

**ENVIRONMENTAL POLICYMAKING IN
ZIMBABWE: DISCOURSES, SCIENCE AND
POLITICS**

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SUMMARY

Land degradation narratives have been remarkably persistent in policymaking in Zimbabwe through both colonial and post-colonial periods. This paper asks why policy processes have consistently reinforced a highly technocratic approach to natural resources management, while excluding alternative perspectives and framings of problems for policy. Frequently inflexible natural resource regulations, Master Farmer programmes or land-use planning regimes emerge from a hybrid realm of science and bureaucracy. The paper examines how creation of knowledge about a soil erosion crisis entails processes of black-boxing of uncertainties while relying on networks between scientists and scientific institutions and different parts of the state. Political contexts and interests, it is argued, also shape policy discourses. While there has been continuity between the colonial and immediate post-colonial periods, in more recent times the range of actors engaged in the policy process has widened, responding to state reform, the growth of a diverse range of civil society organisations and a post-Rio international environmental agenda. Reflecting these changes, policy processes have taken on new shapes. Participation has become a key theme. The paper takes four case studies to ask how substantive this participation is: farmer participatory research, the District Environmental Action Planning process, reform of the Department of Natural Resources and the ‘change process’ within Agritex the extension agency. We conclude that, while much participation is ‘instrumental’ and only succeeds in reiterating early narratives and technocratic approaches, policy spaces can also emerge where actor-networks can be constructed promoting more fundamentally ‘empowering’ forms of participation in policy processes.

INTRODUCTION

From colonial times to the present, a range of scientific research has documented apparently alarming trends in soil erosion, soil fertility decline, deforestation and rangeland degradation in Zimbabwe, as elsewhere in Africa (cf. Leach and Mearns 1996). This technical knowledge has, in turn, helped shape a process of policymaking: both for colonial administrative programmes, and also post-independence government policy and development aid (Beinart 1989; Drinkwater 1991). The aim of this paper is not to weigh up the arguments for and against an environmental crisis. Our point of departure is that there is a significant enough consensus that land degradation orthodoxies are problematic, to ask how it is that these views are maintained in policy, and, subsequently, whether spaces exist for the expression of alternative perspectives.

In this examination of the policy process we look at how particular types of knowledge become dominant, and how this is associated with the creation of facts about the world and attempts to manage and control that world. Knowledge, we argue, is produced discursively: it reflects and shapes particular institutional and political practices and ways of describing the world. To examine this we bring together work from three fields. First, work from the field of science and technology studies helps interrogate the creation of knowledge, particularly the creation of influential facts or wisdoms and their supporting data, and also the ways in which scientific disciplines and practices become dominant (Jasanoff and Wynne 1997). This helps unravel the processes whereby particular pieces of information or ways of operating become unquestioned. Examining this helps reveal the centrality of social values to the presentation of what appears as reality (Hannigan 1995; Wynne 1996).

The challenge in analysing policy processes is to examine how discourses are created and upheld through the institutions of science, government and administration: to examine where they are contested, where they are open to incremental change, and where alternative discourses are emerging and finding expression in the policy process. A second area of literature shows how language and styles of argumentation are critical when analysing policy processes (Fischer and Forester 1993; Kaplan 1990; Majone 1989; Apthorpe 1996). Discourses¹ demarcate the way problems are thought about, linking up different issues often in highly programmatic, narrative, cause and effect form (Roe 1991). These framings guide interventions in relation to objectified problems by setting up causal links, through rhetorical power, and through the marginalisation of alternative perspectives as biased, subjective and non-scientific. Often these discourses and the institutional practices upon which they rely are so entrenched that people are unaware of them and the way they shape world-views.

The third body of literature is focused more specifically on processes of policy change. This work locates policy in political and bureaucratic contexts, pointing to the importance of particular histories and balances of state and society forces in shaping the emergence of any given policy path (Young 1994; Mamdani 1996). Some work in this field also emphasises the non-linearity of policy. In this view, policy does not move neatly from stages of agenda setting and decision-making to implementation; policy is often

¹ Hajer (1995: 44) defines discourse as 'a specific ensemble of ideas, concepts and categorisations which are produced, reproduced and transformed in a particular set of practices and through which meaning is given to physical and social realities'.

contested, substantially reshaped, or even initiated from a range of places or points between macro and micro levels (Lindblom 1980; Lipsky 1979; Shore and Wright 1997). It is this complexity and dynamism, we argue, that may allow spaces for the assertion of alternative storylines and practices, which, in turn, can gradually result in substantial challenges or shifts in the knowledge and practices associated with previously dominant discourses.

Through examining specific environmental policy processes in Zimbabwe we suggest that scientific and other forms of knowledge – and the interests they reflect and shape – interact in a range of different ways. Distinctions between the technical and the political become blurred,² and contests occur in the process of developing scientific facts, in official decision-making fora and in the implementation of projects, programmes and policies. Policy, we suggest, can change in unexpected ways. Moments of ‘policy space’ (cf. Grindle and Thomas 1991) emerge allowing alternative perspectives room to challenge the power of more totalising discourses, influential social interests and particular patterns of state formation.

In later sections of the paper an emerging discourse of participation is delineated. This is currently subject to intense contestation. On the one hand, notions of ‘participation’ are being deployed in an instrumentalist fashion to manage a perceived environmental crisis, and, although distinct from earlier command-and-control approaches, this is set within the parameters defined by existing forms of science and bureaucracy. On the other hand, ‘participation’ is being discussed in terms of genuinely alternative perspectives, which potentially recast policymaking to repoliticise areas previously demarcated as strictly technical. To help focus this enquiry we have taken as a focus policy debates centred on land degradation and soil management in the communal areas.³ Four case studies – covering research, planning, regulation and extension – are used to explore the potentials and limitations of a more inclusionary and participatory policy process.

The research for this paper was carried out between 1997 and 1999, and is based primarily on over 70 interviews carried out in Harare, Masvingo and the UK with politicians, scientists, university researchers, government and NGO officials, donor representatives, media people and farmer union leaders. The paper is organised as follows. The next section sets out how the environmental debate is framed in Zimbabwe. The following section looks at the styles of scientific knowledge and the interactions between science and policy that inform discourses on the environment. We then set these reflections within a more explicitly political context, examining the nature of the state, bureaucratic politics, and state and society interactions. Following an examination of a series of case studies of various forms of participation in policy processes, a final section looks at the extent to which the contours of a new type of policy space are now emerging in Zimbabwe.

² The prevalence of a technically framed debate is very evident in Zimbabwe, despite the obvious underlying social and political connotations. Drinkwater (1991: 115), for example, argues: ‘The Zimbabwean government, like the Rhodesian, has sought to enunciate in purely technical terms land use policies which are in fact designed very much for political purposes’.

³ The communal areas are the African smallholder farming areas, formerly called ‘reserves’ and ‘Tribal Trust Lands’, originally created through land alienation through the Land Apportionment Act of 1930.

THE DISCURSIVE CREATION OF ENVIRONMENTAL PROBLEMS

Since the early colonial era, concrete programmes for natural resource management in Zimbabwe have consistently reflected particular discursive framings of environmental problems.⁴ And these framings have often been expressed in a distinctly narrative style. A range of commentators have illustrated how colonial land use and natural resource policies were based on assumptions that traditional farming practices degraded the land.⁵ This certainty about the reality of widespread environmental degradation in the communal areas has continued to the present day. Indeed Malthusian assumptions about population increase progressively leading to degradation of natural resources were repeatedly articulated to us in interviews, and are also in evidence in both grey and academic literature.⁶

Such views of growing crisis requiring urgent action were made to us by range of different informants with different technical backgrounds, and with different types of position in differing types of organisation. They were articulated by senior and influential figures as well as junior staff, by scientists and non-scientists, and by those outside state institutions as well as those within them. An international NGO director working on natural resource management made the point in stark and alarmist terms: 'People live off raping the soil, and raping the forest'. A worker with a smaller, local NGO set out the challenge as: 'Natural resources are getting scarcer and scarcer in the communal areas – it's a tragedy of the commons'. A senior official in the Department of Natural Resources commented:

Look at the deforestation we have now. Rural reforestation programmes are not that successful, they are cutting more than they are planting. Erosion on grazing lands is greater than arable lands, but arable lands are also eroded, particularly hillsides, streambanks and streambeds, despite the legislation.

A more junior official working on conservation in Agritex made it clear that pressure on marginal lands was the major issue he faced in his work: 'Increases in population are leading to cultivation of waterways and steep slopes'. In relation to soil fertility, a senior soil scientist commented: 'There is serious soil fertility depletion in the smallholder sector... Soil fertility is associated with a lack of food security... if you come to Zimbabwe in 20 years we'll be just like Ethiopia'. On soil conservation, Henry Elwell, a key figure in the Zimbabwean soils debate is quoted as predicting that: 'if soil erosion rates are allowed to continue at existing levels within our lifetime crop failures will be the norm, water will become scarce, and most of our resources will go towards feeding a vast, starving rural population'.⁷

⁴ See commentaries by, for example, Phimister (1986), Cliffe (1988), Alexander (1993), McGregor (1995), Ranger (1999), among others, with the Zimbabwe debate reflecting a wider Africa-wide picture (cf. Anderson and Grove [eds.], 1987).

⁵ A range of colonial legislation was premised on this assumption. For example the Natural Resource Act (1941) and the Native Land Husbandry Act (1952) both sought to reverse the perceived negative environmental impacts of African farming practice through regulation and land use planning.

⁶ For example the publicity rhetoric of the Trees for Life campaign of the NGO Environment 2000 is an example: 'Approximately 75 to 100 000 hectares or about 1.5 per cent of the total woodland area of Zimbabwe disappears annually'. Equally, the popular outputs from the government agencies have a similar tone (cf. Chenje *et al.* 1998), as do both academic commentaries (e.g. Moyo *et al.* 1991; Davies and Rattsø, 1996) and donor agency documents (cf. DFID 1999).

⁷ SARDC, Communicating the Environment Programme, Factsheet No 1.

These, we would argue, are not an unrepresentative selection of quotes; rather they represent widely held and historically deeply rooted views of highly precarious people-resource dynamics in rural areas. These narratives, as we will show below, are shaped by the policy process, and also shape the way those involved in the policy process act.

Responding to the crisis narrative

Such narratives frame the way solutions are defined, and so how key areas like research, planning, regulation and extension are conceived and operationalised. In this section we explore three responses to the dominant crisis narrative. The first two – in different ways – maintain the crisis narrative as the central framing device. The last offers some potential for alternatives to emerge. Subsequent sections of the paper, in turn, explore the degree to which these alternative responses are played out in practice.

The first response, we argue, is to continue with a technocratic command-and-control approach to natural resource management. In line with the findings of formal science, recommendations are disseminated and regulations are made and enforced. The state plays a key role in this: making decisions through interaction with those in the research community and implementing these through different ministries and departments. In the case of pushing recommendations Agritex the extension agency plays the key role, while in the case of policing implementation it is the Department of Natural Resources that matters. In some instances NGOs interacting with the state are key actors. This technical, scientifically informed and bureaucratically managed approach remains the dominant paradigm, we would argue. An NGO director summed this style up: ‘Particularly for soils the cry of Alvord⁸ is what we are hearing today – we still think the solutions are the same’. The solution, in this view, is through policy change, informed by scientific expertise and implemented by technical extension, leading to the promulgation of legal directives setting out how rural populations may utilise natural resources.

A second response adopts elements of a new participatory, but in a way that serves to reproduce many of the effects of the overtly technicist approach. Is this slightly different policy process, based on what might be termed ‘instrumental participation’, producing new policies which really allow rural people to make greater political demands? In some quarters, as we explore in more detail below, it is possible to see a participation discourse being produced by certain actors that is in many ways of a piece with what went before: the problems are framed in the same way and responded to by the same reified policy sector and issues; only this time the objects of policy – the rural poor – play more of the roles previously reserved for the state.

A third response is somewhat different. This was set out to us by the managers of an NGO project in Masvingo Province. They argued for the spread of participatory practices and a more fundamentally empowering decentralisation of responsibilities for management of natural resources to local levels. The director of an integrated rural development project argued: ‘We need to institute participatory approaches within technical institutions and the wider community’. This third view is, as we shall see below, emerging as

⁸ From the 1930s, the Chief Instructor for Native Agriculture, Emory Alvord was a key exponent of a view that traditional agricultural practices and patterns of natural resource management needed root and branch reform or modernisation (e.g. Alvord 1948).

an alternative way of doing policy in certain places: opening up agendas and assumptions, and potentially challenging the very politics underlying the technical prescriptions.

We explore the possibilities and contradictions of new participatory policy process dynamics in later sections. However, prior to that it is necessary to look at the place of science in the policy process, at how particular types of knowledge are created, and how the links between particular segments of the scientific community shape processes of policy change.

SCIENCE AND THE POLICY PROCESS

This section argues that, in the Zimbabwean context, applied science often results in the promotion of simple planning and regulatory models and a culture of fixed recommendations in extension. This results, in the majority of cases, in a persistence of a command-and-control response or, at most, a form of instrumental participation where a core crisis narrative is maintained. Examining these models and recommendations, we argue that the underpinning data for these approaches is, to an important extent, socially constructed, relying on particular audiences and practices to support claims to validity. We suggest too that this type of science achieves influence through the construction of actor-networks incorporating bureaucrats and politicians and international and civil society organisations. These networks engage in processes of ‘mutual construction’, recursively shaping the way science is done and policy is made.

Science from colonial times in Zimbabwe has existed in a close relationship with the state and policy.⁹ In the post-colonial period many of the core assumptions and approaches from this era have continued to shape the practices of science. As one senior national NGO official commented to us:

We don't know better because the way we do science has not changed. Going out and measuring slope changes. Soil loss estimation methods. All these come from the turn of the century – there is no fresh way of doing science.

The influence of science on natural resource policy can be traced through a variety of models and approaches that have guided policy development. These include: the ‘mixed farming’ model, promoted since the 1920s as a way of organising agricultural production; mapping and planning frameworks which have guided land use

⁹ In the colonial era scientists largely concentrated on agricultural production in the commercial sector. The work that was carried out specifically on communal area questions was limited. Thus the framing of questions and the policy advice that emerged was very much located in the settler agriculture context. Wider environmental concerns also entered through the colonial administration and contact with consultants from outside. Thus, for example, concerns about drought and erosion were spurred by the South African Drought Commission of 1922, and the experience of the ‘dust bowl’ in the US (Beinart 1989). Similarly, ideas about pasture degradation and livestock management regimes were in a major way influenced by Pole-Evans, an eminent pasture scientist who provided evidence to the Native Enquiry on natural resources in 1939 (Scoones 1996). Within the then Native Department, agricultural officials did focus on ‘reserve’ agriculture, but their numbers were small and their practice so bound up with day to day administration that the opportunities for innovation remained limited. A few key individuals, such as Emory Alvord, however, did push particular innovations for small-scale agriculture, in his case a model of ‘mixed farming’ based on crop rotation and manuring (Alvord 1930). This was a key part of the centralisation policy from the late 1920s and was the technical centre-piece of the Native Land Husbandry Act of 1951, perhaps the most ambitious of all state attempts at technical intervention during the colonial era (Garbett 1963).

and settlement designs; key pieces of data about natural resource trends that have informed policy direction, such as the figures for annual soil losses of 50 tons per hectare; and specific directives and fixed recommendations, such as the 30 metre rule for stream bank cultivation, as well as the huge variety of cropping, soil conservation and fertiliser recommendations and regulations. It is these models, maps, plans, data sets, directives and recommendations that have formed the basis of state-led intervention strategies since the colonial era. Within agricultural extension the ‘Master Farmer’ programme epitomises this approach. This is an archetypically technocratic approach to working with smallholders involving the filling in of record books detailing planting, fertiliser applications and conservation measure construction, all executed to the letter as advised by extensionists. These practices, backed up by science, help to frame and order policy problems and, in turn, provide the legitimacy and authority for particular interventions (Scott 1998).

The social construction of scientific facts

One of the characteristics of scientific practice is to claim objectivity and neutrality: scientists uncover and document facts, and the facts speak for themselves. In this view the link between science and policy is taken as unproblematic: what Wildavsky (1979) and others have labelled ‘speaking truth to power’. Of course, many scientists do not necessarily adopt a positivistic view of scientific activity. As we shall see, many are quite candid about the contingencies surrounding scientific knowledge claims. However, awareness of uncertainty has a habit of disappearing when science interacts with policy. When policymaking is presented as being based upon objective and neutral facts it can also be framed as a purely technical activity. Scientific knowledge can – unwittingly or not – provide the justification for the interventions of both a technocratic state and, increasingly, other policy actors.

In many cases when apparently ‘hard’ scientific data is interrogated and facts are retraced to their origins, it emerges that particular bits of knowledge may be far from certain and indeed may possibly rest on quite dubious assumptions. Similarly, mapping the paths along which facts move to positions of influence may reveal the importance of particular events, specific practices and often the central significance of the strategies of scientists, particularly in their interactions with policymakers. The case of the much-quoted Zimbabwean soil loss data is a useful example. Plot-based soil loss figures have been immensely influential both within Zimbabwe and further afield.¹⁰ However, discussions involved with those producing the data, suggest reasons to view the figures with care, implying the need to be careful about what conclusions are drawn from them. A scientist involved in this research commented to us:

The numbers came out of a hat... the figure of 50 tons per hectare came from the same source as US soil loss tolerance. It was just a wild guess from a conversation we had one evening on how to extrapolate nutrient losses. We wanted a figure for arable lands, a wild figure ... Our footnotes say that. Retrospectively it was good that we made it a round number.

¹⁰ One politician, we were informed, picked up on the date and made a speech claiming that Zimbabwe was losing enough soil each year to fill two goods trains stretching between the earth and the moon.

The figures may be treated with great caution by those who produced them, but after appearing in scientific papers and reports, they get taken up by others and develop a life of their own, and, in the process, achieve power and influence. A comment made by an NGO worker reflects the way particular individuals, and the science with which they are associated, have gained positions of influence and status in Zimbabwean natural resources debates:

When we think about soils we think about soil erosion. And the key studies for this are by Whitlow, Elwell and so on. Their erosivity formulas that have helped us with classifications.

How did this influence come about? Part of the explanation is that figures are useful when you are trying to make a particular case. A Zimbabwe Farmers Union official commented that having data at his fingertips in meetings was often crucial to the outcomes of discussions:

The more alarmist the information, the more you are probably going to win it. People want quantified information about the state of affairs. But no-one has time to compete with figures. If I say 'x' per cent rate, no matter what the figures are, I get better results.

The soil loss figures achieved influence because politicians, government officials and donor agencies latched onto them. Indeed, in this instance, the very existence of particular – and arguably problematic – scientific data was a result of pressure applied by one policy actor. A senior soil scientist commented: 'FAO pushed us desperately to extrapolate for macro-figures... However many health warnings we put they just went ahead blithely. Popular publications then picked this up'.

This work on soil erosion is used as a key piece of evidence for a land degradation crisis in the document *Conservation and Rehabilitation of African Lands*. A box entitled 'Zimbabwe: the hidden cost of soil erosion' refers to the 1986 reanalysis of the data from the Henderson experiments of the 1950s. It argues 'the financial cost of erosion per hectare per year varied from US\$20 to \$50 on arable land and from \$10 to \$80 on grazing lands. The implication of these figures is that erosion is a massive 'hidden' cost on the economy of Zimbabwe – as indeed it must be in nearly every other African country' (FAO 1990:10). The scientific experiments thus give authority to the FAO case. They are neatly summarised, caveats are dropped, and the information is translated into economic terms to give more impact.

Writings in the field of sociology of science (e.g. Latour 1987; Callon 1986) suggest that the power of scientific knowledge comes not from its incontrovertible status as a depiction of reality, but from the construction of actor-networks supporting specific knowledge claims. This may involve processes of strategising on behalf of scientists, what Latour calls enrolling into the actor-network, and it may also involve other actors joining up together with their own agendas. The power of the knowledge and the influence of the science come from the degree to which the enlisted actors are themselves powerful and the degree of solidity and stability of the network. The construction of scientific facts involves processes of 'black-boxing', whereby disputes are closed, fundamental uncertainties, or questionable premises, are concealed from further investigation, or just simply ignored. So, for example, uncertainties around experiments from the 1950s are black-boxed in the production of evidence of a crisis several decades later. Scientists we spoke to currently at

work in Zimbabwe were quite clear that, if their work was to engage people who mattered, it involved black-boxing uncertainties and making trade-offs between rigour and impact. One scientist commented:

One of the key things researchers can do is to present the situation as really bad... If policy is going to be influenced by researchers then there has to be an alarmist message.... We need broad level scenarios rather than ecosystem complexity. Many conclusions are derived from plot level. You increase the scale and of course extrapolation is difficult and there may be errors. Scientists rely on facts at a smaller scale – but the question is what message you want to present. To drive the message home it is worth including a large element of error... Don't be afraid even if there are inherent inaccuracies.

Another researcher put it this way:

If you want to push something through, you must bring it down and simplify it. Make it something they can understand. From complicated scientific data you pull out the simple elements... In the real world you have to take risks... How long do you have to have an experiment running before you make a decision?

Science, it is often assumed, neutrally and dispassionately observes biophysical realities and documents what is happening to the environment. Scientific findings are presented as rational inputs to be translated through government and administration into policies and programmes. But science, as we have seen, is not as value-free as this idealised image would have it. The complexities of scientific findings are often lost in the process of producing clear, intelligible messages for busy audiences with wavering attention spans.

There are several explanations for this. In some cases scientists are clearly aware of the need to make trade-offs, and to produce arresting messages that have real purchase. It is enough, they argue, that the disputes over the assumptions upon which assertions are constructed can be dealt with elsewhere in more 'technical' arenas. Successful engagement with those who establish policy priorities, guide funding and can influence career paths and reputations may be important motivations. Others – the majority perhaps – are more reluctantly pragmatic. Premature closure may be necessary to appear relevant, and may be no bad thing if it engages people in debate while further refinements to propositions and processes of experiment continue in the meantime. Others may, while being aware of the limitations of their work, still be convinced that the broad point they are making is correct, or self-evident, so that limited evidence is not perceived as a problem. Here, received wisdoms, we would argue, transmitted through society and bureaucratic and scientific practice, have powerful structuring roles in ongoing processes of knowledge production.

The mutual construction of science and policy

While scientists may actively try to shape policy agendas, the process is, as we have suggested, two-way. Politicians and bureaucratic staff also have their own agendas and pick up on and ignore different types of science and scientific information. Scientists also strategise to promote their findings. While this is, of course, not altogether surprising, there are cases where, in the desire for impact, any attempts at circumspection are

lost.¹¹ One scientist commented that in the ‘campaign’ against soil erosion, certain ‘technical fixes are more acts of faith than acts of science’. Shackley and Wynne (1995) refer to this process as one of ‘mutual construction’: science shapes the agenda for policy interventions, but, at the same time, what scientists work on is shaped by research policy, the difficulties of getting decision-makers interested, and often the need to find backers in government and other agencies. For example, a group of researchers we spoke to were far less upbeat about influencing policy on soil fertility compared to soil erosion:

You can see gullies on TV. People can feel them creeping. So publicity is easy for gullies. But you can’t see chemical imbalances. You talk to reporters about soils and they strike out the nutrient aspect and concentrate on soil loss. It’s hard to communicate to politicians that poor soil fertility leads to increased soil erosion.

As they noted, soil erosion – and particularly gullies – has received most of the attention in the Zimbabwe land degradation policy debate. Work on soil erosion in Zimbabwe has a long pedigree. Some of the earliest articles in the Rhodesia Agricultural Journal commented on the potentials for severe soil erosion. The Henderson experiments, referred to above, for instance, were one of the first long term attempts on the continent to establish soil erosion rates under different conditions (Hudson 1961). The work of the soil conservation section of the Institute of Agricultural Engineering, particularly under the guidance of Henry Elwell has, as already noted, been enormously influential in raising the issue of soil erosion and testing and extending mechanical soil conservation technologies. In addition numerous surveys have attempted to document soil erosion levels and potential hazards across the country through a variety of assessment techniques (e.g. Stocking 1986; Elwell 1974, 1983, 1987; Elwell and Stocking 1988; Whitlow 1987). Together, this network of scientists and technicians has offered a consistent set of messages: soil erosion is bad and it is getting worse, and here are a range of tested technologies which will stop it. While the use of some of the data to support this case can certainly be questioned, key advocates of urgent action have not been afraid of sounding the alarm bells. For example, Elwell commented:

Soils, particularly in the communal areas, are rapidly degrading. Vast amounts of nutrients are being lost annually... on current evidence it seems probable that, within our own lifetimes, the subsistence sector will no longer be able to feed itself (1987: 8).

One of the key institutional aspects of this network has been that, unlike other research groupings based in the University of Zimbabwe or the Department of Research and Specialist Services (DRSS) in the Ministry of Agriculture, the Institute of Agricultural Engineering had a direct route to the extension arm of the Ministry, being formally under Agritex. In many ways, this blurring of the research and extension distinction has proved important in getting the message out and incorporating new technologies and management

¹¹ Popularisation of scientific information through bureaucratic practice is also key. Elwell’s soil conservation manual, for example, used in training Agritex staff, was cited by one informant as crucial to the dissemination of soil loss information.

practices into extension recommendations. In addition, illustrating the close relationship between generation of scientific knowledge and bureaucracy, many of the key publications on soil erosion have been reports to government departments: the Natural Resources Board, or Agritex (see for example, Elwell 1974; Whitlow 1988).

Work on soil nutrients and soil fertility more generally has not, as the DRSS scientists commented, had the high profile of this soil erosion work. This is not because there has not been an extensive amount of research in this field over many years. Indeed, the work of the Soil Productivity and Chemistry lab at DRSS has provided important testing services for farmers over much of this century. In addition, experimental work on soil fertility in granite sands took off in a number of sites in the 1960s and 1970s (e.g. Grant 1967; Saunders 1960), gaining some prominence among the scientific community. In the 1980s work was supported by the Tropical Soil Biology and Fertility (TSBF) programme at the Department of Biological Sciences at the University of Zimbabwe which resulted in a flurry of scientific activity primarily on soil biology (Swift 1998). Since then soil fertility has been taken up as a theme for work focussed on maize by both DRSS and University of Zimbabwe researchers supported by the Rockefeller Foundation (Giller *et al.* 1998; Hikwa *et al.* 1995; Kumwenda *et al.* 1995).

While undoubtedly resulting in high quality scientific results and an important expansion of understanding of soil fertility dynamics, this work has not gained the profile that soil erosion research has. In part this may be because of the apparently less inviting or easily communicable nature of the subject – soil nutrients, microbes and so on do not make good TV and newspaper material. But also it is due to the lack of cohesiveness of the scientific networks, spread as they have been over several institutions and multiple departments. With some exceptions, much of this work has remained effectively isolated from policy and extension concerns located at the more ‘pure’ end of soil science. Thus the actor-networks that have formed have remained fragmented and lack the necessary diversity across science-extension-policy areas. And, without the ‘policy entrepreneurs’ in the mould of Henry Elwell, the soil fertility debate has remained less prominent, although in significant ways still influential.¹²

In various ways, then, these actor-networks are involved in an on-going process of producing facts that lend support to particular narratives of environmental degradation. Through the engagements between scientists, policymakers, international donors, the media and others, this process contributes to the mutual construction of science and policy. As we have seen these actor-networks have had tangible effects over time. The widely held perceptions, entrenched institutional practices and the persistence of legislation, regulations and recommendations all bear witness to the apparent efficacy of the core actor-networks involved in soils management and land degradation issues in Zimbabwe.

However, it is our contention that, increasingly, new activities, new styles of research, new technical and institutional practices are emerging as alternative linkages are made between scientists and bureaucrats and

¹² This characterisation of the actor-networks associated with soil fertility work in Zimbabwe may be changing. In particular, through the activities of the SoilFertNet supported by Rockefeller, a greater interest in more applied developmental issues are being sparked, including a concern with policy questions. It may be that in the future new more solid and extensive networks around this theme may start to form.

those in civil society. These new linkages are producing new knowledge; knowledge that, because it is experiential and rooted in practice, increasingly challenges the dominance of formal scientific knowledge. How this comes about and what the implications are for the relationships between knowledge, power and political processes in more inclusive styles of policy process will be discussed below. Before moving to that discussion, the next section looks at the role of the state, international and civil society actors in natural resources policy.

ACTORS, INTERESTS AND THE STATE IN NATURAL RESOURCE POLICY-MAKING IN ZIMBABWE

We have attempted to show how scientific practices have contributed to particular crisis narratives about land degradation and, in turn, frame particular practices of research, planning, regulation and extension. We argued that the bureaucratic and political settings in which science as an activity is located are central to this. Equally the networks in which scientists are located are important. This section seeks to look at these contexts – both administrative and political - more closely. How have state politics and bureaucracy contributed to the creation and maintenance of a particular view of people-natural resource interactions, resulting in a particular – and remarkably static – set of policy prescriptions? To what extent has this changed as new actors – civil society organisations, for example – more explicitly enter policy debates?

The view that people in rural areas need to be told how to manage natural resources and essentially to be instructed how to farm can, as we have noted, be traced back to colonial times. An array of legislation, decrees and regulations defined how soils, trees or wetlands were to be used, reflecting the relationship between the colonial state and local populations. The strategies used and the relative emphases between different approaches of course varied over time, often with substantial conflicts over these issues emerging within the scientific community and government bureaucracy (Alexander 1993). However, the broad pattern is clear and hard to contest.

Exactly why this happens can be debated. On the one hand, it can be argued that colonial authorities claimed that Africans were inadequate farmers or managers of natural resources because they needed moral or political justifications for the seizure of fertile land by white settlers and the relocation of blacks to the reserves. As Munro (1998) argues, there needed to be a Land Husbandry act to justify the Land Apportionment Act (1930). Likewise, Drinkwater notes ‘land apportionment not only had to be maintained, it had to be justified.’ (Drinkwater 1989: 288). A rationale for state activity in the reserves had to be provided because of the ‘uncertain status of public authority in the reserves’ (Munro 1998: 84). Others have argued the predilection for straight lines of grazing schemes, settlement areas and land use plans found favour and were promoted with such vigour because they facilitated control and surveillance of rural populations (Robins 1994, 1998).

An alternative view would be that technicians simply believed profoundly in the superiority of ‘modern’, European farming practices. While there was an early recognition that land degradation was an issue in the white commercial farming areas, this was seen to be more significant in the ‘native reserves’ because of the ‘backward’ nature of traditional farming practices. In the commercial farming areas this was responded to

through voluntary agreements, and generous incentive packages promoted through the Intensive Conservation Area approach. By contrast it was assumed that, because of the unresponsiveness of native populations to technical recommendations, a more top-down, command-and-control response was required in the African farming areas. In turn, in order to safeguard the food producing commercial sector, a rationale for land alienation could be made on technical grounds.

In the post-colonial period an essential continuity is evident. The same assumptions about the backwardness of rural natural resource management strategies and agricultural practices has continued in the activities of the agricultural extension agency, the Department for Natural Resources and in land use planning activities (cf. Drinkwater 1989). Despite some attempts at overhauling environmental legislation,¹³ most of the colonial rules and regulations have persisted. The Master-Farmer scheme continues, restrictions on stream-bank use persist and standardised recommendations for soil conservation measures remain in place. Again there are different explanations. As Hill, in an article on the politics of wildlife in Zimbabwe, puts it:

The state uses conservation policies in much the same way it uses taxation, investment, interest rates, or land resettlement policies: to establish and extend its own interests, which in a new and independent polity centre on authority maintenance and creation (Hill 1994: 227).

A set of political objectives can be attributed to the post-colonial state, ironically, not that dissimilar to those of its predecessor. To establish the new state as the legitimate source of authority in rural areas this meant identifying problems – such as environmental crises – which required state intervention or state underwriting. The interventions that then followed brought remote rural areas, with long traditions of suspicion towards the state, more firmly within the reach. The creation of new governance structures, such as village and ward committees, invested with responsibility to organise ‘community-based’ environmental management schemes can be seen as ways of extending the reach and authority of the state and of establishing its legitimacy as the ultimate source of authority within rural areas (Munro 1995, 1998).¹⁴

Robins makes essentially similar arguments in his work on land management in Matabeleland (Robins 1994). He writes of the spatial reorganisation of landscapes through villagisation policies and grazing schemes in the post-colonial period that echoed earlier colonial attempts at centralisation and enforced change in land husbandry practices. Inchoate landscapes of scattered huts and disorderly livestock and crop production arrangements were to be subject to the ‘rectangular grid of civilisation’ (cf. Comaroff and Comaroff 1991). This ostensibly neutral project, promoting well-demarcated, orderly, efficient, scientific livestock farming could be justified entirely in technical terms where administrators were convinced that

¹³ The Environmental Management Bill has been an attempt by the Ministry of Environment, Mines and Tourism to bring together the range of environmental legislation in one framework (MMET 1998).

¹⁴ Village Development Committees (VIDCOs) and Ward Development Committees (WADCOs) under an elected councillor were established in 1984 by Prime Ministerial decree. They were intended to supplant so-called traditional leadership based on kraalheads and chiefs and provide a hierarchical planning structure linked to local government. In many places these new posts were taken up by party members, and the ZANU cell structure established during the liberation war became closely linked in.

traditional shifting cultivation and transhumant pastoralism eroded soils, were inefficient and led to a 'tragedy of the commons' through overgrazing. This technical agenda, while in all likelihood sincerely felt, conceals, according to Robins, a political agenda of centralising people for purposes of surveillance, in order to facilitate more effective administration. Conservation and agricultural development policy, it is argued, had ends in mind beyond those verbalised.

Drinkwater's work on colonial and post-colonial policies and promotion of agrarian development in Midlands Province helps clarify what exactly it is about bureaucracy that results in this similarity of practice despite a substantial regime change (Drinkwater 1989, 1991). He argues that there was remarkable consistency between the two eras in terms both of actual policies (again villagisation is the key example, along with agricultural demonstration and conservation policies) and of styles of governance. Drinkwater's concern is with an approach to governance where positivist scientific and technical knowledge is wedded to a Weberian mode of administration. Drinkwater identifies in state activity the progressive spread of technocratic rationality over alternative types of knowledge. The traditional, irrational and inefficient are progressively subjected to the 'iron-cage of bureaucracy' associated with the spread of modernity, progress and the application of reason to human affairs (Weber 1991; Habermas 1990). The state, it is argued, is absolutely central as 'modern', 'rational', 'technical' approaches are so embedded in its mechanisms, composite parts and institutional practices. This meant that, even with the transition to a new government of entirely different hue after Independence, state officials have continued to operate with the same technicist, modernising mindset.

Thus change within the bureaucracy has been limited and core policy objectives of the new regime – such as land redistribution – have been pursued modestly in the extreme (until recently at least) (Moyo 1995). In many ways it can be argued that a political objective has in fact been to keep the balance of power in Zimbabwe fairly unchanged, to trade-off the demands of business and the commercial farming sector (now more populated with a new black elite) with demands for more radical structural change coming from the communal areas (Weiss 1994). Keeping discourses about land focused on technical issues – such as land management and modernisation of traditional practices – has arguably kept the more political issues of land reform off the agenda. This startling continuity between the pre- and post-Independence settings highlights how, despite obvious shifts in politics, the embedded nature of bureaucratic attitudes and practices, shaped, in turn, by science, provides the basis for the persistence of a particular styles of state response to environmental and land management issues.

The changing state

Today the Zimbabwean state exists in a very different context to that at Independence in 1980. This clearly affects the nature of the policy process, and the way rural development and environment issues are dealt with. At Independence the new ZANU-PF government took power with strong backing from the rural population (Bratton 1987b). Party structures were key in asserting state control, and an ambitious programme of reform was announced through a series of five year plans. The creation of a decentralised system of local representation through village development committees and ward councils was announced in 1984 with the

stated aim of encouraging a decentralised process of rural development (De Valk and Wekwete 1990; Helmsing *et al.* 1991). However by the 1990s the grand aims announced from 1980 had not been realised. Many of the early gains in improved service provision had slowed, land reform on any significant scale had not materialised, poverty levels had increased and the new local governance arrangements were increasingly critiqued (Makumbe 1998). The structural adjustment programmes initiated from 1991 had also weakened the state through restructuring and retrenchment. And by the late 1990s, the political legitimacy of the ruling party was increasingly being questioned. At the same time international actors (e.g. international financial institutions, NGOs, bilateral donors), the private sector (e.g. business lobbies, fertiliser and seed companies) and 'civil society' players (e.g. farmers' organisations, churches, local NGOs) had come to have a greater influence on the state in policy discussions (cf. Skalnes 1989).

But the state, at any time over the last 20 years, has never been monolithic. States need to be disaggregated: they are composed of different bureaux, ministries and agencies, which often have discernibly clashing projects and interests. The character of the policy process is shaped strongly by the peculiarities of each of these component parts and the relations between them. In relation to natural resources this is often seen in terms of interactions between 'production' focused agriculture ministries and more 'conservation' focused environment ministries. In Zimbabwe, the Ministry of Agriculture,¹⁵ with its remit for national food security, agricultural exports and, at various times since independence, land reform and resettlement has a far higher profile than the environment ministry. The profile of the minister, the number of civil servants and the overall budget allocation all combine to give it prominence. The current Ministry of Mines, Environment and Tourism is perhaps more significant than before,¹⁶ in part because of the additional mandates of the commercially important mining and tourism sectors. However, in overall government policy statements it is the production focus that remains dominant, despite the widely used rhetoric surrounding environmental protection and sustainable development. This is reinforced by the influence of the farming unions, and, in particular the Commercial Farmers Union, and is institutionalised in regular meetings between farming unions and Ministry of Agriculture officials.¹⁷

In addition to competition between line ministries one can identify alternative priorities between the different tiers of government: district and province, province and centre and so on. Since the initiation of decentralisation policies in the 1980s this has become an important feature, involving competition over government budgets, donor projects, operational mandates and personnel. With the establishment of unified Rural District Councils, combining both communal and commercial farming areas, and the subsequent investment in 'capacity building' efforts at the rural district council levels, this tier of government is seen as increasingly significant. Although many project-based experiments and locally driven implementation

¹⁵ Since 1980 the Ministry of Agriculture has had various incarnations, including the Ministry of Lands, Agriculture and Rural Resettlement and the Ministry of Agriculture and Water Development.

¹⁶ The Ministry of Environment was created in response to the UNCED process and the forthcoming Rio conference. A remit for tourism was added later, and subsequently the Ministry of Mines was incorporated.

¹⁷ This close linkage between commercial farming interests and the ministry has a long history. In the pre-Independence era, the CFU had enormous political influence (Herbst 1990). Although this declined following Independence the farming unions were party to agricultural commodity price setting until market liberalisation from 1991.

processes occur at this level, the councils still lack both the budgetary resources and political clout of most line ministries, often making many such initiatives limited in scope and impact (Mutiza-Mangiza 1990; Roe 1995; Makumbe 1998).

Yet the state – in all its complexity – is not the only player in the policy process. In the following sections we will look at two other sets of influences on environment debates – connections with the global arena and the role of NGOs and civil society actors. With this diversity of actors in the policy process, it may now be harder to sustain a view that policy in the rural areas is being used instrumentally for political objectives. But more complexity and apparent lack of coherence does not mean that policymaking is any less enforcing of the crisis narratives which we have identified earlier. Indeed, such narratives may be reinforced by these new interactions and alliances.

Global connections

Zimbabwean officials are increasingly exposed to what has been labelled a ‘global environmental discourse’ (Yearley 1996). National NGOs and line ministries do not only exist within networks that are coextensive with national borders. The UNCED conference in Rio in 1992 is the most obvious example of an international forum bringing together national actors and attempting to shape national projects around a common international agenda. The conventions associated with Rio were regularly mentioned by informants during interviews as important in shaping perceptions of environmental issues in Zimbabwe. What appears to have emerged is an internationalised ‘epistemic community’ (cf. Haas 1992) around the environment-development debate, with key actors in Zimbabwe in government, NGOs and the research community linked into wider international networks. In this international context, epistemic communities are effective because they are able to target individuals in national ministries and promote an approach to environmental problems that goes beyond narrow national interest concerns.¹⁸ Many of our informants made this type of point to us. A senior figure in the Ministry of Agriculture put it that: ‘environment has become a big issue because of the international environmental bandwagon’. A Zimbabwean working in one of the multilateral agencies commented that: ‘There is lots of awareness about the conventions... so many people talk about desertification and biodiversity depletion’.

Zimbabwean state actors, at least at senior levels, have a fair amount of interaction with others in the international environmental community. How this translates precisely into modifications of views and changing perceptions of interests is hard to gauge. But it is clear that the involvement is substantial. Someone with close familiarity with the Ministry of Environment commented that: ‘half the ministry is gone for half the year dealing with environmental protocols, and treaties... per diem hunting’.

Not only are national actors increasingly exposed to the environmental community outside of Zimbabwe, international actors also have space and opportunities in Zimbabwe. One example where a

¹⁸ The epistemic community approach therefore departs from conventional International Relations theory – with its understanding of the state as a unitary rational actor, and in competition with other states – and emphasises the agency and perceptions of state officials. This ties in with our concern to present the state as a major determinant of policy, but conditioned by a range of contests that may produce unexpected results.

bilateral donor has been important in the environmental policy process is in pushing for and providing technical assistance to the drafting of the Environmental Management Bill. The drafting and presentation of this bill has been fairly high profile, linked to a process of consultative meetings and hearings and extensive newspaper coverage. The Bill is ambitious in its scope, aiming to tidy up numerous overlapping and often contradictory pieces of legislation, many of which date from colonial times, into a single framework under one ministry, while also incorporating more modern environmental management tools such as environmental impact assessment. Reactions to the bill have been mixed. One perception that was often repeated to us was of the Bill as a donor-dominated activity. A senior Zimbabwean environmental researcher commented: 'CIDA's role is key. At a guess the Act is 80 per cent Canadian and 20 per cent the Zimbabwean lawyer in the ministry'.

The 'per-diem hunting' or 'squabbling over shopping trips' that another donor official identified have perhaps meant that ministry officials have not been as proactive as they might have been and that correspondingly donors and expatriate advisors have been able to have more influence on the process of policy formulation. There is a serious concern about this lack of focus and capacity within the environment ministry, as a senior Zimbabwean environmental researcher commented: 'The MMET is a disaster area. To get them to do anything is well nigh impossible'.

The picture that emerges in the case of the new Environment Bill, then, is that the state has continued to shape policy processes, albeit through processes of interaction with donor agencies and some limited forms of public consultation. According to some commentators, the effects of these interactions have meant that the Bill may well have resulted in an increased role for the state in natural resource management reflecting a refusal to relinquish control over what are framed as questions of technical management. What has emerged, according to the director of an NGO, is: 'Rubbish! A command and control approach to natural resources...the Bill is full of dos and don'ts, standards and compliance'. As we have seen, this is the upshot of complicated policy processes where state activities seem to be pushed by donor activity, where state officials often appear not to have a particularly coherent project, and where international discourses about environmental management and frameworks for sustainable development, mediated through expatriate consultants, seem to have exerted considerable influence.

Yet, apparently, none of these factors have substantially altered the fundamental direction of state policy. The technical approach supported by scientific knowledge and implemented through essentially top-down bureaucratic and administrative procedures remains intact. Thus, even though international debates and actors may have become more important in the policy process, they have not fundamentally challenged the basis of state practice. Next, we want to ask whether the same can be said of national NGOs and other actors in civil society.

NGOs and 'civil society'

Today there are numerous registered NGOs in Zimbabwe (Muir 1992; Vivian 1994), alongside a host of other more informal community organisations (Bratton 1987a; Thomas-Slayter 1994). Many NGOs are involved in some way or other in environmental and land management issues as most of their work is

focussed on communal areas (Ndiweni *et al.* 1991; Vivian and Maseko 1994). They range in size from outfits of a handful of people sometimes based in the communal areas with very limited budgets and operating capacities to large, well-funded organisations with national coverage. Most NGOs, whether classed as 'northern' or 'local' are reliant on external donor funds. These flooded in during the post-Independence period resulting in a boom period for the NGO sector in the 1980s. For those involved in environment and development activities this boom was sustained into the 1990s through engagement with the international convention processes leading up to and following the UNCED Rio conference in 1992. This helped raise profiles and broaden credibility. For example, reports by ZERO, ENDA and other environmental NGOs at the Rio summit have been widely quoted and have increased the standing of those organisations and, for a time at least, their ability to attract funds (e.g. ENDA/ZERO 1992).¹⁹

The relations between NGOs and the state is not necessarily a confrontational one (Mungate and Mvududu 1991). The ZERO/ENDA piece, for example, was part of the Zimbabwean government's own submission. Many NGOs also work closely with the state in service delivery, and make up for some of the lack of government capacity in rural areas, one of the major consequences of structural adjustment in the 1990s. As one commentator put it: 'In the 1980s NGOs and government were at loggerheads. Now the government is more cooperative because they are filling a gap, because they don't have officers at grassroots or district levels'.

In contrast to some other countries in sub-Saharan Africa, these NGOs operate with considerable freedom to experiment with new approaches, and they are also able to be quite outspoken in criticising government practices. They are often staffed by highly competent personnel; well connected to both government and donors. Highly literate in both national and international sustainable development debates, it is undoubtedly the case that there is a high degree of NGO capacity in Zimbabwe, and that relations between NGOs and the state are increasingly important in policy development, both in terms of agenda setting, and influencing decision making, and also in terms of influencing implementation processes on the ground.

The growth of networks and coalitions, embracing both government and non-governmental officials, has been important in recasting the way some areas of policy are thought about. There is much blurring of boundaries. At one time the same individual may be a government official, help run an NGO, be a respected academic commentator, and a player in business community. Indeed, when one talks to NGO officials they are clear that it is their strong personal connections with key figures in government (often old colleagues or classmates) which facilitate their work. For example, one provincial NGO official told us 'With the permanent secretary I can go and see him straight away as we were at college together. With the Minister it's more of a problem, but then the permanent secretary may arrange it'. At the provincial level such interactions are even easier. One NGO worker commented: 'Masvingo is a small place. We all know each other. If we get on, we can do business'. Particularly significant is the flow of personnel between donors, government and NGOs. One NGO official commented: 'One of our senior officers was a senior secretary in the Ministry of Environment. This is now a help in building networks and passing on ideas'.

¹⁹ See Wapner (1996) on international environmental links to, and support for, southern civil society.

While such networks may help encourage new ideas to blossom, on other occasions there is sometimes a tendency for NGOs to simply implement government policy in their own programmes. Thus many NGO resource management projects – whether woodlots, soil conservation or wildlife management – are indistinguishable from their government equivalents. Indeed, in many instances government officials are employed by the NGOs to oversee the project on the ground. Other NGOs, by contrast, have made use of close linkages with government and have taken advantage of new opportunities to experiment with innovative approaches to natural resource management. As we shall see below some of these new initiatives have been important in challenging the current state-led approaches to natural resource management. An NGO director put it like this: ‘These days NGOs can get in and define the parameters of state involvement’. Others are more sceptical. For example another NGO official spoke rather resignedly of her organisation’s involvement with the drafting of the Environmental Management Bill:

Our NGO was set up to influence policy. We do research and then provide solutions and recommendations. All this is successful to a limited extent. For example, the core ideas for the Environment Bill came from the Ministry. We proposed changes but things remained the same.

NGOs are, of course, not the only civil society players in the policy process. The farming unions, the private sector and more diffuse rural movements all play a part. The Zimbabwe Farmers Union, for example, seeks to represent communal area and small-scale farmers. It is a membership organisation that extracts levies to cover its operational costs. While membership is not high in relation to the overall farming population, it does have a large potential constituency. Although in the past it has been criticised for simply representing the interests of the farming elite, it has made recent attempts to address wider concerns. Through its policy and research sections it attempts to raise issues with government, both through formal and informal channels. An official in the ZFU reflected that: ‘five or ten years ago it was a controlled environment – now it is a liberated environment with many more actors. This requires new lobbying techniques – more lunches and more dinners!’

Since the liberalisation of the economy in the 1990s, the private sector has become increasingly important. In the past, the largely white commercial interests in agriculture and industry were represented through highly influential lobby groups such as the Commercial Farmers’ Union (CFU). These groupings remain important, although with deregulation and liberalisation the opportunities for direct influence on government policy has diminished. Instead, the growth of the private sector, for instance in the agricultural supply and marketing sector, has resulted in an increased influence on the actual practice of farming through seed provision, fertiliser supply and the growth of contract farming arrangements. In addition, a range of new private sector interests are increasingly important in the environmental policy debate, particularly those associated with the tourism, hunting and safari industry. These groups, while not having the organisational infrastructure of the long-established CFU, do exert considerable influence in the day-to-day implementation of policy initiatives such as the community-based wildlife programme, CAMPFIRE, through the structuring of markets, the enrolment of key figures into advisory and consultancy roles and behind-the-scenes political lobbying.

In addition to these rather more formal elements of civil society a range of informal movements and followings can be identified in the communal areas which, in various ways, have influence on the policy process. For example, during and following the devastating drought of the early 1990s, a large following emerged across the south of the country behind a young female spirit messenger, Ambuya Juliana. She proclaimed that the drought was the result of a combination of lack of respect for the ancestors linked to the adoption of inappropriate technical policies and interventions. She urged her followers to reject extension advice regarding 'modern' seeds and inputs, to abandon development projects which used cement and wire fencing and to return to 'traditional' ways (Scoones *et al.* 1996). It is, of course, difficult to assess the impact of such movements, but over quite some period in the mid-1990s and across a wide area, extensionists and development project workers had to adapt their approaches and take account of shifting local opinions as influenced by Ambuya Juliana and her followers. Other self-proclaimed prophets, leaders of the proliferating new Christian churches and traditional spirit mediums and messengers also offer advice and recommendations – perhaps not framed as 'policy' as such, but nevertheless introducing greater complexities into the processes of implementation on the ground.

Some of these individuals and groups have allied themselves with more formal NGOs who also advocate a return to 'traditional' ways and more spiritual engagements with environmental and natural resource issues. In Masvingo province, for example, the NGO AZTREC operates through an alliance of herbalist, mediums, ex-combatants and professional NGO workers. Similarly, the NGO ZIRRCO mobilises local churches and spirit mediums to work together on environmental protection and tree planting.

So, have increasingly articulate and high-profile NGOs and other civil society actors effectively challenged the political effects of an apparently technical policy process? One academic with much experience in the NGO sector took a decidedly pessimistic view. He argued that NGOs tend to get involved in fairly limited technical debates rather unreflectingly and miss the broader political issues: 'They are raising the flag on issues with narrow constituencies and not thinking squarely what the issues of the country are'. This lack of coherence and strategising, he argued, meant that 'environment', which might have been a suitable entry point for tackling larger issues of resource access, has in some sense lost some of its potency due to the lack of astuteness, vision and tactical skill of those in the NGO movement: 'Business is buying into the environment debate. CAMPFIRE has been coopted. The thunder has been taken out of environment'.

According to this view, civil society has not effectively dealt with the burning political issues which underlie technical deliberations about natural resources – in the Zimbabwe setting, of course, this centres on the still unresolved 'land question'. In a sense this mirrors what has happened with international actors – these have been new and important players in national policy processes and, to some extent, agendas look broader for their involvement. But these changes, it can be argued have not fundamentally altered the framing of policies or the way solutions are thought about. A similar scepticism was voiced by a senior government official we spoke to: 'NGOs are often founded to raise money and create jobs. Their motives are essentially private ones and not focussed on environmental issues'.

There are, however, reasons to think that such views are overly pessimistic and that important changes

have occurred. These have been initially at the micro-level –essentially around experiments in participatory agricultural and natural resource management – which, over time, have begun to link to new forms of science that challenge strongly positivistic and exclusionary approaches to knowledge. Taking advantage of complex bureaucratic settings, a ‘room for manoeuvre’ (cf. Clay and Schaffer 1984) has been created in some quarters, resulting in the beginnings of a new form of policy process that is gradually reaching to more macro scales. Through a series of case studies, an examination of the prospects for such inclusionary and participatory forms of policy process is the theme of the next section.

PARTICIPATION: EXTENDING OR CHALLENGING THE DISCOURSE?

So far we have explored the scientific, political and bureaucratic contexts which, we have argued, it is necessary to understand in order to explain the persistence of received wisdoms about the Zimbabwean environment in policy debates. These, as we have seen, have been reinforced by the institutionalised practices of conventional styles of research, planning, regulation and extension. We have suggested that there has been continuity between the colonial and immediate post-colonial periods in terms of the way policy has operated, and we have argued that this has changed to some extent because the state exists alongside donors and a dynamic civil society. But is this really continuity or change? It may be that narratives remain in place and that policy continues to operate in the same fashion despite the changing configurations of state and civil society relations. We explore this issue in our final section through a critical investigation of the emergent participation agenda.

The key question we ask is: given the changing architecture of state and civil society interests, what room exists for new perspectives to enter the policy debate and challenge some of the core assumptions and premises of the conventional policy framework? Are there new ‘policy spaces’ (cf. Grindle and Thomas 1991) opening up, with new policy entrepreneurs associated with new actor-networks offering radically new perspectives on policy issues? Are there, as a result of such shifts, any emerging opportunities for new ways of co-producing science and policy arising from interactions between different kinds of science and policy actor? Are there, then, possibilities for new, more diverse, inclusionary and participatory forms of policy process? Or, by contrast, are these apparently new ways of talking about and doing things simply extensions of existing webs of authority and control, where fundamentals are not challenged? Is it the case that, although networks may be extended and new actors enrolled, an essentially similar set of policy perspectives emerges simply dressed up with the gloss of participatory rhetoric?

Certainly contemporary Zimbabwe offers an interesting setting for exploring these questions. The new buzzwords of development – participation, empowerment, decentralisation, indigenous knowledge and so on – are widely used across the spectrum of policy actors (Makumbe 1996). No conference, workshop or seminar is complete without some commentary on the potential benefits of participatory approaches, whether in the Minister’s opening speech, or in the submissions of NGOs or farmers’ groups. Participatory rural appraisal (PRA) and similar local level analysis and planning approaches are the *sine qua non* of development activity in government, NGOs, and even the private sector, provoking a growth in entrepreneurial consultancy activity in the area, as well as a plethora of networks, newsletters and exchange

programmes focussed on participatory themes.²⁰ As one local-level researcher in Masvingo exclaimed: 'Participation is coming like a bomb!'

In the following sections we look at four case studies where apparent attempts at encouraging a more participatory approach to policy and implementation have been tried in recent years. By looking at emergent practices around research, planning, regulation and extension in a range of institutional settings, we ask whether new forms of participatory practice offer room for new forms of policy process. As we have seen conventional research, planning, regulation and extension have been central to the command-and-control approach which lies at the heart of the dominant discourse about farming and natural resource use in the communal areas. The degree to which these core practices are able to shift is a key test of the potentials of alternative policy processes. The first two cases focus on local level negotiations over knowledge and how these are reflected through the practices of research and planning. The first dwells on an exploration of how new interactions between scientists and farmers are emerging through farmer participatory research initiatives in the field of soils management, while the second looks at district environmental action planning initiatives, where cross-sectoral participatory planning for environment and development issues have been encouraged as part of a national response to Agenda 21. The second two cases look more at the institutional and organisational settings for new initiatives in participation within the two key government agencies dealing with regulation and extension, first within the Department of Natural Resources and second within Agritex.

Across the cases we are interested to explore the degree to which 'participation' – which, as discussed earlier, comes in many shapes and forms – has the potential to fundamentally shift the nature of the policy process, challenging the conventional discourse on environment and development, or whether such initiatives prove a convenient diversionary tactic, effectively extending mainstream discourses through a new form of 'political technology', this time dressed up in the paraphernalia of 'participatory development'.

Research: new spaces for alternative forms of knowledge?

The growth of farmer involvement in the research process has been an important shift in recent years within large parts of the conventional research establishment. Everyone now encourages farmer involvement in field experimentation based on 'participatory research'. But what are the implications of this change for the policy process, and the interactions between farmers, scientists and policy-makers?

What is common to all such initiatives is the emphasis on showing people things: erosion, yield increases, new technologies, indigenous conservation practices. Through the more radical styles of farmer participation, alternative knowledges are increasingly influential. Through such experiments, demonstrations and pilot activities, some of the technocratic science portrayed earlier is increasingly being contested in a number of ways. Firstly, in terms of its internal assumptions, as issues of complexity and uncertainty receive more attention, and, secondly, in terms of its biases towards exclusivity, as alternative forms of knowledge and popular science are better articulated and promoted through the creation of alternative actor-networks.

²⁰ A PRA network exists in Zimbabwe hosted by the NGO SAFIRE. This has a resource centre, newsletter and regular meetings. The network includes government officials, academic researchers, NGO workers and independent consultants.

The debate over wetland use, for example, has fuelled a great deal of controversy in Zimbabwe over many years (Scoones and Cousins 1994). While the actual legislation associated with wetland use for agriculture has not changed, the attitudes of officials have shifted significantly in the last decade. This has been the result of consistent lobbying by a loose network of researchers, government officials, NGO workers and farmers. Through a series of research projects, pilot and demonstration activities, media coverage and workshops where a range of wetland use advocates and policy actors were brought together both within Zimbabwe and at a regional level, a perceptible shift in approach has resulted.²¹

The Head of the Agritex Soil and Water Conservation Branch reflected on the various actors who had influenced his thinking. In particular, he acknowledged the role of Mr Zephaniah Phiri, a farmer from Zvishavane district who was once arrested for cultivating a wetland, but since has developed his farm as a demonstration site with visitors from across Zimbabwe and from overseas regularly visiting. He also acknowledged the Contill research project within Agritex²² as another key influence:

Farmers are often very vocal. Mr Phiri, for example, was extremely vocal in a workshop. He said Agritex and DNR [Department of Natural Resources] have hindered me, but only now you appreciate me... Researchers are also influential. The work on conservation tillage was important. And the work on participatory technology development and experimentation. I saw this initially as pressure from outside. To begin with it was very rough. Then I realised it was worthwhile to look at a new system.

Constructing actor-networks is simultaneously a process of building and extending knowledge (cf. Latour 1987), with experiments, pilot projects or demonstration farms in part acting as opportunities for 'witnessing'. Experiments are set up, key people witness what is claimed and, if they support it, facts are extended.²³ While the conventional tools of science – graphs, statistics and so on – matter (as we have seen with the soil loss data), researchers argue that they generate real support when they can show things. As the soil fertility researchers quoted earlier noted, it was the visual impact of dramatic gullies, not scientific data *per se*, which had the impact on policy profile. In discussing experiments on conservation tillage a researcher

²¹ Work by the University of Zimbabwe (in collaboration with Loughborough University in the UK), trials by the Department of Research and Specialist Services at Makoholi research station, the Zvishavane Water Projects demonstration work in Runde communal area, along with a range of meetings convened by international organisations such as IUCN and IIED have together raised questions about the appropriateness of current regulations.

²² The Contill project was aimed at looking at conservation tillage options for dryland farming areas. It was established with GTZ funding at Makoholi Research Station near Masvingo, and involved a range of field-based activities in nearby communal areas, including Chivi, Zaka and Gutu. Its early phases were largely station-based and technically oriented, although in its latter phases it became much more engaged in on-farm participatory research work (Chuma and Hagmann 1997).

²³ Shapin and Schaffer (1985) discuss the notion of virtual witnessing which means that individuals don't have to be physically present at an experiment to be persuaded of its validity. According to Latour this occurs through the use of 'inscription devices' such as journals and conferences (Latour 1987). What makes scientific knowledge different from other forms of knowledge actor-network theorists argue is that this virtual witnessing allows scientific knowledge to be globalised, and hence perceived as modern, indigenous knowledge is by contrast more context specific and lacks the devices to achieve global reach, leading to the perception that it is 'traditional' and 'non-modern' (see Murdoch and Clark 1994).

commented: 'People prefer yields to conservation effectiveness, but if tied ridging can show yield gaps, then we can discuss conservation. Seeing the size of cobs matters!'

The contexts for new styles of participatory research and action are enormously varied. Much interest exists in pockets within the mainstream agricultural research establishments (the Department of Research and Specialist Services of the Ministry of Agriculture and the University of Zimbabwe particularly), but also NGOs, the farmers' union, extension agents and others are engaged in various types of farmer participatory research. Researchers engaging with farmers effectively by-pass the hierarchical structures of the transfer-of-technology paradigm, where research, guided by policy priorities, is supposed to lead to extension, and the transfer of information and technology to farmers. By enrolling actors across these divides – farmers, extensionists, researchers, policy-makers – researchers working in a more participatory mode can establish new ways of doing things rather quicker than is the case when they are reliant on formal procedures and bureaucratic structures. For example, a researcher involved with the conservation tillage project, Contill, explained how they got around the official position preventing dissemination of formally unproven technology by labelling their activities as 'testing':

Testing is a way of getting around not being able to implement. We call it research not extension. For those involved it's an excuse to do things their bosses wouldn't approve of. To get around the rules you have to have a research project nearby. There is a very fine line between demonstration and research, and you can't demonstrate unproven technology.

This has provided scope for Agritex officials, researchers and farmers to try out new soil management and conservation options, which had not been formally approved, and thus effectively creating new policy through a process of research and implementation on the ground.

Other forms of policy influence emanate from the documentation of particular projects and activities of farmers in the communal areas. For example, the extensive work carried out on 'indigenous' soil and water conservation and land use management practices by researchers, NGOs and others has provided a legitimacy to types of practice which, in the relatively recent past, were at best frowned upon and sometimes banned outright.²⁴ While often notionally illegal and contravening policy guidelines such practices are often accepted as appropriate activities by extension workers, and, indeed, used as demonstration visit sites for other farmers. For instance, the Agritex soil and water conservation specialist in Masvingo commented on one farmer he had recently visited in Zaka:

It is quite beautiful if you saw what that farmer did. Then you wouldn't worry about erosion. This was well conserved - he was a model farmer. DNR won't give him any problems. He didn't need a permit; he had a permit in his head.

²⁴ A large amount of work has recently been undertaken looking at local soil management practices under the auspices of the Indigenous Soil and Water Conservation Programme coordinated by the Institute of Environmental Studies and Intermediate Technology, Zimbabwe. Other work by the Farming Systems Research Unit of DRSS, Ministry of Agriculture and various university and NGO research groups has complemented this.

Farmer participatory research takes a variety of forms, ranging from the nominal involvement of farmers in implementing experiments already designed by research scientists, to a fuller engagement, involving the design, implementation and analysis of research in collaboration with researchers. In the former case, participation is limited, and the opportunities for new forms of knowledge and action to emerge are constrained, with, more often than not, the standard technicist solutions emerging from conventional science simply being extended to a wider group. However, other forms of participatory research do potentially allow new voices to be heard, and a different type of science to emerge, based more on local understandings of key issues and problems. The effective linking of actors across the conventional divides offers the potential for new forms of knowledge and practice to enter the policy process. Very often this occurs through the extension of new forms of practice through informal networks, and the acceptance of this by a growing group. This may not result in a formal change in policy – as with the wetland case, or much of the soil conservation measures – but this may not matter if accepted practice shifts in response.

Planning: experiences with District Environmental Action Planning

Another example of the new participation emphasis is the attempt to bring different line ministries together with local communities to develop District Environmental Action Plans (DEAPs). The DEAP process is seen as an attempt to implement the National Conservation Strategy developed in the mid-1980s and to provide a district-level focus for post-Rio Agenda 21 activities (Mukahana *et al.* 1998). The approach fits within a wider trend of the last decade towards greater decentralisation of governance and public service provision to the district level.

The DEAP process was established in the early 1990s with support from UNDP, with an office initially placed in the Department of Natural Resources. A consultant with experience in participatory planning approaches was hired through IUCN to initiate the process in a number of districts and develop a methodology and training package. By 1999 DEAP activities had occurred in a number of districts in the country, each involving a range of line ministry, district and NGO officials. DEAPs are seen as an attempt to develop the capacity of district level administration and to create mechanisms for community-based management of natural resources.

An official in the UNDP spoke to us highly enthusiastically of his experiences: ‘We have started a revolution which could influence future policy formulation: once people articulate their needs no government can resist.’ The DEAP process draws its inspiration in particular from the CAMPFIRE community-based wildlife programme, now a world-renowned attempt at widespread participatory resource management centred on local and district administrative structures. One commentator involved in the CAMPFIRE programme for some time observed:

CAMPFIRE was the first non-command and control approach, a new vista for management of animals, trees and soils. Once people know their rights you can’t go back. The District Administrator was a feared man, now people want to do it for themselves. They demand their rights.

Within the Department of Natural Resources,²⁵ DEAPs are seen as a radically new approach to natural resource management, an approach which will allow the department to break away from its past associations of draconian, top-down policing style (see below). The Deputy Director commented:

We believe that people with resources should manage. So there have been greater attempts to involve people in policy formulation. CAMPFIRE exemplifies this, and DEAPs too empower communities.

This optimistic angle on the DEAP process that it really is the beginning of a new type of inclusionary planning and policymaking was not shared by everyone we spoke to. A general criticism is that the DEAPs that have emerged are simply long lists of demands for basic infrastructure and services, with different line ministries putting in bids for roads, clinics or schools rather than imaginative plans emanating from the community for natural resource management. A provincial official in Masvingo commented: 'People expect dams, irrigation schemes, roads and boreholes'. While the emphasis on the standard products of rural development is important, there is also a sense among some that the whole process is too donor reliant, and in fact poorly linked to higher levels of line ministry planning and budget allocation. A senior environmental researcher put it that:

DEAPs' negative side is that they are just donor driven – they die when donors leave. It's all at too high a bureaucratic level. All this natural resource reform needs to be right down at the ground.

It is possible to see the DEAP process as more technocratic planning rather than genuine participation and empowerment – while there may be public involvement it does not appear to be sufficiently linked into broader questions of resource access and other more political issues to constitute a real shift. DEAP as a policy approach constructs its subjects as participants in a planning frame, but not one that they actually control, because they have to continue to fit within the broader resource allocation and political commitments of government. As one senior figure in the DNR commented: 'the aim is to have DEAP as part of the core Rural Development Council planning process'.

The question, then, is to what degree can participatory initiatives at the local level, whether based on farmer participatory research or district level environmental planning, have an effect within the existing structures of government and bureaucracy? To what degree can participatory approaches to policy-making, planning and implementation become institutionalised within settings which, as we have seen, have long histories. Histories that have resulted in embedded practices and procedures influenced by a set of discourses about people, environment and development that have, at least in the past, offered little space to alternative perspectives? It is these questions which we pursue in the following two sections which look at changes in the two key government departments dealing with environment regulation and agriculture extension – the Department of Natural Resources and Agritex.

²⁵ The Department of Natural Resources is located within the Ministry of Mines, Environment and Tourism.

Regulation: refashioning the Department of Natural Resources

In recent years there has been a gradual shift in the way the Department of Natural Resources operates. This department has historically been the body that polices rural communities and ensures that natural resource legislation is being respected. They have powers to fine farmers who cultivate wetlands, for example, and also power to grant discretionary licenses to those who are following practices that are technically illegal.²⁶

DNR has many fewer operational staff than Agritex the agricultural extension agency: there is typically only one DNR official per district, whereas there will be over thirty agricultural extension agents. Restricted numbers and dwindling government budgets make it hard for DNR officials to go out and fulfil their policing role. One DNR officer commented on their day-to-day operational challenges: ‘Fuel has gone up 60–70 per cent. The cost of spares has gone up, so it is difficult to go out and look and see what is happening’. A senior official put it that DNR has had to move to a more community-based advisory role because it has simply been impossible to enforce regulations: ‘Unless you send in the army, gold panning and deforestation will go on’. Another official commented: ‘You can’t have a police officer behind every tree’.

In some instances there is evidence of a growing realisation among DNR officials that the earlier picture of rural populations needing to be policed into good natural resource management is no longer always appropriate. And, further to this, where rules are infringed, there may be a logic that reflects alternative knowledge about how to manage natural resources effectively and maintain livelihoods. Given the DNR’s statutory obligations to enforce the environmental legislation, a new more discretionary stance presents many dilemmas, however. A DNR official discussed a case of an NGO illegally experimenting with wetland use. The DNR forced the community to apply for a license:

They applied and the community got approval. We may not be against these things, but we must respect the law of the land. It’s my responsibility to see that government policy is implemented at this level.

Taking advantage of policy spaces, researchers can effectively shift policy discussions incrementally through enrolling particular officials who then become implicated. One such official DNR official recounted the story of how ‘illegal’ research was first ignored and then when noticed by higher officials provoked a shift in regulatory practice from the Natural Resources Board:

They started trials and I went round. People were ignoring the policy. So it came up in Harare and people started asking ‘what is happening in Masvingo?’ And so last week we sat down and they applied for approval from the Natural Resources Board.

²⁶ Under the Natural Resources Act significant power is vested in the Department of Natural Resources, and particularly the Natural Resources Board, to both restrict and enable activities. In practice this flexibility is rarely applied, given the complex procedures required to gain exemptions from statutory regulations. The Board is appointed by the President and oversees the work of the Department. It is made up of a range of people who are deemed to be knowledgeable and interested in resource management and environmental issues. Currently no communal farmer is represented on the Board, and it is composed mainly of academics, commercial farmers and NGO representatives.

Thus in the context of the DNR, certain changes are afoot. In its desire to recast itself in a positive light and to reject its past policy role as much as possible, the department has wholeheartedly embraced a range of community based natural resource management initiatives – CAMPFIRE, DEAPs, community forestry and so on are all heralded as part of a new era. The attempts to revamp environmental legislation by the Ministry have also been welcomed as part of the reinvention of the Department. Despite its critics the new Environmental Management Bill is hailed internally as a radical new step which sweeps away past colonial legislation and emphasises holistic environmental assessment.

This new view, emerging slowly from the late 1980s, has accepted greater flexibility and discretion among field officers in their day-to-day work. But such officers are put in a difficult position. On the one hand they are encouraged to operate under a new regime which emphasises community involvement and participatory management, yet they are expected also to implement and enforce the enormous array of complex legislation.

So does such discretion and flexibility result in participation, or simply a rather less draconian form of state-led environmental managerialism? It seems that some basic features of DNR's structural setting mean that the result, by and large, has been the latter. The dominant and, in many respects, incredibly powerful role of the Natural Resources Board puts limits on the flexibility of the organisation to shift both its policies and practices, as does the nature of the legislation that it is obliged to oversee. The limited resources of the Department – both in terms of personnel and overall budget – also mean that the scope for innovation and change remains constrained. Thus a rather instrumental form of participation is the result, limited by the broader setting. Without the obligation to enforce regulations, Agritex, the agricultural extension agency has perhaps more opportunities to adopt a more flexible, inclusive style. However, as with the DNR, it too carries with it a long history of a very different way of operating.

Extension: organisational change in the extension system

Agritex is currently undergoing a process of organisational development labelled 'change management'. This process began formally in Masvingo in 1994 under the auspices of the provincial head, and with support from organisational development and participatory extension consultants employed through GTZ. Since then the provincial process has won national support and is currently being implemented nationally following the promotion of the director to a senior national position (Hagmann *et al.* 1999).

Broadly, change management came about because of a growing realisation among key figures that the command-and-control approach with which Agritex had historically been associated was not producing effective results. For example, a senior officer in Masvingo observed: 'Hundreds of land use plans are produced every year, but only grazing is ever implemented besides that nothing else happens.' A key figure in the process commented that a change was needed from a 'technical quick-fix' approach to a more 'problem-oriented' approach:

We learnt that extensionists should be partners not teachers; there should be open diagnosis and we should be less production-oriented, looking instead at the full range of income earning possibilities. We

need client assessment, more stakeholder involvement, peer assessment. Not the old attitude of 'I'm the expert for this ward' ... 'the expert assistance model of development' is nonsense.

A range of reasons was identified as leading to this commitment to change by people we interviewed. One theme was the realisation that lower level extensionists were interacting with farmers and other actors outside the organisation and were following practices that contravened official positions. These grassroots officers were then not feeding back, or were dissembling to superiors. Gradually awareness of this and its implications for policy implementation filtered back up the system.

Another key reason was the effect of a constellation of well-linked NGO/research projects in Masvingo province. The 'three key stimuli', according to the acting provincial head of Agritex, were the Chivi-based Intermediate Technology Group project concentrating on farmer empowerment and demand-led research and extension, the IRDEP/GTZ participatory extension project and the Conservation Tillage farmer participatory experiments.²⁷ During the first part of the 1990s these combined to offer experiences – field days, workshops, exchange visits and study tours – which helped change the perceptions of key personnel in the Agritex bureaucracy in Masvingo and, later, further afield. These projects suggested entirely new approaches to research and extension that engaged with farmer knowledge and practice, built on new understandings of the logic and sometimes superiority of farmer approaches to utilising natural resources.

The three Masvingo projects were not isolated activities. They can be taken as experiments with fundamentally different ways of doing rural development. The findings and practices that emerged from them flatly contradict many long-established policy directions: promotion of intercropping, new tillage techniques and forms of conservation, for example. As the impact of these experiments has been extended, policy – particularly policy-in-practice – has begun to change. This has gradually permeated upwards through the Agritex hierarchy to the head office, where even the Master Farmer programme is under review.

Not surprisingly, the changes that have unfolded over the past five or so years have not occurred without a certain amount of resistance. A researcher commented: 'in 1991–2 there was a really strong debate about Contill. Contill really goes against the Alvord recommendations – talking of intercropping and unclean weeding, and not straight lines. Monocropping is very entrenched in Agritex'. However, at least in Masvingo province, in a few years, key elements of the participatory approach advocated have taken hold. An official with the Masvingo-based IRDEP programme commented on changes within Agritex: 'A few years ago they would have laughed at ITK [indigenous technical knowledge]. Now there has been an attitudinal change for extension agents. They are training them in participatory approaches'.

So how did these experiments, projects and unconventional practices both within and outside the organisation lead to wider changes? One explanation is that key individuals convinced of the validity of alternative approaches were able to strategise and build alternative actor-networks in a similar manner to

²⁷ The IT project in Ward 21 of Chivi district became a key demonstration site for alternative extension approaches during the 1990s. Similar experiments were ongoing under the auspices of the IRDEP integrated rural development programme in Gutu. The Contill programme operated in Gutu and Chivi, and provided an important link between personnel and experiences. When the IRDEP programme wound down field activities, its strategic location in Masvingo and close connections with Agritex were key in gaining access to the Department.

those ways dominant scientific-bureaucratic actor-networks had emerged in the past. Many of these networks started out quietly and in isolation, but gradually expanded to involve a wide range of farmers, extensionists, researchers and practitioners across a range of organisations. Over time there were enough visible results to enrol higher-profile protagonists such as the provincial Agritex head. A consultant observed, ‘these micro-pilots are essential: they tune in the senior people’. When the provincial head got involved he was able to use his authority and links to highlight the results of the projects, and achieve official endorsement for a process of change within the bureaucracy. At a workshop in 1993 ‘the National Director sat there and saw the provincial director talk about organisational development. He said, “That’s a risky area. We’ll call it a pilot project for two years and if it is good we’ll all share the glory; otherwise it’s your problem”’.

But such tactics and strategies of individuals as members of actor-networks can not be seen as separate from wider changes which opened up an area of policy space for a discussion about participatory forms of extension which had not been present before. The early 1990s were characterised by severe financial cut-backs in the public sector due to structural adjustment and the withdrawal of loan funding to agricultural departments. As discussed earlier, this had put a major strain on government departments, including Agritex, restricting their ability to fulfil their mandate. It had also resulted in a drop in morale – no longer was Agritex the prestigious, technical extension agency in Africa that actually ‘worked’ it seemed. Thus in the early 1990s, key people in Agritex were looking outwards for new ideas, new directions, and, indeed, new sources of funding.

The donor support from the German government which allowed Agritex Masvingo the opportunity to experiment flexibly without undue reliance on central funds and the ministry’s bureaucratic procedures were undoubtedly significant, as was, as has been mentioned, the close interaction with the trio of projects working in the province at that time. By the mid-1990s, these projects had accumulated significant experience and were beginning to show some really positive results, if at a very small scale. This was sufficient to give confidence to key Agritex officials that some real alternatives existed which, on the one hand were potentially more cost effective and, on the other, delivered real successes which farmers clearly appreciated.

The space offered by the national Agritex directorate for a Masvingo pilot was also important. By 1993, preparations for a new phase of World Bank lending were already in the offing²⁸ and the need to rethink extension strategy and organisation had been highlighted by a range of consultants reports for the Bank and other donors. In addition, a political push was increasingly evident with the appointment of Dr Olivia Muchena as Deputy Minister for Agriculture, who was well-known from her days as a University of Zimbabwe lecturer in extension as a strong advocate of a participatory approach.

Thus, in the late 1990s a range of factors combined – political pressures and budgetary constraints, delivery problems across the extension service, advocacy of new approaches through NGO and pilot projects, the creation of new actor-networks across organisations, and the actions of a few key ‘policy entrepreneurs’. Such factors created some ‘room for manoeuvre’ in one of the largest government departments in the country. This had not existed before, but did allow the space for the introduction of new,

²⁸ Consultants employed in the preparation of the Agricultural Services and Management Programme supported the idea of a major organisation review as a starting point for the programme.

participatory ideas in ways that potentially offer real chances of change.

Each of the case studies has highlighted some of the potentials of participation, but also the clear limits. In many cases, as we have seen, an instrumental form is evident, where prevailing discourses and practices go unchallenged. A 'participation gloss', in other words, does not alter the deeply embedded institutional practices and political connotations of conventional research, planning, regulation or extension. In other instances, more fundamental shifts have been observed where policy spaces have been opened up by new configurations of actor-networks, with new forms of bureaucratic practice emerging. This has often started at the local level through the discretionary actions of 'street-level bureaucrats', but sometimes has permeated upwards and outwards into structural organisational reform.

Yet the examples we have identified have remained limited to renegotiations over technical knowledge, with little evidence of more direct challenges to structural issues of politics and power. It could be argued that such shifts, while on the surface looking progressive and transformatory, operate on the margins and are not played out in more contentious and political arenas, such as around issues of land access. In such situations participation is limited to consultation, as the consequences of addressing explicitly political issues through participatory processes could not be countenanced. As one informant commented during a discussion of the Land Tenure Commission²⁹: 'there were lots of consultations... but it's not a technical issue, you're kidding yourself if you think it is. It's political.' An awareness of the consequences of more politicised forms of participation was expressed by one senior government official who commented ominously: 'Empowerment can be politically dangerous. Especially where you don't practice democracy. It's a timebomb'.

CONCLUSION

This paper has looked at the policy processes that have produced a particular style of natural resources policy in Zimbabwe – a style that has been associated with the production and reproduction of a set of environmental crisis narratives. We suggested that this approach emerges from the way science and bureaucracy mutually construct one another through their interactions. These policy processes depoliticise potentially political questions by framing them as technical (cf. Ferguson 1990). Tracing the continuities of policy practice from the colonial to the post-colonial era, we have also elaborated some of the state interests in maintaining such an approach.

However, as we have shown, for a variety of reasons in recent years policy processes have begun to show some change: there is now room for international and civil society actors; and agencies in the state have also begun to change, as our analyses of Agritex and the DNR suggest. What this means for policy processes is as yet unclear. Our examination of the DEAP process, for example, suggests there are reasons to see that

²⁹ The Land Tenure Commission reported in 1994 under the chairmanship of Professor Mandivamba Rukuni. In the period since then few of the recommendations have been taken up. The political implications of the findings became increasingly apparent and the government ignored it. In a recent interview Rukuni commented: 'it is now exactly four years after we submitted the report. When I meet top politicians, including the President, they are still highly complimentary of the report we produced, but behind that it's a different story. The bureaucracy is generally sceptical... they say, it's nice on paper but difficult to implement' (Haramata 1999:7).

the new emphasis among policy actors on participatory planning and deliberative and consultative mechanisms as an extension of the earlier technologies of governance, albeit in slightly new forms, but nevertheless with the same political effects.

An alternative view would claim that participation is not just being used instrumentally, but that a range of actors are building networks that run through state and civil society and result in potentially quite a different type of policy practice and policy process. On this schema lower level policy actors, such as farmers, field researchers and development practitioners, may exercise agency and actually create policy and thereby broader social and political realities too. In many ways this requires more testing and experimentation. What are the limits of citizen science and the creation of witnessing experiences? When are visits and workshops, or the careful construction of project or NGO steering committees or the manipulation of personal connections likely to offer returns? What are the limits of lower level policy actors' agency? Can the cumulative effect of such new practices result in more fundamental change?

At this juncture, given the wider macro political and economic changes ongoing in Zimbabwe, it is unclear what participation ultimately means for the policy process. It may be that it simply becomes an extension of a well-established technocracy, continuing to reinforce narratives on environmental and agricultural policy which have long been at the centre of state-led initiatives, although now in a 'participatory' guise. Or it may be that there really are new opportunities for people to articulate their realities, and that participatory approaches may be a vehicle for challenging the political assumptions upon which much technical policy rests. For this to take place new actor-networks will need to be built, and new forms of knowledge and practice skillfully articulated. This, in turn, requires sensitivity to the new policy spaces created by the new contexts emerging with broader social, economic and political change. With such contexts changing so rapidly, it is unclear what the future will hold. But what our case studies suggest, is that the rigid frameworks of the past are being challenged in various ways with the potential, as yet far from realised, for new forms of policy process to emerge.

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