

Annex 7. Summary of Specialists Reports and Core Team Evaluations of Programme Performance and Management

1. Animal Health Programme (AHP)

1.1 Science

The projects covered in this report fall under four different categories of research. These are: trypanosomiasis, tick-borne diseases, zoonotic diseases and vaccine development.

The trypanosomiasis cluster has been active for the duration of the programme period. During the early phase of the programme, trypanosomiasis research was focused on non-tsetse transmitted *Trypanosoma evansi* infections. The tsetse-trypanosome interface later became an important area of study, looking at different approaches to vector control, improved and targeted use of trypanocide treatments, development of tsetse flies in the laboratory incapable of transmitting trypanosomiasis, and also through improving knowledge of the feeding habits and preferences of tsetse flies.

Tick and tick-borne diseases (TTBD) are another large group of diseases that affect livestock and the poor livestock keepers. Over the course of the programme, there have been several projects addressing the epidemiology, pathogenesis, diagnostics, prevention, treatment and immunoprophylaxis.

Zoonoses severely affect poor people. These diseases affect and can kill both animals and their owners. Tuberculosis and brucellosis are two of the major diseases, and there are different parasitic diseases such as hydatidosis and cysticercosis. Rabies is probably the best known of all zoonotic diseases.

The studies on East Coast Fever to identify the protective antigens of *T. parva* constitute the core of the vaccine development projects, but there are many others, including those that form part of the trypanosomiasis research activities (*T. evansi* particularly). There have been projects related to vaccination against rabies in jackals and dogs and the capripox vector (pox virus infecting goats) has been widely used and tested for its ability to induce strong immune responses. This methodology is a core competence of one of the industrial partners (Merial) and has been used in several projects.

The early research efforts were characterised by limited knowledge generation and little risk-taking. This improved significantly during the development of the programme with more attention given to applied issues and knowledge dissemination. The quality of the research under the AHP has, in general, been good with some very high impact publications in recent years and a trend towards a gradual increase in innovation. Overall the science quality may be characterised as good.

1.2 Impact

a. Direct Evaluations and Impact Assessment

In 2001 a study was undertaken by Landell Mills¹. This looked at an AHP project on mastitis in Tanzania and five zoonotic projects. (Zoonotic projects account for 12% of AHP research). The review indicated that the project had improved awareness of mastitis as a problem with cattle, and indicated a possible reduction in costs to farmers of £25 per year, through improved yields and a possible reduction in treatment costs. Although the project had included some uptake activities, it was felt that there was a need for more funding for dissemination.

The review of zoonotic diseases suggested that there were a number of indicators of impact, in particular in bringing veterinarians and medical doctors together to address the animal-human interaction. The economic implication of the work carried out on rabies infections showed the potential benefits of a vaccination programme, but there was no indication, at that time, of public sector commitment to follow through. The projects on sleeping sickness showed that instituting effective control of trypanosomiasis by treating domestic cattle could have a major impact on the morbidity and mortality of the surrounding populations. A cost-benefit ratio of 6.5 for the research was estimated. In addition, it was estimated that the research could result in an additional 500,000 Disability Adjusted Life Years (DALYs). This work has influenced Ugandan policy on the response to outbreaks of sleeping sickness. The first projects in this cluster predate the current RNRRS by 3-4 years, but the work has continued throughout the period of the strategy.

¹ A. Shaw and L. Sibanda, Evaluation of Selected Livestock Themes, prepared for DFID by Landell Mills, July 2000.

There has been much considerable effort over the last two years to assess impact in these areas, however, much of this appears to be in terms of the overall estimated cost of disease at national or regional level, rather than the impact of specific interventions. In addition, there is no field level assessment of rate of uptake and adoption.

b. Indications of Likely Impact

After 1999, there was a much bigger involvement of developing country institutions in determining project design. In 2001, the programme undertook a study to determine what should be the animal health research priorities for poverty alleviation. This study mapped the location of poor livestock keepers, identified the type of livestock that they were dependent on, ranked the livestock disease constraints affecting them and identified ways in which research could help to deal with these. On the basis of that review, the programme did appear to be prepared to close down projects, and focus on the areas where it assessed it had a combination of scientific comparative advantage, and potential relevance for poor people. The majority of AHP's projects fall into the inclusive category, i.e. providing outputs which are relevant to livestock keepers, including, but not specifically focussed on, the poor. Diseases and production systems relevant to the poor have, however, been prioritised. The programme has identified and explored some areas, in particular the relationship between animal and human health and zoonotic diseases, in a way which has centred on accessibility to the poor. Some of the work, for example on East Coast Fever vaccine, has a strong public goods element, but in response to the need for a cheaper vaccine which is more affordable to poor households. In the last few years there has been more emphasis on ensuring that the results of past projects are being properly packaged and made accessible to poor livestock keepers.

Some AHP projects have had relatively quick uptake, and have influenced policy. In particular, tsetse control in Uganda due to good linkages with, and involvement of, government ministries and research institutes. AHP has also worked well with international agencies in its adaptation of the FFS approach of FAO to livestock keepers. This has now been taken up by other organisations and donors.

In summary, AHP has developed a number of technologies and interventions which have the potential to improve the livelihoods of poor livestock keepers, and has achieved this in a way which had not been addressed by other researchers. There is, however, neither baseline evidence against which to assess this, nor impact tracking which will allow quantitative assessment of impact. It would also appear that AHP has been on a learning curve over the last five or six years on how to address the poor more directly, and how to involve the private livestock sector. In other instances, such as the project to provide basic training to enable those selling veterinary products in dukas in Kenya to give accurate advice to livestock farmers the vested interests were not successfully brought on board, and the project foundered as a result.

Researchers from AHP are members of two WHO working groups, on sleeping sickness and rabies, which have the potential for influencing the global agenda in these areas.

Finally, AHP and LPP appear to have worked together in a way which has allowed effective sharing of background studies and mutual development of dissemination pathways.

1.3 Programme Management

This programme underwent a major reorientation, partly in response to the White Paper, and perhaps also reflecting the orientation of a new programme manager. The revised strategy was concerned with focusing the programme, and two studies were commissioned to assist with this: a geographic analysis of the location of poor livestock keepers, and a needs analysis done using researcher and other stakeholder workshops and focus groups. This resulted in a decision to concentrate on particular skills and strengths, a focus on Africa, and cluster projects to achieve greater momentum and impact. The programme manager characterises the current programme as less heavily science-based and less 'run by scientists'. The refocusing activity required the exclusion of some lines of research within the AHP portfolio and this inevitably affected the funding of projects by the managing institution.

Following the refocusing, project cycle management arrangements were also more clearly defined: focused calls for concept notes are subject to formal review by a team of usually 5 or 6 scientists including at least one natural and one social scientist reviewer; review team findings are debated by the PAC; and concept notes are prioritised on the basis of available funds. A similar process is followed for proposals. The screening process prioritises proposals which have southern partner involvement, and this has led to the current situation where the larger portion of programme funds is spent in Africa on African scientists.

This programme is distinctive in the extent to which it has actively worked to establish longer-term cross-project partnerships with key southern institutions, and it has also cemented institutional links through informal support of PhD studentships. Active sharing within and between cluster groups is an important communications and implementation support mechanism. The programme makes use of a shared East Africa Co-ordinator (see Crop Post Harvest Programme for further details) to assist with these mechanisms.

Project teams have to comply with standard reporting requirements for quarterly and annual reports. Final technical reports are submitted to DFID, but the programme regards these as less important than other project outputs, including peer reviewed publications and dissemination materials.

2. Aquaculture and Fish Genetics Research Programme (AFGRP)

2.1 Science

The purpose of this programme is the “Productive benefits of aquatic resources for poor people generated and sustained through improved knowledge of aquatic stocks and their selection, enhancement and culture”.

The programme has three themes:

- **Seed Production.** The research topics include broodstock management, selective breeding and seed production. This theme also emphasises research on social and institutional dimensions, and is particularly focused on the integration of fish farming with rice cultivation in flood-plain areas in Asia. Integrated pest management and the harvesting of freshwater shrimps and snails are also considered important. The particular relevance of the research to poor farmers is strongly emphasised.
- **Aquatic Animal Health.** Since the commencement of the programme, research has been carried out on important fish and shrimp diseases, with impressive continuity in their research work on the epizootic ulcerative syndrome (EUS) which widely affects cultured fish in Asia.
- **Systems.** Aquaculture is researched as a part of people’s food production systems. Topics of investigation include the integration of aquaculture with irrigations systems and the importance to poor people of self-recruiting species of fish, which are sometimes looked upon as “weed-fish”. The links between fish, environment, farmers and their families, traders and consumers are highlighted, and a systems perspective is used to link local livelihoods and production contexts with rural and urban markets, and issues of global trade.

Gender is recognised as a crosscutting theme and the social roles of men and women are consciously included in aquaculture research.

The programme is managed and co-ordinated by the Institute of Aquaculture, University of Stirling and also includes (since 2001) the Fish Genetics component which was formerly managed by the School of Biological Sciences, University of Wales. This amalgamation appears to have strengthened the focus on impact and relevance to poverty reduction as well as maximising the synergy between these two closely related topics.

The Institute of Aquaculture has a longstanding focus on aquaculture in developing countries, has trained a large number of aquaculture specialists at BSc, MSc and PhD levels worldwide and is recognised as a world leader in its field. It has engaged in basic and applied research for many decades, in collaboration with international research partners. These are important strengths which are actively drawn on by the AFGRP programme which mainly focuses on applied research.

The programme has progressively placed greater emphasis on development relevance and the impact of its research, but it has maintained a strong record of publishing in peer-reviewed journals. Interdisciplinary approaches are increasingly emphasised in many of the research projects. The Programme Manager has a detailed overview and insight into the programme’s diverse research activities with an appreciation of their context within international research agendas and priorities, particularly through close collaboration with FAO and other international and regional research bodies.

The geographic focus is predominantly Asia, but there are an increasing number of projects in Africa. Aquaculture is most widely practiced in Asia (accounting for 95% of world production) and is important among small-scale producers as well as for industrial-type projects, but has huge potential in Africa in the long-term, despite initial difficulties introducing it.

The programme has a well designed website (<http://www.dfid.stir.ac.uk>) that is actively used. Amongst a range of promotional initiatives, the programme had a stand at the 2004 Asian Fisheries Forum which was well visited; AFGRP researchers were prominent amongst the speakers and their collaborators were among the prize-winners at the conference.

The evaluation of this programme concludes that although its contribution to new knowledge may have been greater, the overall scientific assessment is clearly positive, with major achievements in applied research, and with potentially major research findings which may benefit poor fish farmers.

2.2 Impact

a. Direct Evaluations and Impact Assessment

The main direct evaluation of AFGRP projects has been an evaluation of Fisheries Projects carried out by Cambridge Resource Economics² in 1999. This addressed all three fisheries programmes, with 5 case studies from AFGRP - 3 from aquaculture and 2 from fish genetics.

- Of these projects, the Cages II project was considered to have large-scale potential impact in Bangladesh, due to its integration with a large NGO network. The review felt, however, that this project had a resource-poor orientation.
- The Epizootic Ulcerative Syndrome (EUS) project was considered to have the potential for reducing economic losses by 10%, but no firm output has been seen as yet. It was, however, having a very positive impact on the environment. Ultimately this project was considered by the PM to be one of programme failures, because although the pathogen was identified, no effective way of managing it was developed, and the epidemic ultimately died out.
- The Laos rice-fish project operated at all levels of the A-H scale, but only involved a small number of farmers and the poorest were not participating. The real value of benefits from small-scale aquaculture was estimated to have increased by 20%.
- The two fish genetics projects reviewed have shown a strong production and productivity impact, but the GMT (genetically male tilapia) suite of projects was deemed to be probably most relevant to commercial fish farmers, due to the investment capital requirements, and the attitude to risk of economically marginalised groups.
- The Fish Genetics programme had formed a joint venture with the University of Luzon (Phil-Fishgen) to promote production, and the evaluation considered it appropriate to delink the commercial activities.

One recent project is examining the impact of production and marketing of freshwater aquatic products on rural livelihoods, and there is currently an epidemiology study in Vietnam which will assess the impact of fish disease projects. This is due to report in April 2005. Work has also been commissioned to develop a methodological approach to impact assessment, but this has not yet been implemented.

b. Indications of Likely Impact

As with many of the other programmes, AFGRP has become much more poverty-oriented in the past six or seven years, moving away from focussing on fish disease towards focussing on poor fish producers.

There appears to have been little consideration of the level of demand for research, at least from poor fish farmers. However, the programme works in close collaboration with a number of key national and regional institutions, and maintains both its awareness of ongoing issues and its ability to disseminate information through this network. AFGRP is only a part of the research programme carried out by the Institute of Aquaculture, and the research links developed in general benefit the AGFRP. The programme is also active in public debates and its regional partners, AIT and Worldfish in particular, play an important role in promoting the programme's outputs at regional and national levels.

AFGRP is participating in the Aquaculture Compendium, led by CABI, as a way of disseminating case studies from the experience of the AFGRP to a broader audience, which is part of a broader dissemination strategy. This is also the only programme which has devoted resources to informing the British public about its activities (the Eden project). Recent annual reports contain an impact framework, linked to the A-H scale, and identify steps to take at individual project, and project cluster level to improve the potential for impact.

2.3 Programme Management

The aquaculture and fish genetics programme is one of three (originally four) very small programmes (see below), with small budgets and project management teams, who are all advised by a small joint PAC. Attended by all of the fisheries programme managers, this PAC was initially perceived to function in a much more managerial, rather than advisory, role. This has changed over time, and the PAC is now playing a supportive role, focused on development matters rather than detailed technical project approval.

² Cambridge Resource Economics, Evaluative Review of DFID RNRRS Fisheries Sector Research Performance, 1999.

Aquaculture research has benefited from DFID funding since the mid-eighties, and this support was absorbed into the RNRRS. The current programme was formed from the amalgamation of two earlier separate aquaculture and fish genetics programmes. The 1997 White Paper and the PAC-commissioned review of the fisheries programmes were important triggers for strategy development, and a more focused logframe, which incorporated enabling and policy influencing activities, was developed in consultation with the PAC. The programme is currently regrouping projects into themes in order to package and deliver outputs effectively, and is giving a high priority to supporting dissemination and uptake promotion.

The aquaculture programme is distinctive in that its project cycle management is informal. The programme manager does not use competitive calls for proposals, but uses an informal process of identifying concept areas and setting up consortia to prepare proposals. The programme has relied heavily on the PAC to scrutinise these concept notes and proposals. This approach is partly rationalised on the basis that with a very small programme, which may be capable of funding only three projects at any one time, it is more cost-effective to 'pick winners'. (However, it is noteworthy that other equally small programmes have made use of the more open competitive process.)

In this context, identification of demand is an informal process, drawing on the grass-roots knowledge of southern partners and using participatory and action research as well as northern researchers' expert knowledge. Latterly, the programme has also begun to provide some preparation stage funding to enable project teams to write strong concept notes and proposals.

3. Crop Protection Programme (CPP)

3.1 Science

The purpose of this programme can best be described as furthering integrated pest management (IPM), emphasising a combination of different pest control measures to reduce the impact of pests and to increase yields in a sustainable manner.

Over recent years CPP has focused on the following themes:

- biological control, especially microbial control;
- plant diseases, especially virus diseases;
- IPM strategies within important crops;
- alternative low-cost and sustainable pest control techniques, eg use of pheromones.

Since the start of the programme CPP has been divided into 6 production systems (and 10 sub-groups): Forest-Agriculture, Hillsides, High Potential, Land/Water Interface, Peri-Urban and Semi-Arid.

The five largest production system units (2002-2005) have been (budgets in £ x1000): Forestry-Agriculture (FA1 herbaceous crops) £2.05M, Peri-Urban (PU) £2M, Land/Water Interface (LW2 rice-based) £1.95M, Semi-Arid (SA2 cereal-based) £1.6M and Hill-Side (HS) £1.6M. (HS production system is nearly totally dominated by the potato cropping projects in Bolivia.)

CPP operates with 19 thematic clusters based on crop commodity within the six production systems. The cluster strategies are discussed with PA and PAC once a year. Recently the cluster strategy has been strengthened to benefit from the synergy between related projects. The five largest clusters in 2004-2005 are: roots and tubers (£531k), horticulture (£492k), semi-arid cereals and legumes (£421k), rice systems (£379k) and maize (£379k). In many of the clusters covering commodities such as cereals, roots, bananas and vegetables, the majority of beneficiaries targeted are smallholder rural or peri-urban farmers. A few clusters are not commodity based, eg migrant pests and the whitefly initiative. Migrant pests within the semi-arid production system include locusts, armyworms and *Quelea* birds. Forecasting systems have been developed for several of these pests. The white-fly initiative is important for gaining an understanding of the ecology and dispersal of this insect group of vector transmitters of serious virus diseases on, for example, cassava, sweet potatoes and vegetables.

Ten projects of the CPP were selected for evaluation, covering important commodities for small-scale farmer in sub-Saharan Africa and South Asia. The projects have focused on low-cost and alternative non-chemical pest methods, which can easily be implemented by the farmers to reduce the impact of pests, increase yield and income and reduce the risks of pesticides to human health and environment.

CPP has built on the previous Integrated Pest Management Strategy Area (IPMSA) 1989-1995, but it excluded several countries that were included in IPMSA (eg Central American countries, especially Costa Rica, Caribbean countries, Mexico, Egypt and Thailand). This has created discontinuity in British efforts in these areas since 1995.

CPP is the largest and most diverse of the 10 RNRRS programmes supporting 60-70 operational projects at any one time with a total budget of £4-5m per year). Many projects are still ongoing and will end in March 2005. CPP has recently been extended to March 2006.

CPP has jointly funded or linked projects with other RNRRS programmes: Plant Sciences, Crop Post Harvest and the Livestock Production Programme.

In its strategy to promote outputs, CPP has focused on several levels of end users: policy level (eg biocontrol guidelines and regulation), NARS, NGOs and national extension services (IPM techniques, publication of manuals) and small-holder farmers, both in rural and peri-urban districts (new IPM methods available). The PAs and PAC have continuously monitored project outputs to ensure that all project stakeholders had access to the achievements.

Geographically, the focus of CPP is on approximately 20 countries in sub-Saharan Africa, South Asia and Latin America. Of the listed 325 CPP projects with in-country collaborators 63% of the projects were in Africa (of these 25% in West Africa and 45% in East Africa), 28% were in Asia (of these 51% in India and 11% in Bangladesh) and 9% were in Latin-America, of these 33% in Bolivia.

Following the White Paper, from 1999 the CPP placed a greater emphasis on the elimination of poverty and the promotion of environmental sustainable plant protection technologies. This is clearly reflected in project titles during the 10 year period. The log frames of the CPP projects had a major revision in 1998. In 1998 the CPP reduced the number of inputs given in The Yellow Brick to two:

- strategies developed to reduce the impact of pests on poor people's crops;
- promotion of these strategies.

The two outputs are clearly linked to the revised log frames for 2003-2004 for all production systems within the CPP. A list of specific indicators of achievement is given for each production system in the log frame.

An excellent CPP website was launched in 2003 and contains much relevant information (structure, strategies, outputs, current projects etc). www.cpp.uk.org

The CPP has produced a long list of publications for international journals, extensive manuals on IPM, on pests and natural enemies and overviews of production constraints in cropping systems.

The risk of pesticides to the health of poor farmers, and to the environment have not been strongly emphasised in the CPP-projects, and in some of the projects such issues should have been more in focus.

In general the CPP-projects evaluated are not dominated by cutting-edge natural science with new high-risk technology, but are relying on and developing crop protection methods, such as biological control of pests, proven to be successful in other tropical and sub-tropical areas. The majority of small-scale rural and peri-urban farmers of a particular region are the projects beneficiaries, once the outputs have been implemented by the research community, NGOs, extension service and the private sector. The projects hold a relatively high score in most cases: some variation can be seen, eg in dissemination, but often a subsequent project will continue this process.

In general, all the evaluated CPP projects scored highly on all 5 criteria, but not usually in the highest category. Nevertheless CPP can be considered to be of high quality.

3.2 Impact

a. Direct Evaluations and Impact Assessment

CPP, being the largest programme, has a particularly challenging task in measuring impact. The programme contains 6 production systems, each with an individual purpose, each of which contains two outputs, in terms of strategy development and strategy promotion. The indicators of achievement of the outputs are detailed in terms of individual project purposes. The current structure of the programme, and its logframes, was influenced by an OPR undertaken in 1998.

A research evaluation into Cassava Mosaic Disease (CMD) in Uganda³ was undertaken by DTZ Pidea Consulting, as part of an evaluation of selected RNRRS research themes. The evaluation makes clear how difficult it is to attribute impact to specific projects, and even to DFID itself. The DFID-funded work on CMD started in 1991, prior to the current RNRRS, and only one of the projects fell fully within the 1994-2004 period. In addition, the evaluation identifies six other major donors, including the National Agricultural Research Organisation (NARO) in Uganda, who were funding work on CMD. This issue was reinforced in discussions with researchers in NARO when the core team were in Uganda. An evaluation of economic benefits to research in cassava in Uganda indicated a cost-benefit ratio of 1:22 by 2003, but DFID funding in recent years had been very minor, and it was impossible to attribute impact within the national programme.

The PIEDA report also looks at the impacts of the overall CMD strategy. The review estimates a return to expenditure on development, multiplication and distribution of CMD resistant varieties of 33:1, measured in recovery of cassava production. There is also indication of institutional spin-off (the establishment of an IITA root crop research unit) and a 'research to farmer' infrastructure of technology transfer, which could be used for other crop disease threats. This work has continued relevance, as cassava viral diseases are continuing to spread in other East African countries.

³ DTZ Pidea Consulting, Cassava Mosaic Virus Disease in Uganda, November 1998.

There have been a number of impact assessments done in recent years, as part of programme monitoring. These inevitably show only limited adoption, though a study on IPM-Chickpea production in Nepal indicates a high level of informal uptake even at the mid-term review stage. These kinds of assessments are useful as project management tools, and indicators of success, but do not address issues of longer-term adoption outside of the project area, and broader impact.

During the field visit to Uganda, the evaluation team was presented with the draft reports of impact assessments for two CPP projects implemented by AT Uganda: R8104 on Promoting Potato Seed Tuber Management for increased Ware Yields in Kapchora, Eastern Uganda; and R8105 on Farmer Led Groundnut Multiplication. The projects had carried out surveys of beneficiaries and non-beneficiaries and had developed quantitative and qualitative assessments of project success in achieving both outputs and impact. Although both studies are open to criticism, particularly in terms of timing of impact assessment, and the fact that there is no attempt to assess any indication of adoption outside of the project area, they are good examples of efforts to give robust estimates of project achievements and constraints encountered.

The CPP has developed an impact assessment strategy in recent years. They had budget provisions for undertaking case studies on impact, but the programme manager was informed in 2002 that this should be invested in the PARC impact assessment tools. CPP now has plans to supplement this analysis with case studies to complement the PARC work. Reporting on recent projects also indicates that impact assessment is being built in more carefully to the project design.

CPP has also had impact on macro-level policy change, most notably in initiating change in biopesticide regulatory legislation in response to constraints identified by projects. The use of biocontrol was also adopted as part of government policy in armyworm management in Tanzania. The programme is now putting considerable effort into tracking impact on policy.

b. Indications of Likely Impact

CPP has moved towards a more demand driven approach since 1995, and it defines this in terms of a combination of using secondary needs assessments, carried out by other organisations, programme development studies commissioned by CPP itself, and from previous project findings. In addition, stakeholder workshops held before projects commence can improve the probability of successful outputs and uptake. A study undertaken in the late 1990s addresses the implications for CPP of the SL approach.⁴

There have been a number of methodological studies commissioned by CPP, to assist them in assessing impact. A CPP publication, *Enhancing Impacts*⁵, identified particularly effective partnerships for achieving results in this area.

The programme has used a variety of dissemination approaches in communicating research outputs: cartoons, radio soap operas, and photo competitions, as well as more traditional articles and presentations. A study was undertaken on promotional strategies in 2002 and in 2001 the CPP task force on uptake and adoption identified five project clusters which should be considered for post-project promotion. In a number of cases, this has led to uptake projects. Particular commodity clusters have developed their own promotional opportunities and strategies.

CPP contributes to the financing of the regional coordinator in East Africa, which gives them a nationally based intermediary for improved access to policy processes, and an informed source on appropriate national partners.

3.3 Programme Management

The CPP currently has a portfolio of approximately 60 projects, and had approximately 90 at its peak. The size of the programme is partly explained by the strong pre-RNRRS relationship between crop protection scientists at NRI and DFID's natural resources team under the integrated pest management research programme. The programme management team is correspondingly large with project coordinators, a social development adviser and a communications support team as well as the programme manager and deputy programme manager. This team is further supported by a large group of programme advisers, engaged for a number of days each year as required, and taking individual responsibility for particular commodities. The large crop protection PAC also appears to be slightly different from the others, with some members representing key stakeholder institutions as well as attending as individual experts.

⁴ H Warburton and A Martin, *Pest Management and Poor People's Livelihoods*

⁵ M. Blackie and Gibbon, *Enhancing Impacts*, 2003

This programme has commissioned various studies to facilitate strategy development and prioritise commodities and areas for study, and an important output to purpose strategy exercise in 1998 led to an initiative to bring projects into clusters. In 1999 a further review exercise examined the livelihoods dimension in the programme. Over the last four years, projects reflect an increasing trend towards policy advice and guidance, dissemination and efforts to strengthen uptake pathways.

The CPP has continued to apply the competitive funding process largely as originally specified. Calls for concept notes are circulated to interested parties as well as being placed on web sites (in recent years more non-UK researchers have been included). Programme managers examine concept notes and the majority are presented to the PAC for consideration.

Possibly because of its scale, CPP has taken a rather different stance on supporting proposers. Rather than providing direct support as many other programmes do, this programme has tended to link them with experienced partners who could assist them to prepare concept notes and proposals. Capacity building is fairly hands-off, limited to the facilitation of PhD studentships, and, informally, through supporting attendance at workshops and conferences.

Project monitoring is formal. The programme has reduced the project reporting requirement to two progress reports and an annual report. The annual report is reviewed by the programme manager and programmes are offered feedback where necessary. No formal independent evaluations are carried out, but project leaders prepare self-assessments, particularly as part of the process of proposing follow-on project funding. Final technical reports are all subject to formal review by specialist programme advisers, and PAC members also get involved in many of these reviews.

4. Crop Post-Harvest Programme (CPHP)

4.1 Science

The CPHP strategy was planned to operate over a ten year period and commenced in 1995. It was charged with carrying out research in the natural and social sciences aimed at improving the storage, processing and marketing of crop products in target countries.

Over the 9 years of the programme from 1995 to 2004 crops featured in the CPHP have been; cereals, roots and tubers, legumes, oilseeds, horticultural crops and plantain/bananas. The investment in CPHP amounts to £24m across five livelihood themes; market access, processing, storage, food safety and institutional arrangements for technical innovation.

The overall goal of the CPHP was the improvement of productivity and productive potential in the key areas and systems through a reduction in post harvest losses, and development of processing and marketing innovations. The research themes are focused on this goal by attempting to:

- reduce post-harvest losses through reduced perishability, more effective storage and handling and improved access to transport;
- identify and exploit market opportunities and remove constraints to market access;
- reduce drudgery and release labour for on- or off-farm activities through more efficient processing;
- improve the quality and add value to primary crops through processing technologies and improvements in storage and handling;
- improve the flow of technical information to all in the chain from production through to consumption via institutional development;
- improve opportunities for on- and off-farm employment through backward and forward linkages in the agricultural sector and the development and management of small enterprises.

Several interim reappraisals of the entire RNRRS have been conducted coinciding with changes of government and more recently refocusing of DFID policies. The impact of these realignments on the CPHP has been:

- a shift from technically-led to demand led projects;
- a shift from UK-led to stakeholder-led projects;
- a strong emphasis on poverty alleviation benefits arising from research.

The CPHP is designed to benefit people involved in post-harvest commodity systems by providing them with opportunities for enhanced income, employment and food supply. A common objective in all work is to improve food security of poor households. Outputs specific to each production system are targeted as follows:

- **Peri-urban interface:** Strategies which increase availability and improve quality of horticultural foods and provide better access to markets.
- **High potential system:** Strategies which increase availability and improve quality of cereal and horticultural foods and provide better access to markets.
- **Forest-agriculture interface:** Strategies which increase availability and improve quality of root crop and horticultural foods and provide better access to markets.
- **Semi-arid system:** Strategies which improve food security of poor households through increased availability and improved quality of cereal and pulse foods and better access to markets.

From its inception to date, 154 projects have been commissioned under the CPHP. As a broad generalisation, projects in the early part of their life tended to be technically-oriented and as they, and the programme became mature, implementation and dissemination became larger components of the projects. Similarly, as the programme matured, the focus shifted from being life-sciences dominated to having larger elements of socio-economic material.

The projects have developed and disseminated a wide range of technologies, protocols, strategies and policy recommendations in Zimbabwe, South Africa, Mozambique, Malawi, Zambia, Namibia, Uganda, Tanzania, Kenya, Ghana, Nigeria, Benin, India and Bangladesh.

The specialists' evaluation has concluded that overall CPHP activities have yielded results of high scientific standards. The CPHP is overall a very successfully commissioned, managed and conducted R&D programme. It is not surprising that, at the outset, the programme tended towards "hard science" with somewhat less emphasis on implementation in the field, but later moved towards a "softer" science approach with clear impact-oriented aims. The programme management team have kept well on top of all the organisational, managerial, monitoring and evaluation issues and have regularly reviewed their approaches and practices in these key areas. Not every project has been successful but then it would not be a research programme if they had. Some of the main "failures" such as the work on entomopathogenic fungi and bacteria produced some of the best science.

4.2 Impact

a. Direct Evaluations and Impact Assessment

CPHP has had three sets of logframes since 1994. Initially there were eight, two each for four production systems, which were then consolidated into 4 in 1999, and finally to one logframe for the programme as a whole in 2002. All these changes were made with DFID's agreement.

As with the other research programmes, there was an evaluative review of a research theme in 1998, as part of the process of assessing the relevance of research to the pro-poor policy changes which took place in 1997. For CPHP, the theme selected was control of the large grain borer (LGB) in Tanzania and Ghana.⁶ There are issues of attribution in this work, as DFID funded only 45% of the research into LGB that the review identified, and of that only 22 % was within the RNRRS, the rest being bilaterally funded. The review indicated that in Tanzania there has been lasting impact of the research, in terms of improved control measures, resulting in considerable monetary benefits. However, there was no attempt to assess the distribution of these benefits between types of farmers, nor to identify any constraints to adopting control measures. Similar results, though of a lower monetary value, were found for Ghana.

In 2000-1, CPHP decided to review its own programme in the light of increased market liberalisation in Sub-Saharan Africa, and DFID encouragement to focus on uptake and impact. A study was undertaken to improve the quality and sustainability of research partnerships, and increase the relevance and ownership of CPHP outputs with target institutions⁷. As a result of this, in 2002, the programme adopted a Partnership for Innovations Approach, which involves creating project coalitions between governments, research institutes, NGOs and the private sector. This is currently being evaluated independently, and initial results from this are promising, finding that this approach is more likely to lead to innovation than a more traditional research and dissemination model. It is still early to find much evidence of impact from projects that have only been running for 2-3 years. However, some of the coalition projects follow-on to earlier CPHP projects, and the coalition approach does appear to be generating more ownership and involvement of uptake organisations and agencies. The innovation approach also appears to bring weaknesses in the system to the forefront, for example with agricultural extension systems, and to encourage coalitions to be more realistic about what kinds of outcomes are possible. Field interviews in Ghana and Uganda identified considerable support for the approach, though in Asia there was rather more concern over the more interventionist management style that it was felt resulted.

CPHP has had a monitoring and evaluation adviser since 1999, and there is currently a three phase 3-year evaluation plan. The first phase started with the commissioning of thematic reviews in March/April 2004. The first two of these, on marketing and on storage, have reported. The storage review indicates that CPHP has certainly met its programme output target in this area, but suggests that a programme of fewer and longer projects could have been more effective. The marketing review explores the benefits and costs of the coalition approach, and questions whether there is always the capacity for southern institutions to take the lead in coalitions. The reviews evaluate programme process and outputs, but do not examine the adoption or impact of the outputs produced.

The programme is also introducing a set of indicators for monitoring impact.

⁶ This was carried out by DTZ Pieda in 1998.

⁷ S Biggs and M Underwood, Review of the Crop Post-Harvest Research Programme: Partnerships and Innovation Systems, September 2001.

b. Indications of Likely Impact

The programme has moved away from Calls based on country framework documents, where advisers went out to target countries and discussed priorities with the NARS and the DFID bilateral priorities, to the development in 2002 of regional strategies by the various coordinators.⁶ The programme has moved away from a production systems focus to a geographical focus. A number of the regional strategies have identified themes, and in Accra, there was a theme prioritisation workshop, which involved a wide range of local stakeholders, including end-user groups, and which had a major influence on the regional strategy. CPHP has put considerable effort into ensuring that its projects properly reflect national priorities and have local ownership.

There has also been care taken to develop appropriate dissemination approaches. A dissemination strategy was developed as far back as 1996, which focused on the scientific community both in the UK and overseas. This has since evolved to include broadcasting, (including soap operas) training manuals and newsletters. There are instances of good communications leading to involvement of new organisations in projects, for example, the establishment of an association of women cassava growers, in conjunction with a private company, to benefit from the work undertaken in Ghana on commercialisation of cassava.

The increasing involvement of national organisations as partners through the coalition process (see the Annual Report 2003-2004) is a positive indication of more potential for uptake and dissemination by intermediate organisations.

4.3 Programme Management

The CPHP is a large programme. It established a regional structure in 1998, with coordinators covering East, West and Southern Africa, and (until recently) South Asia (although with slightly different models and institutional arrangements for each). Coordinators have essentially become research managers conducting decentralised priority-setting and monitoring and evaluation of projects. Capacity building of national partners is an important function, as is encouraging science leaders to link to national policy processes such as PRSPs.

Notably, the CPHP PAC has undertaken a formal review of its own operations. (The report of this review is formally part of the programme output documentation.) This PAC sees its role as strategy rather than management. It commissioned a set of eight issues papers to help set the new programme direction at the outset, and played an active role in reorienting the programme following the 1997 White Paper.

This programme has undertaken some of the most fundamental strategic thinking of all the programmes, and has radically refocused its activities around innovation systems, and particularly the notion of partnerships for innovation. This strengthened the programme's focus on using regional linkages to build stakeholder ownership - in partnerships including researchers, producers, intermediate organisations, business systems etc. The programme devotes very substantial efforts to establishing partnerships: operating a model which is more than a basic contractual arrangement, in which partners steer projects, add resources and review performance. This is perhaps the most extreme variation from the research contracting norm of RNRRS but represents very good practice.

In the last few years, calls for concept notes, although based on programme wide priorities, have been originated in the regions, and this has significantly increased the number of Southern institutions bidding and winning contracts, to the point where approximately 70% of project expenditure is now through Southern partners. The creation of a Regional Advisory Committee was a further innovation: the role of this committee is to screen concept notes for their relevance to regional researchable problems. A shortlist of concept notes is then submitted to the PAC, which screens against scientific criteria.

With respect to monitoring and evaluation, the CPHP appears to be among the most rigorous, requiring full quarterly and annual reports and undertaking what projects have described as rigorous and demanding review missions including field visits and stakeholder consultations by the review team.

The CPHP also places very great emphasis on capacity building, facilitating postgraduate qualifications, providing proposal writing training courses and training of trainers in research management skills, but also empowering southern research organisations as part of the process of building institutional relationships.

⁶ CPHP has more regional coordinators than any other programme, having them in Kampala, Accra, Hyderabad and Harare.

5. Fish Management Science Programme (FMSP)

5.1 Science

The purpose of this programme is “Benefits for poor people generated by application of new knowledge to fisheries management systems”.

The programme addresses both capture and enhancement fisheries. It intends to contribute toward benefits at the community level and evaluates options for community participation in management and reduction of resource use conflict.

The programme is organised into five themes with eleven clusters:

Product Theme	Project Cluster
i. Information to inform management-research and influence policy	a. Databases of information b. Livelihood appraisals c. Impacts of climate change
ii. Information systems to support the co-management of fisheries important to the poor	d. Information requirements for fisheries management e. Stock assessment guidelines
iii. Fisheries assessment methods to inform management	f. Bayesian stock assessment and management with limited data g. Generic management guidelines
iv. Pro-poor capture fisheries management strategies	h. Control of foreign fisheries i. Floodplain fisheries management
v. Pro-poor enhancement fisheries management strategies.	j. Enhancement of inland fisheries k. Enhancement of marine fisheries

The FMSP programme has projects that address both basic science (eg modelling of fish stocks) and applied (eg fisheries management solutions and optimisation strategies for fisheries enhancement through stocking) in recognition of the fact that many marine and freshwater fisheries resources are over-fished and badly managed throughout the world.

The Programme operates with three interrelated and overlapping phases:

- basic ecological research to assess the responses of ecosystems to different management systems;
- development of results into appropriate tools for fisheries management based on well founded scientific research; and
- assessment of the socio-economic implications of alternative management strategies that stem from questions of resource ownership and promotion of research outputs.

Since 1999/2000 the programme has undertaken livelihoods appraisals and examined institutional arrangements suitable for management and uptake.

The programme has largely aimed at research which addresses strategic and policy levels, and towards capacity building in order to contribute towards creating enabling environments that will finally benefit poor communities.

The geographic focus of FMSP during the last four years has been on:

- East Africa (Kenya and Tanzania) for marine fisheries research, with additional minor inputs into Indian Ocean small island developing states;
- South and South East Asia (Bangladesh, Cambodia, Lao PDR and Vietnam) for inland fisheries research;
- India (West Bengal, Orissa and Andhra Pradesh) for the promotion of existing FMSP outputs.

The programme is managed and coordinated by Marine Resources Assessment Group Ltd (MRAG), London. MRAG has a core staff of about 30 specialists and a large international network of associations and collaborations with academic institutions, private organisations and renowned scientific experts. In addition to DFID and FMSP, MRAG's services have been utilised by several international development agencies, government departments, private organisations and commercial companies.

Several of FMSP's scientists are recognised to be in the forefront of research in their fields of expertise, and much of their work may be characterised as cutting-edge science, both in natural sciences and within interdisciplinary fields. Their publications in peer-reviewed journals are of high calibre.

The management of the programme appeared to work well as a scientific team, aware of one another's various capacities and capabilities. They engaged in fruitful discussions and were responsive and efficient towards diverse requests and queries during the review process.

An important component of FMSP's programme has been the production of software packages for fisheries stock assessment. These packages are now well publicised. A separate technical assessment of these were made. As with many modelling approaches this raised some interesting questions and issues.

It should be pointed out that there is a potential for overlap between FMSP's focus on "enhancement fisheries" and AFGRP's "aquaculture". Close cooperation between the two programmes has ensured that this has not become a problem or a duplication of research effort. To the contrary, they even implemented project R7917 jointly.

The FMSP has a useful and accessible website (<http://www.fmsp.org.uk>) with relatively up-to-date lists of their publications. FMSP scientists were also present at the 7th Asian Fisheries Forum and their presentations were considered innovative and high quality by Asian and international delegates.

The FMSP has scored highly on all science criteria used in the evaluation and must be rated as a major scientific success.

5.2 Impact

a. Direct Evaluations and Impact Assessment

The main direct evaluation of FMSP projects has been an evaluation of Fisheries Projects carried out by Cambridge Resource Economics⁹ in 1999. This addressed all three fisheries programmes, with 3 case studies from Fisheries Management.

Of these, one project, which addressed the control of foreign fisheries, mainly had an impact on national revenues, but had no poverty orientation.

The Bangladesh flood plains control project had huge potential, but at that time, no quantification. A concern was raised over poor local ownership.

The Laos community based fisheries was assessed to have strong poverty impact, through community development activities using the proceeds from the managed fisheries. Here the possibility of environmental impact was raised, if there was insufficient capacity at management level.

Most FMSP projects are characterised as enabling, ie they help create an environment which can support and enable improved impact on poverty. This is particularly true for projects addressing capture fisheries, which are usually common pool resources. It is more feasible to orient enhancement fishery projects towards poor villages, and groups of people. The PM has commissioned a study to evaluate the impact of the enabling projects which they undertake, which is due to report in February 2005. This will address impact against programme purpose and against the MDGs.

b. Indications of Likely Impact

Since 2001, the focus of the FMSP has been guided by a strategic review which examined, at country level, the dependence on fisheries, the country's poverty status and its vulnerability to changes in fisheries. As a result, there was a greater emphasis on East Africa. After this a workshop was held in Bangladesh to assess demand, and visits were made to SE Asia, E Africa and India, which then informed project choice. In some areas, such as India, focus was on uptake projects. The logframe was rewritten after this review.

⁹ Cambridge Resource Economics, Evaluative Review of DFID RNRSS Fisheries Sector Research Performance, 1999.

The programme takes the view that impact has to be built in from the beginning of a project, through choice of partners. The programme has strong project level collaboration with international agencies and centres such as FAO and Worldfish Centre, with whom they share outputs and coordinate approaches.

In the last two years there has been an emphasis on promoting the uptake of existing research products. Eight uptake projects have been commissioned since 2002, using a variety of approaches from participatory workshops to the development of toolkits.

The latest annual report assesses the extent to which FMSP outputs have addressed the OVI against purpose contained in the latest logframe. As previously mentioned, there are considerable problems of attribution for the types of enabling projects that FMSP, because of the nature of the area it covers, has funded. The OVIs are expressed in very general terms, as are the outputs of the projects, but the overall correspondence appears to be satisfactory.

FMSP has taken seriously the need to address impact but would have been helped by greater guidance on how to assess this for enabling projects, and particularly on how to monitor uptake of regional and international public goods, after projects have ended.

5.3 Programme Management

Fisheries management science research was also supported by DFID before RNRRS began, and much of the thinking was reflected in the RNRRS priorities. The White Paper and PAC-commissioned review of the fisheries programmes represented an important change point for the programme, improving both the geographic focus and the orientation towards the livelihoods of poor fishers. The programme used workshops to help define its future priorities and to redefine its portfolio against these: while some technical research issues remained, the programme began to emphasise information and other tools for community and co-management, and to focus on policies, institutions and processes to facilitate uptake. Today the programme is organised around themes and clusters.

The programme can trace a change in the nature of its partnerships which reflects the evolution of this strategy. Until 2000, partners were primarily researchers, but since then the programme has partnered with institutions for dissemination and uptake in an effort to engage those who should be applying project outputs.

The programme has issued two types of calls for concept notes: open calls and prescriptive calls. Like many other programmes, there have been more of the latter as the strategic framework for the programme has become more focused in recent years. The standard methodology is followed: all concept notes are considered by the PAC, and two PAC members will review those which progress to full proposals. Occasionally a specialist reviewer will be commissioned to supplement their evaluation. The programme management team supports proposers to prepare their submissions, and this has become increasingly important as the programme has sought to award more projects to southern researchers.

As a small programme with only five to ten projects active at any one time, it is possible for the programme management team to link directly with projects on a regular and informal basis. More formal contact arises through the quarterly and annual reporting cycle. No formal independent evaluations are carried out during project implementation, although final technical reports are subject to review by two independent referees.

The programme does not prioritise capacity building for researchers other than as an informal action learning process which happens through the normal project management cycle. Capacity building of institutions for dissemination and uptake is described as an aspect of many projects and training of trainer courses have been undertaken for this purpose.. Specific training of researchers to facilitate project implementation has also been undertaken (for example, socioeconomic data collection methodologies and stock assessment techniques).

6. Forestry Research Programme (FRP)

6.1 Science

The FRP has been built on major research efforts that were supported by ODA/DFID prior to RNRRS in 1994, but given new direction and impetus during the RNRRS period.

As at the end of 2004, FRP appears to be an effective programme in respect of the quality and focus of the work supported together with the structures and systems in place to underpin these.

FRP is now a solidly pro-active programme whereas in 1994 it was generally reactive, within a very broad topic range. It might be argued that it is too restrictive. Given the project topics being funded at the end of the reviewed period, the logic applied in their selection and their strong relevance to DFID's wider agenda, it would be churlish to criticise.

There does remain a question over whether FRP was correct to continue funding the agroforestry and forest modelling work for as long as it has. The programme manager has noted the spiralling costs of such work and the relatively limited impact on the target beneficiaries, especially in the short-term. Such work would seem more appropriately funded by ICRAF and CIFOR, for example, especially in the light of recently increased DFID funding to the CGIAR. In this regard, there would seem to be no case for FRP funds to go to either CIFOR or ICRAF and indeed, there is at least a moral argument that these organisations should be actively seeking to co-fund FRP initiatives.

These comments lead directly to the more general argument at the core of DFID RNR research on the extent to which "Blue Skies" research is a legitimate charge on development funds. In the absence of clear resolution of this debate and in response to DFID guidance on what it expects, FRP has, since 1997, adopted a tightly focused approach with the PMT and PAC very much in the driving seat. There has been good identification of new areas, Carbon funds and the new approach to water issues being good examples.

There is heavy reliance on the problem analyses and on the skills and experience of the PMT and PAC to define research priorities through the calls for Concept Notes and during the preparation of PMF. Although the PAC and PMT has a wide-ranging and very high level of internationally recognised expertise, it is not clear that the balance of expertise, which has remained broadly similar over the period under discussion, is fully consistent with the work now being commissioned. There is good use made of external expertise, when the need is identified from within FRP but it would be useful to see certain areas being permanently strengthened within the PAC and thematic specialists.

FRP itself mentioned that political science was one gap and this is agreed with. However, there seems to be a more serious gap in the wider field of economics. A number of the PAC have solid knowledge of certain aspects of economics but both developmental economics, relevant for service values for example, and commercialisation economics seem to be thinly covered. The book published under R6914 on the economics of participatory forestry is solid but does not address the real complexities of the extensions into, for example, decision making with multiple opportunities and limited capital.

There is a fast-moving and potentially useful area in business economics dealing with portfolio theory and risk management that could potentially make useful contributions within some of the latest project clusters in which FRP is now engaging. More engagement with small-scale commercialisation expertise within PAC would also be useful, given the latest directions being followed.

FRP has developed links with possible co-funders such as the EU and GTZ, as well as organisations such as ETRFN and FAO but requires institutional support to realise the potential. FRP has also used its funds to prepare issues papers, support meetings and encourage project work in areas of current DFID interest, including forest law enforcement. The stability of the PAC and the networks of the individuals on it have helped enormously in this, as has the effective working relationship that has developed.

The PMT expressed disappointment at their general lack of success in securing support from most DFID country offices. It would be better for FRP to now regard DFID country offices as simply potential beneficiaries.

The current Programme Manager plays a central role in maintaining the science quality of FRP, giving extremely good value for money.

Over the period evaluated, there have been a number of failures in projects, few have been total failures but there has been sub-optimal achievement. In the main, where failures have been due to management and/or planning, systems have been tightened, resulting in the system as presently used.

Overall the FRP has scored well on most science criteria and must be regarded as a solid scientific success.

6.2 Impact

a. Direct Evaluations and Impact Assessment

FRP scores its outputs in their logframe in their annual report. In 2003-2004, 25 out of 41 outputs are scored as achieved, and 14 of the remaining 16 apply to projects or clusters which are still ongoing.

In 1999, there was an external evaluation of forestry research themes by DTZ Pineda. The themes selected were Dry Zone Hardwoods in India, Tree Fodder in Kenya, Carbon Sequestration in Southern Mexico and Sustainable Beekeeping in Tanzania. Of these, only the carbon sequestration project lies entirely within the time period of the current RNRSS, the others started earlier, in the case of dry zone hardwoods as far back as the mid-1980s. The review identifies monetary benefits on the basis of participating farmers, a fairly small number in some of the projects, and in some cases the amount is fairly modest. However, the review points out that the financial gains are going to the very poorest individuals, and therefore are deemed to be working effectively towards the eradication of poverty.

FRP has agreed with DFID that it will monitor three projects on an ongoing basis in order to assess the impact on the poor with defensible data. These are: R6549 promotion phase for tree-based fodder for dairy cows in East Africa Highlands; R7636E monitoring livelihoods at household level for communities involved in rattan production and processing in West Africa; R7822 livelihoods of families harvesting and processing mopane worms for food in southern Africa. These are still ongoing projects, with no impact assessment as yet. The PM reckons, probably quite correctly, that this is an expensive process and reduces by a third the amount of research that a given amount of funding can buy.

Given the long time required for many forestry projects, it is unreasonable to expect significant evidence of impact over the time frame concerned here.

The most recent problem survey, in Nepal, was undertaken at the time of the development of the interim PRSP, and had an influence on the poverty approach for forestry. FRP has also put emphasis on the development of policy briefs, and, all though there is no formal evidence of influence, there is informal evidence that they have brought about changes in policy.

b. Indications of Likely Impact

In 1999, FRP revised its research strategy to focus on four different groups of poor people; smallscale poor farmers; artisans, traders and small-scale entrepreneurs; poor landless families employed within the broad forest sector; and the urban and peri-urban poor. Since 1997, FRP has been carrying out a series of problem surveys in a number of countries (24 in total), based on interviews with relevant government organisations, private sector, the research community, community-based organisations and indigenous peoples. These add up to an impressive source of information about the importance of forest products in the livelihoods of poor people, and the constraints they face in improving their position.

The programme has moved away from more technical areas towards a stronger institutional or policy focus. Projects are also much more strongly clustered than twenty years ago, which should indicate a broader constituency for outputs, and therefore more possibility of impact.

FRP also holds project initiation workshops which bring together all collaborators to secure full agreement, though end-users are not included in this process.

There is a high level of demand for FRP monographs and synthesis reports, and the PM estimates that he could spend almost all his budget on producing these alone.

6.3 Programme Management

The FRP has conducted a number of surveys to identify demand in designated partner countries and has devoted considerable time and effort to developing and documenting a revised strategy on the basis of these. The portfolio is now less focused on technological projects and is more focused on policies, institutions and processes (which has led to the establishment of more multidisciplinary project teams), and projects have been clustered to address a smaller number of major problems.

Following the demand surveys, the programme has been able to issue very specific calls for concept notes. These are examined by the programme management team as well as the programme's contracted thematic leaders. The PAC comments on the concept notes and proposals and the programme manager takes these comments into account in deciding whether or not to fund projects.

The forestry programme has taken a very strong line on ensuring local demand and ownership: it requires projects to conduct

- project initiation workshops for all stakeholders. These are intended to be the basis for a specific agreement on inputs, outputs and milestones, which is then signed by the partner institution director.
- formal annual monitoring reviews (again with stakeholders).
- a maturity workshop which involves policymakers wherever possible and focuses on programme outputs and post-programme actions intended to facilitate dissemination and uptake.

The programme has also provided training in communications and advocacy skills for approximately 90 researchers from a number of countries.

Throughout project implementation, the programme management adopts an extremely hands-on approach. With a current portfolio of 12 (larger and more complex) projects (by comparison with an average of 30 projects at its peak) daily contact is possible. The programme managers described their role as intellectual prospecting, professional leadership and making a contribution to project success rather than administration, with important capacity building, linking and networking roles.

7. Livestock Production Programme (LPP)

7.1 Science

The LPP is managed under contract by the Natural Resources International (NRI). Since 1995, LPP work has been conducted in 13 DFID focus countries in Africa (Ethiopia, Ghana, Kenya, Tanzania, Uganda and Zimbabwe), Asia (Bangladesh, India and Nepal) and Latin America (Bolivia, Brazil, Colombia and Mexico). Until 1998, the programme focused on increased livestock production and productivity through improved supply and value of livestock products as well as improved contribution of livestock to crop production in four production systems: semi-arid, peri-urban, high potential and forest/agriculture interface. Following changes in the RNRRS to focus on poverty reduction in 1998, the LPP programme was revised to focus on improved livelihoods of five resource-poor livestock keeper groups, namely, smallholder milk producers, crop/livestock farmers, small stock keepers, landless livestock keepers and pastoralists. These livestock farmers subsist under the same four production systems as those prior to 1998, except that the peri-urban production system was extended to include urban livestock farmers. The four production systems generally cut across livestock keeper groups, except that research in the arid and semi-arid rangeland production system is confined to the pastoralist keeper group. Research themes depend largely on the production system and livestock keeper group. The main research themes are:

- Small-holder milk producers: appropriate rationing systems; conservation practices; milk processing and marketing; use of improved local breeds and exotics for milk; lifetime vs annual production indices.
- Crop-Livestock farmers: feeding draught animals for work; appropriate harnessing and yoking systems; appropriate primary and secondary cultivation implements; contribution of dung to soil fertility; tsetse control; animal welfare.
- Small stock keepers: dry-season interventions; nutrition-disease interactions; coping with worm burdens; control of production diseases; indigenous approaches to feeding and disease; appropriate husbandry (feeding, housing, disease control) practices; products(meat, eggs, skins, dung) to market.
- Landless livestock keepers: policy change and creation of enabling environments; gender issues; empowerment of the poor.
- Pastoralists: policy change and awareness raising; land use and tenure; empowerment; markets and marketing.

The evaluation shows that the LPP activities have improved and grown steadily over time, in terms of pro-poor focus and relevance of the science, capacity building, research collaboration with target institutions and international organisations, and strategies for knowledge dissemination and promotion. This indicates that knowledge gained over time has been invested for further improvements in the performance of the programme. However, this growth has not been evenly spread across livestock keeper groups or individual activities. Relatively less technology has been generated for the landless livestock keeper groups which were included later in the Strategy. Although more intervention-related research will be needed to address the technology and policy needs of these groups, there is limited time left in the present Strategy to complete such research. Secondly, technology generation needs to be followed by a successful process of dissemination, uptake by the extension systems and adoption by end-users. This process has not been completed yet and has somewhat fallen behind when assessed against the remaining time before the end of the Strategy. Thirdly, the potential problems have been highlighted of national extension systems not readily taking up and disseminating pre-packed research outputs that they were not involved in generating and/or packaging. Therefore, if the outputs of the research generated by LPP are to have a good chance of being taken up and disseminated by the national extension systems, there may be need for these systems to be active participants in the packaging and dissemination of the technologies.

The evaluation by the specialist indicates that given that research ambition (risk taking) has been moderate, the achievements, and particularly the impact of further dissemination of the findings in the current research programme, may be significant. Overall the rating is good.

7.2 Impact

a. Direct Evaluations and Impact Assessments

There have been relatively few independent evaluations of LPP projects in the past; a number of OPRs in 1999, as the programme shifted from an emphasis on production systems, to an emphasis on the livelihoods of different groups of livestock keepers and an evaluation in 2000, jointly with AHP, of a number of selected livestock themes. There is some indication from these reviews that earlier projects were rather researcher-led, rather than focused on the poor, but the two themes assessed in the 2000 evaluation, Draught Animal Power (DAP) and Smallholder Dairying, were felt to have identified technologies which have the potential for bringing both economic and social benefits to poor farmers, if and when the technologies are adopted over a broad range of users.

The DAP projects were set in Zimbabwe and Bolivia, and focussed on the use of single donkeys or horses, which would make draught power more accessible to poorer users and to women. In Zimbabwe, the projects identified the much lower mortality for donkeys in times of drought, as opposed to cattle, therefore reducing farmers' vulnerability. The number of donkeys purchased doubled over an eight year period (though no indication was given of the absolute number). The use of donkeys has been recommended in Zimbabwe's drought mitigation policy.

The smallholder dairy projects reviewed were also based in Zimbabwe, and focused on development of suitable forage, for dry season feeding in particular, and on the use of cross-breeds. The review estimates the benefits of the use of bagged silage for the 2,000 adoptors identified at that point at an average of £38 a year, in terms of net income generated. It records much greater interest in growing forage as a result of the project cluster. In general, the external reviews indicate concrete achievements in production oriented outputs, but a need for an explicit strategy as to how to transform these outputs into developmental impact.

Impact on policy is, in some way, easier to measure and in East Africa there have been a number of initiatives arising both directly out of projects, and out of scoping studies to identify constraints facing urban livestock keepers. In Kenya, an NGO funded by LPP has been active in addressing the constraints facing the formation of formal farmer groups, and thereby constraining access to livestock registration in the studbook. In a number of East African countries a scoping study, funded from programme development funds, has raised the problems facing urban livestock keepers at local council and national level, and appears to have had some success in changing local governance and attitudes towards livestock raising in urban areas, a practice largely undertaken by the poor. Locally based organisations, and in particular NGOs, appear to have taken the lead in pursuing these institutional constraints.

Interviews in East Africa confirmed this understanding of the programme's impact.

b. Indications of likely impact

In recent years LPP has put considerable effort into ensuring the potential for impact in its projects. Since 1999/2000, when a PCN was accepted, the proposed lead institution has been required to conduct a stakeholder workshop, funded by LPP, in the locality of the research before finalising the PFM. This is to validate demand for and acceptability of the proposed research. The programme has also commissioned analysis of the characteristics of different types of livestock keepers, and adopted this in restructuring and focussing the programme, with promising results. LPP has also focused on dissemination of research results, often in conjunction with other international research organisations, and has commissioned the preparation of toolboxes for dissemination to messenger organisations, and directly to farmer organisations.

LPP has placed great importance in developing appropriate dissemination material for different sections of the community, and, in particular, its Wambui leaflets for distribution in schools. The programme is also trialling different approaches to dissemination, and in some areas has assessed the extent to which potential dissemination agents are trusted. In Meru, in Kenya, they are working closely with church and women's groups as a result of this analysis.

Many of the projects commissioned under LPP can show that their outputs have the potential for beneficial economic impact on farmers. For example, research on tsetse control has shown the possibility of saving 90% of the costs of insecticide and rationing of local dairy animals has the potential to increase milk production to the value of millions of pounds in communities in India. However, the actual levels of adoption and of overall impact on livelihoods have not been directly measured in communities as yet, though there are ongoing efforts to assess upscaling strategies.

LPP contributes towards regional co-ordinators in East Africa, Southern Africa, Bolivia and Nepal and anticipates that they will play an increasingly important role in promoting project outputs over the next two years. They will also be asked to spend more time co-ordinating with national and regional institutions

In summation, LPP has gradually taken a more pro-active role in pursuing actual and potential impact, through greater emphasis on validating demand, trying to ensure that stakeholders are involved in projects from the beginning, and using programme development funds in well-focused scoping studies and development of dissemination materials. A number of the scoping studies and analysis of characteristics of livestock keepers have added to the knowledge and understanding of these groups in a way which has assisted both LPP and other researchers to understand their constraints and opportunities. Policy constraints have been identified and pursued, but direct impact on the poor will take longer to substantiate. Technologies have been promoted and disseminated across countries, largely, but not solely on a regional basis.

7.3 Programme Management

The LPP adopted a regionalised structure which deploys part-time regional dissemination, promotion and uptake co-ordinators, whose responsibilities include reviewing project quarterly reports and making linkages between projects, as well as dissemination and facilitation of upscaling. In addition, the programme makes use of UK-based specialist co-ordinators who provide high-level support and guidance for dissemination and promotional activities. Following intervention by the DFID Lead Adviser, this programme has moved from the original PAC concept of a seven to ten member PAC chosen on the basis of relevant technical expertise, to a very small generalist PAC (shared with the AHP) which has increasingly viewed its role as providing strategic guidance (although it also continues to screen concept notes and proposals).

A major strategic review following the 1997 White Paper reoriented the programme around groups of livestock keepers and the current programme logframe reflects the current poverty and livelihoods focus, with outputs focused on uptake and livelihoods change as well as developing new knowledge and technologies. Further strategic reviews resulted in a narrowing of focus from 20 to 11 countries, and prioritising policy work over technology development.

The programme has adopted a system of bringing stakeholders together in the design process, recently funding planning workshops (on a cost-sharing basis) at which project teams consult local stakeholders as part of the design. Project teams are also expected to report back to the same stakeholder groups on an annual basis throughout the project lifetime. Cluster meetings are also used to make linkages between projects and stakeholders, and as a monitoring and progress review tool.

Project teams are required to report quarterly and annually in line with DFID guidance, and programme monitoring and evaluation includes site visits by in-country co-ordinators or programme management team members. In the early years, OPRs were carried out but these have been discontinued. Occasional independent mid-term reviews have been commissioned on an exceptional basis. Project teams are required to submit Final Technical Reports (FTRs) and these are independently evaluated.

8. Natural Resource Systems Programme (NRSP)

8.1 Science

The NRSP has contributed to interdisciplinarity in research, and promoted a holistic and system based approach to NR related research. Many of the findings in the research projects have been dependent on or enhanced by the interdisciplinarity of research teams.

The programme has funded a number of good research projects, and has to a large extent achieved its outputs, thereby contributing strongly towards its purpose. Most projects have achieved results in a good or very good way related to their own logframe, while some projects have contributed less, and some have faced problems for political or other reasons. In a number of cases, there are indications of influence on the international agenda.

The programme has treated communication as a research field of its own, thereby contributing to the incorporation of communication as an integral part of the research itself. A communication plan is now a standard requirement for NRSP projects.

The programme has studied uptake promotion through separately commissioned projects, thus increasing the understanding of uptake processes. This knowledge has been used directly into project development processes. The programme has developed credible sets of uptake pathways for major clusters and suites.

NRSP has ventured extensively into uptake promotion and facilitation of the development process itself, thereby partly reducing the focus on development of new knowledge. However this effect is less than expected, and research has to some extent shifted its focus to studying the effects of development interventions, development of methodology for consensus building, studying the requirements for policy change etc. This is moving away from traditional NR related research, but still is relevant and necessary research when the purpose is to contribute to the improvement of livelihoods of poor people.

NRSP has developed a programme level logframe and pursued in a consistent way the production of outputs and the OVIs of the logframe. This has guided programme development and strongly affected project design.

The risk factors and innovation in research of the type dominating in NRSP is generally linked to the need for innovative thinking when approaching a study with an interdisciplinary team, and the complications of doing research in a real-time development setting, where the research team has limited control of many of the factors affecting the results.

Only in a few cases have research teams included social scientists and projects have mostly been managed by institutions with a natural science tradition. Many natural scientists have learned methodologies and gained insights from the social science domain. However, in the long run, the quality of interdisciplinary science can only be secured through including social science environments from the outset, and not relying on natural scientists that have moved sideways to encompass some aspects of social science.

The NRSP programme has a strong and well-managed quality assurance system, including peer review of proposals and FTRs, full-fledged MTRs and close follow up of each project. Serious attention is given to ensuring the achievement of outputs according to the logframes of each project and the logframe at the programme level.

The NRSP was initially managed internally in DFID, with a mandate including the promotion of joint initiatives between RNRRS programmes. The decision to outsource management of NRSP in 1999 left a vacuum that was not filled, and the Strategy has suffered from a lack of a co-ordinating body that could promote co-operation between programmes and ensure links between RNRRS and DFID operations. Links between research and DFID operations are now generally very poor and ad hoc only.

The NRSP has gradually developed a good number of overseas led projects, and transferred a considerable share of the project activities (and project costs) to overseas partners.

The NRSP has implemented a number of cross programme activities, including research on cross cutting issues like communication, research uptake, social capital, research methodology, livelihoods, poverty, common pool resources, consensus building methodology etc. This has been used in NRSP but only in a limited way by other programmes.

The programme management in NRSP is seen as highly professional. Robust and transparent systems have been developed. It is observed, however, that transaction costs are substantial and that there is a lot of overlapping work between programmes under the Strategy. The structures developed in a programme like NRSP could cater for a much larger research programme than its current size. This may be an issue when discussing potential future support to development research.

NRSP has in some cases contributed to the development of strong partnerships between UK and southern institutions, and increased the ability of southern institutions to participate on an equal footing. However, it is observed that the Strategy does not have a policy on development of long-term institutional partnerships. Banning of scholarships funded through the programmes and lack of focus on establishment of long term links, has reduced the overall effects of the programme when it comes to development of strong national research institutions in partner countries.

The sharing of knowledge between programmes and between the strategy and stakeholders at many levels is not effectively taken care of. Websites are not developed as quality sources of knowledge for NR based development.

The management structure of NRSP represents a credible purchase-provider split, probably beyond what is seen in other programmes of the Strategy. The management office is hosted at an institution with no direct involvement in any project commissioned from the programme. This system reduces the potential for conflicts of interest and promotes transparency in management procedures. These experiences may be of interest when planning management structures for potential future support to development research.

The evaluation has given NRSP high scientific marks on the five scientific criteria and rated the programme as a major scientific success.

8.2 Impact

a. Direct Evaluations and Impact Assessment

NRSP was run directly from DFID until 1999. During that period there was an evaluation of participatory Crop Improvement in Nepal (see annex on PSP) which was jointly funded by NRSP.

The projects are all required to have an external MTR which acts as an evaluation, particularly looking at performance against project purpose, but in general projects are more likely to focus on outputs, rather than purpose level. The PM feels that there is considerable confusion over what an impact assessment should cover. An impact assessment study on the peri-urban programme has just started, but a call for impact assessment on the Participatory Action Plan Development (PAPD) approach used in Bangladesh only received one response which was unacceptable. A small study to assess effectiveness has now been undertaken, funded out of programme development funds, and this shows that use of PAPD delivers significantly improved pro-poor outcomes from community –based fisheries management initiatives. However, it is too soon to expect the impacts from these outcomes to be detected.

NRSP has developed a Conceptual Impact Model (CIM) which defines five generic stakeholder domains, which specify the beneficiaries with whom the programme can achieve or make progress towards developmental impact through research uptake. This model can be linked to the A-H Pathway, and could be usefully used as a basis for a general impact monitoring approach.

The suite of rainwater harvesting (RWH) projects have been assessed for their potential benefits for poverty reduction¹⁰, and the report is at draft stage. The initial findings indicate that good RWH increases returns to land considerably, though not necessarily to labour. However, for poor farmers who are mainly farming for home consumption, and where land may be the major constraint, this becomes an attractive option for increasing household food security. RWH has been incorporated in the curriculum of Sokoine University and has commanded attention at the highest political level in Tanzania, resulting in national policy changes.

NRSP has also commissioned an intra-programme study of 18 projects to identify factors that influence livelihoods and identify means to improve livelihoods outcomes through further research¹¹. The programme has also undertaken a review of gender and gender analysis in NRSP projects.

¹⁰ Mutabazi et al, Benefits of RWH in Poverty Reduction in Tanzania, draft, 2004.

¹¹ B Ambrose-Oji, Livelihoods Synthesis study: key determinants of poor people's livelihoods strategies and natural resources-related management opportunities, 2004.

b. Indications of Likely Impact

An uptake promotion strategy was developed in 2002 and, as a result, NRSP now has 15 dedicated uptake promotion projects. All projects have to have a communications element. The programme has a strong inter-disciplinary and poverty focus.

The programme commissioned scoping studies, and its RWH project came out of this.

Another influential piece of work commissioned by NRSP, to assist in its own scaling up and uptake approach, is a review of experience in scaling up¹². This was one of the earliest initiatives on scaling-up and has been widely cited.

All these initiatives are likely to increase the probability of projects having impact on poverty.

8.3 Programme Management

The NRSP was initially managed within DFID and was contracted out in 1999. This programme operates with a small generalist PAC supported by a larger Steering Group, each member of which takes responsibility for specific discipline or geographic areas.

The programme logframe was developed after contracting out¹³. A number of high-level scoping studies were commissioned to investigate demand and the portfolio was organised into a series of geographical 'nodes' and programmatic 'suites'. Recent projects have had a strong focus on uptake promotion (about 15 current projects have this as the logframe purpose). In common with many of the programmes, the majority of NRSP's recent projects are follow-on projects and are awarded to existing project teams rather than through a new open component process.

NRSP is proactive in supporting project design. Concept notes are reviewed by designated Steering Group and PAC members, and project teams whose concept notes are accepted are directly supported through the proposal development process by designated Steering Group members. The programme increasingly views concept and proposal development as a learning process for project teams, especially as more southern project teams are being contracted.

The programme operates a formal and rigorous reporting and monitoring system for all of its projects. Inception, quarterly, annual and final technical reports are required of project teams, and these are reviewed by designated Steering Group members and the programme manager. NRSP is the only programme which conducts formal on-site mid-term reviews for all projects.

¹² S Gundel, J Hancock and S Anderson, *Scaling-up Strategies for Research in Natural Resources Management*, 2001.

¹³ When managed in-house, the NRSP consisted of a series of separately managed sub-programmes, and there was no overarching Logframe

9. Post-Harvest Fisheries Research Programme (PHFRP)

9.1 Science

The Programme has defined both a vision and a purpose. The vision is “to improve the livelihoods and food security of poor people within the post-harvest fisheries sector by: (i) working with the poor to identify constraints to better livelihoods and improved food security; (ii) commissioning high-quality research to develop methods and tools to overcome constraints; (iii) effectively promoting the results of research to the point where they are adopted for the benefit of the poor”. The purpose is “to produce benefits for poor producers, processors, traders and consumers through the application of new knowledge to the improved utilisation of fish from fisheries in South Asia and East and West Africa”.

PHFRP has defined three core research areas, these are:

- to develop improved methods to identify the source and magnitude of post-harvest losses and promote take-up and use by key institutions;
- to develop appropriate value-adding and loss reduction processes and technologies and promote use by key stakeholders;
- to generate new knowledge of the structure and operation of post-harvest credit and market systems and the impact on the poor of changes in the utilisation of fish and disseminate this knowledge to key policy makers and stakeholders;

The PHFRP focuses on the enabling environment in order to influence policies, institutions and processes affecting people in the post-harvest fisheries sector.

The Programme is managed and co-ordinated by NR International Ltd, which is owned by Imperial College London, the University of Edinburgh and the University of Greenwich. NR International was formed in 1996 upon the dissolution and privatisation of the Government’s scientific body for development, the then Natural Resources Institute. NR International now manages five of the ten RNRRS programmes: CPHP, CPP, FRP and LPP in addition to PHFRP.

In PHFRP’s earlier years research efforts were focused upon applied scientific and technical aspects of fish spoilage and insect infestations that cause significant losses in developing countries. A change in management thinking in 2000 resulted in the completion of earlier projects, a synthesis of results and a process of demand identification towards a new focus emphasising outreach, dissemination and promotion. Emphasis was perceived as being shifted from a “supply-led” to a “demand-driven” approach. PHFRP management regards it to be difficult, and perhaps meaningless, to differentiate between “research” and “development”. The Programme considers that “dissemination” may be too passive a concept and that “promotion” is a more effective approach.

PHFRP works closely with Integrated Marine Management Ltd (IMM), Exeter who are involved in the implementation of several of the projects.

PHFRP has an informative website at <http://www.phfp.uk.com> which is both user-friendly and interactive.

In the specialist’s scientific evaluation the programme has been given moderate scores on the creation of new knowledge and the risk level taken in the research projects. On the other hand it has been rated good on the more applied side and its ability to get useful results to the user community.

9.2 Impact

a. Direct Evaluations and Impact Assessment

The main direct evaluation of PHFRP projects has been an evaluation of Fisheries Projects carried out by Cambridge Resource Economics¹⁴ in 1999. This addressed all three fisheries programmes, with 1 out of the nine case studies from Post-harvest Fisheries. This project was based in India, and was assessed as highly poverty-impacting, based on its targeting of poor households with little other income than from fish sales.

Currently there is an Impact Assessment Review being carried out on the Cambodia Post-Harvest Livelihood Project. This initiative builds on past PHFRP research, and is intended to provide a clearly documented case study on the systematic adaptation and integrated application of PHFRP outputs. Interim results indicate that it is likely to have an impact in terms of establishing a pro-poor policy environment, capacity to implement such a policy, and developing a range of pilot projects which can show the way forward.

¹⁴ Cambridge Resource Economics, Evaluative Review of DFID RNRRS Fisheries Sector Research Performance, 1999.

There have also been a series of studies commissioned to assess the impact of various elements of the programme in a more systematic fashion. A study on the impact of research products from the earlier stages of PHFRP¹⁵ shows that success in some cases, and in particular the application of tools such as the Fish Loss Assessment and Control (FLAC) package, has been constrained by lack of engagement of intermediate institutions in the process of output development. This is contrasted with the India blowfly research projects, which are seen to have had direct benefit to project participants, and to have led to a change in knowledge on the part of poor fish sellers.

A second assessment will look at the more recent work on policies, institutions and processes and is due to report later in 2005. The programme's sector and livelihoods assessment has influenced fisheries policy in Ghana, and the revision of the Ghana Poverty Reduction Strategy.

The programme comments on progress in achieving purpose level OVIs, in general terms, in the annual report.

b. Indications of Likely Impact

There was a significant change in emphasis in PHFRP when the current programme manager took over and there was a move away from research on technologies applied to fish to a people-focussed approach. A number of demand identification projects were commissioned, and the outputs of existing projects were packaged for dissemination (see impact assessment above). Almost 60% of the budget in the first year of the new management was spent on dissemination as opposed to 4% the previous year, and workshops were held in East Africa, West Africa and Bangladesh and India, to identify options for uptake.

A study was commissioned in 2003 to look at the evidence on poverty and fisheries in the target countries for the programme (Bangladesh, Uganda, Ghana, Cambodia and India).

PHFRP sees collaboration with key international partners as important to its dissemination processes, and has developed close links with FAO and ICLARM (International Centre for Living Aquatic Resources Management) to this end.

PHFRP is taking perhaps the most systematic approach to impact assessment of the various programmes, an effort which is undoubtedly easier because of the small size of the programme, but which should nonetheless be applauded.

9.3 Programme Management

The PHFRP has altered its focus significantly since 2000. Since then the programme has focused on synthesising, packaging and promoting the outputs of earlier research programmes. This new strategy effectively put on hold the awarding of technical research contracts while the programme focused on establishing demand (through a research needs assessment exercise in four target countries), and on synthesising, packaging and promoting the outputs of earlier work. This shift reflects more explicitly the development phases through which many of the programmes have progressed - from a technical natural resources research focus, through engagement with policies institutions and processes to facilitate dissemination and uptake, and finally into consideration of synthesising outputs and exploring impact questions.

As one of the smaller programmes (the programme manager estimates that at its peak there were perhaps only six projects running concurrently), PHFRP was able to adopt a hands-on approach to project cycle management. Following the research needs assessment exercise, the programme issued focused Calls for concept notes and clustered projects to look for synthesis, particularly encouraging southern institutions to submit (although with limited success). Given the small-scale, contact with project teams is informal and frequent, and review tends to be through informal meetings. Projects are also required to comply with the standard reporting cycle, and the programme has also commissioned independent peer review of all final technical reports.

¹⁵ PHFRP Impact Assessment Phase 1, interim review, RL Stirrat and I Clucas, 2004.

10. Plant Science Research Programmes (PSP)

10.1 Science

The current PSP of 1995-2005 follows an earlier programme (1989-1994) and the Centre for Arid Zone Studies, University of Wales has been responsible for the programme throughout, so the management represents a continuity of 15 years.

When starting this programme (1994/95) all of the pre-existing projects were assessed according to the requirements spelled out in the “Yellow Brick”. Projects that did not fit the new programme specifications were discontinued and those that were found relevant under the new programme were maintained. In that way the programme got a “flying start” with 36 carried-over projects.

During the lifetime of the programme, new projects have been added until the project database reached a total of 105 entries. The evolution of the programme is characterised by a gradual reduction in diversity of research topics towards clustering around five major themes. The number of UK-based lead institutions has come down from 18 in the early period to currently 8 with the majority of the projects managed by two institutions in the UK. Involvement of institutions in developing countries has increased by number and responsibility.

The programme as it now stands with activities clustered around selected themes, is nothing less than a remarkable success. Positive impacts are already documented and potentials of further contributions to the achievement of millennium goals are great.

The programme manager and deputy manager are both active researchers in the programme. Both had extensive experiences from research in developing countries before joining the programme (one from Asia and one from Africa), and both have been continuously involved (the manager since 1990/91 and the deputy manager since the start of the current programme phase in 1994/95). Their personal research involvement has included experimentation with participatory methods. They therefore have first-hand experience of the needs and circumstances of the end-users. The interaction of managers with this background and scientists with other needed competence has contributed to the evolution of a programme that uses the most advanced sciences but with a clear developing country and poverty focus.

This can be seen as a successful outcome of the Yellow Brick and the DFID policy of devolving research management to selected institutions.

When the assignment is to go to the poorest countries and help the poorest people within those countries, the task is to succeed where everybody else has failed. Research and development since the Green Revolution has successfully improved production in major cereal crops in high potential areas and basically within areas which were well endowed with infrastructure and support services. The DFID priorities direct researchers to the marginal areas where climates and other environment factors are hostile or difficult and where infrastructure and support services are often poorly developed. No proven solutions were readily at hand. The task required innovation and risk taking. The formulation of research projects required knowledge of what are real and important constraints, knowledge about what science can do and what is researchable, and finally knowledge about what could be workable solutions under the adverse environmental, social and economic conditions of the targeted people.

The combination of expert knowledge from work with poor farmers in representative target communities and commissioned feasibility studies by lead scientists seems to have helped getting the programme on tracks that at the end of the programme proves to have brought successes.

The combination of long-term commitments and short-term contracts is an interesting feature of the whole programme. By making a commitment to a 10-year programme DFID recognised the fact that research is a long-term endeavour and must be given time. It allowed the programme management to organise and plan activities for a reasonable period of time. But the actual research was based on contracts for up to a maximum of 3 years. In that way research could be periodically assessed, and stopped, redirected or continued. This laid the foundation for a programme evolution towards the successful clusters that are described in this review.

The competitive bidding that was required by the Yellow Brick brought a high number of excellent scientists and institutions on board. The programme evolution eventually reduced those numbers so that the programme towards the end of the ten-year period is left with a few groups of scientists. Those scientists are excellent by the ordinary criteria (such as scientific publishing), and they have proved that they can contribute to the progress of the programme. By having been involved in the PSP for a long period, they have also developed the added motivation of knowing that what they do could help poor people. This motivation becomes enthusiasm when, towards the end of the programme, research outputs are being tested and the importance of what has been achieved starts emerging from the response from

local partners. The programme has successfully linked good scientists in the UK with the problems of poor people in developing countries.

The evaluation has rated the scientific achievements of this programme highly.

10.2 Impact

a. Direct Evaluations and Impact Assessment

In 1998 DTZ Piedad undertook an evaluative review of Participatory Crop Improvement (PCI) in High Potential Systems in Nepal. PCI had already been shown to have high impact in marginal areas. This research was jointly funded by PSP and NRSP. It was shown that this was an effective way of introducing a large number of new varieties much more quickly than traditional research routes. The varieties offered increased yields of up to 50%, though with some evidence of lower price. There also appeared to be informal seed dissemination through family and friends. The evaluation was carried out at an early stage in the project's life-time, as there were still two years to go before the planned achievement of outputs, as per the OVIs in the logframe. Despite this, the evaluation found that this had good potential for impact.

Research has continued in this cluster, and surveys have shown increasing and widespread adoption in both Nepal and eastern India. There is high uptake, more yield and significant improvement of food security. The methods developed are being adopted in other countries, and are changing policies in national research systems and extension services. An impact assessment which focussed on monetary benefits to participants, estimates an internal rate of return of between 43% and 125%¹⁶ changes in yield. The PSP co-ordinator in Nepal has also succeeded in achieving change in the varietal release process there, thus removing a major constraint for successful impact.

The programme has funded a significant number of project impact assessments, and these have been a mixture of externally and internally conducted. The programme can show that there are major potential benefits in terms of increases in yield or reduction in crop losses from its research on Marker Assistance Selection for Downy mildew resistance in pearl millet. In Indian pearl millet districts the current losses are calculated to be of the order of £7.8m in a single year. There is frustration that these successful research outputs have not made much impact on DFID country programmes, particularly in Nepal.

PSP estimates that the benefits of its PCI cluster in India alone by 2010 will be more than the total cost of the PSP during 1995-2005. Certainly the impact assessments show substantial monetary benefits, and there are considerable incentives for both farmers and plant breeders to disseminate and promote the outputs of the programme. This is also true of the millet breeding work. The genetic map of millet is freely available on the internet, and can expect to influence millet breeding programme worldwide. However, it will be important to keep following the development of these processes to ensure sustainability, and that there is scope for maintenance of the yield improvements.

The programme reports directly against logframe output OVIs in its annual reports.

b. Indications of Likely Impact

PSP undertook a number of surveys at early stages in the RNRRS to persuade DFID that some of the ideas in the Yellow Brick were not really researchable. They narrowed down their areas of focus and rewrote the logframe. There is little evidence of direct consultation with end-users, but the PCI cluster work in some sense makes this unnecessary, by involving the end user as part of the research process.

The programme produced a strategy paper on upscaling and promotion in 2001, at the request of DFID.

10.3 Programme Management

PSP pre-dates the RNRRS programme and the programme manager welcomed the focus on demand-led research and linking to uptake pathways which the RNRRS brought. This programme has shifted its strategy in a more evolutionary manner than some other programmes: gradually adopting a more 'livelihoods' focus (especially using participatory methodologies and increasingly engaging with policies, institutions and processes to facilitate uptake); concentrating more on South Asia; gradually shifting to rely more on southern researchers, and clustering projects to achieve synergy. The programme has not undertaken a major formal review of its portfolio, but has gradually modified it by de-prioritising some of the areas which were identified in the original RNRRS as experience has shown these to be unfruitful. The portfolio now contains a smaller number (15) of larger projects (compared with 35 to 40 at its peak), and approximately 30% of current projects lie with Southern partners.

¹⁶ Reported in the Annual report, 2002-2003.

The programme management team includes two funded co-ordinators, in Nepal and ICRISAT, and a dedicated dissemination officer. The PAC is still structured along the original lines envisaged by the RNRRS, with seven to nine members nominated on the basis of technical expertise including socio-economic, environment, biotechnological and farming systems.

Programme management is 'hands-on'. For first projects, each concept note and proposal is reviewed by two independent reviewers and the PAC debates their recommendations. However, while first projects are awarded through open competitive tendering, follow-on projects are not – this is both a reflection of the limited number of institutions with relevant expertise, and also represents a deliberate strategy to achieve continuity.

During project implementation, the programme management team works closely with all projects. In addition, annual review meetings are held for two major project clusters (transgenic work and molecular marker work), at which scientific findings are presented. These are attended by project leaders and scientists as well as PAC members, other relevant programme managers and other interested scientists. Apart from this, projects are required to submit quarterly and annual reports but no formal project review or evaluation activities are undertaken. Final technical reports are submitted, but not subjected to independent review, unless the programme management team feels there is particular cause for concern.