage Boards Consortium, Somerset Water Management Partnership and Wessex RFCC	GCC, Scottish Water, SEPA, Clyde Gateway Urban Regeneration Company, Scottish Canals, Scottish Enterprise, Scottish Government, Glasgow and Clyde Valley Strategic Development Planning Authority	Moray Council, Royal Haskoning, Morrison Construction and E C Harris

It is apt to refer to local policy making as a continual interplay between national polices and local factors. The manner in which local factors influence local flood risk management policies is very instructive with regard to the ways that local flood risk management governing coalitions, which are groups identified as formulating and implementing local flood management policies in the case study areas, act to translate and transform national flood risk management policies as necessary to mitigate for local factors. In fact, the influence of local factors does not begin with their impacts on policy: distinctive local factors were also observed to influence the emergence and composition of the governing coalitions themselves, even before local policy formulation begins in earnest. For example, the Birmingham Strategic Flood Risk Management Partnership (BSFRMP) emerged due to recommendations forthcoming from a DEFRA pilot that was itself the outcome of a national

flood risk management policy, *Making Space for Water* (DEFRA, 2005). The pilot revealed the disjointed nature and dearth of urban surface water management in Birmingham and framed this as a policy problem. Consequently, the governing coalition that exists in Birmingham is composed not only of policy actors involved in the management of flood defence assets in the Birmingham area, but also the EA, Severn-Trent Water Limited as well of course, of Birmingham City Council.

Similarly, the make-up (and hence values, beliefs and outcomes) of the governing coalition in Glasgow (the MGSDP) reflect the fact that its genesis lies in the devastating urban inundation of 2002 and the finding that this could not be categorised neatly as being pluvial, fluvial or sewer flooding. Recognition that upgrading of multiple aspects of the drainage infrastructure in Glasgow was not only essential to deal with coincident flooding, but also key to reinvigorating moribund and derelict parts of the city, led to the way flood risk management was perceived and framed as a policy problem in the aftermath of the floods. Consequently, membership of the coalition includes a wider group of policy actors than would otherwise have been the case, with GCC, Scottish Water, SEPA, Clyde Gateway Urban Regeneration Company, Scottish Canals, Scottish Enterprise, Scottish Government, Glasgow and Clyde Valley Strategic Development Planning Authority all becoming involved. It follows that differences in the actors making up the governing coalitions in what are essentially similar urban conurbations may be traced back to the locally distinctive factors and events responsible for their formation.

In Moray, emergence of the Moray Flood Alleviation Group (and hence the Flood Alleviation Schemes that are its primary outcomes) can also be attributed, mainly, to devastating flood events, this time those of 1997 and 2002. Despite this, membership of the coalition that emerged is much less inclusive and diverse than those in both Glasgow and Somerset and its subsequent policy interpretations and actions reflect this. It was the nature of the river floods that led to subsequent framing of the flooding problem as the result of inappropriate development on floodplains due to poor planning decisions in the past, while exclusion of significant local stakeholders (manifest, for example, through the absence of FLAGs) reflects not only the nature of the flood events but also perhaps an understandable wish on the part of the Local Authority to keep control of river management in Moray and the enthusiasm of Royal Haskoning, Morrison Construction and E.C Harris to build engineered flood defences. In short, these local factors have influenced and largely explain how national policy has been transformed to condition the characteristics of Moray Flood Alleviation Schemes that are the physical embodiment of the values and beliefs of the governing coalition.

The Somerset case study further illustrates the importance of local factors in conditioning the make-up of the local governing coalition in ways that feed through to determine its values, beliefs, preferences and outcomes. The Somerset Strategic Flood Risk Management Partnership emerged as a result of the recommendations of the Pitt Review into the 2007 floods and the requirements of the FWMA (2010). The emphasis placed in the Pitt's recommendations on effective governance and partnership building between the various risk management authorities and other responsible organisations (made law in the FWMA) resulted, in Somerset, in a coalition whose membership is very different to that in Moray even though Somerset is, like Moray, largely rural. Membership of the Somerset Strategic Flood Risk Management Partnership extends beyond Somerset County Council and all District and Borough Councils in Somerset to include Wessex Water, South West Water, the Somerset Drainage Boards Consortium, Somerset Water Management Partnership and Wessex RFCC. The demonstrable failure of the governing coalition to manage or even mitigate the impacts of the floods of 2012 and 2013/14 stems partly from the overwhelming, cumulative effects of the storms that inundated the Somerset Levels on both occasions. However, it remains to be seen whether the coalition shares the values, beliefs and cohesion necessary to formulate future flood management in Somerset that is sustainable and consistent with plans for continued urban growth in Bridgwater and Taunton. In this context, the current move to establish a 'Somerset Rivers Authority' with fund-raising powers from council taxes and authority to coordinate flood risk management across the entire county (Somerset County Council, 2014) is a development which suggests that the issue of policy fragmentation between District Councils is finally being addressed. If the governing coalition in Somerset does prove capable of translating, translating and delivering sustainable flood risk management for the county, this will be a further endorsement of the principle that a governing coalition that is fit for purpose first emerges from and then deals with local factors and local events unique to the locale.

Critical Review of the Analytical Framework and Methodology

The analytical framework developed and applied in this thesis uses three concepts in the policy process literature:

- the policy networks model,
- discourse coalitions and
- Advocacy Coalition Framework (ACF).

The logic that led to utilisation of particular elements of these concepts was explained in Chapter Two, together with arguments justifying the analytical framework that resulted from their amalgamation. However, insights gained through using the framework, evidence gathered during the empirical research and the findings of this thesis altogether provide a new perspective on the framework. In light of this, it is important to revisit and critically review the analytical framework and research methodology used in this thesis.

The utility of policy networks as a component of the analytical framework in this thesis depends on their suitability for capturing the dynamic and complex interactions between policy actors. These include governmental and non-governmental actors operating at scales of governance ranging from the local to the supra-national level, spanning a wide range of policy sectors and including a number of professional disciplines (Bulkeley, 2000). Hence, application of this element of policy network theory reflects the shift in focus from an emphasis on *government* to one on *governance.* The notion of policy networks as governance has received attention from critics who have characterised the new governance practice as a form of *multi-level participation* (Bache, 2004) rather than the more apt *multi-level governance* (Walker et al. 2009). Multi-level participation denotes a rather state-centric arrangement whereby governance is devolved but, as a result of being democratically accountable, state institutions remain the prime drivers of governance (Peters and Pierre, 2004) leading to more peripheral roles for non-state actors. This has led to the new *governance* being labelled as somewhat theoretically deficient and quite weak as an analytical framework (Bache and Finders, 2004; Peters and Pierre, 2004; Walker et al. 2009).

However, the findings of this thesis buttress the notion of policy networks as governance. It is shown that the array of functional institutions is not limited to democratically accountable state actors but rather that, in accordance with Hajer's (1988) discourse theory, functional institutions are negotiated and re-negotiated between (state and non-state) members of a policy network; a process characterised as coalition building. These institutionalised patterns of national flood hazard coalition building, and hence *governance*, can be observed in the transformation of 'flood defence' into 'flood risk management' policy communities in this thesis. In Chapters Four and Five, the national flood policy domains in Scotland and England were unpacked and categorized into four policy networks namely; defence management, planning, bureaucratic and environmental management. These policy networks are comprised of both state and non-state actors and they themselves act as institutions capable of influencing concrete policies. In addition, the local flood governing coalitions detailed in

Chapter Seven lend credence to the notion of policy networks as *governance*. This is the case because not only have the policy output(s) of these coalitions been documented but it has also been shown, by examining the emergence and policy outputs of these coalitions, that non-state actors who are members of the coalitions are not peripheral figures: rather they are actively involved in the process of coalition building - which has been referred to as *governance* (Marsh and Rhodes, 1992).

The local flood governing coalitions identified in the LA case study areas investigated in this thesis have been characterised as policy domains within the ACF. However, the ACF has limitations, some of which have been highlighted by Weilbe and Sabatier (2007). The first addresses concerns over the utility of the ACF where only one advocacy coalition has been identified in a particular domain. The concern is that the ACF is most useful when policy issues are being contested by policy participants categorized into opposing advocacy coalitions (Weilbe and Sabatier 2007). This is a salient point as observations from the local flood governance coalitions identified in this research reveal solitary coalitions in three of the case study LA areas. The exception was Somerset, where the local flood governing coalition (the Somerset Strategic Flood Risk Management Partnership) evolved from a wider network of actors (the Somerset Water Management Partnership), which had a wider environmental remit and, hence, was analogous to an *issue network*. Having recognised that, it is instructive that, in their study of flood policy change in England, Johnson et al. (2005) identified only one advocacy coalition for each paradigmatic period.

However, by comparing and contrasting local flood governing coalitions in the four case study areas, the analytical framework adopted in this thesis has added to the utility of the ACF. Specifically, value has been added by demonstrating how framing LA areas as ACF policy domains or sub-systems, provides the basis for conducting a comparative study of domains across national boundaries and the urban-rural divide. This was achieved by combining concepts from the policy networks approach and discourse theory with the ACF approach, originally a suggestion by Borzel (1997), into how the ACF could be further strengthened. Hence, each LA case study area was conceived as an individual policy domain, comprised of a number of local flood policy actors who aggregate into a coalition, and within which the dominant coalition translates beliefs into policy outputs. Therefore, rather than comparing opposing coalitions within one policy domain (as done by Bulkeley (2000) and by Weilbe and Sabatier (2005) or utilising policy networks and ACF individually as explanatory tools to address policy change within one policy domain (like Smith (2000), this thesis analysed dominant coalitions *across four geographic policy domains* across

national boundaries and the urban-rural divide. This, original, approach has further strengthened the utility of policy networks and advocacy coalitions as explanatory tools, not only in addressing policy change and stability (Marsh and Rhodes, 1992; Sabatier and Jenkins-Smith, 1992), but also as units for comparative policy studies (Bressers et al. 1995).

The second concern about the ACF, raised by Weilbe and Sabatier (2007) touched on the need for better explanations of the factors that structure the nature of coalition(s) in a policy domain. These concerns were addressed in this thesis through examination of the emergence of the governing coalitions in the respective LA case study areas. It was shown that local flood governing coalitions are established as a result of the interplay between policy events, on one hand, and the frames with which local actor's interpret the event, on the other. These frames are mediated by geographical, physical, social, economic and political environments unique to each LA area. These factors influence the process through the advocacy coalition forms, which policy consensus is achieved and, thus, the inclusion and exclusion of policy ideas and actors from a coalition. Hence, it is not surprising that in a rural setting such as Somerset, the local flood governing coalition includes organisations such as the Somerset Water Management Partnership: an umbrella group comprising actors such as the NFU, FWAG, Somerset Wildlife Trust, RSPB South West Association of Drainage Authorities, Somerset Waterways Development Trust and Natural England. In contrast, the absence of such actors in the Birmingham Water Group can be attributed to the urban nature of Birmingham. The absence of such groups from the Moray Flood Alleviation is attributed partly to the framing of the flooding problem in Moray as the legacy of past planning decisions as well as a legacy of the absence of coordinated approaches to flood management in Moray. The decision taken in this research to combine features from discourse coalitions with application of the ACF has allowed for a better understanding of how advocacy coalitions are formed and operate. This is achieved by incorporating knowledge and understanding of how local factors, events and the framing of flood problems by policy actors influences, but is in turn influenced by, the nature of the governing coalition.

These policy frames are expressive of policy meanings that have been teased from the information gathered in this thesis by mapping out discourses through which flooding problems, appropriate solutions and institutional practices are constructed and transformed by policy actors. Yet concerns have been raised about the validity of discourse-based analysis with respect to its practical relevance, the possibility of bias by the researcher and even claims of distortion resulting from decisions to ignore contrary data (Jacobs, 2006). With regard to the practical relevance of discourse-based analysis qualitative methodologies

have allowed for the socio-historical analysis of flood management in Scotland and England, thereby leading to the unpacking of the 'flood defence' and 'flood risk management' paradigms into multiple and contrasting discourses that reflect the different meanings of these paradigms to a variety of policy actors. These discourses are translated into concrete practices and policy artefacts of practical relevance, such as the narrow application of cost-benefit analysis in appraising flood defence schemes identified in this thesis as an institutional practice of the 'defence management' discourse of the 'flood defence' paradigm. Concerns regarding bias and ignoring contrary evidence are addressed in the interpretive methodology used herein. This sought to reveal how policy actors construct flood hazards and did not involve any judgements from the researcher as to the validity of any claims in the data. Consequently, evidence was neither categorized as sympathetic or non-sympathetic. This approach to data analysis is in line with that proposed by Hajer (1988; 1993; 1995) and Bulkeley (2000), who argue that the meanings given to physical and social realities by various policy actors may originate from normative or analytical convictions, historical references or even myths about nature.

In light of the findings reported in this thesis, there are aspects of the analytical framework that could be further modified for future studies. One proposed alteration addresses the role of policy brokers within the ACF previously framed in the literature (Hajer 1996; Bulkeley, 2000) as problematic and incompatible with the discursive turn adopted in this research. However, as the findings of this thesis reveal, the role of organisations such as SEPA (in Scotland) and DEFRA (in England) in the formation of local policy consensus and, hence, the MGSDP and the Birmingham Water Group is analogous to that of policy brokers as defined by Sabatier and Jenkins-Smith (1992). SEPA was responsible for bridging the gulf between GCC and Scottish Water during disagreements that followed the Glasgow floods in 2002. In addition, SEPA officials presented information about the flooding that led to a common understanding of the problem between GCC and Scottish Water. In Birmingham, while DEFRA is not a member of the local governing coalition, the Upper Rea IUD pilot (whose core participants coalesced into the Birmingham Water Group) was a DEFRA initiative. While Hajer (1996) contends that policy brokers cannot remain neutral actors and belong to advocacy coalitions themselves, as this thesis has shown, that does not diminish their roles in promoting consensus, gaining trust and minimising conflicts between actors in a policy domain (Fischer et al. 2007).

Contribution to knowledge

This thesis contributes to knowledge through the process of:

- Unpacking the ‘flood defence’ and ‘flood risk management’ paradigms in the Scottish and English contexts, and adding to previous explanations of paradigm shifts and policy changes in both countries;
- Highlighting the innovative role local actors can, have and should play in the process of local policy translation and (through transformative feedback) evolution at the national scale, and;
- Comparing and contrasting local approaches to flood risk management in Scotland and England.

In the wider field of flood hazard governance, this research has shown that policy paradigms such as ‘flood defence’ and ‘flood risk management’ in the Scottish and English contexts embody values and belief systems that are context specific. Hence, reference to the paradigm of ‘flood risk management’ has to take into consideration the mediating factors and context-specific values distinct to Scotland and England that have been identified and highlighted in this thesis. Tunstall et al. (2004), Johnson et al. (2005), Penning-Rowsell et al. (2006) and Johnson and Priest (2008) stress the role of major flood events in accelerating the transition from ‘land drainage’ to ‘flood defence’ and ‘flood risk management’. This thesis has, however, revealed nuances in the transition from ‘flood defence’ to ‘flood risk management’ by showing that these paradigms can be unpacked into contrasting policy discourses, expressive of values and belief systems, that influence the policy practices of flood policy actors. It has also been argued that policy change can occur as a result of the transformation of these underlying values within the various discourses, through interpretation of policy events that can be characterised as coalition building. In the process of which, particular policy actors, and hence ideas, are included or excluded from the policy process. Lastly, this thesis has argued that the policy events that influence policy change are not restricted to devastating flooding episodes alone but also include wider social, economic, bureaucratic or political changes, This is evident not only empirically: it is implicit in Directives from the European Commission and obvious from improvements in our understanding of flood risk management as a subject that spans the natural, engineering and social sciences.

In terms of the policy process, the findings of this thesis highlight specifically the role of local policy actors in contributing new policy ideas that are eventually translated into national policies. These ideas emerge from policy narratives that are themselves the culmination of interactions between perceptions of national policies and distinctive local conditions. The innovative role of the flood governance policies in Birmingham and Glasgow demonstrates

that locally mitigated flood risk management policies, developed as interpretations of national flood policies, can act as innovative policy ideas or approaches which may subsequently be incorporated back into the policy agenda at the national level. By examining the implications of LA areas adopting contrasting local approaches to flood risk management, it can be argued that some national flood policies are not altogether innovative but rather result from the institutionalisation of policy ideas variously developed at the sub-national level. This is consistent with the revelation by Penning-Rowsell et al. (2006) that some practices embedded in past policy changes in UK flood and coastal risk management were not based on the development of new ideas but on bringing forward existing ones that were already the subject of widespread professional or public discourse. Therefore, the contribution of this thesis to the wider field of policy process studies is to reinforce the important role of sub-national policy actors in influencing the process of policy change. This supports arguments made by Sabatier and Jenkins-Smith (1992) that policy innovations may occur first at a sub-national scale and then expand into nationwide programs.

Even though flood governance processes in Scotland and England are qualitatively different, this thesis has devised a common analytical framework that allows local approaches to flood governance to be conceptualised, compared and analysed within different national contexts and across urban and rural settings. Local flood governing coalitions established as a result of local interpretation and framing of flooding problems provide a window into how LA areas in Scotland and England approach flood governance. By detailing the emergence, membership, policy making activities and outputs of these coalitions, a conceptual basis for comparing local approaches has been established. This approach addresses concerns raised by Krieger (2012) about the cross national diffusion of policy concepts, how various actors within different countries with distinct institutional practices, interpret the 'flood risk management' governance paradigm. Hence, a component of the unique contribution of this thesis lies in providing another avenue to aid policy analysts in evaluating the flood risk management policy behaviours of local policy actors (state and non-state) in Scotland and England. This could be undertaken through analysis of local flood governing coalitions, which act as institutions to influence local flood risk management policies, on the one hand, and individual policy actor behaviour, on the other. Finally, detailing and contrasting approaches adopted in each of the case study areas allows, 'signals within current policy discourse' (Penning-Rowsell et al. 2005, p.324) to be detected, thereby providing insights into which innovative local governance practices could be potentially adopted and institutionalised at a national scale.

Recommendations for Future Research

During the course of writing this thesis, it was observed that most flood policy actors were in the process of familiarising themselves with the requirements of flood management legislation recently passed in both countries. This process has been aided by production of guidance documents and reports on the new laws by various institutional actors, including the EA, DEFRA, LGA and RSPB (in England) and SEPA, COSLA, RSPB (Scotland) and the Scottish Parliament (in Scotland). Local approaches to flood risk management are documented in the local flood risk strategies required of LLFAs in England, and the local plans required of LLAs in Scotland.

As LLFAs, in conjunction with other local actors, continue to navigate and interpret the new flood risk management regulations, there will be possibilities for further evaluation of the local flood risk governance approaches that emerge. Indeed, as Bulkeley (2000, p.731) noted, 'institutions are not immutable; they are continually re-negotiated in the permanent interplay between conscious human agency and wider social structures.' Therefore, as local governance continues to be influenced by the pressures of cuts in funding, shortages in flood management expertise, the localism agenda of central government, European targets and the increasing frequency of devastating floods, future research will be needed to build on the findings of this thesis and further explore, capture and explain changes to the memberships of local flood governing coalitions. In this context, a representative of the NFF expressed interest in getting involved in local flood risk governance and stated that, 'the NFF has been involved in trying to help them engage in communities, help them (LLFAs) to realise that they've got to engage with communities, I'm quite heavily involved with that'(National Flood Forum Interview, 25/06/2012). Examining the potential roles of currently excluded actors such as the NFF would result in a deeper understanding of the dynamic process of local policy interpretation and transformation that engages rather than communicates, with communities.

It was noted in Chapters Four and Five that the transition from 'flood defence' to 'flood risk management' brought about changes and extended membership of flood policy domains in Scotland and England. Actors that acquired new roles and responsibilities include the EA Board, RFCCs private water companies and environmental organisations such as RSPB, Natural Trust and Natural England (in England) and SEPA, SNH and Scottish Water (in Scotland). Therefore, in evaluating the implications of policy change for flood management actors, further research into how these organisations and institutions interpret their

respective roles would expand the scope of knowledge in flood risk management implementation studies in Scotland and England. Of particular interest is examination of the relationship between the RFCCs, which have lost their executive role, and the EA Board. While providing insight into this, a representative of the EA described the relationship between these institutions as: 'always a grey legal area *vis-a-vis* the power of the Board' (EA Interview, 14/11/2012).

Another area of research potential is to examine the relationship between actors with contrasting views within flood policy domains that extend beyond LA areas, such as the regional level where, according to regulations in the RFCCs, 'you have to have at least one member legally who's got experience in nature conservation' (EA Midlands Interview, 10/06/2012). Hence, comparing how the inclusion of actors with nature conservation briefs results in policy outputs between different RFCCs in England is an attractive prospect.

In addition, the announcement of a renewed Statement of Principles between central government and the ABI (which is institutionalised in the Water Act (2014) provides new avenues for flood governance research. This is significant as concerns have been raised by the NFF and the SFF that Flood Re (a not-for-profit flood reinsurance fund, owned and managed by the insurance industry in the UK) could reduce the incentives of householders to undertake property-level flood protection or avoid development on areas at risk of flood, by providing an accessible re-insurance pool for UK householders, which conflicts with the cornerstone of the 'flood risk management' paradigm (DEFRA, 2013). Examining the impacts of these new developments as policy drivers that can influence the implementation of flood risk management in Scotland and England would enable a better understanding of the dynamics of the relationship between the new and existing members of these networks and, thus, provide insights into the future direction of flood hazard governance.

At the theoretical level, conceptualising national policy change as occurring within spaces defined as policy networks and characterising local flood hazard governance as occurring within local flood governing coalitions opens possibilities for future research. The findings of this research show that using the analytical framework of this thesis in other policy contexts is a potentially attractive prospect. This research has already shown that comparative analysis between qualitatively different approaches to flood risk management in Scotland and England is feasible. Therefore, future research could seek to expand the knowledge gained thus far by extending the scope of analysis beyond Western European political and local governance contexts by seeking to conduct comparative analysis between flood

governance approaches in North America, China and sub-Saharan Africa. This is significant considering that the 'flood risk management' governance paradigm is beginning to gain a foothold in local flood hazard governance in Asian mega-cities such as Guangzhou, Hong Kong and Shenzhen (Chan et al. 2012).

Another attractive prospect would be to utilise the local governing coalitions approach in evaluating other aspects of local governance. While ACF concepts have been utilised in explaining the policy process in policy areas as diverse as transportation, foreign policy, biotechnology, environmental and flood management (Weilbe et al. 2011), these have been undertaken from national and functional policy perspectives. However Weilbe and Sabatier (2009) used ACF concepts to explain policy change in Lake Tahoe Basin; which is both a functional and local policy domain. Applying the concept of local governing coalitions to explain the local interpretation of climate change, education, health and environmental policies between local policy actors could further strengthen the efficacy of the concept of local governing coalitions as important tools for policy analysts in explaining sub-national policy outputs and local actor policy behaviour.

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Appendix 1: List of interviewees

Organisation	Roles	Interview dates and duration (minutes)
Department for Environment, Food and Rural Affairs	DEFRA flood management project officer	09/11/2012 (25)
Environment Agency	Head of flood and coastal erosion management	14/11/2012 (37)
	Strategic and development planning specialist	09/03/2012 (47)
	Flood risk manager	10/06/2012 (55)
Somerset County Council	Team manager – flood and water management	30/11/2011 (42)
	Unit manager – civil contingencies unit	
Birmingham City Council	Birmingham resilience team – flood planning and response	29/11/2011 (59)
South Somerset District Council	Engineer- flood, drainage and civil contingencies	10/06/2012 (40)
Sedgemoor District Council	Land drainage and coastal protection manager	10/06/2012 (46)
Taunton Deane Borough Council	Watercourse management assistant engineer	08/06/2012 (24)
National Farmers Union	Regional	12/09/2012 (18)

(Somerset)	Environmental Adviser	
Somerset Wildlife Trust	Brue Valley Living Landscape Manager	13/06/2012 (42)
National Trust Somerset	Projects and Grants Manager	11/12/2012 (18)
Birmingham and the Black Country Wildlife Trust	Principal Ecologists	08/06/2012 (33)
National Farmers Union (West Midlands)	Shropshire County Adviser	
Association of British Insurers	Assistant Director, Head of Strategy Policy Adviser on Flooding	24/05/2012 (15)
Natural England	Senior Freshwater and Wetlands Specialist	23/03/2012 (39)
National Flood Forum	Chief Executive	
Royal Society for the Protection of Birds	Water Policy Officer	08/06/2012 (37)
Scottish Government	Head of Managing Flood Risk Team	01/08/2012 (42)
Scottish Environmental Protection Agency	River Basin Planning Manager	19/11/2012 (49)
	Flood Policy Unit Manager	29/07/2012 (57)
Scottish Water	Business Strategy and Policy Manager	27/07/2012 (41)
Scottish Natural Heritage	Landscape Policy and Advice Officer	12/09/2012 (22)
	Operations Officer	24/07/2012 (50)
WWF Scotland	Fresh Water Policy Officer	26/11/2012 (26)
RSPB (Scotland)	Water Policy Officer	26/07/2012 (34)

Scottish Flood Forum	Operations Director	11/08/2012 (24)
Glasgow City Council	Road Operations Manager	25/07/2012 (40)
Moray Council	Project Manager Moray Flood Alleviation	31/07/2012 (37)

Appendix 2: List of questions for policy actors

1. What is the nature of your organisation's remit in flood hazard governance in England/Scotland?
2. How has your remit changed, if at all, since the introduction of the new Act?
3. What do you think the implications are for you and other risk management authorities?
4. How does the new approach compare to past approaches to flood hazard governance?
5. Would you describe the change as positive or negative and why
6. What do you think was responsible for the change in approach from 'flood defence' to 'flood risk management'?

Appendix 3: List of key documents used

Birmingham City Council

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