2003 - 2004 Research Highlights

Natural Resources Systems Programme

Poverty reduction through partnerships in natural resources research

Contents

This document is an output from a programme funded by the UK Department for International Development (DFID) for the benefit of developing countries. The views expressed are not necessarily those of DFID.

Poverty reduction through partnerships in natural resources research

Photo credits: We wish to thank the projects in this edition for supplying the photographs within their articles and projects R6778 and R8362 for the additional photographs on the front and rear covers.

Technical editing: Melvyn Kay, Email: Melvynkay@rtcs.co.uk Designed and produced by Visual Identity, Milton Keynes Tel: 01908 867171.

Page 11 Key determinants influencing natural resources livelihoods

A review of a report on key determinants that influence the poor and the NRM opportunities from which they can benefit.

Page 15 Best practice guidelines

Recommended best practices for natural resources researchers undertaking socio-economic research.

Page 23 Natural resources management in mountain communities

Review of conference proceedings that examine the many challenges and opportunities facing people farming small hillside holdings in the Hindu Kush-Himalayas

Page 16 Getting to common ground

Resolving conflicts linked with decision-making on 'suitable' regimes for managing common pool resources.

Page 19 Uplifting poor 'island' communities

How new self-help methods can help poor communities living on islands (chars) in braided river channels in Bangladesh.

Page 12 Promoting farm-level use of a crop-soil simulation model

Support for farmers using rainwater harvesting in Tanzania.

Page 24 Market research with the poor

Researchers take an innovative but logical step and ask the rural poor what information they want and how they would like to access it – a market research approach.

NRSP Research Highlights

Poverty reduction through partnerships in natural resources research

The Department for International Development (DFID) is the British Government department responsible for promoting development and the reduction of poverty. The central focus is a commitment to the internationally agreed target to halve the proportion of people living in extreme poverty by 2015. To contribute to achieving this objective, DFID funds a group of programmes that cover various aspects of natural resources research. One of these programmes is the Natural Resources Systems Programme (NRSP).

NRSP was planned as a ten-year programme that began in 1995. In response to the Government's White Paper on International Development ('Eliminating World Poverty: A challenge for the 21st Century') in November 1997, NRSP's research strategy was revised to focus more explicitly on the circumstances around poverty and the needs of the poor. Thus, since 1999, NRSP has aimed to deliver new knowledge that can enable poor people, who are largely dependent on natural resources, to improve their livelihoods. The new knowledge centres on changes in the management of natural resources that can assist the improvement of poor people's assets and enable them to move out of poverty in enduring ways. Assets encompass not only individual and household gains, such as human skills and knowledge, financial capital and other stores of value, but also social capital as a means for poor people, through their own community-based support networks, to have a stronger voice and more assured involvement in the decision-making processes and policies that affect their livelihoods.

To attain NRSP's aim, the programme's research covers three inter-related fields: the natural resource (NR) base itself; the integrated and dynamic nature of poor people's livelihood strategies and how these affect their decision-making and capacity to use and manage the NR-base; and the institutional environment in which NR management strategies are designed and implemented. The inter-relationship of these fields is a reality in poor people's everyday livelihoods and is therefore a major consideration in the design and conduct of NRSP's research.

The current year provides good examples of what such research contains – what it 'looks' like – which, of itself, is an important product of the programme. Projects demonstrate that achieving pro-poor developmental change is complex requiring multi-faceted, pluralistic research. Importantly, they also show that research can succeed and deliver methods and insights that are highly relevant to pro-poor improvement of livelihoods as well as good management of the NR-base.

NRSP's research is implemented as contracted projects that are undertaken by government, non-government and private institutions with expertise in natural resources management. Often these different types of organisations work in partnership, each contributing their differing expertise and experience towards attaining a project's aim. During the past year, NRSP's portfolio comprised 32 projects.

In-country ownership of projects is of major importance to achieving enduring outcomes for poverty-focused research. In-country organisations were leading 16 of the projects in this year's portfolio and nearly all others have had substantial inputs from in-country teams.

NRSP has aimed to deliver new knowledge that can enable poor people, who are largely dependent on natural resources, to improve their livelihoods

Bearing in mind that the programme has a finite length (originally planned as March 2005 but now officially extended to March 2006), 17 projects in this year's portfolio have built on the outputs of previous projects and six projects have focused specifically on promoting the uptake of products of earlier research. In-country ownership of research is a considerable asset to uptake promotion. The extent of in-country leadership, as well as partnership, that is in place for our portfolio provides major support to national and regional promotion of NRSP's findings and knowledge-sharing products.

A complete list of on-going projects is provided at the end of this publication. A brief resumé of research projects featured in this edition of Highlights follows.

Empowerment – what it can 'look like' (p4) illustrates how poor people in rural West Bengal in India have taken the initiative on a policy change recommendation concerning services to support their fish culture livelihood activities. Rather than waiting for service agents to provide the recommended service support they have set up a 'One-stop Aqua Shop' that can both provide and draw in the support services that they need.

Researchers as communicators (p8) concerns the vulnerability of island communities in the Caribbean to agro-chemical pollution. This can directly impact on human health and livelihoods with poor farmers least able to develop strategies and coping mechanisms to mitigate the effects of flawed pesticide management practices. Researchers there are stepping out of their more usual technical roles and supporting the development of national strategies for agro-chemical management and use which involves harmonising legislation, establishing administrative controls for chemical distribution, introducing good on-farm practices, and setting up effective health and environmental monitoring systems.

Although many crop-soil simulation models are developed by researchers as predictive tools to help land and crop management, they are not usually developed in response to a well-articulated demand from the end users such as local professionals and farmers. Promoting farm-level use of a crop-soil simulation model (p12) describes how a computer-based research model was developed into a robust and 'user-friendly' tool that is now being used to advise farmers growing maize and rice using rainwater harvesting systems.

Importantly, the model's institutional home is in Tanzania at the Sokoine University of Agriculture. This ownership ensures that, the model's further development will be tuned to local (national and regional) requirements and locates the technical support for its practical use where it is needed.

Getting to common ground (p16) is about resolving conflicts that are linked with decision-making on 'suitable' regimes for managing common pool resources. Many conflicts arise because it is assumed, quite wrongly, that all those involved share the same understanding of the problems. To an outsider the problems, and hence their solutions, seem self-evident. But this simplistic view ignores the different perceptions that people have about the problems and so it is hardly surprising that the proposed solution does not always work out as intended. An empirically useable method for understanding stakeholder perspectives in contested natural resource management situations is proposed and its usefulness tested in conflicts over forest resources in Madhya Pradesh, India.

Uplifting poor 'island' communities (p19) describes the challenges facing communities living on islands (chars) in braided river channels in Bangladesh – home to some seven million chronically poor people.Their lands are prone to floods, which can result in famine, and their livelihoods are dominated by conflicts over natural resources. Participatory Action Plan Development (PAPD) – a technique successfully developed for building consensus for resource management among farmers and fishers in fresh water flood plains – is producing similar benefits for char dwellers. It helps to identify ways to reduce their vulnerability and improves livelihoods by resolving conflict and improving resource management.

Access to good quality, reliable information is just one of the many difficulties facing the rural poor in Bangladesh as they pursue their various livelihood activities. Current methods of communication are ill-suited to the integrated ways in which poor people make their decisions. In Market research with the poor (p24) researchers took an innovative but logical step of simply asking the poor what information they wanted and how they would like to access it – a market research approach. The research developed a proto-type method by which grassroots service providers (such as NGOs) could routinely assess the information demands of the poor in order to provide rural services that are relevant to their various livelihood activities and daily lives.

Empowerment – what it can 'look like'

In rural West Bengal in India, poor but talented people are working together to develop small-scale fish farming in seasonal water tanks to improve their livelihoods. By forming a federation of Self-Help Groups they are providing and drawing in the support services they need. Together they have established a One-stop Aqua Shop (OAS) – a single point where people can buy essential inputs and obtain the range of information that they need on aquaculture.

Knowing the problem

In India, for a long time now, voices have been raised in support of the advancement of severely disadvantaged social groups that are trying to derive a livelihood from limited resources in remote rural areas. Although various schemes have been developed to try and improve their circumstances, most people would agree that so far there has been only limited success. The will is there but the way appears to be hard and difficult to accomplish.

Nevertheless in the gently undulating hills of rural West Bengal, a quiet revolution of self-determination is underway. Poor but talented people are taking control of their future. With limited arable land and dwindling forest resources, many are beginning to use the seasonally stored water around their villages for livelihood enterprises. Fishers and farmers are working together in groups on small-scale fish farming and, linked with this, have progressed to forming and building up a mutually supportive federation of Self-Help Groups (SHGs). Their efforts provide, and also draw in, the support services they need, and they are beginning to influence policies that affect their livelihoods.

In Kaipara Village

Kaipara Village in West Bengal State is 15 km from the tarmac road and home to about 1,600 people in some 280 households. They come from at least five ethnic groups variously classed as scheduled tribes, scheduled castes or the unfortunately classified Other Backward Classes (OBCs). Many have had little schooling and literacy is low.

Kaipara is not well endowed with natural resources. It has only 150 ha of irrigable land and no nearby forest resources. The moderately high rainfall (about 1200 mm) is seasonal (June to September) and variable – the rains fail as often as once in four years. There are 36 small tanks (ponds) that are used for fish culture as well as for conserving rainwater for irrigation, livestock and domestic purposes.

Livelihood options involving food production are eagerly sought – the common view, based on harsh experience, is that food producers have greater food security than those who have to purchase it. However, 75 percent of households could not produce enough food for the whole year and were faced with two unattractive options. They either borrowed rice from richer families and paid high interest rates which consumed scarce cash, or they migrated for work and ran the risk of exploitation.

Fish culture – a popular option

Poor people in Kaipara are attracted to fish culture for several reasons. Fish is an important part of people's diets. Bengalis love to eat fish so there is a ready market for the products. Small-scale fish production in seasonal ponds has already proved to be successful. People know about the favourable results of DFID-NRSP funded research from 1996-2000 on aquaculture using seasonal rather than perennial tanks and the successes of the SHGs that were involved.

Yet despite the livelihood opportunity that fish culture offers, a range of factors still influence success. Disputes over access to tanks and leasing rights can constrain aquaculture operations for many years. There are the various tank owners to consider and general access may involve the whole community.

Support services are also needed such as information about good practices, materials and labour to get started, money, and help when things go wrong. Most districts have professionals who can help – District Fisheries Officers and rural bank managers. Friends and family can also help. But the reality is there are many small tanks and many remote communities, and not enough support people to meet the demand for help.

A Federation of Self-Help Groups provides service support

In Kaipara the community has solved the problem of services by forming a Federation of SHGs. More than 70 SHGs federated to develop their own support network and to draw in the support of others to provide a 'home-grown' support infrastructure. Currently 174 men and 890 women make up the federation that proudly includes 14 SHGs belonging to the so-called 'Below Poverty Line' groups. The Federation has a 40-member General Body and an 11-member elected Steering Committee. As is often the case, there was one local person (with good experience of fish rearing in seasonal tanks), who had the vision and the drive to stimulate and facilitate individuals and SHGs towards federation.

Two further inputs were important – the role of STREAM as an external facilitator and the findings from a DFID-NRSP research project on pro-poor aquaculture policy. The STREAM Initiative works in India to help 'give farmers a voice' and take forward prioritised recommendations for policy change. These recommendations resulted from widespread consultations and consensus-building with farmers, fishers, state and national fisheries policy-makers, shapers and implementers – a process that included the Kaipara fish culture SHGs. A priority recommendation was the need for single-point under-one-roof provision of services for aquaculture – a One-stop Aqua Shop (OAS).

When the Kaipara SHGs federated and agreed to operate an OAS service they contacted STREAM who then helped them to advance the proposal. This included support for a workshop in Kaipara, hosted by the Kaipara Federation, to develop the relationships between the Federation, banks and other GO and NGO service agencies. At the workshop, a Federation spokesperson highlighted how the OAS would change the way that information is made available to farmers thus making the process of starting aquaculture more efficient. Farmers saw how this would mean less journeying around chasing information on fish culture, suppliers, government schemes and micro-credit. Support agencies also saw how this could make their efforts more efficient, and began to pledge their support. Exactly a month later, the Steering Committee of the Federation passed a resolution that launched the Kaipara OAS.

Generating finance to sustain the service

One service that the Kaipara OAS offers is the supply of fish fingerlings. Farmers with seasonal tanks need these early in the season in order to produce a fish crop before the water dries up. So far the OAS has supplied about 25,000 fingerlings to farmers in a 3 km radius. But people are already coming to buy fingerlings from up to 24 km away. The Federation is cautious about making promises it cannot keep as it wishes to build a reputation for quality service. It estimates that the local market for fingerlings is one million and their first objective is to develop their capacity to supply half this total.

Sustainability for OAS operation is taken seriously. Each SHG has invested 2,000 Rupees (about US$ 27) to provide operating capital. Another action which is helping to sustain the OAS is, at the same time, helping six all-women SHGs in a nearby village to use ten tanks for raising large fish for sale. The OAS is testing an arrangement whereby 50 percent of the

A priority recommendation was the need for single-point under-one-roof provision of services for aquaculture – a One-stop Aqua Shop (OAS)

benefit will go to the SHGs, 25 percent to the tank owners and 25 percent will go back to the OAS to pay for the fingerlings it supplies.

One local person summed up the experience so far as – 'No one used to come and now they're all coming'.

Wider implications

The Federation of SHGs and their OAS are a new model for development communications and supply services where farmers build groups, link up and develop local service centres which then can act as a beacon – the contact and delivery point – for other service providers.

Kaipara demonstrates how poor people have taken ownership of the changes that have occurred and it is an example to others of what the poor themselves can achieve. It is also an example to policy-makers of the favourable outcomes from using policy formulation processes that include the views of the poor and enable poor people to be fully aware of agreed policy priorities.

In the case of the poor of Kaipara, they voiced their needs as part of a policy process, and then decided they were well capable to take their own action to meet their needs. The seeds that have led to this flowering of collective confidence were sown some years ago and were nurtured by project continuity and transparency in the inclusion of the poor. But on top of this, poor people's initiative and drive are enabling the whole project to be greater than the sum of the parts.

R6759 Integration of aquaculture into the farming system in the eastern plateau of India

R8100 Investigating improved policy on aquaculture service provision to poor people

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

Graham Haylor
STREAM Initiative
Network of Aquaculture Centres in Asia-Pacific
Bangkok, Thailand
Email: ghaylor@loxinfo.co.th

Guidelines for Marine Protected Areas

Based on research in the Caribbean region

Coastal zones in the Caribbean are areas of great natural beauty. They are a fragile and complex mixture of biological, physical and human endeavours. Such a mixture inevitably brings conflict and begs the question – can valuable coastal ecosystems be conserved while, at the same time, accommodate relatively poor and rapidly expanding populations that rely on natural resources for their livelihoods? Can coral reefs, mangroves and seagrass beds be protected alongside rapid increases in fishing and tourism and the pollution and degradation these economic activities can bring?

Marine Protection Areas (MPAs) are used to manage and conserve these coastal resources. They are areas with legally established boundaries that are set aside to prevent the over-exploitation of natural resources. However, they are rarely set up by, or explicitly for, the general populace living in and around them despite the fact that MPAs can have a profound effect on such people's livelihoods, affecting their sources of income, nutrition and recreation. Equally, the activities of local people impact on natural resources within MPAs and as such can have a significant impact on the success of any management initiatives.

MPAs have more often generated deep resentment in communities that find themselves excluded from resources to which they have historically had access. This lack of consideration can actually prevent MPAs from achieving their objectives and undermine the viability of the protected areas. In 2002 only 34 percent of MPAs in the Caribbean were reported to be meeting their management objectives.

Although there is a wealth of knowledge on the ecological performance of MPAs, there is a dearth of information about their institutional and social performance, particularly in relation to the livelihoods of the poorest in the Caribbean region. These guidelines, which are the result of research into the institutional arrangements of 80 MPAs in the region, begin to fill this gap. They show how working more closely with people living in and around MPAs – addressing their needs and concerns and encouraging their involvement in management – can lead to increased MPA effectiveness.

The guidelines highlight the two-way impacts. They describe how local communities can help and also hinder MPA management; how to enable communities to be more positively involved by concentrating on the benefits that MPAs can provide, particularly for poor groups; and how to create an environment for effective collaboration. This is not a step-by-step guide, but instead a selection of ideas, real-world examples from the Caribbean region, and theoretical insights and methodologies that have proved useful for MPA management. There are lots of good, practical case studies – organic farming in Jamaica, tourism in a marine reserve, fishing gear exchange programme in Jamaica, beach cleaning programme in St Eustatius – to name but a few.

The publication is very well presented and highly readable. Whilst the main context of the guidelines is the Caribbean, it is relevant to professionals working in other comparable areas that are facing similar challenges in the management and conservation of fragile ecosystems.

Increasing MPA effectiveness through working with local communities. Guidelines for the Caribbean. MRAG Ltd, London, UK 45pp.

This publication is a product of R7976 *Institutional arrangements for Caribbean MPAs and opportunities for pro-poor management.*

Available for downloading at NRSP website: www.nrsp.org

Researchers as communicators

Solving agro-chemical pollution problems in the Caribbean

The Caribbean region is especially vulnerable to agro-chemical pollution. The predominance of small islands means there is an intimate link between the land, rivers and the sea. This increases the potential for environmental pollution and can directly impact on human health and livelihoods with the poor most at risk. Researchers are often criticised for focusing only on the technicalities of pollution. But in the Caribbean researchers are moving beyond their 'traditional' territory and supporting the development of national strategies for agro-chemical management and use which involves harmonising legislation, establishing administrative controls for chemical distribution, introducing good on-farm practices and, setting up effective health and environmental monitoring systems.

The poor are most affected

Agriculture, fishing and tourism are the major sources of employment in the Caribbean but farmers and fishers are among the poorest people in the region. Farmers' livelihoods are critically dependent on fertile soils and fishers' on healthy marine ecosystems. But the misuse of agro-chemicals adversely affects them all. It increases food production costs, contaminates soil and water, increases phyto-toxicity and pest resistance, and renders exports uncompetitive. It affects global trade that demands exporting countries provide proof that their systems produce safe food, and tourism by damaging the coral reefs that draw visitors to the islands.

In St Lucia the intense use of pesticides on banana smallholdings has led to significant environmental pollution. This stems mainly from inappropriate chemical handling, storage, and disposal, and poor soil and water conservation practices that encourage soil erosion and the movement of pesticides into the groundwater and nearby streams. Similar problems occur in Jamaica with additional pollution coming from the intensive plantation farming of coffee, sugar and bananas. In several environmental studies in the region more than 75 percent of water samples were found to contain pesticide residues higher than the European Community general guidelines for drinking water.

Poor farmers in the Caribbean are least able to develop strategies and coping mechanisms to mitigate the effects of flawed pesticide management practices. Product labelling is often poor and farmers are usually inadequately trained in the use of hazardous chemicals. So incorrect applications are likely. Most farmers do not have appropriate application equipment and fail to wear protective clothing.

At national and regional levels

An important step to improving agro-chemical management was taken by the Cartagena Convention (1983) and its Protocol on Land-Based Sources of Pollution. This sets out the obligations of Caribbean states to formulate national plans, policies and legal mechanisms to prevent and ameliorate land-based pollution. However, a lack of capacity has meant that little has been achieved since the convention and national plans of action have yet to be put in place.

This lack of action has meant that the management of agro-chemicals at a national and regional level is generally poor. At a national level there are few effective controls over the importation of toxic pesticides, their

Poor farmers are least able to develop strategies and coping mechanisms to mitigate the effects of flawed pesticide management practices

administration and the distribution chain. There is a lack of targeted research on agro-chemicals and their impacts and there is no long-term monitoring in place. Current research tends to be technically focused on pesticides breakdown in soils, the bio-accumulation in species and to a lesser extent on the links between chemical use in agriculture and their impact on river systems and coastal waters.

At a regional level there is as yet no common approach to agro-chemical management shared by all the nations. This disharmony in legislation and management practices reduces the effectiveness of national controls as chemicals are moved from one island to another.

A course of action

The benefits of improved agro-chemical management are well recognised. Improved land use and more effective and selective use of agro-chemicals will reduce costs for farmers and improve incomes. Careful application of agro-chemicals will also reduce pollution at source and reduce public health risks to farmers. It will also reduce pollution downstream in the watershed and coastal zone and so reduce public health risks in coastal communities. It may also improve fish yields as well as helping to secure new opportunities for fishers and farmers offered by the growing tourist industry.

Researchers also recognised the importance of establishing a comprehensive strategy for the management of agro-chemicals in line with the Categena Convention. To achieve this the researchers were pro-active in communicating with key policy makers – the regional Coordinating Group of Pesticide Control Boards of the Caribbean (CGPC), whose membership comprises the heads of the Pesticide Control Boards from all the countries in the Caribbean Community and Common Market (CARICOM). This led to a working partnership for the development of a strategy to improve the use of agro-chemicals.

To prepare this strategy the research team examined two case study countries – Jamaica and St Lucia. The studies involved working with resource users to assess the type and extent of agro-chemical pollution, evaluate the impacts of pollution on the livelihoods of small farmers and fishers, and examine ways of reducing impacts to benefit both farming and fishing. An assessment was then made of the pollution threats and their economic implications from which management

options for pollution control were developed. These clearly confirmed that toxic loadings need to be reduced and better health and safety practices employed to protect people and to safeguard the environment and economic resources.

The research identified several critical intervention points for the management and amelioration of agro-chemical pollution, and the need for a common approach regionally. At the national level these included harmonising agro-chemical legislation with Caribbean partners, developing administrative procedures to control chemical use and establishing public health and environmental monitoring and feedback mechanisms. At the farm level it included inspecting and monitoring the use of pesticides as part of a wider strategy for implementing Good Agricultural Practices (GAP).

A strategy

An holistic strategy for improved agro-chemical management, which captures the recommendations of this three year research programme, was developed directly with policy-makers during a meeting with the CGPC in June 2003. It is designed to bring together the various stakeholders/institutions involved in agro-chemical use and management from import manufacture through to monitoring the effects of application in the land water interface.

The strategy provides ten key management recommendations and translates them into actions at regional and national levels to harmonise pesticide control measures, to support and finance existing institutions and improve collaboration, and to promote good agricultural practice through information, training, and outreach work (see box). The strategy also provides detailed guidance on developing health and environmental monitoring plans and on research and planning that should be undertaken in support of these. It makes recommendations on sustainable financing, capacity building, and communication and education programmes that are required to support the strategy.

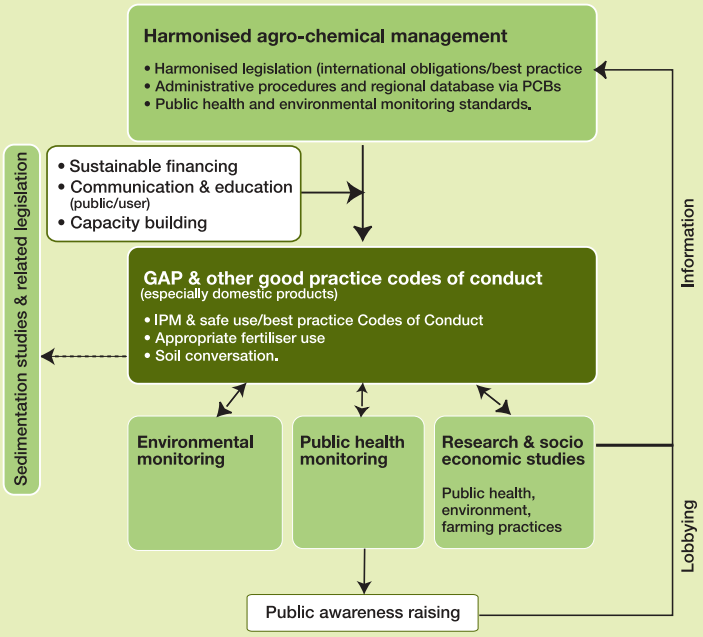
A huge task to come

The CGPC has recommended that the strategy be promoted to national governments for adoption and implementation. This demonstrates the significant impact of this research at the policy level. It also represents a huge task to come and so implementation requires a phased approach. Priority should be given to reducing imports of the more toxic pesticides and controlling their administration and distribution chain as this would have the greatest impact on reducing toxic agro-chemical loadings. At the same time better practices should be employed in the use of agro-chemicals and their fate should be monitored.

A participatory, consultative process involving the users of agro-chemicals, those affected by pollution, and the implementing agencies will be important to achieve an effective agro-chemical management plan, and thus pollution control. In response to this a new research project was commissioned (R8634). This is largely about advocacy and communication. It seeks to increase awareness of the need for improved agro-chemical management and to promote the implementation of best practices as a means of reducing coastal zone pollution, maintaining markets for locally produced foods and improving public health. Currently, management actions of the various institutions tend not to be integrated. So the aim is to gain their engagement in broad-based participation, to accept and adopt the strategy and to develop national and regional plans of action. This will be designed to achieve the coordinated use of available limited human and financial resources.

Indicators will also be needed to measure the uptake of the strategy and the resulting benefits from its implementation. These have yet to be defined at a national level but they should ideally be available and monitored via existing mechanisms and reported in annual reports and statistics of the institutions involved (e.g. quantities of imports, numbers of licences issued). This too will form part of research project R8634 with the results expected in 2005.

A key aspect of the completed and current project is the sustained dialogue between researchers, policy-makers and policy implementers. As a result, there has been significant policy progress which should carry through to achieving sustained improvements in pollution control.



R7668 Impact and amelioration of sediment and agro-chemical pollution in Caribbean coastal waters

R8634 Promoting an holistic approach to agro-chemical management in the Caribbean (on-going)

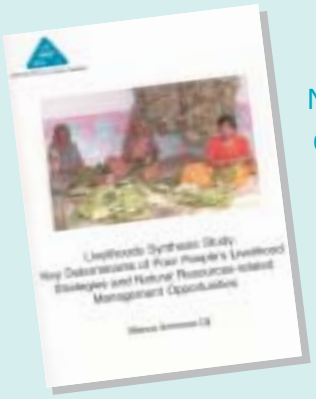
Copies of strategy document and project briefs available on www.mragltd.com

Also available at www.caribpesticides.net

Christopher Mees
MRAG Ltd
18 Queen Street
London W1J 5PN
Email: c.mees@mrag.co.uk

Hyacinth Chin Sue
Pesticides Control authority
Kingston
Jamaica
Email: chinsue@caribpesticides.net

Key determinants influencing NR livelihoods



NRSP's purpose is to deliver new knowledge to enable poor people, who are largely dependent on natural resources, to improve their livelihoods. But how does this work in practice? What are the key determinants that most influence the livelihoods of the poor and what natural resources (NR) related management opportunities are there that could benefit them?

To try and answer these questions a synthesis was undertaken in 2000 of a selection of NRSP projects. This work took account of the already burgeoning 'livelihoods' literature that encompasses a host of concepts and terminology and the evidence that each NRSP project has used many of these ideas and words in their own ways to suit their specific research objectives.

Despite the complexity of the livelihoods of poor people this synthesis has highlighted several important insights into those factors that most influence them and the strategies they adopt. For example, in the peri-urban interface there are fundamental changes taking place as households and individuals move away from agriculture and rely less on natural resources. Nevertheless, there are still some poor groups, including women, that have strong links with agriculture through, for example labouring opportunities. This is in contrast to the rural areas where there continues to be strong, established agricultural enterprises. But young people are tending to move on and find non-NR livelihood alternatives often based on agricultural trading and service-based enterprises.

New institutional arrangements and the strength and variety of social networks are prominent in areas with high potential and where access to land and water are important. These enable some poorer farmers to take advantage of a range of opportunities such as sharecropping and leasing that increase access to land. Similarly access to water for irrigation also increases the potential to farm in both the wet and dry seasons.

Emerging political networks in semi-arid areas, where common pool resources such as water and forests are important 'buffers' against livelihood shocks, are proving beneficial in empowering the poor, with very limited privately owned natural resources, to reduce their vulnerability and improve their food security. In coastal and flood prone areas similar networks are the key to mediating access to fisheries and to the management of seasonal water resources.

The ways by which the poor cope in response to seasonal changes, shocks and trends depends on what assets they have and how they are valued in relation to raising finance or other loans. In Kenya for example, poor households cope with food insecurity by transforming patronage and acceptance of wealthier groups, built through social interaction and labouring, into gifts and loans of food.

What about NR-related management options that could benefit the poor? The study identified three main areas that needed attention and, based on these, provided some key pointers for NRSP's future research? These were how to build and then also protect the assets of the poor; how to enable and sustain communication and knowledge flows between the poor and other social groups and between the poor and service providers (both government and private); and how to support groups through periods of transitional vulnerability as they move from one livelihood strategy to another. The study provides more detailed coverage of what the research for each of these areas should contain.

NRSP took on board the majority of these proposals and has seen them bear fruit even in the short time frame (in research terms) of three years. Indeed, we consider that the stories in these highlights justify this statement!

Key Determinants of Poor Peoples Livelihood Strategies and NR related Management Opportunities. NRSP Synthesis Study PD105. Available from NRSP website www.nrsp.org

Promoting farm-level use of a crop-soil simulation model

Supporting farmers using rainwater harvesting

Researchers have developed crop-soil simulation models that are relevant to improving agriculture in developing countries. However, in most cases, these models have not been developed in response to well-articulated demand from potential end-users such as planners, local service providers and farmers. Indeed most potential users are not experienced in the use of models nor do they appreciate the relevance of models to their work. In spite of this, simulation models do have potential for supporting development planning and farm management decisions. In Tanzania a model that started life as a research tool is now being used to help farmers who produce maize and rice using rainwater harvesting systems.

Rainwater harvesting

Since 1992 the Soil and Water Management Research Group (SWMRG) at Sokoine University of Agriculture has been working to promote rainwater harvesting to improve maize and rice production in the semi-arid regions of Tanzania. It is a method of farming that is highly relevant to sub-Saharan Africa as it occupies the middle ground between arable farming that solely depends on rainfall and irrigated agriculture that requires relatively large investment in structures and equipment for water management. Rainwater harvesting is about collecting rainwater runoff from a catchment area and channelling it to increase the water available in smaller cropped areas. Some farmers practice this technique on individual farms but Tanzanian farmers generally prefer macro-catchment systems that collect runoff from large, distant catchments and serve many farms.

SWMRG has pursued a programme of technical research on rainwater harvesting alongside a sustained effort over many years to change the perceptions of both government and the farming community. This comprehensive strategy has proved successful and rainwater harvesting is now fully recognised in the country's Agricultural Sector Development Strategy and is a common feature in district council development plans.

PARCHED-THIRST

A computer-based simulation model – known as PARCHED-THIRST (PT) – supports Sokoine's strategy for promoting the use of rainwater harvesting. The PT model is agro-hydrologically based and is capable of simulating maize and rice production under both rainfed conditions and rainwater harvesting systems. It was jointly developed by the University of Newcastle in the UK and Sokoine University of Agriculture.

Field trials conducted over several seasons indicated higher maize yields were obtained through rainwater harvesting. But these findings were inevitably restricted to the specific trial sites for a limited number of seasons. Given the extreme variability of rainfall patterns and its dominant influence on crop performance, extrapolation and transfer of experimental results was recognised from the outset as a difficult problem. Researchers turned to simulation modelling as a solution because it enabled them to simulate reliability and risk for crop performance at various sites over 20 to 30 years providing good historical rainfall data were available.

District planners are now using PT to develop plans as well as provide advice to farmers on rainwater harvesting

SWMRG researchers enlisted the support of computer systems specialists from the University's Computer Centre to develop a robust yet user-friendly model

Researchers recognised the potential of PT as a tool that could help farmers and those working for farming communities to make good decisions about investment in rainwater harvesting, scheme design, and crop management. However, in order for PT to benefit farmers, a more 'user-friendly' version was needed that could be easily used by agricultural planners and local professionals who provide advice directly to farmers who practise rainwater harvesting. To achieve this SWMRG researchers enlisted the support of computer systems specialists from the University's Computer Centre to develop a robust yet user-friendly model. The consequences of this collaboration were significant. The Computer Centre became the institutional home for the model which confirmed its ownership and stimulated further development and support for PT.

Promotion and uptake of PT

One of the main targets for promoting the use of PT was district agricultural planners who are responsible for formulating District Agricultural Development Plans. Local agricultural extension staff were also targeted and this was supported by farmers who, on seeing demonstrations of PT, encouraged researchers to train their district and ward extension workers to use it so that they could offer better advice to them.

SWMRG initially provided PT to a large number of potential users by distributing it to each of them on compact disk. At the same time, a Help Desk was established in the University's Computer Centre to promote the use of PT and to provide support for users with specialist advice and training. This is staffed by computer specialists and professionals from the university's departments of Agricultural Engineering and Land Planning, and Soil Science. Help Desk staff also continue to upgrade PT and they maintain a promotional website from which the current version of PT can be downloaded (see box at end of article).

Under the current project various demonstration and training initiatives were undertaken in two districts in Tanzania; Same and Mwanga. With the added support of geographic information systems (GIS), District Agricultural planners are now using PT to develop plans and undertake yield gap analysis as well as provide advice to farmers on rainwater harvesting techniques and appropriate field sizes.

In Same District local professionals used PT to analyse the local effects of planting dates, maize varieties and plant populations on crop yields on farms. The results were used in farmers' seminars to increase awareness of these issues and advise farmers on appropriate agronomic practices. The model was also used to assess runoff from adjacent catchments for the design of the Vumari dam.

PT has also found practical application in the villages of Mwembe, Bangalala and Makanya. Structures are planned for construction to control harvested water for local farms. Linked with this, PT was used to help to decide their location and determine their size by simulating the expected runoff from given catchment areas and anticipated rainfall patterns.

In Mwanga District a local NGO is cooperating with SWMRG to use PT to improve soil and water conservation and crop yields on small farms. One interesting outcome of this has been an increased awareness among NGO staff of the need for good, reliable rainfall measurements and hence the need for more rain gauges in the area to improve model predictions. As a result the NGO has fabricated and distributed rain gauges to villagers to improve rainfall data collection.

PT has potentially wider application than Tanzania and is now being promoted internationally to participants attending courses in Tanzania and elsewhere. These have included participants on the annual course of the World Meteorological Organisation (WMO) for Statistics and Agricultural Climatology (SIAC) from 2001 to 2004; those attending an irrigation and water management course of the African Institute for Capacity Development in February 2004; and a group of visiting Rwandan scientists. It was also promoted at an exhibition for Sub-Saharan Africa Water Week held in Dar-es-Salaam, a workshop organised by the Kenya Rainwater Association in Nairobi, and a seminar on Smallholder Land and Water Management Systems in Bangkok.

Meteorologists as well

Agricultural planners and local professionals are not the only potential users of the PT model. Meteorologists were also targeted not just because the model relies heavily on climate data to produce results. It is envisaged that the Tanzania Meteorological Agency, with support from the Ministry of Agriculture and Food Security, could add value to their weather forecasts by providing information on crop performance and likely yields. A team comprising people from these two organisations is now working with researchers from SWMRG to integrate PT into the process of yield prediction and forecasting and food security analysis.

Future expectations are that PT will be used for agricultural planning and food security purposes especially in yield forecasting by the Department of Early Warning and Food Security within the Ministry of Agriculture and Food Security. It is also expected that in the near future more districts in Tanzania will be using PT to advise farmers on appropriate water harvesting techniques, yield forecasting, yield gap analysis and food security planning. The model will also be used as a virtual laboratory to help students studying agriculture to better understand the interactions between soil, water, nutrients and plants in rainwater harvesting production systems.

R8088A Promotion of and support to the use of the PARCHED-THIRST model v2.1 in eastern Africa, and the development of version 2.2

R7949 PARCHED-THIRST model: Development of a client-friendly version 2.1

This project builds on:
R7888 Promotion of rainwater harvesting systems in Tanzania

Henry Mahoo
Soil-Water Management Research Group
Sokoine University of Agriculture
Morogoro
Tanzania
Email: hmahoo@suanet.ac.tz

Best practice guidelines

For natural resources researchers undertaking socio-economic research

When DFID formulated its Renewable Natural Resources Research Strategy (RNRRS) for the ten-year period,1995 to 2005, members of the biophysical research community accepted that in order for the aims of the RNRRS to be achieved, the social and economic dimensions of natural resources (NR) research would need much greater attention.

Firstly, projects would need to be designed in such a way that social and economic factors were given explicit consideration. Secondly, the combined skills of a research team would need to cover the social and economic as well as biophysical dimensions of the work. As one of the ten programmes comprising the RNRRS, NRSP has endeavoured to implement projects that meet these requirements, not least because they are integral to systems research.

In 1995, in addition to the pursuit of holism in research design, it was decided that biophysical scientists should be pro-active in incorporating socio-economic dimensions into their own research. To support them the Socio-economic Methodologies (SEM) Programme was conceived, as part of the RNRRS, Its aim was to provide NR research scientists with readily accessible information on social science methods. This information would be presented in the form of Best Practice Guidelines (BPGs).

The SEM Programme ran from 1995 to 2000 and over this period a set of 12 BPGs and other methodology reports were produced. In 2003, NRSP assembled the BPGs and the various resource materials as an electronic archive on one CD-ROM. This CD was widely distributed in the UK and internationally and the archive also was made available on the NRSP web site.

The BPGs are the result of fieldwork in thirteen countries (Brazil, Bolivia, Côte d'Ivoire, Ghana, Malawi, Nigeria, Tanzania, Uganda, Zanzibar, Zimbabwe, Bangladesh, India and Sri Lanka). This included interaction with projects in the portfolios of the other programmes of the RNRRS. Care was taken to ensure that NR scientists with little or no background in the social sciences could understand the guidelines and apply the various methods in their research or commission specialist expertise as necessary. Each BPG comprises an introduction; a synthesis of current relevant research; a summary of how the technique should be applied, by whom, where and when; a final section that highlights areas still to be resolved and where future research is likely to produce new insights; and a list of suggested reading.

The CD-ROM is available free on request from NRSP and at www.nrsp.org

DFID Natural Resources Systems Programme (DFID-NRSP). 2003. Best practice guidelines. Socio-economic methodologies programme 1995-2000. UK: DFID Natural Resources Systems Programme, HTS Development Ltd. CD-ROM.

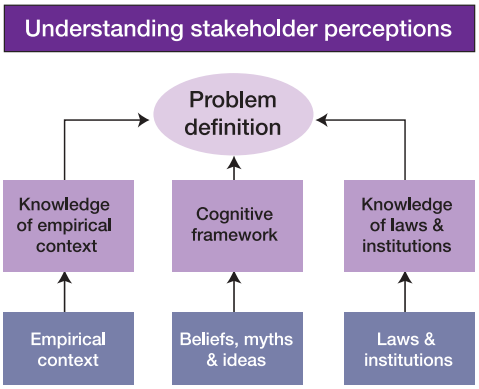
Getting to common ground

Resolving conflicts over common pool resources

Conflicts over the management of common pool resources often arise because it is assumed, quite wrongly, that all those involved share the same understanding of the problems. To an outside observer the problems, and hence their solutions, seem self-evident. They reflect differences in material interests between stakeholders and these can be analysed in various ways. But this ignores the different perceptions that people have about the problems and so it is hardly surprising that the proposed solution does not always work out as intended. Bringing people's perceptions into the discussions between stakeholders is seen as an important step to building consensus and resolving conflict. But how can this be done so that it makes the differences clear and helps people to get to common ground?

A framework for understanding

Conflict is a common feature of many natural resource management regimes. But its origins can go beyond material incompatibilities and arise from a deeper cognitive level. Stakeholders draw upon their knowledge and understanding of resources and intuitively develop their own view of the problem which may be very different from that of others. A scientist will no doubt have very different experiences and views to those of local people. Religious beliefs and moral conviction will also influence thinking as will ideas obtained from formal science and informal and 'folk' knowledge. Stakeholders' knowledge and understanding of the legal and institutional framework that governs most common pool resources will also have an effect.



Defining the problem clearly is critical to the process of making policy and it is these different stakeholder perceptions, which provide a deeper explanation of conflict, that are often obscured in conventional policy dialogue. If stakeholders can be encouraged to reveal their different interpretations of key issues then the debate may be much more productive.

Previous research on this issue has produced an analytical framework for understanding stakeholder perspectives in contested natural resource management situations (see diagram). It suggests that knowledge falls into three realms – empirical knowledge; beliefs, myths and ideas; and laws and institutions – and it seeks to promote dialogue between stakeholders by making their differences clear.

From theory into practice

In order to turn this theoretical framework into a practical method a research project was set up to explore its usefulness for understanding field-level conflict over forest resources in Harda, Madhya Pradesh, India and to examine the opportunities and constraints for adapting and institutionalising it for policy dialogue.

Harda is an example of the 'self-evident' approach to problem solving. It is generally celebrated as an excellent example of effective, decentralised and participatory forest management. Since the early 1990s the Madhya Pradesh Forest Department has promoted the 'Harda model' of participatory forest management which channels development funding to wean local poor communities away from forest dependence and into forest protection and

development. Based largely on this and other similar experiences the World Bank funded a large forestry sector project in Madhya Pradesh in the 1990s.

While the Forest Department views Harda as a success, others, including local NGOs and CBOs believe that communities have not only failed to benefit but are actually worse off. This resulted in conflicts among different stakeholders at all levels and confrontational meetings that inhibited the process of reconciliation and understanding. The only thing that was clear was that the causes of this conflict were complex and they were not well understood.

The Madhya Pradesh experience has important implications for forest management throughout India. While participation has been widely documented the perceptions of local-level stakeholders have not been adequately studied. This study provided an opportunity to look in detail into the issues that arise with mature participatory programmes, and to provide policy-relevant suggestions that have wider applicability.

Field work

The seven research partners comprising the project team assembled to undertake the work was itself rather unusual in that the partner organisations themselves were stakeholders and potential target institutions for uptake activities. They were also closely associated with other on-going processes and policy dialogue in the forest sector in India and so they enjoyed relatively easy access to the relevant target institutions.

Field work focused on documenting stakeholder perceptions on participatory forest management and each stakeholder was studied over a relatively long period by a single organisation. The village level studies were conducted by a six-member team located in Harda for over a year. A sample of twenty-four villages was chosen for the intensive research, reflecting the diverse ecological and socio-economic characteristics of the district.

The analytical framework was converted into an empirically useable method for use in the field – a task that was inclusive and shared by all the research partners. This was one of the highlights of the research. In addition to standard qualitative techniques, the Q-method was used. This provides researchers with a systematic and rigorously quantitative means for examining human subjectivity particularly on issues that are socially contested and argued about.

A set of 48 statements was carefully designed and translated into the local dialect to stimulate stakeholders. Some could read the statements for themselves while others had them read to them. Their reaction to each statement was recorded on a sliding scale. From their responses individual profiles were created and these were statistically analysed to extract typical profiles that capture the common essence of several individuals. Finally, these typical profiles were interpreted to provide an insight into the social discourses.

Engaging with stakeholders

Engaging with stakeholders was not easy. Both the heads of the local administration and Forest Department changed during the research and their interest in the research fluctuated especially during election times. One Mass Tribal Organisation (MTO) had reservations about the research because of the way it was funded. This was resolved to some extent by personal contact with the leadership of the MTO. Engaging with local MTO activists at the village level was easier.

Research partners have already started using the method in other projects and so as key stakeholders in this research this has resulted in immediate uptake

Interest nationally and in the state capital, Bhopal, was high because of the focus on Harda and also because the research coincided with a number of broader policy processes in which project partners were already playing key roles.

Communicating the project findings was done through meetings and workshops at local, state and national levels that were attended by local policy actors, NGOs, and politicians. At the village level, folk theatre was used. Feedback from these events was incorporated into the methodology.

Interestingly the research itself was confronted with questions. Perceptions about the project team influenced the ways in which local people received messages from the research and the extent of their engagement. Those who perceived the findings to be critical of their function adopted defensive attitudes. Those more distant from the local context were more receptive to findings, as they saw them as less threatening.

Findings

Experience with the framework methodology was very positive. A field manual was produced and training was used to promote the method and build research capacity in the sector. Research partners have already started using the method in other projects and so as key stakeholders in this research this has resulted in immediate uptake.

Experience so far suggests that the method has made only a limited contribution to actual conflict management since it was only one part of a wider process of negotiation over policy.

A good atmosphere between policy makers and their willingness to 'buy-in' to the process is essential for effective policy dialogue. When relationships are poor it is not possible in a short-term project like this to change them. It also raises questions about the legitimacy of externally funded research projects as part of on-going policy dialogue.

Nevertheless, the project did help the project partners to build experience in managing multi-stakeholder dialogues that can be an integral part of a policy process. The professional duality of the India-based partners – researchers and stakeholders in policy shaping – will be a considerable asset to improving the rigour of inclusive policy processes in the future.

R8280 Incorporating stakeholder perceptions in participatory forest management

This project builds on

R7973 Policy implications of CPR knowledge in India, Zimbabwe and Tanzania

Bhaskar Vira
Department of Geography
University of Cambridge
Downing Place
Cambridge CB2 3EN
E-mail: bv101@cam.ac.uk

Girija Godbole
Cambridge-Harda Project
Email: girija_godbole@yahoo.com

Uplifting poor 'island' communities

Participatory planning for poor riverine island communities

Islands (chars) in the braided river channels in Bangladesh are home to some seven million chronically poor people – five percent of the country's population. They are prone to floods and famine and their livelihoods are dominated by conflicts over natural resources. Developing consensus to reduce conflict and improve resource management is seen as an important factor in reducing their vulnerability and improving livelihoods. But how can this be achieved? Does Participatory Action Plan Development (PAPD) – a technique successfully developed for building consensus for resource management among farmers and fishers in floodplain wetlands offer similar opportunities for char dwellers?

The chars

The Jamuna River, which runs for some 250 km through Bangladesh, is a braided river system with unstable sand bars and low-lying islands (chars). Unlike the mainland, the chars are physically volatile and the continuous erosion and flooding shape the lives of the inhabitants – the chouras. They are among the poorest and most vulnerable people in the country and are marginalised from the benefits of the mainland because of their impoverished communication networks. Their access to essential services such as health care and education is poor. Road links do not exist and government support services for agriculture, livestock and fisheries do little to enhance people's income or help them to protect their assets. Even NGOs have little contact with chouras because of the difficulty and risks of working on the chars.

Char dwellers are among the poorest and most vulnerable people in the country and are marginalised from the benefits of the mainland because of their impoverished communication networks

Livelihoods are dominated by conflicts over the use of natural resources. Fisher groups are in conflict with each other over collective water bodies and with farmers, money lenders, and land 'owners' who control government land rights to common property. Building consensus between interest groups by examining problems, identifying priorities and developing them collectively rather than in isolation is seen as a way of resolving conflict and producing tangible benefits for the whole community – a win-win situation for both rich and poor. But poverty often stands in the way. It is difficult to engage the poor in consensus building. They tend to be too focused on short-term issues and are marginalised from the main stream of decision-making. Participatory Action Plan Development (PAPD) is a consensus building tool that has been designed to overcome these problems.

PAPD is...

PAPD is a planning technique that uses participatory methods to build consensus and commitment to action amongst various social groups whose livelihood strategies depend on commonly owned natural resources but clash at certain points in the seasonal cycle. It helps to represent the views of all stakeholders and not just the most vocal or socio-politically powerful. It actively encourages participation by the poorer members of a community and encourages community participants to respect others' concerns. The end result of a PAPD is a community action plan, with roles, responsibilities and a budget for managing natural resources.

PAPD was developed in Bangladesh in 1997 by the Centre for Natural Resources Studies (CNRS), a national NGO, to build consensus among communities that rely on floodplain resources for their livelihood.

The process, supported by external facilitators, aims at equity through giving different members of a community the opportunity to speak and express their views. Various types of stakeholders in the community meet in separate groups to express their views amongst themselves without those who may tend to

Investigations showed that although the water body was owned by wealthy land owners both rich and poor had something to gain from reaching a consensus on sharing costs and management responsibilities

ITDG/Zul ©

ITDG/Zul ©

silence them. Representatives selected by each of the groups then report to plenary sessions to create and prioritise a problem census for the community. These are analysed in detail for causes, effects, solutions and who is affected. An action plan is then prepared and proposals are presented on how it should be implemented. Secondary stakeholders from various local government agencies and NGOs attend the plenary sessions to create linkages with the community in their decision-making processes.

PAPD in practice

Over the past five years, ITDG-Bangladesh, an NGO, has worked with char communities in the northern reaches of the Jamuna River. It focused initially on short-term issues and needs identified by the poor which centred on a range of production technologies developed in partnership with char communities. ITDG saw PAPD as a complement to this primary focus and so it was piloted in two char villages to see what adaptations, if any, were needed for its use in the charlands. Would it, for example, enabled char communities to debate longer-term and seemingly intractable issues in order to identify actions for resource management that could help to improve their livelihoods in more enduring ways?

Char Nandina is a mature community established some 40 years ago and located on the river bank. A 25 ha water body is central to their future development but its status in the community and issues of access have been a source of conflict for decades. Investigations showed that although the water body was owned by wealthy land owners both rich and poor had something to gain from reaching a consensus on sharing costs and management responsibilities. The poor would have legitimate access to fishing while the rich would benefit from increased fish yields resulting from improved management and reduced poaching.

A PAPD process was successful in bringing the various stakeholders together to collectively participate in making crucial planning decisions on fish seed management, the organisation of community funds, individual financial contributions, common access and equitable sharing of benefits. A total of 256 households now equally share the costs of managing the water body with 153 coming from the poor and daily labour groups. The poor obtain credit from an NGO to pay their share and repay the loans from the income they receive. District level officials reviewed and endorsed the community's plan for improvement. There is evidence that the PAPD process is now being absorbed into the community structure as they begin to organise their own interest groups and plenary meetings without the need for outside facilitation.

In contrast, Char Nadagari is a relatively new settlement, less than 10 years old, and has few established community structures. It is 7 km from the nearest town, there is no road and access is by foot along rough tracks and through shallow water, and by ferry boat. The island is predominantly sandy and not very fertile. Most people grow rice, millet, potatoes and groundnuts, while chilli production is the dominant cash crop. A lack of credit services has meant that farmers depend on local money lenders and so are subjected to high interest rate payments that affect contractual agreements between producers and market middlemen.

Nadagari is a more impoverished community than Nandina and although the community was lifted by the successful adoption of ITDG's technical interventions, progress with PAPD has been much slower. Difficulties in organising groups and discussions, and conflicts and resignations among those organising events have meant that the consensus process has all but broken down. Although the reasons for this are still being investigated, the isolation and the lack of social structures in the village are likely contributing factors. Cultural differences between the different clans in the village also appear to be more important sources of conflict than the differences between rich and poor.

Some lessons

The water body at Char Nandina was a long standing source of conflict and it was unlikely that a short, intensive PAPD would be effective or provide a lasting solution. For this reason the community went through the various stages of PAPD at its own pace. Sustained support over at least two seasons on micro-level livelihood improvement is considered necessary to draw in the landless farming and fishing groups into a village-wide planning process. Treating poor women as a separate interest group also proved effective in enabling women leaders to emerge and articulate their issues in community meetings.

At Char Nadagari ITDG staff consider that PAPD still has a role to play but much more time is needed for the process to be accepted. An added problem to resolving conflicts among char dwellers is that most natural resources are 'private' rather than common property. The influential classes exercise power through informal channels to capture resources, making asset accumulation by the poor almost impossible. This is a particular problem on isolated chars where land grabbing is a common practice.

Although investigations are underway to understand more fully the reasons for the breakdown in Char Nadagari, PAPD has met with substantial success in Char Nandina and demonstrated the value of this method for char communities. The experience strengthened the view that NGOs must facilitate the emergence of community-based organisations that can interact directly with local and meso-level government institutions and private service providers. It can lead to more concrete expressions of demand from char villages and provide a channel for charland development and the allocation of resources. NGOs and local institutions also need to find ways for communities to wholly internalise the PAPD process so as to remove the need for outside facilitation.

ITDG/Zul ©

One of the most positive outcomes of the research is that ITDG-Bangladesh has become a champion for PAPD

ITDG/Zul ©

The challenges ahead

The challenges for PAPD in the charlands are threefold. The first is to bring the hidden informal power-holders into the local consensus building process. The second is to influence the local network of organisations that support char dwellers with short-term seasonal aid to become involved in planning activities for the medium and long term. Finally, the major bilateral donors who are supporting char interventions need to use their linkages with national government to facilitate this emergence of local economic development rather than continue supporting a traditional top-down approach.

One of the most positive outcomes of the research is that ITDG-Bangladesh has become a champion for PAPD. From an initial position of scepticism towards the value of researching new participatory models, ITDG-Bangladesh is now in the forefront of promoting the use of consensus building by local partner NGOs in Bangladesh. Under the umbrella of ITDG-Bangladesh's European Commission funded programmes, PAPD is giving a new lease of life to the work of local NGOs in deprived rural areas as they branch out from routine micro-credit operations into natural resource management.

ITDG-Bangladesh is now pilot testing a training manual entitled Training for NGOs on consensus building and improved natural resource management in char areas. This is an eight-day course with modules specifically aimed at char dwellers. It includes technologies and extension methods, processing and marketing, and consensus building leading to the creation of village level development plans.

R8103 Consensus for a holistic approach to rural livelihoods in riverine islands of Bangladesh

This project builds on

R7562 Methods for consensus building for management of common property resources

Stuart Coupe
Intermediate Technology Development Group
Schumacher Centre
Bourton Hall
Bourton-on-Dunsmore
Rugby CV23 9Q2
Email: stuartc@itdg.org.uk

Mohammad Ali
ITDG-Bangladesh
Email: ali@itb.bdmail.net

Natural resources management in mountain communities

Many challenges face people farming small hillside holdings in the Hindu Kush-Himalayas. Heavy rainfall and poor soil and water management practices are eroding the soil and soil fertility is declining as nutrients are lost through leaching. If farming livelihoods are to be protected then alternative farming practices are urgently needed that help to conserve water, soil and fertility in these marginal and fragile hillside environments.

These are not new problems but current research, knowledge and practices have not solved them. Technologies are available but many farmers have not adopted them in spite of their demonstrated effectiveness. Yet farmers are not unaware of the problems they face. Studies have shown that many farmers have a sophisticated understanding of soil and water related ecological processes and make rational use of them to devise practices to combat erosion and declining soil fertility. So why do they not take advantage of the technologies available to them?

Current research in the region, supported by comparative studies in the Andes and the African highlands, suggests that the key element to successful development is the participation of farmers at all the various stages of technology development. This involves finding new ways of bringing together farmers' local knowledge and practices with the scientists' knowledge and findings to develop appropriate soil and water management practices. A further dimension is the communication of policy-relevant findings to policy actors.

These were the central themes of a workshop held in Nepal which brought together key stakeholders in natural resources (NR) research from various countries to disseminate the major findings and policy implications of NR management investigations conducted in the region. It also compared the findings with those from hillsides research undertaken in mountainous areas in Africa and South America.

Some of the common threads from the workshop included the vital importance of community involvement in the planning, design and monitoring of 'good' research; participatory methods to legitimise interventions and to tap into local knowledge; and farmer-centred methods. Many of the case studies displayed a strong poverty focus but stressed that wealth endowments can be very different from one place to another and so there are no blueprint solutions. Local professionals were seen as crucial front-line workers but their role and effectiveness varied from country to country for a variety of reasons. They need to be armed with the proper analytical tools and field guides and ways of engaging with local people. A 'basket of knowledge' was suggested as one way of presenting the results of research to farmers. It is important that farmers are offered options to either test or to implement – the choice of strategy being theirs alone.

These wide ranging issues from the generic and programmatic through to techniques and tools arising from NR management research are all presented in this publication.

Renewable Natural Resources Management for Mountain Communities.

Editors: Stocking M, Helleman H, White R.

International Centre for Integrated Mountain Development, Kathmandu, Nepal. April 2005. 314pp

Market research with the poor

Asking the rural poor about their information needs

In Bangladesh the rural poor face many difficulties, including accessing good quality, reliable information that can help them in their various livelihood activities. Current methods of communication are ill-suited to the integrated ways in which poor people make their decisions. So how can information systems be improved so that poor rural men and women can pursue opportunities that they perceive as potentially beneficial to their livelihoods? A logical starting point, and one that is not usually considered, is simply to ask the poor what they want – a market research approach.

In Bangladesh

Over the past decade, agricultural research has played a significant role in achieving self-sufficiency in staple foods in Bangladesh. Implicit in this is the assumption that increased crop productivity will automatically lead to improved economic well-being among poor farmers and landless workers. However, the equation is not that simple. Poor people perceive a more complex picture. In addition to concerns about the performance of their crops, they also experience such things as marketing problems; low and seemingly unfair farm-gate prices, and high input costs; and a lack of organic manures resulting from pressures on feed supplies and animal ownership.

Poor access to quality information

Many of the difficulties that resource-poor people face are exacerbated by poor access to good quality information relevant to their various farming and livelihood endeavours. To try and fill this gap a research project investigated how access to agriculture-related information, that better suited their needs, might enable poor people to derive much greater benefits from rural services, from both government and non-government providers. The project did not take the more conventional approach of asking those who supply information. Rather it focused entirely on the views of the rural poor. It was analogous to market research asking such questions as: What kind of information do you want? Where do you go to get it? In what form do you receive it? What is your view of the quality of all this? Do the various services available meet your needs? What are your preferences and why? Based on the findings from these questions a proto-type for improved information services was designed and tested.

People used a wide range of information sources but they were heavily dependent on 'close' sources such as neighbours and development workers visiting their village

Market research

The project team, comprising UK and Bangladeshi specialists, and two local development NGOs, conducted a survey in two regions of Bangladesh to determine poor people's information needs. The team used well established participatory rural appraisal techniques combined with a rigorous sampling procedure to ensure that the survey's findings were statistically supportable. They were pro-active in making sure they sampled poor people's views and did not allow less poor people to speak for them. A total of 67 rural groups comprising 950 individuals interacted with researchers, including 30 women-only groups.

The survey findings enabled the team to build a picture of how poor people accessed, evaluated and used information. Although the survey was primarily concerned with agriculture, comments from those surveyed showed that poor people inter-relate their information needs for crops and livestock production with other aspects of their livelihoods. This included information on markets, credit, and in a wider livelihood context, health matters such as access to vaccination services for children.

The survey found that poor rural people were well aware of the difficulties they face in accessing good quality and reliable information. They were also able to articulate their information needs as well as evaluate information sources and information providers. Common criticisms were that information is not always clear, was often incomplete or not useful, and channels of information were not always accessible.






People used a wide range of information sources but they were heavily dependent on 'close' sources such as neighbours and development workers visiting their village. They valued face-to-face contact as a means of getting information. In one village, where farmers grew watermelons, they were heavily dependent on truck drivers and hoteliers for information on markets and prices. They would have liked a more independent and reliable source.

People found information from the mass media (radio, television) hard to interpret and incomplete, and were doubtful about its reliability. Broadcasts were misunderstood because they were not in the local dialect. One farmer cultivated papaya after listening to a radio programme but was unsuccessful because the information was incomplete and the seed he obtained was of poor quality.

Equally important was that many poor people could not afford the time to seek out information or afford the costs involved such as transport and payments to officials. They were also wary of being rejected or ignored if they went to government offices asking for information about the services available.

Developing a proto-type

The Bangladeshi partners took these findings very much on board. They realised their mission to help the poor did not mean that they should try to second guess what they wanted. Instead of approaching people with their established programmes, such as homestead gardening or small livestock keeping, they needed to help people to identify and prioritise their own information needs. Based on the survey findings and the strong 'buy-in' by the Bangladeshi partners, the team worked closely together to design a proto-type for improved information services which they tested with a sample of farmer groups. This included helping the groups to make contact with providers who could meet their information and service needs in areas that the NGOs themselves could not cover.

At one farmers' meeting participants presented their needs to representatives from eight government departments and one seed company who explained the services available. Representatives from both sides were nominated to establish contact and facilitate people's needs. Subsequently farmer representatives visited their sub-district centre to make specific requests to officials with whom they had not had good contact in the past. One participant commented: '*Earlier we felt shy and afraid to visit any office for fear of being neglected or having to pay for services. Now we are confident enough to visit any offices and contact officials to collect information or get services without any additional expenditure… service providers now give us due importance and provide all necessary support*'.

The beneficial impact of this work on strengthening people's ability to identify available services and approach providers was visible within a few months. Equally rapid was the impact on the staff of partner organisations who became more knowledgeable about services from other providers thus making them more effective resource people for rural services. Although the impact on livelihoods will take longer to assess, some people who received skills training are already translating this into income-generating activities or new farm enterprises.

A *win-win* situation

The success of the field study and the proto-type design, its testing, and outcome is a good example of a win-win situation for all the parties concerned.

The *farmers* received a better service. A video made during the proto-type testing not only illustrates the types of improved information services provided but also provides a record of farmers' views on what they gained from them. It shows how quality information helped farmers to build their capabilities and confidence through such things as access to training, obtaining better quality farming inputs, and contact with advisors for specific types of information.

The *local NGOs* gained experience of a better way of working for the poor and achieved a more pro-poor impact. The outcome of the research was so favourable they also had the satisfaction of experiencing the rewards for their time and commitment to the field studies and their leading role in the design and testing of the proto-type.

The *local consultants* gained experience of field survey methods and rigorous data analysis. They had the satisfaction of seeing a worthwhile outcome and now have a comparative advantage for undertaking pro-poor market research.

The *UK researchers* also gained experience in the design and analysis of studies that use participatory methods, inter-disciplinary and inter-organisational partnerships, and the integration of uptake promotion into research.

Promoting method and findings

The project developed guidelines for undertaking pro-poor market research in Bangla for local use by development agencies. A video was also produced that covers the project's survey method and experiences of pro-poor service provision and complements the information in the guidelines. Both products stress the importance of working closely with poor people to identify their information needs and to encourage them to use different information and service providers instead of relying only on the agency with which they primarily relate.

The future

This project is an example of developing robust evidence for the need to change service provision that targets the rural poor. Not only did the NGO partners recognise the value of the survey's findings, and took action on them, they also appreciated the importance of undertaking pro-poor market research rather than second guessing the needs of the poor. One NGO is already making plans to ensure that market research with the poor becomes a key preliminary phase of their future community-based work.

The experience has generated considerable interest in the two project regions among government and, more particularly, non-government development agencies that promises well for scaling-up. The NGOs in the project are well regarded in Bangladesh and this bodes well for the continued promotion of pro-poor services and the communication of these experiences to other field workers and to senior policy-makers. One NGO has strong links with the Bangladesh Agricultural University at a level that can influence graduate and post-graduate curricula. This may well create opportunities for spill over into training those who will be involved in rural service provision in the future.

It is well known that there are several facets to livelihoods and the poor are no different. These facets can be best served by better coordination of information services so that accessing information is not a major hurdle and a burden on time for the poor. While such a research finding may not be rocket science, it has shown that it is feasible to provide rural services that can better assist poor men and women to build their livelihoods.

R8083 Strengthened rural services for improved livelihoods in Bangladesh

Stephanie White
Rothamsted Research
West Common
Harpenden
Hertfordshire
AL5 2JQ
Email: stephanie.white@bbsrc.ac.uk

John Best
Email: j.r.best@reading.ac.uk
University of Reading

Enamul Huda
PRA Promoters Society
Bangladesh
Email: pps-bd@agni.com

MG Neogi
Rangpur-Dinajpur Rural Services (RDRS)
Email: rdrs@bangla.net

Malik Anwar Khan
Friends in Village Development
Bangladesh
Email: fivdbsyl@sol-bd.com

NRSP projects 2003-2004

Uganda
R7517 Bridging research and development in soil fertility management: Practical approaches and tools for local farmers and professionals in the Ugandan hillsides

In UK – Overseas Development Group University of East Anglia. In Uganda – National Agricultural Research Organisation
John McDonagh

Caribbean
R7668 Impact and amelioration of sediment and agro-chemical pollution in Caribbean coastal waters

In UK – York University, MRAG Ltd. In the Caribbean – Caribbean Environmental Health Institute, Ministry of Agriculture Forestry and Fisheries St Lucia, University of West Indies (Jamacia Campus), Caribbean Agricultural Research and Development Institute, Caribbean Coastal Area Management
Callum Roberts

India
R7830 Integrated management of land and water resources for enhancing productivity in Bihar and eastern Uttar Pradesh

In India – Indian Council for Agricultural Research Research Complex for Eastern Region Patna
AK Sikka

India
R7839 Improved livelihoods – Bihar and Uttar Pradesh (UP)

In UK – Rothamsted Research, Commonwealth Agricultural Bureau International, University of East Anglia. In India – Indian Council for Agricultural Research, Research Complex for Eastern Region Patna, CIRRUS Management Services Bangalore. In Thailand – International Water Management Institute, Bangkok
John Gaunt

Uganda
R7856 Strengthening social capital for improving policies and decision-making in natural resources management

In Uganda – Africa Highlands Ecoregional Programme Uganda. In UK – Natural Resources Institute
Pascal Sanginga

Nepal
R7958 Developing supportive policy environments for improved land management strategies

In UK – Reading University, GAMOS Ltd, Silsoe Research Institute. In Nepal – Local Initiatives in Biodiversity Research and Development, Agricultural Research Station-Lumle, Nepal Agricultural Research Council
Chris Garforth

Kenya
R7962 Linking soil fertility and improved cropping strategies to development interventions

In UK – Imperial College at Wye. In Kenya – Kenya Forestry Research Institute, Kenya Agricultural Research Institute, International Centre for Research on Agroforestry, Maseno Regional Research Centre
Georg Cadisch

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

In UK – MRAG Ltd. In the Caribbean – Caribbean Natural Resources Institute St Lucia, University of West Indies Barbados
Caroline Garaway and Nicole Esteban

Bangladesh
R8083 Strengthened rural services for improved livelihoods

In UK – Rothamsted Research, Reading University, freelance consultant. In Bangladesh. – PRA Promoters Society
Stephanie White

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

In UK – University of Wales Bangor, Development Planning Unit University College London, International Development Department Birmingham University. In India – University of Agricultural Sciences Dharwad, India Development Service, BAIF Development Research Foundation, Best Practices Foundation
Robert Brook

Tanzania
R8088A Promotion of and support to the use of the Parched-Thirst (PT) Model v2.1 in Eastern Africa and development of version 2.2

In Tanzania – Soil and Water Management Research Group, Sokoine University of Agriculture Morogoro
Henry Mahoo

Tanzania
R8088B Improved research strategies to assist scaling-up of pro-poor management of natural resources in semi-arid areas

In Tanzania – Soil and Water Management Research Group, Sokoine University of Agriculture Morogoro, Ministry of Agriculture and Food Security. In UK – Reading University and freelance consultant

Ghana
R8090 Who can help the peri-urban poor?

In Ghana – Centre for Development of People, University of Science and Technology Kumasi
Korsi Ashong

India
R8100 Investigating improved policy on aquaculture service provision to poor people

In Thailand – Support to Regional Aquatic Resources Management Regional Office. In India – Gramin Vikars Trust Ranchi, Central Institute for Fisheries Education Mumbai, Indian Council for Agricultural Research New Delhi, State Departments of Fisheries in Jharkhand, Orissa, West Bengal
Graham Haylor

Bangladesh
R8103 Consensus for a holistic approach to rural livelihoods in riverine islands

In UK – Intermediate Technology Development Group, Stirling University. In Bangladesh – ITDG-Bangladesh
Stuart Coupe

Tanzania
R8115 Improvement of soil fertility management in rainwater harvesting systems

In Tanzania – Soil and Water Management Research Group, Sokoine University of Agriculture Morogoro Tanzania. In UK – University of Nottingham
Henry Mahoo

Tanzania

R8116 Improving management of common pool resources in rainwater harvesting systems

In Tanzania – Soil and Water Management Research Group, Sokoine University of Agriculture Morogoro. In UK – University of Nottingham
Henry Mahoo

Caribbean

R8134 Developing guidelines for successful coastal co-management

In the Carribean – Caribbean Conservation Association, University of the West Indies Natural Resources Management Programme. In UK – MRAG Ltd
Patrick McConney

Caribbean

R8135 Feasibility of alternative enhanced sustainable coastal resource-based livelihoods strategies

In the Caribbean – Sustainable Economic Development Unit University of West Indies Trinidad and Tobago.
In UK – freelance consultant
Dennis Pantin

India

R8192 Enabling rural poor for better livelihoods through improved natural resource management in SAT India

In India – Central Research Institute for Dryland Agriculture, All India Coordinated Research Project for Dryland Agriculture Anantpur and Bangalore, BAIF, Institute for Rural Development Karnataka, International Centre for Research in the Semi-arid Tropics
KV Subrahmanyam

Bangladesh

R8195 Integrated floodplain management – institutional environments and participatory methods

In UK – ITAD Ltd, Durham University and freelance consultants. In Bangladesh – Bangladeshi Resource Centre for Indigenous Knowledge, Centre for Natural Resources Studies, WorldFish Centre
Roger Lewins

East Africa

R8211 Understanding and enhancing youth livelihoods in rural East Africa

In UK – Reading University, ITAD Ltd, Save the Children. In Uganda – Matilong Youth Mixed Farmers Organisation, Department of Agricultural Extension and Education Makerere University, National Agricultural Research Organisation, National Agricultural Advisory Service, District Agricultural Training and Information Centre. In Kenya – World Neighbours, Department of Agricultural Extension and Education Egerton University, National Youth Forum, ITDG-Kenya
Kevin Waldie

Bangladesh

R8223 Consensus building in common pool resources: A learning and communications programme for the PAPD methodology

In UK – ITAD Ltd. In Bangladesh – Centre for Natural Resources Studies
Abigail Mulhall

Ghana

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

In UK – Overseas Development Institute. In Ghana – Institute of African Studies University of Ghana Legon
David Brown

India

R8280 Incorporating stakeholder perceptions in participatory forest management

In UK – Cambridge University. In India – Enviro-Legal Defense Fund, Institute of Economic Growth, Tata Energy Research Institute, Winrock International India Delhi, Indian Institute of Forest Management and Sanket Information and Research Agency Bhopal
Bhaskar Vira

Bangladesh

R8306 Better options for integrated floodplain management – uptake promotion

In Bangladesh – Centre for Natural Resources Studies, WorldFish Centre. In UK – ITAD Ltd, Reading University, MRAG Ltd and freelance consultants
Mokhlesur Rahman

Caribbean

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

In the Caribbean – Caribbean Natural Resources Institute Trinidad & Tobago, Caribbean Conservation Association Barbados. In UK – MRAG Ltd
Vijay Krishnarayan

Caribbean

R8325 Policy-relevant knowledge on feasible alternative natural resource-based strategies for enhancing livelihoods

In the Caribbean – Sustainable Economic Development Unit, University of West Indies St Augustine Trinidad & Tobago
Dennis Pantin

India

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

In Thailand – Support to Regional Aquatic Resources Management Regional Office Regional Office Network of Aquaculture Centres in Asia-Pacific. In India – Gramin Vikas Trust Ranchi
Graham Haylor

Bolivia

R8362 Validation and communication of a community-led mechanism for livelihood improvement of remote communities

In UK – Leeds University, Natural Resources Institute. In Bolivia – Acción Cultural Loyola Tarija, Protección del Medio Ambiente Tarija
David Preston

South Asia and the Far East

R8363 Enhancing development impact of process tools piloted in Eastern India

In Thailand – Support to Regional Aquatic Resources Management Regional Office Regional Office Network of Aquaculture Centres in Asia-Pacific. In India – Gramin Vikas Trust Ranchi. In Sri Lanka – National Aquaculture Development Authority. In the Philippines – Bureau of Fisheries and Aquatic Resources. In Indonesia – Directorate General of Aquaculture. In Lao PDR – Department of Livestock and Fisheries. In Cambodia – Community Fisheries Development Office. In Vietnam – Sustainable Aquaculture for Poverty Alleviation, Ministry of Fisheries.
In Nepal – Agriculture Information and Communication Centre
Graham Haylor

Caribbean

R8364 Promoting an holistic approach to agrochemical management in the Caribbean

In the Caribbean, space needed – Pesticides Control Authority, Caribbean Environmental Health Institute, Ministry of Agriculture St Lucia, Coordinating Group of Pesticides Control Boards, Caribbean Agricultural Development and Research Institute, University of the West Indies Trinidad and Tobago. In UK – MRAG Ltd
Hyacinth Chin Sue

R8365 Evaluating action planning for enhanced NR management in PU Kolkata

In UK – Stirling University, WRENmedia. In India – Institute of Wetland Management and Ecological Design, Centre for Environment Management and Participatory Development, Sociological Research Unit Indian Statistical Institute , Department of Fisheries Government of West Bengal.
Stuart Bunting

HTSPE Ltd

Thamesfield House, Boundary Way, Hemel Hempstead HP2 7SR, UK
Tel: 44 (0)1442 202439 nrsp@htspe.com

www.nrsp.org

in association with

Marine Resources
Assessment Group Ltd

18 Queen Street, London W1J 5PN

and

Development Planning Unit

University College London
9 Endsleigh Gardens, London WC1H 0ED