

**LEARNING FROM THE PERIPHERY:
THE CGIAR AND CIVIL SOCIETY PARTNERSHIPS**

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| CONTENTS | Page |
|---|-------------|
| ACKNOWLEDGEMENTS..... | 4 |
| ACRONYMS AND ABBREVIATIONS..... | 5 |
| EXECUTIVE SUMMARY..... | 6 |
| Key Insights..... | 6 |
| Key Lessons..... | 8 |
| BACKGROUND..... | 10 |
| AGRICULTURAL INNOVATION SYSTEMS THINKING AND PARTNERSHIPS..... | 11 |
| PARTNERSHIPS CASE STUDIES..... | 13 |
| Table 1. Partnership Characteristics..... | 18 |
| Key Insights..... | 22 |
| Key lessons..... | 29 |
| CONCLUSION..... | 31 |
| APPENDIX – CASE STUDIES..... | 34 |
| The CIP Papa Andina Partnership: Case Study 1..... | 34 |
| The CIP VITAA Partnership – Case Study 2..... | 39 |
| The CIAT CLAYUCA Partnership – Case Study 3..... | 44 |
| The IRRI PETRRA partnership – Case Study 4..... | 48 |
| The IWMI MUS Partnership – Case Study 5..... | 53 |
| ICRISAT and ‘Participatory Experimentation’ – Case Study 6..... | 58 |
| BIBLIOGRAPHY..... | 63 |

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ACRONYMS AND ABBREVIATIONS

| | |
|----------------|--|
| BRR | Bangladesh Rice Research Institute |
| CARE | International NGO |
| CBO | Community-based organisation |
| CIAT | International Centre for Tropical Agriculture |
| CIMMYT | International Centre for Maize and Wheat Improvement |
| CIP | International Potato Centre |
| CGIAR | Consultative Group on International Agricultural Research |
| CLAYUCA | Latin American Consortium for Cassava Research and Development |
| CRS | Catholic Relief Services |
| CSO | Civil society organisation |
| CU | Concern Universal – an international NGO |
| DfID | UK Department for International Development |
| EU | European Union |
| FIVDB | Friends in Village Development Bangladesh - NGO |
| FLAR | Latin American Fund for Irrigated Rice |
| FORTIPAPA | Potato Program of Ecuador's INIAP |
| GFAR | Global Forum on Agricultural Research |
| ICRISAT | International Crops Research Institute for the Semi-arid Tropics |
| ICRD | Integrated Cassava Research and Development |
| ICRW | International Centre for Research on Women |
| IDRC | International Development Research Centre (Canada) |
| IFPRI | International Food Policy Research Institute |
| INCOPA | Project for the Competitive Production of Potatoes in Peru |
| INIAP | Ecuador's Institute of Agricultural Research |
| IPG | International public good |
| IRRI | International Rice Research Institute |
| ISNAR | CGIAR's International Service for National Agricultural Research |
| IWMI | International Water Management Institute |
| MDG | Millennium Development Goals |
| MUS | Multiple Use System |
| NARS | Public National Agricultural Research and Extension System |
| NGO | Non-governmental organisation |
| PETRRRA | Poverty Elimination Through Rice Research Assistance |
| PMCA | Participatory Market Chain Approach |
| PPP | Public-Private Partnership |
| PRAPACE and | Regional Potato and Sweetpotato Improvement Network in Eastern Central Africa |
| PROINPA | Foundation for the Promotion and Research on Andean Crops |
| RDRS | Rangpur Dinajpur Rural Service – Bangladeshi NGO |
| R&D | Research and Development |
| SARRNET | Southern Africa Root Crops Research Network |
| SDC | Swiss Agency for Development and Cooperation |
| TAHEA | Tanzanian Home Economics Association |
| VITAA | Vitamin A for Africa |

EXECUTIVE SUMMARY

This report aimed to better understand the organisation, development and impact of Consultative Group / Civil society organisation (CSO) partnerships, having been initially commissioned by the Standing Panel on Mobilizing Science of the Science Council of the Consultative Group on International Agricultural Research (CGIAR). The report presents key insights and lessons learned from the analysis of six notionally successful CG-CSO partnerships and we hope demonstrates not only the impact of these partnerships, but also how partnerships of this nature might be best organised and supported in the future.

The partnerships studied encompass many CG Centres, environments, technologies and developmental needs. From Papa Andina's demand-led methodologies, to 'Poverty Elimination Through Rice Research Assistance's' (PETRRA's) support and development of complex research partnerships, to the International Crops Research Institute for the Semi-arid Tropics' (ICRISAT's) or the International Water Management Institute's (IWMI's) focus on community-level innovation all the partnerships, to varying degrees, articulate need, deliver technologies, develop innovative methodologies and build capacities, trust and the networks that increasingly border CG Centres. However, partnerships are also developing other, sometimes unforeseen outcomes, including giving insight into institutional innovation, developing international public goods (IPGs) such as methodological insights into demand-led research and gearing CG Centres towards more 'innovation systems' thinking.

Key Insights

Stronger and “deeper” partnerships have history – The partnerships that seem to function most effectively and complement each other are those with a significant shared history prior to the partnership under study. These shared histories allow projects to build on pre-existing trust and ways of doing things and allow access to localised and specialised knowledge. Shared histories also facilitate reaching a clear and agreed vision. For example, Papa Andina (International Potato Centre and PROINPA) could build on boundary partners' trust gained under previous collaborations and this greatly facilitated partnership activities. Latin American Consortium for Cassava Research and Development (CLAYUCA) (International Centre for Tropical Agriculture and Corpoica) also built on several long-term relationships between CIAT and civil society partners and farmers groups. PETRRA (International Rice Research Institute (IRRI) and numerous Bangladeshi partners) demonstrated an ability to build on strong local and historical ties in Bangladesh. This insight also holds true for project-donor relations.

Partnerships are built on resources – Successful partnerships (and note that 'success' is a relative and multidimensional concept in this context) tended to be the best resourced. This was particularly true when resources were not only available to work towards the partnership's objectives, but were also available to build the strength of the partnership itself. The two CIP partnerships studied illustrate this, Papa Andina devoted significant time and resources to relationship nurturing and this resulted in a very systemic, organised partnership. Vitamin A for Africa (VITAA) (CIP and Catholic Relief Services) had significantly fewer resources to ensure the smooth running of the partnership and partnership-building activities were much more ad hoc and localised.

Effective partnerships are articulate – Articulate partnerships have an internal and external capacity to communicate. Articulate partnerships display an ability to

continuously define the partnership, partners' roles, and how partners interrelate with each other. This allows the clear setting out of goals and duties (as in the case of VITAA for example). Communicating and setting out an initial vision is a key component of successful partnerships. In addition, articulate partners are especially adept at communicating with their external partners: donors, CG Centres, and communities for example. Whilst these forms of communication are quite different, internal communication is primarily about partnership organisation and definition and external communication about project partnership ideas, partnerships that tended to be good at one where also good at the other. PETRRA, for example, displayed an ability to manage dozens of partners within its research network and develop partners' ability to communicate and disseminate research.

Out-reach vs. 'in-reach' – Considerable resources are invested within the CG in terms of reaching out to stakeholders in a variety of ways – indeed often these partnerships are central mechanisms for such communication. Correspondingly, relatively few resources are directed towards reaching back into the institution to share partnership lessons, research and insights. Partnerships still tend to exist at the periphery of CG institutional learning with little effort made by either the centre or the partnership itself to share best practice. This seems to be primarily a resource issue, little time and few resources are available to encourage learning of this sort. The Multiple Use System (MUS) project (IWMI and Khon Kaen University), for example, proved effective at learning within the Mekong basin between Khon Kaen University and local partners but much frustration was expressed when trying to share this learning back to partners based in other river basins.

Partnerships face divergent policy agendas – Partnerships face policy agendas from a number of directions that make their activities more difficult. Partnerships function best over longer periods of time but donors do not offer long-term support, nor indeed support for anything other than specified activities that feed directly into partnership objectives. Also, partnerships are often inherently local but are increasingly asked by donors to cast their influence in terms of constructs such as 'international public goods' and the Millennium Development Goals (MDGs). This invariably draws their attention away from their core activities and intended outcomes. There is thus a tension between what partnerships can realistically attempt to do, and the scale at which they do it, and what donors (and often the CG) want partnerships to achieve. To varying degrees this was an issue across the six case studies.

Partnerships with CSOs are producing International Public Goods (IPGs) – Besides attempting to create innovation pathways and deliver technologies to communities, successful partnerships are often producing 'methodological' IPGs, and providing insights into new ways to organise agricultural research for development. For example, the methodology-led approach of Papa Andina has created more demand led approaches to research, and insights from this partnership are currently being developed into methodologies that can be applied outside of the Andes. 'Mother-child field trials', the ICRISAT-developed research methodology whereby farmers play a role in choosing and refining CG Centre research in southern Africa, has emerged as a key output of the project, alongside the adoption of resource management practices, which was the original goal of the project. In terms of promoting change within CG Centres, PETRRA's "farmer-centric model" and strong partnerships have played a role in shaping IRRI's strategic planning and research, and helped gain funding for subsequent projects.

Key Lessons

1) Invest in the ‘partnership platform’ itself – Thought, time and resources need to be factored into developing the partnership itself. For example, supporting communication, building reciprocal relationships and establishing trust. Partnerships with larger amounts of resources to devote to platform building tended to remain more centralised and locked into the relevant CG Centre, those with smaller budgets tended to devolve down to the local levels of partners and boundary partners and lose some of the comparative advantage of being attached to the CG Centre. This also impacted upon the amount of learning that could then take place between the centre and the partnership. Investing in the platform would also mean to acknowledge the time that people devote to partnership development as productive in and of itself. There was a sense of CG scientists often finding themselves caught between their core business of research and partnership building.

2) Develop ‘in-reach’ – Attention needs to be focused on how institutions can best be encouraged to reflect on lessons learned from partnerships. This is particularly apt given the enormous efforts made to develop partnerships; quite often insights gained during partnerships *and* regarding the nature of partnerships themselves are lost or poorly articulated, and this information rarely feeds back into the CG Centres involved as effectively as it might. Thought needs to be given to how effective institutional learning can be encouraged from the perspectives of both the institution and the partnership. How best can lessons be internalised and built upon?

3) Think systemically – Partners need to think about how knowledge flows, how responsibility is assigned and how activities are pursued in a systemic manner. Partnerships ought to behave in an inherently systemic manner, as their function is often primarily to articulate broader sets of relationships and transmit needs through a network. However, the more successful partnerships were particularly adept at thinking of their own organisation as a system which entailed thinking and communicating more clearly about partner roles and responsibilities, developing mechanisms to share knowledge and document it where necessary and effectively conceive of broader contexts in terms of partnership impacts and their implications. These partnerships excelled at seeing beyond the partnership itself.

4) Develop institutional ‘partnership’ strategies – The ways in which partners relate to CG Centres and their broader sets of goals and activities needs to be reconsidered. Many partnerships appear relatively ad hoc in that they were developed in response to calls for funding or at the behest of partners. Partnerships often seem to exist almost entirely externally or parallel to the host CG Centres. Finally, there are obvious tensions between meeting short-term poverty alleviation needs and aiming to meet longer-term strategic targets such as those tied to the MDGs or development of international public goods. Thinking more deeply about these issues and the role and relationship of partnerships within individual CG Centres’ institutional strategies is important in developing better, longer-term and more appropriate partnerships and deriving institutional learning from them.

5) Rethink partnership funding – Evidence shows that partnerships function best and have the biggest impact when they have functioned for a long time (beyond a single project or program), when resources are earmarked for partnership building and communication, and when CG staff (those involved both directly and indirectly) have adequate time explicitly allocated to the partnership. Supporting partnerships of this nature probably involves developing funding mechanisms that acknowledge these additional costs and allocates funding over and above the levels necessary to fund only activities directly related to partnership outcomes. It may be useful to think

of partnership funding in terms of core and non-core funding, with core funding allocated to partnership building, some key staff costs and effective strategic management, and non-core funding allocated to specific partnership activities, goals and outcomes. Evidence suggests that provision of the 'core funding' necessary to support and develop partnership platforms themselves will in itself produce positive impacts some of which have been described in this research: institutional learning, an adaptive long-term network of partners, capacity building, organisational innovation and IPGs.

BACKGROUND

Partnerships between Consultative Group on International Agricultural Research (CGIAR) Centres and CSOs comprise 17 per cent (roughly 560) of the total partnerships reported by Centres of the CGIAR in a 2005 survey.¹ A special Ministerial Meeting in February 1995 in Lucerne, Switzerland, recognised linkages between the CGIAR and civil society as mutually beneficial, and as 'critical imperatives to a fully effective CGIAR system'. The importance of CGIAR Centre-CSO partnerships was further underlined in the Bezanson (2004) Independent Evaluation of the Partnership Committees of the CGIAR. Paradoxically, in the 2005 survey, Centres rarely mentioned such collaborations as highly relevant. This working paper aims to shed light on why this is so, and ultimately, to contribute to improve the relevance and success of CGIAR Centre–CSO partnerships. The paper documents six CGIAR Centre partnership experiences with CSOs, and highlights how and why such partnerships are important for mobilising science and for achieving the CGIAR mandate. Furthermore, the paper identifies key insights and lessons learned from such partnership experiences, and attempts to arrive at a better understanding of the factors behind successes and failures. We hope that the study leads to the development of a CGIAR policy to increase impact and relation with the CSOs, and last but not least, the evolution of way of working in the CGIAR.

Whilst Centre partnerships with CSOs are numerically small, this study demonstrates that they play an important role in linking CGIAR Centres to the environments, communities and farmers they are mandated to develop technologies for. The partnerships studied encompass many CGIAR Centres, environments, technologies and developmental needs. From Papa Andina's demand-led methodologies, to PETRRA's support and development of complex research partnerships, to ICRISAT's or IWMI's focus on community-level innovation, all the partnerships, to varying degrees, articulate need, deliver technologies, develop innovative methodologies and build capacities, trust and the networks that increasingly border CGIAR Centres. In addition, partnerships with CSOs are often developing other, sometimes unforeseen outcomes, including giving insight into institutional innovation, building capacity in National Agricultural Research Systems (NARS) and other partners, developing international public goods (IPGs) such as methodological insights into demand-led research, and gearing CGIAR Centres towards more 'innovation systems' thinking.

Although the six partnerships studied were not selected based on a prior assessment of their success, we consider that all the six partnerships studied had important elements of success. They had all contributed to the development and disseminating of a new technology, or to a better understanding of a research problem through testing approaches on the ground. However, when we talk of 'successful' partnerships we use the term with circumspection. Success is clearly subjective, relative and related to the context of partnerships that often have multiple aims, modalities, and dimensions. Success in terms of partnerships could correspond to those that achieve the maximum local impact, those that transmute their activities to become IPGs, those that are cost effective and well organised, those that share knowledge and communicate most effectively, those that promote change in their partners, or those that exist for a relatively long time. The initial scoping of case studies was circumscribed by visibility, and while there are very many CGIAR Centre-CSO partnerships, the most visible are probably the more successful, as they have been able to communicate their aims, ideas and results.

¹ CGIAR Science Council. 2006. CGIAR Centre Collaboration: Report of a Survey. Rome, Italy.

Even within successful partnerships there are elements of failure, of missed opportunities, room for improvement, or unbuilt capacities. Accordingly, we did not attempt to define, or confer, success onto the partnerships we encountered. Instead, we sought to identify the practices, dynamics and characteristics that bred success and those that stifled success, in all its dimensions. We also hoped to capture partnerships based in each continent, partnerships that dealt with different types of technologies and partnerships that were housed at different CGIAR Centres.

Methodologically, we sought to explore how the partnerships functioned, and how they affected change. We tried to analyse the partnerships from the perspectives of both key partners – within the CGIAR Centre and the corresponding CSO – and when possible, we broadened our analysis to other partners. The research was primarily qualitative, and involved interviewing key people within the partnerships. In an effort to map qualitative change affected by the partnership, we focused on understanding how the partners evolved their activities and thinking within the partnership. Each of the six case studies was analysed in order to derive the insights and lessons learned that form the bulk of this report. We approached the six case studies from an innovation systems perspective; that is, with the understanding that partnerships and their success or failure are fundamentally about how they communicate, generate and share knowledge effectively to change behaviours of ‘boundary partners’,² the target population. We also drew on concepts derived from other analytical traditions, including development studies perspectives that highlight the importance of participatory approaches, the acknowledgement of multiple knowledge systems, and an understanding of local contexts (Chambers et al., 1989).

The main body of the report is organised around a discussion of five key ‘insights’ and five key ‘lessons to be learned’ that have developed from our comparative analysis of the six partnerships we studied. An appendix provides overviews of partnership goals, organisation and outcomes and summarises our findings for each partnership.

Having completed the study it is our conviction that partnerships between CGIAR Centres and CSOs are a key element in the present and represent the future of the CGIAR. They represent important vehicles for institutional change and for mobilising science on behalf of the poor. The challenge for the CGIAR is to take advantage of the possibilities and potential that these partnerships offer, and we hope that this study will have contributed to the identification of such possibilities and potential.

Before we turn to the core of the study we reflect on some thinking about agricultural innovation systems, which was not only central to our analysis, but which we also found was the framework that guided the ways in which many of the partnerships studied were organised and how their conceptualised their work and purpose.

AGRICULTURAL INNOVATION SYSTEMS THINKING AND PARTNERSHIPS

Much has been written in recent years about why partnerships are critical to successful innovation strategies. Spielman et al. (2007), drawing on a major study of strategic partnerships by Hagedoorn et al. (2000), and other literature outline four analytical approaches to understanding partnerships:

² The concept of ‘boundary partner’ was coined by the IDRC, as part of its Outcome Mapping Methodology for project assessment. ‘Boundary partners’ are individuals or organisations whose behavior (practices, attitudes, etc.) should change as a result of the partnership. They are, in that sense, the immediate target population of the partnership. For more information see http://www.idrc.ca/en/ev-26586-201-1-DO_TOPIC.html

Industrial organisation approaches that focus on analysing the economies of inherent failures in the market for scientific and technological knowledge;

Transaction cost theory approaches that address the implicit costs of producing and exchanging knowledge under different institutional regimes and organisational structures;

Strategic management approaches that examine how firms compete, network, or collude in an effort to accumulate and deploy resources and capabilities to strengthen their market position;

Innovation systems approaches which examine how collaborations between public and private agents in the generation, exchange, and use of knowledge are conditioned by the internal behaviours, practices, and routines, and by external social and economic context within which they operate..

While elements of all these approaches have proved useful in shaping thinking about partnerships, the fourth framework has recently gained significant momentum as a useful framework for looking at how agricultural research is done, and why and how it can best serve development objectives. Indeed, the innovation systems framework is now being used to understand how and why certain partnerships are emerging within the CGIAR system, and the strengths and weaknesses of different types of partnership approaches (World Bank, 2006). In some partnerships, CGIAR Centres and their CSO partners use ideas from the innovation systems framework in conjunction with value chain analysis to provide insight into both knowledge and technology generation, and the way in which different business models operate. Some of the methodological innovations developed by the Papa Andina partnership are examples of such a hybrid approach.

The concept of an “innovation system” is currently used in science policy discourse as a kind of metaphor to indicate the need for a much wider perspective on relevant actors and decision-making processes involved in technological change, than has been the case in the past. The agenda for agricultural science has become much more complex and multidimensional, and while science remains central to an innovation system, it can no longer be considered the only propellant of technological change. For example it is increasingly difficult to regard agricultural science as the main source of crop yield improvements and thus, international food security and social wellbeing. Instead the agenda has expanded to include issues of continued (and worsening) poverty, environmental sustainability, private sector activity, the complementary roles of non-governmental organisations and community-based organisations, the importance of farmer knowledge, the growth of relevant agribusiness and changing (national and global) macroeconomic conditions. In particular innovation systems thinking is about building up knowledge on how to integrate agricultural science better with client needs and complementary capabilities, especially with relevance to poor rural communities.

Because most stakeholder groups and individuals have been trained in ways that emphasise narrow disciplinary foci and reductionist approaches to the conduct of research programs, scientists and other stakeholders, while aware of the complexity of innovations systems in agriculture, often have difficulty translating this, in their minds and actions, to appropriate change. For example, the transfer of technology from research institutions to end-users remains the main formulation of the relationship between scientists and society. Similarly, communication regarding science and technology still often revolves around filling the ‘knowledge gap’ in explaining to society the need for technological fixes. In contrast to this linear approach, the innovation systems framework emphasises the need for clearer understanding of the interdisciplinary issues involved, through feedback loops that

promote repeated and intense interaction between different stakeholders, and through the creation of contexts in which different agendas can be talked about and acted upon jointly. In that way, the innovation systems framework provides a more networked way of thinking about research for development issues and relationships among stakeholders.

One of the prevailing fears about innovation systems thinking, which implies that innovation need not result from science-led approaches (and so, that investments should not only be in science) is that scientific quality may thereby be compromised. In this respect, there is renewed discussion about the focus, direction and boundaries of agricultural research, which revolves around the nature of scientific excellence versus developmental impact, and this debate is intimately linked to discussions about the nature of partnerships (Chataway et al., 2007). In many respects, the six partnerships that we studied play out these contestations. They deal with relationships between agricultural research and development: between the agendas of donors and research institutions on the one hand, and the needs of farmers and communities on the other. In doing so, partnerships seek to develop innovative ways to communicate, analyse and problem-solve.

PARTNERSHIPS CASE STUDIES

This section describes the criteria used for the selection of partnership case studies, and provides background on each case study, in order to contextualise the key insights and lessons learned.

The criteria for the selection of partnerships addressed by the study required that partnerships had to be, using Bezanson et al.'s (2004) typology of partnerships, either *complementary* or *collaborative* or *critical*. 'Consultative' and 'coordinative' partnerships were not considered, because they were characterised by lower levels of depth and intensity than 'complementary', 'collaborative' or 'critical' partnerships. The key characteristics of these partnerships, as described by Bezanson, are as follows:

Complementary partnership. In this form or level of relationship, though each party has separate initiatives, they are both guided by a common programme framework characterised by purposive efforts to support each other.

Collaborative partnership. In this relationship, both institutions agree to work together, sharing a common vision, establishing common objectives, and plans of action on a programme level. Mechanisms are institutionalised so as to facilitate delivery of services to their target communities.

Critical partnership. This may be the highest form and level of partnership where both institutions consider each other as indispensable partners in pursuing broad development goals and visions. Both sectors work together on a more strategic long-term arrangement on various aspects of the socioeconomic and political life of the community. NGOs, for example, are given access to government resources and are also given the chance to participate in the policy formulation and decision-making processes.

In addition, the six case studies were selected based on the following criteria: a) The CSO partner should be an organisation related to agricultural science and technology, which could include a non-profit NGO or a farmer organisation, but not a university; b) the CSO partner should be a primary or key partner of the CGIAR

Centre partnership;³ c) the partnership had to have been in existence for at least two years; d) studying the partnership should be feasible; and e) the partnership had to have been previously documented. Out of the partnerships that fulfilled these criteria, we then based the choice of partnerships on achieving a mix of CSO types; of upstream/downstream focus; and a mix thematic focus (natural resource management/crop or livestock improvement/value chain research/policy research); and of CGIAR Centres/agro-ecosystems. The partnerships studied and their contributions to science mobilisation are discussed below.

Table 1, on page 17, summarises key characteristics of the six partnerships. Additional detail about each partnership is provided in the Appendix.

Papa Andina: CIP – PROINPA

The Papa Andina initiative grew out of a long-term collaboration between the Swiss Agency for Development and Cooperation (SDC) and the International Potato Centre (CIP), to strengthen Andean national potato research programs in the 1980s and 1990s. Papa Andina was instigated in 1998 to continue previous work at a regional level, but with a more institutional focus on horizontal collaboration between its national partners and CIP. Papa Andina's mission is to improve the capacity of partners in managing technological and institutional innovation processes to respond to demands from poor farmers, potato market chain actors and development institutions taking advantage of regional experiences. The explicit focus is on supporting innovations to improve small-scale farmer productive capacity and efficiency in an equitable fashion, ensuring pro-poor, gender enhancing and empowering improvements. In recognising the complexity surrounding poverty alleviation, and diversity of market access, agricultural productivity and institutional actors, Papa Andina has adopted an innovation systems approach to draw together research and development organisations, as well as end-users, in a process of learning by doing.

Papa Andina attempts to strengthen its members not only through technological innovation, but also by helping them to develop institutional responses adapted to new economic and political contexts. Longstanding links exist between CIP and other strategic partners, particularly with the Foundation for the Promotion and Research on Andean Crops (PROINPA), a Bolivia-based agricultural research NGO.

Each country in the Papa Andina network now contains 1-2 'strategic partners' and up to 10-15 'good operating partners'. Around 4000-5000 farmers per country have been reached through these boundary partners. Interviews were held with Papa Andina partners in La Paz, Bolivia. Partners representing CBOs, private sector companies, trade associations and farmers groups all stated that they had learned how to think and operate systemically through their work with Papa Andina, the development and adoption of the Participatory Market Chain Approach (PMCA) has been central to this, as has the notion of creating 'platforms', spaces where issues around marketing can be discussed and dealt with, in order to facilitate the market chain.

The Multiple Use System Project MUS: IWMI – Mekong River Basin CBOs

The Multiple Use Systems (MUS) project began in January 2004, promoted by the International Water Management Institute (IWMI), in response to a call for proposals from the CGIAR's Water and Food Challenge Programme. MUS is a partnership of institutions from the productive and domestic water sectors, including government departments, research institutions, and NGOs, including CBOs and other members

³ Most partnerships have multiple partners.

of civil society. Coordinated by IWMI, MUS focuses on developing methodologies, tools and guidelines for multiple-use water delivery services as an effective way to use water to promote poverty alleviation, agricultural production and gender equity. Activities are currently underway in rural and peri-urban areas of five major river basins -- Mekong, Andes, Limpopo, Nile and the Indus-Ganges -- spanning eight countries in Africa, Asia and Latin America. The project works through learning alliances to develop locally-specific innovations and build capacity for scaling up. Our research focused on work in the Mekong River Basin in northeastern Thailand, where the main CSO partners are CBOs known as 'local wisdom networks' that promote systemic learning around resource use. Within the Mekong Basin, the partnership appears to have played a central role in learning and sharing MUS innovations. Activities such as the development of model MUS rice paddies, periodic meetings and training workshops have underpinned the communication and learning that has occurred between Khon Kaen University (key implementer) and the local wisdom networks.

Poverty Elimination through Rice Research Assistance: IRRI – Bangladeshi NGOs

Partly in response to a perceived downturn in rice research in Bangladesh, DfID funded the Poverty Elimination through Rice Research Assistance (PETRRA) project. PETRRA began in 1999 and ended in 2004. The project was implemented by the International Rice Research Institute (IRRI) through its Bangladesh country office, with around 50 partner organisations, including the Bangladesh Rice Research Institute (BRRI) and a range of CSO partners, significantly Proshika and RDRS – two Bangladeshi NGOs --, and CARE and International Development Enterprises – two international NGOs. The guiding rationale for all research supported was that improving rice productivity was a valid means to improve livelihoods in Bangladesh, leading to enhanced food security, improved incomes and household sustainability and resilience. Implicit in this rationale, was an acknowledgement that focusing on rice production could act as an entry point for other interventions, into the poorest households. Based on a competitive grant system, PETRRA was managed by a Project Management Unit. By the end of the project in 2004, a total of 45 sub-projects, broadly dispersed across Bangladesh, had been implemented.

Our interviews with stakeholders suggest that while PETRRA's sub-projects have made direct contributions to improving livelihoods in rural Bangladesh, the experience of working with PETRRA has clearly shaped institutional learning and practice for partners. 551 villages, 107 *upazilas* and 38 districts participated in the various sub-projects. In the 2004 *Boro* season, this amounted to 12983 participating farmers. Ten technologies regarded as 'significant' were developed, identified and adapted. Insights into uptake and development pathways were developed, and opportunities for policy makers to engage with critical agricultural R&D policy issues were afforded. Out of five calls for concept notes, 391 submissions were received and in total over 700 scientists were mobilised.

Vitamin A for Africa: CIP- CRS - TAHEA

In 2001 CIP convened a meeting of agriculturalists, health experts and nutritionists to launch an initiative to tackle Vitamin A deficiency in sub-Saharan Africa. The Initiative was called VITAA – 'Vitamin A for Africa'. The main goal of VITAA is to promote increased production and consumption of orange-fleshed sweet potato (OFSP) in sub-Saharan Africa as a way of combating Vitamin A deficiency. As the focus of VITAA is on both production and consumption, it was clear that a multidisciplinary, multi-level approach would be needed to tackle the problem in a systemic way. VITAA, from its inception, was conceived as a loose network of organisations that

would evolve and function in the different contexts of the African countries in which the project would be implemented.

Today, the VITAA partnership includes more than 70 partner organisations representing expertise in health, nutrition and agriculture, including non-governmental organisations, community-based organisations, root crop regional research networks (PRAPACE and SARRNET) and private sector institutions. These institutions work together with the intention of broadening the impact and uptake of OFSP in the ten member countries: South Africa, Zambia, Uganda, Tanzania, Kenya, Mozambique, Nigeria, Rwanda, Ghana and Ethiopia. Beneath the sub-Saharan Africa-wide network, national VITAA networks function with the participation of farmers, NGOs, CBOs, media, policy makers, local governments and nutrition, health and agricultural experts.

We looked in particular on the partnerships between CIP, Catholic Relief Services (CRS) – an international NGO, and TAHEA – the Tanzanian Home Economics Association. Our focus on these relationships highlighted in particular the strengthening of the working relationship in-country between CRS and TAHEA, and the capacity of local communities' ability to grow and eventually market OFSP locally. The impacts at this present moment are relatively small-scale. The number of communities that have benefited is relatively small, but there are signs of the sort of organisational capacity being built between the Tanzanian partners needed to increase impact and the scale of OFSP development and dissemination.

Improving Agriculture by S&T in Eastern and Southern Africa: ICRISAT – CU

The International Centre for Research in the Semi-Arid Tropics (ICRISAT) and Concern Universal (CU), an international NGO, formed a partnership to implement this DfID-funded project between May 1999 and March 2002. The rationale for the project was based on research in SSA which has shown that agricultural yields in semi-arid areas consistently fail to achieve the yields obtained by researchers in research station and field trials, that yields are low often because farmers do not invest in soil fertility management, and that farmers' risk minimisation strategies are key culprits of this. The project targeted the poorest and most vulnerable rural households in sub-Saharan Africa's semi-arid areas, headed by women. The goal of the project was to develop methodologies to link farmer-led participatory research with systems modeling through case studies focused on improving the welfare of women farmers.

There is a clear legacy from the project. Within ICRISAT the project has played a central role in shaping a new natural resource management and research paradigm. This is particularly true in terms of how the relationship between farmer and researcher has been re-conceptualised. This has had an impact within other CGIAR Centres such as the International Centre for Maize and Wheat Improvement (CIMMYT), which have adopted methodologies developed by the project. The project also highlighted the role of risk and perception of risk in uptake of technologies, and much was learnt regarding knowledge flows and learning within farmer communities. Recognition of the importance and complexity of communication of new technologies was highlighted as an important outcome. Finally, and more concretely, the recognition of the fundamental importance of appropriate fertiliser in semi-arid, resource-poor environments was reaffirmed.

CLAYUCA: CIAT - Colombian CSOs

The Latin American and Caribbean Consortium to Support Cassava Research and Development (CLAYUCA) is a consortium operating from its base at the International Centre for Tropical Agriculture (CIAT) in Cali, Colombia. CLAYUCA was formed in

1999 but is based on over 20 years work on more integrated approaches to Cassava research at CIAT. Participating local partner CSOs include farmers' organisations and CBOs. The Corporación Colombiana de Investigación Agropecuaria (Corpoica), a government research organisation was a key partner.

The major significance of CLAYUCA is that it is based on strategic alliances and partnerships with farmers groups and the public and private sectors. It is consortium with eleven member countries, three of them in Africa.

In Colombia, CIAT, CSOs and Corpoica work together to devise and deliver participatory training in post harvest techniques to farmers and work with them on participatory variety improvement research. From visits made to farmer organisations that had close contact with CLAYUCA and those that had not, it was clear that the former were better informed about technical options, and had more capacity to act on behalf of members in commercial and negotiation contexts with the Colombian government.

Table 1. *Partnership Characteristics*

| Partnership project | CGIAR Centre | Key CSO Partner contacted for the study | Regions/ Countries covered by project and key types of partner organisations involved | Focus | Science mobilization |
|----------------------------|--------------|--|---|---|---|
| Papa Andina | CIP | Foundation for the Promotion and Research on Andean Crops, Bolivia (PROINPA) | Bolivia, Peru, Ecuador In addition to PROINPA, Papa Andina works with the National Potato Program of Ecuador's National Institute for Agricultural and Livestock Research (INIAP), called FORTIPAPA, and the INCOPA Project in Peru. | Strengthen national potato research programs in the Andean Region | Has reached around 4000-5000 farmers per country reached. Has developed the Participatory Market Chain Approach (PMCA) approach – a structured participatory R&D process that gradually stimulates interest, trust and collaboration among members of the market chain, to promote innovations, which can be new products and processes, new technologies or new institutions, benefiting the different actors of the marketing chain directly or indirectly. |
| Multiple Use Systems (MUS) | IWMI | Local community-based organisations (CBOs) in Thailand's Mekong River Basin | Five major river basins and eight countries in Africa, Asia and Latin America: Mekong Basin, Andean Basin, Limpopo Basin, Nile Basin and Indus-Gangetic Basin MUS has involved as partners NGOs, including CBOs, regional governments, financing institutions, private sector, | Develop methodologies, tools and guidelines for multiple-use water services delivery as an effective way to use water for poverty alleviation, agricultural production and gender equity. | Within the Mekong Basin, the partnership has played a central role in learning and sharing MUS innovations. Activities such as the development of model MUS rice paddies, periodic meetings and training workshops have underpinned the communication and learning among partners, such as the local Khon Kaen University and the local CBO-based wisdom networks. |

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|--|-------------|--|--|---|--|
| <p>Poverty Elimination through Rice Research Assistance (PETRRA)</p> | <p>IRRI</p> | <p>Various Bangladeshi NGOs, including CBOs</p> | <p>universities (e.g. Kon Kaen University in the Mekong River Basin) Bangladesh PETRRA involved 48 participating partners, ranging from Bangladeshi government departments, international and national-level NGOs, including CBOs.</p> | <p>Increase productivity in rice-based production systems through farmer-led rice research, as a means to rural livelihoods in Bangladesh</p> | <p>By 2004, last year of the project, there were 12,983 participating farmers in 551 villages; Over 700 scientists had been mobilised. Ten technologies regarded as 'significant' had been developed, identified and adapted. Insights into uptake and development pathways had been developed, through a so called 'farmer centric' model of agricultural research, also known as "plan, milestones and pathways to reach farmers", now widely adopted by the EU. PETRRA has, to quote IRRI's Director General, "penetrated institutional thinking at a deep level". Indeed, the PETRRA experience played a key part in shaping thinking behind IRRI's 2007 strategic plan. A recent concept note on the development of 'abiotic stress tolerant rice' for the Bill and Melinda Gates Foundation was structured around PETRRA's farmer centric model.</p> |
| <p>Vitamin A for Africa (VITAA)</p> | <p>CIP</p> | <p>Catholic Relief Services (CRS) – an international NGO, and TAHEA – the Tanzanian Home Economics Association</p> | <p>10 countries in Sub-Saharan Africa (South Africa, Zambia, Uganda, Tanzania, Kenya, Mozambique, Nigeria, Rwanda, Ghana and Ethiopia) More than 70 partner</p> | <p>Reduce Vitamin A deficiency in sub-Saharan Africa, through promoting increased production and consumption of orange-fleshed</p> | <p>VITAA has increased capacity and stronger working relationships between CRS and TAHEA in Tanzania. At present, only 1-2 per cent of sweet potatoes grown in Northern Tanzania are OFSP, and only a handful of communities are involved. There is little doubt, however, that local structures have evolved to facilitate the growth of OFSP use, and capacity to do so has been built.</p> |

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| | | | organisations are involved, representing expertise in health, nutrition and agriculture, including NGOs, CBOs, NARS, root crop regional research networks (PRAPACE, SARRNET) and private sector. | sweet potato (OFSP) | |
| Improving Agriculture by S&T in East and Southern Africa | ICRISAT | Concern Universal (CU) – an international NGO | East and Southern Africa (Zimbabwe, Malawi, South Africa) Besides CU, the partnerships involved NARS and universities | Develop methodologies to link farmer-led participatory research with systems modelling, to improve the welfare of women farmers through improved soil fertility management | The 'mother and baby trial', a participatory approach that allowed the testing and refining of technologies through a partnership between scientists and farmers, was developed and refined through experience in Malawi and then Zimbabwe, and has become a popular participatory research approach, now being applied in South Africa and elsewhere. Within ICRISAT the 'mother and baby trial' research approach has played a central role in shaping a new natural resource management and research paradigm. This is particularly true in terms of how the relationship between farmer and researcher has been conceptualised. This has had an impact within other CGIAR Centres such as CIMMYT, which have adopted elements of the approach. |
| Latin American and Caribbean Consortium to Support Cassava | CIAT | Local CSOs, including farmers' organisations and CBOs. | Colombia and other 10 other member countries. CLAYUCA has involved | Cassava agri-food chain: devising and delivering | Most recently, those organisations that have received training and advice through CLAYUCA have been better informed about technical options, and have been better able |

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| <p>Research and Development (CLAYUCA)</p> | | | <p>as partners the private sector, NGOs --including farmer organisations, Ministry of Agriculture and NARS</p> | <p>participatory training in post harvest techniques to farmers, and working with farmers on participatory varietal improvement research.</p> | <p>to act on behalf of members in commercial and lobbying arenas. For example, as a result of contact with CLAYUCA, small farmers were better able to voice and defend their interests in relation to debates about bio-ethanol and how to produce it. Contrary to initial Colombian government policy, farmers who had received training from CLAYUCA effectively defended vis a vis Ministry of Agriculture officials their preference for small production plants that would allow for multiple uses of the whole cassava plant, including foliage for cattle feed and processed waste for fertiliser.</p> |
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KEY INSIGHTS AND LESSONS LEARNED

This section seeks to highlight the key insights and lesson learned from the six partnership case studies, and represent particularly important organisational principles, capacity building and partnership outcomes that have manifested themselves across projects, technologies and contexts. We believe that these insights and lessons learned are generalisable, and may therefore provide guidance into best practices for current and future partnership organisation and management.

Key Insights

Stronger and “deeper” partnerships have history. The partnerships that seem to function most effectively and where partners complement each other are those with a significant shared history prior to the partnership. These shared histories allow projects to build on pre-existing trust and ways of doing things, and allow access to localised and specialised knowledge. “Deeper” partnerships are therefore those that have developed organically through time, are characterised by trust and a common sense of vision, and have well-developed and organised ways of working and communicating. Shared histories also facilitate reaching a clear and agreed vision.

For example, Papa Andina was able to build on boundary partners’ trust gained under previous collaborations, and this greatly facilitated partnership activities. Papa Andina is a consortium with a depth beyond the existence of the Papa Andina initiative itself as key actors have previous working relationships to build on. According to interviewees the depth of relationship has been a key factor in the success of the partnership. Given the core activities of the project, which consisted in providing platforms and opportunities where market chain actors could meet to discuss how to bring potato-based products and innovations to markets, trust was a fundamental prerequisite to bring actors with ostensibly competing interests together, and support them in developing common ways of working. In addition, Papa Andina’s key partners had long working relationships with each other, stretching back over decades. This greatly smoothed working relationships within Papa Andina. This was particularly important, as the project is relatively de-centralised.

IRRI and BRRI have worked closely for more than 30 years. The partnership between IRRI and its host Bangladeshi institution is strongly recognised and appreciated by the Ministry of Agriculture. PETRRA was able to build on that strong trust and thereby experiment with new forms of research management that drew in partners beyond BRRI and piloted a pro-poor agenda. IRRI, BRRI, The Ministry of Agriculture and DfID recruited wisely in identifying a project manager that was well experienced in Bangladesh and had the confidence of both IRRI and BRRI. This clearly played an important part in the smooth running of an enormously complex partnership that contained very many partners undertaking numerous activities. PETRRA encompassed 45 sub-projects, each with multiple partners, and coordinated, supported and monitored capacity building and shared learning within the sub-projects. The nuanced understanding of the topography of Bangladeshi research institutions was important, as IRRI is relatively centralised and works mainly with national agricultural research systems. The organisational structure of PETRRA’s partnerships was considerably more complex than the type of partnership arrangements IRRI had historically engaged in. An important spin-off of PETRRA’s history in Bangladesh was the building of capacity beyond the confines of PETRRA. The Bangladesh Rice Research Institute was able to develop its own research activities and ability to accrue funding as a direct result of PETRRA.

The MUS project provides a different perspective on the importance of shared histories between partners. There was relatively little history between IWMI and its

key partner in each river basin, and indeed between each partner. This meant that little learning across river basins took place. In contrast, the relationship in the Mekong River Basin between Khon Kaen University and its own local partners, via 'wisdom networks', was very strong and had existed for many years. This resulted in strong partnerships, deep shared learning and tangible outcomes in terms of impacting upon communities' water management practices. Indeed, it is unclear precisely how important the broader project was to the Mekong basin activities, many of which were ongoing and seemingly already very effective. The local partners viewed the project's success as built on shared activities within the local context of the Mekong basin in Thailand, and the broader MUS network was not perceived as an important facilitator of this success by any of the informants we spoke with in Thailand. Members of the Mekong River partnership expressed frustration at their inability to share what they considered their important insights into learning and water management with other partners, either because there was little opportunity to share learning across river basins via IWMI, or because partners expressed disbelief at the Mekong partners' success, presumably based on their lack of knowledge of the historical context of work in the river basin.

The MUS project provides something of a counterpoint to the examples of Papa Andina and PETRRA, as while common shared local histories clearly played an important role in the work taking place in the Mekong, their lack in terms of relationships between IWMI and between river basins meant the project was rather less effective at learning across basins than it might otherwise have been.

Furthermore, depth and history breed success. Shared histories are perhaps the most important pre-requisite for successful partnerships. And in some ways are the insight most far removed from the partnership in that they are by their nature internal, they cannot be legislated for, or managed into a partnership. They must be accumulated over time and through activities. Nevertheless, partnerships that are successful, particularly with respect to complex processes such as capacity building, shared learning and sustainable impacts, their success is most likely due to the fact that partners knew each other beforehand, had worked together, and had developed their own nuanced understanding of their common organisational, socio-economic and agro-ecological contexts.

Papa Andina was able to benefit from another set of historical relationships than those described above. The project manager had a long working relationship with the Swiss Agency for Development and Cooperation (SDC) that had spanned work in the region even prior to his employment at CIP. This meant that SDC had a very good understanding of the project's modus operandi, supported its objectives, and could be reassured of the project's likely success. This trust is amply demonstrated in the long-term continuation of funding (Papa Andina is entering its third phase of funding as it approaches the end of its first decade). This long-term funding is of vital importance as it allows strong working relationships to develop. It also allows more effective monitoring and evaluation, as many of the impacts of the partnership revolve around local capacity building, relationship strengthening and organisational learning; processes that are in themselves incremental and long-term.

Partnerships are built on resources. Successful partnerships tended to be the best resourced. This was particularly true when resources were not only available to work towards the partnership's objectives, but were also available to build the strength of the partnership itself. Partnerships that had larger amounts of resources allocated to activities such as communication and capacity building were better able to 'nurture' the partnership itself. This had significant implications for the effectiveness of the partnership, in terms of the quality of the partnership's outcomes, levels of

organisation, effectiveness of capacity building, communication within the partnership itself, and generation of benefits to all partners.

The two CIP partnerships studied illustrate this. Papa Andina has devoted significant time and resources to relationship nurturing, and this has resulted in a very systemic, organised partnership. The partnership's leader is able to devote 100 per cent of his time to the project, and although the management team is relatively small, it benefits from significant experience and longstanding working relationships in the region. Longstanding links between CIP and other strategic partners, particularly with the Foundation for the Promotion and Research on Andean Crops (PROINPA) in Bolivia underlay a relatively loose coordinating structure. Annual meetings agree agendas, work plans and approaches but there is quite a high degree of latitude to respond flexibly to issues as they arise. Despite this relatively loose structure, Papa Andina has a clear and strong sense of central coordination, there is a strong sense of communication, and being able to communicate problems and issues, between the core at CIP and the periphery in Bolivia. This sense is undoubtedly aided by the geographic contiguity of the project. This certainly facilitates travel, sharing information and regular communication. The Papa Andina partnership's objectives are defined by the coordination team who meet with strategic partners on a regular basis. The roles of each partner are agreed on an ongoing and responsive basis and there is no formal or structured agreement about overall roles of each partner. This has been highlighted as a potential weakness of the initiative in one review (Horton and Benavides, 2005) Horton and Benavides note:

One weakness of the project's design is the imprecise definition of the roles and responsibilities of the various entities involved in Papa Andina....SDC and CIP feel it is important to involve a broad range of stakeholders in national innovation systems, including not only research organisations but other governmental and non-governmental organisations and private entities. However, the broadening of participation is a sensitive issue among strategic partners who sometimes view it as a way to reduce their role in the project (Horton and Benavides, 2005:8).

The issue of undefined roles identified by Horton and Benavides has caused problems between some partners in the initiative but overall the approach has enabled dynamism and flexibility within the partnership. This style of leadership has accommodated CIP and PROINPA into the partnership in a way that has enabled the organisations and their staff to learn from the partnership. The loosely defined roles, therefore, seem to be a result of the partnership's philosophy of dynamism, rather than vagueness of management or partnership building.

In contrast, VITAA has devoted significantly fewer resources to ensure the smooth running of the partnership with CRS, and partnership-building activities have been much more *ad hoc* and localised. This is not to say that VITAA could not be deemed successful. Indeed, to a certain extent, the contrast between the two CIP partnerships simply represents the different levels of resources each partnership has been able to accrue. But allocating resources to the modality of the partnership itself clearly results in stronger partnerships. There are clearly delineated roles within the VITAA partnership, and CIP plays a clear coordinating role. Indeed a CIP employee is responsible for the functioning of the entire partnership. In addition CIP is heavily involved in assisting advocacy and promotion around OFSP. CIP also works closely with national agricultural research programs, including those for OFSP breeding, to develop appropriate varieties with regional adaptation. Activities other than research tend to take place at a national level. In Tanzania, Catholic Relief Services (CRS) plays an important role in coordinating and funding these activities.

The VITAA partnership does not function as a network of activities gradually extending outwards from a static, central, coordinating point and there is an apparent need for a more interactive learning network. Currently partners have regional and local autonomy to put their own ideas and initiatives into action. This fairly *laissez faire* approach to the functioning of the partnership seems to work well in this case because the technology involved is very simple. OFSP varieties can be centrally tested and certified for release then they can be left in the hands of partners. Issues that arise – besides the continual problems with producing and transporting vines – tend to revolve around marketing and value-addition. The technology itself remains fairly static within VITAA. Indeed, there is a strong sense that the main role of CIP was that of a propellant, to set VITAA in motion and then play a fairly minimal, periodic coordinating role. As described above, there is the sense that as the complexity of the partnership increases and as issues to be dealt with multiply in complexity, there may be a need for a new, more proactive role for CIP within VITAA.

However, there is a clear sense that CIP could play a deeper, more involved coordinating role in VITAA, particularly as relationships between partners and boundary partners deepen and evolve to deal with increasingly complex sets of issues. For example, CRS would like to see CIP taking a greater role in coordinating advocacy and scaling-up activities such as promoting distribution, processing and commercialisation. There is a perception that Tanzania would benefit from learning from Uganda and Kenya, particularly about seed storage techniques, processing options, marketing and distribution. Coordination around these issues seems to be somewhat lacking and hope was expressed by CRS that VITAA could evolve to enable that coordination.

VITAA contrasts with Papa Andina, which is more tightly managed. While VITAA seems more like a consortium of like-minded but individual institutions, Papa Andina can be represented as a dynamic and organised learning network. This is partly a function of form and access to resources, but Papa Andina is clearly more successful in terms of building capacity and learning from practice. While VITAA partners sometimes feel disconnected, Papa Andina's are more embedded within the project. The contrast between these two partnerships suggests that if partnerships are to be sustainable and well organised, and if they are to build robust capacity, then considering how best to provide resources to support partnership-building activities and structures is important.

There is strong evidence from the study that long-term, committed, innovative partnerships are capable of perpetuating themselves and of perpetuating and expanding their impact. What this means is that investments in CGIAR Centre-CSO partnerships with a history of impact and innovation are more likely to yield desired results, and thus, these kinds of partnerships are the most likely to attract further funding, which creates a virtuous cycle where more funding extends partnership impacts and ensures a higher degree of sustainability, beyond donor funding cycles. Papa Andina and PETRRA are Clear examples of this.

Partnerships are articulate. Articulate partnerships have an internal and external capacity to communicate effectively. Articulate partnerships display an ability to continuously define the partnership, partners' roles, and how partners interrelate with each other. This allows the clear setting of goals and duties. Communicating and setting an initial vision is a key component of successful partnerships. VITAA, despite a fairly loose management style, was very clear in establishing which partners would be responsible for what. Regular agenda setting and periodic reviews of partners' goals and work plans were followed in various forms by all partnerships. Partnerships

differed in terms of how this was achieved, but that was generally a function of the nature and goals of the partnership itself rather than any one partnership not thinking regular communication and evaluation was a good idea. However, there were cases of limited or inadequate communication. For example, while the MUS project demonstrated very effective communication within the Mekong Basin, it had limited communication across river basins in the project, and hence, little or no inter-basin learning appears to have taken place. In this respect, Mekong Basin partners expressed dissatisfaction that while they were managing what they considered a very successful project, there were inadequate ways to share information with partners in other basins.

Partnerships like PETRRA and Papa Andina appeared to have very effective internal communication channels. Inevitably, issues were raised by partners regarding communication, but generally partners were satisfied with their ability to communicate within the partnerships. It is perhaps pertinent to reflect that both PETRRA and Papa Andina were organised using elements of innovation systems thinking, and this focus on the quantity and quality of interaction and its necessity for real learning to take place has influenced how they conceptualise communication and how highly they prioritise it. Articulate partnerships are also adept at communicating with their boundary partners such as donors, other CGIAR Centres, and local communities. Partnerships that might be considered the most systemic and with the most effective internal communication were generally also very good at communicating externally, whether this meant liaising with donors, sharing learning back into the host CGIAR Centre, or simply publicising partnership activities. Whilst internal communication is primarily about partnership organisation and definition, and external communication is about project partnership ideas, partnerships that tended to be good at one were also good at the other.

Ability to communicate and effectiveness in encouraging communication also seem to go hand-in-hand. This seems to be both because effective communication means understanding how good communication works, therefore it is much more straightforward to mainstream and encourage effective communication within partnerships. PETRRA, for example, displayed an ability to manage dozens of partners within its research network, and to develop partners' ability to communicate and disseminate research.

Virtually all the partnerships' aims revolved around communication and sharing ideas so it is not surprising that they display ability in this regard. It is more surprising that some partnerships, such as the MUS project, are effective communicators only within elements of their own structure. This suggests that this partnership does not effectively conceptualise communication as central to its activities, and that there is limited understanding of the importance and nature of communication. The more systemic and more tightly managed partnerships such as PETRRA and Papa Andina were those who communicated most broadly and most effectively.

Because communication requires both time and resources in order to be effective, resource constraints were often inherent to weak communication within partnerships. As discussed earlier, partnerships with a longer history were the best resourced, and it is perhaps because of this that they tended to be more effective communicators. A partnership's ability to communicate improves over time as partners develop trust, voice and a shared vision. An ability to communicate is deepened by understanding the central role that communication has in achieving the partnership's goals, and by realising that communication is not only a means to articulate roles and responsibilities, but also an end in itself.

From out-reach to a learning loop. Considerable resources are invested by the CGIAR in reaching out to stakeholders in a variety of ways, and CGIAR Centre-CSO partnerships are often central mechanisms for such communication. However, fewer resources are directed towards reaching back into the institution to share partnership lessons, research and insights. The six partnerships studied suggest that partnerships still tend to exist at the periphery of CGIAR Centre institutional learning, with little effort made by either the Centre or the CSO and other partners to share lessons and identify 'best practice'. This seems to be primarily a resource issue; little time and few financial resources are available to encourage learning of this sort.

Papa Andina has developed participatory market chain methodologies (PMCA) that could be employed to deal with some of the issues encountered in the VITAA project, which, so far, has been unable to effectively analyse market conditions for OFSP in Tanzania. Papa Andina is making efforts to apply PMCA methodologies in other countries and contexts, and to make package it as a global public good. While Papa Andina has organised training and information sharing workshops in Uganda, there appears to be a lack of communication within CIP across these two partnerships. There are few mechanisms to share learning in the context of CIP, and this year (2007) one of the few opportunities that exist was missed due to the cancellation, caused by resource constraints resulting from an unexpected loss of funding, of the annual meeting where all CIP scientists meet in Peru to share learning.

Increasingly scientists and other staff linked to projects are wholly funded on project funds. Their time is costed directly to project or partnership activities, and this leaves little opportunity to spend time sharing knowledge in any structured way within CGIAR Centres. The MUS project for example, was characterised by the lack of interaction and learning back into the IWMI, a problem that seems to be partly a resource issue, whereby insufficient resources are devoted for regular meetings and for support to other inter-basin learning activities. Indeed, our interviews with Centre and CSO staff suggest that partnerships often exist on the periphery of the Centres, organisationally as well as geographically. Partnerships often operate off campus and partnership staff are employed outside of the Centres. This makes it difficult to interact and share knowledge in practical terms. Finally, Centre staff are increasingly busy, and are often simply unable to turn their attention to examining what else goes on in their institution. Several constraints, issues and lack of incentives stand in the way of in-Centre interaction.

However, there are examples of partnerships promoting change within their host CGIAR Centres. PETRRA's farmer-centric research model approach to learning and knowledge management has played a role in IRRI's institutional change. IRRI has been involved in a long-term process of expanding its base of partners, and the PETRRA experience has influenced the Centre, which has learned to recognise the role of partnerships, to understand how knowledge can best be shared between IRRI and its partners, and how networks of partners can be encouraged to work in a systemic, innovative way. PETRRA has, to quote the Director General of IRRI: "penetrated institutional thinking at a deep level". Indeed, the PETRRA experience has played a key role in shaping thinking behind IRRI's 2007 strategic plan. The notion of institutional learning -- understanding what has been learned and what needs to be learned -- a key concept underpinning PETRRA, is seen by IRRI as increasingly important as the Centre designs its relationships with partners.

It is interesting that for all of the examples discussed above, there is no formal mechanism of learning from partnerships internally or for exerting influence outside of CGIAR Centres. Most influencing is achieved through informal relationships and shared experiences, rather than through any organised or systemic programme. And

perhaps it is precisely because shared experience is the key driver of change and influence, and in the contexts of these partnerships shared experience happens outside the boundaries of the Centres themselves that 'in-reach' is not more effective or systematic.

Partnerships face divergent policy agendas. Partnerships face policy agendas from a number of directions that make their activities more difficult. Partnerships function best over longer periods of time, but donors do not offer long-term support, nor indeed support for anything other than specified activities that feed directly into partnership objectives. Also, partnerships are often inherently local but are increasingly being asked by donors to demonstrate impact in terms of the MDGs and IPGs. This policy imperative also drives the CGIAR Centres that house the partnerships. There is thus a tension between what partnerships can realistically attempt to do, and what donors (and often the Centres) want partnerships to achieve. To varying degrees this was an issue across the six case studies. Papa Andina, for example, is experimenting with their PMCA methodology in contexts outside of the Andes. Project partners have conducted capacity building workshops in Uganda as a first step to operationalise the methodology in East Africa, and attempts are being made to test PMCA's applicability in the Andes.

The MUS project demonstrates some of the issues and additional complications of internationalising often context-specific partnerships. While in the Mekong basin it is clear that the partnership has been successful in developing and sharing knowledge regarding water management best practice, and that real relationships and capacity has been built between partners, the project seemed less successful at sharing knowledge with partners in other basins. Locally, the project worked well as it was extending and supporting pre-existing working relationships and research activities. The strength of the project has been in developing nuanced, local understanding of how best to manage and conserve limited water supplies in varying local climatic, agro-ecological and cultural contexts. This strength becomes a weakness when attempts are made to share this knowledge out of context. The MUS case illustrates the potential tensions between local-level project activities and the increasing internationalisation of development policies and agendas. Partnerships have to exist, and indeed justify themselves and attract funding, while donors' focus increasingly on delivery mechanisms such as ways of getting 'research into use' (DfID), and the MDGs. It is incredibly difficult for partnerships that are often bound by relatively short-term funding and that are working in very complex local contexts to assess and conceptualise their impact and success in terms of the MDGs. Meanwhile, the CGIAR's governing bodies recommend the development of knowledge that has more than local relevance and applicability.

Partnerships with CSOs are producing International Public Goods (IPGs).

Besides attempting to create innovation pathways and deliver technologies to communities, successful partnerships *are* often producing 'methodological' IPGs, and providing insights into new ways to organise agricultural research for development. For example, the methodology-led approach of Papa Andina has created the PMCA demand-led approach to research, and insights from this partnership are currently being developed into methodologies that can be applied outside of the Andes. The ICRISAT-developed 'Mother-child field trials' research methodology whereby farmers play a role in choosing and refining CGIAR Centre research in southern Africa, has emerged as a key output of the project. This methodological innovation has developed alongside the adoption of resource management practices, which was the original goal of the project. In terms of promoting change within CGIAR Centres, PETRRA's farmer-centric model and strong partnerships have played a role in

shaping IRRI's strategic planning and research, and helped gain funding for subsequent projects.

The CSO partnerships that are producing the most innovative public goods are building on the success of local activities and research. These partnerships illustrate that the principle of scaling-up from the local is a good one, resulting in impact and more robust and applicable methodologies and technologies. CGIAR Centre-CSO partnerships may often produce IPGs, but these IPGs will continue to be developed, tested and supported in local contexts, through local activities. For example, PETRRA has had considerable direct and indirect outcomes. 551 villages, 107 *upazilas* and 38 districts participated in the various sub-projects and in 2004 12 983 farmers participated. PETRRA has had an external impact too; key elements of PETRRA's funding model have been adopted by other donor agencies, including the European Union (EU). The EU has adopted PETRRA's 'farmer centric' model of agricultural research and has allocated €10mn under its Food Security Program for NGOs working with small and medium-scale farmers to define problems and improve seed systems in Bangladesh. A competitive call for proposals has been made and four international and national NGOs have been selected to scale up PETRRA research findings through a similar value-based approach.

The ICRISAT-led project 'Improving agriculture by S&T in East and Southern Africa' has also had tremendous influence through its development of innovative participatory research methodologies. Within ICRISAT the project approach has played a central role in shaping a new natural resource management and research paradigm. This is particularly true in terms of how the relationship between farmer and researcher has been conceptualised. This has had an impact within other CGIAR Centres such as CIMMYT who have adopted methodological elements. The project also highlighted the role of risk and perception of risk in up take of technologies, and much was learnt regarding knowledge flows and learning within farmer communities. Recognition of the importance, and complexity, of communication was highlighted as an important outcome. The need to continually revise and rethink how ideas and concepts ought to be communicated and translated gave insight into how knowledge flows. ICRISAT, too, was heavily influenced by the success of the mother-child field trial methodology and this influence was built on local-level success. Within ICRISAT the project approach has played a central role in shaping a new natural resource management and research paradigm. This is particularly true in terms of how the relationship between farmer and researcher has been conceptualised and this thinking has pervaded through other CGIAR Centres.

Papa Andina has perhaps been less influential in gearing change within the CGIAR System, but has also built on its local level success in order to begin to broaden its focus elsewhere in regions such as East Africa. Around 5,000 farmers in each of the three original partner countries have been reached through the strategic partners. This success and the experience gained through this success, have allowed Papa Andina to accrue more funding and to develop strategies for working elsewhere.

Key lessons

Invest in the partnership platform. Thought, time and resources need to be factored into developing the partnership itself. For example, by supporting communication, building reciprocal relationships and establishing trust. Partnerships with larger amounts of resources to devote to platform building tended to remain more centralised and locked into the relevant CGIAR Centre, those with smaller budgets tended to devolve down to the local levels of partners and boundary partners and lose some of the comparative advantage of being attached to the CGIAR Centre.

This also impacted upon the amount of learning that could then take place between the centre and the partnership. Investing in the platform would also mean acknowledging that the time people devote to partnership development is productive in and of itself. There was a sense of CGIAR scientists often finding themselves caught between their core business of research and partnership building.

Supporting the development and strength of partnerships assists in creating sustainable partnerships whose impacts can reach beyond funding cycles and beyond the original remit of the partnerships themselves. Thinking of partnerships as long-term modalities that need to be sustained as organisational forms in their own right appears to be a way to provide mechanisms that articulate the relationship between CGIAR Centres, farmers and communities. Nurturing the most successful partnerships in this way, enabling them to access resources and develop their own capacities, can be a key way of driving science for development in appropriate directions.

Develop long-term learning relationships. Attention needs to be focused on how institutions can best be organised to reflect on lessons learned from partnerships. This is particularly apt given the enormous efforts made to develop partnerships; quite often insights gained during partnerships *and* regarding the nature of partnerships themselves are lost or poorly articulated, and this information rarely feeds back into the CGIAR Centres involved as effectively as it might. The partnerships studied are particularly effective at developing an understanding of local contexts, how to manage and share knowledge, and how to develop locally specific innovation. These are all insights that ought to be fed back into the CGIAR Centres.

The two CIP case studies illustrate ways in which more systematic organisation of learning could benefit across partnerships. PETRRA illustrates how 'in-reach', whether formalised or not, can have a tremendous impact on institutional. There are other examples of missed opportunities or poor communication, however. Thought needs to be given to how institutional learning can be encouraged from the perspectives of both the institution and the partnership. How best can lessons be internalised and built upon?

Think systemically. Partners need to think about how knowledge flows, how responsibility is assigned and how activities are pursued in a systemic manner. Partnerships ought to behave in an inherently systemic manner, as their function is often primarily to articulate broader sets of relationships and transmit needs through a network. However, the more successful partnerships were particularly adept at thinking of their own organisation as a system which entailed thinking and communicating more clearly about partner roles and responsibilities, developing mechanisms to share knowledge and document it where necessary and effectively conceive of broader contexts in terms of partnership impacts and their implications. These partnerships excelled at seeing beyond the partnership itself, and their methodological insights and organisational innovations were those that had the broadest reach. The case studies show that creating frameworks and modes of organisation that nurture systems thinking and place it at the heart of partnership activities and management appears to be a positive approach to maximising impact and learning and articulating lessons back into CGIAR Centres, into other partnerships, and beyond.

Develop institutional partnership strategies. The ways in which partners relate to CGIAR Centres and their broader sets of goals and activities needs to be reconsidered. Many partnerships appear relatively ad hoc in that they were developed in response to calls for funding or at the behest of partners. Partnerships

often seem to exist almost entirely externally or parallel to the host CGIAR Centres. Finally, there are obvious tensions between meeting short-term poverty alleviation needs and aiming to meet longer-term strategic targets such as those tied to the MDGs or development of international public goods. Thinking more deeply about these issues and the role and relationship of partnerships within individual CGIAR Centres' institutional strategies is important in developing better, longer-term and more appropriate partnerships and deriving institutional learning from them.

Rethink partnership funding. Evidence shows that partnerships function best and have the biggest impact when they have functioned for a long time beyond a single project or program, when resources are earmarked for partnership building and communication, and when CGIAR staff have adequate time explicitly allocated to the partnership. Supporting partnerships of this nature probably involves developing funding mechanisms that acknowledge these additional costs and allocates funding over and above the levels necessary to fund only activities directly related to partnership outcomes. It may be useful to think of partnership funding in terms of core and non-core funding, with core funding allocated to partnership building, some key staff costs and effective strategic management, and non-core funding allocated to specific partnership activities, goals and outcomes. Evidence suggests that provision of the 'core funding' necessary to support and develop partnership platforms themselves will in itself produce positive impacts some of which have been described in this research such as institutional learning, an adaptive long-term network of partners, capacity building, organisational innovation and IPGs.

In addition, evidence from our case studies shows that partnerships that are successful gain access to additional resources and are able to spin-off to diversify their activities. Successful partnerships develop longer histories with partners, attract more local trust, are more effective and are therefore more cost-effective. Papa Andina is an example of a partnership that is currently in its third funding cycle and has a strong working relationship with its donors. It is an example of how a successful team and approach can attract additional resources. PETRRA did not receive funding beyond its initial five year term but its methodological and organisational approach has been adopted by several partners, IRRI, BIRRI, Bangladeshi and international NGOs and has successfully attracted donor funding from diverse sources. It represents the pull a successful method has on donors. Success is clearly multidimensional from the perspective of the donors too, and investment in partnerships that can demonstrate impact and innovation is clearly attractive.

CONCLUSION

We believe the six case studies illustrate the tremendous strengths of partnerships in ensuring that technologies and knowledge make a difference. They provide an articulation between the work of the CGIAR Centres and the needs and realities of farmers and the rural poor. They build capacity in their partners, whether they be NGOs, NARS or CBOs. Indeed, they often play a very complementary role to other types of organisations. They mobilise science in many ways and contexts. The most effective partnerships seek to build real working relationships between farmers and scientists, between agricultural practice and science, and place dialogue and the sharing of knowledge at the heart of their activities and at the heart of how they conceive their role. All of these partnerships have made tangible differences at the local level and several of them have transcended their locality to impact upon how and even why CGIAR Centres undertake their work. They have bridged the gap between local practice and the creation of international public goods.

CGIAR Centre-CSO partnerships present clear modalities. They often act as linkages to broader networks of partners. PETRRA, for example, links NARS partners such as the Bangladesh Rice Research Institute with local and international NGOs and farmer and community groups. VITAA similarly, links NARS, NGOs and community groups. CSOs are at their best when they provide direct, relatively localised links to farmers and communities. The partnerships themselves are then good at reflecting on the realities of these relationships and drawing out lessons and methodologies. There has been some suggestion that CSOs may eventually replace the national agricultural research systems in many countries (particularly in Africa) as they lose capacity, funding and personnel. We would argue that whilst in some cases CSOs may replace any lost national-level capacity their strengths lie not in systematic organisation but in strategic organisation. NARS focus on science, nationally and CSOs focus on development and knowledge, locally. There is often a synergistic relationship between CSOs and NARS as demonstrated by PETRRA and it would be better to reflect on how to build that synergy to the benefit of all parties, rather than thinking of CSOs as ready-made replacements or alternatives to national agricultural research systems.

CSOs themselves are changing. New forms of CSOs, hybrids of public and private such as PROINPA in Bolivia, highly professionalised, international NGOs such as Catholic Relief Services in Tanzania, and extremely focused community organisations found in virtually all of the case studies mean we must significantly broaden our conceptualisations of 'CSOs'. This means thinking more deeply about what CSOs can bring to partnerships, how they must be related to, and how they must be supported within the context of CGIAR activities.

The case studies highlight how partnerships run, how they are organised and what principles shape their activities. There are several clear themes that run through them, effective communication, long-term historical ties, an understanding of how knowledge is developed and ought to be shared and finding a balance between clearly defining roles and building flexibility into the partnership are all requisites of the more successful partnerships. The case studies underline, too, that partnerships must be invested in if they are to be most effective and have maximum impact.

It is possible to derive clear lessons from the partnerships, partly because the requisites for success are so universal. Invoking systems thinking, thinking how partnerships can best relate back to the CGIAR System, and acknowledging that the partnerships are valuable entities in themselves and need to be supported remain important lessons.

It is possible that many of the insights derived from this study may be more broadly applicable. None of the insights are universal truths, but individually they are intuitive and their adoption is likely to result in more effective partnerships regardless of the context. If the insights are taken as a whole, however, they provide quite a specific sense of the way in which locally focused CSOs may be supported and nurtured. They describe how partnerships can build impact, share knowledge effectively, and how they can grow their impact far beyond their original impact. There are, of course, many intangibles and issues that cannot be legislated for. Innovation fundamentally depends on the strength of ideas, the insight of individuals and the energy of partnerships to nurture them. Trust and local expertise is built on individuals. Impact is based on the strength of ideas and identifying an opportune moment. The CGIAR Centre-CSO partnerships we studied demonstrate, however, that these primarily intangible qualities can be nurtured by providing enabling environments and institutional contexts that allow ideas to develop, partnerships to flourish and impacts to be magnified.

In understanding how CGIAR Centre-CSO partnerships add value to research, and the ways in which they impact upon poverty, it is possible to build on the unique perspectives and insights they bring to the CGIAR System. Well-targeted and thought-through support is required if their impact and influence on the CGIAR system is to be increased. We hope that this report has in some small way served to highlight what CGIAR Centre-CSO partnerships bring to the CGIAR, and can bring to the CGIAR system. They exist at the periphery of the CGIAR System, often off-campus, but they must surely remain central if the CGIAR is to fulfil its mandate.

APPENDIX – CASE STUDIES

The CIP Papa Andina Partnership: Case Study 1

Context, Origin and Evolution of the Partnership

The Papa Andina Initiative grew out of a long-term collaboration between the Swiss Agency for Development and Cooperation (SDC) and CIP to strengthen Andean national potato research programs in the 1980s and 1990s. Papa Andina was instigated in 1998 to continue previous work at a regional level but with a more institutional focus on 'horizontal collaboration' between its national partners and CIP. Papa Andina's mission is to 'Improve the capacity of partners in managing technological and institutional innovation processes to respond to demands from poor farmers, potato market chain actors and development institutions taking advantage of regional experiences'. The explicit focus is on supporting innovations to improve small-scale farmer productive capacity and efficiency, whilst ensuring pro-poor, gender enhancement and empowerment foci in all work. Papa Andina, in recognising the complexity surrounding poverty alleviation, and diversity of market access, agricultural productivity and institutional actors, adopted an innovation systems approach to draw together research, development organisations and end-users in a process of 'learning by doing'. An innovation systems approach allows greater participation of the different actors in the generation, acceptance and dissemination of knowledge; more effective contributions to new R&D approaches and ultimately the development of more effective, appropriate technologies. Papa Andina attempts to strengthen its members not only through technological innovation but also by helping them to "develop institutional responses adapted to new economic and political contexts."

Papa Andina is a regional initiative that promotes pro-poor innovation for development in Andean potato-based production and marketing systems in Bolivia, Ecuador and Peru. It has resulted in a range of new native potato based products grown by small farmers being sold in regional retail outlets. It has been widely recognised as an innovative initiative and has won a number of accolades including very recently being selected as one of ten finalists (out of an original 230 applicants) for the 2007 UN Seed Awards.

Papa Andina began its activities in 1998, with financial support from the Swiss Agency for Development and Cooperation (SDC). Coordinated by the International Potato Centre (CIP), Papa Andina has just completed its second phase of operation (2002-2006) and is organising a third phase, which will run from 2006 and 2010. Swiss support and other bilateral agency support, particularly from the UK and the Netherlands has been important in supporting potato research and seeds work since the 1980s. Swiss support for Papa Andina followed a highly successful technical PhD scholarship program and signaled an interest on the part of the Swiss development agency in following this technical support with broader initiatives designed to make technical support and technologies useful to small farmers. Initially this work did not incorporate CIP. At around this time however in the early 2000s, ISNAR under the direction of Dr. De Souza began to talk about new institutional paradigms. This influenced people within CIP who had close connections with the Foundation for the Promotion and Research on Andean Crops (PROINPA), a Bolivian agricultural research institute still supported by the Swiss, and work on Papa Andina was initiated.

The targeting of work with potato growers in the High Andes by SDC was vital in enabling Papa Andina to explore different approaches and develop its novel

methodologies over a number of years and Phase 1 of the program saw an increasing focus on the institutional and commercial aspects of innovation. Thus, as with many successful partnerships, Papa Andina is the outcome of various strands of project-based activity and institutional reforms that have occurred during the last decade. Longstanding links between CIP and other strategic partners, particularly with PROINPA Foundation in Bolivia underlie a relatively loose coordinating structure. Annual meetings agree agendas, work plans and approaches but there is quite a high degree of latitude to respond flexibly to issues as they arise.

There was no formal review of partner capabilities before the initiation of Papa Andina as CIP and PROINPA were well known to each other. One issue this raises is the replicability of the initiative and the methods fostered under the auspices of Papa Andina. Leading players recognise that trust has been an essential ingredient in the initiative's ability to foster new approaches, and themselves question what this implies for further roll-out of methodologies.

The project is run by a small and experienced coordinating team based at CIP in Lima. It is led by Andre Devaux, a longstanding CIP research manager who has extensive experience of the region and is committed full-time to the initiative.

Papa Andina's coordination unit works with one strategic partner in each country. These are:

- The Foundation for the Promotion and Research on Andean Crops, PROINPA in Bolivia.
- The National Potato Program of Ecuador's National Institute for Agricultural and Livestock Research (INIAP) supported by a special SDC funded project called FORTIPAPA
- The INCOPA Project in Peru facilitating coalition with private and public partners for improving the access of small-scale potato growers to market.

For the purposes of this study we focus on the partnership between CIP and PROINPA. CIP and PROINPA's decision to work together was made on the basis of common agendas to help poor potato farmers in the high Andes. Work funded by the Swiss allowed for a common agenda to emerge over the initial phase of the project. CIP and PROINPA had strong institutional links and this facilitated communication and work.⁴

The Papa Andina initiative originally had a more delineated focus on technology and technological innovation. Innova, a DfID supported project in Bolivia which coincided with Papa Andina in the early phase, and cemented the partnership between PROINPA and CIP in this area of work, focused on trying to match technologies to farmers' needs. These approaches however seemed to be limited in their effectiveness and the CIP based coordinating team felt strongly that new methodologies were needed in order to stimulate innovation and uptake of technologies. Market chain approaches initiated in Peru were discussed with PROINPA in connection with the Innova work and then adopted as a central plank of work between CIP and PROINPA.

- The Participatory Market Chain Approach (PMCA) spearheaded by partners in Peru and Bolivia (**Box 1**);

⁴ CIP was instrumental in facilitating the emergence of PROINPA was state funding for agricultural research in Bolivia collapsed.

- Methods for developing institutional and stakeholder platforms spearheaded in Ecuador

Strategic partners work with about 30 operational partners in Ecuador, Peru and Bolivia.

Box 1 Participatory Market Chain Approach (PMCA) (Adapted from Bernet, Devaux, Ortiz and Thiele, 2005)

The Participatory Market Chain Approach (PMCA) is a participatory R&D method that has recently been developed. Involving the different actors of market chains, it seeks to generate group innovations based on a well-led and -structured participatory process that gradually stimulates 1) interest, 2) trust and 3) collaboration among members of the market chain. These innovations can be new products and processes, new technologies or new institutions, benefiting the different actors of the marketing chain directly or indirectly. PMCA is a flexible method to be applied in different marketing chain contexts. Its use is not restricted to agriculture. The R&D institution needs to adapt PMCA to the specific market contexts and policy environment to ensure the desired types of impact (e.g. poverty reduction, gender enhancement, farmer empowerment).

The only fixed elements of this approach are its three phases, with flexible duration depending on how the process advances, (i) Diagnostic research and analysis of actors and market chain; (ii) Define and analyze potential business opportunities; (iii) Implementation and development of market opportunities. Each phase has a specific objective and a closing event. At the final event of each phase, results are presented to a larger group of participants and further steps are discussed. It is important that the institution that leads the PMCA process understands the “sustainability logic” of this 3-phase structure, gradually seeking to empower key actors involved in the process on the cost of the R&D institution, which progressively reduces its importance and influence on decision-making along the process.

Objectives, Roles and Work Plans

The Partnership’s objectives are defined by the coordination team who meet with strategic partners on an annual basis. The roles of each partner are agreed on a rolling basis and there is no formal or structured agreement about the overall roles of each partner. This has been highlighted as a potential weakness of the initiative in one review Horton and Benavides (2005) note:

One weakness of the project’s design is the imprecise definition of the roles and responsibilities of the various entities involved in Papa Andina....SDC and CIP feel it is important to involve a broad range of stakeholders in national innovation systems, including not only research organisations but other governmental and non-governmental organisations and private entities. However, the broadening of participation is a sensitive issue among strategic partners who sometimes view it as a way to reduce their role in the project (Horton and Benavides, 2005:8).

The problems identified by Horton and Benavides appear to be greater problems between other partners in the initiative and whilst ill-defined roles have undoubtedly been the source of some unease the style of direction and leadership has enabled

dynamism and flexibility within the partnership which has been appreciated by both CIP and PROINPA staff, many of whom highlighted the degree to which their institutions had been accommodated by and learnt from the partnership.

Papa Andina has reporting requirements from donors. These are dealt with by the coordination committee and approved by strategic partners. There are no specific partnership procedures for monitoring and evaluation. However, the initiative has taken steps to institute a culture of reflection and on-going assessment and an innovative 'horizontal evaluation' methodology has been developed.

As Papa Andina enters its third phase of funding, the focus is very much on evaluation. The SDC are keen to be able to assess Papa Andina's progress and this requires a measure of impact. This is not straightforward. First Papa Andina is complex initiative with a number of different strands, including experiments in using PMCA methodology in the context of Uganda. It spans policy work, technological innovation, institutional innovation and commercial innovation.

Outcomes

Papa Andina has been successful in raising funds and has been innovative in its strategic use of different initiatives to fund different strands of work. For instance, whilst the Swiss Development Agency has funded much of the core activities in Peru, Bolivia and Ecuador, a DfID grant supported the Innova activities in Bolivia, involving both PROINPA and CIP, coordinated by Papa Andina and closely related to other Papa Andina activities. DfID also supported an initiative to use PMCA techniques in Uganda in the context of VITAA work. A new project 'Alianza Cambio Andino', led by Graham Thiele, for a number years part of the Papa Andina team, will both build on and inform Papa Andina work.

Funds are sufficient to cover the costs of the coordination unit and finances are a relatively uncontentious issue within the partnership. There is a broader issue relating to the constraints of project funding in the context of very limited core funding at CIP. Whilst Papa Andina has sufficient funds for agreed activities, there is limited scope for others at CIP, who are working within the context of sharpening budget constraints, to get involved. This is perhaps an issue as it does not facilitate institutional learning regarding Papa Andina's work and activities *within* CIP. This does seem to be a lost opportunity as Papa Andina is clearly an effective learning network and there are lessons that may apply within CIP's other activities regarding partnerships and dissemination pathways.

Papa Andina began with a mission to get CIP technology to poor farmers in the high Andes. During the first period of operations the coordinators and strategic partners including PROINPA and the CIP team became more convinced that without institutional and commercial reform the initial mission could not be fulfilled. In this first period then it became apparent that the number of boundary partners had to be expanded. Each country in the network now contains 1-2 'strategic partners' and up to 10-15 'good operating partners. Around 4000-5000 farmers per country are reached through these boundary partners. A key focus of Papa Andina's approach is to act as operational 'model' for partners to adopt and adapt. Interviews with Papa Andina partners in La Paz, Bolivia, were instructive. Partners representing CBOs, private sector companies, trade associations and farmers groups all stated that they had learned how to think and operate systemically through their work with Papa Andina, the adoption of the PMCA approach has been central to this, as had the notion of creating 'platforms', spaces where issues around marketing can be discussed and dealt with, in order to facilitate the market chain.

Papa Andina's focus is not on a commodity but rather a series of innovation systems-focused methodologies. These methodological approaches shape not only Papa Andina activities but also thinking underlying learning and flexibility within the partnership itself. Papa Andina has built on strong pre-existing trust and local knowledge to develop what it considers a series of methodological international public goods. Partners and boundary partners have both adopted and adapted these approaches where appropriate, but have also integrated the underlying principles and thinking into their work. Papa Andina represents a strong, focused and flexible example of a broad partnership dealing with complex issues.

The CIP VITAA Partnership – Case Study 2

Context, Origin and Evolution of the Partnership

In 2001 the International Potato Centre (CIP) convened a meeting of agriculturalists, health experts and nutritionists to launch an initiative to tackle Vitamin A deficiency in sub-Saharan Africa. The Initiative was called VITAA – ‘Vitamin A for Africa’. The main goal of VITAA was to promote the increased production and consumption of orange-fleshed sweet potato (OFSP) as a way of combating Vitamin A deficiency in sub-Saharan Africa. As the focus of VITAA was on both production and consumption it was clear that a multidisciplinary, multi-level approach would be needed to develop a systemic approach to developing and promoting OFSP. VITAA, from its inception, was conceived of a loose network of organisations that would evolve and operate in the different contexts of the African countries in which it would operate. As such it provides an interesting case study of the CGIAR partnership with civil society organisations. **Table 2** below gives a taste of CIP-VITAA activities, beneficiaries and milestones.

Vitamin A deficiency is a serious problem in sub-Saharan Africa. It is a leading cause of childhood death resulting from increasing vulnerability to illness and disease by weakening the immune system. It is a particularly serious condition for the young, the elderly and lactating mothers. The prevailing strategy to deal with Vitamin A deficiency has been to supply capsules that contain mega-doses of Vitamin A (mainly to children). This intervention is effectively medically but is not very sustainable because it is expensive and has so far only been made available to a small proportion of those at risk. The rationale of VITAA is to provide sustainable, alternative sources of Vitamin A through diet. Several food groups, fruit, vegetables, meat and milk, are rich in Vitamin A and if consumed in sufficient quantities can significantly reduce the impact of Vitamin A deficiency. Many of these food crops are expensive, only seasonally available or are unpalatable to children. The sweet potato was identified as the food to provide Vitamin A in this context. It is already widely grown in East and southern Africa and it is highly productive and palatable.

The VITAA partnership includes more than 70 partner organisations representing expertise in health, nutrition and agriculture, including non-governmental organisations, community-based organisations, root crop regional research networks (PRAPACE and SARRNET) and private sector institutions. These institutions work together with the intention of broadening the impact and uptake of OFSP in the 10 member countries: South Africa, Zambia, Uganda, Tanzania, Kenya, Mozambique, Nigeria, Rwanda, Ghana and Ethiopia. Beneath the sub-Saharan Africa-wide network national VITAA networks function and their members include farmers, NGOs, CBOs, media, policy makers, local governments and nutrition, health and agricultural experts.

The OFSP was identified as the ideal type of sweet potato to develop and promote. OFSPs are particularly rich in beta-carotenes that are easily converted to Vitamin A in the body; they are productive, resilient and affordable. Consumers in Kenya, Uganda, Tanzania, Mozambique and South Africa have accepted around 10 varieties of moderately disease and virus resistant OFSP. Ex-ante impact assessments indicated that the widespread adoption and consumption of high beta-carotene cultivars could potentially benefit 50 million Africans under the age of six. Early field studies conducted by CIP in conjunction with the International Centre for Research on Women (ICRW) noted that OFSP was acceptable to consumers in terms of taste, appearance and texture. These are all important characteristics as they determine ways in which the sweet potato can be processed for consumption.

Table 2. Overview of CIP-VITAA activities (Indicative activities based on CIP published materials and field observation)

| CIP VITAA Project | | |
|---|---|--|
| Major thrusts | Related activities | Key implementing partners |
| Adaptive breeding, seed production and dissemination | Field assessments, acceptability studies, seed systems | NARS, Farmers, NGOs, CGIAR centre |
| Post-harvest, product development and commercialisation | Products, processing and handling, nutrition composition, micro-enterprise | NARS, Universities, NGOs, Private sector |
| Health and nutrition | Community and HH based action plans, growth monitoring, encouraging behavioral change | Nutrition and health care centres, Care givers, Socio-economists, Universities, ICRW |
| Nutrition education, communication outreach | Information systems and databases, public education, social marketing | Nutrition and health centres, Local communities, NGOs, NARS, Media, ICRW |
| Program monitoring and feedback mechanisms | Efficacy studies, HH surveys, ex ante case studies, monitoring and evaluation | Medical doctors, Universities, Nutrition centres, NARS, Farmers, |
| Linkages and alliances | Broaden membership, steering committee, inter-sectoral working groups | National teams and Regional Networks |

Objectives, Roles and Work Plans

The promising early research results led to representatives of the seven original VITAA partner countries to agree to promote OFSP varieties in each of the production zones where the more traditional white-fleshes varieties are currently grown. This work is mainly community-based and focused on women decision makers and it forms the focal point of the partnership we are looking at in this case study. Nutrition education and micro-enterprise development are further important components of this work. The partnership operates according to four overarching principles.

1. The OFSP is now acceptable to African consumers and therefore ready for full-scale development, and will also act as an entry point for other food-based strategies aimed at combating Vitamin A deficiency in sub-Saharan Africa.
2. VITAA varieties can empower local communities to help mothers and young children to prevent Vitamin A deficiency through their own production and increase their incomes through value addition.
3. VITAA provides a highly effective tool to address Vitamin A deficiency within rural communities. Particularly amongst children, pregnant women and lactating mothers.

4. Evidence exists that VITAA varieties may also help reduce the impact of anemia, measles and malaria.

These four principles shape VITAA's agenda, activities and milestones. Attention now turns to how VITAA's structure evolved, how activities developed and how milestones were reached. Given the enormous diversity and size of the VITAA partnership our fieldwork has focused on the relationship between CIP, Catholic Relief Services (CRS) (an international NGO) and the Tanzania Home Economics Association (TAHEA) in the Lake Zone of northern Tanzania.

Initial VITAA meetings were held in May 2001. CIP initiated VITAA and, importantly, Catholic Relief Services were involved from the beginning. The overall objectives of the CIP/CRS partnership which implements the program in Tanzania were as follows:

- Increase farming and subsistence consumption of OFSP;
- To distribute OFSP commercially;
- To encourage processing of the crop so as to encourage diversification of consumption alternatives.

The goal of the partnership then is to “to improve food security and cash income for the resource-poor households in the Lake Zone of Tanzania through increased sweet potato production”. The clarity of the original objectives and the fact CRS was involved from the beginning (in part due to CRS staff who had previously worked within the CGIAR System) was highlighted by several people within both CIP and CRS as an important step for the subsequent smooth running of that particular partnership.

There are clearly delineated roles within the partnership. CIP plays a clear coordinating role, indeed a CIP employee is responsible for the functioning of the entire partnership. In addition CIP is involved in assisting advocacy and promotion around OFSP. CIP also works closely with national agricultural research programs and research breeding institutes to develop appropriate varieties of OFSP. CIP takes an overall coordinating role in breeding activities. CRS sits on the steering committee and works with CIP to implement the VITAA initiative in Tanzania.

Activities other than research, plant breeding and evaluation of varieties tend to take place at a national level, and in Tanzania CRS plays an important role in coordinating and funding these activities. CRS works very closely with a key boundary partner, TAHEA. TAHEA is the national lead party in Tanzania. CRS and TAHEA work on regional advocacy, education and encouraging farmers to grow and work with the OFSP. CIP provides funding for major promotional and advocacy events such as the 'launch' of the vita in Tanzania held in April 2004. The Tanzanian NARS also plays a role as a boundary partner, provides resources, coordination and testing of potential cultivar varieties.

In addition, CRS (with TAHEA) is now thinking about developing distribution channels for vines and roots and how to develop processing and marketing activities.

Distributing vines and roots has proved particularly problematic. Only six villages produce surplus vines and issues with water supply mean that vines produced do not remain viable for long. There are also issues of vine material carrying viruses and disease and this in a further area where the NARS provides expertise in clearing vines for removal. A further impediment to vine production is access to adequate transport to move vines. This is a further area around which discussions are taking place between CRS, TAHEA and the NARS.

There are some ways in which CRS (and TAHEA) would now like to see roles evolve further. In particular, they would like to see CIP taking a greater role in coordinating

advocacy and scaling up activities (such as promoting distribution, processing and commercialisation). There is a clear perception that Tanzania would benefit from learning from Uganda and Kenya in particular about seed storage techniques, processing options, marketing and distribution. Coordination around these issues seems to be somewhat lacking and hope was expressed both within CRS and TAHEA that VITAA could step in to enable that coordination. This probably involves a clearer understanding of who should be responsible for regional coordination.

There is clear evidence of evolution in the relationship and activities between CRS and the boundary partner, TAHEA. TAHEA benefits in some small way from resource flows from CRS (a small portion of the TAHEA coordinators' time is paid for by CRS) but more importantly the relationship allows CRS and TAHEA to think more carefully about marketing, small-scale value addition and distribution of both products and vines.

VITAA partners such as CRS and TAHEA are happy to explore new avenues and diversify their activities and goals regarding the promotion OFSP but they want this to happen in the context of CIP in turn playing an interactive role. The image here is not one of a network of activities gradually extending outwards from a static, central, coordinating point but of the need for a more interactive learning network. There was a clear sense that CIP could play a deeper, more involved coordinating role in VITAA, particularly as relationships between partners and boundary partners deepen and evolve to deal with increasingly complex sets of issues.

Although roles are not clearly laid out in an overall workplan or document, relations have been good and a division of labor which to date has suited all parties has evolved. An annual meeting involving all regional and national level partners in VITAA is important is setting targets for each country and for evaluating what has been achieved in each context. To some extent plans are made for the coming year at these meetings although there is much latitude for national partners to develop plans and amend work programs.

CRS and TAHEA play a very active, and tightly interrelated, part in VITAA within Northern Tanzania. CRS takes more of a coordinating role around strategising, seeking funding and marketing, whilst TAHEA play a very active role within communities and with community groups around advocacy, education, value-addition and marketing. Whilst activities may evolve slightly there is a clear delineation between the roles, and indeed capabilities, of the two partners. Periodic, often monthly, meetings and good working relationships lubricate the working relationship. From the perspective of community-level work CIP seems a distant partner, focused very much on the region. The extent and expanse of roles seems well delineated. CIP focuses on the region, CRS on the state and the region, and TAHEA on the community and household. Within this broad characterisation work plans remain almost completely fluid. There is a sense of shared learning within the state, of an ability to try out new approaches and test new activities, of fluidity and reflexivity.

Outcomes and the future

The reason for the work being organised this way is because VITAA is a fairly loose consortium based initiative rather than a tightly defined partnership arrangement. This seems to work well as it allows enough regional and local autonomy for partners to put their own ideas and initiatives into action (as we have seen above). This fairly *laissez faire* approach to the functioning of the partnership seems to work well in this case because the technology involved is very simple. OFSP varieties can be centrally tested and certified for release then they can be left in the hands of

partners. Issues that arise, besides the continual problems with producing and transporting vines, tend to revolve around marketing and value-addition. The technology itself remains fairly static within VITAA. Indeed, there is a strong sense that the main role of CIP was that of a propellant, to set VITAA in motion and then play a fairly minimal, periodic coordinating role. As described above, there is the sense that as the complexity of the partnership increases and as issues to be dealt with multiplies in complexity there may be a need for a new, more proactive role for CIP within VITAA. Nevertheless, there are signs of impact, not least of which in terms of increased capacity and stronger working relationships between CRS and TAHEA in Tanzania. At the moment only 1-2 per cent of sweet potatoes grown in Northern Tanzania are OFSP, only a handful of communities are involved. There is little doubt, however, that local structures have evolved to facilitate the growth of OFSP use, and capacity to do so has been built.

The CIAT CLAYUCA Partnership – Case Study 3

Context, Origin and Evolution of the Partnership

The Latin American and Caribbean Consortium to Support Cassava Research and Development (CLAYUCA) is a consortium operating from its base at the International Centre for Tropical Agriculture (CIAT) in Cali, Colombia. It was formed in 1999 but is based on over 20 years work on more integrated approaches to Cassava research at CIAT. Cassava research at CIAT can be broken down into three periods:

- 1) The 1980s, where an innovation process initiated by the public sector is analysed. This period of the innovation process is called the Integrated Cassava Research and Development (ICRD) Period.
- 2) The 1990s where public support was limited to a minimum, and which has been called the Latent Period.
- 3) 2000 to date, where a public-private partnership innovation process started as a response to a real demand of the private sector, and has been called the CLAYUCA Period (Gottret and Ospina, 2004)

The major significance of CLAYUCA is that it is based on strategic alliances and partnerships with farmers' groups and public and private sectors. It is a regional consortium, nevertheless the depth and breadth of partners in Colombia is greater than in other countries. It has 11 member countries. Some countries have a number of partners; some such as Ghana have just one.

Cassava is an important staple and commercial crop in Latin America. It has high tolerance to seasonal low rainfall, high temperatures and to low and intermediate fertile soil. During the 1970s and 1980s small scale farmers of the North Coast of Colombia obtained 40 per cent of their cropping income by marketing cassava (Janssen, 1986). The crop represented an important food source for the farmers and their families as well as an employment generator, creating about 7.3 million wage days per year (Gottret and Ospina, 2004). However, cassava roots deteriorate quickly once harvested and this constitutes difficulties for marketing the crop. A combination of very difficult market conditions and the collapse of state support for farmer support programs meant that cassava farmers experienced very difficult conditions during the late 1970s and early 1980s. Consequently, although CIAT's research program was delivering good research results and promised increased cassava yields farmers had no special interest in adopting new cassava production technology to raise efficiency or productivity. Moreover, the targets of research with CIAT - increased yield - ignored other factors that were priorities for farmers. With an increasing concentration of Latin America's population in urban centres, preferences shifted from cassava as a basic dietary staple to foodstuffs easier to transport, store and exchange. Thus, increasing cassava use in Latin America was dependent on developing new products that would use cassava in its fresh state or transform it to a storable or higher value product, and in developing new markets for those products.

During the 1980s CIAT explored various marketing and processing options for cassava. The most promising options at that time seemed to be the use of dried cassava chips as an energy component in animal feed concentrates. After conducting various economic studies, CIAT implemented an integrated rural development program, which worked on cassava production, processing and market development at the same time. The emphasis on processing led to the establishment of farmer co-operative owned cassava drying plants that sold dried cassava to animal feed factories. Colombian farmers adopted the new technology quickly and by 1991 about 150 cassava drying plants were operating in the North Coast region of the

country. The Economics Section of CIAT's Cassava Program, estimated that, from 1984-1991, the cassava sector in northern Colombia benefited by almost US\$22 million (Gottret and Henry, 1994). These benefits resulted from integrating research to improve cassava crop management, processing, marketing, and consumer preferences in the framework of cassava-based development projects. Economic liberalisation constrained the sector, and many processing plants closed over time and the sector contracted.

Nevertheless many drying plants did survive and those involved in cassava work at CIAT argue that the investments have had lasting positive impacts on farmer livelihoods and income. Furthermore, whilst cheap maize made cassava for animal feed uncompetitive at some point, the emergence of bio-fuels as a focus for economic activity has recently pushed the price of maize up very significantly and cassava is becoming more competitive once again.

One way of looking at developments in this era is that an alternative to linear model diffusion of science was emerging. Instead of science leading to technology to commercial success what was becoming apparent was that a model in which science had a following rather than leading role met with success. This model, whereby producers in the private sector decide on where technological improvements are needed, underpins CLAYUCA thinking. Often research and development work is focused on post harvest technology and machinery but there is plenty of evidence that this has positive demand for the uptake of improved plant varieties and more upstream science.

CLAYUCA was initiated in 1999. The CLAYUCA experiment was spurred by several changes in local conditions in Colombia. First, the chicken feed producer association (which subsequently came under different leadership and pulled out of the consortium) foresaw that dependence on maize as food crop for chickens might be a threat to the poultry industry. Thus, in its inception period one of the main promoters of CLAYUCA was the poultry association.

The public sector also renewed its interest in cassava. The Ministry of Agriculture and Rural Development (MADR) supported the initiative to form strategic alliances with the private sector and with the participation of farmer groups. The MADR was important in lending support as a facilitator and co-founder of CLAYUCA and Colombia became the original home to the initiative. An interview with a Ministry of Agriculture official who interacts with CLAYUCA underscored the support that CLAYUCA enjoys from this source.

Since the early 2000s, the Ministry has favored working in partnerships and has supported CLAYUCA in financial and political terms. The Ministry has provided substantial financial resources to Cassava work. In the past few years it has given US\$2 million to cassava related activities. This money has been given to CLAYUCA. CLAYUCA has spent the money in partnership with Corpoica, the national agricultural institute. But it is significant that the money was given to CLAYUCA to administer; the Ministry wanted to support a partnership approach. It was clear that CIAT would not have been given this resource without CLAYUCA, as whilst the Ministry underlines the importance of collaborating with international research institutions, the agenda should be set in country. Through its more complex partnership structure, CLAYUCA was seen to be rooted in national partnerships in a way that CIAT was seen not to be.

Objectives, Roles and Work Plans

Within CIAT, the termination of the integrated cassava program had left a gap. Changes with CIAT, reacting to reduced core funding and increased competition for donor funds meant that the centre began a shift from core programs to research projects with scientists and staff being assigned to these projects. CIAT was keen to establish new strategic relationships and proposed to cassava-producing countries in the region the formation of the CLAYUCA consortium which was established in April 1999 (Table 3).

Table 3. Overview of CLAYUCA activities

| CLAYUCA Project | | |
|---|--|---|
| Major thrusts | Related activities | Key implementing partners |
| Transfer and exchange of technologies, information and knowledge sharing among public and private sector institutions and farmer groups | Training, consultancies, fact finding missions, annual meetings | Private and public sector members, Farmers, NGOs, CGIAR centre, Ministry of Agriculture |
| Post-harvest, product development and commercialisation | Products, processing and handling, nutrition composition, micro-enterprise | NARS, Universities, NGOs, Private sector |
| Research and development in cassava | Plant breeding and advice on varieties | CGIAR centre and NARS |
| Strengthening capacity amongst farmers and producers | Training, meetings with farmer groups and producer associations | NARS, Co-operative organisations, Ministry of Agriculture |
| Technical and commercial monitoring and feedback mechanisms | Efficacy studies, ex ante case studies, monitoring and evaluation of technical and commercial development and trends | NARS, regional and international partners |
| Linkages and alliances | Broaden membership, steering committee, inter-sectoral working groups | National teams and Regional Networks |

Indicative activities based on CLAYUCA published materials and field observation

CIAT has a long history of working with Corpoica (in its different historical forms) and it was a natural partner for working with farmers in Colombia. Corpoica has a national reach which was important to CLAYUCA. It was also interested in working on new methodologies for engaging farmers in more participative and integrated research which fitted well with the CLAYUCA approach. For Corpoica, CLAYUCA could provide trusted scientific advice, additional resources (through contacts with international funding bodies), contacts with other bodies in Latin America and a more strategic approach to the development of cassava related activities. It also seems to be the case that CLAYUCA rather than Corpoica were the favored partners of the Ministry of Agriculture. Thus funding from the Ministry for Cassava work has gone to CLAYUCA rather than directly to Corpoica. Because of the historical ties, there was little need for formality in approaching this partnership. Both parties were familiar with each other, had worked with each before and there was sufficient trust to proceed without formalities

The role of each strategic partner is to define CLAYUCA's workplan and diffuse knowledge and technology. The consortium has members from eight countries. Each country nominates one representative to the Executive Board. The Board meets annually and makes decisions about priorities and work plans for the coming year. Most of the representatives on the Board are from the private sector. The idea is that members in each country work together to define the agenda and then the country representative takes that country's agenda to the Board which makes decisions about work plans. So Corpoica would work with other Colombian members to define the country workplan and then in the context of the annual meeting would formally agree that workplan for the coming year.

In terms of its model CLAYUCA follows the example of another CIAT inspired consortium, FLAR⁵, a rice consortium. There are some important differences however. FLAR is more 'institutional' – it has one partner in each country and that partner is an institution (producer association or similar). There are very few producer associations in cassava because most producers are poor and small farmers. Because farmers are mostly very small-scale, within Colombia co-operatives and farmers organisations are a main point of contact for CLAYUCA and Corpoica. The partnership works with co-operatives who are members or who are members of organisations that are CLAYUCA members. It also maintains close links with other organisations that are not members but are vital to the interests of those who are members. One example is the relationship with Confecampo, a large association of co-operatives, which has lobbying power and serves to diffuse information about CLAYUCA.

Outcomes

CLAYUCA and Corpoica work together to devise and deliver to farmers participatory training in post harvest techniques and work with farmers on participatory variety improvement research. CIAT scientists are engaged in post-harvest technical work and to date most of the plant breeding has been carried out by Corpoica.

During fieldwork visits were made to a farmer's organisation that had close contact with CLAYUCA and Corpoica and to a cooperative which had not had these links. It was apparent that the organisation that had received training and advice through CLAYUCA was better informed about technical options. Perhaps more important than this however, they were organised and the capacity of the organisation to act on behalf of members in commercial and lobbying arenas was put down in part to active involvement in CLAYUCA. There was evidence then that as a result of contact with CLAYUCA and Corpoica farmers were better able to voice and defend their interests. This was viewed as particularly important in relation to relatively new debates about bio-ethanol and how to produce it. The government currently favors large-scale production facilities with farmers supplying cassava but having no direct role in the production of ethanol itself. Farmers who had received training from CLAYUCA favored smaller production plants that would allow for multiple uses of the whole cassava plant including foliage for cattle feed and processed waste for fertiliser. As a result of better organisation and armed with better technical information and understanding, farmers felt better able to make their case to the Ministry of Agriculture.

⁵ FLAR is bigger and more established. It is clearly a PPP rather than CSO-Centre collaboration. It has 14 member countries and a sliding scale of member fees. The scale is according to the amount of rice grown in each country. The minimum fee is £15,000 and the maximum paid by any one member is £135,000 which is contributed by Brazil. The total amount raised in member dues is £700,000.

The IRRI PETRRA partnership – Case Study 4

Context, Origin and Evolution of the Partnership

Partly in response to a perceived downturn in rice research in Bangladesh DfID funded Poverty Elimination through Rice Research Assistance (PETRRA). PETRRA began in 1999 and ended in 2004. The project was implemented by the International Rice Research Institute (IRRI) through its Bangladesh country office with the Bangladesh Rice Research Institute (BRRI) as the key national partner. The guiding rationale for all research supported was that improving rice productivity was a valid means to improve livelihoods in Bangladesh, leading to enhanced food security, improved incomes and household sustainability and resilience. Within this rationale was an acknowledgement that improving rice yields, even in a country as heavily dependent on rice as Bangladesh, may not in itself be a pathway out of poverty but nevertheless focusing on rice production could act as an entry point into the poorest households. PETRRA was centred around a Project Management Unit and the main part of its research activities comprised a portfolio of sub-projects commissioned through a competitive grant scheme. These sub-projects were broadly dispersed across Bangladesh and in all 45 sub-projects were funded during the life of the project. The array of sub-projects has made direct contributions to improved livelihoods and the experience of working with PETRRA has clearly shaped institutional learning and practice for partners.

The Poverty Elimination through Rice Research Assistance approved, managed and supported 45 sub-projects in Bangladesh between 1999 and 2004. Managed by IRRI, with BRRI as key national partner, PETRRA was funded to the tune of £9.5mn (around \$15mn). Three broad research areas were focused on:

- Pro-poor policy (6 projects)
- Technologies (19 projects)
- Uptake and extension (20 projects)

Right from PETRRA's conception and inception a clear set of core values were identified as guiding principles for all activities (see **Box 2**). This was a fundamental step in light of the increasing complexity of managing and support so many sub-projects and liaising with so many partners. A series of log-frames (a series developed as the aims and potential impacts of the project developed) were crucial in planning activities, identifying milestones and defining objectives and suitable verifiable indicators.

Box 2 PETRRA's core values

- **Participation** of the poor during needs assessment, technology validation and dissemination
- **Poor** households with 3-8 months' food security from own rice production, with some flexibility depending on region, actor and technology
- **Partnerships** for better access to the poor and synergy of skills
- **Gender** issues addressed in all project phases
- **Demand-led** research based on stakeholder analysis

PETRRA's research, and the research it supported, was based on the premise that enhancing rice productivity is an appropriate means to initiate improvements in livelihoods in the context of Bangladesh. This premises a 'virtuous circle' whereby rice productivity enhances food security and ultimately an improvement in livelihoods. The potential limits of this pathway out of poverty, that even in a heavily rice-dependent country such as Bangladesh improving rice production and rice-based

agriculture may not be enough to enhance livelihoods, were acknowledged through PETRRA. Poverty and pathways out of poverty are multi-causal and multi-level. Nevertheless, PETRRA used rice as a means to enter agricultural systems and livelihoods and seek to lever a difference. Allied to acknowledging the complexity of agriculture and livelihoods was a relatively tight focus on the target group to be assisted; households who have an annual rice provisioning ability of 3-8 months – the ‘moderate poor’ and ‘tomorrow’s poor’. **Box 3** presents an example of one of the 45 poverty-focused research projects.

PETRRA aims and rationale, then, were conceived around a mix of acknowledging complexity and diversity and circumscribing and tightly defining the goals, aims and potential outcomes of the project and its allied sub-projects. This conceptualisation led to a focus on five key outputs:

- 1) New production technologies for poor farmers
- 2) Improved capacity for demand-led research in the national agricultural research system
- 3) Greater recognition and broader discussion of key policy issues
- 4) Improved methods for the effective uptake of new technologies
- 5) Piloting an effective, competitive rice research management scheme

These outputs underline three key issues and linkages. First, it underlined the strong relationship between science and uptake. Second it promoted a poverty focus that demanded a strong demand-led impulse, people, not technology, would drive activities and research. Third, and perhaps most importantly there was an acknowledgement that these outputs must rely on effective and strong partnerships, and eventually networks. Hence, the focus on capacity strengthening, the development of participatory skills and techniques and poverty analysis alongside the ‘core business’ of supporting rice research in Bangladesh.

Objectives, Roles and Work plans

The core focus of PETRRA was resource-poor households. In order to reach distant, decentralised and often marginalised households and communities PETRRA focused on best practices that encouraged engagement such as participation, partnership, critique and openness, a poverty and gender focus and environmental awareness. The project was fundamentally committed to decentralisation and the associated need to build broadly-based capacity. The primary mechanism to achieve an appropriate resource-poor focus was through a competitive research approach. This approach did not favor particular institutions or organisations but rather encouraged all to participate through a series of research calls. This competitive model encouraged institutions to buy in to PETRRA’s research principles in that it rewarded practices that reinforced PETRRA’s core principles. Furthermore it encouraged the best researchers to engage with research demand.

Focusing on people and structures and in terms of both demand and enabling activities necessitated a commitment to the generation of strong and flexible facilitating networks. Initially this focused on priority issues, but expanded to focus on processes (e.g. an ‘uptake forum’) and regional priorities (e.g. ‘regional knowledge networks’). Over time it became apparent that networks as an organising principle and a facilitating reality would become increasingly important, and to an extent increasingly complex. In many respects, the concept of a network became the defining feature of PETRRA.

Box 3 Sub-project 19 01: Rice cum duck farming

Rice-duck farming is a low-cost, organic farming method. While common across other regions of South and Southeast Asia the approach had never been adopted in Bangladesh prior to 2001 when a PETRRA-funded research and extension project (led by BRRI and FIVDB) began to promote it.

With rice-duck farming ducks are allowed to forage in the rice paddy for selected periods during the growing cycle. During foraging ducks provide fertiliser, remove weeds, eat pests, and soften the soil releasing trapped nutrients. This removes any need for herbicides, pesticides and fertilisers and husbanding the ducks provides additional sources of nutrition and income. Research showed that rice yields increased by an average of 20 per cent, duck meat and eggs significantly increased protein intake, and surplus ducks and eggs were sold at market for cash.

This initial research was supplemented by varied extension activities. An initial hurdle to be overcome was the reluctance of farmers to accept that allowing ducks to forage would not damage paddies. Other technical issues to overcome included developing mechanisms to provide sufficient numbers of ducklings through setting up village hatcheries, and providing effective vaccines and medicines for the ducks using the support of existing government supply systems.

Over three years of the project, rice-duck farms were established in over 40 villages, as individual units and latterly on a community basis. A complex set of institutional partners worked together to promote and develop the sub-project, including lead organisations BRRI and FIVDB (who provide technical support and establish links with stakeholders), partners organisation BDS, hatchery owners, farmers, other NGOs (who have subsequently initiated new rice-duck plots in other communities), several government agencies (who provided seeds, ducklings, vaccines and other services) and the private sector (who provide vaccinations).

PETRRA was started with a clear plan and guiding principles in place. The sheer evolving complexity of the project, encompassing so many partners and research activities meant that there were considerable initial transaction costs such that the project was initially considered “messy”. There was, however, a strong sense that within this complexity and ‘chaos’ was the beginnings of a fruitful and real innovation system. Flexibility was an inherent part of the system. For example, PETRRA purpose level statements changed three times during the life of the project. Initially, it was sustainably enhancing the productive potential of rice-based farming systems for improved livelihoods, especially resource-poor farmers. On discovering difficulties in measuring the productive *potential* of rice-based farming systems for resource-poor farmers there was a shift in emphasis in the 2nd phase to sustainably increasing the productivity of rice-based farming systems for resource-poor farmers. As PETRRA evolved beyond this objective two additional purposes were added to the PETRRA logframe, relating to the use of research findings by Government and NGOs, and the adoption of key elements of the PETRRA model by other research funding bodies. Inherent within the PETRRA modus operandi was an acknowledgement of not only the need to set clear goals, objectives and problem statements but also that in a five-year, complex project these goals and objectives may change. These changes were internalised within project logframes. This proved a useful tool in maintaining a coherency of structure and internal communication regarding what is to be done, and how it is to be achieved.

PETRRA sought to develop a monitoring and evaluation system that was simple, relatively low cost and could be administered flexibly. Logical frameworks were developed at the project and sub-project levels as the basis for the monitoring and

evaluation system. Monitoring and Evaluation systems were developed in participatory and adaptive ways with sub-project partners.

Outcomes

In terms of sheer numbers PETRRA has had considerable direct and indirect impacts. 551 villages, 107 *upazilas* and 38 districts participated in the various sub-projects, in the 2004 *Boro* season this amounted to 12 983 participating farmers. There were 48 participating partners, ranging from Bangladeshi government departments, international and national-level NGOs, CBOs and community-based organisations. Ten technologies regarded as 'significant' were developed, identified and adapted, insights into uptake and development pathways were developed and opportunities for policymakers to engage with critical agricultural R&D policy issues were afforded. Out of five calls for concept notes 391 submissions were received and in total over 700 scientists have been mobilised.

Insights from PETRRA have played a role in IRRI's institutional change. IRRI has been involved in a long-term process of expanding its base of partners and the PETRRA experience has played a role in firstly recognising the role of partnerships, secondly understanding how knowledge can best be shared between IRRI and its partners and thirdly how networks of partners can be encouraged to work in a systemic innovative way. PETRRA has, to quote the Director General of IRRI, "penetrated institutional thinking at a deep level". Indeed, the PETRRA experience played a key part in shaping thinking behind IRRI's current strategic plan. The notion of institutional learning, what has been learned, and what needs to be learned – a key underpinning notion of PETRRA – is seen as increasingly important as IRRI looks towards its relationships with partners. More concretely, a recent concept note on the development of 'abiotic stress tolerant rice' for the Bill and Melinda Gates Foundation was structured around the PETRRA model of "plan, milestones and pathways to reach farmers". Further projects have relied on IRRI partnerships built up during PETRRA including EU funded projects and Bangladesh-based projects on water use and rice production.

Key elements of PETRRA's funding model have been adopted by other donor agencies, including the EU. The European Union has adopted PETRRA's 'farmer centric' model of agricultural research and has allocated €10mn under its Food Security Program for NGOs working with small and medium-scale farmers to define problems and improve seed systems in Bangladesh. A competitive call for proposals has been made and four international and national NGOs have been selected to scale up PETRRA research findings through a similar value-based approach. These selected NGOs are Action Aid, CARE-Bangladesh, ITDG (now Practical Action) and Proshika. Several of these NGOs gained experience in agricultural R&D partnerships through work on earlier PETRRA sub-projects. In addition, with DfID support, another key PETRRA partner, Agricultural Research Initiative (ARI), is planning to replicate learning principally from PETRRA. There are plans to introduce PETRRA learning in the entire agricultural research sector in Bangladesh. In the government sector, the Bangladesh Rice Research Institute introduced farmers' participatory evaluation processes to assess the effect of USG application in *Boro* rice production and rice-fish culture. Most regional stations of BRRI have begun to work in partnership with relevant government and NGOs for technology dissemination. Adaptive Research Division of BRRI used elements of PETRRA value-based approach to validate BRRI developed rice technologies in different locations.

PETRRA provided extensive support at a variety of levels to its partners and the PMU was especially active in drawing together partners from across sub-projects.

Most partners showed positive responses to the adoption of pro-poor demand-led competitive research systems. Activities to encourage participatory approaches included the bidding process, participation in stakeholder analysis, identifying demand-led research systems, and training. It is instructive that many of the participatory approaches and approaches to adaptive research have been replicated in subsequent projects within IRRI and within PETRRA main and boundary partners. That these methodological approaches have been taken up and adapted by such a wide range of institutions is testament to the strength of the approaches and the adaptability and learning of the partner institutions.

The IWMI MUS Partnership – Case Study 5

Context, Origin and Evolution of the Partnership

The Multiple Use Systems (MUS) project is a partnership of institutions from the productive and domestic water sectors, including government departments, research institutions, NGOs, CBOs and other members of civil society. The project is coordinated by the International Water Management Institute (IWMI). The MUS project is focused on developing methodologies, tools and guidelines for multiple-use water services delivery as an effective way to use water for poverty alleviation, agricultural production and gender equity. Activities are currently underway in rural and peri-urban areas of five major river basins and eight countries in Africa, Asia and Latin America. Basins focused on are the Mekong Basin, Andean Basin, Limpopo Basin, Nile Basin and Indus-Gangetic Basin. The project works through learning alliances to develop “locally-specific innovations and build capacity for scaling up”. The MUS project is part of the Challenge Program on Water and Food.

The Multiple Use System project began in January 2004 via an inception workshop held in Pretoria, South Africa. The project was instigated by the IWMI in response to a call for proposals from the Challenge Program on Water and Food. The MUS project has two key objectives: the generation and synthesis of new knowledge and building capacity for scaling up:

- *Generation and Synthesis of New Knowledge:* To generate a knowledge base and synthesise the knowledge into innovative models, guidelines, and tools for rural and peri-urban water supply systems. The purpose is to fulfil domestic and productive needs in ways that are sustainable and inexpensive including methodologies to support water users associations. The objective is to have quantifiable positive impacts on food security, income, work load, health and well being, in particular of women and children, and weakened persons with HIV/AIDS and youth-headed households.
- *Capacity building for scaling up:* To build the capacity of project partners and to engage, inform, prepare and build the capacity of other professionals and policy makers from the domestic and productive water sectors in NGOs, government, financing institutions, private sector, and development organisations. The objective is to jointly promote a 100-fold increase in implementation of multiple-use water supply systems after this project (MUS website).

The focus of the MUS project is on seeking pathways to the more effective use of small-scale water supplies. The bulk of the work is on generating and testing tools for multiple use systems that are sustainable, locally-contextualised and affordable for the poor. These tools will form the basis for an ambitious 100-fold up scaling of the approaches within the respective river basins. The envisaged generation of tools to promote more effective multiple use systems (see **box 4**) has several aims such as to improve poor people’s food security and health, to reduce unpaid workloads, to alleviate poverty and to enhance gender equity. The project is organised as a ‘learning alliance’ (see **box 5**), a relatively loose affiliation of partners and boundary partners spread throughout the six river basins. This affiliation is administered by IWMI, whose role appears to be to coordinate learning between river basins. The responsibility of coordination in each basin falls to key implementing partners, universities, and large – mainly international – NGOs. Our research focused on work in the Mekong river basin where the main implementing partner is a university, Khon Kaen University in northeastern Thailand.

Objectives, Roles and Work plans

IWMI instigated the development of the proposal that led to the MUS project. It identified the 'key national partners' in each Basin, primarily based on previous working relationships. In the majority of cases these partners had no experience working with each other. In essence IWMI would act as a point of articulation between the national partners. Viewed in terms of knowledge flows the partnership structure could be seen as a series of spokes reaching out from the hub of IWMI rather than a more connected spiders web where knowledge flowed from one partner and one region to another.

Box 4 Multiple Use Systems and the MUS Project

Multiple Use Systems focus on the ways in which water can be effectively managed for consumption, production and other uses. In addition, multiple-use water supply systems often distribute water from multiple sources including canals, springs and streams in hills, pumped groundwater, water harvested from roofs and catchments, water from formal irrigation systems, and water from supply services, including tap water and water brought by tankers to the end users. Even though their qualities may be different, these sources are managed as parts of the same 'system'. This type of multiple source system is very much in evidence around Khon Kaen where communities typically rely on seasonally varying quantities of rainwater, irrigation water from rice paddies and piped water. Given the diversity of livelihoods, even in neighboring households, large differences in water use is apparent between individuals and this too is a further complicating element that requires attention. There is a complex of diversity of use, supply and management that needs to be dealt with.

In their inception report for the MUS Project De Vries et al. (2005:6) define a Multiple Use System as "the sum of the institutions, services, resources, and infrastructure that allow communities to effectively and inclusively manage their water resources and the domestic and productive uses of water. For interventions with respect to infrastructure and resources, our focus will be on communities, while for interventions in water services and institutions, our focus will be on the water service providers at a district level. Defined in this manner, a multiple use system is one particular form of integrated water resources management."

For households and communities a multiple use system should mean more and better quality water and arrangements to secure it. This potentially has far-reaching consequences for livelihoods, household income, land and water productivity and gender equity.

If the goal of the MUS Project is to massively scale up Multiple Use Systems key questions become apparent:

- (a) What generic lessons can we learn from existing full multiple-use systems?;
- (b) Whether de facto, but inefficient, multiple-use systems, can be upgraded to full multiple-use systems;
- (c) If so, how?
- (d) If not, how can new multiple-use systems be designed and implemented?

These questions lie at the heart of the MUS Project, and of activities observed in north Thailand.

Each strategic partner coordinates partnerships and activities with up to 10 'associated partners' within the various river basins. The key strategic partner in the

Mekong Basin is Khon Kaen University. The University has historically been an agricultural university (although it has more recently diversified considerably) and has a tradition of applied research in northeastern Thailand. In the case of the Mekong Basin Khon Kaen University has built on pre-existing relationships in the region primarily with regional government and CBOs and this appears to be the case to a greater or lesser extent in each of the other basins. IWMI appeared happy for there to be relative autonomy and devolution within river basins. There appear to be both strengths and weaknesses to this devolved approach. Autonomy provides flexibility in terms of working relationships within river basins. In the Mekong all activities were planned and organised within local partnerships and IWMI played little or no role. The downside to this approach is that there were little or no natural flows of knowledge between river basins. This seems to run against one of the stated aims of the MUS project in sharing best practice as widely as possible.

Box 5 Learning Alliances

A basic definition of a Learning Alliance is as a series of linked platforms, existing at different institutional levels (national, district, community, for example) created with the aim of bringing together a range of stakeholders interested in innovation and the creation of new knowledge in an area of common interest. The stakeholders involved should have complementary capabilities which, when combined, will allow the new knowledge created in the innovation process to be brought to scale. Some of the key capabilities required are in implementation, regulation, policy and legislation, research and learning, documentation and dissemination, and capacity building itself.

Learning alliances require approaches to overcome barriers to interaction and communication within and between the stakeholder platforms. They aim to enable a shared learning process in which barriers to horizontal and vertical information sharing are broken down. Learning alliances, by involving key stakeholders at all levels in the process of knowledge creation, aim to ensure that innovation takes place within a framework of local and national conditions and norms that ensure that what is produced is relevant and appropriate.

Within the notion of a Learning Alliance is the implicit notion that processes of scaling up are important. The horizontal component of Learning Alliances is primarily about finding ways to broaden networks and share knowledge widely in order to allow knowledge to flow and become widely utilized. Scaling-up, then is understood to include not only the widespread replication of an innovation but also (and critically) its quality and sustainability. Rapid replication, for example of borehole and hand-pump installation, is of no use if the systems and services replicated are not sustainable in the long term. Learning Alliances aim to address the critical issue of sustainability by looking not only at the innovation itself but also at the enabling environment necessary to maintain and sustain it.

Learning Alliances in sum must look at the whole system (social, economic, environmental) in which an innovation is to operate. This systemic approach relies on local knowledge in order to understand local contexts. This does, however, place obvious limits on the extent or degree to which up-scaling can occur. It may be possible to scale up within an individual river basin for example, but rather more difficult to promote in another river basin where contexts may radically differ. Mapping and analysing this spatial trade off is therefore of primary importance when one considers the effective management of multiple site and context projects such as the MUS project.

There was a project inception workshop to introduce partners, develop a common framework for thinking about and operationalising the project, and to determine preliminary work plans. Since then there has been co-operative work on developing annual work plans. The majority of project resources appear to have been used in providing operational support within IWMI and facilitating partnership activities in situ. There seem to be little or no resources for encouraging inter-basin learning. For example it does not seem possible for practitioners working in one basin to easily visit and learn from practices in another. The notion of a learning alliance seems strong in a vertical sense from key strategic partners to boundary partners within river basins but weak in a horizontal sense between strategic partners via IWMI. It seems that a much larger budget, or portion of the budget, ought to have been allocated to supporting inter-basin and inter-project learning. Indeed, many of the inter-basin learning activities – at least in the case of the Mekong work – were taking place prior to the existence of the MUS project. The project appears to have facilitated these activities to a certain extent but does not seem to have engaged with in-depth organisational learning of its own.

Notwithstanding these concerns the activities that have been supported in the Mekong appear very successful. The Khon Kaen University staff involved in the project have longstanding working relationships in the basin and these have been strengthened. Much talk revolved around the notion of “social capital”, how it could be built and its role in promoting learning and reflection. The main boundary partners in the Mekong are known as ‘local wisdom network’s, these are affiliations of farmers and natural resource managers who have collectively organised learning activities of their own. Of the very many groups, numbering in the dozens, affiliated to the MUS project via the university some are very strong, having built learning centres, made use of web resources and building on strong links to regional and even national government in deliberating on policy issues. These networks have organised themselves as autonomous learning alliances of their own; indeed leaders of these networks were presenting their take on organisational learning to local businessmen whilst fieldwork was taking place. Local wisdom networks also tap into the prevailing notion of building self sufficiency at a range of levels, local, regional and national, that has been promoted by the King of Thailand adopted by government. This to a certain extent is happy coincidence as it provides a space in which MUS operational approaches can clearly flourish, but also has strategic implications as it potentially allows learning around MUS practices to feed directly back into state policy through the conduit of local wisdom network leaders. The result of this is that the demanding goal of scaling up one 100 fold does not seem entirely unrealistic in the Thai context. It is, however, very difficult to disaggregate these successes from the uniqueness of the local organisational and governance context and the inputs of the broader MUS project. Indeed it was apparent there was some tension between reporting on what was taking place in Thailand what was taking place elsewhere. Thai partners felt their experiences were not taken entirely seriously when they reported back to MUS partners based in other basins.

Outcomes

These issues of attribution and disaggregation strike at the heart of the difficulties in how to assess the impacts of projects that focus on shared learning activities. It is extremely difficult to unpick the impact of learning and facilitation from the pre-existing background noise of knowledge flows, learning and experimentation. In Khon Kaen it is clear that the success of MUS Project activities owes an enormous amount to the pre-existing decade-long relationships that exist between the university, layers of government and local wisdom networks. On top of that the overarching philosophy and values of the MUS Project coincided almost directly with national and associated

partners' own values. This can perhaps be partly attributed to a sound choice of partner by IWMI but it does make it difficult to fully assess the impact of the broader project.

The project can be deemed a success in the Mekong, it is rather more difficult to assess the success or failure of the project as a learning alliance of its own however. There were several complaints from within the Mekong that learning was not happening, that there was little interest in learning from their own experiences, and that not enough resources had been allocated to sharing inter-basin experiences. These may well be valid issues, although difficult to carefully assess given the nature of the fieldwork undertaken. What is clear however is the difficulty in learning across such broad contexts, the difficulty of attributing impacts in such contexts, and the difficulty in learning across local and increasingly global spatial scales.

ICRISAT and 'Participatory Experimentation' – Case Study 6*Context, Origin and Evolution of the Partnership*

ICRISAT ran the DfID-funded project entitled 'Will women farmers invest in improving their soil fertility management? Participatory experimentation in a risky environment' between May 1999 and March 2002. This project built on previous Rockefeller-funded legume research. The goal of the project was to develop methodologies to link farmer-led participatory research with systems modeling through case studies focused on improving the welfare of women farmers. The project had four aims: i) To better characterise the crop management investment options and risks facing primarily poor, female headed households in drought prone environments; ii) To improve the ability of crop scientists, NGO workers and extension officers to facilitate crop management experimentation by women farmers; iii) To define management options with poor, female headed households; iv) To provide guidelines for integrating farmer assessment of technology options into national-level research and extension programs. Capacity building – of farmers, researchers, partners and institutions – was an explicit activity in seeking to achieve these goals.

The rationale for the project lay in the identification of the poorest and most vulnerable rural households in sub-Saharan Africa as situated in semi-arid areas and headed by women. Research has shown that household yields in semi-arid areas consistently fail to achieve the yields obtained by researchers in research station and field trials. A key constraint in achieving better yields is the lack of investment in soil fertility management resulting in poor and declining yields. Much research and recommendations on fertility management continue to target maximisation of yields and profits and have little consideration for the realities of agricultural risk and resource constraints. Rather than seek maximum profit or efficiency, the poorest and most vulnerable households are inherently conservative and seek to minimise risk at every opportunity. Only the wealthiest households can afford to invest in complex management techniques.

The project turns on the premise that even though there has been a greater emphasis on on-farm research and experimentation there is often still not an appreciation of farmers' real needs and priorities. Research still rests on the assumption that productivity and profit are the key priorities for poor farmers, when in fact agricultural practices that require little labor or smooth seasonal shortfalls may be preferable, for example. Management options must therefore fit within the resource constraints and investment priorities of the poorest farmers.

ICRISAT has a history of working on research programs targeting improvements in fertility management for semi-arid regions through farmer participatory research in southern Africa and the DfID-funded project focused on developing participatory research approaches that could be used to test technologies and management approaches and potentially be adopted by NARS and the like. The approach adopted by the project combined farmer-led participatory research with simulation models in order to overcome the constraints of on-site specificity and the need to capture a broader range of contexts in order to understand whether a technology would be taken up or not.

The DfID-funded project, then, did not exist in a vacuum, rather it built on earlier research efforts and fed into complementary projects that ICRISAT or project partners were involved in. The project fed into nine such complementary projects. There is a strong shared history amongst partners involved in the research. For example, the original manager of the project had previously worked with the

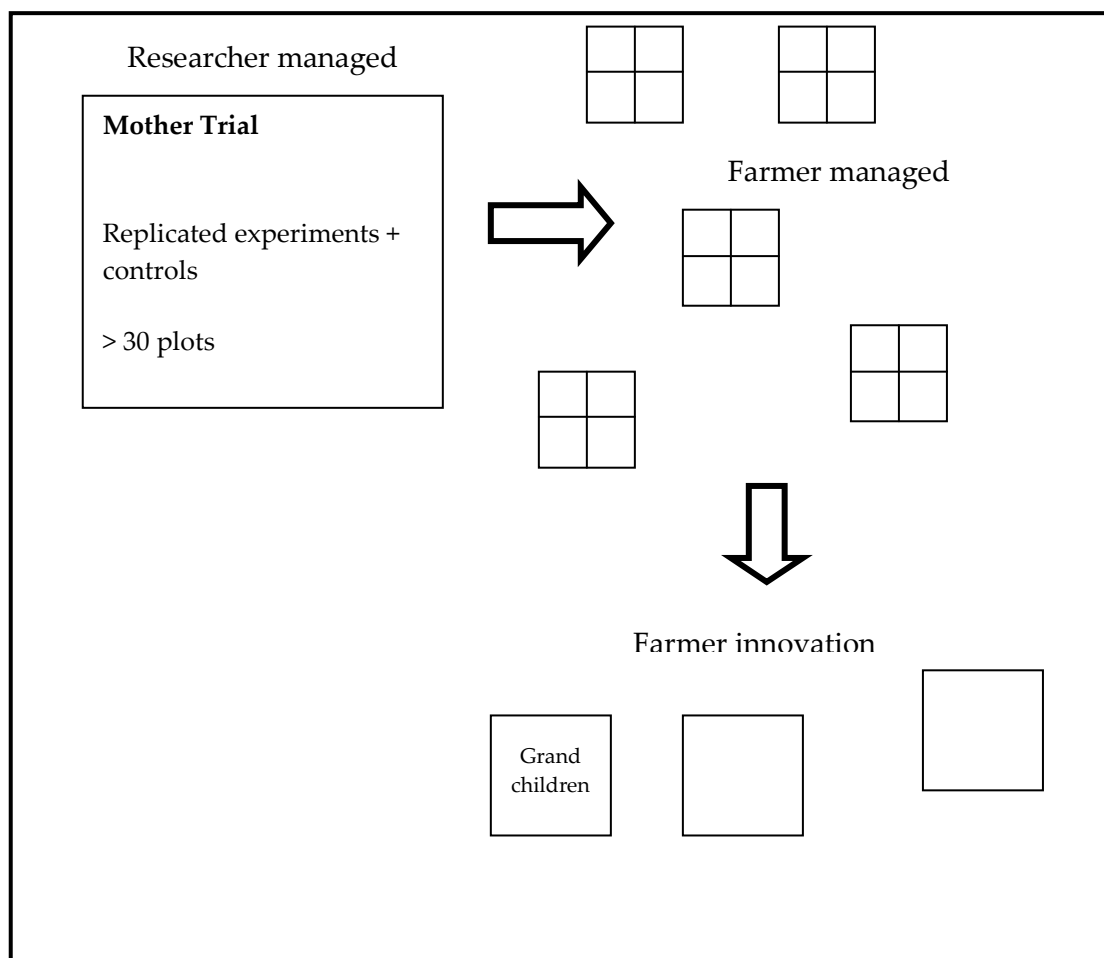
Rockefeller Foundation who had funded complementary projects and subsidiary elements of the DfID project. She had long-term work experience in Malawi. Another key person had previously worked for CIMMYT and had long-term work experience in Zimbabwe. These experiences, and others, enabled rapid buy-in for research activities in the two countries. This is especially important given the levels of trust and understanding of local nuance needed to undertake meaningful participatory research.

The main CSO partner was Concern Universal, an NGO specialising in relief and development work. Concern Universal had a particularly strong tradition of working in Malawi. This combined well with ICRISAT's experience working in Zimbabwe. The Malawian and Zimbabwean NARS were also important partners, both in terms of implementation and as recipients of knowledge and skills through capacity building. Further partners came from local universities, government ministries, NGOs and international institutions.

The main innovation, the central focus, of the project was the 'mother and baby trial', a participatory approach that allowed the testing and refining of technologies through a partnership between scientists and farmers. This approach, refined through experience in Malawi and then Zimbabwe, has become a popular participatory technology.

The approach provides a way to connect assessment of technology by farmers – and therefore an implicit assessment of their technological wants, needs and priorities – with a biological assessment of technological performance in the field. The methodology has two stages. Firstly, the "mother trial" takes place on-site, in the community, to test a range of hypothesis regarding technologies. This trial is initially managed and monitored by the researcher. The second stage, a series of "baby trials" comprises a number of sub-sets of the mother trials. These baby trials are under farmer management and crucially using farm resources. This allows an analysis of the appropriateness of any given technology from the perspectives of both the farmer and the researcher. Each trial compares a sub-set of those tested in the mother trial and either chosen by the farmer or as a result of farmer-researcher consultation. Researchers advise on technological management and monitor progress and actual farmer practice. This dual trialling system allows detailed monitoring and evaluation of crop response via the mother trial, and systematic evaluation, by and of the farmers, of particular combinations of variables through the baby trials. Furthermore, it builds trust, dialogue and participation between researcher and farmer, exposes the farmer to new technologies and practices and provides an important qualitative element to the more traditionally qualitative field-trial based research. Farmers' ranking of technologies and practices is combined with quantitative data and regressed in order to cater for variances in environmental conditions. In this way the trials attempt to overcome the dichotomy of seeking an understanding of local context whilst needing to also understand the broader productive potential and up-take of the technologies being tested (**Figure 1**).

Figure 1. Mother and Baby Trials



The project began in 1999 with an inception workshop open to a wide range of stakeholders. Following this a series of workshops were held in each country along with an annual planning workshop towards the end of 2000 and finally a wrap up workshop in 2001. In total 12 workshops were held during the 30 months of the projects, half of these were focusing on initiation/coordination/training activities and the other half on more technical aspects of the project. Communication was a core activity of the project, the majority of outputs outlined in the project’s final technical report focused on training, dissemination and summarising of activities. Activities were targeted at particular groups of stakeholders, NARS, scientists etc. Communication *within* the project, between partners, appears to have been strong and the strong focus on training appears to have solidified communication through doing.

In terms of organisation within the project, ICRISAT took the lead in technical support whilst Concern Universal provided access to farming communities through their existing work. Other partners can be considered as boundary partners, employees of NARS and universities for example, whilst actively participating in project activities were primarily involved to learn. The complementarity of ICRISAT, Concern Universal and the other partners is clearly strength. A clear demarcating of roles and responsibilities combined with follow up and communication created a framework for organised partnership activities.

There were, of course, some glitches and tensions within the project. A certain tension that had to be managed was that of expectation. The NARS in particular

expected, or at least hoped for, direct flows of resources through the project. This was particularly the case in Zimbabwe where funding for staff time was expected. This sort of issue is not uncommon within partnerships where one set of partners is significantly better resources than the others. It still had to be managed.

A further issue concerned what might be termed the 'flexibility of management' within the project. There was a sense on the ICRISAT side that Concern Universal held particularly "tight reins" over activities in Malawi. Again, this does not appear an uncommon issue. The strength of partners well embedded in local contexts inevitably means that they have developed their own way of doing things. This historical territoriality was again something that had to be managed through communication.

One issue highlighted regarding working with NGOs regarded their *modus operandi*. NGOs, particularly those concerned with development and relief, tend to give 'things' rather than 'ideas'. This is particularly the case with NGOs. This focus shapes the way they operate, the way they think, and the way they deal with partners. NGOs do not deal with 'global public goods' such as methodological innovations as do CGIAR Centres and this different focus creates fundamental differences in the ways in which institutions work. This was circumvented to a certain extent in the Malawi and Zimbabwe case because individuals within NGOs had experience working either with individuals within CGIAR Centre or CGIAR Centres. This of course raises the question about who makes partnerships function and makes delivery of project outcomes possible: the institution or the individual within the institution?

On the whole the project organisation seems to have worked well. Communication, internal and external, was mainstreamed throughout the activities, and indeed given the focus of the project on learning and reflection this is not altogether surprising. ICRISAT and Concern Universal staff had a history of working with each other, and key staff had long-term experience in both Malawi and Zimbabwe. This individual institutional memory clearly played a key role in the effective functioning of the project, its conceptualisation, and its outputs.

Outcomes

The overall goal of the project was to revise the way new technologies were developed and disseminated. This was always going to be a difficult task in relation to the NARS in the two host countries, particularly given developments in Zimbabwe. There is, however, a clear legacy from the project. Within ICRISAT the project approach has played a central role in shaping a new natural resource management and research paradigm. This is particularly true in terms of how the relationship between farmer and researcher has been conceptualised. This has had an impact within other CGIAR Centres such as CIMMYT who have adopted methodological elements. The project also highlighted the role of risk and perception of risk in up take of technologies, and much was learnt regarding knowledge flows and learning within farmer communities. Recognition of the importance, and complexity, of communication was highlighted as an important outcome. The need to continually revise and rethink how ideas and concepts ought to be communicated and translated gave insight into how knowledge flows. Finally, and more concretely, the recognition of the fundamental importance of appropriate fertiliser in semi-arid, resource poor environment was reaffirmed. There have been several spin off projects, within ICRISAT and between partners, including a large project currently taking place in Limpopo Province, South Africa, that are further developing these ideas and lessons learnt.

In sum, the project has given much to boundary partners, the methodological approaches developed and refined through work in Malawi and Zimbabwe have been influential within the CGIAR system and elsewhere. The impact of these innovations on NARS – the intended direct beneficiaries – is perhaps rather more open to question. The project gave much insight into the research process, how to make it inclusive, and how to make it participatory. In addition it gave insight to the complexity of sharing and developing knowledge in the complex realities and differing contexts of rural livelihoods. There has been much talk of the tension between short-term survival and long-term development within rural livelihoods and this tension lies at the heart of farmer-oriented research, and this is perhaps the most important lesson that it is essential to make technological innovation participatory for it to have any place in peoples' fields. This is perhaps a lesson that lies at the root of the need for partnerships within agricultural research for development more broadly.

BIBLIOGRAPHY

Bernet, T., A. Devaux, O. Ortiz, and G. Thiele. 2005. Participatory Market Chain Approach. BeraterInnen News 1/2005. In: CIP-UPWARD, 2004. Participatory Research and Development for Sustainable Agriculture and Natural Resource Management: A Sourcebook. Lima, Peru

Bezanson, K., Narain, S. and Prante, G. 2004. Independent Evaluation of the Partnership Committees of the CGIAR. CGIAR Secretariat.

CGIAR Science Council. 2006. CGIAR Centre Collaboration: Report of a Survey. CGIAR Science Council, Rome.

Chambers, R., Pacey, A. and Thrupp, L. A. 1989. *Farmer First: Farmer Innovation and Rural Research*, Practical Action, London.

Chataway, J., Smith, J. and Wield, D. 2007. Shaping scientific excellence in agricultural research. *International Journal of Biotechnology*, 9(2), 172 – 187.

De Vries, P., Hilmy, S. and Innocencio, A. 2005. Learning alliances for the broad implementation of an integrated approach to multiple sources, multiple uses and multiple users of water. Unpublished manuscript for the International Conference on Integrated Assessment of Water Resources and Global Change: A North-South Analyses, Bonn, Germany.

Gottret, M. and Ospina P. 2004. Twenty years of cassava innovation in Colombia: Scaling up under different political, economic and social environments, in D. Pachico and S. Fujisaka (eds.), *Scaling Up and Out: Achieving Widespread Impact Through Agricultural Research*, Centro Internacional de Agricultura Tropical (CIAT), Cali, 105-126.

Gottret, M.V., and G. Henry (1994) "La Importancia de los Estudios de Adopción e Impacto : El Caso del Proyecto Integrado de Yuca en la Costa Norte de Colombia." In: Iglesias, C. A. (ed.) *Memorias de la Tercera Reunión de Fitomejoradores de Yuca*. Documento de Trabajo No. 138, Centro Internacional de Agricultura Tropical, CIAT: Cali, Colombia, pp. 193-223.

Hall, A., Bockett, G., Taylor, S., Sivamohan, M. and Clark, N. 2001. Why research partnerships really matter: innovation theory, institutional arrangements and implications for developing new technology for the poor, *World Development*, 29(5), 783-797.

Hagedoorn, J., A.N. Link, and N. S. Vonortas. 2000. Research Partnerships. *Research Policy*. 20: 567-86.

Horton, D. and Benavides, Y. 2005. Papa Andina, Resultados de un Proceso de Reflexión y Evaluación. International Potato Centre (CIP) – Papa Andina, Lima.

Janssen, W., 1986. *Market Impact on Cassava's Development Potential in the Atlantic Coast Region of Colombia*. Centro Internacional de Agricultura Tropical, Cali.

Spielman, D., Hartwich, F. and von Grebmer, K. 2007. *Sharing Science, Building Bridges and Enhancing Impact: Public-Private Partnerships in the CGIAR*, IFPRI Discussion Paper 708. Washington, D.C.

World Bank. 2006. *Enhancing Agricultural Innovation: How to Go Beyond the Strength of Research Systems*, World Bank, Washington, D.C.