



EVALUATION OF DFID RENEWABLE NATURAL RESOURCES RESEARCH STRATEGY

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Main Report

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Full responsibility for the text of this report rests with the authors. In common with all evaluation reports commissioned by DFID's Evaluation department, the views contained in this report do not necessarily represent those of DFID or of the people consulted.

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ACRONYMS AND ABBREVIATIONS

AFGP	Aquaculture and Fish Genetics Programme
AHP	Animal Health Programme
APO	Associate Professional Officer – DFID
ASARECA	Association for Strengthening Agricultural Research in East & Central Africa
CAADP	Comprehensive Africa Agriculture Development Programme
CATIE	Centre for Tropical Agricultural Research and Higher Education
CBO	Community-Based Organisations
CEH	Centre for Ecology and Hydrology (formerly NERC)
CFI	Commonwealth Forestry Institute (at Oxford)
CGIAR	Consultative Group on International Agricultural Research
CIAT	Centro de Investigacion Agricola Tropical (Bolivia)
CIFOR	Centre for International Forestry Research
CN	Concept Note
CPHP	Crop Post Harvest Programme
CPP	Crop Protection Programme
CRD	Central Research Department
DAC	The Development Assistance Committee
DANIDA	Danish International Development Agency
DAP	Draught Animal Power
Defra	Department for Environment, Food and Rural Affairs
DFID	Department for International Development
DRASTIC	Dairy Rationing System for the Tropics
DRC	Development Research Centre
ECTF	Edinburgh Centre for Tropical Forests
EEC	European Economic Community
ESG	Evaluation Steering Group
ETFRN	European Tropical Forestry Research Network
EU and EC	European Union and European Commission
EUREPGAP	European Retail Produce Good Agricultural Practices
FAO	Food and Agriculture Organisation of the United Nations
FARA	Forum for Agricultural Research in Africa
FMSP	Fisheries Management Science Programme
FRP	Forestry Research Programme
FTR	Final Technical Report
GIS	Geographic Information System
IAQ	Impact Assessment Questionnaire
IARC	International Agricultural Research Centre
ICARDA	International Centre for Agricultural Research in Dry Areas
ICRAF	International Centre for Research in Agroforestry
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICSF	International Collective in Support of Fishworkers

IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
IITA	International Institute for Tropical Agriculture
INNOVA	Strengthening technical innovation systems in potato based agriculture.
IP	Impact Pathway
IPG	International Public Good
ISI	Institute for Scientific Information
KENDAT	Kenya Draught Animal Technologies
LA	Lead Adviser
LPAC	Livestock Programme Advisory Committee
LPP	Livestock Production Programme
LRDC	Land Resources Development Centre
MDG	Millennium Development Goals
MTR	Mid Term Review
NARS	National Agricultural Research system
NARSIS	Natural Resources Information System
NGO	Non Government Organisation
NORAD	The Norwegian Agency for Development Cooperation
NPG	National Public Good
NRI	Natural Resources Institute
NRIL	Natural Resources International Ltd.
NRPAD	Natural Resources Policy and Advisory Department
NRRD	Natural Resources Research Division
NRSP	Natural Resources Systems Programme
NWFP or NTFP	Non-wood Forestry Product (sometimes NTFP – non-timber)
ODA	Overseas Development Administration
OECD	Organisation for Economic Cooperation and Development
OFI	Oxford Forestry Institute
OPR	Output to Purpose Review
OSAS	Overseas Service Aid Scheme
OVI	Objectively Verifiable Indicator
PAC	Project Advisory Committee
PAM	Poverty Aim Marker
PARC	Performance Assessment Resource Centre
PARIS21	Partnership in Statistics for Development in the 21st Century
PCI	Participatory Crop Improvement
PCN	Project Concept Note
PD	programme Development
PHFRP	Post Harvest Fisheries Research Programme
PM	Programme Managers
PMF	Project Memorandum Form
PMT	Programme Management Team
PRAPACE	Regional Potato and Sweet Potato Improvement Network
PRSP	Poverty Reduction Strategy Paper

PSA	Public Service Agreement
PSRP	Plant Sciences Research Programme
R&D	Research and Development
RLD	Rural Livelihoods Department
RNR	Renewable Natural Resources
RNRRP	Renewable Natural Resources Research Programme
RNRRS	Renewable Natural Resources Research Strategy
SADC	Southern African Development Community
SIBTA	Sistema Agropecuario de Tecnologia Agropecuaria
SIM	Structured Inventory Matrix
SL	Sustainable Livelihoods
TCO	Technical Cooperation Officer
TOR	Terms of Reference
TP – D	Talking Pictures - Dairy
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UTS	Unit of Tropical Silviculture

PREFACE

It was never going to be easy to evaluate the ten separate research programmes in the UK Government's Department for International Development's (DFID) Renewable Natural Resources Research Strategy (RNRRS).

The ten-year strategy was developed at a time of a series of Global Summits and international development gave priority to structural adjustment, sectoral reform and projects. It is being evaluated when the emphasis is on poverty reduction strategies, national budgetary support, and governance reform and on the attainment of the Millennium Development Goals. The Strategy was designed to produce generic knowledge and 'public good' technologies and provide continuity in policy, funding and management at a time of anticipated institutional change in the United Kingdom. It piloted the use of logical frameworks in the definition and management of research for development.

The period covered by the Strategy has seen a reduction in the levels of donor, and in many cases national, funding for natural resources sectors and the institutions which serve them; this has reduced the ability of many national institutions to be partners. It has also covered the development of transgenic approaches as one means to address the challenges faced by developing countries and the rise of public concern over food safety. While population growth has started to slow, the numbers of food insecure people has not reduced especially in Africa and the impact of HIV/AIDs is now clearly showing across rural communities. But trade reform, reduction of subsidies and non-tariff barriers in the rich countries, the reform of policies and incentives that might have stimulated investment and activities by the private sector, have not emerged.

To help and advise the Evaluation Team with their complex task, DFID identified and appointed an Evaluation Steering Group of seven people drawn from the UK research councils, professional associations and other national and international organisations with experience with organisation and management of research for development.

The terms of reference and the membership of the Evaluation Steering Group are presented in Annex 2.

The Group met with the Evaluation Team on three occasions at DFID headquarters. Representatives of DFID's Central Research and Evaluation Departments were present at these meetings either in person or by video link. These meetings gave adequate opportunity for open and frank discussion. The conclusions of the Group were minuted and forwarded to the Evaluation Team.

The first meetings of the Group focussed on the approach, methodologies, work plan and planned field visits. The latter meetings were devoted to examining whether the emerging conclusions and recommendations were based on adequate analyses and evidence. However, in carrying out a task of this scale the Evaluation Team formed some clear perceptions and views. These are important even if they are not always supported by data sets and hard evidence.

It was the job of the Group to help guide and inform the evaluation, not to comment on their findings and recommendations.

It is to the credit of the Evaluation Team that they have been able to complete their task and to consolidate their findings into nine clear recommendations with supporting text and some suggested options for the future. We commend these to DFID and look forward to seeing their response.

The Members of the Evaluation Steering Group are most grateful to DFID for the opportunity to help steer the evaluation. They would like to thank the Evaluation Team for their positive and constructive responses to our suggestions and for carrying out their difficult and complex task efficiently and well. They would in particular like to thank the Central Research and Evaluation Departments for their help and support and in particular Elizabeth Warham for acting as the Secretary to the Group.

Finally I would like to thank my colleagues on the Evaluation Steering Group for their wise counsel and capacity to read, digest and comment on a huge quantity of documentation quickly and willingly.

Andrew Bennett
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EXECUTIVE SUMMARY

- S1. **Background:** The goals of the Renewable Natural Resources Research Strategy (RNRRS) for 1995-2005 are the alleviation of poverty, the promotion of economic growth and the mitigation of environmental problems. The strategy aimed to achieve economical and environmentally sustainable enhancement of productive capacity in the renewable natural resources sectors through contracted out management of competitive research funds.
- S2. The evaluation is an objective assessment of the extent to which the ten programmes have delivered the agreed outputs of the strategy, the identification of components which have made, or have strong potential to make an impact on poverty, and the lessons from programme and project cycle management. Three aspects have been evaluated: quality of science, impact or potential impact on poverty, and quality of management.
- S3. **Methodology:** The evaluation methodology built upon preliminary activities carried out by the Performance Assessment Resource Centre in 2003 which established commonly agreed benchmarking tools to enable impact assessments across the ten research programmes. Evaluation activities included:
- Review of a large number of documents;
 - A systematic examination by Specialists, of a purposive sample of projects (selected in collaboration with PMs to represent: closed and current, and large and small projects; the span on the A-H Scale; and projects considered the most and least successful by PMs). Two to eight percent of all projects ever funded were selected in each programme;
 - Stakeholder interviews including the total population of programme managers, programme advisory committee chairpersons, DFID lead advisers, as well as a significant sample of UK-based project team leaders and other key informants;
 - Country visits to Ghana, Kenya and Uganda in Africa, and Bangladesh, India and Indonesia in Asia where stakeholders were interviewed either individually or in groups of up to 12 participants using a structured set of questions. Stakeholders included farmer organisations, NGOs, NARS, IARCs, private sector, extension agents, Ministries, and DFID officials. About 10% of all RNRRS projects ever funded were included.
- S4. The criteria for the evaluation of science quality included: contribution to new knowledge, using existing knowledge in new contexts, innovation and scientific risk-taking, knowledge dissemination, and capacity and relationship building.
- S5. The evaluation of the impact on poverty and livelihoods considered direct impact on poor people, impact made through influencing partners (researchers, extension agents, *etc.*), and potential impact in the future. This aspect of the evaluation was reliant on secondary studies and information collected during country visits, as time and resources did not permit new impact assessment activities. The potential impact was evaluated through the examination of processes leading to impact, including: identification of demands, relevant design, and identification of appropriate dissemination and uptake pathways.
- S6. A variety of governance and management dimensions were evaluated. In addition to the terms of reference (Annex 1), it was agreed that the core team would also consider programme managers' roles, programme strategies, plans and management systems, and RNRRS-wide as well as programme level governance arrangements.
- S7. The evaluation team faced a number of challenges, including a huge quantity of information and a lack of sufficient time to allow for reflection, repeat consultations, and refinement of conclusions through dialogue. The lack of independent or objective performance data was a major limitation in assessing impact, especially on poverty.
- S8. Based on the analysis and evaluation of the data and information collected the evaluation team has drawn a number of conclusions and arrived at a series of recommendations, which are embedded in the text below.

Recommendation 1 – DFID should exploit its comparative advantage in natural resources research for development.

- S9. In the 10 years of its existence, RNRRS has achieved good science outcomes (4.4) and programmes have largely been successful in meeting their target Outputs (3.2), although the evidence of ultimate impact remains elusive at present (5.5).
- S10. The total value of RNRRS project funding, which was £ 190 million from 1995 to 2004 (PARC, Annex 9) could have been dispersed through bilateral channels or through CGIAR and other international players or through a mix of these. In the absence of this having been done, it is impossible to say whether it would have achieved more or less than RNRRS did. The value of DFID RNRRS is roughly 10% of CGIAR funding, significant but not equal. DFID itself considers that, as a founder member and important contributor, it has increased the poverty focus within CGIAR and has increased the emphasis given to capacity building (7.2). Whether this could have been done so effectively without RNRRS remains an open question.
- S11. As a proxy, it is useful to look at what RNRRS has achieved. Firstly, there has been research funded in a large number of countries (PARC states 27 main partners for 7 programmes but the total is many times greater once all partners are included). Funds have been dispersed across all three tropical regions, with a preponderance of expenditure in Africa (56%) followed by Asia (32%) and Latin America (12%). Because research activities are multi-partner and multi-country, it is impossible to assign accurately the value of support given on a country by country basis, as distinct from the expenditure within a specific country.
- S12. As shown in their Annual Reports, and confirmed by the Specialists' Reports (Annex 10) individual programmes have engaged with a great number of, predominantly southern, partners and actors and the southern focus is increasing (6.5). Programme Managers have used a range of innovative instruments, including small studies and funding for workshops and meetings as well as more formal projects to engage with researchers, and this diversity of approach is not normally present in other mechanisms. Allowing Programme Managers flexibility in this regard is a very positive reflection on wider DFID RNRRS management. Details of the range of approaches are clear from the PARC listing of activities funded by the various programmes (Annex 9).
- S13. The response of Programme Managers to the paradigm shift in policy in the 1997 White Paper (4.2) shows an effective rise to the challenge presented. This has been reflected in the changing balance between science and social science in the programmes, although the extent of the change has varied (see the Specialists' Reports in Annex 10).
- S14. DFID was the world leader in developing, refining and applying the Livelihoods approach to development (5.2). By ensuring that Programme Managers took up this approach, DFID became the first research service provider to work in this way and the positive response of programmes to seeing ultimate beneficiaries as key stakeholders gives DFID a unique position globally with its understanding of the research – development continuum. The more recent planning and reporting frameworks (Annex 10 and Table 3) of all programmes are strong evidence of the adoption of the Livelihoods framework, as noted above.
- S15. The use of research clusters and encouragement of multidisciplinary research has been a very important mechanism in securing the change in approach and content required, as noted above in respect of Livelihoods concepts (5.5 and Annex 10). The commitment of programmes to the poverty focus is evidenced in both their Logical Frameworks and the nature of the research supported. However, there is also an important sea-change in the fact that all programmes now talk and report in terms of a poverty framework from the indicators in the Logical Framework through the calls for concept notes to the reports of the research activities. Programme Managers have responded positively and effectively to the requirements laid on them in this respect (4.2). Given the driving force throughout RNRRS of poverty impact, there is urgent need to improve the objective assessment of poverty impact, as opposed to what is currently possible (Recommendation 8).
- S16. The direction and encouragement given to Programme Managers to follow the policy change and span the science / development continuum has not just resulted in appropriate research activities. Through the use of clusters and partnerships, it has led to changes in UK institutions being supported and to the fostering of stronger, cooperative UK / collaborator / southern institution links. This has the potential to be reinforced and developed and provides a core of expertise familiar with the science and development continuum and with the poverty and Livelihoods framework (4.5, 6.5). This will be beneficial to long term positive impact.

- S17. Nevertheless, it is impossible to judge effectively the precise impact of much of the work funded. The lack of mainstream objective baseline and monitoring data (5.1) means that formal assessment of impact is almost impossible at this time, although there have been a number of specific studies which do show good impact (5.5). As noted above, recommendations are given to remedy this situation.
- S18. The full benefit from DFID comparative advantage in RNR research requires effective uptake to ensure that the beneficiaries have access to the findings and that research capacity in partner countries is built to allow continuation and adaptation. Once DFID moved away from the extensive field based programmes noted in the Yellow Brick as a major (but not exclusive) user of the findings, a conundrum was created for Programme Managers. Funding could never allow any significant uptake activity much beyond the preparation of material and promulgation workshops. Furthermore, capacity building was specifically excluded from Programme Managers' ToRs, although there were different interpretations of the rules, none of which seems to have been questioned by DFID (6.2).
- S19. The result is that RNRRS, whilst being increasingly demand-led in its activities (4.5, 5.2) can only adopt a supply-push approach to uptake. This is neither effective nor efficient. If it is to secure the best outcome from its RNR research funding, DFID will need to address the capacity building and uptake issues raised (Recommendations 6 and 7).
- S20. Overall, 10 years of investment in RNRRS has led to an effective, responsive programme, congruent with and supportive of DFID policies. Science and technology, especially in agriculture, are critical for developing countries to increase food security, engage in global trade and find a route out of poverty (7.2).
- S21. RNRRS, through flexible and responsive management (6.2) has created a balanced, poverty focused research portfolio of great diversity across NR fields. This is linked through an enormous, active network of researchers, policy leaders and other stakeholders (7.2) giving solid potential to support policy and practice changes for effective poverty reduction.
- S22. RNRRS has also created a massive knowledge base. The benefits, particularly of more recent changes are only just beginning to accrue (5.5) and it is important that these are fully captured and utilised (Recommendation 9).

Recommendation 2 - DFID should continue to fund natural resource management research, with improved efficiency and effectiveness.

- S23. RNRRS has achieved good science (4.1) and has largely met its Output targets (3.2). In the process of so doing, it has generated a huge resource of information through a variety of media including both the traditional peer reviewed publications and a host of innovative approaches (4.4).
- S24. In the process of delivering their programmes, Programme Managers have created a substantial, complex and multi-disciplinary international network of researchers covering UK institutions and individuals, collaborators and partners. Since 1998, this has been increasingly dominated by southern partners (6.5). The individual programmes have been an important source of support to many southern actors and institutions (6.5).
- S25. The size and scope of RNRRS has been widely recognised as an important contributor to international RNR research, by CGIAR institutions and bilateral agencies as well as by researchers and sector players in southern countries (Country visit reports, Annex 8, personal knowledge of Core Team and Specialists).
- S26. The major changes to DFID aid policy (1997 and 2000 White Papers) required Programme Managers to adapt the approach and scope of their programmes. The evidence from the Specialists (4.2, 6.3) shows that this has been successfully achieved in respect of the focus and balance of the work funded. The speed and effectiveness of the response demonstrates clearly that Programme Managers have been able to adapt their programmes to respond to changes in DFID policy. The role of CRD in allowing this high degree of flexibility has been crucial in this (6.2).

- S27. The introduction of the Livelihoods approach is probably the most important recognisable change in response to the increasing poverty focus of DFID. It is widely accepted that success within a Livelihoods framework requires there to be effective technical systems to underpin other actions (5.2). Programmes have adopted to varying degrees a livelihood framework for programme management and decision making, LPP and FRP being perhaps the most advanced in this as evidenced in their Annual Reports and research strategy publications.
- S28. LPP and FRP in particular may have a long time horizon between project initiation and implementation of results (5.5), up to a decade and beyond, due to the life-cycle of trees and livestock. Given, however, that the major change in RNRRS was the 1997 White Paper, the impacts of the changed priorities and approaches are only just coming on stream and it is important that these be allowed to accrue fully (Recommendation 9).
- S29. In a research programme, it is expected that there will be instances of failure as hypotheses are being developed and tested out. It would not be realistic to expect every hypothesis to work in practice. Positive impacts on poverty are, however, beginning to emerge from the RNRRS. The findings of this evaluation emphasise that it is critical to maintain support and to continue to fund applied, adaptive and basic research to secure the desired impacts from work already commenced (5.6).
- S30. Despite the positive elements noted above, and the importance of positive professional opinion on the value of RNRRS, the lack of formal M&E systems, of strategy wide approaches and of impact baseline and monitoring data make it hard at the present time to present substantial formal evidence of impact (5.5). These elements are reflected in Recommendation 8 of this report.
- S31. By creating a strategy founded on needs-based researchable problems (6.1), DFID has a valuable model, which has further benefited from a flexible approach to overall management. The Programme "structure" largely evolved from historical "discipline" based groups rather than from a problem orientation. Strengthened strategy-wide coordination, including participation of southern institutions, would remedy this and build upon cross-programme synergies, furthering Programme Managers' initiatives (e.g. AHP, LPP and FRP with LPP in *Calliandra* fodder research – Annex 10).

Recommendation 3 – DFID should transparently set priorities for RNRRS in terms of the mix of international and national public goods it is expected to produce and deliver to meet its stated goal of alleviating poverty in developing countries.

- S32. The new Research Funding Framework defines the objective for research as "To promote the production and uptake of technologies and policies that will contribute to poverty reduction and the achievement of the Millennium Development Goals." Under Sustainable Agriculture Especially in Africa, the new funding framework identifies 3 intertwined approaches: participation, technology and access. Only the second of these approaches relates to the generation of new technologies and practices and the specific examples given imply adaptation and application rather than fundamental research.
- S33. DFID must decide on the key objectives that it wishes to address, are these:
- to deliver new knowledge?
 - to link stakeholders to existing knowledge?
 - to demonstrate benefits in order to influence national processes and systems?
 - to build sustainable links between research institutions?
 - to build capacity in southern research institutions? or,
 - a combination of the above?
- S34. In the light of the Sustainable Agriculture Especially in Africa framework, all of these, with the exception of the first appear to be relevant, suggesting that a combination of them is likely to be the most appropriate way forward. Provided that the technology exists, it can be argued that more focus on applied research, dissemination and capacity building activities in the UK as well as in developing countries is needed.

- S35. Most importantly, only after determination of what it seeks to achieve can DFID begin to implement the other recommendations from this study on governance, uptake and capacity building and select the best model for delivery: *i.e.* how it will be achieved. Given DFID poverty reduction aims, this process should mirror the work of the programmes themselves (4.4, 6.5) and engage with southern stakeholders at all stages of the process of developing the new approach, thus capturing the benefits of engagement with southern partners and stakeholder representatives, and their participation in setting priorities as well as formulating research plans, achieved by individual programmes, especially more recently
- S36. The recent trend in all Programmes and the overall strategy to be more applied and adaptive needs to be maintained to increase the poverty impact but there will still be need for some basic research. DFID needs to determine how and by whom this will be funded. The focus should remain on research targeted at addressing problems and relieving constraints faced by large numbers of poor people, of which there are many good examples already within RNRRS (Specialists' Reports, Annex 10 and Table 10, below).
- S37. There are lessons from the use of logical frameworks (3.3) which could have evolved through more regular revision than has been the case. Such evolution, as well as incorporating M&E findings (Recommendation 8) would also benefit from active stakeholder and southern partner engagement, reflecting the increasing dominance of southern institutions as research leaders (4.4, 6.5) and the importance of including stakeholder views in setting criteria strongly grounded in poverty reduction (3.5). This would also help secure good impact assessment practices.
- S38. In the Yellow Brick, NRSP was given a pivotal role in coordinating research across the other programmes (6.2). This was subsequently dropped and the opportunities for cross programme work have not been fully exploited (4.5, 6.2). The substantial changes within programmes to generate cross / multi-disciplinarity (4.5) could be further enhanced as part of the process, leading to improved overall strategy coherence.
- S39. In order to determine the most appropriate option for the future natural resources research management, DFID must define its precise objectives for natural sciences research (7.6). For example, is the new scheme primarily intended to deliver new knowledge? Link stakeholders into existing knowledge so that they can use it in their specific circumstances? Demonstrate benefits in order to influence national processes and systems? Build sustainable links between research institutions? Build capacities in southern research institutions? or some combination?
- S40. Broadly, five options for the future scheme can be identified and are described in more detail in the report (7.6):
- An open competitive model, similar to the approach adopted by UK research funding councils.
 - Improved contracted research: continue with a number of contracted-out commodity/discipline-based research programmes along the lines of the existing RNRRS.
 - Global consortia: discipline-based and broadly in line with the existing development research centre model, with a group of partners pursuing a long-term demand-driven research agenda.
 - Country-based consortia: similar to Option 2 but country-specific in a limited number of locations.
 - A combination of the above options: a scheme which includes several different funding channels to achieve different objectives.
- S41. Each of these models has significant features, advantages and disadvantages which must be taken into account in determining the future management arrangements for natural resources research (7.7). Option 1 should be favoured if innovation and leading-edge fundamental research (IPGs) are prioritised. Options 2 and 3 both offer the potential to achieve a balance between international and national public goods, and between research, dissemination and capacity building. However, Option 2 places more emphasis on funding research across a wide agenda with a variety of degrees of competition, while Option 3 places more emphasis on continuity and southern representation. Option 4 should be favoured if demand-led country-level adaptive research is prioritised. Option 5 would be appropriate if DFID wants to achieve a combination of objectives. Before a decision is made, DFID must decide what it wishes to achieve.

S42. There have been a number of solid success stories from all Programmes (7.8, Specialists' Reports, Annex 10). All these have at least one of the following characteristics:

- A research theme which has been followed through a number of related projects, from basic research, through local adaptation and application, to regional or international dissemination.
- Bridging identified gaps in the research agenda.
- Grounded in an objective analysis of the priority problems of the poor
- With an effective and dynamic network of researchers and other stakeholders

S43. The evaluation has identified that the research themes from Chapter 7 and shown in Table 10 could be starting points for DFID to start a transparent process to identify critical themes for future research. It does so with the important rider that the themes must be engaged within a clear overarching research strategy and effective mechanisms to ensure evolution in the light of changing circumstances.

Possible Research Themes

Research Programme	Themes
Aquaculture and Fish Genetics (AFGRP)	<ul style="list-style-type: none"> • Seed production • Aquatic animal health • Systems
Fisheries Management Science Programme (FMSP)	<ul style="list-style-type: none"> • Information to inform management –research and influence policy. • Information systems to support the co-management of fisheries important to the poor. • Fisheries assessment methods to inform management. • Pro-poor capture fisheries management strategies. • Pro-poor enhancement-fisheries management strategies.
Post Harvest Fisheries Research Programme (PHFRP)	Discontinue as a separate programme / theme.
Animal Health Programme (AHP)	<ul style="list-style-type: none"> • Vaccine development and disease control as clustered disease control initiatives. • Demand led research focusing on identified needs of poor livestock keepers.
Livestock Production Research Programme (LPP)	<ul style="list-style-type: none"> • Intervention related research for pastoral and landless livestock keepers. • Technology dissemination, uptake and adoption in respect of all existing themes for smallholder dairy, crop/livestock and small stock keepers. • Long term partnerships need to be developed more deliberately between UK and Institutions in the South.
Crop Post Harvest Programme (CPHP)	<ul style="list-style-type: none"> • Food safety and nutrition need to be prioritised from existing themes. • Cross cutting theme linking farmers to Markets • New Themes related to the roles of climate change, changing crop profiles, non-food crops and natural products need to be developed.

Research Programme	Themes
Crop protection Programme (CPP)	<ul style="list-style-type: none"> • Insect pests in Sub-Saharan Africa. • Sustainable disease control in Sub-Saharan Africa. • Weed problems in rice in Asia and balances with environment and human health issues.
Plant Sciences Research Programme (PSP)	<ul style="list-style-type: none"> • Crop transformation cluster. • Participatory crop improvement cluster. • Marker assisted selection. • Seed priming and associated agronomy research.
Forestry Research Programme (FRP)	<ul style="list-style-type: none"> • Maintain active review of needs. • Focus on clusters with elements that relate to wider forest and tree functions within trade, poverty and livelihood support. • Support to international policy processes.
Natural Resource Systems Programme (NRSP)	<ul style="list-style-type: none"> • The cross programme initiative with stronger focus on the environments in partner countries including the socio-political issues. • Bangladesh suites 1-3 Delivering empowerment and poverty alleviation through integrated land management strategies. Expand this to new countries. • Bolivia suite 2 Scaling up strategies, ready to be expanded to new countries. • East Africa suite 1-3 with contribution to new knowledge, capacity building and policy impacts. • India suite 1 with important findings on policy processes and service delivery.

Recommendation 4 – DFID RNR research funding should allow and encourage maximum flexibility in terms of funding – including commissioned studies, sponsored meetings and temporal clusters as well as larger and longer duration projects

- S44. Programme managers have proved innovative in developing a range of approaches in addition to the standard 1 to 3 year “project” (6.4). The flexibility of approach to allow short studies and similar initiatives has been very helpful to making progress (Specialists’ Reports, Annex 10).
- S45. The Concept Note to Project memorandum phase, while quite time consuming, has facilitated development of multidisciplinary teams and led to much better communication within these (4.5, 7.8). It has also reduced the risk (in the management sense) inherent in relying on one or two collaborators only (4.6). Programme Managers have used their capacity to commission sequential projects without necessarily making recourse to full competitive tendering, which has allowed longer term research to be funded (6.4). Clusters that are allowed to evolve and adapt, including engaging new collaborators with new expertise, also have the capacity to function for a longer period than 3 years and are useful in this regard (4.3).
- S46. In order to optimise responsiveness and balance, funding options should be as flexible as possible with a wide range of approaches being utilised, from short commissioned studies and issues papers to longer projects (5+ years) if basic science is required. The ability of Programme Managers to respond quickly to policy and information gaps through small studies of various types has undoubtedly helped the programmes to be engaged in relevant policy work and to facilitate the work and skills building of contracting partners. Transparency obviously needs to be observed as does equity in fund allocation. There are strong indications that within clusters, having at least one contractor familiar with RNRRS processes and procedures has been helpful (7.8).

Recommendation 5 – Management of RNRSS needs to be strengthened in:

- a. Overall governance structure**
- b. Strengthening of PACs**
- c. Development of more effective quality assurance and of project and programme M&E systems**
- d. Adoption of best practice project cycle management**

- S47. Overall governance has been characterised by a light touch (6.2), which has been responsive and supportive. Programme Managers' contractual obligations have been clearly, if voluminously, defined in their Terms of Reference (6.2) although this has not precluded flexibility. There has been substantial written reporting but a lack of synthesis, leading to limited cross-programme synopses (6.2). Considerable reliance has been placed on CRD/Lead Adviser annual reviews (6.2) to monitor progress. Although individual Programme Managers, together with Lead Advisers and PAC members do maintain contact, the lack of formalised structures means that the full opportunity to exploit strategy-wide synergy is not taken.
- S48. Quality assurance at Programme and strategy level is thus much less rigorous than that applied to individual projects and programme activities (6.2). The PARC review (Annex 9) was an attempt at a late stage to remedy the lack of strategy-wide analysis.
- S49. Although PACs are pivotal to the governance system (Figure 3) there are major differences in the level of engagement (6.2) and much depends on the relationship between individual Programme Managers and their PACs (6.2). The level of interest of Lead Advisers also seems to be significant. PACs have no formal cross-programme communication channels (6.2).
- S50. PACs undertake varying degrees of engagement in the formal management and quality assurance of their programme (6.4). Some programmes utilise Thematic Leaders (FRP), local coordinators (PSP) or contracted specialists (CPP) within their PAC structure (6.3). There is scope for clarifying PAC roles and responsibilities to achieve strategy-wide consistency (6.2). With one exception (CPHP) PAC members are UK based, although with extensive overseas experience (6.2).
- S51. Programme decisions on funding of projects and other activities were found to be flexibly made within the RNRSS guidelines (6.4). Discussions with contractors within the UK and overseas found widespread agreement that PACs and Programme Managers had performed well in this regard (6.4).
- S52. The selection process for all projects follows a standardised system of Concept Note through to full Project Memorandum (6.4) with major screening at the Concept Note stage. Both focused and open calls are made (6.4) and the degree of concentration amongst contractors, which was criticised in earlier years, has reduced in recent years. This provides a robust basis for selection.
- S53. The adoption of the cluster approach together with a range of alternatives to formal projects means that any future funding strategy will need to develop new guidelines for funding allocation (6.4.7).
- S54. Programmes have developed their own systems for M&E of progress, which vary widely (6.4). Despite this, there is no evidence of insufficiency but the lack of standardisation makes strategy-wide performance measurement very difficult (6.4 and Recommendation 8).
- S55. All Programmes appear to have performed well, despite a range of management models and systems (6.4). Nevertheless, there appears to be scope for refining project cycle management to strengthen and incorporate good practices. Key elements include (6.4) flexible contracting, support during the project preparation process, minimising delay in tendering, maintaining good contact with researchers, building cross-institutional links through training and education, providing support to partners through mentoring and clusters, applying effective and transparent evaluation within a standardised monitoring system.
- S56. The individual Programmes have generated a massive information resource based on printed and electronic documentation, and a whole host of other output media from project material. Increasingly this is being made available on the Web (6.2). Various initiatives for centrally based information dissemination appear to have fallen by the wayside over the years and there is scope for a strategy-wide review and decision on how to make best use of the knowledge and information base. Programme level information is generally well regarded by users (4.4).

Recommendation 6 – Uptake systems need to be identified within research activities and to be supported at policy level to achieve optimal impact and delivery of benefits

- S57. Research results require uptake systems in order to deliver benefits to practitioners; capacity building is also necessary if national researchers are to be able to take on progressively more research tasks.
- S58. Throughout the 10 year period of RNRRS, assumptions in the Logical Frameworks of the programmes and the strategy as a whole (3.4) have drawn attention for the need for an enabling environment, including uptake and capacity building mechanisms, to secure effective delivery of benefits. In 1994, DFID field projects and programmes were an important, but not exclusive, provider of support to wider uptake and capacity building activities, thus aiding directly the securing of impact for the identified ultimate beneficiaries. With the changes in aid delivery policy, notably the 1997 White Paper, this has changed with progressively greater reliance being placed on others, including national governments, to secure the delivery of uptake and impact.
- S59. Since then, all Programmes have increasingly incorporated a mix of specific projects, or built appropriate aspects into projects, to support strengthening of the enabling environment, including explicit support for policy, institutions and associated processes. Programmes have also initiated work on uptake and capacity building as a direct response to being committed to achieving research outputs focused on securing poverty reduction (4.2).
- S60. There remains a danger that with the more complex channels now available, valuable information becomes locked up in “supply-push” dissemination systems without the necessary “demand-pull” to ensure free flow.
- S61. All programmes have addressed policy level dissemination and this has undoubtedly assisted in creating an enabling environment (e.g. FRP water cluster facilitation of water policy change in India and South Africa – Annex 10). Research programmes alone, however, cannot obviate the need for investment to provide resources for uptake delivery systems and processes for all stakeholders. The example above indicates the level of resources that are needed for this.
- S62. Although Programmes have already established some activities to assist in uptake, there appears to be scope for DFID to further this process through its political links with other organisations such as bilateral and international donors, development banks and other key players, including private sector organisations where these are relevant. Such approaches would be assisted by strong central information systems (6.2).

Recommendation 7 – Capacity building at 3 levels needs to be built into future work: professional development of researchers; policy makers, decision makers and extension workers; and, institutional strengthening

- S63. Capacity building needs to be seen as much wider than simply supporting formal research qualifications and improved research management. If research is to deliver impact and to be sustained, then capacity building is required for policy and delivery institutions and actors, as well as for research institutions, which also need support in improving their strategic level planning and management of research (6.5).
- S64. Without Capacity Building in partner countries, especially in Africa (6.5) where losses of skilled human resources have been particularly severe, the potential impacts from supported research will not accrue nor will the benefits to future national research activities materialise. The individual Programmes have interpreted the strictures on support for Capacity Building in a variety of ways. Some have observed the letter of their terms of reference while others have largely ignored these. DFID appears to have accepted both extremes of interpretation (6.5).
- S65. The increasing engagement of southern partners in RNRRS, facilitated by initiatives aimed at developing capability in research leadership (as with the cluster approach for example) has reached a 50/50 balance in some Programmes (6.5) and leading southern authorship of publications is approaching this level (Table 6). Within RNRRS, although capacity building incentives were excluded for the first 8 years (6.5) programmes have adopted a comprehensive range of approaches, (6.5) including short training events and facilitating higher level qualifications. There has also been valuable mentoring of individual researchers and support through small grants and commissions and for attendance at meetings and conferences (6.5, Specialists' Reports, Annex 10; PARC Report, Annex 9).

- S66. The cluster approach, together with the system of participatory development of Project Memoranda is particularly valuable in assisting partner institution researchers to develop their skills in formulating demand led research. It also exposes them to the systems and standards of internationally competitive funding, as distinct from the usually less rigorous systems when large donor-funded projects and programmes are in place.
- S67. Although the formal capacity building can be replaced by other donor support, the informal mentoring of individuals has been of particular value, especially in those institutions where senior researchers are few and far between (6.4). The capacity to maintain this type of support needs to be included in any future strategy (6.5).
- S68. The extent to which devolution of leadership to southern partners is practicable depends on the policy/technical balance and the institutional capacity in administrative matters such as financial control systems as well as the availability of reliable communication systems (4.7).
- S69. Overall, capacity building in any future support should continue to include developing research expertise but needs to also include support for policy and delivery institutions and their personnel in order to promote uptake and adoption. Strategic level research management capacity also needs attention to ensure balanced and effective programmes which deliver results that are taken up and adopted (6.5). It is perhaps only major research institutional capacity building, including infrastructure and facilities, which is beyond the scope of RNRRS and similar initiatives (6.5).

Recommendation 8 – External evaluation processes (both strategy wide and programme level) need to be put in place to complement formalised M&E systems

- S70. There is considerable diversity among Programmes in the extent to which they make use of external evaluations (6.4). There is no doubt that external evaluation is helpful for creating new insights and for securing improved transparency.
- S71. M&E systems have not been developed in a coherent manner across the Programmes, although individually, Programmes undertake such activities (4.6, 6.4). Given the desire to utilise nested Logical Frameworks for key Programme and strategy-wide management, it would seem prudent to make use of an integrated, strategy-wide M&E system. Such a system should include but not be limited to gathering of information and data for impact assessment. Some activities are already being undertaken to achieve this end (5.5).
- S72. An effective M&E and Impact Assessment system would facilitate the strategy-wide management, improve coherence and, through information feedback, allow regular fine-tuning of Logical Frameworks and associated output to purpose review at Programme and strategy levels (3.4).
- S73. A formal, independent external evaluation process (both strategy wide and programme level) that ensures evaluation say every 5 years would be helpful for future management and also ensure that effective impact assessment was being carried out.

Recommendation 9 – Transitional arrangements should be made to ensure that the benefits of existing and ongoing work, and their accruing impact, are not lost

- S74. Despite lack of conclusive evidence for most of the programmes, there are indications that much of the ongoing work is likely to have an impact in the future (5.6). There is a significant risk of undermining this potential impact if provision is not made to accommodate ongoing work while consideration is being given to the optimal future strategy. If projects are wound up, research teams and active, functioning clusters with no expectation of new short-term funding will become scattered and engaged elsewhere. It therefore appears sensible for a period of transition funding (7.7) to allow time for:
- Determination of future priorities;
 - Selection of the most appropriate management options;
 - Identification of thematic areas.
- S75. It is also recommended that during a further period of funding, resources be earmarked specifically for capturing the professional and institutional memories from the individual RNRRS programmes in order to support management of the change process into any new research funding strategy with the minimal loss of information and experience.

Chapter 1 Introduction

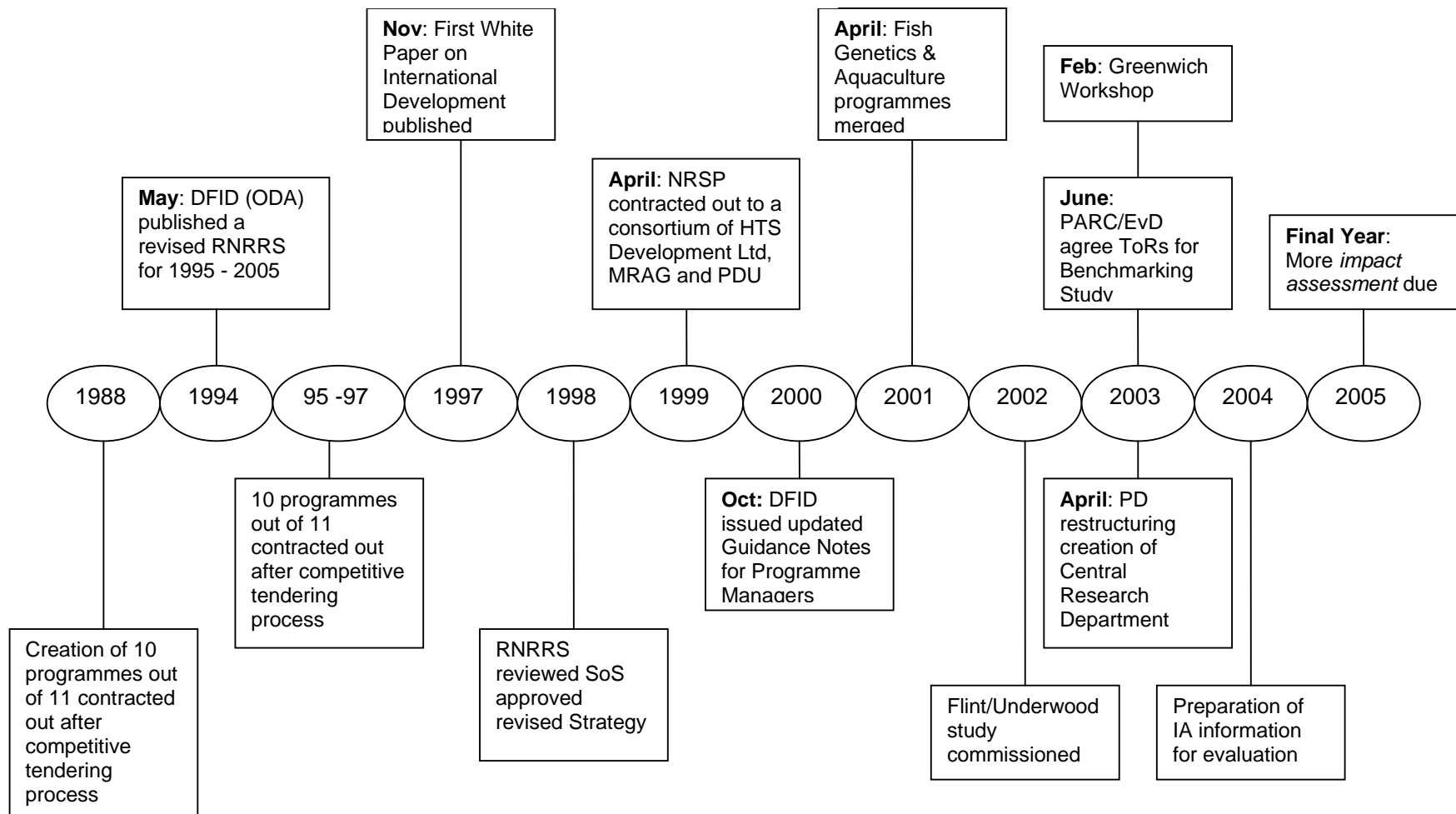
1.1 The Renewable Natural Resources Research Strategy (RNRRS)

- 1.1.1 In May 1994 the Department for International Development (DFID), then the Overseas Development Administration (ODA), published a new Renewable Natural Resources Research Strategy (RNRRS) for 1995-2005, the so called "Yellow Brick".¹ The RNRRS emerged and built on previous research funded by the ODA. The Goals of the RNRRS framework were to be the alleviation of poverty, the promotion of economic growth and of economic reform, and the mitigation of environmental problems. Achievement of the goals required the research to be wealth creating and/or improving the life for beneficiaries in developing countries.
- 1.1.2 In generic terms, the outputs were to be the removal of researchable constraints to economically and environmentally sustainable renewable natural resource development or resource management, with demonstrable impact on productivity, productive potential and/or production achieved within a 10 year timescale.
- 1.1.3 Research projects were to be demand-led, contributing to the achievement of a programme purpose by responding to the clearly defined problems of a closely specified group of beneficiaries.
- 1.1.4 The RNRRS was to adopt a geographic focus, mirroring a list of Core Countries (Bangladesh, Bolivia, Brazil, China, Ghana, India, Indonesia, Kenya, Malawi, Mozambique, Namibia, Nepal, Nigeria, Pakistan, South Africa, Sri Lanka, Tanzania, Uganda, Zimbabwe), and Niche Countries/Regions (for forestry –Belize, Cameroon, Guyana, Honduras, Malaysia; for aquatic resources – Pacific, Caribbean, SE Asia; for livestock/wildlife – Botswana, Gambia, Horn of Africa, Yemen).
- 1.1.5 The RNRRS was to adopt a production systems perspective, with all research focussed on one or more of seven RNR commodity/resource production systems (semi-arid, high potential, hillside, tropical moist forest, forest-agriculture interface, land-water interface, peri-urban interface).
- 1.1.6 The RNRRS is structured around ten contracted out research programmes:
- Natural Resources System (NRSP)
 - Livestock Production (LPP)
 - Animal Health (AHP)
 - Crop Post Harvest (CPHP)
 - Crop Protection (CPP)
 - Plant Sciences (PSP)
 - Forestry Research (FRP)
 - Aquaculture and Fish Genetics (AFGP)
 - Post Harvest Fisheries (PHFRP)
 - Fisheries Management Science (FMSP)

¹

Overseas Development Administration, 1994. Renewable Natural Resources Research Strategy 1995-2005, Final Report, Research Task Group, May 1994.

Figure 1: Timeline of the RNRRS (Source: PARC 2004)



- 1.1.7 The strategy evolved over time (Figure 1). A major revision took place in 1998 following the publication of the White Paper 'Eliminating world poverty: A challenge for the 21st century' in late 1997. This led to formal reviews of the programmes and revision of the programme logframes, and triggered further reflection and evolution both inside DFID and among Programme Managers (PMs). The December 2000 White Paper on 'Eliminating world poverty: Making globalisation work for the poor' also had some impact, manifested as a more recent preoccupation of some programmes with institutional change, marketing and business linkages.

1.2 The Evaluation Terms of Reference

- 1.2.1 The aim of the evaluation of the RNRRS is for an objective assessment of how effectively the ten bilateral programmes have responded to deliver the agreed outputs of the strategy (what has been met, what will be met, what will not be met and why). In addition, the evaluation seeks to identify components of the programmes which have made, or have strong potential to make, an impact on poverty, including impacts on science, policy and communication, and whether or not these components might be continued and how. The evaluation also seeks to learn lessons from programme and project cycle management, institutional partnerships and communications systems operated by the ten Programmes. The ToRs are in Annex 1.

1.3 The Evaluation Team

- 1.3.1 **The Core Team** of four members (Annex 2) had overall responsibility for developing the evaluation framework, leading the analysis of this information and drawing out lessons from the thematic and technical programme areas. The Team addressed the overriding aspects of the research strategy including research management and development, "good science", governance including institutional and organisational aspects and the goal of linking these facets into strategies to eliminate poverty.
- 1.3.2 **The Specialist Support Team** was established with eight experts to cover the individual research programmes (Annex 2). Working with criteria established in consultation with the Core Team, the Specialists assessed the scientific quality of each research programme, identifying areas of success and failure, the extent to which programmes had been conducted in a participatory mode, the degree of innovation in the research. The Specialists were selected on their development science qualifications and expertise in evaluating scientific research programmes. (Specialists' reports Annex 10)
- 1.3.3 **The Performance Assessment Resource Centre (PARC)** was separately contracted by DFID in 2003 to provide initial information on the programmes and their governance. PARC initiated the evaluation process by updating the impact assessment of each of the individual programmes using their benchmarking tools. (PARC Report Annex 9)
- 1.3.4 **An Evaluation Researcher** was included in the team to help with data analysis, particularly the analysis of publications from the programmes. (Citation Analysis Annex 11)
- 1.3.5 **The LTS International Project Manager** was responsible for the logistics and overall administration of the evaluation process.
- 1.3.6 **An Evaluation Steering Group (ESG)** was established by DFID consisting of independent international specialists to advise and support the evaluation team to ensure objective assessment of the RNRRS (Annex 3 for ESG ToR).

1.4 Evaluation Work Plan and Time Table

- 1.4.1 The evaluation commenced in early October, 2004 with a meeting of the ESG (Annex 4). In October the Core Team received background information from PARC, developed the criteria to be used in the evaluation of programmes, and commenced data collection from stakeholders in the UK. In November Specialists were briefed and commenced detailed assessment of the programmes. The Core team and Specialists received the PARC report in December, and continued data collection in the UK. Country visits by the Core Team took place in January, followed by analysis and preparation of a draft evaluation report in February 2005. Following the February ESG meeting and their advice and direction, comments from all UK stakeholders, and a change to the original ToR to not restrict the report to 50 pages, a final draft of the report was delivered to DFID in April 2005.

1.5 Scope of the Evaluation

- 1.5.1 The ToRs required an evaluation of the RNRRS Programme as a whole and, as a route to secure this, evaluation of the individual research programmes that contribute to this whole. The three key elements in the evaluation, as defined by the ToRs, relate to the quality of the research supported, the governance and management of the programmes and to the impact that has been achieved.
- 1.5.2 This evaluation is not an Output-to-Purpose Review of the whole programme, nor were the Specialists' reviews ever intended to be Output-to-Purpose Reviews of the individual programmes. Still less were they intended to undertake formal evaluation of individual projects within the programmes. The aim was to utilise selected sample projects to secure an overview of the individual programmes and thence facilitate evaluation of the RNRRS as a whole.
- 1.5.3 This report aims to provide DFID with a comprehensive analysis to assist in learning lessons from the past and to guide the future direction of RNR Research. It makes observations and recommendations that DFID itself will need to consider and then decide whether and how to take up. It is not meant to provide a definitive, ready-made decision for DFID on the future of RNRRS.

1.6 Outline of the Report

- 1.6.1 Chapter 2 of this report presents the methodology used for the evaluation. It lays out the issues concerning sampling and data collection and presents the criteria for the assessment of Science Quality, the Impact on Livelihoods and for Programme Governance and Management. The chapter ends with a presentation of the key challenges involved in undertaking the evaluation.
- 1.6.2 Chapter 3 presents an assessment of the programme purpose through a description and an investigation into the 'nested' logical frameworks of the RNRRS. The following chapters 4, 5 and 6 are the key elements for the evaluation. They lay out the evidence, analysis and assessment of Research Quality and Scientific Achievement, Poverty Focus, Contribution to Programme Purpose and the Governance and Management within the RNRRS.
- 1.6.3 Chapter 7 focuses on a Strategic Review and determines possible Ways Forward. It looks at the balance between scientific knowledge and livelihoods impact, the global research context and the RNRRS' comparative advantage. The chapter concludes by looking at some alternative options for research funding and management to support the way forward.
- 1.6.4 Chapters 8 and 9 draw together the conclusions from the evaluation and determine recommendations for DFID to act on.
- 1.6.5 Annexes 7, 8, 9, 10 and 11 to the report contain the evidence trail for the evaluation including the summary reports of the Specialist reports and the Core Team evaluations of programme performance and management, the Country Reports, the PARC report and the full Specialists report.

Chapter 2 Evaluation Methodology and Criteria

2.1 Preliminary Activities by PARC

2.1.1 In 1997, DFID commissioned a study to examine the monitoring of the impact of the RNRRS², which concluded that there was no case for undertaking impact assessments as a routine exercise, but that there could be a case for commissioning assessments of the impact of project clusters, which had the potential to affect large numbers of people. A more recent study by Flint and Underwood (2002) indicated that there was likely to be difficulty in assessing the impact of the RNRRS on the poor, because of a lack of common indicators of impact amongst the programmes, the lack of a systematic approach to monitoring and evaluation, and particularly of programme uptake. DFID's Central Research Department (CRD) then commissioned the Performance Assessment Resource Centre (PARC) in 2003 to establish commonly agreed benchmarking tools to enable impact assessment across the ten research programmes.

2.1.2 Four tools were developed:

- Structured Impact Matrix (SIM) to capture a comprehensive spreadsheet of all the projects undertaken through RNRRS funding, with details to indicate focus and achievement (for all projects) and the availability of qualitative and quantitative data against which to assess project achievement;
- Impact Pathways (IP) for current sets of projects to demonstrate how particular projects or clusters of projects were designed to meet the overall purpose of the programme;
- Impact Assessment Questionnaires, for current projects which often built on earlier projects, to provide details about each project's focus and achievement, in order to show evaluators where they might search for further relevant detail; and
- Impact Timelines to show how individual projects or clusters of projects actually progressed towards the programme purpose over time.

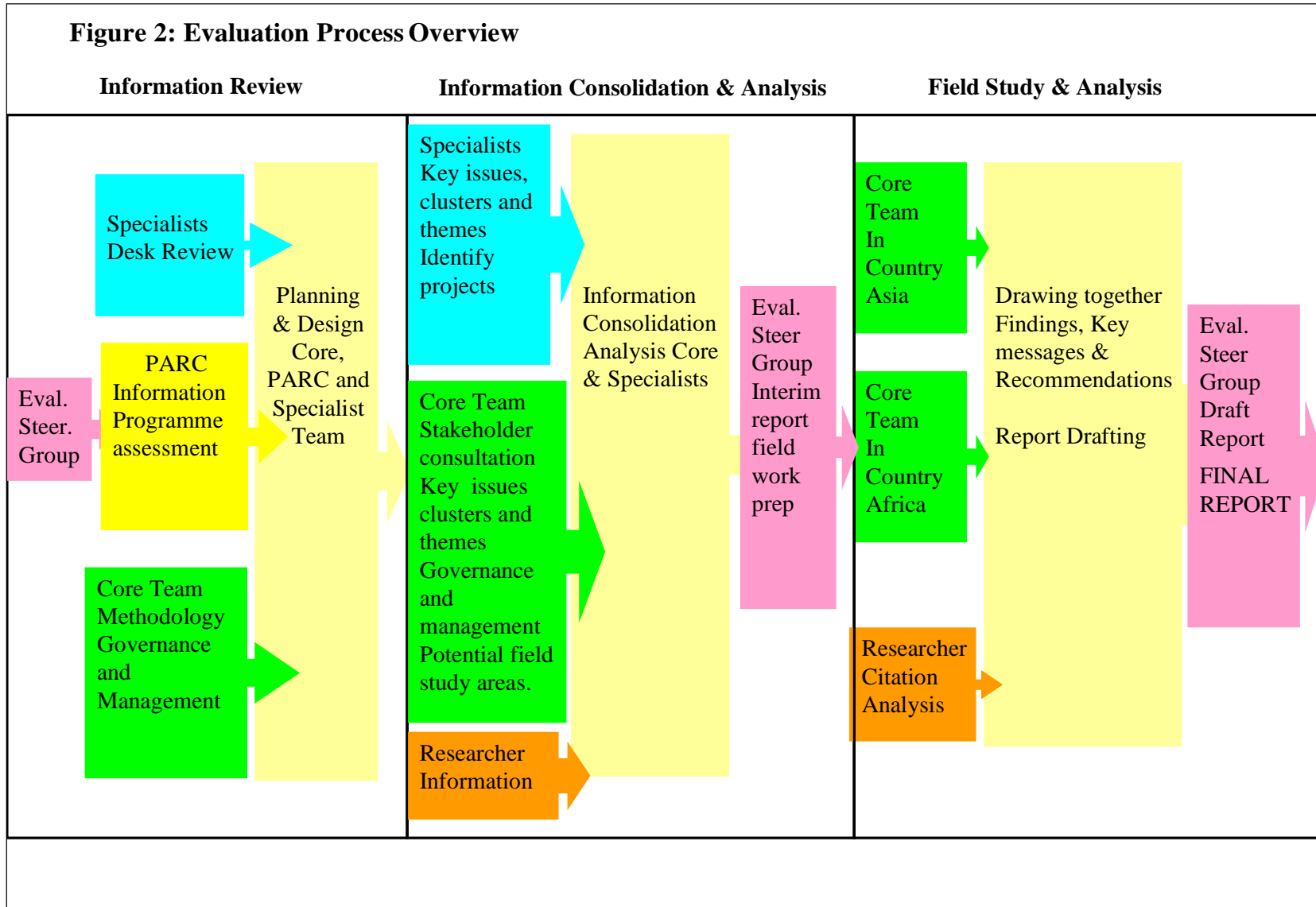
2.1.3 Programmes applied the different tools to different degrees with only three providing some data using the Impact Assessment Questionnaire and Impact Timelines. Furthermore, most of what was expected to be background information became available after the evaluation had commenced, making it necessary for the Core Team to launch their information gathering and consultation in parallel. Nonetheless, the PARC (2004) report provided information on the timelines of the RNRRS, a summary of governance arrangements, the structures of the programmes, and the impact pathways anticipated by the PMs.

2.2 The “stop-check-go” staged process

2.2.1 A “stop-check-go” staged process was adopted for the evaluation (Figure 2). It enabled the Core Team to draw together, collate and analyse the vast amounts of information provided by the RNRRS programmes. Each stage allowed engagement with different stakeholder groups and therefore provided for cross-validation and triangulation of findings in previous stages. Work plans were reviewed and refined as required at the end of each stage. An important factor in adopting the methodology was to ensure the most efficient and effective use of the personnel and resources, including those of the PARC.

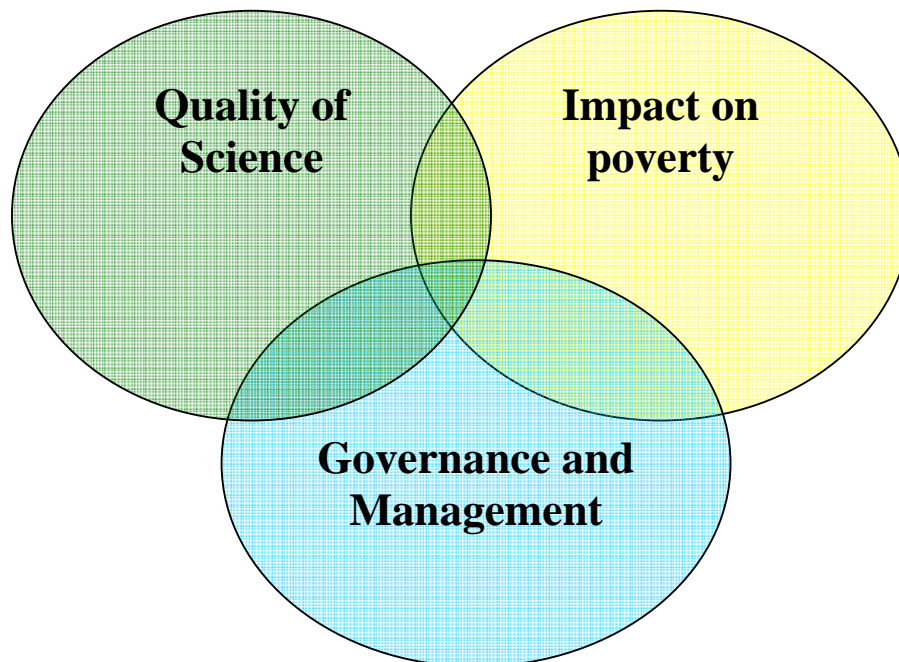
² Don Brown et al. (1997). Monitoring the Impact of the DFID Renewable Natural Resources Research Strategy for 1995-2005, ITAD for the NRRD.

Figure 2 Overview of Evaluation Process



- 2.2.2 To make the most efficient and effective use of the experience and skills of the Core Evaluation Team the RNRRS Strategy was assessed under three key facets: quality of science, impact or potential impact on poverty, and quality of management. The process of breaking down the Strategy into these key facets allowed the evaluation team to give an independent assessment of the primary driving forces behind the Strategy. The team could then derive key lessons, identify best practices and key influences and the balance relating management, and good science and impact on poverty when deriving recommendations for future orientation of the Strategy.
- 2.2.3 The key facet approach enabled the evaluation team to break down standard internal RNRRS reporting against the 'nested' logical frameworks which primarily address the overlap between the key facets, see Figure 3.

Figure 3 Key Elements of the Evaluation



2.3 RNRRS and Individual Programmes

- 2.3.1 The RNRRS has been operating for 10 years 1995 -2005. The Strategy is now comprised of ten, individually contracted research programmes which collectively amount to over 1600 research projects. The amount of information that has been associated with the RNRRS is enormous. Table 1 shows the distribution of budgets and projects by programme through the whole lifespan of the RNRRS.

Table 1 Budgets and projects of RNRRS programmes, 1995 - 2004

Programme	Total Budget (million pounds) ^a	% Total budget	% Budget proposed in Yellow Brick	Number of projects ^b			
				Latin America	Asia	Africa	Total
AHP	22.38	11.84	8.1	8	21	81	110
Aquaculture	2.66	1.41	2.0				
Fish Genetics	2.69	1.42	2.0				
AFGP	3.79	2.01		0	48	5	53
LPP	13.23	7.00	8.4	19	21	78	118
CPHP	23.41	12.39	12.6	5	32	173	210
CPP	49.26	26.07	26.4	45	130	310	485
FMSP	5.11	2.70	2.0	2	30	13	45
FRP	22.07	11.68	13.2	73	57	86	216
NRSP	27.21	14.40	14.2	28	74	95	197
PSP	13.54	7.17	8.4	8	93	58	159
PHFRP	3.62	1.92	1.5	0	13	13	26
Flexible			1.2				
Total	188.97	100.00	100.00	188	519	912	1,619

a Source PARC, 2004, Figure 9. Original data from Elizabeth Warham, DFID - No data for 1995/96 for FRP and PSP, no data for 1996/97 for LPP, CPHP, PRSP, no data for FRP for 1997/98, no data for LPP and CPP for 1998/99.

b Source: PARC, 2004. Original data from Elizabeth Warham, DFID. CPHP has noted a discrepancy between their figures and the PARC data.

2.4 Sampling and Data Collection

2.4.1 The Core Team used a number of methods and techniques for collecting the information needed for the evaluation. The total population of Programme Managers (PMs), Programme Advisory Committee (PAC) Chairpersons, and DFID Lead Advisers (LAs) were interviewed, sometimes more than once, using specific protocols (Annex 5). In consultation with DFID and PMs the UK based institutions which have led the most projects were interviewed, also using a specific protocol (see Annex 5 for protocols and Annex 6 for people interviewed).

2.4.2 The Evaluation Team has also assimilated enormous amounts of information from documented sources including:

- Strategic management and policy documents.
- Guidelines for operational and contractual arrangements.
- Standard reporting formats for programmes and projects.
- Strategic reviews for the RNRRS and for the individual programmes.
- Output reports and publications from projects and programmes.

- 2.4.3 For detailed examination of the scientific quality from the programmes a purposive sample of past and current projects were selected for detailed study. With over 1600 DFID-registered projects spread over 11 (later 10) programmes³, it was not feasible to cover the whole population given the time and resources of the evaluation. Furthermore, given the incomplete and sometimes outdated information, and differing coverage of Programmes in both the DFID database and the PARC SIMs, it was not thought wise to select a random sample of projects for detailed analysis. Purposive samples of projects were selected by Specialists in close collaboration with PMs to represent closed and current projects, large and small projects, the span on the A-H Scale⁴, and projects considered by PMs as the most and least successful. Two to eight percent of all projects ever funded were selected from each programme.
- 2.4.4 The individual Specialists' approach to sampling had to be purposive and be taken through a process of iteration. To ensure independence, it was required that the Specialist Reviewers had not been directly engaged in the programme they were evaluating during the period from 1994. Individual Specialists were, of course, aware to different degrees of the research that had been undertaken, of the more important findings and of the programmes themselves. This is inevitable given the high profile of the research funded, especially in those partner countries where substantial research has been supported by RNRRS, and the efforts made by Programme Managers to publicise their programme achievements and outcomes.
- 2.4.5 Each specialist adopted an approach to sampling that differed in detail depending on the characteristics of the programme. The aim was not to evaluate individual projects. It was to secure an understanding of a wide range of projects, that represented varying degrees of 'success' and to use these as proxies and examples to answer the main questions on the quality of the research, its management and delivery and on the use made of the results. (Section 2.5).
- 2.4.6 All individual programmes contained examples of projects that had failed for external reasons, which nevertheless assisted the team in identifying how programmes had extracted and adopted relevant lessons. Within the range of variation that applies in each individual programme, the Specialist Reviewers used a combination of reading, interrogation and discussion to secure a sample of projects for further detailed study which covered the range of basic and applied science, one-off and sequential projects, different contractors and so on.
- 2.4.7 For in-country stakeholder consultations, the four countries with the highest number of projects in each RNRRS region were identified (Bolivia, Costa Rica, Honduras and Mexico in Latin America, Bangladesh, India, Indonesia and Nepal in Asia, and Ghana, Kenya, Tanzania and Uganda in Africa). The number of projects in each country ranged from 20 to 144. Because of time constraint and logistics, and the low number of projects (20-49 per country), stakeholder consultations were not held in Latin America, as well as in Nepal and Tanzania.

³ Fish genetics merged with aquaculture under the management of Stirling University as the University of Wales did not want to renew its contract due to Welsh legislation which precluded research into genetic modification of organisms

⁴ All DFID-funded projects are scored with Poverty Aim Markers to show where they intend to focus in terms of the continuum of effort involved in poverty reduction. The Key to Scoring for Uptake Pathway are as follows:

- A – Generation of relevant research results
- B – Formal/informal agreement with target institutions
- C – Development of appropriate research-based products through adaptation/packaging
- D – Promotion of products into target institutions
- E – Adoption of products by target institutions
- F – Application and replication of results in target institution programmes
- G – Promotion of technology or behavioural change among end-users by target institutions
- H – Adoption of technology by end-users and generation of economic benefits

Projects were also categorized as follows:

- an "enabling" aim indicates that the project is aimed at the policy or institutional change that will be necessary to ensure benefits to poor people e.g. influencing policy change to permit the use of genetically modified crops;
- an "inclusive" aim indicates that wider social groupings, including poor people, may also benefit from the project - in the context of RNRRS an inclusive focus also encompasses influencing institutional change;
- a "focused" aim indicates that the primary aim of the project is to ensure a more exclusive focus on benefits to specific groups of poor people.

- 2.4.8 The Core Team split into two groups and visited Bangladesh, India and Indonesia in Asia, and Ghana, Kenya and Uganda in Africa. DFID painstakingly constructed a list of project participants in each of the countries and the Core Team interviewed as many as could be contacted, either individually or in groups of up to 12 participants in each country using a structured set of questions (Annex 5). Stakeholders in about 10% of all RNRRS projects ever funded were interviewed (Table 2 and Annex 6). They included farmer organisations, NGOs, NARS, IARCs, private sector, extension agents, Ministries, and DFID officials.

Table 2 Number of Projects Sampled During in-Country Visits, by Country and Programme

Country	LPP	CPP	CPHP	NRSP	PSP	FRP	AFGP	PHFRP	FMSP	AHP
Indonesia	2	1	2	1		3			1	6
Bangladesh	4	6	5	13			1		3	
India	5	4	5	3	13	2	2			
ASIA	11	11	12	17	13	5	3	0	4	6
Ghana	2	10	14	5	3	2				
Kenya	4	10								1
Uganda	5	16	6	2						0
AFRICA	11	36	20	7	3	2	0	0	0	1
TOTAL	22	47	32	24	16	7	3	0	4	7

2.5 Criteria for Evaluation of Science Quality

- 2.5.1 Science quality was the main target of the specialist evaluation. Impacts on the poor, as well as management and governance aspects are covered mainly by the Core Team. However, in the course of this more detailed science evaluation, Specialists were requested to form impressions of the degree to which the projects, and through them the programme, had been conducted in a participatory mode, and to pass the impressions on to the Core Team.
- 2.5.2 Quality of science includes aspects related to the correct formulation of hypotheses, the appropriateness of scientific inputs, research methodologies and processes, and research outputs and outcomes. The most objective, and most commonly used measure of quality of science is the quality of publications in refereed journals. Since the methodology including biometrics, research process and reporting of results is subject to review by qualified peers, they provide an independent assessment of the quality of the research and the validity of the output. An assessment of a sample of the publications from RNRRS programmes, including citation analysis, was undertaken by the Evaluation Researcher.
- 2.5.3 Specialists used the criteria and factors below to score the programmes. The Scores were used as a mechanism for summarising the overall assessment of the programmes, but weighted averages across programmes were not intended to be, and were not used by the Core Team to arrive at judgements for all of RNRRS as that would have involved too much value-judgement about the variety of projects in the programme portfolios, in view of the limited and purposive nature of the samples. Rather, The Core Teams used the results, in addition to its information derived from its own interviews of PMs, project leaders and in-country stakeholders to arrive at broad conclusions on the quality of scientific output.
- 2.5.4 The methodology for the citation analysis can be found in Annex 11. The citation analysis undertaken within the evaluation is only for use as a guide. It was never the intention to compare the individual programmes within the RNRRS with each other. The sampling methodology for published articles varied between programmes. Under the AFGRP, FMSP and PHFRP programmes publication data was available between 1990-2004, and for the PSP programme publication data was available between 1995-2004, however, citation analysis for all 4 of these programmes was only carried out for articles published post and including 1997. For CPP, projects were only sampled between 2001-2004, according to information provided by the programme managers and the specialist and for FRP citation analysis was only carried out for 9 sample projects.

- 2.5.5 Each of the Specialist Reviewers was asked to make use of a numerical scoring system to summarise the different attributes of the programme for the benefit of the Core Team using a full scale of 1 to 10. These figures are internally consistent but cannot be used to provide a global summary table giving comparison across programmes as the scoring system could not be moderated in the time available. It was therefore agreed that although these numerical scores would reflect each Specialist's report, they would not be amalgamated. The limitations of the numerical information were made explicit to Programme Managers and others to avoid protracted debate on the "scores" given.
- 2.5.6 Programmes were scored 1 (none/worst) – 10 (much/best) for the following:
1. To what extent the programme contributes to new knowledge;
 2. To what extent the programme uses existing knowledge creatively in new contexts;
 3. Rating of the programme in relation to its innovation and scientific risk-taking with comment on projects that are innovative and projects that are not;
 4. Demonstrate awareness of all current knowledge (journals, books, web-based information) including in developing country literature, English language literature and non-English language literature;
 5. Extent to which the expected science achievements outlined in the log frame been met (key projects, outputs at programme level);
 6. Extent to which projects and the programme have contributed to science capacity building in the scientific communities in developing countries;
 7. Development of long-term institutional relationships between UK institutions and Southern institutions;
 8. Rating of the overall result knowledge dissemination from programme:
 - a) To science community (refereed, non-refereed, web-based, other media),
 - b) To developing country policy audiences;
 - c) To developing country outreach services;
 - d) To developing country end users (farmers, foresters, fisher folk.);
 - e) To the international donor community.

2.6 Criteria for Evaluation of Impact on Livelihoods

- 2.6.1 The impact of RNRRS programmes is examined from a number of perspectives:
- The direct impact that individual projects, or clusters of projects, have had on poor people, either through increasing the opportunities open to them, by providing new technologies, reducing the risks they face, through reduction of pest and disease, or changing the policy environment within which they have to operate.
 - The impact made through influencing partners; partners in the international research community, in the national research system, in the national public service provision sector, in the private sector and in the donor community
 - The potential impact that projects and programmes might have in the future.
- 2.6.2 There were considerable challenges in undertaking this assessment given the resource constraints and tight time frame. It was particularly difficult to get any feel for impact of the more recent projects and clusters as many analysts would argue it is difficult to assess impact on poverty in less than ten to fifteen years after the start of a project.
- 2.6.3 From the beginning, it was recognised that the evaluation would not be able to conduct any new assessment exercises, but would be reliant on secondary studies, data on project performance and information on project and programme processes. Because of the number of projects undertaken in the RNRRS, it was also accepted that the emphasis would be on programme level information, rather than project level.

- 2.6.4 Where existing evaluation studies allowed, poverty was analysed, as much as possible, using the Sustainable Livelihoods (SL) Framework adopted by the Rural Livelihoods Department (RLD) of DFID in the late 1990s. This is in contrast to assessments of impact of agricultural research that focus on changes in productivity of crops and livestock. An SL approach implies looking at changes in economic poverty, equity issues, gender impact, environmental sustainability, vulnerability, social capital and empowerment, capacity building and policy impact.

2.7 Criteria for evaluation of Programme Governance and Management

- 2.7.1 The TOR for the evaluation identify explicit governance and management issues in relation to project cycle management and programme management, as well as more general issues, particularly related to capacity building and skills transfer, and influencing activities.
- 2.7.2 Although the TOR do not make explicit reference to some important areas, the Core Team clarified with DFID that the following should also be considered:
- Expected and actual roles and responsibilities of PMs, and how these vary across the programmes.
 - Strategies and plans prepared by PMs beyond the programme log frames – comparing and contrasting approaches, structures, balance and strategic planning processes.
 - Management systems and processes adopted by programmes, especially for participation, executive decision-making, communications, reporting, monitoring and review, and human and financial resources management.
 - Programme governance, particularly the effectiveness of the PAC arrangements with respect to strategic guidance, transparency and accountability.
 - DFID's strategic governance and management of the RNRRS as a whole, including arrangements for strategic direction, monitoring and evaluation, and utilising the outputs of the strategy.
- 2.7.3 The governance and management evaluation criteria used for the evaluation are concerned with "fit for purpose". Essentially, the Core Team evaluated the extent to which the governance and management structures and processes are appropriate, and whether they are actually delivering programme contracts economically, efficiently and effectively. They examined the planned and actual management roles and processes operated by DFID and programme managers, identifying points of good practice and issues requiring further consideration in designing the successor to the RNRRS.

2.8 Challenges faced by the Evaluation

- 2.8.1 The evaluation team faced a number of challenges which provide lessons for future evaluation activities.
- Although there was sufficient total time available for the evaluation, the overall deadline meant that there was insufficient time between the start and finish dates to allow for reflection, repeat consultations, and refinement of conclusions through dialogue.
 - Even given the time available, it was never going to be possible to do more than sample the more than 2,000 projects and other studies funded and the copious documentation relating to each of these. This made the sampling system of critical importance to securing a comprehensive overview of each programme.
 - A major limitation was the lack of independent or objective performance data on which the evaluation team could draw. This applied at every level from monitoring of project performance, evaluation and impact assessment, through to assessment of programme achievements by programme managers and by DFID. Even the impact assessment activities carried out by PARC relied on self-assessment by programme managers.

- Despite all of the efforts to collate and make available information held at the centre or by programme managers, the available data still displayed a number of limitations, in terms of volume, completeness, accuracy, and currency. Specific examples are: lack of comparability between programmes' annual reports despite the guidelines on contents and formats; out of date contact and address lists; absence of a reliable central index of documents indicating their location; and the variety of media types available.
- The limited numbers of programme and strategy level documents meant that it was necessary to draw heavily on organisational memory to understand the evolution of the strategy, and changing priorities and processes. At the same time and in some cases the lack of continuity of personnel meant that this was an unreliable source.

2.8.2 To facilitate the evaluation of future programmes, careful consideration should be given to the collection and archiving of documentation, and to regular commissioning of objective reviews within an overall system of monitoring and impact assessments. There needs to be adequate investment in the evaluation process to support and manage change.

2.8.3 This evaluation is presented as a coherently argued interpretation of the DFID RNRRS Programme since 1994. It has, nevertheless, been constrained by the time available to the team and the sheer impracticality of detailed study of all the more than 2000 projects that have been funded and of the detailed documentation relating to each programme.

Chapter 3 Evaluation of Programme Performance

3.1 Programme Logframes

- 3.1.1 The RNRRS is structured around “nested” Logframes. There is an overall Logframe for the strategy, and within this there are Logframes for each of the programmes. All programmes were established with production system Logframes, but in a number of programmes these have evolved over time into Logframes at cluster, or geographic level. These programmes, in turn, consist of projects which are required to develop their own logframe. The outputs of projects contribute towards project purpose, which in turn contributes towards output at programme level.
- 3.1.2 The Yellow Brick had an overarching Logframe that is unusual in that it had three Goals, one Purpose and three Outputs. Under this, each Programme had multiple Logframes. Table 4 shows the number of Purposes and Outputs given to each Programme in the Yellow Book. Over the ensuing 10-year period, these have been simplified to the position shown in Table 5. The simplification has occurred as part of evolving programme management and was made by PMs in consultation with PACs. It is not clear to what extent the original central control, to create “nested” Logframes, has been applied during this evolution nor whether the original “nesting” has simply become broadly hierarchical.
- 3.1.3 Table 3, below, shows the purpose statement and the Objectively Verifiable Indicators (OVIs) of achievement by the programme. Logframes of most programmes changed, with DFID agreement, around 1999, when programme management contracts were renewed, and some programmes have continued to modify Logframes in accordance with changes in approach.
- 3.1.4 The table shows that there is considerable variation in approaches to indicators of achieving purpose. For some programmes, the indicators of purpose are very specifically identified, for example, AFGP identifies an increase in income by 20% for half a million people in SE and S Asia by 2005. For others they are very general, and would be difficult not to achieve, such as the wide range of benefits identified by LPP.
- 3.1.5 In analysis of the “Assumptions columns” within the logframes from the 1995 “Yellow Brick”, the assumptions at programme purpose and output levels generally related to the need for an “enabling environment” and for “investment in uptake pathways” respectively. Over the 10 year period of the strategy, the assumptions have gained a little in detail but have not in essence changed. The assumptions stated within the latest programme logframes all highlight the policy environment for poverty reduction, with more emphasis being directed toward poor people themselves having opportunity to utilise programme outputs. All of the programmes have had to start to build in activities to support the “enabling environment”. The issue is highlighted as programmes have moved from managing outputs from the programmes to attaining impacts on poverty.

3.2 Reporting against Programme Purpose and Outputs

- 3.2.1 PMs do not, for the most part, report against logframe purpose, but focus on the output level. There are exceptions to this; NRSP has assessed progress at the Programme Purpose level since 2000-2001, and CPP reports on achievement of OVIs against sub-programme purpose. These are generally set out in terms of adoption of poor farmers (number unspecified) in a given number of target countries. Other PMs report against programme outputs, either in narrative or on progress against indicators. In general, programmes report high levels of achievement against output, and, based on the comments lead advisors have made on the annual reports of their programmes, this seems to have been accepted by DFID. The reports of the science specialist review team also support the view that the programmes have delivered at output level.
- 3.2.2 PMs also identify and report against appropriate milestones, agreed with DFID on an annual basis, to enable the tracking of progress towards the programme’s strategic objectives.

- 3.2.3 One concern that was voiced by a number of PMs during the meetings with the evaluation team was where the responsibility lay for reporting against programme purpose. The PMs are responsible, as laid out in the programme management performance indicators contained in the guidelines for PMs, for uptake promotion. PMs are not, however, contractually responsible for delivering against programme purpose, as this may depend on factors beyond the PMs' control, but they are responsible for delivering research outputs which could be expected to deliver the developmental impacts identified at the programme purpose level, for identifying uptake pathways and initiating action with target institutions to promote uptake of research outputs.
- 3.2.4 As will be discussed below, there have been different interpretations as to how far PMs should go in promoting uptake, and in assessing likely impact of their programmes. Examination of the logframes show that the means of measuring OVIs is generally through use of surveys and national statistics, which would require considerable investment of resources to undertake. Yet it is precisely this kind of analysis and assessment that is required to show impact, and identify the ultimate success of the RNRRS in producing benefits for poor people. There has been no overall strategy to address this, and PMs have addressed this gap on an individual basis.
- 3.2.5 PMs maintained during interviews with the Evaluation Team that the great majority of projects funded by the RNRRS achieved the outputs they intended. This is consistent with the information provided in their annual reports. Some projects were aborted because of poor implementation, some came up against institutional constraints that they had not anticipated (for example, the project to train those selling animal medication in village dukas in Kenya) and some simply could not find an effective technology to address the problem identified (storage of yams in Ghana). The Lead advisor reviews of annual reports, and the specialist reports confirm that the vast majority of RNRRS projects have developed technologies and methods which have the potential for increasing productivity and/ or reducing poverty, dependent on level of adoption, an enabling policy environment and their accessibility to the poor.

3.3 Logframe Evolution

- 3.3.1 There is no doubt that the major policy and administrative structure changes within DFID since 1997 required modification of the RNRRS Logframes. Although all changes were approved by DFID, such as when programme management contracts were renewed, it is not clear to what extent the changes were guided proactively from the centre.
- 3.3.2 To our knowledge - as with the original design of RNRRS - the changes in logframes have not involved developing country scientists to any significant extent. In the Specialists' reviews of all programmes, it has been specifically noted that all programmes have adhered strictly to their (current) Logframes. The Logframes have played important roles in the guidance of programmes, both by PMs and PACs, and also DFID. Within programmes projects have had their own (simpler) Logframes. Interviews the Core Team has had in Asia and Africa have revealed general satisfaction with the practice of project Logframes, and – after training provided by RNRRS – little difficulty in constructing and report according to these.
- 3.3.3 A more general issue remains, much beyond the RNRRS, on the wisdom and scientific incentive inherent in logframe based research. Science rarely works in straight lines and to manage a research programme only against outputs and indicators laid down at the start of projects may result simply in self-fulfilling prophecies (6.4). Systems such as the logframe are most useful when dealing with highly applied research or experimental development and least useful for basic or strategic research, in which the progress is never in the straight lines demanded by such a system. This results in wasteful revisions of objectives and may actually hinder the progress of a long-term study. In terms of the good science assessment most Specialists said that “objectives” and “milestones” are the biggest hindrance to research progress. Some large corporations are now reverting to “inspirational” research rather than object-oriented research. (see CPHP specialists report)

3.4 Impact Measures

- 3.4.1 In order for OVIs in Logframes to measure impact, considerable expenditure is required on information and data gathering. Brown (1997) concluded that the cost of this was too high to be justified on a general basis. Flint and Underwood (2002) drew attention to the difficulty of assessing impact without such an information base and the PARC work was commissioned in 2003 to remedy the situation prior to this evaluation. The difficulty the Team has faced in securing objective information on impact suggests that steps might usefully have been taken earlier to ensure that it was available.
- 3.4.2 It is not clear that the fundamental shift away from the situation pertaining in 1994, when the "Yellow Brick" was promulgated, has always been fully internalised within DFID. In 1994, RNRRS was primarily a programme envisaged to support field RNR projects and programmes being undertaken by DFID. The policy changes that have occurred since then (5.6 and 7.2) mean that this natural DFID constituency, through which uptake, capacity building and other impacts could be achieved, no longer exists. Research cannot be expected to provide mainstream development impacts other than at a very localised scale.
- 3.4.3 It appears that a more fundamental and analytical internal consideration by DFID of the need to balance a Logframe based management approach with formal systems of gathering data on impacts could have been helpful. The Team is fully aware of the complexity of such work, especially for those programmes such as livestock, forestry and fisheries where impacts may take well over a decade to materialise.
- 3.4.4 Had well-conceived OVIs been developed and resources for information collection been made available, it would have been more straightforward for the evaluation to draw conclusions on the contribution of each programme to RNRRS as a whole. Without this, greater reliance has to be placed on professional judgement and comparison with similar initiatives.
- 3.4.5 Programmes have become increasingly focused by the attainment of impact on poverty in their respective research realms. In analysis of the "assumptions column" of the programme logframes over the period of the RNRRS, it becomes apparent that all programmes have needed to initiate strategies to resource the enabling environment, within which the outputs of their research are framed. Programmes and projects are now building in support to the enabling environment including institutional support, and capacity building, and direct support into market led uptake of research findings. It is a challenge for programmes to balance this since the resourcing, for these built in inputs, is insufficient to be able to generate a sustainable enabling environment. There is a need for any impact assessment to ensure that the assumptions column is utilised fully. It is a key aspect to monitoring progress for longer term requirements to support research uptake and its overall impact on poverty reduction and eradication.

3.5 Key Points on Programme Performance

- 3.5.1 The evolution of Logframes from the overly complex structure in the "Yellow Brick" has been helpful for clarity in seeing individual programme achievements. There would appear to be greater scope for stronger linkages across programmes, which may have been useful in securing greater collaboration.
- 3.5.2 The lack of earlier objective data collection makes evaluation of impact problematic, especially when looking at the contribution of projects to programmes and programmes to RNRRS as a whole.
- 3.5.3 All aspects of the Logframe, purposes, outputs, activities and assumptions, need to be monitored to determine impact from projects and programmes. The Logframe should be able to frame impact assessment for programmes that, in turn, could be utilised as a management tool for strategic management of the research, its outputs and its uptake and impact on the poor.

- 3.5.4 The recently commissioned studies of impact will ultimately be very helpful but could not assist this evaluation. All the internal and external evaluations and assessments and data collation studies are leading toward the recommendations made by the Surr report in 2002. It recommends that DFID should be required to report more regularly and effectively on the impact of its research programmes. The evaluation team endorses this, and feels that for future research programmes, DFID should develop an impact assessment strategy, and an appropriately timed programme of impact assessments, commissioned centrally. This should be linked to the logframes and it's OVIs and to management of the programmes through their logframes.
- 3.5.5 If the value of the logframe approach is to be fully captured, their use has to be linked into a strategy wide, coordinated monitoring, evaluation and impact assessment system; this is currently lacking. (4.4)
- 3.5.6 To embody the research strategy in demand-led research and in order to open all available channels for uptake and promotion of research outcomes project cycle management needs to become much more participatory and to engage with all stakeholders at all stages of PCM.

Table 3 Programme Purpose Statement, and Objectively Verifiable Indicators (OVIs) of achievement

Programme	Purpose statement	OVIs
Animal Health (AHP)	Benefits for poor people generated by application of improved management of livestock disease	By 2005, in Kenya, Uganda, Tanzania, Africa, Bangladesh or India, evidence of: <ol style="list-style-type: none"> 1.1 Increased sustainable production of livestock by the resource poor 1.2 Decreased production costs for resource-poor livestock keepers 1.3 More reliable supply of safe livestock products to the poor
Aquaculture and Fish Genetics (AFGP)	Productive benefits of aquatic resources for poor people generated and sustained through improved knowledge of aquatic stocks and their selection, enhancement and culture	By 2005, knowledge gains allow 500,000 poor people in S & SE Asia to improve food supply by 20% and income by 20%, based on yield increases related to better aquatic stocks, sustainable aquaculture and enhancement practices, and at least 100,000 people positively impacted by development activities incorporating programme outputs
Crop Post Harvest ⁵ (CPHP)	National and international crop-post harvest innovation systems respond more effectively to the needs of the poor	By 2005, a replicable range of different institutional arrangements which effectively and sustainably improve access to post-harvest knowledge and/or stimulate post-harvest innovation to benefit the poor have been validated in four regions
Crop Protection (CPP)	Benefits for poor people generated by application of new knowledge on crop protection to: <ul style="list-style-type: none"> • High potential production systems. • Peri-urban production systems. • Coconut based systems at the land / water interface. • Rice based systems at the land / water interface. • Annual and herbaceous crops in forest agriculture production systems. • Tree crops in forest agriculture production systems. • Cultivation of herbaceous crops in hillside production systems. • Cereal based semi-arid cropping systems. • Migrant pests in semi-arid systems. 	<i>Indicators are identified at the production systems level, rather than for the programme as a whole.</i>

⁵ This is the logframe for 2002- 2005, but the purpose indicator statements are currently under review with CRD and the CPHP M&E advisor

Programme	Purpose statement	OVIs
Fisheries Management Science (FMSP)	Benefits for poor people generated by application of new knowledge to fisheries management systems.	<p>By 2005, evidence of application of research products, in S Asia and SE Asia for inland fisheries, and East Africa Indian Ocean and East Africa for marine fisheries by at least two of the following:</p> <ul style="list-style-type: none"> • Poor people • Institutions supplying services to the poor • Employers of the poor • Policy makers <p>to benefit target communities by achieving, for at least one EFZ, coastal or inland capture fishery, and for two enhanced fisheries, one or more of the following:</p> <ul style="list-style-type: none"> - Less variable capture fisheries production, and yield stabilised at sustainable level - Fisheries productivity increase / improvement for enhanced fisheries leading to increased livelihoods benefit - Improved access by poor people to fisheries knowledge generated by the Programme
Forestry Research (FRP)	New knowledge applied to problems in forest and tree resource management, the resolution of which benefits forest and tree-dependent poor people within the Forest/Agriculture Interface and the Peri-urban Interface.	<p>By 2005, increased financial capital for poor households through expanded tree-based employment opportunities; increased biological and technical productivity,; higher producer prices through added value in processing and marketing; reduced production costs through greater efficiency and effectiveness in the application of labour resources; and improved availability of subsistence items in land-use systems involving the management of forests and trees.</p> <p>By 2005, increased sustainable natural capital for poor households through: reduced variability and risk in production; and the development of new tree-based production alternatives.</p> <p>By 2005, increased physical capital for poor households through: improved information pathways and the production equipment and means by which poor people earn their living.</p> <p>By 2005, increased social capital for poor people through: adequate control of access to relevant forest resources; increased institutional capacity; and an enabling policy environment.</p> <p>By 2005, increased human capital for poor households through: enhanced forest management skills; less destructive tree-product harvesting and improved processing, packaging and marketing capability; and healthier nutritional use of indigenous tree products.</p>

Programme	Purpose statement	OVIs
Livestock Production: (LPP)	Benefits for discreet groups of landed and landless livestock keepers generated by the application of new knowledge on the sustainable management of livestock in semi-arid, agro-pastoral, forest-agriculture, high potential and peri-urban production	<p>By 2007, in response to primary demand from poor farmers engaged in crop/ livestock farming, from landless livestock keepers and from pastoralists/ agropastoralists in Latin America, Sub-Saharan Africa, and South Asia, evidence of one or more of the following:</p> <ul style="list-style-type: none"> • Sustainable increases in production/ productivity/ survival of livestock with special relevance of the poor • More, cheaper, safer livestock products consumed • Increased contribution of livestock to crop production • Reduced drudgery, particularly for women and children • Improved employment opportunities • Stabilized balance between people and domestic livestock • Sustainable resource base • Increased contribution of livestock to social development
Natural Resources Systems (NRSP)	To deliver new knowledge that enables poor people who are largely dependent on the NR base to improve their livelihoods	<p>By March 2005, new knowledge from NRSP's research can benefit the poor in use at the levels specified by at least two of the following target groups:</p> <ul style="list-style-type: none"> • Poor people themselves • Institutions supplying services to the poor • Employers of the poor • Relevant policy makers <p>By March 2006, products from at least 20% of NRSP projects, and the programme as a whole, used in the international research and development system, including DFID country desks and institutions in non-target countries</p> <p>By March 2006, lessons from NRSP's research internalised by NRSP's constituents, providing a resource for continued attainment of DFID's objectives.</p>
Post Harvest Fisheries Research (PHFRP)	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.	<p>By 2005,</p> <ul style="list-style-type: none"> • The level of post harvest losses identified and reduced by 50% in two target fisheries • The net incomes of poor producers sustainably increased in tow target fisheries • Food security amongst poor consumers maintained or improved through the availability of affordable fish on local markets.
Plant Sciences Research (PSP)	Benefits for poor people generated by application of new knowledge on selection and genetic enhancement of cultivars, and improved agronomic practices, to crop production in Semiarid, High-potential, Hillside and Forest Agriculture-interface	Real benefits (in terms of yield, farmer income, consumer prices, resilience etc) from improved crop production in Plant Sciences Programme target area by 2005.

Table 4 Analysis of 1994 Logframes from the Yellow Brick

Showing number of Purposes and (Outputs) by programme.

System	Land Water Interface	Tropical Moist Forest	Socio-economic methods	Semi Arid	Hillside	Forest Agric. Interface	Peri Urban	High Potential	Total Purposes	Total Outputs
<u>Programme</u>										
<i>FRP</i>		3(4,3,3)		2(4,1)	3(2,3,2)	3(4,3,3)			11	32
<i>AHP</i> ⁶				2(6,3)		1(7)		1(6)	4	22
<i>LPP</i>				2(6,3)		1(6)	1(2)	1(4)	5	21
<i>NRSP</i>	2(4,4)		1(7)	3(5,6,3)	2(3,2)	3(2,4,5)	3(3,4,3)	2(6,3)	16	64
<i>PSP</i>				2(3,4)	2(2,2)				4	11
<i>CPP</i>	2(7,6)			4(4,5,3,2)	2(7,4)	2(7,9)	1(4)	1(15)	12	73
<i>CPHP</i> ⁷				2(6)		2(6)	2(6)	2(6)	8	24
<i>FMSP</i>	2(5,3)								2	8
<i>Aquaculture</i>	2(4,5)								2	9
<i>FGRP</i>	2(2,4)								2	6
<i>FPHP</i>	2(3,4)								2	7

⁶ AHP Links High Potential and Peri Urban systems.

⁷ CPHP uses Crop based structure linking Semi Arid and Hillside; FAI and Hillside systems

Table 5 Analysis of Latest (2004) Logframes by Programme.

System	Land Water Interface	Semi Arid	Hillside	Forest Agric Interface	Peri Urban	High Potential	Total Purposes	Total Outputs
<i>Programme</i>								
<i>FRP</i>							1	4
<i>AHP</i>							1	2
<i>LPP</i>							1	4
<i>NRSP</i>							1	5
<i>PSP</i>							1	5
<i>CPP</i>	2(4)	3(6)	1(2)	2(4)	1(2)	1(2)	10	20 ⁸
<i>CPHP</i>							1	2
<i>AFGRP</i>							1	6
<i>FMSP</i>							1	1
<i>FPHP</i>							1	2

⁸ Only CPP continues to formulate separate Logframes for the different production systems

Chapter 4 Research Quality and Scientific Achievements

4.1 General Issues

- 4.1.1 Overall research direction was given by the “Yellow Brick” in 1994. Much thought by a then strong natural resources research community in DFID went into the formulation, supplemented by input from DFID advisers located in DFID country offices. We have been unable to ascertain whether any independent input from developing country scientists and research and policy communities went into the formulation of The Yellow Brick, beyond mostly informal discussions held at country level between DFID country advisers and local research groups.
- 4.1.2 At the two major changes to the aims of RNRRS – towards poverty reduction in 1998 and more capacity building in 2001 – the new directions came from political considerations within the UK political environment and DFID itself. It is conceivable that a regional and bottom-up design approach involving developing country scientists in leading roles may have led to suggestions for different scientific research priorities and procedures for a RNRRS. When similar exercises were carried out in e.g. the CGIAR system, new research priorities and modes of operation were identified (CGIAR-NARS Meeting of Minds I, II and III, 1999-2001).
- 4.1.3 As indicated in Section 2.5, the Evaluation team used a number of approaches to assess the quality of the scientific output of the RNRRS. These include an objective measure (citation analysis of publications), and a number of subjective assessments by the Specialists and the Core Team.

4.2 Programme Content

- 4.2.1 In the period since 1994, the RNRRS framework has been characterised by the generally short-term nature of projects supported and changing political aims within DFID as a whole. DFID has also undergone a string of internal reorganisations. This has had repercussions on the geographical spread of research of the RNRRS programme and impacted severely UK institutions with significant dependence on DFID as a major source of development research funding.
- 4.2.2 Programme Managers and Programme Advisory Committees appear to have adapted the project portfolio and individual projects very capably to these changing political signals. For example, social science was seriously under-represented in early years but has progressively consumed a larger proportion of the resources, reducing the natural science components, a shift confirmed by the citation studies (4.4).
- 4.2.3 From the interviews conducted by the Core Team, it is apparent that any early reluctance among scientists to move from the more basic toward the applied end of the research spectrum has been overcome. Initial frustrations about the increasingly applied nature of research, even moving into development, have been transformed into significant enthusiasm about the potential for concurrent, direct impact on science policy and on livelihoods of poor people. The Cluster approach has been a good mechanism for achieving this mix.
- 4.2.4 An issue arises with DFID-dominated development research financing of UK-based science. With its holistic emphasis on poverty eradication it may have reduced its contributions to more basic research in this field. Contractors and researchers involved in development research are certainly challenged in meeting the demands of other funding sources, which rely heavily on the scientific publication record and cutting-edge research and for which poverty eradication is not a goal.
- 4.2.5 The Plant Sciences Programme has a particularly impressive publication record with widely quoted articles. Housed in a traditional university environment it is not unnatural for a university-managed research programme to take this line. Similar tendencies are seen with other university-based programmes: aquaculture and animal health are examples. Smaller programmes, like the Post Harvest Fisheries Programme, have few refereed publications.

- 4.2.6 Most programmes that are not managed from a university environment seem to have relatively fewer and less quoted refereed publications. It must be understood that the career incentives in universities are likely to be more closely linked to academic publications than in research institutions and consultancy services. These may prioritise customer contacts, inventions, and the creation of successful spin-off enterprises.
- 4.2.7 The level of multidisciplinary research that has been achieved at project level across RNRRS represents a good example of modern scientific approaches to development studies. This achievement is notable both in the UK and in cooperating developing-country institutions. The Core Team believes that RNRRS has contributed significantly to this mode of conducting research in natural sciences. Interestingly, all programmes appear to have embraced much more interdisciplinary approaches than were common in participating institutions prior to RNRRS.
- 4.2.8 These approaches may have arrived earlier in Southern institutions as a result of RNRRS than might otherwise have happened. A natural resources and fisheries project on controlling stream flow in the floodplains of Bangladesh – a co-operation between a government research institution, a Bangladesh NGO and a CGIAR institute – won an international award for its work, which was very much on the applied side. This is in line with the aims of both the Yellow Brick and the later poverty reduction orientation of RNRRS.

4.3 Project Time Frames

- 4.3.1 The current RNRRS structure leads to short-term projects yielding limited research continuity (although some projects have covered the entire 10-year period through extensions) and of too short a duration to tackle fundamental problems. Very few projects have truly moved research frontiers significantly, although some failed projects tried hard to do so (failure in such cases is within the accepted scope of research risk taking, e.g. nitrogen-fixing cereals in plant sciences that did not work). Projects have been forced to concentrate on issues where intensive, short-term research may be expected to reach tangible results. This initially favoured well-defined natural science-based approaches whereas social science aspects and implications normally require longer periods of observation and research, making a significant challenge in including social science, which has ultimately been met by all programmes. However the shorter timeframes have enabled research streams to keep up with changes in policy and development thinking.
- 4.3.2 The Core Team received consistent comment from PMs and whilst overseas that the 3-year cycle for competitive grants, even when renewals were obtained, has led to limited research continuity. Three years (in effect often 2, with start-up and reporting phases) is too short in duration to tackle fundamental problems. As an example: the commercialisation of a promising animal vaccine in Indonesia suffered from this.
- 4.3.3 Short-term funding encourages drift towards the applied side of the research spectrum, to look for immediate impacts, including in this case impacts on the poor. Ensuring the sustainability of research findings and strong poverty reduction, therefore, usually fall outside the scope of short-term projects.
- 4.3.4 Short term funding also creates employment uncertainties for project staff, both in the UK and among developing country partners. A five or 10-year period for RNRRS grants may have yielded a distinctly different family of projects, and had different effects on the sustainability of actions arising from RNRRS research. In addition it may have led to more capacity building both in the developing countries and in the UK. Against this must be seen the diligent closures of less successful projects done by PMs and PACs, avoiding further investments in less than promising research endeavours, and any legal challenges arising from premature termination of long-running projects. Shorter-term projects on the applied side may also give better scope for participation by smaller research partners. The Core Team saw this in livestock projects in India.
- 4.3.5 Short-term funding also influences the level of ambition of research. The Specialists' reports, without exception, note that risk-taking in the actual research projects has been moderate to low. Focus on impact from short-cycle projects naturally encourages "safe bets". Programmes that have initiated and developed high risk basic research, have had to draw on other funding sources to support the longer timeframes and the higher investment costs required.

4.4 Quality of the Science, Contribution to New Knowledge

- 4.4.1 All programmes and most projects have been conducted well or very well. Programme leadership has been stable, project leaders have been chosen with care, and although many different models for science management have been used, they have all produced satisfactory results. A common factor seems to be that the quality of science leaders determines, more than any other factor, the quality of the research. In this respect RNRRS has been both very capable in its choice of science leaders, and well served by those appointed. Scientific standards have been generally high and occasionally very high. The highly competitive arena in which RNRRS funding has been allocated, and the close attention paid by PMs, has ensured that all research has been conducted to very high standards. None of the Specialists found major errors of process or procedure.
- 4.4.2 Whilst the Specialists and Core Team members may at times differ on the consequences of the observed drift in the OECD R&D spectrum, there is little doubt that a very great deal has been achieved. RNRRS has established itself globally as possibly the leading research programme in natural resources management. This is a major achievement. It may be that this perception is more strongly held abroad than in Britain, which should be seen as an additional compliment.
- 4.4.3 RNRRS research has produced a very large number of publications. Some are scientific publications in internationally refereed journals and books, others are nationally refereed, while some are direct project documents without peer review outside the projects or programmes. In addition less orthodox media presentation of research work has been undertaken (BBC World Service and local radio programmes, films and videos shown nationally, as with animal health programs in India, newspaper articles, cartoons, street theatre, also in India and drama competitions in East Africa).
- 4.4.4 In relation to the quality of science, peer reviewed articles in journals and books constitute a standard measure against which to judge one aspect of science quality (but there are clearly others also). With the wide scope of RNRRS, many types of publication play important roles but peer-reviewed articles remain one classic measure. The Core Team commissioned a citation index study on a sample of 500 projects from all 10 programmes. Publications naturally tend to appear towards the end of projects, so emphasis has been put on later years. Many PMs have informed us that substantial numbers of publications are still in press or in preparation. The details of the citation analysis of 2,792 refereed RNRRS publications are summarised in Table 6. Full details are given in Annex 11.
- 4.4.5 The citation analysis undertaken within the evaluation is only for use as a guide. It was never the intention to compare the individual programmes within the RNRRS with each other. The sampling methodology for published articles varied between programmes due to the information obtained from the programmes through DFID, programme managers and the specialists. Under the AFGRP, FMSP and PHFRP programmes publication data was available between 1990-2004, and for the PSP programme publication data was available between 1995-2004, however, citation analysis for all 4 of these programmes was only carried out for articles published post and including 1997. For, CPP projects were only sampled between 2001-2004, according to information provided by the programme managers and the specialist, and for FRP citation analysis was only carried out for 9 sample projects.
- 4.4.6 Publications in refereed journals can arise from all research projects, as there are journals for virtually any type of research or dissemination activity. Variation in the number of refereed publications between programmes is therefore an indication of the relative importance given by the programmes to scientific publications, thereby subjecting research and dissemination output to review by peers, as well as a reflection of the programme strategy.
- 4.4.7 Attempts were made to review all publications of the programmes starting two years after the onset of the RNRRS, i.e. from 1997. However data could only be compiled for fewer numbers of years for some programmes (Table 6). Data on citations is from the Institute for Scientific Information (ISI) database.
- 4.4.8 On the average 20% - 40% of authors of published articles are partners from the "south" showing the RNRRS programmes have integrated their partners in all aspects of the programmes including the publications of journal articles. This was confirmed during the in-country visits, and there were hardly any complaints from stakeholders regarding co-authorship of publications.

- 4.4.9 The percentage of projects with publications in refereed journals varied widely by programme, from 65% for AFGP to 10% for CPHP. The low percentages for CPHP and NRSP are a cause for concern, as they may indicate that these programmes do not submit the majority of the outputs from their projects to scientific review by peers, or that there is a high rate of rejection of articles submitted to journals. The FRP figure is based only on a sample and hence the low figure for the percentage of projects with refereed publications is not directly comparable. Since all RNRRS programmes have significant numbers of their projects involving dissemination activities, the variation in percentages may also be an indication of the interest that different programmes have in publications in refereed journals. Given the resources and time available, it was not possible for the Core Team to determine precisely which of the above reasons is the most important.
- 4.4.10 For the projects that published articles in refereed journals the number of refereed publications per project shown in Table 6 (average publications / 3) indicate an average of 0.6 to 1.1 publications per year, taking an average of 3 years duration for each project. It is difficult to say whether that is an adequate rate of output by comparison with other institutions. However, the average would be considered on the low side by universities, or by CGIAR institutions engaged in similar research. For ICRISAT staff members, the average output was 2.0 journal articles and 2.5 conference papers per scientist per year, with a substantial variation in average number of publications per year per scientist, ranging from 0.14 to 7.43 for journal articles, and 0.4 to 14.0 for conference papers for staff who had spent at least 2 years at the Institute (ICRISAT EPMP, 2003). In ICARDA during the 1994 to 1998 period the figures were as follows: germplasm enhancement - 2.6; production systems - 1.6; NRM - 0.5; and social sciences 0.4. For IITA, which was considered to have a low output, the figures were: crop improvement - 1.6; NRM <1; socioeconomic <0.3; (IITA, 5th External Program and Management Review, 2001).
- 4.4.11 The average Impact Factor⁹ for the journals in which articles are published, and for journals in which citations occur, range from 0.9 for CPHP to 3.4 for FMSP. These indicate that in general, RNRRS programmes are publishing their articles in respected journals, and they are cited in respected journals. PSP and FMSP get their publications into the highest rated journals, while CPHP does not do so well.
- 4.4.12 The number of citations gives an indication of how highly peers regard the information in the journal article. Programmes where less than half of the published articles are cited (AFGP, PHFRP) should examine whether their publications are reaching their targeted scientific audience. The publications of some programmes (e.g. PSP) are much cited and are clearly having great impact on the scientific community.
- 4.4.13 From the above analysis, one can say that the quality of scientific publications from RNRRS programmes has been good. Some programmes (PSP, FMSP, AHP and AFGP) score well, while others may need to pay more attention to this area. The evaluation team has greater concern about the quantity of scientific output, which it considers as low in some programmes, but which may merely be a reflection of the increased attention paid to non-scientific publications in recent years.
- 4.4.14 The record of publications in referred journals discussed above points to the fact that some RNRRS programmes have made significant contributions to new scientific knowledge. As expected, examinations of sample projects by Specialists show that this contribution has varied between projects and programmes. Overall, the Evaluation Team believes that, for the reasons laid out above, RNRRS has only been able to make an average contribution to development of new scientific knowledge. This is to be expected from a research programme that has been increasingly designed to be mainly applied in nature.

⁹

A journal impact factor is a measure of the frequency with which the "average article" in a journal has been cited in a particular year. It helps evaluate a journal's relative importance in its subject area.

Table 6 Citation analysis of publications from a sample projects in selected years by programme

Programme	Years	Tot Proj ¹	Proj Pub % ²	No Pub ³	Avr Pub ⁴	Pub IF ⁵	PWC ⁶	Tot Citations ⁷	Avr Cit ⁸	Cit IF ⁹	% South ¹⁰
AFGP	1997-2004	51	65	105	3.2	1.4	14	379	3.6	1.6	30
AHP	1999-2004	43	53	75	3.3	2.1	19	326	4.3	2.7	30
CPHP	1997-2003	127	10	23	1.8	0.9	11	63	2.7	1.2	30
CPP	2001-2004	93	26	52	2.2	1.6	17	98	1.9	2.0	30
FMSP	1997-2004	25	60	40	2.7	3.4	9	89	2.2	1.2	30
FRP ¹¹	1996-2004	69	13	21	2.3	2.5	8	98	4.7	1.4	30
LPP	1997-2004	63	30	33	1.7	1.2	13	127	3.8	1.3	30
NRSP	1997-2003	122	16	42	2.1	2.3	14	180	4.3	1.6	40
PHFRP	1997-2004	12	50	10	1.7	1.3	3	32	3.2	1.9	20
PSP	1997-2004	98	62	158	2.6	2.6	37	1,396	8.8	2.3	20

¹ Total number of projects in operation during the period reviewed (NARSIS database)

² Percentage of projects with publications in refereed journals

³ Number Publications in projects reviewed

⁴ Average number of refereed publications per project reviewed

⁵ Average Impact Factor for journals with the articles

⁶ Number Projects with Citations (in period of assessment)

⁷ Total number of citations for published articles

⁸ Average number of citations per publication

⁹ Average Impact Factor for journals with articles citing the referenced publications

¹⁰ Proportion of authors who are from the "south"

¹¹ Sub sample only, there are many more publications that were not subjected to analysis

- 4.4.15 Those programmes with a higher proportion of their research portfolio in more “basic” research (e.g. PSP, AFGP, AHP) have scored higher in this respect. Notable contributions to new knowledge identified by Specialists include PSP’s participatory crop breeding techniques, which have been published in high profile scientific journals such as *Euphytica*; PSP’s work on marker assisted breeding, and establishment of the genetic map for pearl millet, a very important crop for poor farmers in semi-arid areas, as well as crop transformation research with publications in *Nature*; AHP’s work on sequencing of the *Theileria parva* genome, and the epidemiological evidence of linkage between bovine tuberculosis and poverty.
- 4.4.16 Research results have been well publicised in the international scientific environment, with creative use of both older-style scientific publications and the new media. There has only been moderate to poor dissemination in developing countries but this is often due to factors beyond the responsibilities of RNRRS (eg poor access to expensive journals, poor internet connectivity). Some outstanding dissemination achievements in the South, using the new media but also unorthodox methods (eg cartoon strips and radio soap operas in LPP and CPP, street theatre and drama competitions in NRSP and CPP), have been noted. These have often had their origins and design from Southern partners.

4.5 Creative use of existing knowledge

- 4.5.1 *Problem solving and removal of constraints.* Where they have not contributed new scientific knowledge, Specialists have assessed many of the projects and programmes as making creative use of existing knowledge. Examples can be found in all RNRRS programmes. AHP/LPP’s feeding habit study of tsetse flies, which has led to the development of reduced costs for insecticide treatment of cattle is a good example.
- 4.5.2 CPP projects evaluated are not dominated by cutting-edge natural science with new high risk technology, but made innovative use of crop protection methods through good research, such as biological control of pests, that proved to be successful in other tropical and sub-tropical areas. Such projects have generally removed constraints faced by small-scale rural and peri-urban farmers in the project region, e.g. the work on cassava virus and sweet potato diseases in Eastern Africa.
- 4.5.3 PSP’s “seed priming” research has provided information to break an important constraint to very simple existing farm technology of seed soaking for a number of cereal and legume crops that has significantly reduced the risk of using the technology by extension systems.
- 4.5.4 CPHP’s diatomaceous earths clusters project, which uses non-conventional methods to protect cereals and pulses, is assessed as a major success story. It has excellent applied research credentials, good publications, a good profile, and is award-winning. It evolved into a highly successful implementation phase and has the environmental, economic and social benefits rarely seen in a short term project using modern science.
- 4.5.5 The NRSP review provides other good examples - the Participatory Action Plan Development method used in Bangladesh is now being used in similar projects in India and Vietnam, the methodology being used by the World Fish Centre in poverty-oriented fish farming projects, and the Tanzania rainwater harvesting projects which are now stimulating similar developments in other East African countries.
- 4.5.6 This creativity has extended beyond research as purely defined, into areas of institutional arrangements for research, as well as dissemination and communication systems. CPHP’s Innovations Systems cluster which has developed and applied a new conceptual framework for the analysis of partners and innovation processes was rated as representing a major shift in the way research for development is conceived, commissioned, conducted and exploited. It is a brave and novel departure, although the jury must be regarded as still out as to whether the benefits outweigh the transaction costs.

- 4.5.7 *Production systems perspective.* One of the guidelines provided in the “Yellow Brick” at the onset of the RNRRS was that research should focus on seven defined production systems. This was intended to ensure that technologies developed would be relevant. All RNRRS programmes have followed the guidelines but have innovatively adapted and adjusted the defined production systems in ways with which the Specialists and Core team have generally agreed. NRSP, which has the most direct focus on production systems, works in all systems but in response to a query from DFID in 1999, it reduced the number of countries per production system from 2-6 countries per system to 3 countries and reallocated funds to better reflect the “needs” of each based on DFID’s priorities.
- 4.5.8 The relatively small AFGP and FMSP have also reduced their coverage over time to allow better focussing of research funds. The Core Team concurs with these moves which are likely to have had a positive effect on science quality, and believes that further consolidation should be considered in future (see discussion of issues of balance in Chapter 7).
- 4.5.9 *Multi-disciplinary approach.* The degree of multidisciplinary work at the onset of the RNRRS was high in programmes that have a systems focus such as NRSP, but much lower in the commodity programmes such as LPP and PSP. The degree of multidisciplinary research has significantly increased in all programmes in recent years, however, with increasing participation of Southern partners in projects and the drive towards more dissemination and impact focussed projects, even in the so-called commodity programmes.
- 4.5.10 For example, prior to 1999, LPP’s research was largely commodity-based and researcher-driven, the principal aim being to provide technologies that would result in efficient production of livestock commodities for four production systems. In order to make projects demand led, LPP promoted multi-institutional and multi-disciplinary project teams. Successful applicants of concept notes were obliged to convene a stakeholder meeting in the beneficiary countries in order to promote ownership of the research process and set up multi-disciplinary research teams.
- 4.5.11 With the poverty reduction slant now dominating RNRRS, such science quality criteria constitute only one of several measures of success. Also, given the rapid spread – also in and to developing countries – of web-based publishing (and all RNRRS programmes have good to very good web sites, some even at project level), traditional journal publishing is playing a decreasing role. Indeed, many developing country scientists have lamented to us that by publishing results in international journals the developing country readership is almost excluded due to inability to pay subscription fees. Although Internet connectivity may still be poor in some areas, particularly in Africa, several RNRRS programmes have donated and installed Internet facilities to partner institutions in the South, also to encourage web-based science exchange.
- 4.5.12 In the view of the Specialists, the majority of multidisciplinary projects have performed satisfactorily. The broad multidisciplinary approach has enabled many RNRRS projects to address livelihood issues that could not have been tackled with a narrower focus. This success has not, however, been always easily or fully achieved. There are still cases where the Specialists have indicated that social science disciplines are under-represented in project and programme portfolios.

4.6 Innovation and scientific risk taking

- 4.6.1 Noting the earlier comments on the low-risk approaches engendered by short-term funding, this trend caused conflict as programmes faced the challenge of finding solutions to problems of the poorest farmers in the world. This has often meant having to find ways of moving forward where earlier initiatives, including initiatives of RNRRS predecessor programmes, have failed. There were often no obvious solutions, and innovation was necessary. Attempting to be innovative always increases the risk of failure. As there has been stronger engagement with beneficiaries, and more complex project clusters, with sometimes less easily defined targets, the level of research risk of projects has increased. Overall, one can conclude from the analysis by Specialists and observations by the Core Team that the degree of innovation and scientific risk taking in RNRRS has been average but the trend is to increasing risk as multidisciplinary clusters arise and this risk requires active management.
- 4.6.2 It is to the credit of RNRRS that so many of the projects have yielded results in scientific terms, although as is shown later, economic benefits of the outputs have yet to be systematically determined.

4.7 Inputs and processes

- 4.7.1 The quality of any scientific study should be determined from the quality of its outputs, which, in turn, depend on the extent to which the study has followed the steps of good research process (e.g. correct formulation of objectives/hypotheses, objective-driven research protocols, generation of high quality data, correct data analysis and interpretation of results.) These in turn depend on the quality and professional competency of staff conducting the study. Science quality is therefore heavily dependent on inputs and processes. Research quality control through project cycle management is discussed in Chapter 6.
- 4.7.2 The measure used in this evaluation to assess one of the most important research inputs - the quality of research staff in RNRRS, is the awareness and use of current scientific knowledge. With only very few exceptions the view of the Specialists was that RNRRS programmes had adequate knowledge and made appropriate use of global scientific knowledge. This was particularly true in long-running projects where researchers had acquired and used vast amounts of information over time.
- 4.7.3 The only caveat to the above generalisation is the situation of “newer” southern partner institutions, especially where non-traditional partners, such as NGOs, have been brought into the knowledge generation systems in response to demands for more stakeholder participation. A number of PMs indicated difficulties with getting enough qualified researchers from the south. This has meant that PMs have to carefully select Southern partners, and may partly explain why some institutions in the South have had an apparently disproportionate share of RNRRS projects. It has also sometimes necessitated the addition of some short-run capacity building activities into projects (methodology workshops and seminars, etc.), and in a small number of cases resulted in promising concept notes not being developed to project proposal stage. However, this problem has not been of such magnitude as to change the trend to an increasing number of projects being led by institutions from the South.
- 4.7.4 The balance between Northern and Southern institutions is related to the type of research, nature of the problem, demonstrated accountability of the potential partner, flexibility in relation to nationally-agreed programmes of work, and several other factors. In the RNRRS, both LPP and CPHP have high proportions of Southern project leaders while FRP has a very low proportion. This is conditioned by the weak accounting capability of Southern forestry partners and the relatively more accountable by the more policy-related work under FRP while CPHP and LPP are more traditionally technology-focussed. FRP, however, may have much larger numbers of Southern partners in a project, even if it is led from the North. The key issue in sharing responsibilities for research initiatives is developing high levels of participation throughout the project cycle.

4.8 Monitoring and Evaluation of Science Quality

- 4.8.1 Whilst it may be argued that quarterly and yearly reports from projects and programmes using logical frameworks constitutes *de facto* monitoring, formal M&E has been largely absent. There has been a scarcity of internally commissioned external reviews, or external reviews commissioned by others (including DFID). It is most unusual for a strategy of the magnitude of RNRRS not to have instituted formal M&E procedures from the start. Indeed, it is unfortunate that the current evaluation at the very end of the RNRRS period is, for most programmes, the only evaluation to which they have been exposed.
- 4.8.2 The value of M&E is largely to be found in the impact findings have on on-going research. Ex post facto M&E cannot be used to improve current research efforts. Nevertheless, the Core Team noted considerable praise being expressed to programme managers for their close supervision of ongoing research activities. Indeed, project leaders and participants in developing countries samples, have repeatedly acknowledged the assistance given by programme managers or their senior staff throughout the period of a project, both by personal visits and telecommunication.
- 4.8.3 The core team concludes that programme leaders have gone to great length to support and quality-control projects, particularly in developing countries. The secret of the success of RNRRS may in part be found in this most responsible behaviour of programme managers. One programme has also operated a decentralised regional support system with considerable autonomy – project leaders have reported favourably on their functioning.

4.9 Concluding Remarks

- 4.9.1 The overall conclusion of the Evaluation team is that taken as a whole the quality of science in RNRRS has been high. With very few exceptions, peer reviewed publications have appeared in reasonably high Impact Factor journals. Most programmes have substantial numbers of projects that successfully use existing scientific knowledge in creative ways, with a few projects having made significant contributions to new scientific knowledge. DFID should be proud of the overall scientific quality of RNRRS research.
- 4.9.2 RNRRS has been a major scientific success, particularly in applied research, with significant results although ground-breaking research findings have been uncommon. When activities have fallen into the development part of the R&D spectrum, with limited research content, the impacts e.g. on poverty alleviation may nevertheless have been worthwhile. The overall management of programmes has been good, although there has only been limited inter-programme cooperation. Significant differences in programme management styles do not seem to have impacted negatively on the research quality. Short-term duration of projects and the absence of monitoring and evaluation procedures have not created optimal conditions for research into long-term challenges of the natural environment.
- 4.9.3 There is a strong consensus among Southern and Northern partners that continuation of RNRRS-like activities, with more cross-linkages and better coordination, would be advantageous for research of this type.
- 4.9.4 The RNRRS is a leading player globally concerning the basic applied research continuum. At this stage in the strategy timeline it has managed to develop and promote ways to manage scientific research to impact on the lives of poor people.

4.10 Key Findings on Research Quality and Scientific Achievements

- All programmes and most projects have been conducted well or very well. There has been uniformly high quality leadership. A key component to the successful management and outcome of the programmes is simply down to the high quality of science leaders.
- Although there has been only average generation of new knowledge, there has been excellent creative use of existing knowledge, extending into research management, dissemination and communication systems.
- RNRRS structure leads to short term projects, restricting the ability to tackle some core problems although it may favour engagement of smaller NGO players, and limiting research aspirations.
- Short term projects and policy/structural changes in DFID have required PMs and PACs to adapt, which they have done very capably.
- University based programmes appear to have greater “science” impact than others, due to the pressures inherent within the university system. There are few issues of science quality but some programmes appear to be rather short on the quantity of publications in the more formal press.
- Good multidisciplinary approaches have been developed and well managed in all programmes, especially in recent years, in response to changing needs, providing significant contribution to wider global perspective on tackling RNR research.
- Scientific standards have been generally high, occasionally very high. RNRRS is now seen as a global leader in RNR research.
- All programmes have integrated their “Southern” partners well, with 20 to 40% co-authorship and in some cases 50/50 funding.
- There is scope for increasing the social science support base in some programmes although the overall level of global knowledge awareness within all programmes is high
- Programme leadership has been efficient and effective. The lack of formal M&E structures has been remedied by active engagement of programme managers ensuring good support and high level quality control. There is, however, still a requirement for future strategies to formalise monitoring, evaluation and impact assessment and to resource it adequately.
- The process of reviewing and selecting project proposals has been transparent and well received by potential contractors from north and south.

- Cross-programme coordination has been limited and the discontinuation of the coordinating function has not helped in this regard.
- With the exception of a small number of advisers, DFID country offices have taken surprisingly little interest in RNRRS.
- The RNRRS is a leading player globally concerning the basic applied research continuum. At this stage in the strategy timeline it has managed to develop and promote ways to manage scientific research to impact on the lives of poor people.
- International organisations such as the CGIAR have strongly applauded RNRRS.

Chapter 5 Poverty Focus of Projects, and their Contribution to Programme Purpose

5.1 Programme Purpose

- 5.1.1 Since 1998 all DFID projects have been reviewed to include poverty eradication as the main purpose. The overarching objective of the RNRRS is to reduce poverty, therefore it is important to examine what evidence there is that programmes and projects have positive impact on the poor, and any evidence on unintended negative impact.
- 5.1.2 The contribution of RNRRS to poverty eradication has been considered at a number of different levels:
- Scoring of project design through Poverty Aim Markers (PAM)
 - PARC's scoring of achievement to project purpose
 - Achievements on DFID's A-H scale
 - Direct Evaluation of Impacts
 - Evaluation team interviews and country visits
- 5.1.3 It has been difficult to draw out generalised lessons due to the lack of data. Where data does exist, it illustrates the wide variation both within and between programmes.

5.2 Scoring of projects through Poverty Aim Markers (PAM)

- 5.2.1 All DFID-funded projects are given Poverty Aim Markers, to indicate the project focus and how direct the likely impact on poverty will be. Analysis carried out by PARC shows that, for seven of the ten programmes, the majority of projects have an enabling focus, and for the remaining three, the focus of the majority of their projects is at the inclusive level. Although all three types of projects, enabling, inclusive and focused, will have an impact on the poor, the impact pathway will vary according to the type of project. The prevalence of enabling and inclusive projects reflects the way in which the demand for research projects was identified at the earlier stages of the RNRRS, where the emphasis was more on IPGs, and addressing issues which had more general applicability, where research outputs were transferable between countries and regions. For this kind of research, the impact on poverty will be very dependent on research outputs being disseminated to organisations and target institutions which can use these to address the problems of the poor in a specific context. This is true of some of the work undertaken in the earlier plant breeding and fish genetics projects.
- 5.2.2 Had time allowed, it might have been possible to identify a trend in changing classification over time as project clusters focus more on national public goods, and respond more to needs identification exercises.¹⁰ Certainly, the country visits indicated that a number of current projects, particularly those managed by non-traditional research partners such as NGOs, had a strong focus on the poor. Earlier projects were rather more dominated by UK researcher interests with less of a direct poverty focus.
- 5.2.3 A case can be made for both types of approach. Where enabling and inclusive projects have addressed issues which were relevant to the poor, and have been successful, their impact can be much greater because of the greater generality of the research issue. In responding to the needs and demands of the poor, as identified by a focused approach, an approach often associated now with the sustainable livelihoods framework, a project may identify technologies that are, in themselves, transferable, and the process of implementing the project may improve understanding about the role that improved technology and understanding about natural resources may play in addressing poverty. In practice, successful research projects combine an element of both supply and demand- the existence of an IPG, and a set of organisations at national level who understand how to apply this in a specific context. The challenge for the RNRRS is where to place itself in this context, and where the comparative advantage of the UK science community lies.

¹⁰ However, some of the more recent scoping studies have prioritised policy interventions as being most relevant to addressing the constraints faced by the poor.

- 5.2.4 DFID was a world leader in developing the livelihoods approach clarifying the complexity of poverty issues related to poor peoples asset base and the policy and institutional environment that they operate within. LPP and FRP have both adopted the livelihoods approach to problem surveys allowing interventions to be prioritised within the livelihoods framework. This does not, however, imply that the work so identified necessarily has a direct poverty impact *per se*.
- 5.2.5 The livelihoods framework and the concomitant approach to poverty focus guiding decision making does put DFID into pole position compared with other agencies in directing its efforts towards poverty eradication. To the extent that RNRRS programmes have adopted the livelihoods approach, they have also mainstreamed poverty as a key guiding influence. (7.2)

5.3 PARC scoring of contribution to programme purpose

- 5.3.1 As part of the Impact Assessment exercise undertaken by PARC, in preparation for this evaluation, PMs were asked to score the contribution of their projects to the programme purpose. Because of the nature of this work and the time resources necessary to complete this exercise, some PMs commissioned an external consultant to undertake this. The PARC then compiled averages based on the results reported by the programmes. These are shown in Table 7. It is difficult to make objective comparisons amongst programmes, based on this data, because of the combination of self-assessment and external appraisal, however from the scores for PSP, FMSP, FRP, NRSP, LPP more than 50% of projects have a moderately or very high contribution to purpose.
- 5.3.2 Where there have been independent Output to Purpose Reviews (OPRs) or evaluation reports, these have indicated that projects rate reasonably well on contribution to purpose, and this is reinforced by the specialist reports. During core team interviews, a number of programme managers, particularly those who had taken over mid-way through the RNRRS, stressed the changes in direction they had made in the programme. This may have led to earlier projects being assessed as having limited, or even no contribution to purpose. As there are no mechanisms for tracking the adoption of the outputs from these projects, it is difficult to say whether or not these assessments have been unduly harsh.

Table 7 Number of projects rated, and their distribution (percent) according to degree of contribution to programme purpose

Programmes	No Projects rated	Contribution to Purpose (Percent of Projects rated)						
		None	Very little	Limited	Some	Moderately high	Very high	n/a
LPP	118	0	0	12	21	30	30	7
NRSP	72	0	10	15	24	40	11	0
AHP	60	1	28	42	22	7	0	0
CPHP	158	0	0	15	39	32	11	1
CPP	459	0	1	2	9	18	24	46
FRP	94	0	0	3	18	59	20	0
AFGP	60	0	3	37	43	17	0	0
PHFP	14	7	14	0	65	7	0	7
FMSP	41	0	0	0	3	34	51	12
PSP ¹¹	21	0	0	9	18	18	50	0

Source: PARC (2004)

¹¹ The data for PSP were supplied at a later date by the PSP programme manager

5.4 Achievements on the DFID A-H scale

- 5.4.1 The A-H scale identifies the level at which a project is aimed at design stage, and where the level achieved in implementation. This ranges from A (agreement with partner institutions) through level E (adoption by target institutions) to level H (uptake by end users). As reported by PMs, or their consultants, the distribution of target level by projects varies considerably by programme (Table 8). One, PHFP, identifies well over half of its projects as designed to have uptake by end users, whereas CPHP has no programmes designed at this level (though it now rates almost a third as having achieved end-user uptake). However, the most common design of projects (almost half) are aimed at levels D and E, the promotion of research outputs to target institutions and their adoption by those institutions. Where there are sequences of projects, it is likely that the earlier projects will be designed to deliver at levels A through E while later projects might deliver at levels G or H. Unfortunately, aggregation at the programme level makes it difficult to pick out these linkages between projects.
- 5.4.2 This is entirely consistent with the responsibilities of PMs, as laid out at the beginning of the RNRRS. However, it means that the contribution of the research to poverty impact is reliant on the dissemination and application of the research findings. This depends on the capacity of global and national organisations to further develop and adapt research outputs to local conditions, or disseminate the information to the local level. PMs are charged with identifying uptake pathways, but have recognised that this, in itself, may not be sufficient, and have responded in different ways, according to their own assessment of opportunities and costs, and the types of research outputs produced. This is discussed in more detail below, but has often involved forging links with national governments and other donors for promotion of research outputs.
- 5.4.3 Table 7 and Table 8 have to be understood as snapshots in time. Both contribution to purpose and achievement on the A-H scale will continue to evolve over the remaining period of the RNRRS.

Table 8 Distribution of projects by A-H Target Level

Programme	Total projects	Target at Design Stage									Current Achievement								
		No. of projects with A – H rating	Rating								No. of projects with A – H rating	Rating							
			A	B	C	D	E	F	G	H		A	B	C	D	E	F	G	H
NRSP	85	81	1	4	3	3	24	10	11	3	26	5	2	1	12	4	1	1	0
AHP	60	60	4	6	6	12	9	2	1	20	60	6	10	14	10	5	3	4	8
CPP	409	309	3	10	34	51	31	51	57	72	247	0	10	32	44	23	48	46	44
LPP	116	109	4	2	8	25	20	8	23	19	109	7	2	18	33	16	11	10	12
PSP	22	16			1			5		10	16		1		6		1		8
CPHP	176	176	13			57	106				173	4	2	15	36	31	9	25	51
AFGP	58	58		11	9	10	7	12	4	5	58		14	9	9	9	13	3	1
FMSP	50	50		1	9	20	6	7	4	3	50	3	5	5	12	11	11	2	1
PHFP	14	14				2	2			10	14		1	1	6	5		1	
FRP	129	94		1		41	19	17	6	8	94	3	2	2	37	15	13	8	14

Source: PARC (2004)

5.5 Direct Evaluation of Impacts

Impact Assessment Studies

- 5.5.1 Direct evidence of the impact of RNRRS programmes on poverty is limited. Projects are required to report on a regular basis, and in some programmes, mid-term reviews for some projects are undertaken by independent evaluators. In some programmes, Final Technical Reports (FTRs) are reviewed externally. Few projects have formal external evaluations, and, to date, no project has had a full external impact assessment. However, PSP has funded some impact assessment work of its Participatory Crop Improvement (PCI) projects.
- 5.5.2 There are a number of examples of external project assessment: in 1999/2000 four major studies were undertaken by consultancy companies on research themes in crops, livestock, forestry and fisheries. These identified potential returns to poor farmers (and others) from adopting research outputs, and, in some cases, were able to quantify these. Estimates were made of potential overall gain from adopting research outputs, on the basis of numbers of end-users in appropriate livelihood systems, who could have an incentive to adopt, but there was no attempt to assess spread of actual adoption.
- 5.5.3 As indicated earlier, the PARC (2004) report provides useful information about the structures of the programmes, and the impact pathways anticipated by the Programme Managers (PMs), but direct information on impact is still very piecemeal.
- 5.5.4 Many of the PMs have started to undertake/ commission impact assessments of particular projects in their programmes. CPP has undertaken a number of studies looking at the linkages between various elements of its programme (commercial horticulture, pest management) and poor people's livelihoods, and has also included an impact on livelihoods survey in the Mid Term Review (MTR) of one of its projects in Nepal.
- 5.5.5 In the country interviews for this evaluation, the Core Team also came across two projects in Uganda, managed by an NGO, where impact assessment had been undertaken at the end of the project, using survey methods to assess positive and negative impacts on project participants and neighbouring families. CPHP has employed an evaluation specialist over much of the RNRRS period, and the current specialist is assisting them in developing an approach to assess impact. CPHP has also commissioned an evaluation of their Partnerships for Innovation approach, which they adopted in 2002, after concerns about the resilience of their uptake pathways, and the overall approach to poverty-oriented research
- 5.5.6 Other programmes are also undertaking impact tracking and assessment exercises. NRSP has developed its own conceptual model for impact assessment, and has undertaken an assessment of its rainwater harvesting programme in Tanzania, and the impact it has had on the economics of production and livelihoods. NRSP has also undertaken a more general study of the determinants of livelihoods, and how projects have interacted within livelihood strategies. FRP has agreed with its lead advisor to monitor three projects on an ongoing basis, to develop a set of robust data on impact. Results from these impact assessments should be collated and analysed centrally to contribute to future policy design.
- 5.5.7 Table 9 examines the ways in which the external evaluation reviews undertaken in 1998-2001, and the more recent impact assessments, have addressed impact on poverty.¹² Earlier studies focused very much on productivity and income gains, and presented estimates of overall likely financial benefits, based on explicit models or assumptions about uptake. Some more recent studies have addressed a broader definition of poverty, within a livelihoods framework, and have asked about environmental impact, the use of increased income to improve physical, human and social capital, and, in a very few cases, vulnerability.
- 5.5.8 Much of this evidence does not seem to have been collected on a systematic basis. Only 16 out of the 35 studies examined had surveyed beneficiaries, and only two of these differentiated amongst informants by any measure of poverty. Two differentiated by gender of project beneficiaries. There has been little attempt to identify negative impact, except in two assessments undertaken by AT Uganda, as part of the implementation of CPP projects. More details on the studies can be found in Annex 7, under the relevant programme.

¹² Almost all the external assessment data from the earlier period. The three exceptions are PHFP's impact assessment review (though this was conducted by a PAC member), CPP's MTR of chickpeas in India and a PSP study of promotion of chickpea in Bangladesh

- 5.5.9 A notable exception is the PSP. Since 2002, the PSP has invested in reviews and impact assessments of its projects to support its participatory research methodologies. The programme has undertaken 17 reviews and impact studies and the evidence for the direct benefits from the research and from their methodologies is becoming apparent. There should be the opportunity for DFID and the other research programmes to take lessons from the PSP's participatory processes and from the way in which they have initiated impact assessment to support the strategic development of their work.
- 5.5.10 There is now more evidence on impact than in 2002, when Flint and Underwood undertook their study. However, much of the work is still underway, or available only in draft form. This evaluation can only repeat the findings of the earlier study – that at present the systematic evidence on impact is limited, but that this does not mean that there has not been, nor will there not be, real and significant benefits from these research programmes. Many of these project level assessments show real benefits at local level, but there is little, though increasing, information on the speed, and extent of uptake¹³. PSP now has data on varietal diversity for rice in Chitwan over a 5 year period, and it is expected that FRP's monitoring initiative will also provide uptake information.
- 5.5.11 Significantly, there is no mechanism for undertaking the kind of broad-reaching impact assessment that could justify the investment of the scale of funding of the RNRRS in terms of either economic benefits or impact on livelihoods. The cost of this would be impossible to fund under individual programmes and there is no central budget to address this.¹⁴
- 5.5.12 There also needs to be consideration given as to appropriate ways to monitor the impact of International Public Goods (IPGs). The impact of these is likely to be achieved through uptake by international and national research agencies for adaptation at the national level, but there are no good models for functional indicators of achievement.
- 5.5.13 Impact at policy level has been documented in programmes' annual reports. Many of the programmes appear to have engaged successfully, through policy briefs and workshops, with policy makers, and international agencies. FMSP and FRP have commissioned projects or project clusters¹⁵ which are directly focussed on policy outputs, but other programmes have had an effect on policy through addressing constraints which arose through project implementation. The CPP policy influence on biopesticide registration legislation in Kenya was a major achievement, not only nationally but is also extremely influential internationally.

13 The issue of when it would be appropriate to expect impact was raised by a number of PMs. This will clearly vary according to type of project, but for both the livestock and the forestry programmes, a good case can be made that impact could take well over 10 years.

14 Nevertheless a number of the programmes have managed to fund smallscale impact assessments either by making them small projects or using programme development funds.

15 FRP's work on carbon sequestration and certification of timber are notable here.

Table 9 Impact Assessment (IA) studies and their Treatment of Poverty

Programme	No of IA studies		Aspects of impact explored						Comments
	External	Internal ¹⁶	Productivity gains	Income benefits	Distribution of benefits to poor ¹⁷	Other aspects of livelihoods	Survey of beneficiaries	Predicted quantified benefits	
AFGP	1		X	x	X				This review examined 5 case studies. Environmental impact was assessed.
AHP	1		X	x		x		x	Discusses socio-economic impact of zoonotic diseases
CPHP	2	2	X					x	The study had access to earlier surveys on which to base some of its findings. One external study is ongoing. " internal studies included OPRs and some elements of impact assessment.
CPP	2	2 as part of project			X	x	x	x	The more recent project assessments have been very livelihoods focused and the two internal projects have explicitly asked about negative impact.
FMSP	1	1	X	x	X				3 projects were examined. 1 internal assessment has been carried out.
FRP	1			x		x		x	The summary report is presented within a livelihoods framework
LPP	1		X	x	X	x		x	Social benefits in terms of improved access to women and better community working practices and use of benefits to improve sanitation and nutrition.
NRSP	1	1		x	X	x	x		Based on an incomplete draft of the assessment. An internal assessment has been undertaken.
PHFP	2				X	x			One project was assessed at a very early stage, and there was no impact to report. The impact assessment review held stakeholder meetings
PSP	5	12	X	x	X	x	x	x	3 external and 6 other impact assessments under Participatory Crop Improvement work . Assessment increasingly important since 2002.

¹⁶ The evaluation team has distinguished impact assessments which include members of the project or programme team from those that have been undertaken solely by independent consultants commissioned by either programme managers of DFID.

¹⁷ Few assessments gave quantitative figures for this, but this column has been ticked if there was some discussion of access to or use by the poor (somehow defined) of the outputs of the project.

Evidence from in-Country Visits

- 5.5.14 The Core Team conducted interviews with stakeholders in Africa and Asia to collect information, among others, on local assessment of the impact of RNRRS projects. The point was made by many stakeholders that 3 years was too short to identify impact and that there needed to be follow-on projects with in-built mechanisms for commissioning of objective impact assessment.
- 5.5.15 On the basis of discussions with local stakeholders, and assessment of documentation provided, the indications are that almost all projects have had short term positive impact on the incomes of the poor at the community/local levels among the limited number of participants in project activities. In some cases, this may simply be because of free services and inputs delivered during the project process, but in others there is evidence of technologies being adopted. Furthermore, there is some evidence of spread to neighbouring communities in the majority of the projects. However, there is virtually no evidence of economic impact at regional or national levels, although there are prospects of such impacts in the future. The team was unable, in the time available during in-country visits, to explore whether there were unintended negative effects, or sections of the community who were excluded from these project benefits.
- 5.5.16 A majority of the projects have already had impact on the scientific community, in terms of adoption of methodologies pioneered by the projects (e.g. participatory variety selection methods developed that have influenced other projects in West Africa, and adoption of similar methods from Nepal to neighbouring areas of India, methods for creation of Community Livelihoods Facilitators and Participatory Business Plans extended to other NGOs in Ghana, boxing of fodder in Tanzania being adopted and developed in Kenya).
- 5.5.17 In some countries, it was clear in discussion that projects had had a direct impact on the policy environment. LPP has had an impact on legislation on urban livestock keeping, as a result of a scoping study undertaken in East Africa, and has also had input into the livestock policy of Kenya, based on experience in registering goat keepers in the studbook. CPP has had an impact on legislation over biopesticides, and is currently funding a project to help horticulturalists conform with new EUREPGAP regulations. AHP research has resulted in sleeping sickness epidemic legislation in Uganda. These are examples of impacts achieved because of the commitment of local partners to follow through constraints, with the support of the programme, and a willingness to respond flexibly on the part of the PMs as the context of projects evolves. However the experience is not widespread with no obvious examples in half the countries visited by the Core Team¹⁸.
- 5.5.18 There is some evidence of impact of successful projects on extension systems which have adopted and are propagating RNRRS tested technologies (e.g. extension of peri-urban dairy practices in Ghana)
- 5.5.19 In the country visits, the team found little emphasis on issues of environment, gender or HIV/AIDS. Even in countries in East Africa, where HIV/AIDS is a major issue at national level, there was little evidence of it being regarded as a factor in project design or implementation. Some projects were focussed specifically on women, but otherwise, there was little indication of gender issues being addressed. When questioned, many researchers indicate that if a crop is grown mainly by women, then research into that crop is gender-sensitive. This indicates a lack of understanding of the importance of exploring the roles of both men and women in producing and marketing agricultural commodities, and the effect that changing technology could have on these, in beneficial or negative ways.
- 5.5.20 Impact assessment is time consuming and expensive, and methodologies are still being developed for assessing impact within a holistic livelihoods framework. Nonetheless, the Surr report¹⁹ recommends that DFID should be required to report more regularly and effectively on the impact of its research programmes, summarised in a single report, made publicly available every three years. The evaluation team endorses this, and feels that for future research programmes, DFID should develop an impact assessment strategy, and an appropriately timed programme of impact assessments, commissioned centrally.

¹⁸ Ghana, India and Indonesia

¹⁹ M. Surr *et al.*, Research for Poverty Reduction: DFID Research Policy Paper, November 2002

5.6 Indications of Likely Future Impact

- 5.6.1 Impact is difficult to assess directly, for both resource and timing reasons. However, the way in which programmes are designed, the choice of project and project partners, the effectiveness of management in achieving outputs and in disseminating results will all contribute towards increasing the probability of positive impact (and identifying and responding to unintended negative impact).

Identification of Demand

- 5.6.2 From the beginning the RNRRS has emphasised the importance of research being demand driven. This was defined in three ways: where a development opportunity can be identified with some measure of benefit to be achieved; where an identifiable community of beneficiaries or end-users can be described, representatives of whom have participated in defining their needs, or where one or more target institution has been identified and has explicitly agreed the objectives of the research.
- 5.6.3 Initially, the demand for research seems to have been identified more by the UK research community itself (the first definition) or by certain more upstream target organisations. There was a legacy of projects which had been started before 1994, and of projects which were developments from earlier projects. However, as the RNRRS progressed, and particularly after the livelihoods approach was adopted by DFID, there was more effort invested in engaging with the end-users. This took three basic forms:
- Use of Programme Development (PD) funds on scoping studies, which included focus group discussions, as the basis for developing new calls for proposals. These needs identification and prioritisation studies have been carried out at regional and cluster level (for example, CPHP, FRP, CPP, PSP, FMSP and NRSP)
 - Use of PD funds to hold stakeholder workshops after a Project Concept Note (PCN) was accepted, and before the programme memorandum was developed (a requirement for LPP projects after 2000)
 - Encouraging projects to hold stakeholder meetings at an early stage in the implementation, a requirement in FRP and CPHP.
- 5.6.4 Programmes which have not adopted these more formal processes have also sought to improve the relevance of projects awarded through a variety of means, for example, AHP and LPP commissioned a geographic analysis to establish the locations of poor livestock keepers to sharpen their focus on suitable target countries. The AHP commissioned a major study²⁰ which further examined the distribution of poor livestock keepers in Africa and Asia, then ranked livestock disease constraints in terms of their impact on the poor, both through their effect on livestock and on human health and went on to examine which of these constraints could be alleviated by research. This study has been widely taken up by the international community, notably the Wellcome Trust is establishing a £25 million animal health research initiative.
- 5.6.5 Scoping studies have also been carried out to identify ways in which programmes can better address cross-cutting issues, such as gender and environment. In addition, AFGP has a gender mini-website, addressing the issues of women in aquaculture, and CPHP has developed a guidance note on gender for researchers developing PCNs.
- 5.6.6 The coalition approach, adopted by CPHP in recent years, has taken a variant on the first form by holding regional workshops to identify thematic areas and prioritising them according to country priorities. This has reduced the influence of UK research institutions on the research agenda (though some UK institutions have been invited to attend these workshops) and has led to the research process becoming more open to responding to local demand, with CPHP acting as facilitators to the process. CPHP would argue that, by ensuring that Southern institutions are in the driving seat, and by requiring projects to correspond to national research priorities, the chances of uptake by government organisations or other donors, and therefore of achieving impact, are improved. In addition, try to encourage themed coalitions that can define their own composition, leadership, roles and responsibilities.

²⁰ Perry et al. "Investing in Animal Health Research to Alleviate Poverty", AHP 2002

- 5.6.7 Increased engagement with national stakeholders and with end-users has advantages in terms of focussing research and developing project design. There is general agreement²¹ that these different approaches have led to increased relevance and have strengthened institutional linkages which facilitate dissemination and uptake promotion. It is too early to say whether or not greater involvement of end-users at an early stage in project design will increase the impact of research. Even if the data were there to make such a comparison, some of the older projects which are seen as successes have built on many years of linked research projects to develop clusters of work, and it is difficult to attribute impact to any particular project in the overall process. It is likely that greater involvement of end-users in the design of adaptive research projects will increase the impact of those particular projects, and it is certainly in keeping with current approaches to participatory work. It may also develop transferable methodologies, such as participatory plant breeding and farmer field schools for livestock keepers.
- 5.6.8 However, it may also reduce the immediate transferability of some project outputs, by moving away from a more global or regional public goods approach²². It also raises the question as to why funding for this type of research is being managed from the U.K., rather than supporting, say, block funding of NARS in selected focus countries. In addition, there will still be ideas for good research which emerge from the research community, and have strong global public goods attributes. Care must be taken to maintain space for these ideas also. These concerns are discussed in more detail in Chapter 7.

Involvement of Intermediate/ Uptake agencies

- 5.6.9 PMs have a responsibility to identify uptake pathways for their research outputs and to identify appropriate target organisations to act as intermediaries between the researcher and the end-user to promote adoption and deliver information. Traditionally the model has been one of the researcher developing a product which s/he passes on to the extension system, for adoption, or to a development agency or NGO for use in a development programme. Sometimes this approach has worked well, particularly if there have been good links with ongoing development work, such as projects funded by DFID country offices. However, it is a difficult process to manage from the U.K., as the necessary contacts and networks need to be maintained. This is probably easier for a relatively small and close professional community such as aquaculture than for some of the larger and more diverse programmes such as CPP and CPHP. The difficulty of maintaining links with developmental activities has increased as DFID country offices have moved away from funding large-scale projects towards more emphasis on direct budget support within the framework of PRSPs. Greater autonomy of DFID country programmes has also led to a perceived diminution of interest in NR research projects and more difficulty engaging the country offices as intermediate agents.
- 5.6.10 Increased involvement of southern research partners in the design of projects has, in some cases, helped increase the linkage with local uptake agents, but some programmes have recognised a need for a more systematic approach to improving uptake linkages. For example, a number of the NR International managed projects have employed regional coordinators who have, amongst their responsibilities, the promotion of research outputs and maintaining the profile of the research at national and regional level. These coordinators have helped develop and maintain links between UK and local researchers, but also between local researchers and government agencies and policy makers. In one case which came to the team's attention during the country visits, the regional coordinator was able to create links between researchers and the national office of another bilateral agency which led to follow-up funding for an RNRRS project which was entering the developmental phase.

²¹ Pluralistic research provision and dissemination has been widely promoted by DFID country offices, and now by the World Bank in its African Agricultural Productivity Programme.

²² It can be argued that the processes of participatory research and dissemination methods developed by some of the programmes are in themselves IPGs, in that they can be adopted in many countries as an improved way of carrying out research. For the most part, however, these are not written up and regarded as the main objective of the research process by the PMs.

- 5.6.11 The coalition approach adopted by CPHP has taken this a step further by encouraging the involvement of uptake agencies at the earliest stages of project design, thereby creating greater ownership of the output by NGOs or extension systems of the project output. The emphasis on the innovation process has moved the focus away from research as a stand-alone service, towards addressing the totality of the process from researcher to end user. This recognises the importance of institutional change in impact-oriented science, particularly where there is lack of capacity in the promotion process, which is often dependent on weak and under-funded extension systems. The initial results from the evaluation of this change in approach by CPHP are promising, and indicate that research outputs are much more closely linked into the dissemination and uptake process than under the previous approach, but it is too early to say whether this will lead to sustainable impact, or whether any improvement will be worth the extra costs involved in managing this kind of approach to research and innovation.

Approach to Dissemination

- 5.6.12 In the last two to three years, the focus of the programmes has shifted away from initiating new research streams to ensuring that the outputs from previous and ongoing research projects are captured in accessible products targeted towards various types of user: the research community, development agencies, government organisations, both at policy level and the extension services, the newer service providers, such as NGOs and the private sector, and the ultimate beneficiary, in many cases the resource-poor farmer. Many of the programmes have developed dissemination or communication strategies, either focussed around project clusters (LPP, for example) or individual projects (AFGP). CPP has communication strategies at programme, cluster and project level. LPP contracted three UK organisations to act as dissemination/ promotion advisers, who are now focussing on scaling up activities.
- 5.6.13 Some programmes have funded projects to examine the effectiveness of different dissemination models, for example the use of radio soap operas, or CD toolboxes. LPP and AHP are promoting touch screen information kiosks in India. A number of programmes have invested in more accessible websites, to enable easy access to project results and briefing documents. There has been considerable impetus to get products out into the hands of those who can take forward the results of the programmes, as the RNRRS reaches its final years.
- 5.6.14 There have also been efforts to promote project outputs in a more integrated manner. CPP, LPP and CPHP have combined forces in Bolivia, under the INNOVA project, which is developing mechanisms for linking demand with the supply of agricultural research, within the new government framework for agricultural research and extension (SIBTA). The overall purpose is to strengthen technology innovation systems in potato based cropping systems, from a cross-programme perspective. PHFRP has also developed a project to promote its research outputs within a livelihoods framework, the Cambodia Post -Harvest Fisheries Livelihoods Project, which is building the capacity of the Community Fisheries Development Office.
- 5.6.15 As these uptake activities have been concentrated in the last two years, there are limited opportunities to assess their success, and learn from the experience. There also appears to be no systematic way of identifying the factors which lead to successful uptake for projects which address the enabling environment. Are there systematic ways of influencing policy, or is it more a question of being opportunistic and flexible in approach? NRSP is considering whether there are systematic ways of influencing policy or whether it is a question of being opportunistic and flexible in approach for one suite of projects (Rain Water Harvesting) but this is one area where DFID could benefit from carrying out an independent study after the RNRRS has come to an end, to identify possible lessons to inform future activity on uptake and dissemination.

5.7 Key Findings on Poverty Focus and Contribution to Programme Purpose

5.7.1 Despite the lack of conclusive impact data it appears that RNRRS has had some impact on poverty, and that the poverty focus has increased during the past five years. The key findings in this area are:

Poverty focus of project design

- In terms of PAM, 7 programmes have enabling focus, 3 have inclusive focus
- For PSP, FMSP, FRP, NRSP, LPP more than 50% of projects have a moderately or very high contribution to purpose
- Almost half of all projects are aimed at levels D and E, the promotion of research outputs to target institutions and their adoption by those institutions.

Evidence of poverty impact

- Direct evidence of a poverty impact is limited but:
 - Few projects have formal external evaluations and to date no project has had a full external impact assessment.
 - There is no mechanism for undertaking the kind of broad-reaching impact assessment that could justify the investment of the scale of funding of the RNRRS in terms of either economic benefits or impact on livelihoods.
- The Surr report²³ recommends that DFID should be required to report more regularly and effectively on the impact of its research programmes, summarised in a single report, made publicly available every three years;
- Three years is too short to identify impact and follow-on projects are needed with in-built mechanisms for commissioning of objective impact assessment;
- Many projects are now undertaking impact assessments but there is no centralised system for collating and analysing these results;
- Consideration is needed as to appropriate ways to monitor the impact of International Public Goods (IPGs).

Poverty impact at policy level

- Many of the programmes appear to have engaged successfully, through policy briefs and workshops, with policy makers, and international agencies;
- DFID claims that it has increased the poverty focus and emphasis on capacity building within CGIAR but the Team has not been able to confirm this;
- Majority of projects have developed technologies and methods which have potential for increasing productivity and/or reducing poverty;
- A majority of the projects have already had impact on the scientific community, in terms of adoption of methodologies pioneered by the projects;
- There are examples of impact on legislation but the experience is not widespread;
- In terms of evidence of impact of successful projects on extension systems:
 - There is virtually no evidence of economic impact at regional or national levels although there are prospects for such impacts in the future;
 - Uptake worked well where there were good links with ongoing development work, such as projects funded by DFID country offices.
- DFID would benefit from carrying out an independent study after the RNRRS has come to an end, to identify possible lessons to inform future activity on uptake and dissemination.

²³

M. Surr et al., Research for Poverty Reduction: DFID Research Policy Paper, November 2002

Poverty impact at beneficiary level

- A number of current projects, particularly those managed by non-traditional research partners such as NGOs had strong focus on poor
- Based on discussions at country level, it appears that almost all projects have had short term positive impact on the incomes of the poor at the community/local levels among the limited number of participants in project activities, though this may, in part, be the result of free services and inputs made available by the project.
- There is some evidence of spread to neighbouring communities in the majority of the projects.

Future impact

- A number of changes in project design and implementation since 1999 increase the chances of poverty impact. These include:
 - More emphasis on consultation with potential end-users in stakeholder workshops at early stages in the project design and implementation;
 - Increased involvement of southern research partners in the design of projects has, in some cases, helped increase the linkage with local uptake agents;
 - Many of the programmes have developed dissemination or communication strategies, either focussed around project clusters;
 - Different innovative methods in dissemination employed *e.g.* radio soaps, CD tool boxes, touch screen information kiosks, Websites.

Chapter 6 Assessment of Governance and Management

6.1 The Strategy as a Whole

- 6.1.1 DFID's Renewable Natural Resources Research Strategy, 1995 - 2005 represented a major change in the commissioning and management of natural resources research. For the first time, a research agenda was specified which prioritised researchable problems on the basis of a needs assessment and focused on the achievement of research outputs which were likely to have an impact on sustainable natural resource-based production. Logframe methodology was used to make clear linkages between purpose, outputs and activities (Chapter 3). This contrasted sharply with the previous arrangements where the majority of DFID-funded natural resources research was based on long-term relationships with a limited number of institutions and funding was effectively institutional core funding or allocated to support what has been described as 'curiosity-driven' research. Several stakeholders characterised the RNRRS today as the 'best structured' and 'most accessible' of DFID's major research programmes.
- 6.1.2 The decision to contract out programme management to 11 (now 10) separate PMs also represented an important innovation, as did the requirement that they should award research contracts on a competitive basis. This mirrored changes which had been taking place throughout the public services in the UK and many other countries, and was intended both to reduce administrative costs to DFID, and to demonstrably obtain good value for money through competition.
- 6.1.3 Although the framework therefore represented a major step forward, it was not perfect. With hindsight it is possible to be critical. Although priorities were determined as a result of a consultative process, the strategy was still heavily 'supply led' with little scope for consultation with potential beneficiaries in the target countries²⁴.
- 6.1.4 The strategy consisted of a very large number of distinct research areas, subdivided into 11 (now 10) programmes oriented towards commodities or farming systems. Although this provided a much more coherent framework than before, and represented best practice at the time, it is clear that, along with the competitive process and the 'level playing field' policy, it created potential for fragmentation in implementation, encouraging research managers and researchers towards a somewhat piecemeal 'shopping list', containing many small projects. The consequences of this, in terms of diseconomies of scale, and a lack of thematic continuity, momentum and synergy, became apparent in the early years of implementation and much of the subsequent evolution of the strategy has been aimed at overcoming these shortcomings.
- 6.1.5 The competitive funding mechanism has also demonstrated some drawbacks over time. Project-by-project contracting does little to facilitate the continuity or sustainability of research activities, and the field studies carried out as part of this evaluation demonstrated how rapidly institutional memory decays if there are no follow-on activities when projects are completed. Similarly, project-by-project funding tends to establish pragmatic 'contractor' relationships rather than broad-based collaborations, and this militates against the establishment of longer-term linkages between researchers and research institutions.
- 6.1.6 Future competitive models must learn from programme managers' experiences and efforts to correct the potential for fragmentation, by using a variety of methods such as the use of restricted calls for continuation projects as described in 6.5 below. The award of larger and longer duration projects, or even the award of 'sub-programmes' consisting of a number of linked projects should also be considered. At the strategic level, careful definition of the shortlist of research priorities drawn from the Research Funding Framework, and determined through transparent processes (as described elsewhere in this report) should allow greater harmony and synergy between projects and programmes.

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Note that this comment applies to priority setting for the **strategy** as a whole. It is accepted that programme managers were directed to demonstrate evidence of demand led prioritisation within each individual programme.

- 6.1.7 The RNRRS was not conceived in a vacuum. DFID was already an important funder and implementer of many natural resources research activities in a number of UK institutions. Large programmes for integrated pest management, crop post harvest and forestry had been supported for quite some time, as had fisheries and plant science research. Strong relationships existed with some UK institutions, notably the Natural Resources Institute (NRI) and a few universities with a track record in natural science in developing countries. It was never intended that all of this work should be brought to an abrupt halt, and therefore some of it featured as a legacy in the RNRRS framework.
- 6.1.8 One of the consequences of this is that the relative size of the individual programmes was distorted at the outset. This pattern has been maintained and it is not immediately apparent how this correlates with modern perceptions of overall priority research needs. The Core Team has been unable to identify the formal procedures that led to the decision to have the original 11 research programmes, and e.g. the logic of having (at the time of RNRRS inception) 4 fisheries programmes, 1 forestry and 6 agriculture-related programmes. Nor has the Core Team been able to find the formal documentation on the original rationale for the relative size of each programme (Table 1).
- 6.1.9 At the extremes, the CPP accounts for approximately 25% of the total RNRRS budget, while the three fisheries programmes together account for only 7.5%. CPHP, NRSP, and FRP each account for approximately 15% of the total. LPP, AHP and PSP have been allocated less than 10% each. This variation is an important causal factor for the differences which have emerged as the programmes have evolved. Funds made available clearly have strong influence on the type of projects undertaken, their duration and scope.
- 6.1.10 On the one hand, large programmes may benefit from economies of scale, which permit them to establish more effective programme management arrangements, and they also have more programme development funds available to them than smaller programmes. On the other hand, smaller programmes are more 'manageable', and this may manifest itself in closer supportive relationships between PMs and project teams, and in increased responsiveness and flexibility. For the future, strategic allocation of resources between thematic or other categories of research must clearly follow from and be based on needs assessment and not on a historical basis.
- 6.1.11 Different starting points, particularly in relation to possible developing-country influence on the design of the strategy and relative size of programmes, could well have yielded different outcomes, including the balance between single and multiple discipline research activities in the programmes and projects, and between natural sciences and social sciences.
- 6.1.12 As described in Chapter 1, the Strategy was reviewed and adjusted in 1998 to align it more closely with the International Development Targets and with DFID's approach to poverty reduction. It has also evolved in more subtle ways. An increasing focus on dissemination and uptake promotion activities; emphasis on demonstration of demand and participatory processes, and the acknowledgement that capacity building is an important part of the research management process, all reflect DFID's response to new notions of good practice for impact on poverty and sustainability of outcomes.
- 6.1.13 Policy and structural changes in DFID, particularly the evolution from natural resources to livelihoods and budgets support approaches, and replacing the natural resources specialist cadres with the livelihoods cadre, have also impacted on the programme strategy. This has manifested as pressure for increasingly integrated and multidisciplinary research activities in which the technical, social, institutional and economic dimensions of researchable problems are addressed simultaneously. PMs have responded well to this challenge, and recent generations of projects display these characteristics.
- 6.1.14 DFID's wider engagement with the strategy has also evolved over time. The initial research priorities identified in the RNRRS derived from consultations with DFID's country advisers, indicating the expectation, at least at the outset, that they would be important stakeholders in the strategy and its outputs. PMs' original terms of reference also required them to 'take into consideration the views of "... relevant DFID country programme managers, natural resources and livelihoods advisers; and to 'establish and maintain liaison with DFID natural resources and livelihoods advisers and with field managers...".'

6.1.15 DFID would no longer describe itself as a primary client for the outputs of the research programmes, and this has been so for some time as DFID has reoriented itself in various ways²⁵. Working relationships with the development programmes on the ground are now extremely limited, which is a source of considerable frustration to PMs, who perceive this as a lost opportunity to build momentum for uptake – particularly when they are exhorted to emphasise this. Equally, some stakeholders suggested that the reduced general engagement of the central departments was a contributing factor to reducing some dimensions of oversight, as discussed below.

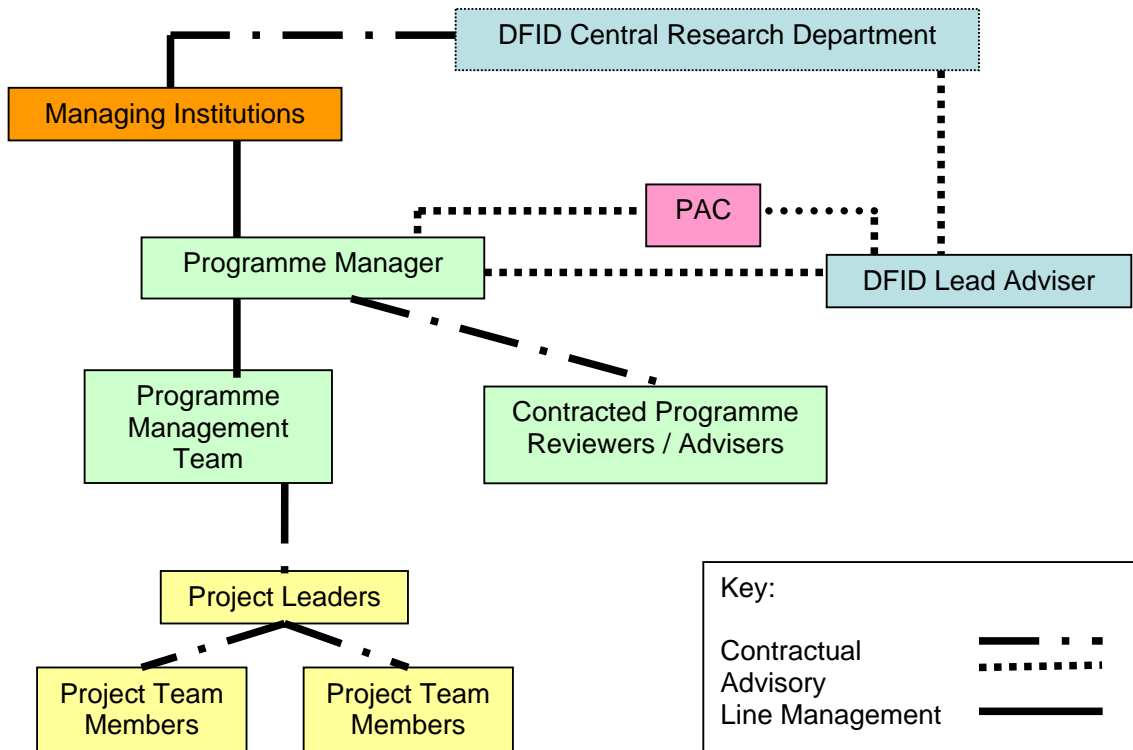
6.2 Strategy and Programme Management

Structure, Roles and Relationships

6.2.1 The management framework for the RNRRS comprised a number of contracted PMs, each responsible for delivering a specific element. At the outset, one of the strategy's programmes, dealing with natural resources systems, was retained for in-house management. A Systems Management Office was established to oversee this, and was also envisaged as providing oversight of and linkage between the contracted-out elements. The NRSP was subsequently contracted out and the Systems Management Office was wound up, leaving a small DFID team (including a dedicated post of Dissemination Coordinator) to retain oversight and maintain communications across the strategy.

6.2.2 Figure 4 below summarises the main elements of the programme management structure and the nature of the relationships between these.

Figure 4 Programme Management Structure



²⁵ Towards livelihoods rather than technical natural resources disciplines, towards autonomous country programmes, towards programmatic and budget support rather than project approaches etc.

- 6.2.3 The role of the PM is laid out explicitly in contractual terms of reference, and further detail is implied in the programme management performance indicators, which are used to assess their performance. PMs are responsible for delivery of the outputs of their programme Logframe, including programme development, project cycle management, dissemination and promotion, monitoring and reporting on performance, and administrative and financial management. The terms of reference make it clear that the PM is contractually accountable to DFID through his/her managing institution for the achievement of these tasks. S/he is advised by a Programme Advisory Committee, the terms of reference for which include providing advice on the strategic direction of the programme, programme structure, project selection, project monitoring and independent programme reviews. The DFID Lead Adviser has a dual role: providing advice to the PM directly and through membership of the PAC; and advising DFID's Central Research Department on the PM's performance through evaluation of the Annual Report (see below).
- 6.2.4 Despite the apparent plethora of checks and balances through these various relationships, the PM has considerable autonomy within the contract. PMs interpret their roles in a variety of ways. Some PMs see themselves as essentially providing strategic leadership and operational management (particularly of generic activities such as capacity building, dissemination and promotion): their role is to formulate and obtain approval of programme strategy, and manage the outcomes of a series of research contracts to deliver this. This view is more typical of PMs who are not themselves active researchers, or employed in an active research institution. By contrast, active researchers within active research institutions are more likely to see their role as including 'intellectual prospecting', professional scientific leadership, and direct scientific advice and support to project teams, including direct involvement in undertaking research projects in some cases.
- 6.2.5 While the PAC is an important support mechanism, its advisory role means that its effectiveness is heavily dependent on the PM's willingness to make use of it and agreement as to the role it should play – from a relatively narrow technical focus on approval of proposals and review of outputs, to a much broader strategic perspective. The quality of the PAC performance is also an important determinant of its impact (and unfortunately, some PACs have been problematic on occasion²⁶). As a result, some PACs have been more effective in advising and influencing PMs than others. The positional authority of the Lead Adviser as DFID's representative can play a vital role in these interactions. However, advisers have very limited time available for oversight of programmes, and turnover of personnel in recent years has often disrupted advisers' engagement²⁷.
- 6.2.6 PAC structures and processes are extremely variable. Two PACs advise more than one programme (livestock and fisheries). PAC's vary considerably in size and membership mix, ranging from the very small generalist PAC responsible for LPP and AHP, to the much larger CPP PAC. NRSP has established a steering group to expand its technical expertise in support of its PM and its PAC, and CPHP has used regional advisory committees to contribute to the PAC's deliberations. Although the intention was to rotate membership on a three or four year cycle, some PACs have retained substantially the same members since inception, while others have insisted on changes.

²⁶ For example, not in sympathy with the research model which has evolved in recent years, or with some members misunderstanding their roles as representing the interests of their research institutions, or perceiving their role as management rather than advice to the programme manager.

²⁷ Some programmes have had a very negative experience in this respect, with either very frequent changes of advisers losing continuity, or in fact no adviser contact at all for lengthy periods.

- 6.2.7 Apart from the joint PACs, there are no formal linkages between programmes. PMs have identified opportunities for additional linkages, for example, between crop and fisheries post-harvest, and between livestock production and the post-harvest programmes, but these have not formally been established. Several programmes have made successful efforts to establish joint projects, but these are few in number when considered across the strategy as a whole, and there are neither mechanisms nor incentives to encourage this type of activity under the current structure. One or two RNRRS-wide initiatives have been attempted, for example to revise project proposal and reporting pro-formas, but these have not been completed, and PMs cite lack of clarity as to who has a mandate for coordination across the strategy as part of the cause²⁸.
- 6.2.8 Two important informal factors impact on the operations of the RNRRS management structure in practice. Firstly, many of the managing institutions, and the PMs themselves, have a long history of interaction with DFID research programmes prior to the RNRRS. They are familiar with DFID's and each other's ways of working, and generally have strong and open lines of personal communication. These undoubtedly facilitate management processes and compensate for any structural limitations. Secondly, the fact that Natural Resources International Ltd (NRIL) holds the management contracts for five of the programmes, and that the programme management teams are co-located means that these PMs have additional opportunities for sharing and synergy: actively sharing administrative and support staff, and tapping into shared expertise for, for example, information management and communications.
- 6.2.9 An unusual feature of the structure is the absence of a general governance body, such as an RNRRS-level Steering Committee. While this is not strictly required since each of the PMs' contracts are managed separately, it means that there is no dedicated structure responsible for providing guidance and maintaining oversight of strategy-wide performance of the strategy, and no forum for strategy-wide representation of stakeholders²⁹. Given the scope and scale of investment represented by the RNRRS, and DFID's preference for stakeholder participation in transparent governance mechanisms in its development programme, this omission is surprising. In the early years of the strategy, DFID's Research Strategy Monitoring Panel provided an oversight mechanism (albeit comprised of DFID personnel) but the role of this panel had become attenuated (for example, it no longer managed programme reviews, or interacted directly with PMs) and it was disbanded at the end of 2002. Since then, each Lead Adviser effectively works in isolation with his/her programme. Only the small core Central Research Department team is able to have any meaningful overview across programmes.

RNRRS-wide Systems and Processes

- 6.2.10 As is to be expected with a series of independent contractual relationships, there are few RNRRS-wide management systems and processes. Effectively the control of the programmes relies on contractual compliance with the PMs' terms of reference and agreed Logframes³⁰. The initial retention of the natural resources systems programme in-house and creation of the Systems Management Office and the DFID Research Strategy Monitoring Panel suggests that DFID initially intended that there would be fairly active coordination across the strategy. However these arrangements changed with contracting out of the NRSP, closure of the Systems Management Office, and disbandment of the Panel. It is possible to view this from two different perspectives: on the one hand, this can be considered as a logical decision taken when early experience demonstrated the PMs did not require close oversight³¹; on the other hand, some of those consulted expressed the view that this was essentially a pragmatic response to changing internal priorities and resource constraints.

²⁸ The evaluation team found that some confusion exists on this point, with some stakeholders asserting that NRSP still has a role to play in this respect, but this was by no means a common view.

²⁹ The PACs are also not designed to provide stakeholder representation, and in fact, with the notable exception of CPHP, PAC members are almost entirely drawn from UK institutions.

³⁰ Targets and milestones are agreed annually in addition to these and are incorporated and reported upon in annual reports.

³¹ Some of those consulted also expressed the view that the Systems Management Office was an 'experiment' which had not yielded the benefits expected and so was terminated.

- 6.2.11 At various times, significant efforts have gone into data and knowledge management, activities, including the development of an RNRRS-wide project database (NARSIS) (although this refers only to projects which have a designated 'R' number, and therefore does not track the numerous other activities undertaken by programmes); the production of a newsletter (now ceased), the website, and the 'Handy Guides' which summarise programme activities in printed form (and which were updated by DFID's Dissemination Coordinator to facilitate sample selection by the evaluation team). Knowledge management has proved problematic, partly due to the sheer scale of materials produced, and partly due to the variety of media used (for example, early reports are incompatible with modern information and communications technologies). At the programme level, a number of programmes have made considerable advances with cataloguing and the development of web-enabled searchable databases to supplement the central system.
- 6.2.12 Today there are no formal RNRRS-wide internal communication channels³². At one time PMs attended the annual Natural Resources (later Rural Livelihoods) Advisers Conference, but this practice was ceased³³. A joint meeting of PAC chairpersons arranged for the purpose of this evaluation was the first occasion on which they had met. Nevertheless, partly as a result of the familiar relationships described above, but also due to strenuous efforts on the part of the small RNRRS core team in DFID's Central Research Department (CRD), PMs are in regular contact with each other, with CRD, with their PAC chairpersons, and (in some cases) with their Lead Advisers. External communications rely heavily on the individual programme websites. Although initiatives were started in the past with the support of Natural Resources Policy and Advisory Department (NRPAD), including the development of an RNRRS-wide communications strategy and plans to improve website linkages, these have not been carried forward since the policy division restructuring.
- 6.2.13 The evaluation terms of reference allude to a 'quality assurance strategy'. Although no formal strategy has been published, various versions of the Guidance Notes for PMs include reference to the mechanisms which DFID uses to manage and monitor the RNRRS and individual programmes. Effectively, formal management is document-based: quarterly reports are primarily used for financial planning and monitoring; the annual report of each programme is the central document for measuring programme performance against the logframe outputs and other agreed targets and milestones³⁴, and the content of the latter is tightly specified. DFID also requires the submission of final project technical reports and project completion reports for inclusion in the RNRRS database.
- 6.2.14 In the first few years, PMs were subject to more extensive oversight than now. The Research Strategy Monitoring Panel maintained an overview of progress across the RNRRS as a whole, and conducted a rigorous examination of PMs' annual reports. After it was disbanded, Lead Advisers were expected to lead an annual interdisciplinary review of performance, but this appears to have fallen into abeyance fairly quickly (partly because of the difficulty in committing cross-cutting advisers' time)³⁵. In the third phase, general programme oversight has primarily been exercised through informal personal contact between the CRD, some Lead Advisers, and PMs. Performance review is carried out on an individual programme basis, and is essentially a brief desk review³⁶ of the annual report by the Lead Adviser. There is no apparent corporate action on the outputs of the RNRRS as captured in the annual reports or otherwise. Opportunities for, for example, sharing learning across programmes, feeding learning into internal DFID policy and strategy processes, or engaging other parts of DFID, do not appear to be sought or acted upon in a systematic manner.

32 Note that this does not refer to exchange of information: the Dissemination Coordinator has ensured that there are various mechanisms in place for this, including the extensive use of web sites and circulation of reports. This point relates to active liaison, sharing and decision-making between RNRRS management stakeholders.

33 Partly because of concerns that the research agenda was dominating the conference business, particularly at the time when DFID was migrating from a natural resources to a livelihoods focus.

34 PMs also report their self-assessment of progress on the A-H scale as described in Chapter 3.

35 Note that the terms of reference for Lead Advisers, included in the 2000 version of the Guidance Notes for PMs includes requirements to... 'lead an annual interdisciplinary assessment of programme management, assembling and guiding the work of an assessment panel...'; 'participate as required...to review programme performance and evaluate programme impacts'; and 'participate with others in by monthly meetings of the lead advisers group....in reviewing policy, procedures and practices'. Past and present Lead Advisers consulted did not indicate that they recalled these processes in operation.

36 Lead Advisers indicated that they were able to allocate one to three days to this task.

6.2.15 Although the 1996 'Guidance Notes for PMs' referred to independent quinquennial output to purpose evaluations, these were not commissioned and the reference was dropped in the revised version of the guidance notes which was issued in 2000. While a variety of special reviews and studies have been commissioned for aspects of the strategy, for individual programmes, and for groups of programmes, no formal evaluation of the RNRRS as a whole has taken place until now. Without this, the Core RNRRS team in CRD, and DFID in general, have been obliged to rely primarily on the lead advisers' reviews of annual reports to assess programme performance, and have had no independent mechanism through which they could assess performance of the strategy as a whole.

Overall Strategy and Programme Management Issues

6.2.16 It is apparent from the analysis above that DFID's management of the RNRRS has been characterised by a 'light touch', which has nevertheless been responsive and supportive. PMs and PAC members hold a broadly positive view of the CRD RNRRS core team's operational management of the strategy. The majority consider that this team has been able, with some key lead advisers, to provide strategic guidance as the policy context has changed; that light monitoring has been sufficient, and that DFID managers have responded positively and flexibly in support of PMs when necessary. Nevertheless, the management process has suffered from four important constraints:

- The absence of a high-level group with stakeholder representation to maintain oversight of the RNRRS and advise DFID managers.
- Limited mechanisms for monitoring and evaluation of programme performance, which have further diminished over time.
- Very limited allocation of advisory or programme management resources to coordinate the strategy.
- Inevitable lack of continuity, as Lead Advisers are posted into different roles.

6.2.17 While these constraints have not necessarily had a negative impact on the performance of individual programmes, there is wide acknowledgement (among PMs, DFID internal stakeholders and many project leaders) that they have resulted in a lack of synergy and coordination across the strategy as a whole. This manifests itself in a number of ways:

- A low and unclear profile for the RNRRS – stakeholders, including research policymakers and managers (as well as potential contractors) are unfamiliar with it, and there appears to be little knowledge of its successes. Although information is posted on the DFID and programme websites, and there are a variety of publications as described above, stakeholders other than PMs appear to be poorly informed about the 'big picture'. It may be argued that some of the recent critical commentary from the science establishment could have been avoided if the strategy's achievements had been better collated and publicised.
- An absence of synthesis during the strategy's lifetime (until the recent PARC efforts and some recently-commissioned cross-programme synthesis studies (chapter 5)), which means that no synopsis of performance as a whole is available. As a result, it is almost impossible to say concisely what has been achieved by the RNRRS overall. Recent efforts to collate information about programme performance revealed enormous quantities of data in the form of project and programme reports, which are so voluminous as to almost defy synthesis at this stage.
- Opportunities to link activities in different programmes to achieve greater impact on a multidisciplinary problem have not been pursued as extensively as they might have been.
- While strategic evolution has taken place across the RNRRS, this has been less coherent and focused than it might have been, with some programmes responding rapidly and others responding more slowly, and a variety of directions being pursued. (see the discussion on programme strategies above and in Annex 7).

- 6.2.18 In the course of this evaluation, the argument has been put forward that, since PMs are governed by individual contracts which specify their performance, there is no need for an overarching governance structure, or for overly-onerous monitoring, especially in the later stages of programmes which have already demonstrated efficiency and effectiveness. However this argument does not outweigh the requirement for oversight and synthesis to facilitate accountability and transparency, and the need to promote synergy and coherence through cross-programme mechanisms.

6.3 Individual Programmes

Programmes' Management Structures

- 6.3.1 Basic programme management structures are similar across all of the RNRRS programmes, including a PM and in some cases a deputy PM and programme officers (depending on programme size) who take responsibility for professional liaison with projects. All programme management teams include some dedicated administrative support, although this varies from one or two part-time posts to a substantial full-time staff including specialists in, for example, dissemination, communications and information management. There are some other significant variations: for example, CPHP has established a very effective formalised regional structure (and some other programmes use its regional coordinators as channels for their own operations); PSP has made use of its own coordinators in Nepal and in ICRISAT; FRP has deployed contracted thematic leaders, and CPP has established a group of ten contracted programme advisers to support the programme management team on technical aspects of project development and monitoring, and NRSP has developed a similar structure with a 'steering group' composed of specialist advisers with contracted inputs.
- 6.3.2 Despite these variations, all of the programmes operate within the agreed management costs provided by their contracts. As each programme was awarded through competition, and proposals were evaluated, *inter alia*, on the basis of their proposed programme management arrangements and costs, this indicates that programme management arrangements have been economical and cost-efficient. Beyond this, since we would not be comparing 'like with like' (and since, as described below, it is not possible to make a direct correlation between programme management arrangements and programme performance as assessed in chapters 4 and 5), it is not possible to make any objective assessment of the relative cost-effectiveness of programmes' management arrangements.

Programmes' Strategies

- 6.3.3 Few RNRRS programme strategies³⁷ are formalised and documented *per se*³⁸. Notable exceptions are NRSP, CPHP, FRP and LPP, all of which have gone to considerable lengths to define and articulate their strategies (See Annex 7 for individual programme descriptions). Nevertheless all PMs were able to describe the coherent strategies which they have adopted. In some cases strategy development was taken forward by (or in close cooperation with) the PAC. In other cases, it was developed as an internal managerial tool by the PM and his/her team. The strategies vary considerably: some are complex and radical (such as CPHP, which has adopted an innovation systems approach); some are pragmatic (such as PHFP which has shifted from research to dissemination and uptake activities to optimise impacts), and others are relatively conservative (such as CPP and PSP which have focused on incrementally improving the effectiveness of project commissioning and implementation by using livelihoods and other concepts).

³⁷ Note that the term 'strategy' is used throughout this analysis to denote a formal multi-year statement of concepts, approaches, priorities, methods etc, and not to describe annual operating plans. Each programme presents an annual operating plan which defines programme activities and the project portfolio. This does not constitute a 'strategy' for the purpose of this discussion..

³⁸ Although they are generally discernible in the commentary provided in annual reports.

- 6.3.4 Apart from identification of technical needs and demands (discussed in more detail in chapters 4 and 5), three factors appear to have influenced programme strategy formulation:
- Programme characteristics, in terms of the demands of the discipline (e.g. technical forestry research requires very long timescales)
 - PMs' (for example, PHFP, AHP and AFGRP programmes), Lead Advisers' (for example, LPP) or PACs' interests and preferences play a significant role in shaping programme strategy.
 - Legacy factors, for example PMs' own research interests, the continuation of research themes from earlier DFID-funded projects, or continuing relationships with institutions or countries.
- 6.3.5 The effect of all of these pressures is that programme strategies exhibit the considerable diversity described above. This diversity can be seen as a strength of the RNRRS, as uniformity is neither necessary nor particularly helpful where innovation is the goal. However, one consequence of strategies evolving separately is that, while each programme may have a very coherent rationale in itself, coherence across the RNRRS as a whole is reduced. It is therefore necessary to question whether this divergent evolution, unmitigated by strong cross-RNRRS coordination, further reduced the potential for meaningful synergy and linkages.
- 6.3.6 Despite the variability in specific programme strategies, general trends are detectable in the evolution of programme strategies over time, particularly in the last few years³⁹. The most significant are:
- A shift from organising around commodities or systems to organising around beneficiary groups.
 - Prioritising impact on livelihoods over the generation of knowledge for its own sake.
 - More emphasis on participatory processes to establish demand and prioritise research needs.
 - Fewer, more tightly focused calls for concept notes.
 - More 'follow-on' and clustering of projects to allow for continuity of research themes.
 - More emphasis on dissemination and uptake promotion.
 - Increasing 'southernisation', with more southern partners acting as project leaders, and more expenditure in southern countries (up to 60 to 70% of project budgets in one or two programmes in recent years).
 - Explicit capacity building activities (which extend beyond facilitating individual higher qualifications - see below)
 - Links with the private sector stakeholders as partners and research users.
- 6.3.7 Overall, these trends point in two interesting directions. Firstly, they clearly indicate a move towards a strong livelihoods and poverty impact focus. This is in line with DFID's policy direction, so it is apparent that, even without strong direction from the centre, the RNRRS has successfully adapted to the changing policy environment⁴⁰. However, a note of caution has been sounded in respect of these shifts, and some observers have made the point that the programmes may effectively be reinventing development paradigms, focusing on demand-led, participatory activities, and engaging with policies, institutions and processes at the expense of research. This is borne out to some extent, as discussed elsewhere in this report (Chapter 7 and Annex 7), by the evaluation team's difficulties in identifying the research components of some projects examined.

³⁹ These are not universal. For example, CPP and CPHP have not altered their approaches to issuing calls for concept notes. Similarly, some programmes have placed more emphasis than others on transferring research project management to southern partners.

⁴⁰ Although programme managers have made the point that they were responding to new developments in thinking within the research and development community at large as much as to DFID direction. The change was supported by dialogue between DFID and Programmes and through the revision of contractual arrangements.

- 6.3.8 Secondly, the trends indicate a shift in the modality of programme and project management, away from the original project-focused concept towards something which places more emphasis on relationships between researchers and institutions, on building research and research management capacity, and on building coalitions of stakeholders in target countries. Essentially, by shifting to overcome some of the perceived shortcomings in the 'pure' project contract model, the RNRRS programmes are beginning to display some of the characteristics of the consortium model which is discussed further in Section 7.6.

Programme Planning and Prioritisation

- 6.3.9 The original RNRRS laid out detailed priorities for each of the programmes, and most programmes followed these in the first contracting cycle. However, almost all programmes have subsequently revisited and revised these priorities, using a variety of processes at the programme and regional levels. New programme-level needs identification and priority-setting exercises were triggered by DFID policy changes, and by the 1997 White Paper in particular. However, other events triggered revisions to programme priorities, including changes to the programme management contract (for example, when NRSP was contracted out, and when the fish genetics and aquaculture programmes were merged); when new PMs were appointed (for example, AHP and PHFP), or when the PM, PAC or DFID Lead Adviser initiated strategic reviews (for example, LPP, FMSP, CPP and CPHP). In the last few years, as described in chapters 4 and 5, many programmes (notably CPHP, LPP, CPP, FRP, NRSP and AHP) have adopted a variety of participatory processes to feed into prioritisation and planning. Others (for example, PSP) also continue to utilise the original RNRRS priorities to some extent, gradually refining these in consultation with research partners, alongside participatory prioritisation and planning processes.

6.4 Project Cycle Management

In General

- 6.4.1 In general, all programmes follow the guidelines set out in the various versions of the DFID 'Guidance Notes for PMs'. The prescribed project management cycle is largely followed: logframes are used as the core planning and guidance document; calls for concept notes are published (albeit to varying degrees); concept notes are subject to screening (although the protocol varies between programmes); successful concept notes are converted to full proposals; all projects are required to report formally at regular intervals during implementation (although intervals and formats vary); and monitoring arrangements vary from limited informal review processes to formal regular review missions.
- 6.4.2 This project management cycle model is clear, transparent and effective. Nevertheless, there are some drawbacks: operated strictly in accordance with the letter of the guidelines, it can encourage fragmentation, with too many small, short projects and consequent diseconomies of scale (also with too many partners, according to some informants). As a result it may hamper continuity of research themes (although the majority of PMs have addressed this by awarding follow-on contracts by one means or another). Finally, it often results in only short-term linkages with isolated elements of partner institutions - which means that efforts are not sustained after project funding ends, and impact may therefore be lost⁴¹.
- 6.4.3 While some of the variation in individual programme management arrangements may be attributed to the preferences of individual PMs and (to a lesser extent) PACs, much of it arises from the very different scale and scope of programmes. For example, the fisheries programmes are all small enough to adopt focused but flexible strategies, while large programmes such as CPP have, of necessity, a much broader project portfolio, and more extensive formalised programme and project management arrangements.

⁴¹ Some programme managers expressed the view that the shifting geographic focus (described elsewhere in this report) was also an important factor militating against the establishment of sustainable linkages between partner institutions.

- 6.4.4 An examination of programme and project management arrangements suggests some aspects of good research management practice which improve the efficiency and effectiveness of interaction with project partners and may contribute to the achievement of sustainable outcomes. On the other hand, consultations with programme and project managers in the UK, Asia and Africa have highlighted a number of areas where further improvements could be achieved. Lessons deriving from both aspects are discussed for each stage of the project management cycle in more detail below and in Annex 7. In summary, some of the strengths and weaknesses are:

Strength/good practice

- Adopting a flexible approach to contracting, allowing for follow-on projects, restricted competition etc, where appropriate.
- Providing support for project development, including needs identification, budget development and identifying potential partners and mentors.
- Ensuring that tendering processes are not unduly protracted, and that implementation begins promptly.
- Maintaining regular contact with researchers throughout the project cycle, with as much face-to-face contact as is operationally and financially feasible.
- Using education and training mechanisms (for example PhD and MSc studentships) to strengthen links between research institutions.
- Supporting partners (both research and promotion) with in-country or in-region coordination, including communications, harmonisation, advice and mentoring.
- Appropriate monitoring and evaluation arrangements including a mixture of standardised reporting, internal monitoring, and external review as appropriate

Weakness/poor practice

- Adopting an inflexible approach either relying entirely on full open competition or on award of contracts to a small select group of researchers.
- Relying on northern research partners with experience to lead bidding teams and engage and support southern partners.
- Long delays at various stages of the tendering process, and especially between approval and implementation.
- More intense contact during project planning and design, followed by only intermittent reporting linkages, and over-reliance on electronic and paper-based communication.
- Ignoring (or discouraging) opportunities to link education and training processes to research activities.
- Relying exclusively on UK-based mentors and processes.
- Either over-fastidious monitoring (for example excessive use of external review) or inadequate monitoring (for example, relying only on review of implementation reports).

- 6.4.5 While it is possible to identify these lessons, no strong correlation is apparent between what might be described as 'managerial good practice' and programme performance, either in quality of science or potential impact on poverty. This is due to a variety of reasons, including:

- Because every programme follows the basic contract of research model laid out in the guidelines, and carries out the core management processes (planning, contracting, operational management, reporting etc), there are more commonalities in the management approaches adopted by programmes than there are differences.
- Management processes adopted are only one of a number of factors which will have impacted upon programme success. The nature of the research, the technical issues addressed, the quality of partners selected, and the level of risk associated with particular projects are just a few of the factors which will have been important. It would be inappropriate to draw correlations taking account of only one of these factors.
- As described in Chapter 4, the variety of criteria for assessing programme performance means that it is not possible to definitively identify some programmes as more 'successful' than others. Relative success depends on the relative weight which is given to the various measures of science quality and impact or potential impact on poverty.
- Further, the conclusions from the assessment of science quality and impact on poverty do not indicate a wide distribution of programme performance: broadly speaking, all of the programmes appear to have performed well. It is not therefore possible to objectively associate any specific management processes adopted with 'more successful' or 'less successful' programmes.

- 6.4.6 No single 'best practice' research management model or style can be identified and management arrangements for the successor to the RNRRS should therefore incorporate managerial flexibility within broad guidelines to devise appropriate management arrangements for specific circumstances.

Competition, Selection and Contracting

- 6.4.7 All programmes have followed the arrangements set out in the RNRRS guidelines to some extent, publicising calls for concept notes, shortlisting on the basis of these, and requiring full proposals from shortlisted project teams. However, there has been considerable variation in practice, both between programmes and over time within individual programmes. The degree of competition is a particularly important aspect: a widely publicised 'open call' is the most competitive model, yet almost all of the programmes have moved away from this to some extent, either circulating narrow calls for concept notes, or circulating calls to a limited audience. These less-competitive calls are specifically intended either to ensure continuity between one project and the next within a research theme, or to ensure that concept notes are received from the limited number of researchers with the specialist competence to carry out the work, and not to waste the time of the others.
- 6.4.8 Some patterns can be detected. The larger programmes (for example, CPP, CPHP and NRSP) are more likely to have continued to use the full competitive process than some of the smaller programmes (for example, AFGRP). Whether an open call or a focused call is used, all programmes ensure that formal concept notes are produced and reviewed, and full proposals are prepared and reviewed before contracts are awarded. It is not possible to say whether the different practices actually resulted in a less competitive environment for some research areas. An analysis of projects awarded shows that some UK research institutions have been very successful in winning contracts from particular programmes (for example NRI has been very successful with the crop protection and crop post-harvest programmes, as has University of Wales, Bangor with plant sciences, and CTVM with animal health) but this is at least partly a reflection of their legacy of involvement in pre-RNRRS research and their expertise in these disciplines, and it also must be said that the proportion of contracts awarded to these institutions has reduced in later years. If the effectiveness of competition is an issue for the successor to the RNRRS, this can be addressed by establishing quantified performance indicators to ensure that research contracts are awarded in line with overall objectives⁴².
- 6.4.9 While all programmes use a screening process to select concept notes to go forward to development of full proposals, the precise procedure varies: some programmes use only the programme management team for initial screening, others use PAC members, others use contracted specialists, or a combination of all of these. The process appears to be transparent in the majority of cases⁴³, with PAC members well-informed, and formal written feedback provided to unsuccessful proposers. All of those consulted in the UK and through the country visits in Africa and Asia who had submitted concept notes reported that the process was effective and efficient, and noted that the inclusion of the concept note stage before the development of a full proposal reduced the risk that they would invest significant time in ideas which had no prospect of approval.

⁴² For example, no more than X% of research contracts or expenditure is awarded to programme managers' own institutions, or that a minimum of Y% is awarded to southern institutions, or that a minimum of Z% is awarded through formal open competitive processes.

⁴³ In a few cases, programme management teams conduct an initial screening of concept notes and those which they regard as unsuitable are not shown to the PAC.

- 6.4.10 Beyond the concept note stage, programmes differ considerably in their approach to supporting proposal development. Some (for example, LPP NRSP, FRP and CPHP) are highly interventionist, with PMs, other members of the programme management team, or contracted specialists becoming directly involved in advising the proposers. Supportive activities at this stage include visiting proposed locations, funding design workshops, identifying and linking suitable partners, and even linking separate proposers together to submit a single joint proposal⁴⁴. In all cases, all full proposals are subject to PAC consideration⁴⁵. Across the RNRRS as a whole, it is rare for a full proposal to be rejected, although some proposals may go through an iterative revision process before final approval.
- 6.4.11 During interviews in Britain and in developing countries the Core Team attempted to ascertain the degree of satisfaction with the review process to which competitive project proposals are subjected. There is widespread agreement that PACs and PMs have usually done a very good job in this process. Proposers of rejected bids have commented that they had fair hearings of their proposals, and rapid and adequate feedback on why proposals failed. Comments received by successful proposers have equally been helpful for adjustments and creating wider networks for cooperation. Several programmes have been specifically mentioned as providing unusually good feedback. Among them are forestry, aquaculture and natural resources systems. The follow-ups once projects get underway have generally been good for all programmes.
- 6.4.12 Proposers consulted were broadly happy with the process as described above, but highlighted some aspects where change is necessary:
- Despite the considerable efforts made by some programmes (especially in the last two years), many southern partners (and some northern researchers consulted) either were unaware of the opportunities represented by the RNRRS (suggesting that calls were insufficiently publicised), or were reluctant to submit concept notes because of the presumption that they would be unsuccessful⁴⁶. In almost all cases sampled, partners were introduced to the RNRRS through other agencies (almost invariably a northern partner). The few examples where this was not the case were particularly well-capacitated institutions (for example, national offices of international NGOs such as ITDG in Bangladesh or Appropriate Technologies in Uganda), or international or regional research institutions (for example, PRAPACE in Uganda, CIFPR or ICRISAT). The situation has been improving, and the CPHP regional concept note calls have been a very successful method of facilitating southern engagement.
 - In some cases, proposers experienced a prolonged proposal preparation and review process. Although they value the two-stage process and appreciated the support they were offered, a long wait for approval, spanning one or even two years in some cases, disrupted their personal and their parent institutions' research programmes. Of equal concern, participatory processes of concept note and/or proposal preparation raised the expectations of potential beneficiaries, and in a number of cases informants (in both Africa and Asia) asserted that motivations and relationships were diminished where there were long delays before implementation could begin.
 - In some cases, post-proposal budget negotiations appeared to result in considerable pressure to reduce costs without reducing activities. This was more important for less-experienced southern proposers, some of whom also experienced difficulties with estimating the management time and costs involved in acting as project leaders. (Some also felt that they had insufficient information about the management and reporting requirements to enable them to make realistic estimates.) This suggests that support needs to be extended to planning and budgeting as well as technical aspects of proposal preparation (as is already provided, for example, by FRP).

44 Which indicates that programme managers are looking for synergy across their programmes.

45 NRSP's PAC does not consider all proposals directly, but the PM includes a PAC member in each proposal review team.

46 However, some programmes cite the submission of unsolicited concept note proposals as evidence that southern partners were sufficiently aware of the RNRRS in some countries (for example, Tanzania and Bolivia).

Implementation Generally

- 6.4.13 During implementation, programme management team contact with projects is variable, ranging from very frequent informal contact which almost amounts to a 'managerial' relationship (for example FRP and AFGRP); to less frequent contact through occasional monitoring visits by the PM or another nominated team member (for example, CPP). CPHP's and CPP's regional and country coordinators have also provided considerable hands-on local support to project teams. For those programmes which devote considerable resources to the support of project teams, capacity building is an implicit objective, often in the form of supported⁴⁷ PhD and MSc studies but also through short specific training events. However, overall capacity building remains very limited. (Capacity building is discussed in more detail elsewhere in this report.)
- 6.4.14 A few PMs have explicitly attempted to build relationships and linkages across their projects. They have used a variety of approaches, and some of the best examples of these are the LPP, CPP and FRP approach to clustering projects, the role played by the CPHP regional coordinators, and AHP's efforts to build longer term partnerships with southern institutions across projects.
- 6.4.15 More generally, programmes have made very impressive efforts to communicate, both internally and externally at the programme level (for example newsletters, posters, conferences and workshops resourced through programme development and dissemination funds); and at the project level as part of dissemination activities (5.6). Innovation in project level communications to stakeholders is particularly impressive, including local language leaflets and posters, toolkits, conferences, workshops and demonstration activities, and innovative use of mass media including information and communications technology, and web and radio-based. A number of programme managers have provided significant support to project teams to develop these ideas.
- 6.4.16 Generally speaking, contract and financial administration has operated smoothly throughout project implementation. The evaluation team found very few examples where contractual difficulties or disputes had arisen between programme management and project leaders, and (with one exception) these were all speedily resolved. Financial disbursements were made efficiently, although the requirement to finance project activities in arrears has caused problems. A number of southern partners alluded to difficulties and delays in beginning implementation of approved projects due to their inability to begin work without funding. This was usually resolved with programme managers' support, often by northern partner institutions providing initial resources, but this was more problematic where the project was awarded to an all-southern team.

Reporting, Monitoring and Evaluation

- 6.4.17 All programmes operate the basic reporting framework set out in the DFID guidelines. Project leaders are required to produce brief financial and activity reports quarterly. A more comprehensive annual report is also required. At the end of the project, a final technical report and project completion report must be produced.
- 6.4.18 Although the majority of programmes operate the reporting cycle precisely as required by the DFID guidelines, there is some variation. One or two have tried to simplify and reduce the reporting requirements in agreement with DFID (notably CPP). These efforts are appreciated since some project leaders (particularly from southern institutions) have found the reporting cycle demanding. However the majority of project leaders consulted regarded the reporting requirements as fairly consistent with those demanded by all funders today.

⁴⁷ This support is generally not financial.

- 6.4.19 While all PMs maintain good communications and are aware of progress with their projects, not all programmes carry out formal evaluations, either internal or independent. At one extreme, NRSP carries out formal mid-term on-site evaluations of all projects. Although not formal evaluations, CPHP also conducts what project leaders have described as rigorous and demanding review missions, including country visits and stakeholder consultations. LPP conducts occasional independent mid-term reviews, but provides independent evaluation of all project final technical reports, as does FMSP. Some other programmes conduct no regular formal evaluations (for example, PSP and CPP⁴⁸), but rely on other mechanisms to keep track of project performance.
- 6.4.20 There is no compelling argument for standardisation of monitoring and evaluation processes in terms of ensuring quality at the individual programme level. All PMs have made arrangements which they believe to be appropriate, and there is no evidence to indicate that these are insufficient. However, yet again, the lack of standardisation means that independent oversight of project and programme progress (i.e. not directly dependent on PMs' accounts) and oversight of the performance of the RNRRS as a whole has not been possible.
- 6.4.21 For the future, consideration should be given to the development of a clearer policy and operational guidance for monitoring and evaluation. This would lay down minimum standards for monitoring, review and evaluations, graduated to reflect relative materiality and risk. In this way programme managers would be assisted to devise monitoring and evaluation procedures which are appropriately rigorous, and also cost-effective.

Relationships at the Programme and Project Levels

- 6.4.22 The evaluation has consistently found that the important working relationships fostered by the RNRRS are between individual researchers⁴⁹ rather than institutions, and it is these individual relationships which persist outside the project context, and after projects are completed. PMs' personal scientific networks are important for a number of programmes (this is particularly notable for those programmes whose managers are within active research institutions, such as AFGRP and PSP). There is also some evidence that projects have succeeded in creating new and strengthening existing alliances between researchers within developing countries. It can be concluded that these relationships constitute an important informal mechanism for strengthening researchers' capacity.
- 6.4.23 Although many programmes have undertaken activities which have an institutional strengthening aspect, these are usually aimed at researcher capacity building. There is no compelling evidence to date that the RNRRS has been instrumental in forging sustainable institutional (as opposed to individual or sub-institutional) relationships. Unless there are follow-on projects or other activities in an institution (whether funded by RNRRS or not), the institutional memory of projects appears to be lost very rapidly, and relationships between the partner institutions do not persist. Shifting geographic targets, as described above, may be an important factor. This was very striking in Indonesia where the de-prioritisation of the country resulted in a complete cessation of activities: four years later it was almost impossible to find anyone who knew anything about the RNRRS or about particular projects⁵⁰. On the other hand, experience under the INNOVA initiative in Bolivia may show a different picture, as described in section 7.3. However, the rarity of this type of example would suggest that the RNRRS contract research model is not particularly suitable for making a sustainable impact on the capacity of southern research institutions in terms of establishing long-term linkages to local and international research networks, or building deep institutional competence (beyond that of individual researchers in specific research themes or discipline areas).

48 CPP conducts evaluations of final technical reports where a follow-on project is being considered.

49 Note that this discussion is restricted to researchers and research institutions. Section 3.7 discusses relationships between researchers and intermediate/uptake agencies.

50 Note that this conclusion was based on the experience of the evaluation team's short field visit in Indonesia. CPP has indicated that there is a strong legacy of research outputs in this country, but these were not detected by the team.

6.5 Capacity Building

Capacity Building in the RNRRS

- 6.5.1 UK scientists have increasingly involved developing country scientists in projects, and have fairly shared research tasks and research credits (e.g. co-authorship of publications) to maintain scientific standards and relevance. It is apparent that during the decade of RNRRS activities there has been a clear shift of science responsibilities, giving much more emphasis to developing country science and/or development groups during latter years.
- 6.5.2 Many examples have been quoted to the Core Team from projects in crop protection, forest science, aquaculture and natural resources management indicating that co-authorship is strongly encouraged by PLs and PMs (4.4), that the order of authors fairly reflects on scientific contribution, and that the frequently superior science writing skills of British partners ensure that international journals accept good science where developing country scientists have played major roles.
- 6.5.3 RNRRS research funding has increasingly flowed to the Southern partners, so that some programmes now have a 50/50 split, in strong contrast to the early years.
- 6.5.4 This, however, is not unique in research sponsored by development cooperation agencies: similar tendencies are present in e.g. USAID's CRSP programmes and in Australian AIARC, and by major research efforts in France. In other countries, a larger proportion of resources has traditionally been earmarked for developing countries (Canada, the Netherlands, and Scandinavian countries). In some fields of science, conducting research in a developing country using developing country scientists is a highly cost-effective mode, but it can be more expensive when infrastructure is lacking.
- 6.5.5 RNRRS has contributed funding to increase the efficiency of developing country research establishments, although human capacity building was excluded until recently (although nevertheless achieved by some programmes, e.g. Plant Sciences).
- 6.5.6 There have been major efforts from programme managers and from individual project leaders to involve a broader group of research institutions in developing countries in the RNRRS projects. The Core Team applauds such efforts, which have led new combinations of government research institutions, universities, farmers associations, NGOs and private national and multinational commercial interests. In general, achievements have been significant, although the exclusion of capacity building incentives in the first 8 years of RNRRS may have failed to create long-term sustainable partnerships with weaker partners, especially civil society organisations.
- 6.5.7 A new emphasis on capacity building has been apparent throughout the last few years of the RNRRS. Several programmes have supported various forms of capacity building for individual researchers, in the form of facilitating higher qualifications for individual young scientists, providing on the job learning opportunities alongside experienced researchers. Some programmes (for example, CPHP, CPP, FMSP and FRP) have also provided short specific training events for a large number of project team members. CPHP's 'Partnerships for Innovation' approach also emphasises strengthening of systems. However, overall capacity building remains very limited.
- 6.5.8 Although capacity building activities are now seen as a legitimate part of programme management, no specific capacity building policies or strategies have been devised, either for the RNRRS as a whole, or for individual programmes. Because capacity building was expressly excluded from the programme management remit until recently, these activities represent a very small portion of the overall RNRRS effort.
- 6.5.9 It is clear that capacity building will need to be an important element of the successor research management mechanism. Virtually every group of stakeholders interviewed in Africa stressed the need to have capacity building, particularly at the MSc and PhD levels as an integral part of any future natural resource management research programme. There appears to be growing shortage of professional manpower in the region. This viewpoint was also expressed, although perhaps not so strongly, by Asian stakeholders consulted.

Defining Capacity Building

- 6.5.10 There are many different potential audiences and mechanisms for capacity building in the context of natural resources research. The most important are:
1. **Individual researchers:** for example, by providing research facilities and supervision for PhDs and MScs. Providing on the job learning through involving inexperienced researchers in experimental design, drafting and editing alongside more experienced researchers, or providing off the job training in particular techniques and concepts through tailor-made training courses. It is likely that any future capacity building policy would want to draw a distinction between UK-based researchers gaining experience of research in developing countries and developing country researchers, and give a higher priority to the latter.
 2. **Research managers:** for example, to improve their ability to use participatory methodologies to establish demand, prepare proposals, assemble project teams, and manage project implementation.
 3. **Policy- and decision-makers:** for example, through supporting evidence-based policy processes, awareness-raising, and demonstration activities.
 4. **Public, non-government and private sector extensionists:** through, for example training of trainers, or preparation of guidance manuals.
 5. **Poor natural resources-dependent people:** through, for example demonstration, mass media, manuals and leaflets, and direct empowerment of grass roots farmers and community institutions.
 6. **Research institutions:** for example providing assistance to senior managers with strategic planning, internal reorganisation, bidding for resources, quality assurance, public relations.
- 6.5.11 The first two categories are directly concerned with developing scientists. The third, fourth and fifth relate to dissemination and uptake. The sixth relates to building sustainable research capacity in-country.
- 6.5.12 To date it would appear that only the last of these (building institutional capacity in national research systems) lies beyond the boundaries of capacity building as it has been interpreted by RNRRS PMs to date. All of the other activities are being undertaken by at least some of the programmes. It is generally accepted that it is beyond the scope of researchers to work directly to build the capacity of poor people, but several programmes argue that they are involved in this⁵¹. The situation with respect to institutional capacity building is by no means so clear-cut. The majority of stakeholders consulted felt that building capacity in southern research institutions is important to secure and sustain demand-led adaptive research efforts. However the majority of internal DFID stakeholders felt that this was not an appropriate role for centrally-funded research.

Future Capacity Building Priorities

- 6.5.13 The successor to the RNRRS should consider prioritising three major areas of capacity building activity, although these should be handled in different ways.

⁵¹ The evaluation team interprets this is an aspect of project design, in the sense that some strengthening of individuals and community level institutions is often necessary to enable project teams to carry out the planned activities. It is not an explicit aim of the project activities as such.

- 6.5.14 There is no doubt that the highest priority and bulk of capacity building resources should be applied to the professional development of researchers and research managers. This is likely to be facilitated by PMs rather than necessarily as an integral part of project design. Capacity building activities could take a number of forms:
- PhDs and MScs
 - Secondments and exchanges between institutions
 - Technical training courses
 - Workshops and seminars
 - Support for project design and management
 - Joint projects
 - Contact with other projects and researchers in the programme
- 6.5.15 If capacity building for researchers and research managers is to have a higher priority in the successor programme, then an explicit capacity development policy, which identifies priorities, methods and appropriate budgets, and which allocates specific responsibilities will be necessary. Capacity building is a long-term and expensive process, and if a heavy emphasis is to be placed on this aspect, then the successor programmes' Logframe outputs and funding structures will need to reflect this clearly.
- 6.5.16 Assuming that the focus on dissemination and poverty is maintained, it is inevitable that the successor programme should also concern itself with the 'capacity building' (although perhaps in the narrower sense of delivering knowledge in useful formats) of policymakers, decision-makers and extensionists. It would be more appropriate for these activities to be an integral part of project design rather than a separate stream of activity.
- 6.5.17 The situation in respect of institutional strengthening for research institutions is much less clear cut. Envisaging a situation where most future development aid is in the form of budget support or programmatic aid rather than project support, it is apparent that strengthening the capacity of southern research institutions is likely to be a very important channel for sustainability, and very strong demand for this form of support was expressed by almost all of those southern researchers and institutions consulted during the country visits. Whether strengthening this capacity is the responsibility of a research programme is a moot point: generally it would be argued that this should lie within the remit of country assistance programmes – but in a budget support environment no mechanism would exist to do so.
- 6.5.18 DFID's Development Research Centre model intended capacity development to be an explicit and formal activity, tailored to specific needs in research partner institutions. However the practical experience of capacity development has proved rather different from its original concept. Partner institutions see themselves as equally competent and the question of institutional capacity building, with its implication of inferiority, is in abeyance. Almost all capacity development to date has been through informal mentoring and tutoring of individual researchers as normal academic good practice. This experience tends to support the case that researchers should not be given direct responsibility for institutional capacity strengthening, although this could be carried out through engagement of institutional strengthening specialists as part of programme or project teams.

6.6 Key Findings Concerning Governance and Management

6.6.1 *The Strategy as a Whole*

- The Strategy represented a major advance by prioritising researchable problems on the basis of a needs assessment, and with clear linkages between purpose, outputs and activities.
- The evolution of the strategy reflects DFID's response to new notions of good practice for impact on poverty and sustainability of outcomes.

6.6.2 Structure, Roles and Relationships

Strategic governance

- The absence of a general governance body means that there is no dedicated structure responsible for providing guidance and maintaining oversight or for strategy-wide representation of stakeholders.

Role of Programme Advisory Committee

- The advisory nature means that effectiveness of the PAC is dependent on the willingness of PM to use it.
- PAC roles vary from a narrow technical focus on approval of proposals and review of outputs to broader strategic perspective.
- Some PACs have been problematic due to lack of clear roles.

Role of DFID Lead Advisers

- Lead Advisers are central in determining the quality of the PAC contribution, but limited time and high turnover of personnel have reduced their impact.
- Since the demise of DFID's Research Strategy Monitoring Panel in 2002, each Lead Adviser works in isolation with his/her programme. Interaction is dependent on individual adviser's time and commitment.

6.6.3 Programme Management

Generally

- There are few RNRRS-wide management systems and processes.
- DFID's central research department RNRRS core team (and its predecessors in DFID, the RLD and NRRD) has been able to monitor contractual performance, provide knowledge management and offer strategic guidance.
- Where managing institutions and PMs have a long track record working with DFID, management processes are facilitated.
- Overall, programme management suffered from 4 constraints
- Absence of high level group with stakeholder representation to maintain oversight of RNRRS.
- Limited mechanisms for monitoring and evaluating programme performance which have further diminished over time.
- Very limited allocation of advisory or programme management resources to coordinate the strategy.
- Inevitable lack of continuity as lead advisers are posted into different roles.
- As a result, there has been less coherent and focused strategic evolution than might have been with strong central management.

Good practice in communication

- Programmes have made impressive efforts to communicate both internally and externally. Innovation in project level communication to stakeholders is particularly impressive.
- Today there are no formal RNRRS-wide internal communication (as opposed to information dissemination) channels.

Knowledge database

- At various times, significant efforts have gone into data and knowledge management activities, including NARSIS, the newsletter (now ceased), the website, and the Handy Guides.
- Knowledge management has been problematic due to the scale and due to the inevitable variety of media used over a 10-year period.
- There have been considerable advances at programme level with cataloguing and development of web-enabled searchable databases to supplement the central system.

Quality assurance

- No formal 'quality assurance strategy' has been developed or published.
- Effectively, quality assurance is document-based.

Reporting, monitoring and review

- In the first few years, PMs were subject to more extensive oversight than now. Now, performance review is essentially a brief desk review of the annual report by the Lead Adviser.
- There is no independent mechanism by which the DFID central research core team can assess performance of the strategy as a whole.
- There are no apparent mechanisms for, nor evidence of, corporate action on outputs from the RNRRS.
- There appear to be no structured opportunities for sharing learning across programmes, feeding learning into internal DFID policy and strategy processes or engaging other parts of DFID.
- Lack of standardised monitoring and evaluation processes makes independent oversight of project and programme progress impossible

6.6.4 Programme Structures and Strategies**Generally**

- Programme structures and strategies exhibit considerable diversity. This is a strength of the RNRRS, but may have reduced the potential for meaningful synergy and linkages.
- Programme strategies have evolved towards:
 - a strong livelihoods and poverty impact focus
 - an 'institutional' focus on relationships between researchers and institutions, on building research and research management capacity, and on building coalitions of stakeholders.
 - Contract and financial administration has been smooth.

Multidisciplinary Approach

- Multidisciplinary approach increased in all programmes with increasing utilisation of participatory approaches.
- Opportunities to link activities in different programmes have not been pursued to achieve greater impact on multidisciplinary approach.

6.6.5 Project Cycle Management**Generally**

- The project management cycle model is clear, transparent and effective.

Competitive Bids

- The degree of competition is variable but it is not possible to say whether the different practices have resulted in a less competitive environment for some research areas.
- Screening processes for concept notes and proposals were variable but transparent in all cases. All who submitted concept notes reported that the process was effective and efficient.

Strengths, Weaknesses and Lessons

- No single 'best practice' research management model or style can be identified and management arrangements for the successor to the RNRRS should therefore incorporate managerial flexibility.
- Lessons from the variety of project cycle management approaches observed include:
 - A flexible approach to contracting (e.g. follow on contracts, restricted calls as well as open competition) allows space for synergy and harmonisation.

- Research effectiveness is improved by providing support for project development, including needs identification and partner identification.
- As much regular and face-to-face contact as is technically and financially feasible improves performance.
- In-country and in-region support confers additional research and promotion benefits to UK-based support.
- There is some indication that efforts to create linkages between projects within programmes can confer additional synergy and momentum.
- Synergy is also achieved by linking education and training for researchers to research projects.
- Appropriate monitoring and evaluation arrangements will include a mix of internal and external review, tailored to the materiality and risk associated with each project or group of projects.

Relationships, networking and partnerships

- RNRRS tends to foster important working relationships between individual researchers rather than institutions. It is these individual relationships which persist outside the project context, and after projects are completed.
- Project by project funding leads to pragmatic contractor relationships and does not facilitate continuity or sustainability of research activities.
- Institutional memory decays rapidly when projects are completed without any follow-on activities.

Capacity Building and Skills Transfer

- There has been a clear shift of research project management responsibilities to developing country science and/or development groups during latter years.
- Strong working relationships established between individuals are an important informal mechanism for strengthening researchers' capacity
- However, there is no compelling evidence that the contract research model is particularly suitable for making a sustainable impact on the capacity of southern research institutions, or building deep institutional competence.
- Although a new emphasis on capacity building has been apparent throughout the last few years of the RNRRS, no specific capacity building policies or strategies have been devised.
- The successor to the RNRRS should prioritise three major areas of capacity building activity:
- Professional development of researchers and research managers through an explicit capacity development policy.
- 'Capacity building' of policymakers, decision-makers and extensionists as an integral part of project design.
- Whether institutional strengthening for research institutions is to be the responsibility of a research programme is yet to be determined.

Chapter 7 Strategic Review and Possible Ways Forward

7.1 Lessons Learned – Walking the Tightrope between Scientific Knowledge Generation and Livelihoods Impact

- 7.1.1 Changing signals regarding research applied to poverty alleviation, and later the need for institutional capacity building in the South, have repeatedly changed the course of research programmes in RNRRS. Social science aspects were seriously under-represented in early years but have arguably consumed large resources in latter years, necessitating a reduction in physical and biological science components.
- 7.1.2 PMs and PACs have very capably adapted the research project portfolio and individual projects to the changing signals. Early reluctance among scientists to move from the more basic toward the applied end of the research spectrum has been overcome. Frustrations about the increasingly applied nature of research, even beyond research into development, have been transformed into significant enthusiasm regarding the increased potential for direct impact on science policy and the livelihoods of poor people.
- 7.1.3 Laudable as the above may be in terms of development of poorer countries, it raises issues whether - in a model with DFID-dominated development research financing - UK-based science is being forced to abandon or reduce its contributions to more basic research. While some independent observers view the shift as a positive change, increasing the likelihood of uptake and improving the potential impact on poor peoples' livelihoods, others express disquiet that in latter years, RNRRS programmes may have been reinventing known development paradigms, rather than making a unique contribution to new knowledge.
- 7.1.4 Innovative concepts are being developed to allow the wider group of stakeholders to be incorporated within the research matrix (e.g. CPHP's Partnerships for Innovations). In some cases research/development activities have been labelled as action research, action learning, adaptive research *etc*, however some of the activities exhibit many of the characteristics of small-scale short-term (and therefore probably unsustainable) development projects. Since almost all programme Logframes have been revised after the onset of the RNRRS to emphasise dissemination and uptake, and these revisions have been approved by DFID, it is reasonable to assume that the shifts in balance have partially, if not fully addressed DFID's requirements.
- 7.1.5 Most programmes have established clustering or strategic linking of research initiatives. This has enabled continuity between aspects of basic, applied, action and adaptive research. It has stimulated longer timeframes for strategic research initiatives to operate within and allowed for inter-disciplinarity within project cycles. The RNRRS now needs to identify and build on clustering principles to develop cross programme and multi-disciplined work further.
- 7.1.6 Looking to the future, the new research funding framework⁵² defines DFID's objective for research as: 'To promote the production and uptake of technologies and policies that will contribute to poverty reduction and the achievement of the Millennium Development Goals.' Referring specifically to the relevant researchable problem, 'Sustainable Agriculture especially in Africa', the new funding framework identifies three intertwined approaches: participation, technology and access. Only the second of these relates to the generation of new technologies and practices, and the specific examples given imply adaptation rather than fundamental research. This would suggest that the successor activities to RNRRS should display the same bias towards dissemination and uptake, capacity building, and engaging with policies, institutions and processes to remove constraints which prevent adoption of suitable technologies, as the current programmes do.
- 7.1.7 Keeping in mind the objectives of the funding institution, in this case DFID, the question of whether the current balance is appropriate can be answered in terms of (a) the global context and comparative advantage of any future programme (b) ability to respond to new research challenges and (c) efficiency in delivery of the expected livelihoods impact.

⁵² DFID (2004), DFID Research Funding Framework: 2005-2007, DFID, London, UK.

7.2 The Global Research Context and RNRRS Comparative Advantage

- 7.2.1 As stated by the House of Commons Science and Technology Committee⁵³, it is impossible to make sustainable progress towards the MDGs without harnessing the potential of science and technology, which as part of a vibrant innovation system can provide a route out of poverty for developing countries. Indeed, scientific and technological capability is critical to enabling developing countries to overcome the trade barriers and quality standards imposed by the world markets. The application of science and technology to agriculture is essential for food security.
- 7.2.2 The RNRRS operates in an environment with vibrant alternative suppliers of its products. With regards to IPGs alternative providers include the universities and national research councils in the UK and other developed countries and the CGIAR.
- 7.2.3 In most industrialized countries with large development assistance budgets, development researchers have a numbers of funding sources. But in the UK, ODA/DFID appears to have been the main or sole financier of development research during the last 2 decades. DFID has moved from aid tied to UK institutions, goods and services to simultaneously trying to support the maintenance and generation of intellectual capital in development research in the UK, while assisting selected developing countries to expand their expertise, and supporting a number of IARCs.
- 7.2.4 The CGIAR is the principal global agricultural research effort for production of IPGs for poverty reduction with an annual budget of £220m and 14 IARCs, 13 of which are located in developing countries. The UK is a founder member of the CGIAR, and DFID claims that its contribution has increased its poverty focus and the emphasis given to capacity building.⁵⁴
- 7.2.5 With regards to NPGs, alternative suppliers to the RNRRS include developing country NARS, the regional and sub regional research organisations such as FARA, ASARECA, and to a much lesser extent the plethora of NGOs and private sector institutions particularly in the area of technology dissemination. Capacity in many of these institutions has increased significantly over the last two decades although many institutions, especially in Africa remain very weak.
- 7.2.6 In the above context RNRRS has to find its niche. The International Development Act 2002 sets out the ways in which the UK can spend money on international development. The Act establishes poverty reduction as the over-arching purpose of British development assistance, either by furthering sustainable development or promoting the welfare of people.
- 7.2.7 The RNRRS has generated globally recognised and influential programmes covering the key facets of natural resources research and the use of research in the fight against poverty. The strategy has generated the flexibility required to evolve over the 10 year period and to emerge as a world leader in balancing aspects of basic, applied and adaptive research supplying outputs to impact on poverty. DFID need to be able to ensure that it builds on and strengthens the foundations developed over the last 10 years.
- 7.2.8 Over the 10 year period the RNRRS has generated enormous stakeholder networks. These cut across international, regional and national development issues including academic, public, private and the NGO sectors. All these networks are influential, but their synergy needs to be strategically addressed if they are to reach their full potential for supporting policy and practice changes and enhance the practicalities of poverty reduction.
- 7.2.9 In recent years UK, in line with other international donors, has been moving away from project and programme support in favour of direct budgetary support. According to this model, donors provide funding directly to developing country governments. DFID country programmes now primarily support developing country Poverty Reduction Strategy Papers (PRSPs) through which countries identify the opportunities for, and constraints on, poverty reduction. PRSPs are developed through consultation within the developing country now a days, usually incorporating the MDGs. DFID manages the UK aid budget and works to eliminate world poverty through the achievement of the MDGs.

⁵³ House of Commons Science and Technology Committee, 2004. The Use of Science in UK International Development Policy. Thirteenth report of session 2003-2004.

⁵⁴ DFID 2004, Research Funding Framework 2005-2007.

- 7.2.10 Over time, UK development research institutions have been dependent on DFID for funding, as UK research councils and ministries have come to expect DFID to ensure continuation of intellectual capital in UK institutions. In early years, the major proportion of RNRRS funds appears to have gone to British researchers and most was spent in the UK. With the untying of aid in 2000, more funds are now being allocated to and spent by southern institutions, drawing on the expertise of UK institutions when appropriate and where they have comparative advantages.
- 7.2.11 DFID's research funding framework 2005-2007 indicates that the focus will be on sustainable agriculture especially in Africa where science and technology feature prominently in the priority areas adopted by the New Partnership for African Development (NEPAD). Pillar 4 of its Comprehensive Africa Agriculture Development Programme (CAADP) is on agricultural research, technology dissemination and adoption. The long-term pillar, aims at achieving accelerated gains in productivity and will require: (a) enhanced rate of adoption for the most promising available technologies so as to support immediate improvement of African production by way of linking, more efficiently, research and extension systems to producers; (b) technology delivery systems that quickly bring innovations to farmers and agribusinesses so making increased adoption possible, notably through an appropriate use of new information and communication technologies; (c) renewing the ability of agricultural research systems to efficiently and effectively generate and adapt to Africa new knowledge and technologies, including biotechnology, needed to increase output and productivity while conserving the environment; and (d) mechanisms that reduce the costs and risks of adopting new technologies.
- 7.2.12 A hallmark of the current RNRRS is that it takes research through to promotion to end users, but is not expected to duplicate dedicated providers of IPGs such as developed country research councils and the CGIAR, or dedicated providers of NPGs such as NARS. One can therefore see two types of roles for the RNRRS – filling the gap left by dedicated providers of IPGs and NPGs in which case it may be somewhat in competition with regional and sub regional organisations, or complementing the work of the dedicated providers by offering an alternative channel for UK development aid to directly influence science and technology policy in developing countries. The challenge facing RNRRS is to effectively and efficiently define and fill its niche, without duplicating or undermining the efforts of alternative suppliers.

7.3 Ability to respond to new research challenges

- 7.3.1 In order to be effective, applied research to generate NPGs often has to draw on bodies of scientific knowledge generated by more basic research. This of course does not necessarily require use of the linear model of basic – applied research, as the basic research can be conducted almost simultaneously with the applied research. The fundamental requirement is that when there is need for so-called upstream or basic research to address a development problem the broader research system must be in a position to undertake it. Will there be sufficient room within the evolving RNRRS structure to undertake enough basic research to keep the pipeline of appropriate technologies flowing? Alternatively, will there be an efficient mechanism to tap into such knowledge generated and available outside the RNRRS?
- 7.3.2 The Core Team concurs with the view expressed by some PMs and many stakeholders interviewed in the field, that the present system of contracting short- run, 1-3 year research projects is not very appropriate for more basic research aimed at generating natural resource management IPGs. Forestry, soil fertility and similar research need a longer time frame, not to mention the time required for genetic transformation of crop and livestock species. It is to the credit of the PMs and PACs that RNRRS programmes have managed to use repeat or follow-up projects to stay with one research topic for long enough to yield positive results. Section 7.8 contains some very good examples of successful long term research projects. However, this cannot be expected to go on indefinitely – the system needs to be changed to allow longer term projects.

- 7.3.3 It often does not take long for applied research and dissemination projects in developing countries to empty the proverbial cupboard of appropriate technologies, or to find out that the shelves are very empty to begin with, thus necessitating the launching of more basic research. The experience of the DFID sponsored INNOVA project in Bolivia is not unusual in that respect. So any effective applied research programme must be able to respond effectively. There are signs that the mechanisms in the current RNRRS restrict its ability to respond effectively. An example is the case of the recently emerged problem of bacterial wilt in banana which needs funding for some fundamental research, but for which RNRRS collaborators could not receive funding to launch an appropriate long-term research programme. CPP has had to initiate the research through other funding sources.
- 7.3.4 In the view of the Core Team, RNRRS as it stands with its mode of short term contracting of relatively small projects, is not an efficient model for producing the IPGs and stream of technologies that are needed to underpin effective applied research and dissemination programmes that would have major impacts on rural livelihoods in developing countries. This is borne out by the relatively low output of scientific knowledge by RNRRS programmes in comparison with CGIAR Centres and UK universities, although the quality of what is produced is high (section 4.4).

7.4 Delivering livelihoods impact

- 7.4.1 The present mix of projects in RNRRS is aimed at producing both International Public Goods (IPGs) and National Public Goods (NPGs). Because of the applied nature of the research and its proximity to the end users, the latter are expected to have much shorter term impact on livelihoods of the poor. As indicated in the discussion in Chapter 5, RNRRS has not yet had much impact on the livelihoods of the poor in developing countries, although there are prospects of more impact in the future.
- 7.4.2 Provided there is technology on the so-called shelf, it can be argued that more focus on applied research, dissemination and capacity building activities in UK as well as in developing countries, i.e. shifting the balance of the programme more “down stream”, would increase the chances of poverty impact.
- 7.4.3 In the view of the Core Team, in trying to produce both IPGs and NPGs, investment in dissemination activities has come too late to show measurable impact within the time frame of the RNRRS. Such investments would need to continue for a much longer period to have demonstrable effect.

7.5 Concluding Remarks

- 7.5.1 By building on earlier work, the current RNRRS contains many of the necessary elements for successful impact on poverty. On the basis of discussions with programme managers, examination of the documentary evidence and the country visits, the evaluation team has noted (chapter 5) a number of attributes for successful impact on the livelihoods of the poor, these include:
- the capacity to stay on a research topic for as long as necessary, usually implying long term research activities;
 - being grounded in an objective analysis of the priority problems of the poor; and
 - being part of a cluster of related projects and hence having an effective and dynamic network of researchers and other stakeholders as well as diversity of effective institutions in the project leadership to provide multi-disciplinary approaches.

7.5.2 However, it is also evident to the Core Team that the RNRRS, as presently constituted is, having some difficulty in generating a large stream of scientific knowledge and IPGs, as well as in making much impact on the livelihoods of the poor. In the view of the Core Team, DFID runs the risk of not achieving its long term objectives with the current model, unless resources are significantly increased to allow longer term basic/fundamental natural resources development research either within or outside the RNRRS framework⁵⁵, as well as longer term country based applied research and dissemination activities.

7.6 Future Research Funding and Management Options

7.6.1 This section of the report presents a number of options for the future RNRRS. In order to determine which is most appropriate, DFID must define its precise objectives for natural sciences research. In discussion with stakeholders, a number of possible objectives and priorities were identified. For example, is the new scheme primarily intended to:

- Deliver new knowledge? (and what should be the balance between international public goods (IPGs) and national public goods (NPGs)?)
- Link stakeholders into existing knowledge so that they can use it in their specific circumstances? (basically adaptive research and dissemination)
- Demonstrate benefits in order to influence national processes and systems? (influencing institutions and processes)
- Build sustainable links between research institutions? (capacity building)
- Build capacities in southern research institutions to enable them to influence their national governments to access resources and develop country specific research programmes? (capacity building)

7.6.2 In order to reap the full benefits of investments in RNRRS, successful research themes should be identified and incorporated into any future RNR research programme. Using a very top-down approach the evaluation team has identified a number of research themes in the current RNRRS that could be continued in future (7.9). However, the list is only of relevance for any future programme if it is assumed that the goals and objectives and implicit priorities, as well as the funding level in the current RNRRS programmes continue in the future. And even then, it is essential to verify them by formal beneficiary consultations. The identification for the future scheme needs to involve full participation of all stakeholders, with their varied vested interests taken into account. In order to get over the critical issue of uptake then research users need to be engaged through out the process.

7.6.3 Broadly, five options for the future scheme can be identified:

- An open competitive model, similar to the approach adopted by UK research funding councils.
- Improved contracted research: continue with a number of contracted-out commodity/discipline-based research programmes along the lines of the existing RNRRS.
- Global consortia to be theme-based and broadly in line with the existing development research centre model.
- Country-based consortia: similar to Option 2 but country-specific in a limited number of locations.
- A combination of the above options: a scheme which includes several different funding channels to achieve different objectives.

⁵⁵ This should not be interpreted as an argument for blue sky or pie in the sky basic research, but rather as one for the type of basic or fundamental research directly targeted at addressing problems and relieving constraints faced by large numbers of poor people, and of which there are examples in RNRRS.

Option 1: Open Competitive Model

- 7.6.4 If a high priority is given to IPGs, then an open competitive fund is likely to stimulate innovative and leading edge proposals, primarily from UK and other 'developed world' institutions. However, the role of such DFID-funded bilateral research by comparison to CGIAR research would require careful definition. The evaluation team understands that consideration is being given to establishing a separate funding channel to support strategic/fundamental research, so it is not discussed further here.

Option 2: Improved Contracted Research

- 7.6.5 Option 2 would imply continuation of the existing programme arrangements, with a number of commodity/discipline-based research programmes contracted out to individual managing agents (either single organisations or partnerships) which would contract a series of short-term stand alone project from a variety of researchers on a competitive basis. The main features of this model would be:

- Continuation of the existing research programmes.
- The potential to continue with current contractors, or to initiate a new round of competition.
- A Programme Advisory Committee with a clear mandate and role for each programme.
- Competitive bidding for research projects led by UK or southern institutions including private sector and NGOs

- 7.6.6 This option confers some advantages, notably:

- Continuity – staying with a model that has performed reasonably well, as described elsewhere in this report.
- Ability to deliver both IPGs, a main raison d'être of any internationally-funded research programme, and NPGs.
- Potentially the lowest transition costs as many of the existing structures and processes could be continued.

- 7.6.7 However it also has a number of disadvantages:

- The drive for poverty focus and impact at local levels results in a dual agenda for IPGs and NPGs.
- Short-term projects leading to difficulties with production of IPGs and achievement of research impact.

- 7.6.8 Lessons learnt through this evaluation suggests that, should this model be continued, a number of improvements would be advisable, including:

- Larger and longer term research projects.
- A new governance mechanism to improve coherence and coordination, facilitate monitoring and evaluation, lesson learning and dissemination, and strengthen accountability to a wider group of stakeholders.
- Earmarked resources for relationship building, sharing and lesson learning, and capacity building.
- Quantified performance indicators to ensure that research contracts are awarded in line with overall objectives.

Option 3: Global Consortium

7.6.9 Option 3 would involve one or more consortia with responsibility for pursuing a long-term (for example, 10 years) demand-driven research agenda on priority thematic areas. Each consortium could be formed by between 6 and 10 (say) natural resources research institutions (public and private) from the north and south. A lead institution would be the primary contractor, responsible for establishing the consortium. The primary contractor would have explicit responsibility for supporting southern researchers and research institutions within the consortium. The consortium would have significant resources available for programme development activities including capacity building, dissemination and uptake promotion. Consortium members would be linked by memoranda of understanding, and would take joint responsibility for the delivery of contracted logframe outputs. The consortium would be responsible as a group for articulating demand, setting priorities, and planning and implementing a programme of research within the logframe parameters. Competitive contracting could still be used, but the consortium should have the flexibility to commission research in other ways as necessary. As for Option 2, governance arrangements should include a 'Consortium Advisory Committee' for each consortium as well as an overall Steering Committee to coordinate and oversee all of the consortia.

7.6.10 Several of the features of this model have already been tested through DFID's development research centres although these are focused on social rather than natural sciences. Evaluations of the DRCs indicate that these features may overcome some of the drawbacks of the existing RNRRS model. The advantages of this option include:

- The establishment of longer-term partnerships between institutions as well as individual researchers, providing continuity and momentum, and thus improving the likelihood of dissemination and uptake.
- More 'natural' capacity building for researchers and institutions through working alongside others and sharing expertise.
- Greater potential for continuity of research themes, with ongoing programmes rather than a series of individual contracts.
- Greater potential for integration and synergy between research activities within the consortium's remit.

7.6.11 However, there are also some potential disadvantages:

- This model would continue the dual focus on production of international as well as national public goods, as described for Option 2 above.
- The relatively narrow membership of the consortium could stifle innovation and limit the involvement of non-consortium researchers, potentially reducing the quality of science.
- Experience has shown that this style of capacity building makes significant demands on the time of the most experienced researchers. If this results in reduced output of peer-reviewed publications, it may make consortium membership less attractive to high quality research institutions.
- Transition costs are likely to be medium, certainly higher than Option 2 above because of the necessity for establishing completely new research management arrangements.

Option 4: Country-based Consortia

- 7.6.12 Option 4 would have many of the features of Option 3, but each consortium would be based in an individual country. The consortium would consist of a number of local (public and private) and international natural resources research organisations, implementing a long-term demand-driven research agenda of 10 years or more. Each consortium would be accountable to a National Steering Committee consisting of representatives of local stakeholders such as NARS, Universities, NGOs and civil society organisations, farmer organisations, agricultural trade and finance organisations, relevant government ministries, sub-regional research organisations, and local DFID representatives. As for Options 2 and 3, governance arrangements should include an overall Steering Committee with external stakeholder representation to coordinate and oversee all of the consortia. A task force would be specifically charged with putting mechanisms in place to ensure a demand-led research agenda. Competitive contracting could still be used, but there would be substantial core funds for the national research organisations, and capacity building, including institutional capacity building, would be fully integrated into the research programme.
- 7.6.13 This model has a number of advantages, including:
- A clear focus on the production of national public goods (leaving the production of IPGs to be funded by DFID through the CGIAR funding window and/or Option 1).
 - With local control of the research agenda, demand-driven research will be much more easily achievable, and momentum for dissemination and uptake will be greater, increasing the potential for impact.
 - Structured institutional capacity building can readily be incorporated.
- 7.6.14 Potential disadvantages include:
- Only a limited number of target countries could be included in order not to spread available funds too thin (with 2-5m pounds per country per year, existing RNRRS funding of 25m per year will allow only 5-12 countries to be covered)
 - Substantial funding from a single donor may lead to distortion of national natural resources research priorities.
 - Core funding for national research organisations may raise issues of sustainability.
 - Institutional capacity building may require the involvement of professional institutional development expertise which may complicate consortium management arrangements.
 - Transition costs for the establishment of this model are likely to be higher than for Options 2 and 3.

Option 5: Multi-channel Approach

- 7.6.15 Depending on the balance of priorities which is determined, a multi-channel approach comprising elements of some or all of the above models could be developed. The main advantage of this approach would be that it confers the ability for DFID to remain involved in the broad spectrum of research activities from fundamental to adaptive, and could also accommodate a focus on dissemination and uptake activities to ensure impact on poverty. This would, for example, allow DFID to retain a separate channel for research aimed at IPGs, and avoid complete reliance on the CGIAR mechanism. It would also allow some separation of research outcomes from efforts to achieve poverty impact, which will be important if fundamental research is to continue.
- 7.6.16 The major disadvantage of this approach would be its managerial complexity. It is likely that DFID would need to establish and manage a variety of different types of contracts, and oversight and stakeholder involvement would be complicated. There is also a significant risk that the multi channel approach would be less coherent, scattering resources too thinly to achieve impact. Transition costs are likely to be high.

7.7 Selecting the Most Appropriate Options

7.7.1 As described above, DFID must determine its priorities for the new research funding framework and the most appropriate option or options must be selected in the light of these.

Considerations include:

- Option 1 should be favoured if leading-edge innovation and fundamental research for generation of IPGs are prioritised.
- Options 2 and 3 both offer the potential to achieve a balance between international and national public goods, and between research, dissemination and capacity building. However, Option 2 places more emphasis on funding research across a wide agenda with a variety of degrees of competition, while Option 3 places more emphasis on continuity and southern representation.
- Option 4 should be favoured if demand-led, country-level adaptive research with potential for short-run impact on livelihoods in a relatively small number of countries is prioritised.
- Option 5 would be appropriate if DFID wants to achieve a combination of objectives.

Transition Arrangements

7.7.2 Pending clarification of priorities and determination of the most appropriate option for future research management, it is not possible to systematically determine which research themes should be continued or terminated. Furthermore it would be risky to end the existing research programmes as currently planned. There is a significant risk of losing important work streams if specific provision is not made to accommodate them in whichever research model is chosen, as projects will be wound up and research teams with no expectation of funding to continue working on a particular theme are scattered. It therefore appears that a further period of transition funding may be necessary to allow time for:

- Determination of priorities for the new framework.
- Selection of the most appropriate management option and putting arrangements in place for it.
- Identification of thematic areas which need to be continued and including these within the most appropriate management arrangements.

7.8 Some Success Stories

7.8.1 DFID has encouraged programmes to develop material on success stories to illustrate the achievements of the RNRRS. Each programme contains a section in its annual report on these, and it is invidious, in some ways, to pick out individual success stories. However, the following do illustrate some of the general strengths of the programme.

The Tsetse and Trypanosomiasis cluster

7.8.2 This cluster of projects, which has been funded by both AHP and LPP stretches back to work undertaken in the 1980s, and illustrates the importance of addressing a major constraint from different perspectives. Current work includes laboratory and field-based research projects, dissemination of effective technologies through farmer-field schools for livestock keepers, and evaluation of a low-input high impact control of tsetse, by restricted application of insecticide. Both programmes are active on the issue, but are coordinating through the common PAC.

7.8.3 AHP is addressing the four areas that it sees as necessary to achieve impact: pursuing research over a long time period, having a critical mass of research projects, ensuring an effective delivery system and influencing policy to ensure an enabling environment. The programme has been active in international debate, has promoted its findings at policy level, resulting in changes in regulations in Uganda, and has disseminated research outputs to farmers directly and to service providers in the region.

- 7.8.4 The many tsetse control techniques developed with DFID and formerly ODA funding, and in particular recent breakthroughs which have been co-funded by LPP and AHP, will be incorporated into aspects of the African Development Bank (ADB) \$ 80 million programme for work to create tsetse and trypanosomiasis free areas covering 215,000 sq km in six East and West African countries, co-funded by participating governments and by the African Development Bank, with a loan for \$65 million.

Rainwater harvesting projects

- 7.8.5 Development of improved rainfed cropping system, incorporating rainwater harvesting/conservation – R5170, R5752, R6758, R7888. This line of research was initiated in 1992, and challenged the idea of working on drought resistant crops as the main solution for semi-arid areas, but instead positioned itself on the continuum between rainfed agriculture and irrigated agriculture. Initially research focussed on the technical aspects of RWH, to demonstrate the benefits of this approach to farming. More recently, the focus has shifted to disseminating knowledge to farmers, and raising the profile of RWH with policy makers. This suite of projects is managed by NRSP.
- 7.8.6 The research has had significant impact at policy level in Tanzania, where the work was carried out with Sokoine University of Agriculture. It is being promoted for inclusion in district development plans. Analysis of the economic benefits of the technology shows that it can increase the returns to land very substantially, particularly in vegetable production, but may actually reduce the returns to labour. The interest in the approach is such that a project has now been started to promote the technology in Nigeria.

Self-recruiting Species in aquaculture, their role in rural livelihoods R7917

- 7.8.7 This project is included as a success story because it has addressed an area which has received little attention before, but one which is critical to the livelihoods of the poorest, who are unable to afford hatchery-produced fish. These resources have been ignored by aquaculture extensionists, but the project has identified specific management measures which can increase harvest of these species. Work has been undertaken with farmer groups in Cambodia, Thailand and Vietnam to explore the potential for improved communal management of the resources, particularly in the rice-fish farming system, and project results are beginning to influence policy. The project was a joint initiative of AFGP and FMSP.

Urban and peri-urban livestock study in 5 East African cities ZC0201

- 7.8.8 This was a scoping study commissioned by LPP to examine urban livestock keeping, and assess its role in the livelihoods of the poor. The study found that this was an essential livelihoods activity for many of the poor, but was not recognised by city planners, and in many cases was actually illegal. Urban livestock keeping brings many associated problems, which are not being addressed because of its status, such as waste management, and water availability. Quality control of livestock products is also minimal.
- 7.8.9 A workshop was held on the findings of the study which included policy makers, and this was followed by local consultations in Uganda between landless livestock keepers, city officials, civil society, research organisations and donor groups have resulted in a change in local ordinances giving rights to city livestock keepers in return for them registering and confining their activities to certain areas within the city. This is a good example of research identifying constraints on livelihoods and engaging in the policy process to address them. The study was carried out by local researchers, which increased both ownership of the findings and access to policy makers.

Participatory Crop Improvement Research

- 7.8.10 PSP has funded a series of projects exploring different methods for involving farmers in plant selection and breeding. The work started in Nepal, but is now being promoted in India and Bangladesh. The projects have used both participatory varietal selection (PVS) and participatory plant breeding (PPB), the first testing pre-existing varieties with farmers and the second creating new varieties in breeding programmes carried out by plant breeders and farmers working in partnership. Although PPB takes longer than PVS, it can still save at least seven years in the speed of adoption over traditional plant breeding methods.

- 7.8.11 As well as direct benefits to farmers in the project areas, in terms of increasing varietal choice and increased productivity, there are already wider impacts of the projects, in terms of spread of the rice varieties bred in Nepal to other countries, but, more importantly, adoption of the methodology by other breeding programmes. This is currently happening in India and Ghana, and it is hoped that it will be adopted in the future by organisations within the CGIAR. It is estimated that the internal rate of return to the Nepal projects could be as high as 83%.
- 7.8.12 All the success stories described above have at least one of the following characteristics:
- A research theme has been followed through a number of individual projects, starting with either an element of basic research, or a new methodology, which has been developed, adapted and applied at local level, then disseminated at regional or international level. The results have influenced policy, and have, or are anticipated to lead to positive outcomes and impact on poverty.
 - Initial scoping studies, or ongoing research, have led PMs to look at researchable issues from a new perspective, and identify gaps in the research agenda. These may have resulted from insufficient understanding of the livelihoods challenges facing the poor, or from misconceptions about possible applications of existing technologies or methods. AS a result, there has been better identification of the constraints facing the poor, and possible interventions to address these, at both policy and technology levels.
- 7.8.13 The specialist review of the FRP identifies six attributes which have led to project success:
- Being grounded in an objective analysis of the priority problems of the poor
 - Being part of a cluster of related projects and hence:
 - Having an effective and dynamic network of researchers and other stakeholders
 - Diversity of effective institutions in the project leadership to provide multi-disciplinary approaches
 - At least one of the contractors in a cluster having a history of successful engagement with the programme
 - Being part of suite of project showing good response to changing circumstances
 - Having dedicated resources within the cluster budget to allow for effective coordination amongst the contractors
 - Independent programme management
- 7.8.14 On the basis of discussions with programme managers, examination of the documentary evidence and the country visits, the evaluation team endorses the importance of these attributes in achieving success.

7.9 Future Research Themes

- 7.9.1 The TOR for this evaluation require that the evaluation identify components of the programmes which have made, or have strong potential to make an impact on poverty, including impacts on science, policy and communication, and whether or not these components might be continued.
- 7.9.2 Throughout this evaluation report practices and processes are assessed in order to arrive at conclusions to inform decision making by DFID regarding future natural resources systems research.
- 7.9.3 In this section of the report the research themes which in the view of the Specialists should be continued beyond the current RNRRS are briefly identified. Three very important caveats are necessary regarding the themes below:
- a) They are identified after a maximum of 21 days of work of Specialists, and mainly from the point of view of good science, although with the expectation that they would have the expected poverty alleviation impact.
 - b) There is no input of potential beneficiaries or target populations in their selection, i.e. they are a supply driven rather demand led list of themes.

- c) They are only of relevance for any future programme if it is assumed that the goals and objectives and implicit priorities, as well as the funding level in the current RNRRS programmes continue in the future.
- 7.9.4 As indicated in Chapter 9 of this report, the evaluation team would expect that DFID would re-examine its priorities in the light of the totality of this evaluation report, the position of future DFID funded NRS research in the global context, especially in relationship to the development of IPGs and NPGs, changing national and geopolitical policy considerations, before deciding on themes that need to be continued. After such re-examination the Core Team expects that research themes not included in the compilation below might be included based on discussions by DFID and/or independent observers with PMs who naturally have intimate knowledge of current research themes, and appropriate representatives of beneficiaries.
- 7.9.5 *Aquaculture and Fish Genetics Research Programme*: The three themes (seed production; aquatic animal health and Systems) have consistently produced scientifically significant and developmentally relevant results. Seed production is often a bottle-neck to commencing production, health problems are of increasing importance and a holistic systems approach is essential to contribute in a development context. These central themes should be considered in a future programme.
- 7.9.6 *Fisheries Management Science Programme*: Five themes (information to inform management-research and influence policy; information systems to support the co-management of fisheries important to the poor; fisheries assessment methods to inform management; pro-poor capture fisheries management strategies; pro-poor enhancement fisheries management strategies) should continue to combine relevant basic and applied research towards improved management. These five themes address essential research issues and deserve continued support.
- 7.9.7 *Post-harvest Fisheries Research Programme*: Three core research areas 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". These have apparently resulted in useful development activities which have been implemented, but they have not contributed to significant research results, especially during the latter years of the programme. They are unlikely to prove fruitful in terms of future research if the present approach is maintained. It would be more appropriate to combine research aspects of post-harvest fisheries with an expanded fisheries management programme and to consider support to selected development activities under bilateral development cooperation channels.
- 7.9.8 For all three fisheries programmes above, it would be useful to pay added attention to cutting-edge research on natural resource management in developmental contexts. Newer research areas on questions of "non-equilibrium ecology" applied to fisheries and aquaculture, and challenges to conventional thinking in development contexts could be usefully explored and critiqued. Considerations of political economy and newer ideas on "political ecology" that are relevant to scientific discourses on development issues could be incorporated.
- 7.9.9 *Animal Health Research Programme*: Research themes to continue into the future are (a) vaccine-development and disease control projects which should include those projects built as clusters with participants from different research groups in the UK and the South (e.g. the vaccine development project, the integrated vector management project and the zoonotic diseases cluster) each with duration of a minimum of 5 years; and (b) demand-led research that focuses on the real needs of the poor livestock keepers, building on the AHP 2002 study "Investing in Animal Health to Alleviate Poverty " and the AHP influential international reputation.
- 7.9.10 Research projects that are not connected with research clusters should not be continued e.g. rabies vaccines in dogs and jackals and CCP vaccine development. This is not saying that all the individual projects were unsuccessful, but it is considered that research clusters involving scientists from the UK and the South is a better guarantee for sustainability.

- 7.9.11 *Crop Post Harvest Programme*: There are five themes covered in the current programme (reducing storage losses, food safety and nutrition, value through processing, access to markets, and institutional arrangements). The bioscience content decreases as one moves storage losses theme to the institutional arrangements theme and the social science content increases. In the future choices will need to be made on the balance between more strategic research or more applied work. Of the themes above food safety and nutrition seems particularly important for a strategic research programme. An important cross cutting theme that needs to be emphasised is the promoting of linkages between farmers and their markets.
- 7.9.12 New crop post harvest science themes that may warrant research in the future relate to roles of climate change (e.g. on pest species/treatment outcomes/viable technologies), changing crop profiles, non-food crops, (e.g. starches), natural products (e.g. natural pesticides/ antimicrobials both for post harvest use and for commercial exploitation).
- 7.9.13 *Crop Protection Programme*: Themes recommended to continue are: (a) insect pests in Sub-Saharan Africa (non-chemical pest control options emphasizing microbial control of insect pests; regional integrated pest management - one-country projects have been too limited in scope and should not be continued unless they are upgraded to a regional scale); (b) disease control in Sub-Saharan Africa with focus on projects that aim at presenting means of sustainable disease control amongst which exploitation of plant disease resistance ranks high; and (c) weed problems in rice in Asia with focus on the environmental and human health impact of the increasing use of herbicides in the region.
- 7.9.14 *Forestry Research Programme*: Trying to identify themes in isolation would be to throw away the substantial benefits of improved programme management achieved by FRP especially since 1997. The currently supported broad "themes" (such as water, carbon and forest fruits and other non-timber forest products) may well need to be replaced in the light of future policy changes. It is essential to avoid recreating the less successful previous approach, evolved from the "Yellow Brick", of a plethora of technical forestry projects. While such work can be scientifically very sound it has usually proved to have rather limited impact. The review of needs should be maintained and the aim should be to support research clusters around wider forest and tree functions that contribute to trade, poverty and livelihood support.
- 7.9.15 Technical themes such as the genetic evaluation of species groups (*Pinus*, *Leucaena*, *Gliricidia*, *Calliandra* and African *Acacia*) have only been successful because they were broadened into temporal and multi-disciplinary clusters. These clusters moved from taxonomic study through multi-country evaluation, research on silvicultural practices and uptake into land-use systems by a range of beneficiaries. There have been notable recent successes with work on forest ecosystem services (such as carbon and water) together with aspects of commercialisation of non-timber forest products (fruits, mushrooms, medicinal values) and work on certification, related to wider global concerns with sustainable management and control of the trade in illegal timber.
- 7.9.16 *Livestock Production Research Programme*: Emphasis in the current programme is on small-holder milk producers, crop-livestock farmers, small stock keepers, landless livestock keepers and pastoralists. Given the lack of adequate research in developing countries, it is difficult to identify any theme that should be dropped out of any future RNRRS. Rather, some changes in emphasis between themes within and between livestock keeper groups are suggested. Themes under dairy, small stock and crop/livestock keepers require relatively less intervention-related research and more effort on technology dissemination and uptake activities. On the other hand there is still research needed for the themes related to pastoralists and landless livestock keepers, which were incorporated into the LPP much later and have had limited time for implementation.
- 7.9.17 *Natural Resources Systems Research Programme*: The research undertaken in the NRSP have been organised in Uptake Promotion Nodes and in 3 suites in each node, in addition to a number of cross programme initiatives. The cross programme initiative should be expanded in with stronger focus on the environments in partner countries. The inclusion of socio-political environments should also be ensured at an earlier stage in the planning process for all projects.

- 7.9.18 Given these general guidelines, the following clusters may be the most robust for future support: the Bangladesh suites 1-3 which all feature projects with good potential for delivering empowerment and poverty alleviation through integrated land management strategies - research could be expanded to new countries; the Bolivia suite 2 which can make important contributions to scaling-up strategies - further progress on this issue is crucial for defending the role of research as a tool in poverty alleviation; East Africa suites 1-3 all of which have contributed to new knowledge, and for several projects also to capacity building and policy impacts in the region; India suite 1 which has important findings on policy processes and service delivery, and may be able to contribute more through involvement of social scientist and expansion to non agricultural sectors beyond aquaculture - this may also include the themes defined under the India suites 2 and 3; the peri urban Interface which has shown good results in India and some progress in Ghana - selecting categories of urban settlements in different ecosystems and political environments may contribute to expanding the understanding of this important development challenge.
- 7.9.19 *Plant Sciences Research Programme*: The four clusters reviewed (participatory crop Improvement cluster, the marker assisted selection, the seed priming and associated agronomy research, and the crop transformation cluster) have all yielded results of high scientific standards, and all warrant further research efforts. The highest achievement in scientific terms, which holds very high promise for the future, is the crop transformation cluster. However, unless public policies and regulatory mechanisms are favourable to research along these lines, the investments may not yield results that can be effectively disseminated.

Chapter 8 Conclusions

- 8.1.1 Based on the analysis and evaluation reported in preceding chapters, the evaluation team has arrived at a number of overall conclusions and has drawn up the recommendations presented in the following chapter.

The Strategy as a Whole

- 8.1.2 The RNRRS has been an improvement on previous research management arrangements, ensuring relevant prioritised research; and achieving value for money by contracting out programme management and introducing competitive research funding. Although the framework conferred increased coherence by comparison with the previous approach, in combination with the competitive process, the model tends to encourage fragmentation, which has neither facilitated the sustainability of research efforts, nor the sustained long-term links between researchers or research institutions. However, since 1997 there has been a recognition to increase sustainability through closer ties with southern institutions, the strategy has evolved in some ways which partially addressed this. (6.1 and 6.4)

Science Quality

- 8.1.3 Taken as a whole the quality of science in RNRRS has been high. With very few exceptions, the research outputs have been published in appropriate peer reviewed journals. Most programmes have substantial numbers of projects that successfully use existing scientific knowledge in creative ways, with a few projects having made significant contributions to new scientific knowledge. DFID should be proud of the overall scientific quality of RNRRS research. (4.9)
- 8.1.4 The overall management of programmes has been good, although there has only been limited inter-programme cooperation. Significant differences in programme management styles do not seem to have impacted negatively on the research quality. Short-term duration of projects and the absence of monitoring and evaluation procedures have not created optimal conditions for research into long-term challenges of the natural environment. (6.3)
- 8.1.5 The quality of the science or research leaders is high. This has been a critical aspect of the strategy and the reputation and recognition of DFID as a global influence and leader within the realms of renewable natural resources research.

Achievement of Programme Outputs

- 8.1.6 Programmes report high levels of achievement against output and the great majority of projects funded by the RNRRS achieved the outputs they intended. (3.2)

Appropriateness of Projects to Programme Purpose

- 8.1.7 This has been more varied, according to the PMs' own assessments. In some cases, projects may have been marked lower on contribution to purpose because of the gap between the upstream nature of the project, and the very poverty focussed purpose statement. Individual PM interpretation may also be a factor. It is possible that, as beneficiaries, and target institutions have become more involved at project design stage, projects will have greater potential to contribute to programme purpose.(3.2)

The use of logframes

- 8.1.8 All aspects of the Logframe, purposes, outputs, activities and assumptions, need to be monitored to determine impact from projects and programmes. The Logframe should be able to frame impact assessment for programmes that, in turn, could be utilised as a management tool for strategic management of the research, its outputs and its uptake and impact on the poor.
- 8.1.9 DFID should be required to report more regularly and effectively on the impact of its research programmes. The evaluation team endorses this finding from the Surr report (2002), and feels that for future research programmes, DFID should develop an impact assessment strategy, and an appropriately timed programme of impact assessments, commissioned centrally. This should be linked to the logframes and it's OVIs and to management of the programmes through their logframes.

Evidence on demand driven research

- 8.1.10 As the RNRRS has evolved, there has been more emphasis on consultation with potential end-users in stakeholder workshops, at early stages of project design and implementation. This has led to more appropriate project design, though there is little formal evidence to support this. Care has to be taken that the emphasis on end-user involvement still leaves space for the development of global public goods research products. (5.6)

Involvement of target organisations

- 8.1.11 In recent years there has been more involvement of target organisations at earlier stages of project design and implementation. It is anticipated that this will close the gap between research outputs and uptake, though it is too early to assess this effectively. (5.6)

Programme approach to dissemination and uptake

- 8.1.12 Programmes have focussed on the dissemination of research outputs as the RNRRS has drawn to its conclusion. A number of different approaches have been taken to dissemination. (5.6)

Evidence of adoption and impact

- 8.1.13 A number of impact studies are currently being undertaken, but there is no systematic way of assessing impact or indeed the number of adopters of a research output. Other studies of the returns to research, and of research impact, give some indications that the returns to the RNRRS are likely to be high. Country observations by the evaluation team provided clear indications that virtually all projects have had short term positive impact on the incomes of the poor at the community/local levels among the limited number of participants in project activities.(5.5)
- 8.1.14 Furthermore, there is some evidence of spread to neighbouring communities in the majority of the projects. However, there is virtually no evidence of economic impact at regional or national levels, although there are prospects of such impacts in the future. A majority of the projects have already had impact on the scientific community, in terms of adoption of methodologies pioneered by the projects, and there are indications of limited impact at the policy level. It is clear to the evaluation team that the average project size of £100,000 to £200,000 and average duration of 2 to 3 years needs to be increased. (5.5)
- 8.1.15 Over the next year or two there will be more evidence on not just the economic returns of RNRRS research but on the impact it has had on poor people's livelihoods. However, this hard evidence has not yet been gathered in a sufficiently systematic fashion to allow any overall assessment to be made.

RNRRS Level Governance and Management

- 8.1.16 Although extremely hands-on during strategy development and in the early years, latterly DFID's management of the RNRRS has been characterised by a 'light touch', which has nevertheless been responsive and supportive. Despite limited resources, DFID's Central Research Department RNRRS Core Team has been able, with input from some key lead advisers, to provide strategic guidance as the policy context has changed, to monitor contractual performance, provide knowledge management, and offer strategic guidance and positive and flexible operational support to PMs. Despite this, important management constraints have resulted in a lack of synergy and coordination across the strategy as a whole. The argument that, since PMs are contracted individually, there is no need for an overarching governance structure, or for overly-onerous monitoring, does not outweigh the requirement for oversight and synthesis to facilitate accountability and transparency, and the need to promote synergy and coherence through cross-programme mechanisms.(6.2)

Individual Programmes

- 8.1.17 Individual programmes' strategies and structures exhibit considerable diversity. Nevertheless, trends can be detected in the evolution of all the programmes' strategies which suggest that research managers have already begun to incorporate some of the characteristics of the consortium model which is proposed in the Research Funding Framework 2005 - 2007. There is no strong correlation between programme management processes and programme performance, either in terms of science quality or potential poverty impact. Although good practice lessons are noted, a range of management approaches appear equally effective. (6.3)

Project Cycle Management

- 8.1.18 The degree of competition for the award of projects is variable, but it is not possible to say whether the different practices have actually resulted in a less competitive environment for some research areas. Contract and financial administration mechanisms operate smoothly, and project leaders comply with these and with technical reporting requirements without difficulty. However, not all programmes carry out formal evaluations, either internal or independent, and the lack of a standardised project monitoring and evaluation procedure means that independent oversight of project and programme performance has not been possible. (6.4)

Capacity Building

- 8.1.19 There has been a clear shift of research project management responsibilities to developing country science and/or development groups during latter years and strong working relationships established between individuals has been an important informal mechanism for strengthening researchers' capacity. However, there is no compelling evidence that the contract research model is particularly suitable for making a sustainable impact on the capacity of southern research institutions, or building deep institutional competence. Although a new emphasis on capacity building has been apparent throughout the last few years of the RNRRS, no specific capacity building policies or strategies have been devised. (6.5)

Balance between scientific knowledge generation and impact on livelihoods

- 8.1.20 Although RNRRS has achieved some notable successes, the current model, with a mix of activities that attempt to balance the production of IPGs and NPGs has not yet achieved a demonstrated impact on large numbers of poor people in the developing countries. There are also legitimate concerns about its ability to respond to new research challenges that require fundamental research. DFID runs the risk of not achieving its long term objectives with the current model, unless resources are significantly increased to allow longer term basic/fundamental natural resources development research either within or outside the RNRRS framework, as well as longer term country based applied research and dissemination activities. Alternatively, other research funding and management models could be adopted. (7.5)

DFID's comparative advantage

- 8.1.21 The RNRRS has generated globally recognised and influential programmes covering the key facets of natural resources research and the use of research in the fight against poverty. The strategy has generated the flexibility required to evolve over the 10 year period and to emerge as a world leader in balancing aspects of basic, applied and adaptive research supplying outputs to impact on poverty. DFID need to be able to ensure that it builds on and strengthens the foundations developed over the last 10 years.
- 8.1.22 Over the 10 year period the RNRRS has generated enormous stakeholder networks. These cut across international, regional and national development issues including academic, public, private and the NGO sectors. All these networks are influential, but their synergy needs to be strategically addressed if they are to reach their full potential for supporting policy and practice changes and enhance the practicalities of poverty reduction.

Options for the future

- 8.1.23 DFID must determine its priorities for the new research funding framework. The most appropriate option or options for management of a future RNRRS programme must be selected in the light of these priorities. It is not possible to systematically determine which research themes should be continued or terminated pending the clarification of these priorities and the determination of the most appropriate option for future research management. Furthermore it would be risky and undermine the investment made through RNRRS to end the existing research programmes as currently planned. It therefore, appears that a further period of transition funding may be necessary to allow time for the determination of priorities for the new framework, selection of the most appropriate management options and for identification of thematic research areas (7.6).

Chapter 9 Recommendations and the Way Forward

9.1 Recommendations

Recommendation 1 – DFID should exploit its comparative advantage in natural resources research for development.

- 9.1.1 In the 10 years of its existence, RNRRS has achieved good science outcomes (4.4) and programmes have largely been successful in meeting their target Outputs (3.2), although the evidence of ultimate impact remains elusive at present (5.5).
- 9.1.2 The total value of RNRRS project funding, which was £ 190 million from 1995 to 2004 (PARC, Annex 9) could have been dispersed through bilateral channels or through CGIAR and other international players or through a mix of these. In the absence of this having been done, it is impossible to say whether it would have achieved more or less than RNRRS did. The value of DFID RNRRS is roughly 10% of CGIAR funding, significant but not equal. DFID itself considers that, as a founder member and important contributor, it has increased the poverty focus within CGIAR and has increased the emphasis given to capacity building (7.2). Whether this could have been done so effectively without RNRRS remains an open question.
- 9.1.3 As a proxy, it is useful to look at what RNRRS has achieved. Firstly, there has been research funded in a large number of countries (PARC states 27 main partners for 7 programmes but the total is many times greater once all partners are included). Funds have been dispersed across all three tropical regions, with a preponderance of expenditure in Africa (56%) followed by Asia (32%) and Latin America (12%). Because research activities are multi-partner and multi-country, it is impossible to assign accurately the value of support given on a country by country basis, as distinct from the expenditure within a specific country.
- 9.1.4 As shown in their Annual Reports, and confirmed by the Specialists' Reports (Annex 10) individual programmes have engaged with a great number of, predominantly southern, partners and actors and the southern focus is increasing (6.5). Programme Managers have used a range of innovative instruments, including small studies and funding for workshops and meetings as well as more formal projects to engage with researchers, and this diversity of approach is not normally present in other mechanisms. Allowing Programme Managers flexibility in this regard is a very positive reflection on wider DFID RNRRS management. Details of the range of approaches are clear from the PARC listing of activities funded by the various programmes (Annex 9).
- 9.1.5 The response of Programme Managers to the paradigm shift in policy in the 1997 White Paper (4.2) shows an effective rise to the challenge presented. This has been reflected in the changing balance between science and social science in the programmes, although the extent of the change has varied (see the Specialists' Reports in Annex 10).
- 9.1.6 DFID was the world leader in developing, refining and applying the Livelihoods approach to development (5.2). By ensuring that Programme Managers took up this approach, DFID became the first research service provider to work in this way and the positive response of programmes to seeing ultimate beneficiaries as key stakeholders gives DFID a unique position globally with its understanding of the research – development continuum. The more recent planning and reporting frameworks (Annex 10 and Table 3) of all programmes are strong evidence of the adoption of the Livelihoods framework, as noted above.
- 9.1.7 The use of research clusters and encouragement of multidisciplinary research has been a very important mechanism in securing the change in approach and content required, as noted above in respect of Livelihoods concepts (5.5 and Annex 10). The commitment of programmes to the poverty focus is evidenced in both their Logical Frameworks and the nature of the research supported. However, there is also an important sea-change in the fact that all programmes now talk and report in terms of a poverty framework from the indicators in the Logical Framework through the calls for concept notes to the reports of the research activities. Programme Managers have responded positively and effectively to the requirements laid on them in this respect (4.2). Given the driving force throughout RNRRS of poverty impact, there is urgent need to improve the objective assessment of poverty impact, as opposed to what is currently possible (Recommendation 8).

- 9.1.8 The direction and encouragement given to Programme Managers to follow the policy change and span the science / development continuum has not just resulted in appropriate research activities. Through the use of clusters and partnerships, it has led to changes in UK institutions being supported and to the fostering of stronger, cooperative UK / collaborator / southern institution links. This has the potential to be reinforced and developed and provides a core of expertise familiar with the science and development continuum and with the poverty and Livelihoods framework (4.5, 6.5). This will be beneficial to long term positive impact.
- 9.1.9 Nevertheless, it is impossible to judge effectively the precise impact of much of the work funded. The lack of mainstream objective baseline and monitoring data (5.1) means that formal assessment of impact is almost impossible at this time, although there have been a number of specific studies which do show good impact (5.5). As noted above, recommendations are given to remedy this situation.
- 9.1.10 The full benefit from DFID comparative advantage in RNR research requires effective uptake to ensure that the beneficiaries have access to the findings and that research capacity in partner countries is built to allow continuation and adaptation. Once DFID moved away from the extensive field based programmes noted in the Yellow Brick as a major (but not exclusive) user of the findings, a conundrum was created for Programme Managers. Funding could never allow any significant uptake activity much beyond the preparation of material and promulgation workshops. Furthermore, capacity building was specifically excluded from Programme Managers' ToRs, although there were different interpretations of the rules, none of which seems to have been questioned by DFID (6.2).
- 9.1.11 The result is that RNRRS, whilst being increasingly demand-led in its activities (4.5, 5.2) can only adopt a supply-push approach to uptake. This is neither effective nor efficient. If it is to secure the best outcome from its RNR research funding, DFID will need to address the capacity building and uptake issues raised (Recommendations 6 and 7).
- 9.1.12 Overall, 10 years of investment in RNRRS has led to an effective, responsive programme, congruent with and supportive of DFID policies. Science and technology, especially in agriculture, are critical for developing countries to increase food security, engage in global trade and find a route out of poverty (7.2).
- 9.1.13 RNRRS, through flexible and responsive management (6.2) has created a balanced, poverty focused research portfolio of great diversity across NR fields. This is linked through an enormous, active network of researchers, policy leaders and other stakeholders (7.2) giving solid potential to support policy and practice changes for effective poverty reduction.
- 9.1.14 RNRRS has also created a massive knowledge base. The benefits, particularly of more recent changes are only just beginning to accrue (5.5) and it is important that these are fully captured and utilised (Recommendation 9).

Recommendation 2 - DFID should continue to fund natural resource management research, with improved efficiency and effectiveness.

- 9.1.15 RNRRS has achieved good science (4.1) and has largely met its Output targets (3.2). In the process of so doing, it has generated a huge resource of information through a variety of media including both the traditional peer reviewed publications and a host of innovative approaches (4.4).
- 9.1.16 In the process of delivering their programmes, Programme Managers have created a substantial, complex and multi-disciplinary international network of researchers covering UK institutions and individuals, collaborators and partners. Since 1998, this has been increasingly dominated by southern partners (6.5). The individual programmes have been an important source of support to many southern actors and institutions (6.5).
- 9.1.17 The size and scope of RNRRS has been widely recognised as an important contributor to international RNR research, by CGIAR institutions and bilateral agencies as well as by researchers and sector players in southern countries (Country visit reports, Annex 8, personal knowledge of Core Team and Specialists).

- 9.1.18 The major changes to DFID aid policy (1997 and 2000 White Papers) required Programme Managers to adapt the approach and scope of their programmes. The evidence from the Specialists and (4.2, 6.3) shows that this has been successfully achieved in respect of the focus and balance of the work funded. The speed and effectiveness of the response demonstrates clearly that Programme Managers have been able to adapt their programmes to respond to changes in DFID policy. The role of CRD in allowing this high degree of flexibility has been crucial in this (6.2).
- 9.1.19 The introduction of the Livelihoods approach is probably the most important recognisable change in response to the increasing poverty focus of DFID. It is widely accepted that success within a Livelihoods framework requires there to be effective technical systems to underpin other actions (5.2). Programmes have adopted to varying degrees a livelihood framework for programme management and decision making, LPP and FRP being perhaps the most advanced in this as evidenced in their Annual Reports and research strategy publications.
- 9.1.20 LPP and FRP in particular may have a long time horizon between project initiation and implementation of results (5.5), up to a decade and beyond, due to the life-cycle of trees and livestock. Given, however, that the major change in RNRRS was the 1997 White Paper, the impacts of the changed priorities and approaches are only just coming on stream and it is important that these be allowed to accrue fully (Recommendation 9).
- 9.1.21 In a research programme, it is expected that there will be instances of failure as hypotheses are being developed and tested out. It would not be realistic to expect every hypothesis to work in practice. Positive impacts on poverty are, however, beginning to emerge from the RNRRS. The findings of this evaluation emphasise that it is critical to maintain support and to continue to fund applied, adaptive and basic research to secure the desired impacts from work already commenced (5.6).
- 9.1.22 Despite the positive elements noted above, and the importance of positive professional opinion on the value of RNRRS, the lack of formal M&E systems, of strategy wide approaches and of impact baseline and monitoring data make it hard at the present time to present substantial formal evidence of impact (5.5). These elements are reflected in Recommendation 8 of this report.
- 9.1.23 By creating a strategy founded on needs-based researchable problems (6.1), DFID has a valuable model, which has further benefited from a flexible approach to overall management. The Programme "structure" largely evolved from historical "discipline" based groups rather than from a problem orientation. Strengthened strategy-wide coordination, including participation of southern institutions, would remedy this and build upon cross-programme synergies, furthering Programme Managers' initiatives (e.g. AHP, LPP and FRP with LPP in *Calliandra* fodder research – Annex 10).

Recommendation 3 – DFID should transparently set priorities for RNRRS in terms of the mix of international and national public goods it is expected to produce and deliver to meet its stated goal of alleviating poverty in developing countries.

- 9.1.24 The new Research Funding Framework defines the objective for research as "To promote the production and uptake of technologies and policies that will contribute to poverty reduction and the achievement of the Millennium Development Goals." Under Sustainable Agriculture Especially in Africa, the new funding framework identifies 3 intertwined approaches: participation, technology and access. Only the second of these approaches relates to the generation of new technologies and practices and the specific examples given imply adaptation and application rather than fundamental research.
- 9.1.25 DFID must decide on the key objectives that it wishes to address, are these:
- to deliver new knowledge?
 - to link stakeholders to existing knowledge?
 - to demonstrate benefits in order to influence national processes and systems?
 - to build sustainable links between research institutions?
 - to build capacity in southern research institutions? or,
 - a combination of the above?

- 9.1.26 In the light of the Sustainable Agriculture Especially in Africa framework, all of these, with the exception of the first appear to be relevant, suggesting that a combination of them is likely to be the most appropriate way forward. Provided that the technology exists, it can be argued that more focus on applied research, dissemination and capacity building activities in the UK as well as in developing countries is needed.
- 9.1.27 Most importantly, only after determination of what it seeks to achieve can DFID begin to implement the other recommendations from this study on governance, uptake and capacity building and select the best model for delivery: *i.e.* how it will be achieved. Given DFID poverty reduction aims, this process should mirror the work of the programmes themselves (4.4, 6.5) and engage with southern stakeholders at all stages of the process of developing the new approach, thus capturing the benefits of engagement with southern partners and stakeholder representatives, and their participation in setting priorities as well as formulating research plans, achieved by individual programmes, especially more recently
- 9.1.28 The recent trend in all Programmes and the overall strategy to be more applied and adaptive needs to be maintained to increase the poverty impact but there will still be need for some basic research. DFID needs to determine how and by whom this will be funded. The focus should remain on research targeted at addressing problems and relieving constraints faced by large numbers of poor people, of which there are many good examples already within RNRRS (Specialists' Reports, Annex 10 and Table 10, below).
- 9.1.29 There are lessons from the use of logical frameworks (3.3) which could have evolved through more regular revision than has been the case. Such evolution, as well as incorporating M&E findings (Recommendation 8) would also benefit from active stakeholder and southern partner engagement, reflecting the increasing dominance of southern institutions as research leaders (4.4, 6.5) and the importance of including stakeholder views in setting criteria strongly grounded in poverty reduction (3.5). This would also help secure good impact assessment practices.
- 9.1.30 In the Yellow Brick, NRSP was given a pivotal role in coordinating research across the other programmes (6.2). This was subsequently dropped and the opportunities for cross programme work have not been fully exploited (4.5, 6.2). The substantial changes within programmes to generate cross / multi-disciplinarity (4.5) could be further enhanced as part of the process, leading to improved overall strategy coherence.
- 9.1.31 In order to determine the most appropriate option for the future natural resources research management, DFID must define its precise objectives for natural sciences research (7.6). For example, is the new scheme primarily intended to deliver new knowledge? Link stakeholders into existing knowledge so that they can use it in their specific circumstances? Demonstrate benefits in order to influence national processes and systems? Build sustainable links between research institutions? Build capacities in southern research institutions? or some combination?
- 9.1.32 Broadly, five options for the future scheme can be identified and are described in more detail in the report (7.6):
- An open competitive model, similar to the approach adopted by UK research funding councils.
 - Improved contracted research: continue with a number of contracted-out commodity/discipline-based research programmes along the lines of the existing RNRRS.
 - Global consortia: discipline-based and broadly in line with the existing development research centre model, with a group of partners pursuing a long-term demand-driven research agenda.
 - Country-based consortia: similar to Option 2 but country-specific in a limited number of locations.
 - A combination of the above options: a scheme which includes several different funding channels to achieve different objectives.

- 9.1.33 Each of these models has significant features, advantages and disadvantages which must be taken into account in determining the future management arrangements for natural resources research (7.7). Option 1 should be favoured if innovation and leading-edge fundamental research (IPGs) are prioritised. Options 2 and 3 both offer the potential to achieve a balance between international and national public goods, and between research, dissemination and capacity building. However, Option 2 places more emphasis on funding research across a wide agenda with a variety of degrees of competition, while Option 3 places more emphasis on continuity and southern representation. Option 4 should be favoured if demand-led country-level adaptive research is prioritised. Option 5 would be appropriate if DFID wants to achieve a combination of objectives. Before a decision is made, DFID must decide what it wishes to achieve.
- 9.1.34 There have been a number of solid success stories from all Programmes (7.8, Specialists' Reports, Annex 10). All these have at least one of the following characteristics:
- A research theme which has been followed through a number of related projects, from basic research, through local adaptation and application, to regional or international dissemination.
 - Bridging identified gaps in the research agenda.
 - Grounded in an objective analysis of the priority problems of the poor
 - With an effective and dynamic network of researchers and other stakeholders
- 9.1.35 The evaluation has identified that the research themes from Chapter 7 and shown in Table 10 could be starting points for DFID to start a transparent process to identify critical themes for future research. It does so with the important rider that the themes must be engaged within a clear overarching research strategy and effective mechanisms to ensure evolution in the light of changing circumstances.

Table 10 Possible Research Themes

Research Programme	Themes
Aquaculture and Fish Genetics (AFGRP)	<ul style="list-style-type: none"> • Seed production • Aquatic animal health • Systems
Fisheries Management Science Programme (FMSP)	<ul style="list-style-type: none"> • Information to inform management –research and influence policy. • Information systems to support the co-management of fisheries important to the poor. • Fisheries assessment methods to inform management. • Pro-poor capture fisheries management strategies. • Pro-poor enhancement-fisheries management strategies.
Post Harvest Fisheries Research Programme (PHFRP)	Discontinue as a separate programme / theme.
Animal Health Programme (AHP)	<ul style="list-style-type: none"> • Vaccine development and clustered disease control research initiatives. • Demand led research focusing on identified needs of poor livestock keepers.

Research Programme	Themes
Livestock Production Research Programme (LPP)	<ul style="list-style-type: none"> • Intervention related research for pastoral and landless livestock keepers. • Technology dissemination, uptake and adoption in respect of all existing themes for smallholder dairy, crop/livestock and small stock keepers. • Long term partnerships need to be developed more deliberately between UK and Institutions in the South.
Crop Post Harvest Programme (CPHP)	<ul style="list-style-type: none"> • Cross cutting theme linking farmers to Markets • Food safety and nutrition need to be prioritised from existing themes. • New Themes related to the roles of climate change, changing crop profiles, non-food crops and natural products need to be developed.
Crop protection Programme (CPP)	<ul style="list-style-type: none"> • Insect pests in Sub-Saharan Africa. • Sustainable disease control in Sub-Saharan Africa. • Weed problems in rice in Asia and balances with environment and human health issues.
Plant Sciences Research Programme (PSP)	<ul style="list-style-type: none"> • Crop transformation cluster. • Participatory crop improvement cluster. • Marker assisted selection. • Seed priming and associated agronomy research.
Forestry Research Programme (FRP)	<ul style="list-style-type: none"> • Maintain active review of needs. • Focus on clusters with elements that relate to wider forest and tree functions within trade, poverty and livelihood support. • Support to international policy processes.
Natural Resource Systems Programme (NRSP)	<ul style="list-style-type: none"> • The cross programme initiative with stronger focus on the environments in partner countries including the socio-political issues. • Bangladesh suites 1-3 Delivering empowerment and poverty alleviation through integrated land management strategies. Expand this to new countries. • Bolivia suite 2 Scaling up strategies, ready to be expanded to new countries. • East Africa suite 1-3 with contribution to new knowledge, capacity building and policy impacts. • India suite 1 with important findings on policy processes and service delivery.

Recommendation 4 – DFID RNR research funding should allow and encourage maximum flexibility in terms of funding – including commissioned studies, sponsored meetings and temporal clusters as well as larger and longer duration projects

- 9.1.36 Programme managers have proved innovative in developing a range of approaches in addition to the standard 1 to 3 year “project” (6.4). The flexibility of approach to allow short studies and similar initiatives has been very helpful to making progress (Specialists’ Reports, Annex 10).
- 9.1.37 The Concept Note to Project memorandum phase, while quite time consuming, has facilitated development of multidisciplinary teams and led to much better communication within these (4.5, 7.8). It has also reduced the risk (in the management sense) inherent in relying on one or two collaborators only (4.6). Programme Managers have used their capacity to commission sequential projects without necessarily making recourse to full competitive tendering, which has allowed longer term research to be funded (6.4). Clusters that are allowed to evolve and adapt, including engaging new collaborators with new expertise, also have the capacity to function for a longer period than 3 years and are useful in this regard (4.3).
- 9.1.38 In order to optimise responsiveness and balance, funding options should be as flexible as possible with a wide range of approaches being utilised, from short commissioned studies and issues papers to longer projects (5+ years) if basic science is required. The ability of Programme Managers to respond quickly to policy and information gaps through small studies of various types has undoubtedly helped the programmes to be engaged in relevant policy work and to facilitate the work and skills building of contracting partners. Transparency obviously needs to be observed as does equity in fund allocation. There are strong indications that within clusters, having at least one contractor familiar with RNRRS processes and procedures has been helpful (7.8).

Recommendation 5 – Management of RNRSS needs to be strengthened in:

- a. Overall governance structure**
- b. Strengthening of PACs**
- c. Development of more effective quality assurance and of project and programme M&E systems**
- d. Adoption of best practice project cycle management**

- 9.1.39 Overall governance has been characterised by a light touch (6.2), which has been responsive and supportive. Programme Managers’ contractual obligations have been clearly, if voluminously, defined in their Terms of Reference (6.2) although this has not precluded flexibility. There has been substantial written reporting but a lack of synthesis, leading to limited cross-programme synopses (6.2). Considerable reliance has been placed on CRD/Lead Adviser annual reviews (6.2) to monitor progress. Although individual Programme Managers, together with Lead Advisers and PAC members do maintain contact, the lack of formalised structures means that the full opportunity to exploit strategy-wide synergy is not taken.
- 9.1.40 Quality assurance at Programme and strategy level is thus much less rigorous than that applied to individual projects and programme activities (6.2). The PARC review (Annex 9) was an attempt at a late stage to remedy the lack of strategy-wide analysis.
- 9.1.41 Although PACs are pivotal to the governance system (Figure 3) there are major differences in the level of engagement (6.2) and much depends on the relationship between individual Programme Managers and their PACs (6.2). The level of interest of Lead Advisers also seems to be significant. PACs have no formal cross-programme communication channels (6.2).
- 9.1.42 PACs undertake varying degrees of engagement in the formal management and quality assurance of their programme (6.4). Some programmes utilise Thematic Leaders (FRP), local coordinators (PSP) or contracted specialists (CPP) within their PAC structure (6.3). There is scope for clarifying PAC roles and responsibilities to achieve strategy-wide consistency (6.2). With one exception (CPHP) PAC members are UK based, although with extensive overseas experience (6.2).

- 9.1.43 Programme decisions on funding of projects and other activities were found to be flexibly made within the RNRRS guidelines (6.4). Discussions with contractors within the UK and overseas found widespread agreement that PACs and Programme Managers had performed well in this regard (6.4).
- 9.1.44 The selection process for all projects follows a standardised system of Concept Note through to full Project Memorandum (6.4) with major screening at the Concept Note stage. Both focused and open calls are made (6.4) and the degree of concentration amongst contractors, which was criticised in earlier years, has reduced in recent years. This provides a robust basis for selection.
- 9.1.45 The adoption of the cluster approach together with a range of alternatives to formal projects means that any future funding strategy will need to develop new guidelines for funding allocation (6.4).
- 9.1.46 Programmes have developed their own systems for M&E of progress, which vary widely (6.4). Despite this, there is no evidence of insufficiency but the lack of standardisation makes strategy-wide performance measurement very difficult (6.4 and Recommendation 8).
- 9.1.47 All Programmes appear to have performed well, despite a range of management models and systems (6.4). Nevertheless, there appears to be scope for refining project cycle management to strengthen and incorporate good practices. Key elements include (6.4) flexible contracting, support during the project preparation process, minimising delay in tendering, maintaining good contact with researchers, building cross-institutional links through training and education, providing support to partners through mentoring and clusters, applying effective and transparent evaluation within a standardised monitoring system.
- 9.1.48 The individual Programmes have generated a massive information resource based on printed and electronic documentation, and a whole host of other output media from project material. Increasingly this is being made available on the Web (6.2). Various initiatives for centrally based information dissemination appear to have fallen by the wayside over the years and there is scope for a strategy-wide review and decision on how to make best use of the knowledge and information base. Programme level information is generally well regarded by users (4.4).

Recommendation 6 – Uptake systems need to be identified within research activities and to be supported at policy level to achieve optimal impact and delivery of benefits

- 9.1.49 Research results require uptake systems in order to deliver benefits to practitioners; capacity building is also necessary if national researchers are to be able to take on progressively more research tasks.
- 9.1.50 Throughout the 10 year period of RNRRS, assumptions in the Logical Frameworks of the programmes and the strategy as a whole (3.4) have drawn attention for the need for an enabling environment, including uptake and capacity building mechanisms, to secure effective delivery of benefits. In 1994, DFID field projects and programmes were an important, but not exclusive, provider of support to wider uptake and capacity building activities, thus aiding directly the securing of impact for the identified ultimate beneficiaries. With the changes in aid delivery policy, notably the 1997 White Paper, this has changed with progressively greater reliance being placed on others, including national governments, to secure the delivery of uptake and impact.
- 9.1.51 Since then, all Programmes have increasingly incorporated a mix of specific projects, or built appropriate aspects into projects, to support strengthening of the enabling environment, including explicit support for policy, institutions and associated processes. Programmes have also initiated work on uptake and capacity building as a direct response to being committed to achieving research outputs focused on securing poverty reduction (4.2).
- 9.1.52 There remains a danger that with the more complex channels now available, valuable information becomes locked up in “supply-push” dissemination systems without the necessary “demand-pull” to ensure free flow.

- 9.1.53 All programmes have addressed policy level dissemination and this has undoubtedly assisted in creating an enabling environment (e.g. FRP water cluster facilitation of water policy change in India and South Africa – Annex 10). Research programmes alone, however, cannot obviate the need for investment to provide resources for uptake delivery systems and processes for all stakeholders. The example above indicates the level of resources that are needed for this.
- 9.1.54 Although Programmes have already established some activities to assist in uptake, there appears to be scope for DFID to further this process through its political links with other organisations such as bilateral and international donors, development banks and other key players, including private sector organisations where these are relevant. Such approaches would be assisted by strong central information systems (6.2).

Recommendation 7 – Capacity building at 3 levels needs to be built into future work: professional development of researchers; policy makers, decision makers and extension workers; and, institutional strengthening

- 9.1.55 Capacity building needs to be seen as much wider than simply supporting formal research qualifications and improved research management. If research is to deliver impact and to be sustained, then capacity building is required for policy and delivery institutions and actors, as well as for research institutions, which also need support in improving their strategic level planning and management of research (6.5).
- 9.1.56 Without Capacity Building in partner countries, especially in Africa (6.5) where losses of skilled human resources have been particularly severe, the potential impacts from supported research will not accrue nor will the benefits to future national research activities materialise. The individual Programmes have interpreted the strictures on support for Capacity Building in a variety of ways. Some have observed the letter of their terms of reference while others have largely ignored these. DFID appears to have accepted both extremes of interpretation (6.5).
- 9.1.57 The increasing engagement of southern partners in RNRRS, facilitated by initiatives aimed at developing capability in research leadership (as with the cluster approach for example) has reached a 50/50 balance in some Programmes (6.5) and leading southern authorship of publications is approaching this level (Table 6). Within RNRRS, although capacity building incentives were excluded for the first 8 years (6.5) programmes have adopted a comprehensive range of approaches, (6.5) including short training events and facilitating higher level qualifications. There has also been valuable mentoring of individual researchers and support through small grants and commissions and for attendance at meetings and conferences (6.5, Specialists' Reports, Annex 10; PARC Report, Annex 9).
- 9.1.58 The cluster approach, together with the system of participatory development of Project Memoranda is particularly valuable in assisting partner institution researchers to develop their skills in formulating demand led research. It also exposes them to the systems and standards of internationally competitive funding, as distinct from the usually less rigorous systems when large donor-funded projects and programmes are in place.
- 9.1.59 Although the formal capacity building can be replaced by other donor support, the informal mentoring of individuals has been of particular value, especially in those institutions where senior researchers are few and far between (6.4). The capacity to maintain this type of support needs to be included in any future strategy (6.5).
- 9.1.60 The extent to which devolution of leadership to southern partners is practicable depends on the policy/technical balance and the institutional capacity in administrative matters such as financial control systems as well as the availability of reliable communication systems (4.7).
- 9.1.61 Overall, capacity building in any future support should continue to include developing research expertise but needs to also include support for policy and delivery institutions and their personnel in order to promote uptake and adoption. Strategic level research management capacity also needs attention to ensure balanced and effective programmes which deliver results that are taken up and adopted (6.5). It is perhaps only major research institutional capacity building, including infrastructure and facilities, which is beyond the scope of RNRRS and similar initiatives (6.5).

Recommendation 8 – External evaluation processes (both strategy wide and programme level) need to be put in place to complement formalised M&E systems

- 9.1.62 There is considerable diversity among Programmes in the extent to which they make use of external evaluations (6.4). There is no doubt that external evaluation is helpful for creating new insights and for securing improved transparency.
- 9.1.63 M&E systems have not been developed in a coherent manner across the Programmes, although individually, Programmes undertake such activities (4.6, 6.4). Given the desire to utilise nested Logical Frameworks for key Programme and strategy-wide management, it would seem prudent to make use of an integrated, strategy-wide M&E system. Such a system should include but not be limited to gathering of information and data for impact assessment. Some activities are already being undertaken to achieve this end (5.5).
- 9.1.64 An effective M&E and Impact Assessment system would facilitate the strategy-wide management, improve coherence and, through information feedback, allow regular fine-tuning of Logical Frameworks and associated output to purpose review at Programme and strategy levels (3.4).
- 9.1.65 A formal, independent external evaluation process (both strategy wide and programme level) that ensures evaluation say every 5 years would be helpful for future management and also ensure that effective impact assessment was being carried out.

Recommendation 9 – Transitional arrangements should be made to ensure that the benefits of existing and ongoing work, and their accruing impact, are not lost

- 9.1.66 Despite lack of conclusive evidence for most of the programmes, there are indications that much of the ongoing work is likely to have an impact in the future (5.6). There is a significant risk of undermining this potential impact if provision is not made to accommodate ongoing work while consideration is being given to the optimal future strategy. If projects are wound up, research teams and active, functioning clusters with no expectation of new short-term funding will become scattered and engaged elsewhere. It therefore appears sensible for a period of transition funding (7.7) to allow time for:
- Determination of future priorities;
 - Selection of the most appropriate management options;
 - Identification of thematic areas.
- 9.1.67 It is also recommended that during a further period of funding, resources be earmarked specifically for capturing the professional and institutional memories from the individual RNRRS programmes in order to support management of the change process into any new research funding strategy with the minimal loss of information and experience.

9.2 The Way Forward

- 9.2.1 There are clear arguments for continuing funding to NR research but decisions need to be made in a timely way on how best to carry this forward effectively. Based on the recommendations and findings outlined in this report, we suggest the following process for taking work forward to agree on the future strategy.
- 9.2.2 Using this evaluation as a starting point, an issues paper should be drafted outlining the key research constraints to be addressed. This will need to take into account the overall focus of DFID in the light of its new research funding framework. This defines the objective for research as 'to promote the production and uptake of technologies and policies that will contribute to poverty reduction and the achievement of the Millennium Development Goals'.
- 9.2.3 Key questions to be addressed include:
- What are the key problems/constraints in NRM?
 - What is being done and by whom?
 - What are DFID key objectives in its strategy?

- What areas are not being addressed and whether they are appropriate for DFID support or whether should DFID be encouraging others to provide support.
 - Where appropriate for DFID support, are these appropriate for the research programme, or are there other DFID mechanisms that would be more appropriate?
 - What themes should DFID address?
- 9.2.4 This paper should be circulated to key stakeholders internally and externally, including “southern” stakeholders and actors as well as other key institutions and players in development research delivery. Thereafter a series of regional stakeholder workshops should be held to discuss and develop the issues and determine DFID’s niche.
- 9.2.5 Once the strategic level approach has been clarified and agreed, research themes can be confirmed, noting the need for cross-disciplinary approaches.
- 9.2.6 A clear impact assessment strategy needs to be formulated and designed, making sure that the process becomes fully integrated into the management of research to provide support and feedback throughout the project cycle.
- 9.2.7 In parallel, further internal DFID consideration will be required on the most appropriate management structure to achieve this. This can be set within the outline options presented in this evaluation (Chapter 7).
- 9.2.8 Whatever model of governance and themes is selected, there will be need for clear guidance on project design to include capacity building, allocation of resources for impact assessment, and the establishment of clear baseline data from which impact can be measured.