NATURAL RESOURCES SYSTEMS PROGRAMME

PROJECT REPORT[1]

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Acronyms

CBO	Community-Based Organisation
CIM	Conceptual Impact Model
CPR	Common Property Resource
DFID	Department for International Development
FD	Forestry Department
GVT	Gramin Vikas Trust
JFM	Joint Forest Management
LC	Local Council
MTO	Mass Tribal Organisation
NGO	Non-Governmental Organisation
NRM	Natural Resource Management
NRSP	Natural Resources Systems Programme
PAPD	Participatory Action Plan Development
PAPP	Participatory Action Planning Project
PRI	Panchayati Raj Institutions
PS	Production System
PUI	Peri-Urban Interface
RNRSS	Renewable Natural Resources Research Strategy
SEM	Socio-Economic Methodologies
SG	Steering Group
SHG	Self-Help Group
SLA	Sustainable Livelihoods Approach
STREAM	Support to Regional Aquatic Resources Management
UPS	Uptake Promotion Strategy

Glossary of NRSP management terms

Conceptual Impact Model (CIM)	The CIM defines five stakeholder domains that specify the beneficiaries/stakeholders for uptake promotion, including the identification of appropriate research products
Steering Group	The NRSP Steering Group operates as technical support to the Programme Manager
Node Suites	There are eight Uptake Promotion Nodes (seven geographic and one systems based). Within these Nodes, projects are clustered into suites around common areas of research and sectoral stakeholders.

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EXECUTIVE SUMMARY

Introduction

The role of policy processes and institutions in natural resources management (NRM) is a core thematic focus for the Natural Resources Systems Programme (NRSP). This study provides a synthesis of the findings across projects that have contributed to this theme. It was designed to extract insights and lessons for both NRSP and a wider policy audience.

The synthesis sits within a broader context of an increasing interest in policy processes and the relationship between these, development practice and livelihoods. If, as a growing critical literature suggests, policy does not impact on livelihoods in the straightforward ways that have come to be widely accepted, then analysis needs to focus on policy generation and implementation, and on the relationship between this and research. Such analysis recognises that policy needs to be understood as both more dynamic and more rooted in relations of power than has often been assumed, and that the institutional dynamics behind policy processes play a key part in shaping outcomes.

Increasingly over the last five years NRSP, like other programmes within the Renewable Natural Resources Research Strategy (RNRRS), has begun to explicitly addresses policy processes. But what does this amount to? What are the key findings that may remain embedded in project literature? What do these projects tell us about the relationship between policy, research and NRM outcomes?

The approach to the synthesis was both literature and interview based and covered 35 projects (see Appendix 1) across all of the NRSP uptake promotion nodes (see Appendix 3).

Conceptualising the policy process

Managing policy?

While most of the projects reviewed nominally ascribe to a view of policy processes that see these as rooted in power relations, many have ended up seeking essentially managerial and technical solutions to the problems they identify. A strong sense emerges from the research reviewed that institutional change can be achieved through interventions designed to stimulate it. What is notably absent from most of the projects reviewed is an *analysis* of power relations between actors that animate institutions and shape their behaviour. While findings are presented that demonstrate power relations at work, the lack of systematic analysis of these means that they remain largely embedded

in background information, and are not explicitly used in efforts to influence policy or catalyse institutional change.

We considered what might lie behind this disjuncture. Two important factors are the pressure to see results, and questions of disciplinary orientation. NRSP has evolved within the wider context of shifts in thinking in DFID. In essence, this has involved a shift from technology and productivity increases, to a concern with poverty and livelihoods. This implies, perhaps demands, a disciplinary shift in research approach. Assessing the productivity impact of a particular technology is a somewhat less complex task than showing its pro-poor impact on livelihoods. But this is exactly what researchers were being asked to do. In the focus on uptake promotion and influencing policy, they have arguably been pushed to go beyond what they were best at.

In addition, for many researchers themselves, the notion that they should be ensuring the promotion of their work was problematic. Programme management stressed uptake and integration with policy and institutions increasingly strongly throughout the life of the NRSP. One result of these pressures has been the predominantly managerial approach to policy processes described above.

These findings provoke questions concerning what the role of outsider researchers in stimulating policy change should be. To what extent should this be informed by a more detailed understanding of what influences the relationship between policy and implementation, including the role of the researchers themselves? Research projects no longer simply produce 'new knowledge' which will (it is hoped) permeate through to policies, and in turn to livelihoods. Their outputs need to be more deeply entrenched in policy processes themselves.

But can this take place if the complexity of policy-making and institutions are not fully understood? We suggest that it cannot: a failure to unpack the policy and institutional context will mean that research is produced in a vacuum. The ability and resources to unpack it reflect several key factors: not only academic perspective, but reflexivity and legitimacy, time, and the nature of local alliances are all important.

Academic perspective: questions of discipline

The challenge of working in multidisciplinary[1] teams has raised many questions and challenges, magnified in the light of the increasing tendency to applied research. If we

[1] In multidisciplinarity, researchers from two or more disciplines work together on a common problem, but without altering their disciplinary approaches or developing a common conceptual framework. Interdisciplinarity happens when researchers from two or more disciplines pool their approaches and modify them to best address the issue to be researched. NRSP projects have tended to have multidisciplinarity as the norm, whereas interdisciplinarity is more elusive and tends to be an ideal or objective rather than common practice.

are not just doing research, but doing research in the service of catalysing positive social change – in the form of policy impact – then our assumptions about the management of social change become very important. If positive livelihood outcomes are to emerge from development research, the closeness of relations between the natural and social worlds, better communication, and transparency in addressing sometimes painful processes of jostling between researchers of different disciplines are all demanded.

Those few projects that explicitly engaged with policy and implementation as politicised and problematic processes were led by researchers whose primary academic training was in the social sciences. Articulating policy processes in terms of politics and power, context and contingency, is what they have been trained to do. And importantly, this is the language with which it is normal for them to report findings. For natural scientists or those with a background in management, the apparently more neutral language of linear cause and effect is more normal and acceptable. Where multi-disciplinary working has been most successful is when these different perspectives have combined in a degree of mutual learning, usually because of personal contact.

Reflexivity and legitimacy

There is more to being able to understand policy than disciplinary perspective though. One research team, working on Joint Forest Management in Madhya Pradesh, India, concludes that its research "can make no more than a limited contribution to on-going policy dialogue […] There are questions about the legitimacy and 'stake' of externally funded research projects as part of on-going policy dialogue." (Vira 2005:5,12)

This conclusion goes to the heart of the assumption that information from externally-funded research can and should have an influence on policy; and a similar assumption that such research should be 'demand-led' by southern policy makers. Crucially, it is not the quality, accuracy or robustness of the information that determines its possible contribution to policy processes, but far more political questions of legitimacy and 'stake'. This requires more reflexive researcher practice[2]. If, as we have seen, researchers are increasingly becoming directly engaged in the processes they seek to influence, then it is becoming more important for them to consider their own position, and the implications this has for what can and cannot be done with the findings of their research. If research is really to influence policy, researchers need to become less invisible, and clearer about the kind of changes they are aiming, and able, to achieve. Those projects in which researchers

[2] We understand 'reflexivity' to refer to research practice in which the researcher recognises and explicitly analyses the impact of their own history, experiences, beliefs and culture on the processes and outcomes of the enquiry

reflected directly and explicitly on their own role in the process, were also those in which engagement with policy makers appeared most deeply and successfully embedded.

Local alliances: issues of time and personal relationships

Very few of the projects reviewed directly engaged with policy processes as part of their researchable questions. Rather, they saw policy as part of the landscape of NRM, and policy actors as the targets that their research aimed to influence. Despite – or perhaps because of - this indirect approach, what emerges from the research is a sense that there are many potential interfaces between policy and practice at which policy change can be catalysed, at different levels. Selecting entry points that optimise the potential for change should rely on an understanding of the range of possibilities, rather than being predominantly driven by external demands.

An important implication here is that when considering policy-directed research, or in planning research on policy directed at a particular question or issue of NRM, it is important to ask not only "which policy process?" but also "which policy makers?"

Which policy makers matter most is a particularly difficult question for those engaged in donor-funded processes. Donors themselves are policy makers, open to influence. They are also heterogeneous actors. DFID at its headquarters in the UK is very different to DFID in its country offices, just as the national office of a key ministry is very different to its decentralised branches in rural areas. Each requires different approaches if influence is to be achieved. And the development of such approaches needs to be built on explicit recognition of the factors that influence their priorities. In the synthesis study we have come across some consideration of the role of DFID, particularly the country offices, with both positive and negative comment. Equally, a few projects have endeavoured to ensure that policy influence takes place at all levels, including the highest. The majority of projects reviewed however, have focused their activities on local institutions, and understanding what needs to happen at this level if positive changes in NRM practice are to emerge.

In those projects where change has been managed through the process of the research, significant investments of time and the construction and maintenance of local alliances have proved essential. This implies meaningful ownership of research agendas by locally based partners, and often a long-term commitment from the research funding body. Individuals have had a key role in catalysing and inhibiting institutional change. While this may seem self-evident, it does have implications for understanding what is needed for positive change. The pivotal role of individuals demands a focus on the micro-politics of how decisions are made and the bases of different kinds of action. Trusted individuals are key to effective communication and learning processes. But change initiatives that come to over-rely on individuals may become fragile and vulnerable. Several research teams that had developed good relationships with key actors and began to build constituencies for change, experienced problems when those

actors were posted to other areas in the case of government staff, or left their institution to find other employment. On the other hand, when researchers engage, not just with individuals, but with the factors influencing their actions and priorities, there are better chances that positive change may be sustained.

Research, policy and livelihoods

It was not the aim of this synthesis to assess the impact of policy on livelihoods; causation is too hard to trace, and our primary focus was anyway on the nature of policy processes and institutions themselves. Nonetheless, the projects do provide some limited information on impact which suggests that policies do not always have an impact on livelihoods, either positive or negative; and where there is impact, it is as often unintended as intended. Beyond this though, the research reviewed also presents considerable insights concerning the local contextual factors that influence livelihood outcomes. These exist regardless of what researchers do, but they are an important part of the picture with which policy makers need to engage.

Of these, the most salient considerations appear to be the role of social factors of difference such as economic status, age and gender. These in turn influence the outcomes of managed processes of social change such as decentralisation and the ways in which representation may or may not be achieved. Research findings point to the need for caution to ensure elite capture is avoided, and the critical importance of building on existing collective arrangements rather than necessarily developing new ones. A common finding across the research is that many local institutional actors lack capacity to implement sustainable and equitable NRM policies and practices. These findings are elaborated in greater detail in Sections 3 and 4, and summarised below.

The relationship between policy and management at micro and macro levels may be strongly linked, their co-evolution shaping responsive and accountable policy and sustainable institutions for NRM; or they may be almost completely disconnected, with national policies virtually unimplementable, and local NRM processes influenced by local politics and governed according to local power structures. The different between these two scenarios depends partly on the social, political and economic context, and the existing policy culture.

The features of a resource itself partly define the kind of policies that govern its management. For example, managing water of any kind presents particular challenges for management and institutions because of the multi-use nature of the resource, and because of the complexity of ownership, rights and responsibilities (Barr 2001). Similarly, research from the high-value forests of the Nepali Terai region concludes that forest *value* is an important driver of forest management (Seeley 2003).

Elements of economic, social and political processes are all reflected in legal frameworks of resource access. Many research projects found overlapping and unclear legislation on

property and access rights for natural resources, especially in the case of common property resources (CPRs). Systems of land tenure in particular were found to be extremely complex in many areas. In many studies, the complexity of legal frameworks and weak implementation means that there is a strong difference between *de jure* and *de facto* natural resource tenure systems.

Several research projects report institutional fragmentation and testify to a dislocation between policy on paper and in practice. Narratives of environmental policy at the national level endure, even when they are clearly at odds with the lived realities of natural resource management. For example, in Ghana, frameworks of natural resource tenure largely exclude villagers from ownership rights; the legislative system criminalises their use of tree resources; and environmental policies tend to equate off-farm natural resource based incomes and 'environmental degradation' (Brown and Amanor 2002). In Bangladesh, dislocation between policy and NRM practice is just as marked, but has different characteristics. Here, partly in response to shifting international conservation narratives, the government has changed the formal basis under which it allocates rights to water. This has led to confusion, with some water stakeholders legitimating their claims according to the new regime, and some according to the old (Barr 2001).

Democratic decentralisation provides an opportunity for NRM policy and practice to become more accountable, and to increase chances of greater community control over processes of planning and management. Positively, decentralised natural resource management could make good use of local knowledge and insights, and the impact of policies on livelihoods would be less likely to be ignored or discounted. However, decentralisation *can* lead to uncoordinated and incoherent policy, made without adequate information or analysis, based largely on the interests of local elites. It can involve the establishment of institutional mechanisms that exist on paper only, and in reality have no resources or influence (Brook 2005). Decentralisation processes are variable in their structure and intent, and involve central government institutions giving up powers which some are not happy to relinquish; this can result in central policy actors digging in their heels and blocking the progress of decentralisation (Brown and Amanor 2002, Brown *et al* 2001).

The design of NRM policies and interventions must therefore take into account the status and form of decentralisation if they are to be successful. Communities may need support in building the skills and capacities to effectively occupy the opportunities that decentralisation offers, just as government officials at lower levels may need support to make policy which relies on local problems rather than central narratives.

The research findings present many examples of institutions that do not necessarily do what they were designed to do. In some contexts, most notably in South Asia, government institutions are profoundly mistrusted, and dealing with government

officials is seen as a matter of corruption, patron-client relations, failure to deliver and an encounter with attitudes of indifference (Brook 2002b, 2005).

Another important consideration is the difference between indigenous institutions and those that have been created by outside interventions. Across many contexts, there has been a relatively recent proliferation of new resource management institutions. In part, the success of policy initiatives rests on the relationship between indigenous and these externally induced institutions.

Wealth and gender mediate access to institutions – as do age, caste, political identity and ethnicity. This observation is far from new, and it challenges us to do more than simply label institutions and describe their different patterns and categories, but rather to move towards considering how to build NRM institutions which are less rigidly exclusive of key stakeholders in management. One key insight here is that those who are socially marginalised have restricted access to the kind of institutional networks that allow them to move beyond the boundaries of their own locality. This restricted access is a key mechanism in broader processes of marginalisation of particular groups of stakeholders from policy processes.

Capacity-building interventions to address institutional weaknesses differ in approach, but those that build ownership of the learning process, engaging participants in learning activities over a long period of time appear to offer the greatest chances of sustainable institutional change. In this, individuals have a key role in both catalysing and inhibiting change.

In many countries, a growing diversity of actors perceive that they have a right to be involved in processes of NRM planning and policy, and amongst them are those who in turn represent those normally marginalised from such processes. A common finding in different contexts was that local institutions which are designed or mandated to ensure the representation of different stakeholders in NRM processes are frequently captured by elites, and many others are excluded from participation along reinforced lines of social difference such as gender, ethnicity or age.

Learning from examples where successful representation of marginalised groups has taken place suggests not only the need to build new resource management initiatives on existing foundations, but the importance of collective action at the village level as a prerequisite to successful representation of villagers in local processes of resource management.

1. INTRODUCTION

1.1 Engaging with policy processes

The role of policy processes and institutions in natural resources management is a core thematic focus for the Natural Resources Systems Programme (NRSP). This study provides a synthesis of the findings across projects that have contributed to this theme. It was designed to extract insights and lessons for both NRSP and a wider policy audience.

Our synthesis of project findings sits within a broader context of an increasing interest in policy processes and the relationship between these, development practice and livelihoods. On the one hand, a growing literature questions the linear and technocratic approach to policy making that has characterised much development thinking (Keeley and Scoones 1999; Mosse 2003, 2005; Shore and Wright 1997). On the other, a search among donors (including the Department for International Development (DFID)) for ways to inform and improve policy-making, seeks to absorb the insights from the critical literature. If policy does not impact on livelihoods in the ways that have been assumed, analysis needs to focus on the ways in which policy is both generated and implemented. Underlying all of this is a concern with the ways that research influences – or should influence – natural resource management (NRM) policy making.

The relationship between research and policy making has therefore been the subject of much recent analysis. As well as being of great concern for NRSP and other research programmes, this relationship has been the subject of DFID-funded research in the shape of ODI's RAPID programme. Concerns have arisen in response to a sustained questioning of the impact and value of research for policy making, let alone development practice (Young and Court 2004). Earlier assumptions that research informs policy in a straightforward way have been replaced by arguments about the complexity of reasons for policy uptake of research messages. For example, the ubiquity of the sustainable livelihoods approach (SLA) in DFID policy is examined by Solesbury (2003), who emphasises the critical importance of context, the relationships between individual advocates and communication processes. The SLA may have become an important cornerstone of DFID thinking with regard to NRM, but its further spread has much to do with the abilities of a small group of advocates to get their ideas across. This in turn is influenced by institutional location and personal contacts, factors that are seldom explicitly addressed in processes of policy analysis or research that aim to influence policy processes.

Of course, insights about research-policy linkages do not necessarily tell us anything about what happens with policies after they are formulated – and therefore little about the eventual impact on livelihoods. A critical literature suggests that the relationship

between policy and implementation is in fact strongly mediated by a range of factors that lead to unpredictability of outcomes. These include the role of politics, power and personal discretion. Mosse argues that in development projects, policy does not produce practice, but rather practices influence policy, in the sense that 'actors in development devote their energies to maintaining coherent representations regardless of events' (2005:2). Thus policy serves more to legitimate what *is* taking place than direct what *might* take place.

The notions of discourse and narrative are also important for many commentators on policy processes. Drawing on the work of scholars such as Latour (2000), these suggest that in order to understand policy making, we need to engage with how what is said and written is located in relations of power and inequality. In turn, the implementation of policy is as much influenced by the internal dynamics and the structural positioning of institutions as it is by the merits or otherwise of the policies themselves. Accounts of the practices of such institutions, and particularly in exploration of the encounters between different kinds of development implementers[3], go some way towards explaining the unpredictability of policy implementation.

This study therefore analyses how a selection of NRSP projects have addressed the challenge of engaging with policy processes and institutions. Increasingly over the last five years, NRSP, like other programmes within the RNRRS, has begun to ask researchers to explicitly engage with policy processes. But what does this amount to? What are the key findings that may remain embedded in project literature? What do these projects tell us about the relationship between policy and NRM outcomes?

1.2 Methodological approach

Our work began with an assumption that we would be synthesising project findings which focused on the *analysis and understanding* of policies and policy processes. During the inception phase, however, we discovered that only a small minority of projects explicitly focuses on policy analysis, using it as part of the background to their particular focus of intervention. Most of these locate their analysis within an understanding of policy processes that is strongly influenced by the critical work described above; but the degree to which they actually use this analysis is variable.

The majority of projects are more concerned with *influencing* policy, perhaps reflecting a pressure from within DFID for research to be seen to be linked to action and pro-poor

[3] Concepts such as 'fieldworker discretion' (Goetz 2001), 'street level bureaucrats' (Lipsky 1980), 'interfaces' (Long 1992) and 'development broker' (Olivier de Sardan 2005) have been important for these analyses of institutional functioning.

change. The result is that variable attention is paid to the nature of the relationship between policy actors, and the generation and implementation of policy.

These two basic approaches to policy result in different kinds of insight. For example, those projects that analyse the factors influencing policy and policy processes tell us about the characteristics of the institutions involved at all levels in making policy, the political context of the policy process and the ways that diverse stakeholder voices come to be heard. Those that primarily aim to influence policy reveal much about the way that researchers conceptualise the policy process, as well as the challenges and contradictions posed by the dynamic relationship between research and policy.

Of those that explicitly aimed to influence policy, most have a strong focus on activities, especially meetings and workshops. But there is not a great deal of reflection within project documentation of what these activities and their outcomes tell us about how policies are generated, or how they work or fail to work. In this body of projects, assumptions are apparently made about what the policy process is and how it works, but these are seldom explicitly articulated.

These preliminary findings led to the methodology subsequently adopted. Although we had anticipated that we would be reporting on 'findings' about policy processes, it became equally important for us to also examine the research projects in their policy contexts, and to think about how and why they are doing what they are doing. In order to achieve this, we supplemented our review of documentation with targeted interviews with project leaders. These interviews have shed considerable light on how researchers see policy, and particularly how they conceptualise their own role in influencing this.

In the first instance, project documentation was reviewed. Project selection was based on explicit policy process focus as well as advice from members of the NRSP steering group. At the time, information was available on 187 projects, and of these, 32 were nominally concerned with policy processes and/or institutions. Our selection was also influenced by a wish to cover each of the NRSP nodes. NRSP research is organised into projects clustered according to both geographic and thematic focus, in 'node suites'. We aimed to cover projects in at least one suite for every node. In the end, 35 projects were reviewed (see Appendices 1 and 2), covering a wide range of policy contexts including:

- In the *Caribbean*, participatory natural resource management and pro-poor integrated coastal co-management.
- At the *Peri-Urban Interface* in *Ghana* and *India*, urban development policy and planning.
- In *Nepal*, policy environments supportive to improved land management strategies, soil fertility management and soil conservation.
- In *Bangladesh*, water resources and integrated floodplain management policy, especially the growth of participation in the water sector.

- In *Uganda*, local bye-laws governing natural resource use.
- In *India, Zimbabwe and Tanzania*, national CPR policies.
- In *Tanzania,* policies that support rainwater harvesting.
- In *India,* aquaculture service provision.
- In *Ghana,* environmental and forestry policy, above all commercial policy and that concerning use of chainsaws, and policies for local land use, including charcoal burning and cultivating close to river banks.
- In *India and Nepal*, Joint Forest Management.
- In *the Brazilian Amazon*, agrarian and environmental policies and the linkages between these and land use dynamics and livelihood security.

Second, as noted, interviews were carried out with project leaders. These interviews focused on questions arising from the documentation, particularly exploration of the ways researchers understood policy and saw their work as influencing it. These interviews also gave rise to much interesting information concerning the ways in which researchers are able, and pressurised, to respond to international research agendas. The list of completed interviews is provided as Appendix 2.

We are aware of some biases and weaknesses in our work. Firstly, the analysis of both interviews and project documentation focused on a range of key themes that were identified in the inception phase. In this, certain projects inevitably came to the fore as providing key insights in particular areas. So it is important to state that this report does not aspire to provide equal representation of research projects, but instead, we hope, presents some of those most strongly recurring themes.

Secondly, the majority of interviews were carried out with UK-based project leaders, an outcome of the limited scope of the synthesis studies. Although the views of some project leaders based in the South were sought, the insights from the interview material are Eurocentric.

Thirdly, and perhaps most crucially, some of the projects reviewed were not completed at the time of the synthesis. Even in the case of those that had been finished, the post-project stages of publications and widespread communication of findings had sometimes only just begun. We are aware that the impact of research on policy is far from instantaneous, and that in some senses this study may have been undertaken somewhat prematurely; the NRSP projects cannot all be evaluated as if they are time-bound, discrete and completed entities.

1.3 Structure of report

The structure of this report reflects our interest in the two broad areas discussed above: the ways that researchers saw understood policy processes and their own place within

these; and their substantive findings concerning policies and institutions, including anything to do with livelihood outcomes.

Part Two presents the diverse ways in which researchers have seen their task of engaging with policy processes and policy makers. We discuss the question of what the relationship between research and policy making is - and could be. We also raise some questions concerning the gaps that the synthesis has revealed. Why is it that, despite the critical insights discussed above, so much research on policy and institutions maintains a basic assumption that policy and institutions can be managed, and that the key to such management is information. Research approaches that rest on this assumption often fail to recognise the place of power in policy making. To what extent is disciplinary orientation important?

Parts Three and Four engage with the findings of the research projects, moving from a discussion of the relationship between policy and livelihood outcomes, to an elaboration of the range of factors that influence policy at various levels, from the broader context for policy making to the specifics of local institutions and the politics of representation through decentralisation.

Our concluding section, Part Five, focuses on the tension between analysing and influencing policy. It also identifies implications for research funders and for researchers themselves.

Note: Throughout the text, direct quotations from interviews with research project managers are in italics. All non-italicised quotations in text boxes and in the main text are from the FTR of the project, unless otherwise referenced.

2. APPROACHES TO POLICY

This section focuses largely on those projects that explicitly aimed to influence policy. Firstly, we ask how researchers have conceptualised policy and, secondly, how they tried to create change amongst policy actors. Thirdly, we ask what implications these approaches have for commonly-held assumptions about policy processes and how they can be influenced.

2.1 How did researchers conceptualise policy?

By examining the ways that NRSP projects conceptualised policy, we can begin to build up a picture of key concepts and considerations in understanding NRM policy and institutions.

Before engaging with the projects directly however, it is important to acknowledge that the research programme as a whole, and the approaches to policy that researchers took, were influenced by NRSP's own evolving setting. DFID, as funder, influenced the broad parameters for researchable questions. This became particularly important after 1998, when DFID oriented its own strategy towards a poverty focus and the notion of sustainable livelihoods. The parameters for researchable questions became increasingly focused. For example, one project manager's, when asked why three countries were selected for a comparative study, replied: *"Because that's what DFID asked for – NRSP said we want a project to do this, in these three countries.."*

Understanding this situation – and NRSP's understandably different perspective on it - requires a brief account of NRSP's history. From 1995-9, NRSP was managed from within DFID. The Programme Manager, assisted by four Production System (PS) leaders, had oversight of research in NRSP's six PSs[4], as well as a largely separate portfolio on socio-economic methodologies (SEM)[5]. Most of this early research had a strong technological and productivity-oriented focus.

From 1999 onwards, responsibility for the six PSs was contracted to a private company, HTS Consultants[6]; the SEM portfolio stayed within DFID. This shift coincided with an increased concern to re-orient the programme towards DFID's new agenda. NRSP was

[4] These are high potential, hillsides, semi-arid, forest-agriculture interface, land-water interface and peri-urban.

[5] The SEM portfolio resulted in the publication of a series of Best Practice Guidelines, which aimed to provide accessible information on social science methods for use in field-based natural resources projects.

[6] Later HTS Development, then HTSPE

given a new purpose, 'to deliver new knowledge that enables poor people who are largely dependent on the natural resource base to improve their livelihoods' (NRSP 2001: iii).

To deliver on this purpose, a series of research calls were made which were indeed very prescriptive. But from NRSP's perspective, such prescription was necessary in order to ensure that past efforts were not wasted. As the 1999 call for the semi-arid production system illustrates:

> 'The NRSP targets are challenging, requiring a tight geographic focus in order that they will be met. The proposed research programme ... adheres closely to the overall guideline of only three countries and the limits for each output of two target areas and two countries' (NRSP 1999: 2)

This framework for this call for research is entirely driven by the logical framework of the PS research programme – something agreed by NRSP management. So 'outputs' refers to those specified by the programme for the semi-arid system, and the limitations on geographical scope also arise from this.

Aside from a limited geographic focus, all the NRSP projects reviewed have also approached their enquiries with a set of assumptions that are strongly influenced by DFID's broader pro-poor agenda, research on policy processes that it has funded, and the widespread acceptance of participatory, multi-stakeholder approaches to natural resource management. In many cases, for example, the primacy of DFID's sustainable livelihoods model (Carney 1998, Scoones 1998) is reflected in the approaches to policy and institutions adopted in these projects. Research on environmental policy processes which came from the same team that initially worked on sustainable livelihoods (Keeley and Scoones 1999) has also had a very strong influence on how researchers framed the question of policy. In later projects, ODI's RAPID programme, which identifies the importance of policy 'windows,' (Court *et al*, 2004) also shaped the way that teams made sense of policy processes.

Below are four examples of approaches to policy taken by NRSP projects. They illustrate a range of approaches, from the technical to the political, and involve researchers with different disciplinary backgrounds. Not only do they illuminate some key concepts used when examining NRM policy, but they also shed light on different views of who 'policy makers' are, and some of the important linkages between policy and livelihoods.

Box 1. Supportive policy environments for improved land management strategies, Nepal (Garforth *et al* 2005)

The aim of R7958 was to understand the development of supportive policy environments for improved land management strategies in Nepal. Specifically, it tried to identify ways to accelerate and upscale pilot research experiences to the wider community through developing supportive policy environments for improving land management strategies.

The researchers saw their role in policy influence as providing clear, credible information to policy makers. But whilst acknowledging literature which frames policy as non-linear, fluid and unpredictable, the project framework and the choice of methodology for understanding policy processes nonetheless reflects an underlying assumption of a high degree of rationality and measurability in policy processes. At the same time, however, researchers acknowledge that policy measures do not necessarily correspond to policy statements of intent and equally policy statements may have no measures to enforce them. Similarly, it is possible for binding policy to be contained in hidden or informal documents such as memos.

This understanding of policy led the research team to conclude that policy decision making involves choosing between alternative aims, objectives and actions, which are often made on the basis of limited knowledge. All too often policy making depends on generalisations either from poorly interpreted statistics or policy narratives.

Box 2. Natural resources at the Caribbean land-water interface. (Brown *et al* 1999, Brown *et al* 2001, Krishnarayan 2004)

In this selection of projects from Caribbean Node Suite 1, there are two distinct approaches to policy. One pair of projects (R7408, R6961) worked in a Marine Protected Area in Tobago, first developing a decision support tool for multi-stakeholder decision making, before going on to examine the institutional dynamics that surround the adoption of participatory approaches to NRM. A third project (R8317), carried out by a different team of researchers, focused on the effective dissemination of lessons, methods and tools from the whole Node Suite (which included other projects as well as the Tobago research) to relevant stakeholders. It identified, tested and disseminated pathways for effective communication

The manager of the Tobago projects observed, *"policy to me means a strategic view of government, in terms of development policy and overall direction; and it means the implementation of different policy instruments, through various government departments and so on; and it also means the implementation of policy on the ground through various institutions and through involvement with different stakeholders. […] So not only to view it as a political process and as a governmental process but also as a broader governance process; and about the specific instruments. A very broad definition!"*

A basic assumption in this broad view of policy is that there is a need to look beyond structural and regulatory change to understand how policy approaches are taken up though institutions. Influencing factors are diverse, and include governance issues, rules, organisational behaviour and the motivations of individuals.

The dissemination project (R8317) takes a different view of policy. Here, there is a stronger focus on individual policy actors who exert power within a national-level policy context. These policy makers are conceptualised as open to influence by critical messages about NRM in the coastal zone, and as being discerning about the validity of research findings. The language here is that of 'messages' and 'uptake,' and changing the minds of Permanent Secretaries through breakfast meetings.

Box 3. Strengthening social capital for improving policies and decision making in NRM in Uganda. (Sanginga 2005)

This project aimed to provide direct support to processes of policy formulation and implementation at the local level in Uganda, where there is a reasonably functional system of decentralised government.

The research team uses the term policy "to refer to programmes, strategies, plans rules and regulations and their implementation resulting from public (state) or collective decision making. Policy can be generated at different levels: international, national, regional, district and local levels; and operate at all levels, and in both public and private spheres, or community organisations. They can be formal (e.g. laws that govern land tenure) and informal (e.g. social customs and conventions); created (e.g. as a result of deliberate political or policy decisions) or may evolve over time." (Sanginga 2005, Annex G:11)

This approach sees policy as embedded in society and social processes, and as dynamic and diverse. It gives significance to the concept of social capital as an inherent part of what animates policy, by creating the conditions in which people are able to effectively participate in the policy process.

This project worked on the assumption that if research is to influence policy, it needs to provide direct support to the process of policy formulation and implementation. The project team concludes that "policy support" is an essential ingredient for widespread adoption of NRM technologies and scaling up of sustainable NRM.

Further, there is a need for dialogue and interaction between a 'critical triangle' of local communities, local government structures and research; and development organisations. Finally, the researchers conclude that policy researchers must get closer to the reality and become more concerned with practical issues of implementation.

Box 4. Environmental democracy in Ghana (Brown and Amanor 2002 & Harrison 2005)

The challenge of making sustainable NRM policies at the forest-agriculture interface is addressed by a pair of projects in Ghana. Policy is approached here as a political process. In this view, policy needs to be informed by the experiences of citizens, and citizens need to understand the avenues through which they can create demands for appropriate policies. Researchers argue that the institutional mechanism for the validation of policy prescriptions must ultimately be the democratic process. This is a normative point of departure for the research: it presents a vision of how a democratic policy process could function, and something to work towards. But it is also a firm indicator of the political identity of policy processes.

The first project began by sketching out in detail the legal frameworks of NRM policy. The findings of this first project led to a shift in how the researchers understood policy from the first to the second project. The manager of the second project notes that "*the point that we reached at the end of the first project is very much that policy is negotiated in terms of interests, and those interests do not necessarily relate to the objectives of policy. Policy is just a vehicle to negotiate interests.*" This understanding led researchers to focus their second project at the decentralised level, and to develop methods of supporting natural resource users to express their interests in district and regional policy processes.

These four examples illustrate several basic perspectives on what policy is. At the risk of generalisation, policy is viewed in turn as principally rational, institutional, social and political. While these perspectives are not mutually exclusive, they do give a sense of the diversity of ways that policy is conceptualised. The researchers' choice of policy perspective and entry point to the policy process shapes not only their understanding of the relationship between policy and livelihoods, but critically, their understanding of how policy can be improved and what role their research could play.

As well as illustrating diversity, however, there are also similarities between perspectives. Most agree that there is a gap between policy on paper and policy in practice which needs to be investigated, and that this gap creates a disjuncture between the apparent intent of policy and its *de facto* effects. As such, implementation needs to be understood more clearly as part of policy processes if there is any chance of making policy that responds to NRM practice, or to ecological fluctuations.

Accepting this undermines conventional assumptions of who policy makers are. The different approaches to policy result in a diversity of actors falling under the name of 'policy maker'. They can be the stakeholders in a localised NRM interventions such as a project or programme; more often they are located in a broad range of institutions of

local government and civil society which are involved in the day-to-day mechanics of implementing policy. For some researchers, an inclusive view of the policy process means that natural resource users are also to be considered as 'policy makers', with a right to representation in decision making processes that effect their livelihoods.

Despite this opening of the definitional boundaries of what constitutes a policy maker, a strong assumption of rational policy maker behaviour remains embedded in many of the approaches to policy taken by researchers. It is widely held that the decisions of policy makers can be influenced by better and more accurate information. Most accept however that this is not the whole picture. Information – particularly information in the form of research findings - is only one element of the forces that influence decision making in either the formulation or implementation of policy. Other forces pertain to policy makers as interest-driven, and embedded in the social and political cultures that shape their actions.

An image of policy processes therefore emerges which is complex, but which nonetheless is open in some senses to the interventions of researchers, and provision of more or better quality information about NRM problems and realities to policy makers. Research teams adopted a range of models in order to engage with these policy makers and the institutions in which they work, and they further illuminate underlying assumptions about policy processes. They are the subject of the next section.

2.2 How did researchers aim to influence policy?

Most current NRSP projects have the stated aim of influencing policy, and several project managers have observed that this aim is directly related to the content of calls for research from NRSP, which emphasised policy influence. Calls for research from different stages of the NRSP reflect a progressively stronger focus on policy impact. For example, in the various PS-oriented calls for research that were made in 1999, policy influence does not take a very prominent role. In the information supporting the call, it is stated that:

> 'Through focussing on livelihood issues and adopting a demand-led model for research planning, it is intended that the research will deliver a relevant product that can have development impact in the medium term in a particular target site. In the longer term, wider impact in comparable environments is also expected' (NRSP 1999: 7).

Here, the relationship between 'development impact' and policy is not elaborated. By 2000, however, NRSP was increasingly explicitly concerned with uptake pathways, and this became formalised in 2001-2 with the development of the Uptake Promotion Strategy (UPS), comprising both 'Uptake Promotion Nodes' and a 'Conceptual Impact

Model' (CIM). The 2001 call information statement on impact was therefore much stronger than earlier. The equivalent paragraph to that quoted above states:

> 'It is intended that the research will deliver results that demonstrably indicate the ***potential for developmental impact*** in the medium term in a particular target site. In the longer term, wider impact in comparable environments is also expected. This context has a major bearing on project design, including the way in which research is transacted, conducted and communicated, in order to position it for development-related uptake and promotion after the project's completion'. (NRSP 2001a; 8, our emphasis)

By 2002, policy makers themselves first appeared in the calls for research, with the statement that:

> 'The intended outcome of the research is that NR-related strategies ... will be delivered in forms that could be taken up by the poor themselves and/or by development practitioners operating at a range of levels, from grassroots to senior policy' (NRSP 2002:4-5).

Following from this, NRSP's emphasis on uptake promotion became increasingly pronounced, reflecting of course the need to consolidate and show results as the programme moved toward the end of its 10 year term in 2005. Thus in the last two years, the great majority of projects commissioned have been those that emphasise the promotion of the findings of earlier projects.

From the perspective of researchers, uptake promotion can also be seen as a strong push to influence policy. For some, this was problematic. As one researcher put it: "*...the guidance from the research programme of how much is the research about understanding and defining policy processes, and how much is the research meant to effect that policy process. I think NRSP lost its way a little bit in trying to define where the boundaries were. Its uptake pathway schematics got ever more complicated, and going from A to H and then W and Z and the expectations for the research on how far you could go and what realistically you might represent. I think the question is, should all projects always do all of it?"* Clearly, the shift toward uptake promotion may go a long way towards explaining the interpretation among researchers that policy research should be more about altering policy than understanding the context of policy-making context.

However, how this should take place was not at all clear. The same researcher observed: *'...there was very little guidance from NRSP or DFID's research in general about policy processes, and I think there was an implicit assumption about linearity – you do the research, you write it up, you publish it, policy makers read it. And if you read the sort of things that are in the logframes, about policy makers and decision makers, they are very fuzzy, very unidentified; there is an assumption that the kind of things you would need to produce from your research would*

somehow influence policy, but the final [part] between the end of the research and a policy change is very poorly thought through'.

This assumption of linearity led to a standardised model for policy influence: a familiar range of written dissemination products including policy briefings, research reports and training manuals; plus workshops for policy makers, sometimes including other stakeholders, at which research findings are shared, discussed and debated. But behind and beyond the workshop exists a hinterland of networks and alliances between key actors in policy processes, and many researchers have made conscious efforts to build on the standard model of policy influence, to penetrate these networks, or to create partnerships with local researchers who are themselves linked to key networks.

Some of the different techniques and strategies used by NRSP projects with the aim of engaging with and influencing policy processes or policy makers are summarised in Table 1, and elaborated in the pages that follow.

Table 1: Tools and strategies for research that influences policy

Node Suite	Key Features of Research Tools and Techniques	Strategies for Influencing Policy and Policymakers
Bangladesh 1 and 3: Improving NRM through CBM – PAPD and Integrated floodplain management	Participatory Action Plan Development (PAPD): Action research, consensus building and action planning with community groups.	Spread of PAPD methodology across different international development agencies.
Caribbean 1: Institutional arrangements and decision support tools	Trade-off analysis, multi-criteria analysis. Iterative decision support tool that generates future scenarios; defines criteria with which to judge them; weights criteria by stakeholder groups.	Policy actors were stakeholders in the trade-off analysis process. Results were owned by these participants, increasing the possibilities for influence through workshops and seminars.
East Africa 1: Drylands rainwater harvesting	Training materials and courses, including training of trainers. Developed training materials: PowerPoint slides, booklets, leaflets and videos.	Strategy to fill knowledge gaps among those charged with promoting and extending rainwater harvesting, using the information resources developed
East Africa 2: Land management constraints and poor	Action research aimed at facilitating dialogue, supporting action, policy	Policy working groups and 'task forces' at different levels of local government,

market access	analysis, and integrated NRM research and development.	stakeholder forums.
Ghana 1: Inclusive public governance mechanisms	Networks and platforms to generate locally-owned, accurate information with the aim of informing policy makers.	Two way strategy: better information to bind senior policy makers to downward accountability, and increased local capacity to hold policy makers accountable.
India 1: Policy processes for pro-poor rural services	'Facilitated advocacy', street plays, documentaries, consensus building. Eight step process with strong role for researchers as facilitators.	Consensus building among policy makers using 'Delphi technique', from high to much lower levels. 'Facilitated advocacy' to bring poor people's voices to the policy process.
PUI 1 and 3: Pilot NR management strategies and new knowledge of participation	Participatory action planning included different stakeholders at various stages.	Strategic attempts to involve policy actors in planning processes from the outset.
Bolivia 1: Community- led improved NRM	Community workshops	Focus on influencing policy by improving communication between local professionals and communities.

As Table 1 shows, some projects elaborated on the basic workshop model by convening advisory groups, or inviting policy makers to project events at key stages of the research in order to engage in the process as it unfolded, rather than just being exposed to the final results. Others have invested considerable thought and planning in their communication strategies, and how to effectively transmit findings to key audiences.

Several projects have taken the demand for policy influence as a starting point for pursuing action research and planning methodologies, which imply a different understanding of policy influence from the publications-plus-workshops model. The manager of one of these projects noted of this experience that *"working in the university […] meant that you had to be published; but to do DFID research, you actually had to have development impact; so action research is the most obvious marriage of the two down the middle."* This comments sums up the meaning of the label 'action research' as it has been applied to those NRSP projects which adopted it. It is however important to note that action research is an existing field of social science in which the term has a far broader and more complex set of meanings. Crucial to this is the concept of a collective research enterprise that includes both experts and non-experts as researchers, and an iterative and cyclical approach to learning which is very different from conventional, expert-led

research (Reason and Bradbury 2001). There is no evidence that the NRSP projects which adopted the action research label have made use of the extensive lessons and experiences available from this field of critical study, and this can be seen as an opportunity missed.

In most cases, projects where an action research approach was used built on earlier work by the same team that had mapped the terrain. As the manager of one such project observed, *"we [had] two projects, and the first started off with that initial problem of managing the Marine Protected Area, then the second project was really trying to open it up much more, to look at the institutional landscape into which that object was placed. [….] We tried to open up those boundaries, I think significantly, in the evolution of our research."* Whether focusing on Marine Protected Area management in the Caribbean, community forest management in India, or integrated floodplain management in Bangladesh, research teams that have had adequate time to build their learning and pursue their processes across different institutional levels have delivered particularly rich insights not only into what policy is, but into how to catalyse policy change, "opening the boundaries" of what policy research can achieve. Conversely, researchers on shorter projects found that expectations of what could be achieved within the time allowed were perhaps unreasonably high, and that there was very little room for manoeuvre if the early stages of the research produced surprising findings or gave rise to unexpected process difficulties. In these cases, it is dissemination and downstream activities that come under pressure.

In the action research tradition, the changes catalysed by the research are part of a process of collective learning and action, an ongoing outcome of the research process, rather than a final output. This has led to dilemmas for researchers who find themselves part of processes of policy making, planning and natural resources management as *actors*, rather than merely as observers. One project manager asked, *"What are we trying to do? Are we trying to influence policy, or we trying to promote the interests of certain people in the policy process? [….] Our attempt really […] is to promote the interests of those who were formerly looked down upon, to try and invert the whole policy process in their interests […] Basically this is an ocean liner which you can't change the course of very easily, certainly within a two and a half year project."*

Despite the challenges of this kind of research, and the assertions made in one project report that "the framing of 'research' excludes 'action' […] it is questionable whether research projects should attempt to implement interventions in this way," (Barr 2001:88) it is from the interface between research and action that many insights on institutions and policy processes emerge. Below, we examine examples of projects that engaged with NRM stakeholders at the village level, and at the same time developed and piloted methodologies for participatory action planning, using action-oriented methodologies.

Box 5. ***Community action planning at the Peri Urban Interface in Hubli-Dharwad, India*** (Brook 2002a, 7959)

Two projects in India examined livelihood dynamics in the semi-arid and drought-prone peri-urban area around the twin cities of Hubli and Dharwad. The nature of urbanisation is that it moves outwards from urban centres, overtaking people living in its path. Communities at the frontier of urbanisation, the peri-urban interface (PUI), find that they have less and less access to what is needed to maintain a rural livelihood. Poor people, with the least room for manoeuvre in changing their livelihood strategies, have to adapt the best they can.

Despite increasing urbanisation, policy makers concerned with NRM tend to focus on rural areas. Of the urban planning processes that do exist, researchers note that there is little planning - physical or economic - effective enough to have a role in major PUI production systems, and that there are no broad strategic plans covering the peri-urban area, much less ones which cover both peri-urban and urban areas."

Research began by gathering evidence about how livelihoods were affected by urbanisation, using conventional research methods. But in a second phase, an action planning initiative was also implemented, which aimed to bridge gaps between actors in the planning process, as well as to develop tools and capacities for community-based action planning.

The action planning component of the research took the form of a participatory planning process facilitated by researchers and evolved by community members. The process of producing action plans involved not just community members and researchers, but other stakeholders such as non-governmental organisation (NGO) staff, Indian and British academics, and government personnel. Thus the methodology was designed not only to nurture ownership of plans at the community level, but also to increase the sensitivity of other stakeholders to the needs and priorities of the poor. The project manager observed that by taking this approach, the researchers were consciously trying to address a major bias in the mindset of planners and policy makers in India: "*that the poor are difficult to work with.*"

Creating opportunities for change in this way was not without its difficulties, however. The very low levels of trust in government strongly influenced the way the action planning process unfolded. The research team decided that NGO partners were needed to facilitate the action research, because they enjoyed greater trust within communities; as the project manager observed, "*they know how to work in villages. Their community officers live with people.*"

Having a project which provides adequate time for the community to engage in iterative rounds of planning and that ensures the inclusion of the most vulnerable is, of itself, a valuable exercise. But nonetheless, processes of rapport building, situation analysis and action planning were all more demanding of time than expected, and this is an important lesson for the planning of future action research initiatives.

In a sense, the Hubli-Dharwad project illustrates the challenges of carrying out action research on NRM in a policy vacuum. There is no policy or planning that touches the peri-urban interface, and local people mistrust those government actors normally seen as policy makers. In this context, the task of producing research that influences policy turns on the successful engagement with communities being used to challenge an anti-poor policy bias, and on the dissemination of the methodology that has been developed, so that ultimately a change in practice may indirectly influence policy. Similar conditions prevailed in a project in Bangladesh that also worked to develop and disseminate a community-based approach to action planning. Here, however, the challenges concerned the internal political dynamics of communities as much as the lack of direct engagement with policy makers.

Box 6. ***Testing improved methods for integrated floodplain management in Bangladesh*** (Barr 2001, Lewins 2004)

The testing and development of the Participatory Action Plan Development (PAPD) methodology on the Bangladeshi floodplain was preceded by a first phase of conventional research which defined the problems associated with livelihoods in the area. The project manager narrates how the next phase developed: *"We realised that […] we needed to look at these multi-user commons if we were going to do pro-poor research. But also that the political economy of rural Bangladesh is such that you can't work with the poor in isolation, because as soon as you get a resource worth capturing, the elite will come in and capture it. So that's when the ideas for PAPD came in […] very much trying to do a research that sat comfortably with the realpolitik in the village, and then trying to scale that up. […] So that was when we started getting involved with an NGO, and also with DFID's bilateral projects, because we saw that was the route to getting sustainability."*

So adopting an action research approach to this phase was a direct outcome of the emphasis placed on this approach by NRSP, but also an outcome of the situation researchers encountered on the ground.

The action research approach was also a way of reaching the people who the researchers felt were their target – landless households. In an area where nearly 40% of households are functionally landless, most depend heavily on patron-client relationships with landholders to secure their livelihoods. It was important for researchers to adopt a "do no harm" approach, trying to create extra opportunities for the landless without endangering their existing livelihoods and patronage relationships.

Using action research to pilot a planning methodology is not without contradictions. At the end of the phase that developed PAPD, villagers had developed action plans, but the project was not able to offer resources or support for implementation or further development. This approach to action research sees 'action' as an output or outcome of the research project and as such is rather different from action research traditions that emphasise the researchers and the researched co-creating action throughout their engagement. Fortunately, in the case of PAPD, the NGO partner and a simultaneous DFID-funded non-research intervention were able to provide vehicles for further work on action plan implementation. But the project manager notes that what is needed for the creation of sustainable village level institutions is "*clearly not the six or seven weeks of PAPD, it's much more like six or seven years of coaching and mentoring to build that sufficient level of confidence that people can be ready to take it forward.*"

In contrast with the PAPD and Hubli-Dharwad experiences, two projects on aquaculture service provision in India have combined community-based activities with a more

explicit emphasis on policy influence through direct engagement with policy makers, asking what is needed to get the voices of poor fisherpeople heard by policy makers.

Box 7: ***Support to Self Help Groups and policy influence in India*** (Haylor and Savage 2003)

These projects worked to improve policy on aquaculture service provision in the Indian states of Jharkand, Orissa, and West Bengal. The central emphasis of the main project was on policy influence, and less on providing an analysis of it. The principal medium for the work was support to Self Help Groups (SHG) through a local NGO, the Gramin Vikas Trust (GVT), working through community motivators. Policy influence in this case can be seen as having two strands: on the one hand, bringing through the 'voices of the poor', and on the other, influencing both lower and higher level policy makers through consensus building methods.

One of the key outputs of the project is the notion of 'facilitated advocacy', in which the role of the external facilitators is made explicit by the project team. This is seen as a way of bridging 'discourse gaps' that reduce the chances that the voices of the recipients of services will be heard. It also empowers scientists to enagage positively in policy processes.

In facilitated advocacy a range of tools are used. These include the development of documentaries and the use of street plays in order to stimulate discussion about policy issues and to provide feedback to visitors. The process of facilitated advocacy has given rise to the spread of 'One-Stop Aquashops': under-one-roof provision of services such as fingerling supply, for smaller scale aquaculture producers. These are based on the principal that farmers can build groups and articulate their needs effectively to government and other policy makers.

According to the project leader: "*...[One-Stop Aquashops] act as beacons which draw in services and knowledge and make it simpler for farmers to access locally the services they need ...the local focal point appears to be of value to service providers trying to reach large numbers of disparate farmers and fishers as well as to farmers having to travel extensively to access the services and support they need. There is overwhelming SHG, government, NGO and private sector interest in One-Stop Aquashop Development*".

Another key part of policy influence has been the process of consensus building among policy makers, from senior to lower levels. In this the 'Delphi technique' was used for establishing policy priorities. Policy makers generated their list of prioritised policies through structured and semi-anonymous ranking exercises. The project leader argues that: "*... the 'semi-anonymity' is a very effective mechanism for levelling. In other words, everyone knows who is involved but no specific input can be attributed to any individual. So a tribal farmer in Kaipara and the Deputy Fisheries Commissioners inputs are judged by everyone on the basis of content alone".*

Like others that took an action-oriented approach, these research projects highlight the micro-politics of engaging in real processes of NRM at the local level. They illuminate the importance of individuals in creating opportunities for change and sustaining them; and the importance of existing social hierarchies in inhibiting changes in NRM practice.

These projects emphasise the time necessary to do this kind of intensive research; a significant investment in an apparently quite limited geographical area. It is important however to note that in all three cases discussed above, the planning methodologies developed by the teams have been adopted and spread quite widely beyond the original research projects. NGO and government research partners have been particularly influential in this spread, as have DFID in the case of PAPD. On the other hand, there is no escaping the broader message of these projects, which is that building sustainable, pro-poor social change takes time and continuity.

In all cases, considerable methodological flexibility was needed in order to stick to the ultimate goal of developing methodologies that would allow resource-poor members of communities a voice in development processes. This meant adapting to existing conditions – for example, a lack of trust in government staff, or the dynamics of patron-client relationships between richer and poor people in the same villages – as part of an iterative process of methodological testing.

A fourth example of an action-oriented approach illustrates a different starting point. Here, instead of action planning to strengthen community voice, researchers in Uganda aimed to build capacity to strengthen policy implementation at the local level, to improve the uptake of NRM technologies. This project therefore engaged a different range of stakeholders from the other action planning examples, and encountered distinct challenges in doing so.

Box 8. ***Action research to strengthen processes and capacity for local policy in Uganda*** (Sanginga 2005)

This project used an action research approach to strengthen local-level processes and capacity for developing, implementing and enforcing local bye-laws that would improve the uptake of NRM technologies.

The action research identity of the intervention meant going further than engagement with local professionals to help them integrate their understanding of local and research knowledge on soil fertility management, by building local ownership of the capacity-building process through the involvement of researchers, district and sub-county officials, local professionals and farmers. Tools were

constantly developed and tested and a continuous researcher presence was important for ensuring feedback loops for learning.

Meanwhile, the project also used three complementary mechanisms for promoting policy dialogue: bottom-up community inclusive processes, sub-county[7] representative meetings and district level stakeholders' workshops. To make the dialogue effective and participatory, it was necessary for researchers to engage with local communities directly in the articulation of their policy needs, and in analysis, design and implementation of policies. A number of meetings and consultations in villages led to the development of community action plans.

Village, sub-County and District "Policy Task Forces" were also facilitated and mentored. These are made up of nominees of different stakeholder groups, and provide a forum for institutional linkages between these different groups. At the sub-county level, the task force worked through the sub-county council and the local Farmer's Forum, part of the structure of the newly privatised agricultural extension service. Village Policy Task Forces were given the task of reviewing existing bye-laws and monitoring their implementation.

One contribution of this work is a model that research and development organisations can use to influence policy action for sustainable NRM. The so-called five "INs" model advocates strengthening local institutions (in order to support decentralisation); providing information (because a majority of policy makers have a limited understanding of policy process and of what they are supposed to implement); linking bye-laws to NRM innovations (to support implementation with appropriate technologies such as agroforestry); finding and promoting incentives and minimum inputs (as a reward to farmers and communities who are championing NRM issues), and building a network of influence (in order to reach and influence policy makers).

These four examples of action research approaches all support the view that policy influence should not be seen in a linear way. They show that influence is often a question of building bridges between institutions and stakeholders at different levels which are fragile and ephemeral; and it is about supporting policy makers to learn, rather than simply giving them access to more information. It can include providing support to stakeholders who are often excluded from NRM processes, as well as strengthening the skills and capacities of the relatively powerful to support more efficient and accountable processes of natural resource governance. Above all, the

[7] Uganda's decentralised governance system has elected Local Councils at five levels, the most important being LCI (village), LC3 (sub-county) and LC5 (district). Decentralising development planning to the LC3 level is the current preoccupation government policy and donor interventions.

dynamic interaction between research and policy is unpredictable and multidimensional. This implies rejecting some commonly held assumptions about decision making in policy processes, particularly the idea the policy contexts are manageable and controllable. This in turn implies continued methodological innovation in the area of policy influence, and is the subject of the next section.

2.3 The manageability of policy and social context?

As the examples discussed in the previous section show, approaches to policy processes that see these as rooted in power relations and not amenable to simple management have nominally formed the conceptual background to many of the projects reviewed. Despite this, many projects have ended up seeking essentially managerial solutions to the problems they identify. A strong sense emerges from the research reviewed that institutional change can be achieved through interventions designed to stimulate it. From a reading of the written outputs of finalised projects, what is notably absent from most is an *analysis* of power relations between actors that animate institutions and shape their behaviour[8]. While findings are presented that demonstrate power relations at work, the lack of systematic analysis of these means that they remain largely embedded in background information, and are not explicitly used in efforts to influence policy.

What might be behind this disjuncture? There are a number of possible explanations, but of these, two that are closely related strike us as being particularly convincing. These concern the pressure to see results, and questions of disciplinary orientation. Reflection on these requires a return to the history discussed above.

As we noted, NRSP has evolved within the wider context of shifts in thinking in DFID, make significant efforts to stay up to date with new developments. In essence, this has involved a shift from technology and productivity increases, to a concern with poverty and livelihoods. This implies, perhaps demands, a disciplinary shift in research approach. This is particularly well illustrated in the report from a workshop that NRSP held at Rothamsted in November 2000, which focused on improving the poverty focus of NRSP's research on natural resource management and at which NRSP managers stressed the importance of both policy and politics (NRSP 2001b). Assessing the productivity impact of a particular technology is a somewhat less complex task than showing its pro-poor impact on livelihoods. But this is exactly what researchers were being asked to do. In the focus on uptake promotion and influencing policy, many have arguably been pushed to go beyond what they were best at.

[8] There are some projects where this was not the case – for example, the study of environmental democracy in Ghana and the PAPD research in Bangladesh; but nonetheless, a lack of *analysis* of power relations was a common feature of many of the projects that referred to the importance of such relations in their literature reviews.

There is a remarkable continuity in the research institutions and individual researchers that have been funded by NRSP over the years. There is nothing surprising about this; as the programme has endeavoured to maintain focus, it is understandable that those who contributed earlier should be expected to continue to contribute. However, for many of those with a primarily natural science background, understanding of and engagement with policy processes was something they effectively had to learn 'on the job'. Some did this very well, some less so; but the important point is that it was not part of what they were trained to do.

For many, interdisciplinarity has been seen as a solution to the challenge of strengthening policy influence; a strong message was coming through that it was necessary to strengthen the 'social' side of the research. For example, at the Rothamsted workshop the chairman of the Programme Advisory Committee argued: '...It is necessary to go 'upstream' from importing social or economic methodologies into technically driven research, to integrating social, institutional or economic perspectives into research design' (NRSP 2001b: 6-2). One way to do this was to involve those whose principal training was in the social sciences. But there were pressures working against this too, given the dislocation of the Socio Economic Methodologies (SEM) component from the rest of the NRSP programme. Retaining SEM within DFID hardly pointed to disciplinary integration.

In addition, for many researchers themselves, the notion that they should be ensuring the promotion of their work was problematic. While programme management stressed uptake, integration with policy and institutions, a different message came through from some working groups at the Rothamsted workshop, who argued that: 'achieving long term impact is the role of local development agents, not a project's research team', and 'ensuring continuity and/or monitoring the impact of research, after a piece of research is completed, is the task of the NRSP programme management' (NRSP 2001: 4-2).

The result of these pressures has been the predominantly managerial approach to policy processes described above. However, this has not characterized all of the projects we have reviewed in this synthesis. Why the differences? Interestingly, those that seem equally, or more, explicitly concerned with politics and power are those that have initiated and led by those with a primarily social science background. This is not surprising; engagement with politics, power and discourse is part of their epistemological world. It is also part of how social scientists are expected to present and argue for their work, which is very different from the 'materials, methods and results' approach required of natural scientists. As one researcher put it, when reflecting on working in a multi-disciplinary team: "*The difficulties are just the ways that the different disciplines report, and their expectations. The anths would write a paper with some catchy title, and the soil scientists would want to write a treatise on Carbon 16 in this field or whatever, so the sort of product we were trying to give to each other was very different.*" On the other hand, just

because some researchers have understood policy in more dynamic terms, does not mean that they have been more successful than others in influencing it, or in achieving the livelihood outcomes that they are meant to be showing.

However, we are not necessarily dealing here with incommensurable epistemological worlds, despite the indications above. The researcher quoted above explained the reasons for successful interdisciplinary work in the following terms: "*I think two things [matter]... one is trust and the other is chemistry.[…] I have to be willing to put myself through a mini-anthropology course to understand what they were talking about, to understand what were the basic tenets of the discipline, and they had to be willing to come and do some computer work.*" Of course, this doesn't always happen, and it is always necessary to question the depth of engagement on either side. What is being described is not so much interdisciplinarity as effective communication between disciplines. But are there inbuilt problems with this? Wouldn't it be better for the natural scientists to get on with what they do best, and not dilute or underplay their expertise? Similarly, would it be better if the expertise of social scientists were not undermined by those who consider it general knowledge? Is an 'amateur' social scientist[9] worse than no social scientist at all? Probably not. These are questions of the competition and discomfort that often exists between researchers of different disciplines.

These questions, and the challenges they imply, are magnified in the light of the increasing tendency towards applied research. Underlying approaches and mindsets set boundaries on what action is possible. If we are not just doing research, but doing research in the service of catalysing positive social change – in the form of policy impact – then our assumptions about the management of social change become very important. If positive livelihood outcomes are to emerge from development research, the closeness of relations between the natural and social worlds, better communication, and transparency in addressing sometimes painful processes of jostling between researchers of different disciplines are all demanded.

Ultimately, the significance of these questions rests in the consideration of livelihood outcomes. In the following sections, we provide an account of the kind of outcomes NRSP projects have described and an overview of some of the key influences on this. We first discuss the relationship between policy, research and livelihood outcomes. We then turn to look at the contextual drivers that are important in shaping the macro level of the policy landscape, then to some of the dynamics of the local level institutions of NRM.

[9] The notion of the 'amateurism' of those practicing social science without training or background in this was expressed by an anthropologist colleague of ours.

3. THE RELATIONSHIP BETWEEN RESEARCH, POLICY AND LIVELIHOODS

In this section, we outline the insights provided by NRSP research on the relationships between research, policy and livelihoods. Tracing the causal linkages between policy and livelihoods is never easy; livelihood changes occur for a whole range of reasons, many of which may have very little to do with policy. Few of the research projects directly interrogated these linkages, and none have evaluated their efforts specifically in terms of measuring improvements in livelihoods. Instead, they rested on the basic assumption, imported from DFID in the form of the basic logic that underpins NRSP's efforts to produce research that influences policy, that policy can and does have a positive influence on livelihoods, and thence that influencing policy through research can be an indirect stimulus to livelihood change. Although interview findings suggest that individual researchers may not have wholly accepted this assumption, it is nonetheless foundational in the design of most projects.

At the nexus of policy and research, as we have discussed, policy change takes place because of much more than information provided by research. Furthermore, insights from the research projects suggest that the legacies of research may be much longer-term, more indirect and broader than can be stated in the short timeframes of much funded research. As one project leader put it: "*I've always argued quite strongly with the NRSP management that actually the research we do isn't just place-based. It's not just about the results that happen in that place; we are applying these findings and methods in a whole range of other contexts*." If research leads to legislative change, then the effects of this will take time to occur. If it leads to cognitive change among policy makers, then this cannot easily be measured.

In the light of these caveats, we have tried to emphasise those cases where the causal linkages appear to be most clear and convincing. In some cases, this involves a discussion of findings about the impact of particular policies on particular NRM-based livelihoods. In others, we draw on evidence of the impact of research projects themselves on the contexts in which they have worked, and how impact has spread beyond those contexts. First, we summarise the kind of livelihood impacts that have apparently been the result of policy. This includes both negative impacts and consideration of the ways in which policy may *fail* to influence livelihoods. Then we present a summary of findings concerning the key influences on these outcomes. This forms the basis for the subsequent discussion in the report.

3.1 Livelihood outcomes of policy and research

Evidence of the impact of policy on livelihoods is quite limited in the projects we have reviewed. However, lack of impact and the difficulty of tracing impact emerged as a recurrent theme. For example, in an analysis of Joint Forest Management in Orissa, India, one research team argues that the impact of policy on livelihoods is very uneven, and depends on long and complicated chains of influence (Conroy 2001). Similarly, research about the impact of community forest management on livelihoods in Nepal found varied levels of impact of policy on livelihoods according to several different factors. It is regionally differentiated, according to the type of forest being managed, and the social and spatial patterns of forest resource use (Seeley 2003). But as in the Indian case, even where there were positive impacts, for example on the state of the forest in the Nepali hill region, there was also evidence that women and poor and vulnerable social groups were not involved in decision making, and had not benefited from any improvements in management systems. This insight illustrates that the story of policy impact is seldom one-sided, and positive and negative outcomes may sit alongside one another.

Research on policies for sustainable land management in Amazonia found that government policies had little impact in a region where access to land is fiercely contested between powerful actors, and in some senses ungovernable (Brown and Muchagata 2002). Despite the existence of pro-poor policies – one, for example, supports small and family farms – these tend to be poorly integrated, and implemented by different agencies acting in isolation, and sometimes completely contradictory in direction. They also seldom take into account the linkages and connectedness of various activities or forms of land use. As such, they do not achieve their intended impact on livelihoods.

Research on environmental policy and livelihoods in Brazil and Ghana also finds an absence of impact (Wiggins 2003). Here, policies on paper had very little influence on livelihoods, because they were only applied sporadically, if at all. In Ghana, the existence of rules and regulations that were only occasionally applied constituted a hazard to certain local occupations. Thus, the existence of a policy could result in sporadic and unpredictable 'campaigns' that had a negative impact on particular livelihood practices. Charcoal burning and forest-based occupations such as carpentry and chain-sawing were particularly susceptible to this. Later projects in Ghana add the finding that agricultural development policies have tended to help richer farmers; these have often involved attempts to develop plantations which favour those with access to land, capital and labour (Brown and Amanor 2002).

Table 2 below summarises some of the complex ways that environmental policies impact on the livelihood strategies of different people living at the forest agriculture interface of

Ghana. The examples in the table draw our attention to the intended and unintended impact of policy on livelihoods. Many of them arise from a strong centralised policy narrative about environmental protection, in which the 'the poor' are not seen as the beneficiaries of policy, but as agents of environmental destruction. In this sense, policies are not *intended* to be 'pro-poor' – but nonetheless have significant positive and negative impacts on poor people's livelihoods.

Table 2
Impacts on livelihoods of environmental policies in Ghana
(adapted from Wiggins *et al* 2004: 1950)

Policy and affected occupation	Impact of policy
Ban on chain-sawing for timber	
Chainsaw operators	Some lost income; some operators moving into farming; reduced capital for farming; Lost wages
Wood carriers	Lost income
Sawn wood dealers and carpenters	Lack of sawn wood drives up prices; hence less demand
Masons	Less demand for services; fewer people building because of higher price for roofing timber
Charcoal makers	Production cut and income down as left over from felled trees no longer available
Consumers of timber	Higher prices
Bush fire controls	
Farmers	Loss of crops prevented; improved soil fertility
Hunters	Less game caught
Riverain protection	
Farmers	Little impact
Safe use of pesticides	
Vegetable producers	Little impact – few people, no knowledge
Confinement of livestock	
Livestock keepers	Little impact

As Table 2 shows for the impact of bush fire controls on farmers, sometimes policies achieve an unintended positive impact – or at least one that is outside the main thrust of policy objectives. A similar example of unintended positive impact comes from Calcutta, where a lack of clarity over land tenure regulations may have had some positive impacts for the poorest by allowing, indeed encouraging, the daily netting of fish, which results in more labourers being employed and smaller, cheaper fish being produced (Bunting 2002).

There are also unintended negative impacts, as in the case of macroeconomic policies in the Caribbean, that are seldom driven by pro-poor considerations, and where potential negative impacts on poor people are not analysed in policy formulation (McConney 2003). As a team working on coastal management in the region observes, a major impact of policy on livelihoods is simply in shaping the "marketing attributes of the socio-economic arena". It is important not to discount the impacts on NRM of apparently distant policies that do not have a direct poverty or environmental focus.

Many of these findings illustrate how particular policies have failed to have an impact on livelihoods. Do different issues emerge if we examine the impact of policy-directed research projects on livelihoods? In the two boxes below, we give two illustrations of research processes that catalysed positive livelihood change, as well as having a direct or indirect impact on policy makers or policy processes. In the case of these two examples from south Asia, NGOs and existing community groups have been important partners in catalysing change.

Box 9. Investigating improved policy on aquaculture service provision to poor people (Haylor and Savage 2003)

As noted earlier, this project had a strong emphasis on influencing the policy process, particularly with regard to aquaculture service provision in three states: Jharkand, Orissa and West Bengal. Its emphasis was on Self-Help Groups, backed up by strong support and advocacy from an NGO (GVT) and the principal research team, from Support to Regional Aquatic Resources Management (STREAM).

Livelihood benefits have accrued to pond keepers as a direct result of project action, but arguably the outcomes are far wider. The project leader asserts that these project activities have given rise to changes in policy, and that these have resulted in livelihood benefits. In one case "*... the policy change (in terms of the changed policy on lease period) was the driver for exploited weavers to struggle to take up aquaculture and the benefits this has brought. Similarly, One-Stop Aquashops (in terms of the changed policy on making information available to farmers and fishers) have emerged in different forms within government, NGOs, the private sector and federated SHGs without any project financial support....*' In addition, the increased income generated by aquaculture activities have resulted in the proliferation of apparently successful, and locally initiated, group formation.

Box 10: Changing livelihoods in Bangladesh (Lewins 2004)

The implementation of the PAPD method has had considerable impact in some of the areas of project work. An assessment of the effectiveness of the PAPD method (Sultana and Aberyasekera 2004) found that in sites where PAPD was implemented, greater social cohesion and fewer conflicts developed, the poor were more effectively represented, and there were positive changes in local government attitude.

Importantly, these were translated into more resource management action plans and reportedly greater personal benefit to individuals. According to the project leader, in one area "*the farming system has changed radically – they're using different crops, so there isn't the tension over the period when the farmers want the land to dry out and the fishers want water in there. There've been new local arrangements for preserving fish, creating refuges in the dry season […] and one of the most significant indicators, when we were doing the research there were about 12 big irrigation pumps sucking the water out of the water body, which effected fishing very badly. Now there are only three left...*"

Project activity is one of the catalysts of these changes. But the extent to which they should also be seen as leading to policy change is rather less clear. However, the wide spread of the PAPD methodology, through networks of NGOs, donors and researchers has multiplied the spaces available for the kind of intervention which gave the positive outcomes described in the example.

The experiences encapsulated in these examples demonstrate that proximity to a research project on the dynamics of NRM at the community level may well bring both material and non-material livelihood benefits to those community members it engages. Further, livelihood benefits may be indirectly catalysed, as research influences policy, which may in turn influence livelihoods.. Finally, beneficial change may spread outwards from this small group, both more widely in the community, and from community to community, via the spread of methodologies and approaches developed by researchers. Research projects can enable the testing of new approaches and technologies that are against the grain of existing policies, and policy makers as much as researchers use these experiences to push boundaries and learn lessons.

What factors shape which trajectory a research process will take? The most important variables emerging from both documentation and in discussion with project leaders would appear to be length of time available for engagement, quality of engagement with local institutional stakeholders and the capabilities and resources of implementing

agencies. Table 3 illustrates some of the lessons learned from NRSP research processes in these categories.

Table 3: Characteristics of research processes that influence the relationship between policy and livelihood outcomes

Characterisitics of research processes	Lessons from NRSP research processes
Timespan of intervention	***Bangladesh.*** Intervention over many years, with NGO partners, has led to the consolidation of lessons and the refinement of methodology, and its wide spread (Barr 2001)
	India. Long-term relationships were critical to the research – both between researchers, and in terms of the long-term presence of the NGO partner in the community. (Haylor and Savage 2003) According to the project leader, "*this is probably the single most important influence on the viability of the SHG that emerged."*
	Uganda. Influencing policy seen as a long process that needs perseverance and a sustained programme of intervention (Sanginga 2005)
Quality of stakeholder engagement	***Bangladesh***. Good stakeholder engagement occurs where donor objectives and national sectoral expertise coincide, and resulting NRM arrangements are likely to be relatively robust (Lewins 2004).
	Caribbean. Creating spaces for dialogue and conflict resolution as an antidote for non-communication was the starting point (Brown *et al* 2001)
Character of local institutional stakeholders	***Bangladesh***. The political and institutional culture of government agencies presents a problem. This includes hierarchical nature of government field agencies, inflexibility and tendency to concentrate on physical targets (Soussan 2000
	India. Lack of capacity of government service providers seen as a key impediment to policy implementation (Haylor and Savage 2003)
	PUI (Calcutta) In a very contested environment, politics between institutions who have very different levels of power shapes the research process (Bunting 2002)

	PUI (Hubli-Dharwad). There are cases of conflict between NGOs with very similar agendas, including one supported by the project. Local level institutional contestation becomes important (Brook 2002b)
	Nepal. Forest User Groups often dominated by a minority of community members, including those not reliant on CPRs. Management planning dictated from above. Their policies reflect a 'hidden economy' related to transactions and subsidies. (R7514, Seeley 2003)
	Caribbean. Lack of capacity and experience in participatory approaches to coastal zone management of government agencies in Tobago (Brown *et al* 2001)

These examples show that there is a wide range of factors that shape the possibilities for effective policy-directed research. Many of these – particularly the institutional characteristics of stakeholders – are, like the general relationship between policy and livelihoods, intimately connected to the broad social, economic and political context in which development initiatives are situated.

3.2 Key influences on outcomes

As our brief examination of the impact of policy and research on livelihoods demonstrates, there are a number of potential impact scenarios – positive and negative, direct and indirect, intended and unintended. Complexity often prevents prediction in the case of such outcomes, but looking at the factors that influence outcomes may lead to a clearer understanding of this confusing but critical relationship. Across NRSP projects, many factors influence impact. The most frequently occurring factors relate to tenure and property regimes, but the structure and nature of the state itself is also important. Localised factors of difference, such as gender, caste, wealth and so on may also play a role. Some examples of research findings in these areas are summarised in Table 4.

Table 4: Contextual factors that influence the relationship between policy and livelihood outcomes

Influencing factor	Findings illustrating impact of factor on livelihoods and NRM
Tenure and property rights	***Bangladesh***. Community based approaches to fisheries management have entailed the transfer of property rights to fishers. This is only of value if they can enforce and protect these rights. *De jure* and *de facto* property rights are very different. Patronage is an important mediator of resource access, with local power brokers using fish cooperatives as a front (Barr 2001)
	Ghana. Tenure is especially important to resource access in rural areas where much land is alienated from primary producers, controlled by chieftaincies and the Ghana Forest Service. (Brown and Amanor 2002, Wiggins 2003). At the Peri-Urban Interface, tenure plays a key role in livelihood outcomes and disputes with traditional authorities are common. Changes in land allocation procedures present opportunities for local initiatives (Nunan 2001)
	India. To pursue aquaculture in eastern India, SHGs and cooperatives need longer leases on ponds in order to be able to successfully manage them. But conflict increases when ponds gain value from establishing tenure (Haylor and Savage 2003) In the forests of Madhya Pradesh, different tenancy rights issues are particularly important: encroachment on forest lands for cultivation without legal entitlement; entitlements of tribal people to usufruct from forests; conversion of forest lands to revenue lands (Vira 2005). At the Peri-Urban Interface in Calcutta, meanwhile, 'the complexity of land tenure belies belief.' (Edwards 2002: 6)
	Tobago. Clearly defined boundaries concerning the nature of the resource and of the community that has access to it is an important pre-condition for community management (Brown *et al* 2001)
Vertical linkages in government	***Uganda.*** Strengthening community level actors to engage in policy processes cannot stand on its own. If local levels of government are dislocated from the centre, effective policy impact is difficult. (Sanginga 2005)
'Social capital'	***Bangladesh.*** There is a need to build social capital in order to create greater trust, cohesiveness and common purpose, and overcome conflicts about NRM. (Barr 2001)
	Uganda. Importance of social capital foundations for successful policy implementation. (Sanginga 2005)
Age	***Ghana***. Tendency for younger people to be the ones that were most influenced by environmental policy. Young people were often those

	burning charcoal – in conflict with elders (Harrison 2005)
Caste	***India***. Scheduled castes are socially excluded in a range of ways and finding methodologies that engage them as well as other groups can be particularly challenging (Haylor and Savage 2003)

The influences summarised in this table give a flavour of some of the drivers of policy impact. They indicate that a wide range of drivers influences the way that policy is translated through implementation into a force that changes livelihoods. In any NRM system, any number of such influences will provide the backdrop to efforts to improve the sustainability of the system, through research or policy. These influences will make their effect felt at the local level as much as in the national political arena; they are rooted in political, economic and social structures. But *how* do drivers like these effect outcomes? This question is the subject of our discussion in the next section.

4. EXPLAINING OUTCOMES: CONTEXTS FOR NRM POLICY PROCESSES

In the following sections we consider the kind of contextual factors that researchers found important to their understanding of the outcomes of policy processes. The relationship between policy and management at micro and macro levels may be strongly linked, their co-evolution shaping responsive and accountable policy and sustainable institutions for NRM; or they may be almost completely disconnected, with national policies virtually unimplementable, and local NRM processes influenced by local politics and governed according to local power structures, as seen in the Ghanaian examples (Brown and Amanor 2002, Wiggins 2003). The relationship between macro and micro levels is part of what we explore below: what factors are important as policy-on-paper is transformed into policy-in-practice and influences the management of natural resources?

Many of the constraints to improving NRM strategies exist outside the communities where many NRM activities take place. Some constraints are broadly economic, social or political in character; others are related the ways that people gain access to natural resources; still others are rooted more specifically in the way the policy is formulated and implemented.

As such, we begin this section by further discussing broad contextual factors. We then move on to consider legal frameworks which establish rights of access to natural resources, rules and prohibitions for their governance. Next, we turn to look at decentralisation, the nature of which often determines which actors and institutions are important in NRM policy processes, and shapes policy implementation in particular. Lastly, we consider the issues of representation and collective action that partly determine the functioning of institutions at the local level.

4.1 The wider social, political and economic context

A nation's broad economic context is also a fundamental driver of the practice of NRM, and also shapes the endowments and capabilities of actors in NRM processes. For example, in Ghana changes in agricultural marketing and the commercialisation of timber production favour wealthier farmers at the Forest-Agriculture Interface (Brown and Amanor 2002). Peri-urban dwellers receive reduced prices for their crops, and have fewer resources to invest in managing natural resources. At the same time, the wage structure of the economy means that it is harder to find labour to engage in NRM activities, as rates for manual labour are higher in cities, and workers sell their labour for the best price they can. The impact of the rural-urban bias and the wage structure of the wider economy means that NRM is increasingly neglected in these communities.

Social and political context is equally important. In the Hubli-Dharwad case, economic challenges to NRM are reinforced by social ones. Community action in peri-urban areas is more difficult to organise than in rural areas. In addition, peri-urban dwellers receive no support from government, and indeed mistrust of government personnel runs very deep. All of these factors combine to make a challenging environment in which to learn about how to catalyse change in NRM processes.

Social relationships within and beyond the local area are also a crucial mediator of what is and is not possible in NRM. In a hierarchically organised society like Bangladesh, for example, social relationships are largely based on patron-client links. Such relationships both secure and restrict access to natural resources. As a result, a Bangladeshi floodplains project concludes, "achieving pro-poor development through improving the management of natural resources, especially CPRs [….] can only occur when the interests of those endowed with socio-political capital are considered" (Barr 2001:22). While this conclusion cannot be generalised, it is nonetheless a valid reminder that NRM interventions risk a great deal if they do not thoroughly examine social context, and consider the relationships between the more and less powerful.

Also critical in the policy context are the narratives that drive policy, and what might be described as the policy culture - the contours of decision making, formulation and implementation. Box 11 describes different elements of the policy context for coastal zone management the Caribbean.

Box 11. ***Policy context of Caribbean coastal zone management*** (McConney 2003; Brown *et al* 2001)

Coastal resources in the Caribbean have traditionally been managed by allocating property rights and creating exclusive areas for certain activities, including conservation. But many empirical studies note that the top-down allocation of property rights is not adequate to prevent resource degradation of common property resources.

These management strategies have also been criticised for ignoring alternative institutional arrangements that already exist, or could be created to facilitate management. In Tobago, there is no explicit legislation that mandates stakeholder participation in decision making about the environment, or in developing new laws for the environment. But there is a policy narrative, anchored in international research, that understanding the institutions of coastal zone management and ensuring the participation of a range of stakeholders is critical to designing better CPR management processes.

Across the Caribbean, state structures for governing coastal zone resources are complex and often opaque. The multi-use nature of the resource means that

Ministries of Tourism, Fisheries and Planning are often all stakeholders in policy. In Tobago, for example, three formal Government agencies are currently responsible for the coastal resources, and the complexity is exacerbated by the array of formal and informal institutions also engaged in managing coastal resources. In this context, policy implementation is fragmented.

The recollections of one researcher illustrate some of the forces at play in shaping the attitudes and behaviours of governmental policy actors in this context.

"*There was this one particular guy, in the Ministry of Tourism Planning. […] He could clearly see what the issues are, associated with marine park management: the problems of having users going above a certain number, the importance of zoning, or managing the park differently. But then part of him also saw that tourism was really important, and we need more people here. […] You've got two departments* [Tourism Planning and Fisheries and Marine Resources] *with a hundred-odd people in each, each desperately trying to achieve their mission, which was set by someone many years ago. But you could see the conflict playing out in this one particular guy. He'd say publicly [about the research findings], this is such a good idea; and then he'd be at the next event, which would be opening the Hilton, saying, "it's great that we're having new hotels built here" – when all the conclusions from our project were saying, perhaps you need to think about locally-owned, small-scale businesses to ensure that benefits get to communities. So, the boundaries* [of policy], *maybe, are in the form of this cognitive dissonance, or inability to bring together the different demands, the different priorities."*

This snapshot of a policy context illustrates how factors at different levels, from the national to the individual, define the boundaries of the policy processes. Challenges in implementing participatory approaches to NRM are found at many different levels, and are often mutually reinforcing.

Several other research projects report the kind of institutional fragmentation described in Box 11. Research into land management policy in Nepal concludes that one result of stakeholders being scattered in different ministries and institutions is that there is a lack of information flow and communication between them. This contributes to disconnections between different levels of policy, and an almost complete dislocation of land management policy and land management practice. The long-standing nature of such disconnections is reflected in Nepal's political situation, with a lengthy Maoist insurgency that has come about at least in part because of rising disenchantment with government corruption and poor delivery of public services. Weak policy implementation in the agricultural and natural resource sector is both cause and effect of this political situation (Garforth *et al* 2005).

Research from Brazil, Ghana and Bangladesh also testifies to the basic dislocation of policy on paper and in practice. Narratives of environmental policy at the national level endure, even when they are clearly at odds with the lived realities of natural resource

management. One project manager, who examined the link between policy and livelihoods in Ghana, reflected on why such narratives are so tenacious*: "The crisis narrative […] has validity from at least two sources. First […] international science says that there is a global environmental crisis […] in which the poor are the major causes of environmental problems in the rural developing world. So you've got solid international support there for fairly drastic environmental legislation. And this intersects with a second source for these kind of policies, which is a feeling among the educated elite that the guys down in the village simply don't know better and need to be told what to do by the people that have passed the exams."* As a result, frameworks of natural resource tenure largely exclude villagers from ownership rights; the legislative system criminalises their use of tree resources; and environmental policies tend to equate off-farm natural resource based incomes and 'environmental degradation'. This contrasts with the importance of forest resources in national exports, and underlines the marginalisation of the interests of the small farmer majority (Brown and Amanor 2002).

As one researcher commented, the dissonance between policy narratives and reality is sometimes further reinforced by the political economy of aid, in which national governments may have to be seen to be serious about environmental issues in order to meet donor conditionalities and access certain aid streams. In Ghana, this seriousness is reflected in policies on environmental conservation which may have strong technical content, partly to meet donor conditionalities, but are either ignored as irrelevant, or "*implemented in the worst possible way*" through capricious campaigns that have negative effects on poorer natural resource users (Wiggins 2003).

In Bangladesh, dislocation between policy and NRM practice is just as marked, but has different characteristics. Here, partly in response to a shifting international conservation narrative which argues that rights of access to NRs can be traded with local people in return for them ensuring the sustainability of the resource, the government has changed the formal basis under which it allocates rights to water. This has led to confusion, with some water stakeholders legitimating their claims according to the new regime, and some according to the old. Alternatively, some people manipulate the new water rights to their own advantage: when the Government of Bangladesh instituted free access to flowing rivers in 1995, for example, in many cases there was a free-for-all with powerful individuals and groups seeking to establish exclusive control over areas of water (Barr 2001).

Several of these cases draw our attention to a final element of the context for policy and institutions: the influence of external actors, particularly donors. This influence is historical as well as contemporary – many of the laws of Trinidad and Tobago, for example, have not been updated since their creation under the British colonial system. But, as is clear from the discussion above, this influence is most often felt in the form of policy narratives about the right way of approaching NRM, and these are often backed

by conditionalities on grants and loans which oblige national governments to follow particular policy pathways.

One particularly powerful policy narrative in many of the countries where NRSP research teams worked, externally validated and adopted by domestic political constituencies, is that democratic decentralised local government is the best system of governance to ensure development. As such, local government actors are frequently at the frontline of implementation of natural resources policies, and the institutions of local government are key players in the policy process. The next section examines the dynamics of decentralised government as a crucial aspect of the context of NRM policies and institutions.

4.2 Decentralised local government

Democratic decentralisation provides an opportunity for NRM policy and practice to become more accountable, and to increase chances of greater community control over processes of planning and management (Brown and Amanor 2002). In a positive scenario, decentralised natural resource management could make good use of local knowledge and insights, and the impact of policies on livelihoods would be less likely to be ignored or discounted. Decentralisation could provide a solution for the kind of disconnection of policy from local realities discussed above. It may also allow local or community level research interventions, like many of those discussed above, to have a validity as examples of local arrangements that might be replicated in successful decentralisation contexts. Participatory natural resource management, which has emerged in recent years as an increasingly important strategy for nurturing both the conservation and development of natural resources, is considered by many to function most effectively in a context of decentralised local government. Together, decentralisation and participatory NRM processes can create opportunities for multiple stakeholders to address their problems and conflicts, particularly where resource use is contested. The policy narrative advocating both approaches is powerful, although experience of realising the narrative through implementation and practice has been extremely variable (Adams and Hulme 2001; Sarin 1998)

Decentralisation is associated with a plethora of potential dangers for policy and NRM practice. It can lead to uncoordinated and incoherent policy, made without adequate information or analysis, based largely on the interests of local elites (Wiggins 2003). It can involve the establishment of institutional mechanisms that exist on paper only, and in reality have no resources or influence (Brook 2005). Decentralisation processes are variable in their structure and intent, and involve central government institutions giving up powers which some are not happy to relinquish; this can result central policy actors digging in their heels and blocking the progress of decentralisation, disabling attempts

to change institutional structures (Brown and Amanor 2002, Brown *et al* 2001). Institutions of decentralised government in some cases have taken up responsibility for setting policy agendas and writing new rules governing resource use, whilst devolving responsibility for implementation and its costs to communities, and seeking benefits 'in the public interest' (Lewins 2004).

Implementing decentralisation policy and creating effective processes at the lower levels of state governance is a long task (Manor 1998), and mature experiences of decentralisation provide a very different context for NRM than those that have been recently initiated. In Boxes 12 and 13 we present the experiences of two pairs of research projects which looked at different aspects of forest management in contrasting contexts of decentralisation – one where decentralisation is relatively mature, and one where it remains bitterly contested and partially implemented. The first, in Madhya Pradesh, India, examines a well-established example of decentralised and participatory forest management, widely held to have been a success, and examined how processes could be improved by a more thorough incorporation of stakeholder perceptions to forest management processes. The second, in Brong Ahafo, Ghana, examined the poverty dimensions of forest governance before working to establish information systems that presented local realities to policy makers in district-level institutions.

Box 12. ***Different perceptions of joint forest management in the context of decentralised local government in Harda District, Madhya Pradesh*** (Adams 2002, Vira 2005, TERI 2005)

In 1990, a nation-wide programme of Joint Forest Management (JFM) began in India. Under JFM, resource users have been given a role in the protection and regeneration of forest land, in return for rights over the use of certain forest products. In 1992 decentralised local government (Panchayati Raj) institutions were empowered to perform a role in the management of local natural resources, including forests, at the village level. Madhya Pradesh is a state that has led the way in implementing this mandate and decentralisation more broadly.

Political leadership in Harda District is differentiated on the basis of caste. While each caste in the village had its own informal leadership, some leaders were able to garner enough votes to become *panchayat* or ward-level leaders. Many *panchs* in the villages were elected uncontested.

In Harda, Panchayati Raj Institutions (PRIs) do not play a significant role in the management of forests, despite legal provision to give them a greater role. There are however potential conflicts regarding jurisdiction, power and roles for the institutions involved in forest management. While PRIs are constitutional bodies, JFM committees originate out of government policy resolutions, which provide weaker legal support.

Different stakeholders have very different perceptions of the JFM programme in Harda District. While the Forestry Department (FD) sees the Harda experience as successful, this view is not shared by some NGOs, community-based organisations (CBOs) and Mass Tribal Organisations (MTOs).

FD respondents felt that there had been a paradigm shift in their functioning, from working 'against the people' to working 'with the people', but some felt that this had been met with resistance from within the department. To overcome this resistance, training sessions, workshops, and exposure visits had been conducted. Many respondents argued that there was now greater acceptance by the FD staff of the rights of the local communities, and also a more co-operative effort from the communities.

Respondents from the MTOs, on the other hand, believed that there continued to be significant differences between the FD and local people. They argued that JFM had tilted the balance of power towards the FD, since departmental staff controlled and dominated JFM committees at the village level.

Respondents at the village level reported that there was very little active participation in the formation of committees, and that committee meetings were irregular. They suggested that the members of the Executive Committees, which have a key role in decision making, were chosen by the Forest Department (FD). A number of women reported that they were unaware even about the existence of a JFM committee in the village, and felt they had no role in decision making.

Box 12 illustrates how the directions of national policies on decentralisation and forest management play out on the ground. Adopting a participatory approach to forest management implies a change in the policy culture of the FD, just as adopting a decentralised approach to governance implies a change in the broader political culture. Elite capture, the role of FD actors in local committees, and uncertainty about the respective roles of the FD and PRI in resource management are all indicators of how intended changes are mediated by prevailing social, political and bureaucratic systems. Although not all perceptions of JFM implementation are positive, the Harda case does illustrate a scenario in which changes were taking place that corresponded in many senses to the directions laid out in national policy. This is in contrast to Ghana, where policies with similar intent have unfolded in a very different way.

Box 13. ***Decentralised environmental policy processes in Ghana*** (Brown and Amanor 2002, Harrison 2005)

Local government decentralisation in Ghana has its origins in reforms first introduced in 1987. While devolution is still far from complete, there is in process a progressive transfer of decision making and legislative control to district-level authorities for many aspects of environmental management.

Partial decentralisation is mirrored by a rhetorical commitment to local participation in policies that affect natural resource use. But despite many pronouncements in favour of local participation in the 1990s, in reality environmental policy making in Ghana remains highly centralised, and moves towards local community engagement are at best tentative.

Environmental management and the dangers of environmental mis-management have a high profile at all levels, and district administrations have been under pressure to implement environmental policies, including forest management policies. This has led to the formation of new institutions of environmental control and protection such as committees and local fire squads, and an increase in the number of local bye-laws to control activities including charcoal burning, hunting and the use of fire.

Two major forces shape these new institutions and decision making processes. Firstly, even at decentralised levels, the narrative of environmental crisis that prevails at the centre of the policy process is very strong. This narrative casts poor people as the instigators of negative environmental change, and in turn reinforces the continuation of a top-down approach which draws on received wisdom about the environment rather than actual conditions on the ground. The project leader observed that "*the government have a very strong […] middle class mandate […] Policy is being defined broadly in the interests of the middle class*."

Secondly, new institutions and decision making processes are located in an environment where rights and claims to natural resources are shaped by factors like ethnicity, age, gender and length of residence. More and less powerful local actors have very different access to and influence on local decision makers, and there is little evidence that attempts at decentralisation are increasing the chances of marginalised voices being heard in the policy process.

Several factors undermine the progress of decentralisation in environmental policymaking, at the same time as endangering chances that participatory forest management practices will take hold. The Ghana Forestry Service has been able to maintain a centralised structure and approach on the grounds that timber resources

are legally defined as national assets that must be centrally managed. Local chiefs and traditional leaders, as well as claiming ultimate ownership of land, are increasingly being given their own rights to enact environmental bye-laws independently of District Assemblies. District Chief Executives are appointed by central government, and widely seen as representing central policy interests. A lack of transparency in district planning processes has led many to see decentralisation as a process that promotes corruption, and has deepened existing mistrust in government.

Researchers conclude that the shortcomings of the forest management system are not necessarily the product of decentralisation. The contradictions tend to come from the higher levels of administration: from ministries, departments and regional co-ordinating bodies who issue top-down directives and expect the districts to comply; from government agencies who expect districts to implement government policy without a debate on the appropriate needs of the districts; and from departments which think they are too important to decentralise.

Contrasting the Ghanaian experience with that in India illustrates how important the context for decentralisation is to the outcome of attempts to broaden the direction of NRM policy to involve a wider range of stakeholders. Both examples present qualifications to the assumption that decentralisation and participatory NRM are mutually beneficial. Particularly important in the Ghanaian case are the upward linkages that keep theoretically decentralised processes within the sphere of influence of central policy actors, and maintain a command-driven and prescriptive approach to NRM structures and policies. The Indian case meanwhile draws attention to the kinds of conflict that can emerge as new decentralised management institutions are created and animated by local social and political forces. The dissonance between different stakeholders perceptions about the implementation and functions of JFM processes illustrate not only the varying interests of different groups, but the challenges of getting stakeholders to work together effectively.

The design of NRM policies and interventions must take into account the status and form of decentralisation if they are to be successful. Local communities may need support in building the skills and capacities that are needed to effectively take up the opportunities that decentralisation offers, just as government officials at lower levels may need support to make policy which relies on local problems rather than central narratives.

4.3 Rules and rights governing resource access

Elements of economic, social and political processes are all reflected in legal frameworks for resource access. Many research projects found overlapping and unclear legislation on property and access rights for natural resources, especially in the case of CPRs. Systems of land tenure in particular were found to be extremely complex in rural and peri-urban Ghana, peri-urban India, and rural Nepal. Environmental legislation in Brazil was found to be poorly understood and therefore largely ineffective (Wiggins 2003). In many studies, the complexity of legal frameworks and weak implementation means that there is a strong difference between *de jure* and *de facto* natural resource tenure systems. In peri-urban Calcutta, the land tenure system on the ground was reported to be more politically than legally determined (Bunting 2002), and in rural Ghana traditional authorities remain very involved in the *de facto* allocation of land (Brown and Amanor 2002).

Research in Uganda that focused on bye-laws for NRM looked in detail at the dynamics of formulating and implementing bye-laws. The findings, summarised in Box 14, show that there are many factors at play in the weak implementation of legal frameworks governing resource access and use.

Box 14. ***Bye-laws in agriculture and natural resource management, Uganda*** (Sanginga 2005)

Unusually, Uganda's 1997 Local Government Act, which outlines the structure of decentralisation, provides a legal framework for the participation of local communities in NRM policymaking. Land use, management and administration are all located in a system of elected Local Councils (LCs) stretches from the village through sub-county to district level.

There are six general bye-laws in agriculture and natural resource management covering the areas of soil and water conservation, food security, tree planting, bush burning, controlled grazing, and swamp reclamation. Each of these bye-laws has specific regulations and enforcement mechanisms, and various local government staff are charged with implementation. In reality, enforcement mechanisms are very weak, and low levels of enforcement are compounded by the lack of an effective agricultural extension service.

Farmers in general are not aware of these bye-laws. In addition, analysis revealed that some categories of farmers would have difficulty in complying with some of them. These included older men and women, widows and orphans with limited family labour, or lacking money to hire labour or to buy implements like spades and hoes needed to establish conservation structures. Farmers with alternative sources of income, which are more lucrative than farming, might not have the time to put up conservation structures on the plots they are using for food security. Owners of small livestock, especially women, who have small farm sizes and do not own grazing land, will have problems with the controlled grazing bye-law, which may force the poor to sell their livestock and could increase poverty and conflicts among farmers.

Many NRSP researchers argue that legal frameworks are of critical importance in building sustainable NRM practices. But, as one team notes, numerous variables, not directly apparent from the legal and policy typologies, may affect and even determine the legal framework. As the example in Box 14 illustrates, some of these variables involve resource users at the local level; others involve international obligations, governance structures and the effective deployment of human resources.

Overlapping and conflictual systems of rights and access characterise many NRM contexts. On the Bangladeshi floodplain, for example, there is a range of stakeholders with different rights in common pool water resource management. Each group exercises its rights differently, and in doing so has an impact on other users. Community-based approaches to fisheries management have entailed the transfer of property rights to fisher people, but these are not formally recognised. Such rights are only of economic

value to fisher people if they can be enforced or protected. Undertaking community-based activities to try and enforce or protect these rights is made more difficult by the heterogeneity of interests and rights in the community (Barr 2001).

4.4 Local Institutions and Policy Processes

As we have already begun to see in earlier sections, there are many institutional actors involved in NRM at the local level. They have many identities, from community groups to local government departments, NGOs and forest management groups, and a range of functions. In this section, we discuss some of the very different roles which local institutional actors play in both the practice and policy processes of NRM.

Focussing this section on *local* institutions and actors partly reflects the emphasis of the research projects reviewed. Many of them took processes of resource management as the starting point of their researchable questions, and their findings are located accordingly. But because of the diversity of contexts, it is important to note that for the purposes of this report, 'local' is a catch-all term that embraces processes that are labelled as 'community level' as well as those that are labelled 'district', 'sub-county' or 'panchayat'. What interests us here is the interplay of institutions and actors with direct involvement in the governance of NRM processes and practices. We should not however forget that 'local' is a relative term and, as Pigg reminds us, "locality is constituted in and through relations to wider systems, not simply impinged upon by them" (Pigg 1996:165 cited in Mosse 2005:48).

Local institutions are the medium through which resources are managed. In the language of the SLA, institutions mediate access to the different capitals necessary to construct a livelihood. Of particular relevance to many NRSP research projects, legitimate institutions are also increasingly recognised as more important than markets in enabling the social dilemmas of CPR allocation to be resolved (Tompkins *et al* 2000). Institutions are also the route by which policy directions are made real, and by which lessons from practice are – at least in theory - fed back to policy makers. They are therefore an essential link in the relationship between policy and livelihood change, and an arena where there are opportunities to improve the impact of policy.

But local institutions are often both multifunctional and unpredictable. The research findings show many examples of institutions that do not necessarily do what they were designed to do. They also show some rarer examples, for example in peri-urban Calcutta, where whole institutional systems are highly dysfunctional and there are deep-rooted problems of governance, which cripple institutional function (Bunting 2002).

The aim of this section is to review some findings about what local institutions actually do in different NRM contexts, with a view to questioning assumptions that are commonly made in policy and practice. We begin by looking at some of the conceptual tools research teams have used to define, categorise and examine local institutions.

There are many definitions of institutions, originating from different disciplinary perspectives. Across the research projects, there is no common theoretical basis to the analysis of institutions. Most of the research projects reviewed recognise, at least implicitly, a spectrum of understandings of the term, ranging from organisations, to regular patterns of behaviour, or even "ways of getting things done" (Lewins 2004:6). Within this broad spectrum, many teams use other categorisations in their analysis of institutions. Several research teams differentiate 'formal' from 'informal' institutions, separating visible structures like organisations or committees from less tangible qualities like cultural or religious norms.

Government institutions have been one focus for analysis. In some contexts, most notably in some of the examples of research from South Asia, institutions with a governmental identity are profoundly mistrusted, and dealing with government officials is seen as a matter of corruption, patron-client relations, failure to deliver and an encounter with attitudes of indifference (Brook 2002b, 2005). These are strong disincentives to engagement, and often mean that government officials are remote and inaccessible to most sections of the population (Soussan 2000). Further, government institutions are far from homogeneous: there are often tensions over control and allocation of resources (Brown and Amanor 2002). Despite the challenges that a governmental identity implies, however, some researchers emphasise the importance of government actors being represented in NRM processes (Brown *et al* 2001).

Another focus for analysis is the difference is between indigenous institutions of NRM and those that have been created by outside interventions – by government programmes, or by projects. Across many contexts, there has been a relatively recent proliferation of NRM institutions. In Bangladesh, for example, key sectors in floodplain initiatives have all used the approach of creating new institutions in at least some of their projects and programmes. But institutions of floodplain management already exist, independent of external support and facilitation. These are usually small-scale and based around annual seasonal interventions to improve water management for local users (Lewins 2004). Similarly, self-initiated forest management groups pre-dated the arrival of JFM in Orissa, India. While on the one hand community forest management groups tend to be quite socially homogeneous and able to re-arrange the use and distribution of benefits, on the other, the poorest households are sometimes excluded because they cannot contribute for forest protection, and women's involvement in decision making is negligible (Conroy 2001). However, in both cases, lessons could have been learned from existing local institutions when designing new ones. In part, the

success of policy initiatives rests on the relationship between the indigenous and the externally created institutions.

Beyond the basic institutional markers of governmental or non-governmental, indigenous and externally initiated, concepts such as social capital and networks are important to many of the analytical frameworks used by NRSP researchers to approach local institutions. This is due in part to the sustainable livelihoods framework, and its people-centred approach; and in part to a broader trend in international development thinking which has seen the rise of social capital as a researchable and measurable phenomenon. Some research teams used the term social capital as a catch-all term in the mapping of contextual landscape[10] while others built new, field-based understandings of social capital and its role (Sanginga 2005).

Wealth and gender mediate access to institutions – as do age, caste, political identity and ethnicity. While this observation is far from new, it challenges us to do more than simply label institutions and describe their different patterns and categories, but rather to move towards considering how to build NRM institutions which are less rigidly exclusive of key stakeholders in management. One key insight here that those who are socially marginalised have restricted access to the kind of institutional networks that allow them to move beyond the boundaries of their own locality. This restricted access is a key mechanism in broader processes of marginalisation of particular groups of stakeholders from policy processes.

Although there is a wide spectrum of approaches to defining institutions amongst the NRSP research teams, there is a common assumption underlying many of them. This is the belief that certain types of NRM institution, particularly formal governance institutions and externally-created local institutions, need to be seen to be responsive to designed processes of institutional change and reform. Following from this, there is a strong emphasis in the projects reviewed on understanding the social and political dynamics of institutional function and institutional change. Researchers ask how institutions work in practice, and how change can happen in order to support effective and equitable NRM practice. Two sets of institutional functions – representation and collective action – emerge as critical factors shaping the prospects for positive change. These are the discussed in the next two sections.

[10] A similar observation is also made in Ambrose-Oji's (2004) synthesis of NRSP research findings on livelihoods.

4.5 Representation

The ideal of sustainable NRM practice embedded in a democratically decentralised system of governance turns to a great extent on different processes of representation. The ideal of democratic representation consists of downwardly accountable and responsive local authorities, as well as capabilities amongst local people to claim accountability (Ribot, nd). Rights to natural resources, mediated through a diversity of institutions and actors, are key to these claims. While formal rights to resources are often established in law, as discussed above, the capability to claim those rights is moulded by power relationships, especially those concerned with access to knowledge and resources (Jones and Gaventa, 2002). Relationships of representation are two-way: the experiences and outcomes of claiming rights and accountability are partly shaped by those claiming them, and partly by the characteristics of the individual or institution against which the claim is being made.

In many countries, a growing diversity of actors perceive that they have a right to be involved in processes of NRM planning and policy, and amongst them are those who in turn represent those normally marginalised from such processes. A common finding in different contexts was that local institutions which are designed or mandated to ensure the representation of different stakeholders in NRM processes are frequently captured by elites, and many others are excluded from participation along reinforced lines of social difference such as gender, ethnicity or age. This is true both of the institutions of externally stimulated programmes and projects, and the institutions of government and political representation.

Findings from the action-planning process in Hubli-Dharwad are illustrative of an externally-stimulated project, with the NGO staff and researchers who implemented it aiming to design a methodology that ensured the representation of poorer and marginalised community members in the planning process (Brook 2005). In the majority of villages where the project worked, this was achieved through engaging with existing networks of self-help groups. In one village, however, the research team initially approached the community through the local government council and government-funded self-help groups. In this community, local elites quickly dominated the agenda, and the representation of poorer people was difficult to achieve. But even in those villages where poorer people were included in the action planning process, there were still categories of people who were not represented, those who, in the words of the project manager "*were just too poor to participate.*"

Findings from Ghana, on the other hand, illustrate elite domination of decentralised local government institutions such as Area Councils and Unit Committees (Brown and Amanor 2002). Women and in-migrants in the Brong Ahafo region see themselves as

marginalised from Unit Committees, which they perceive as being held for men, in particular indigenous men. Indeed, only 17% of Unit Committee members are women. Researchers argue that this elite capture ensures the replication of dominant narratives of environmental crisis in local institutions, and excludes those at the margins by casting their NRM practices in a negative light.

Different constraints to representation emerge from the findings of other projects. In the Caribbean Marine Protected Areas research, an important constraint to broad community representation was found to be lack of time: those that can attend meetings may not reflect the attitudes and opinions of those who cannot (Brown *et al* 2001). In many different contexts, trust was also found to be an essential ingredient in effective representation processes. Where trust is absent, processes ensue in which polarised positions are fixed, and alternatives are not sought. While formal institutions represent notions of democratic accountability, the trust necessary to enact democratic processes is often rooted in informal institutional networks of social and political power relations (Lewins 2004). In situations where the participation of farmers and local communities is limited to a single representative (Sanginga 2005), these deep and complex social layers are inevitably narrowed to a single point of representation, and the interests of marginalised groups go unrepresented.

By contrast, the action-planning research in Hubli-Dharwad offers a glimpse of what kind of change becomes possible in the presence of effective representation. In the village of Mugad, researchers felt that village representatives involved in the action planning process were in a position to truly represent their communities. The importance of a history of trust and prior relationships in the community, and the existence of self-help groups, was reflected in way the Mugad representatives put forward their issues and interacted with government. They were able to articulate the linkages between the causes and effects of their problems, and women dominated the dais in an interaction with senior government officials. Researchers concluded that because they were in a full sense representative, they were already bringing in issues that have been discussed by a wider community of CBOs and their members but also have the capacity to take back the outcomes of the action planning process into the larger community and get their buy-in to the plans. This snapshot of successful representation illustrates not only the need to build new resource management initiatives on existing foundations, but the importance of collective action at the village level *as a prerequisite* to successful representation of villagers in local processes of resource management.

4.6 Collective Action and Conflict Resolution

Stimulating collective action and conflict resolution is key to many NRM approaches. (McConney *et al* 2003). Where there are policy guidelines in place for promoting collective action – JFM in India and Nepal are good examples – this sometimes means creating new institutions that ignore existing patterns of working together. Sometimes, collective action is promoted where it is not the norm, partly because of the unrepresentative nature of local institutions discussed in the previous section. In many peri-urban villages in Hubli-Dharwad, for example, the concept of community action has fallen into neglect, and part of the action planning process was designed to support community members to learn about working collectively, resolving conflicts, and negotiating (Brook 2005). By contrast, in the arena of coastal management in the Caribbean, the challenge is overcoming crisis-driven management responses that prevail in government, often featuring intense but temporary collective action (McConney 2003).

Collective action both requires and builds consensus. The degree of conflict that characterises many resource management scenarios militates against collective action. As research from rural Uganda shows, the types and dimensions of NRM conflicts range from intra- and inter-household gender relations, to antagonistic and sometimes violent clashes amongst farmers, and distrustful relationship between local communities, government and external institutions (Sanginga 2005). Research on coastal zone management in the Caribbean notes diverse sources of conflict amongst resources users: relationships (values, beliefs, prejudices, poor communication); information (poor quality information, misinformation, differing interpretations); interests (perceived or actual; substantive/physical or intangible/perceptual) and structures (institutions, authority, resource flows, and time constraints). (McConney 2003)

What then is needed to overcome conflict with such diverse sources, in order to stimulate collective action in the management of natural resources? In the box below we look again at the Participatory Action Planning Development (PAPD) methodology, which has been discussed earlier. This was developed specifically for building consensus for the collective management of inland fisheries in Bangladesh. The methodology is designed to be used in the facilitation of community-level action planning processes.

Box 15. ***PAPD: building consensus for collective action through action planning*** (Barr 2001)

Collective action and consensus are at the centre of researchers' vision for sustainable improvement in the management of open water CPR fisheries in Bangladesh. They suggest that this is dependent on "building social capital to create greater cohesiveness, trust and common purpose between stakeholders and thence to bring about change in the local rules and institutions that control access to the CPR." (Barr 2001:20)

The development of PAPD rests on the understanding that progress towards collective NRM requires three basic steps. The first step needs primary stakeholders to recognise the interdependencies that exist between different livelihood strategies, and the costs and benefits of a range of management approaches for these livelihood strategies. The second step is to identify a way forward and to build consensus for the strategy across different groups in the community – including a period when the views of the wider community are sought and listened to. At the same time, an existing community organisation is adapted, or a new one created, to implement the action plan with the support of outside agencies. The third stage is to further refine the action plan, and implement it. The PAPD methodology deals with the first two steps of this process.

As the project manager comments, *"we realised that it's very much a normalising process […] In a town hall meeting type approach […] you're never going to get ….] the problems which under Muslim Bengali culture never get much precedence, being to do with women […] to the top of the list through this kind of process. But […] knowing that was going to happen, we took it because we wanted everyone to stay at the table. So we were trying to focus on the problems that were common to the maximum number of people, and that's why water tended to float to the top […] It was very important to the poor, but also equally important to the rich"*

With respect to indicators of prospects for longer-term change, the facilitators spoke positively of the experience gained by primary stakeholders working together with more influential groups for the first time. The majority of participants felt that the process had been relevant to them personally or to the community as a whole. They generally believed new relations and understanding had been fostered, but that further NGO facilitation was necessary if this type of process was to be repeated.

The experience with PAPD rests on the creation of what have been described as new "platforms of understanding" between different actors, which provide a basis for the

successful management of ecosystems (Röling and Wagemakers 1998). Since stakeholders often fundamentally disagree over the definition of problems that need to be solved, and the means that might be used; there needs to be a bridge between them if concerted collective action is to be achieved. Facilitators are essential to this process, in order to create an environment in which stakeholders can learn from each other.

In a project that used trade-off analysis to engage stakeholders in dialogue and action planning for management and conservation in the Buccoo Reef Marine Park (Brown *et al* 1999) collective action was facilitated during the research process. It involved a range of stakeholders making explicit of different views and perspectives and collectively exploring why they were held. A process of collecting information on key social, economic and ecological criteria that were important to all stakeholders allowed each stakeholder group to explore more deeply why they held the views that they did, and deliberate on the relative importance of different criteria. Eventually, each group contrasted the outcomes of their own deliberations with those of other groups, thereby challenging their pre-conceptions of how others perceived resource management issues. This outlined the boundaries of consensus that did exist, and illuminated the dynamics of conflict. As another project that used a similar approach found, dialogue between competing worldviews does not settle irreconcilable differences, but it is effective because it can make the cost of compromise explicit (Adams 2002).

This inclusive and iterative approach to research is a process of collaborative learning, in which there is a collective search for the resolution to an identified problem, and steps are taken towards an agreed goal. It draws our attention to the need for local NRM institutions to be engaged in what have been labelled as processes of social learning (Woodhill and Röling 2002). A social learning approach asks "how do people learn to deal with each other and their interdependence, while they are also learning together to deal with the interconnected issues of their environment?" (Craps 2003:2). The key to answering these questions is that collective learning concerns changes not only in what a stakeholder knows, but also in attitudes, beliefs, skills, capacities and actions. As more and more research projects, policy initiatives and development interventions seek to engage with institutions at the local level, understanding the complex dynamics of how institutions and individuals learn and change, and how such learning and change can be facilitated, are important future agendas.

5. CONCLUSIONS

5.1 The relationship between policy and livelihood outcomes

It was not the aim of this synthesis to assess the impact of policy on livelihoods; causation is too hard to trace, and our primary focus was anyway on the nature of policy processes and institutions themselves. Nonetheless, the projects do provide some limited information on impact which suggests that policies do not always have an impact on livelihoods, either positive or negative; and where there is impact, it is as often unintended as intended. Beyond this though, the research reviewed also presents considerable insights concerning the local contextual factors that influence livelihood outcomes. These exist regardless of what researchers do, but they are an important part of the picture with which policy makers need to engage.

Of these, the most salient considerations appear to be the role of social factors of difference such as economic status, age and gender. These in turn influence the outcomes of managed processes of social change such as decentralisation and the ways in which representation may or may not be achieved. Research findings point to the need for caution to ensure elite capture is avoided, and the critical importance of building on existing collective arrangements rather than necessarily developing new ones. A common finding across the research is that many local institutional actors lack capacity to implement sustainable and equitable NRM policies and practices.

There is nothing very new about these findings, but they are particularly well illustrated in many of the research projects we have examined, and have been elaborated above. For us though, the more important conclusions of the synthesis relate to what we can learn about the research processes themselves. This is the focus of our concluding discussion.

5.2 Influencing policy, analysing policy?

Our synthesis has presented a diversity of examples of how researchers have engaged with policy processes and tried to influence them. Projects have also generated a wealth of information on the role of different institutions in the management of natural resources, and in creating and influencing NRM policies. We have encountered examples of extremely innovative and effective engagement with policy makers. There were also cases where such engagement was at best superficial. Overall, there were rather fewer attempts to stand back and analyse the nature of policy processes themselves, or the relationship between policy and implementation.

This was unexpected, but, as we argued in section two, the activities and findings of these research projects must be seen in context. They reflect a shift within development

thinking more broadly, and within DFID specifically, toward closer engagement with, and influence on, the policy-making of southern governments. In the field of NRM this has frequently been translated into supporting policies that might facilitate sustainable and 'people-centred' NRM. NRSP, increasingly policy-directed through its ten-year history, is part of these efforts, but this has presented significant challenges to research it has commissioned.

In particular, it provokes a question concerning what the role of outsider researchers in stimulating policy change should be. To what extent should this be informed by a more detailed understanding of what influences the relationship between policy and implementation, including the role of the researchers themselves? Research projects no longer simply produce 'new knowledge' which will (it is hoped) permeate through to policies, and in turn to livelihoods. Their outputs need to be more deeply entrenched in policy processes themselves. But can such strategic entrenchment take place if the complexity of policy-making and institutions are not fully understood? We suggest that it cannot, and that the evidence presented above suggests that strategic attempts to influence policy are weakened by lack of such analysis. In addition, though, the different approaches of researchers show that understanding institutions and policy making can come as much from deep local engagement as it can from any particular analytical framing of what policy is, or is not. Ability to unpack the institutional context is therefore partly a matter of academic perspective; but reflexivity and legitimacy, time, and the nature of local alliances are all also important.

5.2.1 Academic perspective: questions of discipline

As we argued in section two, those few projects that explicitly engaged with policy and implementation as politicised and problematic processes were led by researchers whose primary academic training was in the social sciences. Articulating policy processes in terms of politics and power, context and contingency, is what they (and we) have been trained to do. And importantly, this is the language with which it is normal to report findings. For natural scientists or those with a background in management, the apparently more neutral language of linear cause and effect is more normal and acceptable. These differences might be seen to imply incommensurability, but we have suggested that they need not. This is because natural scientists are (of course?) as sensitive to issues of power and politics as anyone. In general, these are not included in their analysis, and often for good reason. However, when it comes to issues of policy, such exclusion makes little sense. Where multi-disciplinary working has worked most successfully is when these different perspectives have combined in a degree of mutual learning, usually because of personal contact. The example of the exclusion of the Socio-Economic Work (SEM) from NRSP (discussed in section 2.3 above) indicates that demanding engagement with social science, but from a distance, will have the opposite effect - not so much mutual learning as mutual detachment

5.2.2 Reflexivity and legitimacy

As we have suggested though, there is more to being able to understand policy than disciplinary perspective. One research team, working on Joint Forest Management in Madhya Pradesh, India, concludes that its research "can make no more than a limited contribution to on-going policy dialogue […] There are questions about the legitimacy and 'stake' of externally funded research projects as part of on-going policy dialogue." (Vira 2005:5,12)

This conclusion goes to the heart of the assumption that information from externally-funded research can and should have an influence on policy; and a similar assumption that such research should be 'demand-led' by southern policy makers. Crucially, it is not the quality, accuracy or robustness of the information that determines its possible contribution to policy processes, but far more political questions of legitimacy and 'stake'. Vira continues:

> "For research to have any real policy impact, it is clear that projects need much greater 'buy-in' of the key policy actors from the inception stage. In situations of conflict, this may not be straightforward. The project experience suggests that it is difficult to work both with the local state and with groups that are hostile to the administration, since each side perceives the other as the real cause of conflict. In such an atmosphere, working closely with all stakeholders is not possible […] Indeed, in some cases, dialogue may be perceived as undesirable, if some actors believe that engaging in such negotiation undermines their credibility and effectiveness." (*Op. Cit.* p.12)

Despite the apparent negativity of this perspective it contains within it important insights. Firstly, making this kind of self-critical statement, uncommon, in an environment where there are imperatives to meet project aims and maintain the good relationships that ensure future funding – is an important step towards more reflexive researcher practice. If, as we have seen, researchers are increasingly becoming directly engaged in the processes they seek to influence, then it is increasingly important for them to consider their own position, and the implications this has for what can and cannot be done with the findings of their research. If research is really to influence policy, researchers need to become less invisible, and clearer about the kind of changes they are aiming, and able, to achieve. Those projects in which researchers reflected directly and explicitly on their own role in the process, were also those in which engagement with policy makers appeared most deeply and successfully embedded.

Secondly, while acknowledging that the potential for this research to influence policy is limited, both the findings and the methods of the project have had an appeal and a utility beyond the policy makers who were its intended targets. Allowing space for unintended influence, and pursuing it when it occurs, is important when engaging in policy processes that are by their nature complex and unpredictable.

5.2.3 Local alliances: issues of time and personal relationships

As we have said, very few of the projects reviewed directly engaged with policy processes as part of their researchable questions. Rather, they saw policy as part of the landscape of NRM, and policy actors as the targets that their research aimed to influence. Despite – or perhaps because of - this indirect approach, what emerges from the research is a sense that there are many potential interfaces between policy and practice at which policy change can be catalysed, at different levels. Selecting entry points that optimise the potential for change should rely on an understanding of the range of possibilities, rather than being predominantly driven by external demands

An important implication here is that when considering policy-directed research, or in planning research on policy directed at a particular question or issue of NRM, it is important to ask not only "which policy process?" but also, "which policy makers?"

Which policy makers matter most is a particularly difficult question for those engaged in donor-funded process. Donors themselves are policy makers, open to influence. They are also heterogeneous actors. DFID at its headquarters in the UK is very different to DFID in its country offices, just as the national office of a key ministry is very different to its decentralised branches in rural areas. Each requires different approaches if influence is to be achieved. And the development of such approaches needs to be built on explicit recognition of the factors that influence their priorities.

In the synthesis study we have come across some consideration of the role of DFID, particularly the country offices, with both positive and negative comment. Equally, a few projects have endeavoured to ensure that policy influence takes place at all levels, including the highest. The majority of projects reviewed however, have focused their activities on local institutions, and understanding what needs to happen at this level if positive changes in NRM practice are to emerge. One basic finding underpins most of the others: that "even new systems of resource management are embedded within existing social and political relations and knowledge of such relations is essential for the design and implementation of effective and equitable institutional arrangements." (Seeley 2003:8)

Even with this knowledge, creating managed change in local institutions is challenging: they are relatively autonomous and locally specific, and they have their own imperatives. In those projects where change has been managed through the process of the research, significant investments of time and the construction and maintenance of local alliances have proved essential. This implies meaningful ownership of research agendas by locally based partners, and often a long-term commitment from the research funding body.

Individuals have had a key role in catalysing and inhibiting institutional change. While this may seem self-evident, it does have implications for understanding what is needed for positive change. The pivotal role of individuals demands a focus on the micro-politics of how decisions are made and the bases of different kinds of action. Trusted individuals are key to effective communication and learning processes. But change initiatives that come to over-rely on individuals may become fragile and vulnerable. Several research teams that had developed good relationships with key actors and began to build constituencies for change, experienced problems when those actors were posted to other areas in the case of government staff, or left their institution to find other employment. On the other hand, when researchers engage, not just with individuals, but with the factors influencing their actions and priorities, there are better chances that positive change may be sustained.

5.3 Implications

The findings of this synthesis have implications not only for researchers, but also for research funders and managers. Some of these are indicated below.

Implications for researchers:

- To ensure that research influences policy, analysing how policy makers learn is as important as providing them with information.

- The outcomes of natural resource management policy often do not match the policy's objectives. For policy analysts, it is therefore necessary to consider the unintended as well as the intended consequences of policy implementation.

- Factors such as gender, wealth, age and place of origin infuence access to natural resources. Awareness of these factors should be reflected in the formulation and implementation of policy.

- Research findings point to the critical importance of building on existing collective arrangements for natural resource management, rather than necessarily developing new ones.

- Decentralisation of government is often seen as an important step towards pro-poor natural resource management, but research shows that this is by no means always the case. As with any change in representation, the possibility of capture by elites must always be considered.

- Tenure and property regimes are likely to be critical factors in determining the outcome of natural resource management policy.

- Disconnections between different institutions and different levels of the policy process are as important as connections in understanding how policy works or fails to work.

Implications for research funders:

- The dynamics of politics and power in policy processes are often overlooked in research on natural resource management. And an understanding of institutional complexity cannot easily be bolted on to approaches that have emphasised technical and managerial dimensions.

- Interdisciplinarity and strong partnerships between researchers in the North and South are essential for infuencing national policy. These need to be supported in research design and built upon where they have already been shown to be effective.

- Research has been most successful in creating local impacts and working upwards and outwards where funding has been available for successive, rather than one-off, projects. Researchers need resources to invest in building their own networks and alliances over the medium to long term if they are to successfully influence policy.

- Influencing policy may take at least as long again as conducting research. This needs to be reflected in funding and in the expectations placed on individual research projects.

- Institutional awareness of research and an institutional memory for research findings is lacking amongst donors. A better relationship between centrally funded research and regional offices would be one way of developing these.

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Appendix 1. List of projects reviewed by the study

(numerical by project number)

1. PD131 The effectiveness of the PAPD method: A comparison of community organisation experience in the CBFM-2 project

2. R6755 Sustainable local water resource management in Bangladesh: meeting needs and resolving conflicts

3. R6759 Integration of aquaculture into the farming systems of the eastern plateau of India

4. R6778 Community forestry in Nepal: sustainability and impacts on common and private property resource management

5. R6787 Learning from self-initiated community forest management groups in Orissa

6. R6919 Evaluating trade-offs between users in marine protected areas in the Caribbean

7. R7304 Zimbabwe: Micro-catchment management and common property resources

8. R7408 Building consensus amongst stakeholders for management of natural resources at the land water interface

9. R7514 Development of monitoring process and indicators for forest management, Nepal

10. R7517 Bridging research and development in soil fertility management (SFM): practical approaches and tools for local farmers and professionals in the Ugandan hillsides

11. R7549 Consolidation of existing knowledge in the peri-urban interface

12. R7562 Methods for consensus building for management of common property resources

13. R7577 Environmental policies and livelihoods in the forest margins of Brazil and Ghana

14. R7854 Further knowledge of livelihoods affected by urban transition, Kumasi, Ghana

15. R7856 Strengthening social capital for improving policies and decision making in NRM

16. R7867 Filling gaps in knowledge about the peri-urban interface around Hubli-Dharwad

17. R7870 Policies, institutions and interventions for sustainable land management in Amazonia.

18. R7872 Renewable natural resource-use in livelihoods at the Calcutta peri-urban interface

19. R7957 Poverty dimensions of public governance and forest management in Ghana

20. R7877 Common pool resources (CPRs) in semi-arid India – dynamics, management and livelihood contributions

21. R7888 Promotion of rainwater harvesting systems in Tanzania - Phase 1

22. R7958 Developing supportive policy environments for improved land management strategies

23. R7959 Natural resource management action plan development for Hubli-Dharwad peri-urban interface

24. R7973 Policy implications of common property resource (CPR) knowledge in India, Zimbabwe and Tanzania

25. R7975 Social structure, livelihoods and the management of CPRs in Nepal

26. R7976 Institutional evaluation of Caribbean MPAs and opportunities for pro-poor management

27. R8084 Enhancing livelihoods and NR management in peri-urban villages near Hubli-Dharwad

28. R8100 Investigating improved policy on aquaculture service provision to poor people

29. R8134 Developing guidelines for successful co-management in the Caribbean

30. R8195 Integrated floodplain management - institutional environments and participatory methods

31. R8258 Informing the policy process: Decentralisation and environmental democracy in Ghana

32. R8280 Incorporating stakeholder perceptions in participatory forest management in India

33. R8317 Pro-poor policies and institutional arrangements for coastal management in the Caribbean

34. R8334 Promoting the pro-poor policy lessons of R8100 with key policy actors in India

35. R8362 Validation and communication of a community-led mechanism for livelihood improvement of remote communities in Bolivia

Appendix 2. Project Leaders interviewed

Bill Adams, Cambridge University	(R7973)
Julian Barr, ITAD, Hove	(R7562)
Robert Brook, University of Wales Bangor	(R7867, R7959, R8084)
David Brown, Overseas Development Institute	(R7957, R8258)
Kate Brown, University of East Anglia	(R6919, R7408)
Chris Garforth, Reading University	(R7958)
Emma Tompkins, University of East Anglia	(Researcher on R6919, R7408)
Steve Wiggins, Overseas Development Institute	(R7577)
Graham Haylor (email)	(R8100)
Stuart Bunting (email)	(R7872)

Appendix 3. Distribution of projects reviewed by Node and Production System

Node	Production System					
	High Potential	***Hillsides***	***Semi-Arid***	***Forest-Agriculture Interface***	***Land-Water Interface***	***Peri-Urban Interface***
Brazil				7870		
Bolivia		8362				
Caribbean					6919 7408 7976 8134 8317	
East Africa		7517 7856	7304 7973 7888			
Ghana				7577 7957 8258		
Bangladesh	6755				7562 8195 PD131	
India	6759 8100		7973 7877 8280	6787		
Nepal		7958		6778 7975 7514		
Peri-Urban Interface						7549 7854 7867 7872 7959 8084