Institutional Histories:
reflections on four Indian coalitions

Edited by Emma Crewe and Joseph Vester

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1.   Abstract

In the last five years the Crop Post-Harvest Programme (CPHP), a Department for International Development-funded research programme, has been challenging received wisdom, and its own assumptions, about research planning, policy and management. The old model – whereby researchers innovate and pass their findings through various channels until they reach the end-users – has been replaced with a sophisticated understanding of innovation. First, it involves far more than merely technical change and, secondly, it is more successful achieved in 'coalitions.

Between 2003-2005 CPHP supported four coalitions in India:

1. the Andhra Pradesh Sorghum Coalition;

2. Linking Tribals to Markets in Orissa;

3. the Jabalpur Lac Coalition;

4. Institutional Learning and Change Coalition

A mixture of the coalitions themselves, a specific aim of the fourth coalition (Institutional Learning and Change) and the institute managing the CPHP in South Asia (the Centre for Research on Innovation and Science Policy – CRISP), all contributed to learning across these coalitions. These findings are presented in this report with an emphasis on the importance of ten key ingredients:

1. *Shared and complementary interests*: All the main partners agreed specific and clear objectives for the project, so they were all working for the same outcomes.

2. *Carefully chosen partners:* Partners were carefully chosen on the basis of their experience, expertise, and comparative advantage.

3. *Learning from previous projects***:** Projects spent time before forming formal collaborations examining the past and designing approach would suit them best.

4. *Clear roles*: At the beginning of the project the partners jointly agreed clear roles for each member of the coalition, but a little flexibility during the course of the project where required.

5. *External co-operation:* Outside organisations were frequently involved and played an important role in the progress of coalitions.

6. *Innovative champions:* Leading individuals and organisations were important for creating, promoting and guiding coalitions.

7. *Coalition management techniques***:** Coalitions were managed well because they designed strategies to prevent or resolve conflict, and avoid domination by one or two of the partners.

8. *Mutual respect and trust*: Non-adversarial, non-hierarchical relationships were developed and courteous and accommodating environments created.

9. *Frequent communication*: regular communication between partners made the running of the project smoother.

10. *Focus on institutional innovation as well as technological change*: Coalitions did not try to simply transfer their scientific innovations from researchers to end-users, but worked collaboratively on improving all aspects, including the capacity, of 'innovation systems'.

2.   Introduction

All current Crop Post-Harvest Programme[1] (CPHP) projects, including four in India, have adopted a coalitions approach in their design and management. A critical innovation in these projects is that as well as aiming for pro-poor benefits, they explore the institutional and cultural processes of the project – documenting changes in approach, composition of partnership groups, and ways of working. Institutional histories are an attempt to both capture the richness of development and change within institutions and the insights that they may provide to others. Histories also explore the institutional development process and the drivers and constraints that govern it, that is, the triggers and process that cause institutional innovation. They have been described as 'a record of key points and lessons about the way institutional arrangements evolve and develop over time to create more effectively ways of achieving project goals.'[2]

The core of institutional histories is the concept that institutional arrangements evolve and develop over time to create more effective ways of achieving stated objectives.[3] Institutional change involves more than people in organisations.

> *organisations* are the physical entities – research laboratories, companies, NGO's, co-operative societies, universities – in which various activities are organised.

> *institutions* are the rules, norms or conventions and incentives that govern the way activities are undertaken, that is, what patterns behaviour. For example, institutions include national or international laws, the convention of marriage or scientists and economists setting research priorities.

Hall defines 'institutional' broadly to include the rules, norms and power structures within which individuals and organisations operate (2004:1). Organisational change is when a particular entity alters its policies or practices. Institutional change occurs when a convention changes: for example, NGOs or public organisations forming new partnerships with private sector companies entails institutional development.

Institutional developments concern both explicit and implicit "rules". In 2002 CPHP decided that 70% its projects must be led by non-UK organisations: that was an explicit rule or institution. However, institutional development also concerns subtler and less obvious changes in procedures, roles, practices and partners. Change can be unexpected and unplanned. But whether planned or not, it nearly always generates learning. For

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[1] The Crop Post-Harvest Programme is one of DFID's research programmes and is co-ordinated by Natural Resources International in the UK and its regional offices, including the Centre for Research on Innovation and Science Policy, Hyderabad.
[2] A. Hall and C. Shambu Prasad, 2004, Institutional histories as an approach to delivering institutional outputs of projects, in Partnerships for Innovation, reflection and lesson-learning from East Africa, Crop Post-Harvest Programme East Africa, Nkoola Institutional Development Associates Limited, Kampala, Uganda.
[3] For a detailed discussion of this see detailed discussion of these concepts in Hall et al. 2002; Clark 2003; and Watts et al. 2003

example, a CPHP project in India found that that the best way to partner with organisations that supported the agenda of the rural poor was to choose organisations with values common to their own (see Clark 2003). This meant spending time getting to know organisations and working at building trust rather than relying on contractual arrangements.

CPHP and its South Asia office (managed by the Centre for Research on Innovation and Science Policy [CRISP]) had already learned a great deal about the role of institutional change before these four projects were embarked upon. At its inception in 1995 CPHP's underlying assumption was that it was the role of researchers (usually scientists) to develop technologies and policies to resolve underlying constraints, and that mechanisms were in place to diffuse these technologies to technology users (whether farmers, consumers, entrepreneurs, or policy makers). The adoption of these technologies would improve the well-being of poor people. The institutional design implied:

1. scientists were the primary source of new knowledge;

2. the relationship between research organisations, diffusion or extension agencies and technology users was (and could be) ordered sequentially so that knowledge and resources could flow down the lineal chain;

3. that poverty reduction was the primary objective of all the agencies involved and that it patterned their behaviour, approaches and priorities.

CPHP has since learnt that these assumptions were unrealistic in three respects. First, existing diffusion mechanisms do not always operate effectively and there is often a need to explore ways of creating such mechanisms as part of research. Partnering with organisations with the mandate, resources and incentives to diffuse technology from the outset – often intermediary organisations like NGO's, but also companies and entrepreneurs – was far more successful than merely handing over new technologies at the end of the research stage. Secondly, while research organisations were the main source of scientific knowledge, other organisations, particularly technology users, were a source of tacit knowledge of both a technical and managerial kind (often generated through the adaptation of knowledge to local circumstances). Thirdly, while many research organisations involved in projects professed to be working for farmers, few had an explicit focus on the poor backed up with ways of testing poverty relevance. The broadening of partnership brought in some poverty orientated organisations (usually, but not always, NGOs), but also other organisations that, quite legitimately, had no poverty focus at all, (usually entrepreneurs). The programme responded by encouraging its projects to undertake more detailed livelihood and stakeholder analysis to sharpen their focus on benefiting poor people.

The CPHP programme revealed that to design a successful research programme questions about institutional arrangements were as important as technology innovation. These questions were about: how to get the right mixture of partners in order to work in ways that combines the complementarities of tacit and scientific knowledge; how to create the incentives and arrangements that link technology users with sources of knowledge and supportive services (for example markets and credit); and how to develop what set of

incentives and arrangements that encourages participation of organisations with a diversity of agendas, but at the same time promotes the interests of the poor.

As a metaphor for this shift in orientation towards a more explicit emphasis on institutional development CPHP made use of the concept of an 'innovation system'. An innovation system incorporates the patterns or groupings of partners and the activities and the institutional arrangements that bring about technical and socio-economic change. Thus, innovation refers to more than technical change:

> *innovation* is the creation, adaptation and use of new knowledge of socio-economic significance. It might involve new technology, management techniques, working practices, cultural rules, or institutional arrangements.
> *invention* is the creation of new technology.

An implication of the emphasis on institutional development is that projects are concerned with capacity development to a much greater degree than previously assumed and recognised. The experience of CPHP projects suggested that those that have the capacity to continually innovate were more likely to reach their objectives. This echoes the experience of other initiatives. For example Hall observed that flexibility and 'innovation system' capacity were key to achieving better impact in the Sorghum and Millet Improvement Program (see table 1).

Table 1. Key features of the research management and technology promotion approach, conventional agricultural research arrangements and of the SMIP task networks

Institutional features	Conventional agricultural research arrangements	SMIP task networks
Guiding agenda	Scientific	Developmental
Relationships involved	Narrow, hierarchical	Diverse, consultative
Partners	Scientists in other public agencies	Scientist, entrepreneurs, and development workers from the public and private sectors
Selection of partners	Predetermined by institutional roles defined by the arrangement of the research system	Coalitions of interest. Determined by the nature of task, national institutional context and skills, and resources available
Role of partners	Fixed. Predetermined by institutional roles defined by the arrangement of the research system	Flexible. Determined by the nature of task, national institutional context and skills, and resources available
Research priority setting	Fixed. By scientists	Consensual. By regional stakeholders and by needs of task network
Work plans and activities	Fixed at beginning of project	Flexible, iterative

Mandate for research/task approach adopted	Fixed by institutional norms of the research system	Negotiated through coalitions of interest
Knowledge produced	Technical/scientific	Technical/ scientific and institutional
Indicators of performance	In scientific terms to other scientists	In development terms to donors. In terms of fulfilling role in task network to other partners
Responsibility for achieving impact	Other agencies dedicated to extension and technology promotion	SMIP scientists and their partners in task networks
Capacity building	Trained scientists and research infrastructure	Collective capacity of task networks, social capital, partnership skills

(For further details see Hall 2004)

The design of the current portfolio of CPHP projects was influenced by this learning. In its last phase CPHP specified that projects had to deliver on institutional outputs as well as technical ones. The idea of holding workshops to discuss institutional histories arose out of the projects' commitment to fulfil these institutional outputs. CPHP requested the South Asia office to take a lead in working with the East African CPHP projects. The first institutional history workshop was held in Uganda in February 2004, facilitated by Andy Hall and C. Shambu Prasad from the CPHP South Asia office, and its methodology formed the basis for future workshops on the same theme in India in March and December 2004. Projects were invited to interview each other and reflect on how they, as sympathetic outsiders or critical insiders, made sense of the project's progress, coalition-building and key findings. The cross interviewing revealed interesting differences in interpretation of the past, a useful learning for all projects.

This document summarises the lessons that they learned.

3.   Four case studies of Indian coalitions for development

The four projects ran from 2003-2005 and were as follows:[4]

1. the Andhra Pradesh Sorghum Coalition;
2. Linking Tribals to Markets in Orissa;
3. the Jabalpur Lac Coalition;
4. Institutional Learning and Change Coalition

CRISP facilitated cross-project learning. They organised two workshops – or as they became labelled 'writeshops', because the emphasis was on writing institutional histories – one in March 2004 and another in December 2005. During these two day events the projects charted the history of their progress, with an emphasis on institutional innovation and how the various organisations worked together rather than the technical achievements, and analysed the lessons that they had learned. In the second writeshop projects were divided into pairs to interview each other about their findings. The institutional history of each project was then presented by the paired organisation. The outsiders' detached perspectives shed light on each project, which then made it easier for each project to reflect on and write up their own institutional history. It is those histories that are presented here as case studies of Indian coalitions for development.

3.1   Case study 1: the Andhra Pradesh Sorghum Coalition

3.1.1   Introduction

India is the second largest producer of sorghum in the world after USA with around 11 million ha under its cultivation. Sorghum is grown in rainy season (June-October) and in post-rainy season (September – January). The rainy season crop accounts for 37% of the total crop area and contributes 65% of the total production. The demand for rainy season sorghum grain for food use has declined over the years primarily due to increased production of rice and wheat and public policies that make them more accessible to the poor and low-income consumers. Thus, farmers are unable to sell surplus sorghum grain at remunerative prices.

Small farmers with less than one-hectare land in the semi-arid regions grow sorghum. The lion share of sorghum cultivation is under subsistence farming. Sorghum production underpins their livelihood strategy to meet the twin objectives of food and feed for

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[4] Their official titles were: (1) Exploring sorghum utilization opportunities through a research, industry and users coalition, in Andhra Pradesh; (2) Integrating markets, products and partners: an action research to explore and develop a management system for linking tribal communities to markets through value addition in Orissa; (3) Developing coalitions approach to non timber forest produce for better livelihoods of tribal communities of Madhya Pradesh;; (4) Institutional learning and change coalition: a capacity development approach to exploring and strengthening post-harvest innovation systems in south Asia.

livestock. However, after meeting their household demands, these farmers are unable to dispose off the marketable surplus due to lack of marketing networks to take advantage of the potential demand for sorghum in non-food uses. Rainy season sorghum is gaining momentum for use in poultry feed as a potential alternative to maize, whose production is not able to meet the present growing demand. Enhancing the use of rainy-season sorghum in poultry feed rations and creation of sustainable marketing linkages between sorghum growers and poultry industry through innovative institutional systems has assumed an importance for ensuring sustainable supply to industry and assured incomes to poor sorghum growing farmers.

Poultry in India developed significantly during last three decades. The annual growth rate of layer is 10% while that of broilers is 15%. This has placed enormous pressure on feed resources. Andhra Pradesh is the largest poultry producing state accounting for one-third of the egg and 18% of broiler production in India. Present requirement of total compounded poultry feed in the country is about 12 million tonnes year^{-1}. Maize (*Zea mays* L.) is the main cereal feed ingredient, which constitutes 30-35% of poultry ration.

The non-availability of cost-effective feed ingredients is a major factor inhibiting the growth of poultry industry. Maize gained the importance in poultry feed, but its low availability and high cost are dwindling the profits of poultry farming. The production of maize in India is estimated to be about 10 million tonnes year. Poultry consumes 30% of it. To feed the anticipated poultry population by 2020, the requirement of maize will be 31 million tonnes. In view of the shortage of maize and huge requirement of feed for poultry in the near future, it has become necessary to develop alternative cereal feed ingredients such as sorghum.

Maize is the principal energy source in poultry feed. Sorghum is next important energy source and is often included in poultry diets as an alternate to maize but only in relatively small quantities. The limited inclusion of sorghum in poultry feed and its relative low status as a raw material is partly due to misconceptions surrounding the crop such as the level of tannins, mycotoxins in blackened sorghum grain, energy levels, problems in processing and lack of carotenoids for egg yolk pigmentation. There are recently improved sorghum cultivars that are moderately resistant to grain moulds and free from tannins but this was not yet widely known in the marketplace.

With this background, a project was conceived with a novel approach i.e., coalition of key stakeholders, making all the stakeholders as partners right from the stage of objectives formation.

3.1.2   Formation of the Coalition: shared and complementary objectives

Sorghum poultry coalition grew out of a long-standing partnership between International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and the private sector. ICRISAT played a nurturing role, often through informal networks, to the emerging private seed industry and relied on them in turn to ensure that the new material they developed reached farmers. The relationship progressed still further in 2000. ICRISAT signed an agreement with eight private sector seed companies to develop sorghum hybrids whereby each company makes a grant to ICRISAT and the scientists then make their results available to all the companies in the consortium. Thus the scene was set for a broader institutional coalition to promote marketing opportunities for sorghum farmers. ICRISAT sorghum breeders and economists were aware that this crop had great potential, especially because there was also a large, and increasing, potential market demand for rainy season sorghum in animal feed, especially for poultry. Two previous CPHP-funded projects (R7506 and R6687) identified this potential, and the two key constraints that appeared to be holding back the promotion of rainy season sorghum in poultry feed:

1. Poultry producers assumed that tannin and mould affected the quality of rainy season sorghum which would in turn reduce the health of the birds[5],

2. The institutional links between the different stakeholder organisations (science institutes, poultry feed manufacturers, poultry producers and sorghum growers) were weak.

Although these projects had established contact with the private sector, they were not working together as partners systematically, or from the outset of the initiatives, so the impact of these projects was limited.

In 2002 ICRISAT scientists with the help of a Special Project Scientist at ICRISAT seconded from Natural Resources Institute (UK), wrote a concept note about developing institutional linkages between different stakeholders in sorghum production and marketing. Scientists at ICRISAT were well aware of the institutional constraints that had held back previous projects. The careful selection of member organizations relied on both long experience and personal contacts. They did not invite the individuals that they knew into the new coalition, but rather these contacts allowed them to find out easily and quickly who would have appropriate expertise for the coalition within those organizations. Doors may have been more easily opened, and trust established more quickly, by use of these personal networks.

A list of eleven organizations were drawn that might take part in the sorghum coalition and then narrowed it down to four, (in addition to ICRISAT): Acharya N G Ranga Agricultural University (ANGRAU), Federation of Farmers Associations (FFA), Andhra Pradesh poultry Federation (APPF), and Janaki Feeds.

Each coalition member had his or her own reasons for joining. The ANGRAU poultry experts, and the ICRISAT seed breeders, were interested in forming links with farmers and

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[5] S. Ulrich Kleih et al., 2000.

feed manufacturers to improve the uptake of their research outputs and findings. Like most agricultural research institutes, in the past both had relied heavily on academic publications to disseminate their work to other institutes and on other agencies to transfer findings to the end-users. They were anxious to work more closely with key stakeholder organisations from the outset of this new initiative to make sure that responsibility for all stages of the work – planning, innovation, dissemination – were jointly shared by all. This strategy, they felt, would maximise the impact on poverty reduction.

The sorghum farmers, represented by the FFA, saw the potential to increase the security of their livelihoods. In recent years farmers had suffered repeated droughts and low prices for their produce. The coalition offered them opportunities to grow higher yielding sorghum, which is a less risky crop than maize because it relies on less rain. If there is an average amount of rain, or a slight drought, sorghum will usually survive whereas maize may easily fail. (Paddy was not a choice for those poorer dryland farmers with no irrigation). Improved rainy season sorghum could provide both fodder for animals – which was of particular interest to women dairy farmers – as well as food for their own consumption. It could potentially be sold for industrial use as well. Since the latter relied upon convincing poultry feed manufacturers and poultry farmers that sorghum was as healthy for the birds as maize, there was an element of risk. But enough farmers judged that this risk was lower than the prospect of growing crops that could be utterly ruined if the rains failed.

Initially the poultry feed manufacturers – Janaki Feeds – were sceptical about 100% replacement of maize with sorghum. They had already been replacing small amounts of maize with sorghum in poultry feed, partly because the latter was cheaper but also because maize was becoming scarce. They had not conducted scientific tests, and had doubts about the nutritional value of replacing large quantities of maize, so they kept the amounts relatively small. They attended the early meetings because of their established contact with ICRISAT. They had a high opinion of the value of science, and of ICRISAT scientists in particular, because they had collaboratively developed a useful and cost-saving 'ELISA kit' together for assessing mycotoxins in poultry feed. But it was only when they scrutinised the evidence that sorghum was as healthy as maize that they saw the business potential and participated fully in the project.

The APPF saw the potential benefits to its members: if the farmers produced their own feed, then they would benefit from cheaper, more easily available sorghum. Or if they bought it from Janaki Feeds, or other feed manufacturers that followed suit, then they would spend less on purchasing feed than they would if they relied on maize for grain.

3.1.3 Project Objectives and Vision

The main objective of this project was the creation of marketing opportunities by developing sustainable economic linkages in sorghum-poultry feed chain through innovative coalition systems.

The four outputs set for the project are:

1. Poultry feed formulations with sorghum cultivars available,
2. Formation of a sustainable farmer scientist industry coalition,
3. Technology access to the target groups accelerated, and
4. Understanding coalition system as a process.

The scientists from ICRISAT took the initiative and convened a meeting with potential project partners in October 2002. They discussed objectives and approach, agreeing to a shared overall goal – to improve the livelihood security of poorer farmers – as well as sub-goals that would meet the interests of each member organization. They developed a 'feeling of win-win situation for all the partners – breeders seeking the dissemination of their products to farmers, poultry scientists in developing new poultry feed rations, farmers looking for high productivity and high market value, feed manufacturers seeking for grain in bulk quantities'. Then they met on four occasions to discuss roles and responsibilities, administration, communications and decision-making, and the budget, culminating in the development of a two-year plan.

The question of who should lead the coalition provoked considerable debate. Since the key beneficiaries were sorghum growing farmers, the FFA felt that they could lead the coalition. ICRISAT did not press its own case to be the convenors of the project but other members favoured it, saying that, ICRISAT being an international organisation would be more appropriate because they were neutral – that is, not pushing for any particular interest, but rather the success of the whole project – transparent, and accountable.

The discussion was also able to identify the roles and responsibilities. A Steering Committee was established to oversee the poultry feed trials. Since the whole enterprise depended upon buying of the outcomes by the poultry feed manufacturers. Janaki Feeds was chosen to be the convenor of the committee.

The coalition members discussed the advantages of trying to get the private seed industry involved, but when approached they found their response was lukewarm initially. By the second year, however, three seed companies agreed to sell new cultivars at a 50% subsidized price as a way of promoting them and stimulating demand among farmers.

The clarity and appropriateness of roles – agreed jointly at the beginning of the project – was recognized as an important ingredient of success. The monitoring plan, for example, stipulated the precise responsibilities of each partner organization in relation to each other as follows:

Defined roles of coalition partners:

International Crops Research Institute for Semi Arid Tropics (ICRISAT)
- Cultivars selection from existing sorghum cultivars suitable for poultry feed
- Multiplication of seed and distribution to participant farmers through FFA
- Networking of partners under one umbrella
- Project implementation and monitoring

Acharya N G Ranga Agricultural University (ANGRAU)
- Conducting poultry feed trials with sorghum as principal cereal ingredient
- Providing technical guidance on consumption and quality of sorghum in poultry feeds
- Improved cultivars production for the target areas

Federation of Farmers Associations (FFA); Represent the interest of the farmers
- Identify suitable sorghum growing areas
- Disseminate the information to farmers about the improved sorghum varieties and market opportunities
- Foster effective linkages with end users

Andhra Pradesh Poultry Federation (APFF); Represent the interest of poultry producers
- Take the lead in interacting with poultry producers
- Conduct/facilitate on-farm poultry feed trials on a large scale in selected locations

Janaki Feeds; Represent the interests of feed manufacturers
- Prepare feed formulations using different proportions of sorghum poultry feed rations
- Up-scale project findings after completion of project

Sorghum Poultry Feed Coalition Building
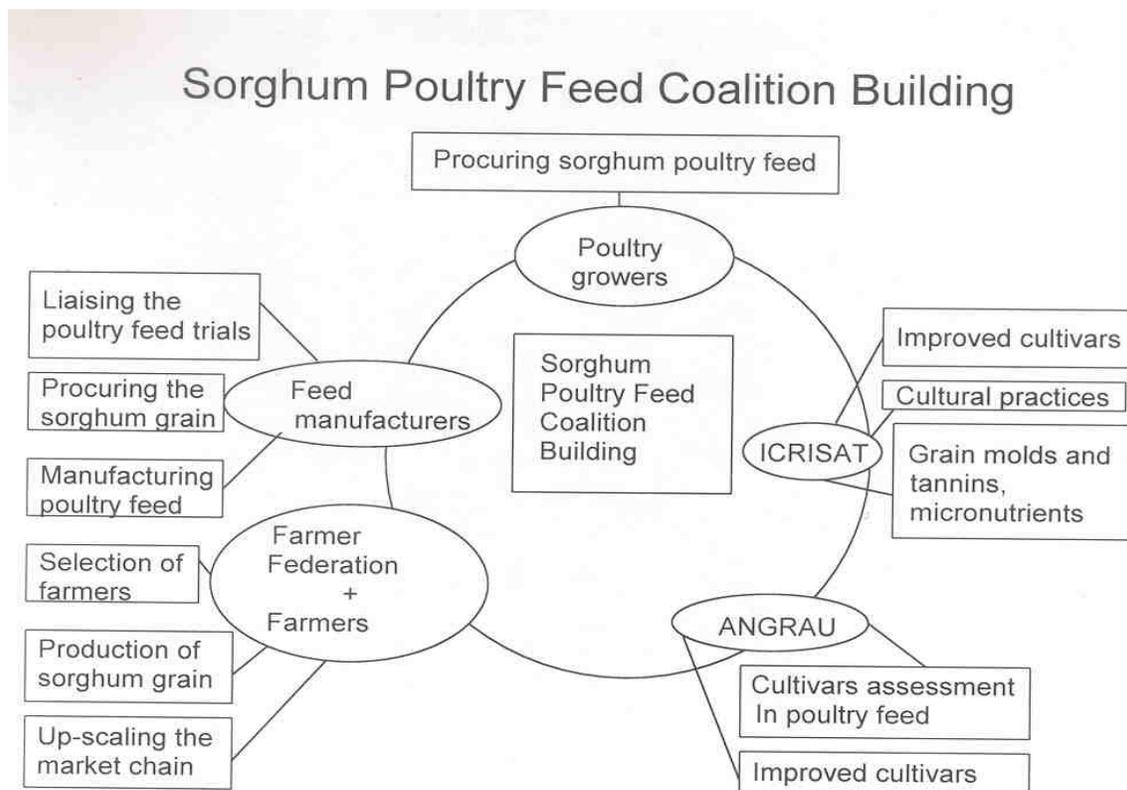
The chronology of important activities, and observations about how the coalition moved to achieve designated outputs in a specified timeframe, are depicted in the table below:

KEYS MEETINGS OF COALITION

Date	Nature of the meeting
October 2002	Discussion with coalition partners to finalise project plan
October 2002	Discussion with coalition partners to finalise project plan
November 2002	Discussion with coalition partners to finalise project plan Preliminary poultry feed trials
February 2003	Detailed activities finalised with the partners
February 2003	Donor approval communicated & agreements sought with all partners
March2003	Milestones discussed and finalised with partners
May 2003	Monitoring and Evaluation training workshop of donor
May 2003	Formation of coalition Steering Committee
June 2003	Review meeting and study villages selected by coalition
June-Nov 2003	Frequent visits to villages to give advice and training
July 2003	Two partners visit ANGRAU experimentation station
September 2003	Two partners conduct meeting at Gangapur village
October 2003	Review and planning workshop with all partners and seven farmers
October 2003	ICRISAT holds meetings with farmers and visits sorghum fields
November 2003	Visit from donor's representative to evaluate progress
December 2003	Review meeting of coalition partners
December 2003	Surplus grain was procured from farmers and supplied to feed manufacturers for large-scale poultry trials and chemical analysis
January 2004	Reports on trials received and results of poultry feed trial presented to partners and poultry producers
March 2004	CPHP holds 2 day 'writeshop' for analysing their institutional outputs
March 2004	Visit from donor's representative to evaluate progress
March 2004	Hybrid sorghum seed procured from private sector seed companies for distribution to farmers
May 2004	Review meeting of coalition partners and reports for donor compiled
June 2004	ICRISAT visits ANGRAU experimentation station
June-Nov 2004	Frequent meetings in villages to give advice and training
August 2004	Review meeting of coalition partners and reports for donor compiled
November 2004	Presentation of poultry feed trial results to partners, poultry farmers & media Second 'writeshop' held at ICRISAT on institutional histories

3.1.4 Innovation

For all members this was their first experience of such a broad-based coalition involving different types of organisation (public, NGO, private), and different skills and expertise

(science, farming, commerce). All claimed that not only had they learned from working as a coalition but that collectively they had worked at a faster pace and achieved their objectives more quickly than they could have done if working separately. The 'coalition allowed members to capitalize on the synergies from sharing of skills from different disciplines with each member playing his/her role in the project'.

The method of testing the sorghum was refined by the coalition to meet the interests of all. Four improved cultivars of sorghum were selected by ICRISAT and grain produced by seventy-four farmers during the kharif (rainy season) harvest of 2002 was analysed for threshed grain mould severity and chemical traits. The poultry feed efficiency of this grain was assessed by ANGRAU. The tests on both layers and broilers showed that sorghum could entirely replace maize in poultry rations with no ill effects when consumed by the birds. Contrary to popular opinion, they demonstrated that when sorghum replaces maize the level of tannins and toxins remain low.

Although DFID had initially resisted the arguments for the necessity of these tests, different varieties produce different results, so they were eventually persuaded that these poultry feed trails were necessary. Also, the poultry feed manufacturers felt that they needed to see the results for themselves on the specific cultivars that ICRISAT were hoping to promote. Significantly, these scientific tests were repeated, on the recommendation of the Steering Committee, with a slightly different method. In the first ANGRAU test after the replacement of sorghum at different levels – at 50%, 75% or 100% – the scientists adjusted the energy content, as was their custom, so that it was equal in each case. This would ensure that the experiment was not affected by other variables, that is, in this case energy content. But the poultry farmers and feed manufacturers, who do not all have computers and so are not able to adjust energy levels as precisely, wanted to know the effects without changing the energy content. So in the second test ANGRAU agreed to repeat the experiment with a simpler method (part-by-part replacement of sorghum in place of maize). A feed manufacturer's mill was used to prepare the poultry feed rations for the second *'part-by-part replacement trial'*. In both cases the quality of feed was the same as maize, and confidence in the results was achieved on all sides.

Although the results were favourable to sorghum, the light colour of the skin of the broilers was deemed a worry. It might deter consumers from purchasing them (but there remains some disagreement about whether consumers mind), so ANGRAU thought of adding Stylosanthes leaf meal to return at least 50% of the yellow to the skin colour. This idea came out of an earlier ICRISAT/ANGRAU project and was one of several possibilities (such as synthetic colouring or marigold) but was chosen because partners had supplies of the Stylosanthes leaf meal. The experiments conducted on layer birds have also produced similar results and were recently conveyed to poultry farmers and feed manufacturers. Another innovation to the methodology emerged from the poultry farmers concern that the tests should be valid for different breeds. At their suggestion the tests were repeated on another breed, and the preliminary results have so far demonstrated that sorghum appears to be healthy for all. Even though ANGRAU had not thought this necessary (because previous research informed them that all breeds would react the same way), this ensured that poultry farmers had no doubts about the findings.

Although hypothetical, it is probable that if the scientists had been working in isolation, the poultry farmers and feed manufacturers would have been less satisfied with the methods. The testing would not have reflected their own practices and concerns and they would not have been in a position to make requests for adjustments after the results had been published. Innovation within the project does appear to have been propelled by linkages between people. Learning from past experience, combining different perspectives to give rise to new, synthesised ideas, and what has been called 'creative imitation'[6], were all the product of the exchange of knowledge and experience between individuals and groups.

3.1.5   Culture and Communication

The roles and responsibilities allocated to each member organisation by the coalition as a whole were both clear and appropriate to the task and the interests of each stakeholder organisation. As a result, the need for complex communication was kept to a minimum. It was required for updates, decision-making about the present and future, reviewing progress, and disseminating detailed results, but it was not as necessary for exerting pressure as it can be in advocacy coalitions. Whereas the latter often rely on communicating with a wider group, for example, to pressurise particular stakeholders to change their practices, communication within this coalition – which was mainly piloting rather than disseminating ideas – remained largely internal.

The mode or channel of communication used by the sorghum coalition varied according to context. Although regular communication was achieved by email and telephone, especially for quick updates, straightforward decisions or arranging meetings, face-to-face discussion was critical at certain points. It was only academics as a group who all relied heavily on email; in all the other groups only certain individuals used electronic communication very regularly while others preferred the telephone. Some had erratic or no access to the Internet, another did not know how to use a computer, and a third was perpetually worried about viruses. But the need for face-to-face discussion was not merely the result of the shortcomings of information and communication technologies (ICTs); it was essential for the process of consensual decision-making. Cognitive understanding of different points of view was vastly easier when people sat around a table rather than communicated through impersonal technology.

The culture of the coalition – created in part by the consensus-building approach of the ICRISAT convenors, but also nurtured by all coalition members – put a high value on courtesy. Polite forms of address, showing concern, patience and flexibility for each other, seeking peaceful resolutions to problems rather than throwing down aggressive challenges, and following the customary rituals during more formal meetings, all contributed to this culture. The "personal touch" in communication was also important for sustaining good relationships. This is much more easily achieved through direct contact partly because non-verbal communication plays such an important part in conveying messages.

No stakeholder organisations or individuals sought to dominate or pressure each other. When farmers found that the quality of the sorghum had improved as a result of using the

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[6] Bell and Arnold as cited by Barnett (2004:1).

new cultivars they increased their own consumption. This, as well as low yields due to late rains, led to insufficient supplies for the poultry feed manufacturers. Rather than provoking hostility within the coalition, the other stakeholder organisations tried to bring more farmers into the coalition and persuaded existing growers to balance their short-term need for food with their longer-term interest in establishing marketing links that will lead to greater security in years when lower quality sorghum is produced. It is the lower quality sorghum that requires the new marketing opportunities offered by poultry feed manufacturers. The fact that the coalition members have a clear-shared interest in increasing the production and sales of rainy season sorghum undoubtedly makes communication between members harmonious. They are not dealing with severe conflicts of interest within the coalition or pressure from outside interest groups.

In conjunction with shared interests, and a non-domineering approach by all members, the individuals who belong to the coalition all work and reside in the same city (with one exception: a scientist who is based two hours drive away). It is agreed that geographical proximity makes a difference. It allowed frequent meetings, at short notice if necessary, with the minimum expenditure of time or other resources. The shared language and identity of all coalition members have reduced the potential for misunderstanding. All were from the state of Andhra Pradesh, shared the same framework of references (cultural, ecological, social, economic and political), and were Telugu speakers.

Informal communication or contact has been found to be a critical factor in the success of many networks. Workshops during which results of the poultry feed trials were disseminated (19th January 2004 at ICRISAT and 9th November 2004 at ANGRAU), may have been as important in providing opportunities for making and consolidating links as they were for conveying information. The ability of two members of the coalition from ICRISAT, to exchange information, and discuss the best ways forward for the project, were greatly enhanced by two forms of informal contact: sharing a lift to and from work each day and smoking outside their office. Such informal discussion – without the strictures of an agenda or any emphasis on formal performance – allowed for creative and spontaneous thinking and consolidating relationships based on trust.

The coalition developed its methods of research to respond to the different types of evidence required to convince different groups of people. The scientists and poultry feed manufacturers required scientifically validated results, while the farmers needed to see for themselves. Farmers observed, "seeing is believing". They ranked reliable sources of information as follows: (1) seeing with their own eyes, (2) other farmers' reports, (3) scientists' reports, (4) trusted industrialists or media outlets. The coalition conducted experiments that could generate evidence to satisfy scientists, but then also enabled some farmers to see for themselves, others to learn directly from the innovative farmers, and still more to be alerted to the market potential of sorghum through media reports, workshops and brochures in Telugu.

The coalition has been highly successful in forging links between different sectors (public research institutes, farmers, and companies). The financial profitability of growing new varieties has been surveyed with positive results. During farmer meetings in the village, for example when seeds were distributed, women have not only been present but expressed

their views and asked questions, especially concerning the use of sorghum as fodder. As the people usually responsible for dairy production, women have a stake in the fodder that sorghum provides. They also contribute their labour to the sorghum-production system either as members of the farming household or as labourers. Furthermore, along with other household members, they may also benefit from greater availability of sorghum for home consumption. Women were not, however, *formally* represented in the coalition.

3.1.5   Management and Learning

The need for clear objectives is now a mantra repeated by all those with experience in partnerships and networks. Members of the network are more likely prosper if they have thought through their objectives and strategy with care. But not all members necessarily share the same objectives because interests often conflict as much as they converge. That the sorghum coalition members had a driving shared interest and solution in common distinguishes it from many networks that are concerned about a particular topic (such as, transport) but cannot agree on how to tackle it and can find it difficult to move beyond information sharing as a group. The sorghum coalition's shared interest at the level of overall goal, and complementary interests expressed through outputs at the lower level, allowed to work as a team. The decision-making is based on consensus building rather than advocacy or campaigning.

The shared over-arching interest, and complementary sub-interests, allowed the coalition to develop a feeling of 'win-win' situation. This entailed the creation of incentives that drew each member into the coalition but also kept them investing in it. These incentives were primarily economic but not entirely. All could potentially increase their financial profit, or their economic security, if the coalition succeeded. But a more elusive gain in social status possibly also encouraged participation.

Another aspect of planning that the coalition rightly took extremely seriously was selection of partners. Echoed throughout all the literature on partnership and networking, the good choice of partners is certainly one of the key criterion in the success of any collective enterprise. It has been pointed out that it is better to have a small number of dedicated organisations in a network than dozens of marginally committed ones.[7] The coalition followed this model as well as having a complete membership involved from start. The inclusion of no additional members may have also eased the process: the small group of organisations built up a cohesive way of working from the earliest planning stage.

Three other aspects of management contributed to the success of this coalition and appear to be relevant to all types of networks:

1. All coalition members were involved in the negotiations about how resources would be divided between the members. The openness and transparency about the budget was important for establishing trust;
2. The monitoring framework and plan made the roles and responsibilities for each member appropriate and clear. Rather than having all stakeholders involved in all

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[7] Creech and Willard (2001:59).

activities, and thereby wasting their time and goodwill, the responsibilities were logically divided so that each was only involved when their expertise was needed and/or their own interests were being met;

3. Members accommodated to each other's practices, needs and perceptions where necessary. For example, ANGRAU agreed to conduct the tests twice to take into account the preferences of the private sector members.

3.1.6 Social Capital

Social Capital entails "trust" and "cooperation networks". As a form of capital, it is possible to invest on it to save and to stock it- but it is possible to lose it, too. Inter institutional collaboration and cooperation is not only important, it is crucial and a prerequisite for maximising impact. The value of social capital in improving the quality of partnerships and increased net working has been emphasised by many.[8] In the case of the coalition, the members recognised that building social capital was necessary for better uptake of research products by the intended users and industry. The social capital formed in the sorghum coalition also influenced the scaling up efforts in technical and economic as well as political aspects.

Technical
- Coalition preliminary efforts in establishing sustainable linkages between farmers associations (FFA, APPF), research institutions (ICRISAT, ANGRAU) and private sector (Janaki Feeds) are successful. The experience and confidence attained by the partners hopefully result in enhanced and wider networks for mutual benefit.

Economic
- Attempts to establish sustainable economic inter linkages between sorghum farmers and poultry feed manufacturers will reduce the risk of high price fluctuations in the market both for the farmers and feed manufacturers.
- The market link between the producer and processor will eliminate the middlemen in market consequently a higher price for the farmers and lower price for the feed manufacturer, which results in poultry feed cost little cheaper, enhancing the competitive advantage of poultry industry.

Political
- The generic lessons from this project demonstrate to the government the required inputs for providing the right policy environment for partnerships/ alliances/networks/coalitions.
- This would enable policy makers to come out with specific policies for the poultry industry to improve its competitive advantage over other regions/nations, while at the same time benefiting the poor sorghum growers.

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[8] For example, Juan Sanchez, in his paper presented at an international workshop in October 1999 held at the World Bank, Washington, sponsored by CGIAR NGO Committee and the Global Forum for Agricultural Research, see section 4 for more details (Sanchez 1999).

3.1.6 Scaling-Up

In sorghum poultry coalition all the scaling up types as referred by Uvin and Miller (2000) (see box below) are relevant to at least one organisation in the coalition.

Types of Scaling Up

☞ **Quantitative**: a programme or an organisation expands its size by increasing its membership base or constituency through increase in geographic area or budgets

☞ **Functional**: a community-based programme or a grassroots organisation expands the number and the type of its activities e.g. from agriculture production to health, nutrition, credit, training, literacy, etc.

☞ **Political:** the organisation moves beyond service delivery towards empowerment and change in structural causes of under development. This usually involves active political involvement and the development of relations with the state.

☞ **Organisational:** community based programme or grassroots organisations increase their organisational strength to improve the effectiveness, efficiency and sustainability of their activities. This is through diversifying fund source, increasing level of self financing/ income generation, assuring the enactment of public legislation earmarking entitlements within the annual budgets for the programme, creating external links with other organisations, or improving internal management capacity of staff.

Source: Uvin P and Miller D 2000

As research organisations, ICRISAT and ANGRAU scale up primarily in terms of *functional* and *organisational* terms, i.e., the activity is increased to realise the anticipated benefits at end user level and by improving the management capacity of staff.

FFA and APPF observe *quantitative* and *functional* scaling up by increasing membership size of the organisation and enhancing its activity base. They also lobby for *political* scaling up.

Janaki Feeds: The private company moves beyond service delivery towards empowerment by establishing direct market links with farmers, eliminating the middlemen in market chain who are taking maximum share of price spread. This ultimately leads to maximising of profits for the company and enhanced returns for the farmers. It looks more like *political* scaling up.

As pointed by Paul Rice[9], the initial economic inter linkages established in this coalition approach will be strengthened by:

1. Organising farmers themselves to achieve economies of scale to produce economically and profitably
2. Furthering linkages with other possible industry utilizations

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[9] Paul Rice, in his paper presented at an international workshop in October 1999 held at the World Bank, Washington, sponsored by CGIAR NGO Committee and the Global Forum for Agricultural Research,

In fact this has been achieved since the project was completed in March 2005. Until 2005 ANGRAU re-ran poultry feed experiments at the request of poultry farmers, and ICRISAT and the FFA have been responding to the farmers' requests for improved seeds and expanding the project to new areas in Andhra Pradesh. ICRISAT has also formed partnerships with ten organisations in India (Maharashtra), Thailand and China and secured a grant of $1.5 million from the United Nations Common Fund for Commodities to facilitate new coalitions on marketing sorghum and pearl millet in each place.

This new series of projects is designed to build on past successes and redress various weaknesses of the past. The Indian coalition members were aware of the need to influence government to make sure their policies support the marketing of sorghum, but while the project was small they knew it would be difficult to make an impression. With the scaling up of initiative, they plan to involve government – especially at the district level in India – making the most of the private sector's participation because government listen more readily to the well-organised industrial lobbies than they do to farmers. The project plan has also innovated at the village level. Not only will villages be organised into clusters, with the Panchayat or village associations receiving grants for storage facilities, but women's representation will be actively encouraged. While the project has already proved that farmers, private sector companies, and scientists can increase the security of farmers' livelihoods more effectively by doing research in coalition, this phase of expansion will scale-up impact, influence the government, ensure inclusivity and test out coalitions in two other Asian countries.

3.2   Case study 2: Coalition on Linking Tribals to Markets in Orissa

Institutional Development Enterprises, India (IDEI), became involved with the CPHP programme in Himachal Pradesh, and decided to spread its learning from that project to other areas, and to experiment with the coalition approach to innovation under the CPHP umbrella. It chose Orissa for this because IDEI had been involved in the state water sector for some time and because it was a region, based on IDEI's initial research before the project started, where it was possible to improve the livelihoods of poor farmers substantially through technological intervention.

The precise area in Orissa, Gajapati district, was eventually selected because there was a credible partner in the region, The Centre for Community Development (CCD), with whom IDEI had previously co-operated successfully. This gave IDEI, the initial member of the coalition, its first partner.

A third member was required, however, and the following set of criteria was drawn up for which attributes should be possessed by the members:

- A managing partner that had prior experience of working with crop post harvest interventions and had marketing skills. This managing partner would co-ordinate and network between the other project partners.

- A technical institution with a credible Crop Post Harvest Department, that could conduct trials, appraise technology and transfer it to the poor tribal community.
- A grassroot level NGO that could mobilize resources and address the needs of the community of the area.

It was clear that IDEI filled the first role, and CCD the third, but the coalition did not yet possess a scientific member. However, a suitable partner was found in the Orissa University of Agriculture and Technology (OUAT).

Having been the organisation that started the coalition and constructed it, IDEI formed what is known as an 'innovation champion'. Especially important was the CEO, Mr. Amitbha Sadangi, who promoted and drove the idea of a more co-operative approach. This role is an important one, because without organisations willing to go out and find possible partners for development, it would be a much slower and rarer process that such coalitions are formed.

3.2.1   Members' Profiles

International Development Enterprises, India (IDEI): IDEI has been promoting low-cost and affordable irrigation technology to the small and marginal farmers of Orissa since 1991. It had also, very recently and successfully, completed a crop post harvest project in Himachal Pradesh on Tomato Packaging. This project had established and experimented with a type of "coalition approach" and IDEI was looking for opportunities to replicate this model in another project area and with new project partners.

Centre for Community Development (CCD): CCD, a grass root local NGO of Gajapati District, had already made some unsuccessful attempts in addressing the livelihood constraints of the poor tribals, through promotion of horticulture cultivation. It had, however, recognized that the main constraints that the community was facing in obtaining better results for their produce were:
1. Absence of value addition options and of technical expertise.
2. Lack of linkages with high value markets for horticulture produce.
3. Lack of utilization of the existing government support (that is, technical expertise available from the state level universities like OUAT, and resources from the Horticulture Department. The little information that did exist was not widely enough disseminated)

Orissa University of Agriculture and Technology (OUAT): This University had developed several low-cost, user-friendly, mechanized and non-mechanized value addition technologies in their laboratories. However, this technology was not being utilized or tried out with the actual users: the poor. OUAT, too, was looking for avenues where their technology and expertise could be utilized and put to proper use.

Thus, these three organizations were individually working for the same goals:
- *Target community*: the poor
- *Product*: Horticulture crops and Non-Timber Forestry Produce (NTFP)

- Need to utilize their *resources* of expertise, skills and technology

These similar interests were the main reasons for the three partners to come together. It was also evident that partners needed to be like-minded and share the same values and commitment to benefiting the community.

All three partners had had contact before due to being involved in agricultural development in the same area, e.g. CCD had used IDEI pumps in its projects and had helped OUAT in its field trials of machinery. However, only IDEI had been involved in a coalition based project before and it was the initial partner who proposed this method of innovation to the other partners.

Although there was a rough idea from the beginning of what roles needed to be filled, it was only after the three partners were selected that specific accountabilities and tasks were decided for each partner. They were:

Role of IDEI:
- Coordination with partner organisations for effective implementation of the project and delivery of project outputs in time
- Provide marketing support for marketing of value added products, develop market linkages and develop a system for sustainability
- Conduct studies such as livelihood analysis, market analysis, institutional analysis, consumer survey etc for in-depth understanding of the livelihood system, market dynamics, market potential for the value added products etc.
- Monitoring the project progress, reporting and documenting

Role of CCD:
- Establishing links between community and other project partners
- Livelihood analysis
- Awareness building on importance of value addition skills
- Organising the groups for training
- Advocacy with the Government
- Strengthening of Gajapati women's self help cooperative

Role of OUAT:
- Technology identification, appraisal and testing
- Value added product development
- Standardization of technologies
- Technology trials in the field
- Technology transfer to end users

The role specifications were mutually agreed upon. Although the roles were specified for each partner organisation it was often necessary for each to get involved in the others' activities and play a different role. For example, many times CCD accompanied IDEI to different private sector players to explore market linkage opportunities. This was necessary because CCD was expected to initiate the activity with the Self-Help Groups,

viewing its role as an escort. Similarly it was necessary for OUAT to get feedback on a consumer survey on pineapple slices because OUAT was required to develop the product. However, there were no significant role changes.

External co-operation:
The members of the coalition, although specifically selected to be able to fulfil the roles required by the coalition, sometimes required the assistance of non-members for their expertise or services. These included external consulting agencies, companies with whom commercial relationships could be formed and bodies with technical expertise or specialist information, as well as assorted suppliers of materials and services. The involvement of these bodies was important as they provided all sorts of small roles that the members of the coalition could not. Without them, the project's progress would have been far slower and less smooth. Although the coalition members were the vital players in the project, it was important for the project's success that it was prepared to look outside when it was necessary.

Partner organisations' benefits from project:
This project added to CCD's local standing within the community, within which it has long been active. For example CCD was able to initiate intervention for establishing a processing unit in the area which was a long-standing demand of the tribals. Similarly, CCD had sufficient local standing to play the advocacy role, particularly with the district level authorities.

IDEI's importance has been much increased by its success with the CPHP experiments in Himachal and Orissa, so that many organisations now approach IDEI to get information and ideas to replicate their models in other places.

OUAT's innovations as a knowledge centre were not much highlighted earlier. After the workshop on CPHP and by being a part of this project, many organisations have now approached OUAT particularly for different post harvest technologies that could be beneficial to area specific situations.

3.2.2 Institutional Arrangements

The coalition had a favourable environment in which to work. Prior association of coalition members, CCD's long presence in the target area and its influence with the target community and OUAT's willingness to apply its technical skills for the people's development were some of the favourable enabling environments for the effective and successful functioning of the coalition. Also vital were the wide range of meetings on different social and official occasions, including the following examples:

- Regular informal meetings among the partner organisations took place from time to time. For example whenever Raju from CCD came to Bhubaneswar, whatever the reason, he made it a point to visit the IDEI office and discuss the project. Similarly the IDEI representative visited OUAT several times a month to discuss technical and administrative aspects of the project with different functionaries. The people

involved in the project met beyond office hours and even on holidays when necessary.

- Telephonic conversation and e-mails with CCD and OUAT and vice versa were a matter of routine sometimes several times a day. This was useful for passing on important messages on time and ensured quick response to important issues. Also, important documents related to the project were shared with them to ensure transparency and trust.

- Every three months a steering committee meeting consisting of all the partners was organized to review the progress made on the research activities and plan for the next three months. This forum provided an opportunity to take each partner into confidence, and strengthen relationships and trust each other. The irritants for the partners were discussed and sorted out amicably. For example on the first trial of the technology while processing pineapple, guava, lemon etc the processed products fermented in the bottles and CCD questioned the credibility of technical experts from OUAT. Both sides continued arguing until a steering committee meeting took place where both partners were made to understand what went wrong. The absence of sterilized bottles and an air-tight bottle sealing machine were the main reasons for early fermentation and subsequently these were rectified.

From the managing partner's side a minimum of two visits to the partner organisation in a month was ensured to have transparency and an understanding of the work outputs. Immediate solutions could be decided for specific problems without waiting till the meeting. For example OUAT wanted to get some stainless steel cutters, which were not available in Bhubaneswar, but IDEI's office in Kolkata meant that the design and production of the cutters could be done in there by the IDEI Area Manager.

IDEI posted one Area Manager/Field Officer at the field level to closely monitor and guide project activities and to interact with the tribal farmers regularly. This provided CCD with moral support and the farmers with a feeling that they are not alone to solve their problems. Several rounds of discussions in villages while conducting livelihood, marketing and institutional analysis provided an opportunity to understand their situation, make them understand the project purpose and carry them all along the project process.

Arrangements were also made to organize the technology transfer trainings or the value addition trials in the field. This helped OUAT to understand the users' perspective on technology. In one case, OUAT had prepared perfect samples of Osmo-Dehydrated pineapple slices and Ready to Serve Drinks (RTS) in the lab and all partners were confident that this could be easily transferred to tribals. However, during training it was realised that what seemed easy in the lab, in a controlled environment, was difficult to replicate in the fields, without sophisticated instruments and minimal infrastructure. They were compelled to think about the *utility of a technology* for the common person. Thus during the next phase of training, care was taken to transfer skills for a technology that could be easily replicated and practiced by the tribal women. It was also arranged for exposure of the tribal growers to a technical institute like OUAT to understand the facilities and the importance of hygiene and the methods of working within a laboratory.

3.2.3   Coalition management

How was the project planned and managed as a coalition?
Besides the dialogue between the farmers and the coalition, two rounds of visits to the project area were organized in order to assess the practical situation, interact with the farmers, and understand the tribals livelihood systems. The coalition members then needed to plan and design the project and were given an opportunity to do so by participating in the project formulation workshop organized at ICRISAT, Hyderabad.

Each participating organisation was requested to envisage their role, the specific activities they intended to implement and the budget requirements. Subsequently representatives of the partners met together to critically assess the relevance of the activities and the justification of the budget and having reached a consensus, the proposal and the budgets were finalized.

A calendar of activities with details of individual partner responsibilities and output delivery was prepared from the very beginning. This provided enough clarity on their roles and responsibility. A stakeholder-monitoring table was also prepared mentioning the general role of the partners and their specific monitoring responsibilities. During another workshop organised by CRISP, the concepts and experiences on project management principles from the partners of other coalitions helped the Orissa group learn about how to make the coalition approach work effectively. After attending this learning-sharing workshop in Hyderabad in March '04 the coalition members became even more motivated as the project was perceived to have shown significant results in a short span of time.

Decision-making, budgeting and relationships
All partners agreed to develop quarterly activity plans and review them in every quarterly meeting, plan the activity for the subsequent quarter and prepare a budget requisition. Each partner organisation submitted the programme plan along with the financial requisition for the release of the fund. The partner organisation also submitted the budget utilization certificate on the earlier fund received. Any change of strategy in planning or execution of activities was discussed among the partners. Some decisions such as on the value addition trials were taken jointly.

There were no major differences or conflicts that affected the functioning of the coalition. However the example of the first trial by OUAT and the resultant damage is explained above, All such issues were amicably sorted out during the steering committee meetings.

The coalition adopted mechanisms to avoid dominance by any member. Each participant was given an opportunity to speak in the meetings and by rotation each organisation was allowed to regulate the proceedings of the meeting. Each partner tried to involve the others in its activities, for example an IDEI representative accompanied the OUAT team to Parlakhemundi for technology transfer and trial and OUAT was taken to visit fruit processing units in Bhubaneswar to understand the packaging and bottling systems. Better understanding of each other's activities meant that no partner was dependant on another and meant

domination was less likely. IDEI, as the managing partner, did not impose anything on the partners against their will.

The individual representatives from the partner organisations maintained personal relationships with each other. This developed due to the fact that all partners worked together and needed each other's help in discharging responsibilities and delivering outputs. The relationships established in this project were also useful outside it, for example CCD requested IDEI to arrange a technology demonstration completely unrelated to this project because the organisations had now formed close ties.

3.2.4 Learning mechanisms in the coalition

The learning mechanisms in the coalition evolved in the process of working together, implementing different activities and applying lessons and principles from previous work. The research component included analysis of the livelihoods of tribal growers, market analysis of value added products, and institutional analysis to find out the social capital base of the tribal growers. The findings helped the coalition members to enhance their knowledge on the livelihood of the tribals, and the market dynamics of the horticulture produces, and were shared with the partner organisations.

Initially, the project was focusing only on pineapple. But on the completion of the analysis, other crops with distress sale also emerged e.g., jackfruit, turmeric, custard apple, cashew apple, guava, citrus, etc. Thus, the next phase of activities was dependent on the results that emerged from this study. This study had also helped in rapport-building with the community and creating confidence among the project members. It was realized how important it is to make the community aware of the purpose of the study and make sure it address their concerns.

The use of trial and error was agreed to have been important to the project. Value addition trials with different horticulture produce were carried out which enabled the partners to assess the potential of each product and decide which products they would develop and propagate further. Similarly on the marketing front, both private and Govt. owned processing units were tried, and the coalition was able to pick those that worked best. Trial and error meant avoiding any serious failures and allowed the coalition to select the best solutions. In the process the partners adopted the principle of flexibility to choose external partners, which made the project much smoother. When developing ready to serve drinks, manufacturers of packaging, bottles and labels needed to be found from outside the coalition.

Partners' willingness to make and face up to mistakes was an important element in the smooth and amicable functioning of the coalition. Following the spoiling of the first batch of processed products due to fermentation, the ability of both OUAT and CCD, who initially blamed one another, to admit that they had both contributed through neglect of certain responsibilities was vital to the quick and clean resolution of the dispute.

3.2.5 Ways of working

The coalition adopted the principle of delegating responsibility and accountability to its partners. They enjoyed the freedom to take decisions on the execution of activities although all members preferred to discuss with each other through e-mails, telephone or individually before implementing any decision.

There were occasionally problems with finding meeting times agreeable to all partners and problems due to the distance between partners, but the coalition did not face any major constraints on its functioning.

By being in the coalition and agreeing to certain principles of working together the partner organisations had to adapt their own working practices. Particularly for OUAT as a government owned institution it was difficult to implement certain principles like an immediate response to a demand for output. However one interesting lesson the partners discovered was that the persons who were associated with the project worked informally within a formal organisation to deliver outputs. For example the technical staff of OUAT worked beyond normal hours or on holidays to get the pineapple processed since they knew that the product is perishable. A decision by one of the technical staff to procure the pineapple from Parlakhemundi without waiting for approval is a reflection of commitment to deliver outputs that may not be possible when operating within the constraints of government machinery.

One of the big challenges that the coalition faced was coordination among partner organisations and ensuring out put delivery in time. The managing partner IDEI played a significant role in this regard by co-coordinating with individual members, pre-empting the partners' responsibilities and output delivery, planning in advance and above all taking all partners into confidence which could only be possible due to the good relations between the coalition members.

Various changes in the practices within individual organisations became necessary:
- All organisations developed a belief in more fieldwork, more knowledge about the field situation and implementing projects that help the poor. OUAT subsequently decided to explore ways and means to test and demonstrate all its post harvest technologies in the field before finally disseminating them. There is a commitment among the scientists of OUAT to develop user friendly and affordable technologies based on farmer's perspective of technology and their uses. IDEI also decided to intensify its field interventions to effect changes and benefit the poor.
- There was wider appreciation and adoption of coalitions by other departments in the OUAT.
- All the three core partners are currently looking for more field related projects to be implemented for the poor.
- OMFED – being the Govt. owned organisation – preferred to work with the SHGs rather than the individual farmers and agreed to give Rs 1-3 as margin to the SHG. The present Managing Director now gives more emphasis on the procurement of produce for SHGs through NGOs within the state of Orissa and not from outside. This is a good sign for replication of our model in other NGO areas.

- Seeing the successful functioning of the coalition effort, the government has sanctioned cold storage and other infrastructure facilities to be created with the financial help of DRDA involving SHGs and the local NGO in the implementation process.

With the benefit of hindsight the coalition members identified things that they would have been done differently:
- As value addition to horticulture produce and the market linkage activities were the major activities of the project, a coalition partner such as OMFED (that has a commitment to poverty reduction in the state of Orissa), could have been carried in the coalition from the very beginning.
- The technology searches and development could have been done simultaneously instead of consecutively.
- With a better time frame of say three to four years, the tasks and outcomes would have been accomplished more systematically.

3.2.6   Outcomes

Following this successful coalition project, the NGO and the University are more receptive to similar projects and the partners have been able to implement the learning and the experiences of this project in other areas of their operation. The Gajapati district administration appreciated the coalition's achievements and the model of intervention and is now trying to find ways to replicate the model in other areas. Furthermore, other departments of OUAT are now thinking of action research projects that involve the poor through designing and disseminating technology that meets the needs of the people, and these departments are also more open to being involved in coalition projects.

The concept of value addition to horticulture produce has had a good response from NGOs, government authorities, consumers and entrepreneurs. The Government of Orissa has introduced a new act – the Orissa Self Help Cooperative Act – in order to lead SHGs towards self- sustainability and the Ministry of Food Processing, Government of India, has also invited the entrepreneurs/NGOs of Orissa to come forward to undertake fruit processing as a commercial activity.

The coalition produced with valuable findings such as technologies for adoption, the unique method of project implementation, the principles and lessons of working in a coalition etc. It organized a state level workshop to disseminate the findings of the project among the policy makers belonging to multiple sectors.

Based on this successful experiment, the partners would recommend that government, private and NGO bodies adopt the policy of working through others particularly with a coalition approach, applying successful principles and lessons for replication of this model in other area-specific situations.

3.2.7 Institutional Innovations and Lessons

All partners and other organisations that were associated with each other over the life of the project realized the benefits of working together in partnerships; they expect to use these principles to guide their future projects. Although IDEI had had a similar experience in Himachal, it was a new experience for the coalition members to make use of complimentary skills to the benefit of the whole. This helped them in many ways in terms of broadening their knowledge base and understanding the approach to mobilizing resources and expertise from multiple sources for a common objective. The main findings of the coalition were:

- The nature of relationship was critical as it formed the basis on which the project would go ahead smoothly. Trust, mutual respect and shared commitment to poverty reduction of the tribals were key factors.

- Timely coordination by the managing partners and taking partners into confidence at each level was important. The project steering committee meeting and informal meetings with the partners, the personnel involved at work places and homes, sharing of documents and sending mails made it possible.

- Equal sharing of accountability and responsibility within the project. For example each of the core partners took up assigned responsibilities as per decision taken in the steering committee meeting without hesitation. It was not just the responsibility of the managing partner.

- Regular and frank discussions amongst the partners helped in building trust and in gauging the expectations of each partner.

- Each partner organisation recognized the strength of the others. In particular, the strength of the local partner was recognized and promoted further by the other two on the understanding it was critical to the sustainability of the project. For example, all interactions were routed through CCD as they would continue to work in the local area even after the project.

- After the workshop on CPHP in Bhubaneswar the coalition partners were trying to develop a network of like-minded organisations in Orissa to promote the post harvest innovations by streamlining the ways and means of exchanging resources and expertise.

- While working in the project contacts and relationships were developed with twenty-three other organisations, constituting is a new set of relationships and social capital that were created by the project.

- Partners learnt the importance of developing adaptable and low-cost technologies that could be used not just in the labs but equally successfully by farmers with few resources. The original plan, tested in OUAT labs, to produce Osmo-dehydrated pineapple slices turned out to be impractical in the field, and the project had to look for other value-addition methods.

- Frequent interactions with experts and technical institutions like OUAT, Central Institute of Plastics Engineering and Technology (CIPET) or food-processing plants like M/s Aaren Foods, M/s Mamta Agro-Foods, M/s Sabita Foods etc and

food product marketing firms like M/s Jagannath Merchandising Pvt. Ltd., have increased the knowledge base of the partners. Technical details such as the need to sweeten fruit drinks for the Indian market, and commercially popular varieties of pineapple would not otherwise have been known to the partners.

- The importance of innovating not just technologically but within the context of the market surrounding the farmers was a very important lesson. Finding niche markets suitable for exploitation (e.g. dehydrated pineapple) and finding ways of dramatically increasing the value of the horticulture produce (e.g. by not selling de-seeded tamarind to India but exporting it with the help of Aaren Foods Pvt. Ltd. at a greater price) were very important in the success of the project.

- It was necessary to prevent the community raising their expectations too high, as the developments of the project were not going to change their lives suddenly, and each new process they learnt was only one step.

- Although Livelihoods Analysis was the key responsibility of IDEI and CCD, there is a possibility that the involvement of OUAT could have enhanced OUAT's skills and could have helped the University in designing interventions for their other projects. Also, feedback between partners at this early stage could have meant that the problems of hygiene during value addition trainings might not have occurred. Involvement of all partners in key activities was another important lesson

- Three studies have been carried out in this project. They are:
  1. livelihood analysis study,
  2. institutional study (to study the impact of the major government and non-government institutions on the livelihood system),
  3. market study (for assessing the varieties and volumes of the main Horticulture produces and spices, the dynamics in the local market, district level-Secondary Markets and Tertiary high-value markets, major forms of the available processed food products, both branded and unbranded in and around the project area).

- These efforts have helped the project partners to understand the sector and area better, but more importantly, also have enabled them to intervene in a way that really helps the community. An important lesson was learning the importance of *thorough research before initiating interventions*.

Advantages of Coalition

- Partners are able to utilize each other's skills. A coalition expands the networking capacities of individual organizations.
- The accountability towards each other and towards the project outcome increases when multiple partners are involved in the project.
- Based on the experiences of working on such a coalition project, partners can keep working with each other even when the project ends.
- Flexibility to increase or decrease the number of partners or stakeholders in the project based on the needs of the project. Also, the roles of the partners might be changing in the course of the project. However, it is difficult to provide the same

flexibility to the core team members. Thus, their selection before the initiation of the project is very crucial.

Disadvantages of Coalition

- With considerable geographical distances, coordination amongst multiple partners gets difficult. The frequencies of contacts are not always sufficient and the presence of all partners at same time can be difficult.
- It is easier to work with people who have prior experience of working on such coalition projects. They understand the nuances of the coalition (like on-time reporting from multiple partners, understanding the importance of coordination, accommodating other partners' interests, etc) and cooperate accordingly.
- Partners sometimes get so engrossed in executing the project activities that they give little thought to the overall purpose of the project.
- The responsibility of monitoring and reporting falls on the managing partner only. The other partners miss out by being less involved in these processes.
- Managing a coalition is like managing the players in an orchestra where each player is expected to play the role with seriousness and sincerity. Any slackness by any one disrupts the team effort to produce the outcome. This principle applies to working in the coalition.
- A system should be available, where the partners are able to judge themselves and each other within the coalition. Partners should be able to review their roles continuously and should be able to ascertain if their interests matching those of the community.
- Due to the bureaucratic set-up within government organizations, effort and time can be wasted in achieving results. Also, the actual project participants from such organizations very often have no decision-making capability or control over the outcomes. This should not limit, however, the utilization of resources, skill and expertise available within the government departments.

All the partners involved in this project gained fruitful experiences and were affected in many ways. In the process of project implementation new relationships were developed with different organisations and individuals having assets and expertise to support the endeavour in the interest of the poor tribal growers. The context in which we worked for the benefit of a vulnerable section of people attracted the special attention of different people and partners. This represented a substantial investment in social capital that did not exist before.

CCD, being the local level NGO partner having proximity with the people, expressed satisfaction about the fulfilment of their long standing dream to initiate interventions in the rural marketing front for the benefit of the poor tribal growers. They learnt a great deal about a commercial approach to improving livelihoods.

OUAT, the technical partner was very much lab oriented, but this project provided them with the opportunity to get ideas from the field and realize the grower's perspective on technology requirements. They experimented and tried hard to develop appropriate and

user-friendly technologies that were accepted and adopted easily, and now are prepared to work alongside NGOs for pro-poor ends.

It was interesting to see that the tribal women growers organized in SHGs developed confidence in acquiring value addition skills and entering into markets. For the first time the tribal women sat in the exhibition stall in the district level Gajapati Festival, interacted with the customers and handled the sale of value added products. The formation of Gajapati Women Self Help cooperative Ltd is the first step towards to strengthening their confidence and an effort in sustaining value addition and market linkage activities. There is full participation of men folk in this since they allow them to enter into this venture and cooperate with the partner organisations.

The project contributed significantly to the sector in terms of innovation of user friendly and low cost technologies befitting the needs of the growers and the processors. They have adopted the technologies for adding value to the produce for getting higher return. Different forms of value added products and the technologies being in place, private sector players showed interest in initiating business with the poor growers. Due to the project intervention the demand for the produce increased which ultimately resulted in a price hike of the produce benefiting the poor growers. The linkage established with OMFED and M/s Arren for regular supply of the value added produces is a breakthrough and means that the interests of the growers and regular income has been protected. A network of different organisations such as the technical organisations, intermediaries, growers, public and private processors and other market players have been established and coordinated. The system in place will be coordinated at a later stage by the federation of the growers. Therefore, this sector is becoming more pro poor and has left a sustainable impact on the lives of poor people in the region.

3.3   Case study 3: the Jabalpur Lac Coalition

3.3.1   Introduction

This coalition on non-timber forest produce (NTFP) innovations for better tribal livelihoods developed new ways of working. How and why these emerged, and what was learned by the project, will be explained and analysed in this section.

Two distinguishing features of this project are: (i) its focus on NTFP with a gathering/collecting mode of access to the 'forest' produce/commodity as opposed to the cultivating/harvesting mode that is seen in other 'agri-horticultural' post-harvest projects, and (ii) its 'coalition' approach to understanding and addressing the livelihoods problems in the NTFP sub-sector, where the tribals have no control over the yield or quality of produce till it is collected and processed (again unlike agri-horticultural projects where post-harvest processing and marketing often dictate how the crop is cultivated/harvested etc.).

3.3.2 Purpose

In the context of the South Asia CPHP investigating institutional and methodological changes in development projects, this project developed the hypothesis that the acknowledgement, acceptance and uptake of institutional lessons indicates how sustainable the products of an innovation system will be. The presence or absence of institutional learning can be used as a litmus test to assess the viability and sustainability of an entire innovation system. This was tested through a case study of the Jabalpur NTFP coalition project, addressing the following questions:

1. Can each institutional innovation be identified as being linked with a particular one of the project's technical innovations?
2. Did these institutional innovations facilitate or enable the technological innovations? If so, how?
3. Has the project coalition noticed these institutional innovations/changes? If yes, what have they done to sustain and document these institutional changes?
4. How were the lessons learnt? Can some specific pressures or processes be identified that helped the institutional lesson? (as evident in changed behaviour, arrangements, relationships, rules or norms)
5. Does the project coalition accept or feel ownership of these institutional changes or are they seen as temporary institutional arrangements to serve a specific (NTFP) project
6. Does institutional learning take place even if actors resort to old institutional arrangements after a particular coalition project is completed?
7. Are there particular features of a project that can be used as a guide by which to predict if the institutional learning and reform it stimulates will be sustained?
8. How can innovation policy sustain these institutional change processes? What existing aspects of R&D and innovation policy are challenged by these institutional changes and how can they be reformed to support the sustainability of such changes?

To answer these questions the method used was process tracing within a case study to analyse and understand how decisions and processes evolved and changed during the project duration.

3.3.3 Context of the Jabalpur NTFP coalition

The project started in April 2003 and ended in December 2004. It was located in one of the poorest districts in the State of Madhya Pradesh, Jabalpur, and focused on the Kundam block of the district, a predominantly tribal area.

Technologically and institutionally, this project is located in a context where there are poor tribal populations eking out a living from the collection and marketing of NTFP. While the processing options do exist, they are used rarely for want of both technological and institutional support/facilities. Previous attempts at bringing processing technologies to

these tribal communities have often left them with an overload of technological options with little or no change in the institutional arrangements that can get them access to:

- these technologies (and their locally suitable adaptations)
- finance and other infrastructural facilities necessary to make the technologies work
- the scale (volume) of produce needed for operating
- the mutual trust and norms required for collectively acquiring or sharing any of these technologies
- market processes (like bargaining with the local collection agent/ middleman for a better price, storage facilities to wait for the lean season sales to begin)

The context is one where there is an obvious lack of technological and institutional arrangements that go hand-in-hand, one enabling the other, to ensure sustainable tribal livelihoods. This project proposed to understand the local systems of produce collection, processing and marketing, so as to bring both the technological and institutional arrangements that will ensure better livelihood options for these tribal villages.

3.3.4   Its Partners

This project coalition consists of five key partners, the tribal households represented by the women's SHGs in the tribal villages, the Mahatma Gandhi State Institute of Rural Development, the NGO Tarun Sanskar, the Tropical Forest Research Institute and Livelihood Solutions Pvt. Ltd.

While the four key partners were part of the coalition right from the project formulation stage, the tribal SHGs come into the project scenario at a later stage when Tarun Sanskar and Livelihood Solutions selected them through a screening process, following a study of existing SHGs in the block. Thus selected by these two partners for their (a) tribal focus, (b) poverty focus, (c) gender focus, and (d) financial discipline, the tribal women's SHGs were the hand picked partner in this coalition. This was in contrast to the voluntary self-assessment that each of the other partners carried out before they joined the coalition. What is noteworthy in the case analysis that follows is how the women's SHGs transformed the entire coalition, demanding new and more inputs and rethinking by the four initial partners.

The four key partners were:

Mahatma Gandhi State Institute of Rural Development (MGSIRD) – is an autonomous institute to analyze, design and cater to all emerging training needs of the Rural Development department as well as the elected representatives of Panchayat Raj. Its mandate is to train those involved in rural development, conduct evaluations and monitoring of on-going projects and schemes, to do research in concerned areas and identify potential for integrated development, as well as feed analytical reports back to the Department. The Institute sees itself as "an academic arm of the department, fulfilling the role of a think tank."

Tropical Forest Research Institute (TFRI) – is an institute manned by officers of the Indian Forest Service (IFS). It is under the Indian Council of Forestry Research and Education, and was founded as in 1988 though the field station in Jabalpur did exist as a unit under the Forest Research Institute in Dehradun. It has the mandate to conduct research on forestry in the States of M.P., Maharashtra, Chattisgarh, Jharkhand, and Orissa, covering much of the hills of Gondwana and the Vindhaya and Satpura ranges. The mandate is scientific and technological.

Tarun Sanskar – is an NGO committed to tribal development in Jabalpur and Mandla districts of M.P., working in the area for over two decades It holds a development vision, where the 'rejuvenation of a village community is based on the principles of self-sufficiency, equity and distributive justice and well principled governance.' TS has vast field experience and good social networks in the tribal areas, due to its previous programmes. These include community organization (including establishment of SHGs), sustainable livelihoods (including NTFPs), gender empowerment, integrated environment management, youth voluntary projects, community health and education, rural markets and retailing, biofertilizers, and trainings offered for several rural/tribal development functionaries of the panchayats and other NGOs.

Livelihood Solutions – is a relatively new, private development consultancy firm, with expertise in the promotion and marketing of rural products. Its mission is to identify and market 'powerful' products that can sustain rural livelihoods and ecosystems and cater to market demands. Personnel in LS are equipped with long years of experience in **diverse** rural/tribal regions and livelihood problems. (This partner has gone through major organizational changes, with changes in organizational structure and internal operations. Since July 2004, it is called Livelihood Services, and has become an individual consultancy firm).

3.3.5 History of the Project

The project evolved from a visit made by the Coordinator and Systems Manager of CPHP South Asia to Jabalpur in 2002. The visit was promoted by suggestions from Guru Naik (Livelihood Solutions), whose previous experience with the tomato box innovation system had been documented and analyzed by the CPHP research team. The specific suggestion made was that the NTFP based tribal livelihoods presented a case of post harvest disorganization in the forestry sector. A series of meetings with MGSIRD, TS, and LS revealed that although there were some good organizations (such as the XIDAS that was trying to help these tribal people), the NTFP based livelihoods were marked by poor and dated technologies, seasonal distress sale of collected produce, poor infrastructure (storage, transport, etc.), exploitation and vicious circles of poverty for the tribal people. The CPHP team identified the need for and scope to build a coalition among various actors in the region and the potential of such a coalition to tie in with CPHP's agenda of focusing on poverty reduction and strengthening the delivery aspects of post harvest innovation.

The next meeting, a month after the CPHP SA visit, among the potential partners was held in MGSIRD where XIDAS, TS and LS decided that they could develop a project proposal

together. TFRI, SFRI, and JNKVV were potential partners along with the CBOs, which had not yet been identified. The tentative project team then went to the PMF workshop (October 2002) with a rough draft of its proposal to develop its project memorandum, and committed to producing an institutional output to document its own ways of working.) The project team finally chose its coalition members and work started in January 2003.

Discussions about selecting the appropriate CBOs to partner with the team led to the decision to focus on SHGs on account of the local ownership, gender implications, and control over livelihoods that would make them a suitable partner. The SHGs were selected from among a list of SHGs that had been developed with involvement of the TS field staff. The shortlisting done by LS went from over 200 SHGs to 120, to 35, with whom both TS and LS had detailed discussions. Then there was a shortlist of 19 SHGs, and after a meeting among the coalition members and further analysis by LS, the number came down to 8; finally a group of 4 SHGs were selected as partners in the coalition.

In the meanwhile the project coalition was searching for and interacting with several potential options for the right type of NTFP intervention to be made. Mahua was a natural first choice – it could interact effectively with several points in the livelihoods system of the tribal households. The coalition discussed options such as extraction of organic colour from Palash flowers, Teju flower colour, Baibarin laxatives but it was decided to focus on lac, despite a significant case of failure of lac in the area.

3.3.6 Mahua and lac – specific post-harvest interventions

For mahua the technical interventions as envisaged by the coalition had to begin with clean collection practices, dust free drying, safe and moisture free storage and the market practices to enable a better and more sustainable income from mahua. The last was the most visible innovation in the case of mahua, since the SHGs rejected all the suggestions for clean collection of mahua because the price difference between clean mahua (collected on muslin spread under the tree and dried dust free) and mahua with a bit of dust and dirt was not worth the effort involved. The SHGs argue that dust free drying is only important if making mahua kishmish or other value added products (such as osmotically dehydrated mahua flowers). But for that to be possible, the SHGs claimed they needed better infrastructure, more resources, and better trade contacts.

After assessing different ways of traditional storage, the coalition recommended that storage in traditional structures in individual households could be reinforced by lining the storage compartment with polythene lining and packing up the top (as is traditionally done) with the mud packs. In April 2004, no polythene sheets could be supplied to the SHGs – so that moisture free lining was not done for that year's crop.

The community storage infrastructure identified that an important innovation the project could have made was grounded for want of intra-coalition conviction (over whether the community storage warehouses were the best option), the timing of decisions (by the time the ground work was done for these structures, the villagers had other things like mahua collection/wheat harvest to attend to), and resource mobilization (TFRI which is

responsible for the technical investments did not release the funds in time due to internal rules or norms).

The SHGs also sent their women (in all about 40 of them) to training at the MGSIRD and a few active members for training at the Chindwara training centre. The provision of working capital and the market management interventions using this capital have resulted in the SHGs gaining strength, overcoming their dependence on the local trader, and being able to dictate the price. This was despite a false fall in prices created by the local traders to discourage the SHGs from their scale advantages and market practices institutionally supported by banks and NGOs like TS.

The earlier failure of an attempt by DRDA in Jabalpur to introduce lac taught these actors (TFRI, TS, and LS) important lessons about:

1. the intricate linkage between lac cultivation technology and the processes that could facilitate these technologies,
2. timely harvesting and quality of brood lac – which meant that skills for harvesting and transporting the brood in time had to be ensured or a reliable supplier with these skills brought into the picture,
3. safe and timely inoculation, which meant that pest retaining nets/bags had to be procured, from which only the lac insect larvae would escape leaving the pests behind in the bag – thus giving a head start for the larvae to establish themselves on the tender shoots,
4. the need to ensure that the tender shoots are ready – or pruning of the palash trees well before the inoculation is done, helping the SHGs to do the pruning and identification of the trees pruned,
5. appropriate arrangements for financing the brood lac, transport costs, technical training.

An important innovation for lac is the inoculation on perennial *arhar* (pigeon pea) trees to substitute for palash trees. Experiments in TFRI and other lac research institutes have revealed that these perennial arhar trees are a good host for lac insects and also offer a good crop for the tribal households. TFRI arranged for the procurement of these perennial arhar seeds from Aurangabad and Bilaspur.

In October 2003 the coalition did the first pruning and inoculation of lac in these villages, and had to arrange for the supply of brood lac. Since then a small harvest and another round of pruning and inoculation occurred in April-June 2004. The field visit in July revealed clear establishment of lac colonies on all the palash trees inoculated. The role of TFRI in this successful introduction of lac here goes beyond their technical expertise: TFRI researchers and staff went through a long period of training and interacting with the tribal people to enable them to prune the trees, inoculate the brood lac and harvest it themselves.

3.3.7 Institutional changes associated with the mahua and lac interventions

The principal institutional innovations revolved around the inclusion of the SHGs in the coalition. Initially, it was necessary for the SHGs, who were then unfamiliar with any of the other coalition members, to be introduced to each one so that they could be equal non-hierarchical partners. Interviews about their role in the project were held in July 2004 to aid this process took place. Each original member then found it had to re-orient its specialisations so that they could interact with the SHGs and deal effectively with the problems that the tribal people faced and the SHGs highlighted. For instance, the MGSIRD had to present itself as a mentor, a figure that was culturally acceptable, facilitating the working of the coalition members, besides conducting its own training programmes for these SHG women. For the organization, the change from training officers and development workers to working with illiterate tribal women unfamiliar with urban facilities and practices demanded some significant changes in teaching methods. TFRI had to turn away from its research arena as it had the skills to help the SHG members learn to prune palash trees, inoculate lac, and even number the trees – an input for record keeping and ownership that the SHG needed (which would not have in the conventional scheme of events been part of the TFRI mandate).

Another change in the project coalition was related to deeper issues of responsibilities and decision-making. When the SHGs were given their working capital (Rs.75,000 per SHG), TS arranged for the SHGs to enter into a bond with them as a condition for withdrawing money from their accounts. LS disagreed with this rule, asking TS to operate on trust between itself and the SHGs instead of through a contract or bond. But the bank demanded it as a measure of good practice, and also accountability (to have a responsible NGO vouch that the withdrawal was put to good use). Thus every demand the SHG had for working capital allocation had to be given to TS as a proposal. This was then discussed among both the SHG members and TS, and when both signed the demand papers, then this amount was released by the bank. Each SHG has been given a credit worthiness of only Rs. 5,000 though the amount was given to them as working capital. So the SHGs did have a valid complaint about the timely release of funds – in this case 'our own funds' they remind us. In Mehdan, for instance, the SHG could withdraw only Rs. 15,000, though they needed more working capital to procure mahua from other households and villages (because of all these procedural delays). This working capital was returned to the account when the mahua stocked in April-May had been sold off completely, and profit allocated among SHG members (after deducting the amounts borrowed from SHG funds by the members during the lean season).

As a result of empowerment training the SHGs in MGSIRD became highly articulate: they came up with a detailed plan for local trade in post-harvest produce and they can operate on their own without dependence on any shopkeepers, middlemen, or petty traders in the area. These women mastered issues of scale and understood the need for better management skills and better community facilities (the community storage structure to begin with) to exploit scope in post-harvest operations through value-addition, timely sale, identifying the right buyers, etc. They developed good records of meetings, debates about issues, especially any conflict or difference of opinion expressed and discussed. Their demands for better management practices have led TS and LS to reconsider their strategies about capacity building at the local SHG level, including:

- more exposure visits to other successful SHGs handling NTFP marketing, enabling effective linkages or some sort of federalisation,
- bringing and sustaining expertise (like TFRI) for continuous hand holding till the SHGs master the techniques and institutional requirements (for lac and also for other NTFP),
- introducing some more interactive learning sessions and discussions in the next training at MGSIRD,
- training some of these SHG office bearers in public speech and articulation of long term sustainability questions.

Differences in work culture were apparent – especially among partners like TS and TFRI (where administrative permission was required for any major allocation within the project) – when the decision was to be made about constructing community storage structures. These storage structures were a demand made by the SHGs, and other villagers, for whom lack of proper storage infrastructure was a major livelihood constraint. They wanted these community storage facilities to be used for Mahua, and for several other NTFP items that the tribal SHGs could collect, process, store and market to the right customers and at the right time/season to fetch a good price. These structures, they argued, could also provide space necessary for SHG activities, including *mahua kishmish* making or other processing activities for which they had been trained by the MP Vigyan Sabha in Chindwara (sponsored and facilitated by the project coalition, and TS and LS in particular).

3.3.8   Changes in roles during the programmme

The work and financial responsibilities developed as follows:

MGSIRD as managing partner retained the project management funds and disbursed the funds earmarked for community work to TS for technical support to TFRI and for market/product development to LS. But after the field work started in the tribal villages, with the participation of the women's SHGs, there was a change in roles and accountabilities.

The TS field staff who had worked with these villages before the project on other livelihood concerns, health projects etc, now had to define their role as building the community participation in the project. This included articulation of NTFP related problems, ensuring that the SHGs functioned well, were managed well, and continued to trust the project coalition. All technical problems were originally to be addressed by TFRI but the neat compartments of 'community based/social work' and 'technological work' broke down when it was clear that technological solutions, such as a bin-lining and construction of community storage bins, would not be possible without TFRI working with the community and without TS and LS getting involved in the land, community and legal issues of building the storage.

Once lac was identified as the ideal NTFP that could be promoted in these villages, TFRI's scientists (forest officers from the IFS) set out on intensive field visits, helping and training the SHG members with numbering of trees (which according to TFRI was not their job in

the compartmentalized role of technology supply), pruning operations, and inoculation. Later TFRI expertise was also employed in identifying best pest management practices and sources of the pest free inoculation nets.

LS, which had been assigned the product development and marketing role, soon found itself discussing and participating in several other components of this innovation chain, some which had little to do with marketing. Once the SHGs were given their initial support of working capital, LS and TS helped develop proper taking of minutes at SHG meetings, helped the field staff to lead the discussions, prepared the legal ground (in one case getting land allocated by the Sarpanch), contracted masons and found necessary labour for constructing community storage structures. However, TFRI needed internal administrative clearance for expenses above a certain limit, and that delayed the final decision on the construction.

The debates between coalition members also revealed that when considering financial allocations among partners, one needed to take account of the way funds were distributed within each organisation so as to prevent delays (such as the one that affected the release of funds for community storage).

3.4 Case study 4: Institutional Learning and Change Coalition

3.4.1 Background

The project follows an earlier CPHP funded project[10] that used a conceptual framework of innovation systems to look at emerging partnerships in agricultural research and development (R&D). Useful insights on partnerships and their policy implications emerged through case studies and were disseminated but the impact of this project on the potential stakeholders has been limited. The project team realized that there was a need for a different approach to this problem of understanding and promoting effective innovation systems in the post-harvest sector.

CPHP South Asia's new portfolio of four projects adopted this new approach of working through coalitions. The Institutional Learning and Change (ILAC) project was one of these four projects, where the objective was to enable pro-poor technological as well as institutional changes in the post-harvest sector and bring the lessons from these innovations to other stakeholders in the sector. All the projects were designed carefully over a period of four-six months – through the concept note to full proposal stage – to bring multiple actors and agencies into a coalition mode at the earliest stage possible. The CPHP management participated actively during this formative stage of the projects, with field visits, meetings, emails, discussions over telephone, comments on written proposals (parts thereof), and even with new contacts. All four projects were expected to provide

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[10] R-7502: Optimizing institutional arrangements for demand driven post-harvest research, delivery, uptake and impact on the livelihoods of the poor through public and private sector partnerships.

both technical outputs and institutional outputs. One of the technical outputs of the ILAC project was the documentation and analysis of the other three CPHP projects.

To develop this new approach to understanding and establishing pro-poor innovation systems in the post-harvest sector, ILAC planned to
1. Gather evidence through case studies about projects that have tried a coalition approach, and others that have not,
2. Facilitate one post harvest institute in the country to build and sustain an effective coalition and in the process learn the processes and institutional changes that take place,
3. Improve the capacity of actors in the post harvest sector to appreciate and apply systems concepts and a coalition approach in their work,
4. Develop a community of practice ,
5. Document, analyze and refine the processes through they achieved the above.

The last was considered essential because the previous project brought a significant change in the ways of working within the project team, as well as amongst the wider community of researchers/learners, the project could not capture these changes in ways that influenced others to follow their example. This was a clear parallel to successful post-harvest research projects where technological advances were achieved but communication strategies were lacking. It was clear from the previous cases studies that technological innovations went hand-in-hand with, or were even facilitated by institutional innovations, but the latter were never analysed or documented by the actors. Thus a crucial component of this ILAC project was to explicitly document, analyse and promote these 'process' insights.

We used an interactive way of doing policy research; rather than identifying a "problem", we were trying to understand "ways of learning" – whether it was about a problem, problem contexts, solutions, differences or changes. The assumption underlying the ILAC project, as established by the team's previous research, was that that those who had developed new different ways of working do better and achieve better impacts. The specific aim was to explore how different/new/modified ways of working were found. We knew that having a rough road map/approach that could help us learn *from* and *with* other innovation clusters was more important than having a fool proof and pilot tested methodology.

3.4.2   The ILAC coalition: formation

Three of the partners in the previous project were partners in this coalition. During a discussion following the concept note stage, the team decided to expand the coalition, and network with a wider range of stakeholders, to become more effective. Critical reflection and an external review of the previous project revealed the importance of including people (a) already working on institutions and institutional reforms in the agricultural R&D system, and (b) with institutional knowledge and experience of working with private and NGO sector. Two new members joined the team, both collaborators in previous work. The issues of the extent of cohesion and complementary skills that would be created within this

coalition were explicitly discussed in April 2002. It was recognized during the planning stage that the project would demand:

- flexibility in operation; an institutional feature that was not available in the public sector research organizations in India
- a good deal of critical reflection and incorporation of lessons into the project process; the intellectual capacity for which was available within the coalition.

To facilitate the administrative aspects of the project and to lead the technical elements of the project, the coalition appointed a 'management team', which started work in September 2003. The members of the coalition shared intellectual curiosity and development concerns, but had no denominators/affiliations in common: – national (Indian, British, etc.), regional (South, East, etc.), caste (different and unknown in detail), professional status (Dean, Vice Chancellor, junior scientist), disciplinary (science policy, economics, management), or organizational (public, private, NGO).

The coalition had to deal with major shifts within its membership: one member left his post in Kenya and reduced his inputs to reading, correcting, re-working drafts, developing contacts with African post-harvest/rural innovation systems and contributing to capacity development workshops. Another decided to leave India for a position at the United Nations University, Institute for New Technologies (UNU/INTECH) in Maastricht. Since this member had been the driving force behind CPHP, and this project in particular, it was decided that a new institutional arrangement was needed to ensure continuity and effectiveness of CPHP management. The Centre for Research on Innovation and Science Policy (CRISP) was created. The ILAC project depended upon the support and suggestions of CRISP's first Director, (who was also a lead researcher in the Consultative Group on International Agricultural Research ILAC project located in ICRISAT). Other adjustments – such as incorporating two new case studies (lac sector dialogue and the medicinal plants study) into this project – ensured that CPHP would not lose any opportunities in institutional learning. A third member then shifted to a more senior and intensive position in a new organization which made it necessary to concentrate all project management responsibility onto the other member of the project management team. He received support from the only other regular India-based member of the coalition.

The team expanded to include new researchers on contract: a British consultant who had expressed an interest in working with this team of innovation policy researchers), a programme manager with a herbal medicine company, a Ph.D. student at JNU with an understanding of innovation systems, and a research associate at the National Centre for Agricultural Economics and Policy Research with expertise in networks). Informally, through discussions on innovation clusters, capacity development workshops and related systems work on natural resources, disaster management or gender, several other organizations and individuals became drawn indirectly into the wider network that the ILAC project was embedded in. These included: – the Department of Science and Technology, Central Plantation Crops Research Institute, Central Institute of Post Harvest Engineering and Technology, Technology Informatics Design Endeavour, Centre for Community Development, Orissa University of Agriculture and Technology, ICRISAT (plant breeding research), Acharya NG Rao Agricultural University, International

Development Enterprises (India), Indian Lac Research Institute, International Livestock Research Institute, Shellac Export Promotion Council, Central Institute of Medicinal and Aromatic Plants, National Botanical Research Institute, Tamil Nadu Agricultural University, Institute of Rural Management, Anand, CapNet India, and Indo-Canadian Environment Facility.

In the next section we shall explore how the direct and indirect participation of these individuals and organizations helped and shaped the processes within the ILAC project.

3.4.3   The first phase: learning about learning

In the ILAC project learning to learn was not mastered but engaged in through a series of processes and practices. As has been recognized in earlier work (see chapter on ILAC in Hall et al, 2004); that there is no one way to institutional learning and institutional innovations (also the case with technological innovations). Each innovation experience and accompanying learning processes are context (time, space and culture) specific.

It is worth reiterating that the learning experiences within the ILAC project are perceived at two levels: – (i) within the project coalition, and (ii) within the larger community of research projects and innovation clusters that the ILAC coalition worked with. In the narrative that follows we have tried to highlight both. But there is an intermingling of causal explanations here between process innovations we made and the lessons we learnt. Sometimes the former were dictated by the latter and at times the latter resulted from the trials and errors that led us to the former. At the end of this narrative we present the crucial practices and processes that helped us and the other coalitions/groups/organizations/ individuals with us (i) learn institutional lessons, and (ii) acknowledge and analyze that learning.

From the earliest planning stage it was clear that the three projects under CPHP South Asia – all given a mandate to carefully observe and analyse their own learning processes – had difficulty in understanding that they were to capture their own 'learning' experiences. They had all the attributes of good coalitions: – complementary skills, some personal/previous association/familiarity among the members, a good deal of trust within the coalition, and relatively non-hierarchical and flexible operational styles. But members within them still viewed the poor farmers/women's self-help groups/tribals as the beneficiaries and, thereby, the ones that had 'to learn' to utilize the new technologies or practices that the project would offer or develop with the beneficiaries. Even towards the end of the projects, it was difficult to convince these coalitions that all members are learning and are beneficiaries so are changing or evolving continuously towards better performance levels. This need to convince the other coalitions about the need for institutional learning was a crucial omnipresent defining context for the ILAC project.

It was during the first CPHP 'write shop' held in March 2004, an event designed to facilitate the process of learning from the institutional lessons of the project, that the ILAC team seriously reflected upon its ways of working and how they needed to be modified. For the first time the project was asked to produce a draft institutional output. It was clear

that this project could not provide an institutional output in the same format as the other CPHP projects because the technical content of the project was process documentation and analysis itself. The institutional output was the critical self reflection, documentation, analysis and promotion of the process insights that led to achieving the technical inputs. The project team agreed that there are two outputs that the project would be providing:

1. **Technical output:** an institutional understanding, analysis, documentation and dissemination of how other post harvest coalitions work, including training/learning and networking

2. **Institutional output:** how our project worked as a policy coalition to achieve the above technical output

The key discussion was whether the project was meeting its commitments in terms of what it has achieved by March 2004. It had certainly accomplished a fair amount: the coalition had reviewing and synthesized experiences no institutional learning and change; initiated a 'lac sector dialogue' and prepared for a stakeholder workshop on the subject; identified lac sector and CIPHET-DPIP MP as partners for interactive policy research and discussed lessons with stakeholders; conducted research on medicinal plant initiatives; drafted on institutional history of an institution involved in post-harvest operations (TIDE); and begun preliminary research into the other CPHP projects and networked with them. It had not, however, begun consciously documenting and analyzing its own processes or ways of working and learning. When the team sat during the March 2004 writeshop and studied its fieldnotes, emails, papers, and notes on conversations and meetings, the first analysis of processes was tentative and incomplete. The questions that needed to be asked to understand (i) whether and how institutional learning had taken place, and (ii) how coalitions were or could enable others to learn from their own learning experiences (including ILAC project) were listed by the team: –

- What are the critical issues addressed by the innovation system/ project and what were the defining contexts or critical factors that led to identification of / work on these issues? Who was the initiator of this coalition and this work? And how did the initiator(s) learn about/ experience this context and need for work?
- What is the composition of this coalition and how was it formed? Explain basic terms or rules or unstated arrangements that define the coalition? (say local language, same caste (upper caste/dalit), women's coalition, same discipline, environmental expertise/commitment). How has the coalition evolved or changed over time?
- How were the activities of the coalition decided/selected? And how did the coalition interact with (on what terms) other actors/organizations involved in these activities or contexts?
- What are the established practices and processes in the coalition? What were the practices or processes that changed during this period?
- Were there specific practices/processes changed/modified or adopted to achieve certain technical ends or as an impact of some technical outcomes? How are these practices different now, within the coalition compared to the period before the coalition was formed?

- To what extent and how do the poor participate in the coalition? What criteria does the coalition use to check that the innovations are genuinely pro-poor?
- Has the project coalition noticed these institutional innovations/changes? If yes, what have they done to sustain these institutional changes? In other words, can the institutional lessons be documented, as lessons learnt by each one of the partners in the coalition, about changes in or in the behaviour of (a) their partners, (b) themselves, and (c) their relationships with others – partners/non-partners- and their processes (of decision-making, implementing, etc..)
- How were the lessons learnt? Can some specific pressures, conflicts, contentions or processes be identified that helped/triggered the institutional lesson (as evident in changed behaviour, arrangements, relationships, rules or norms)? If there were conflicts, how were they resolved?
- Does the project coalition own or accept these institutional changes (new processes/practices/? Or are they seen as temporary institutional arrangements to serve a specific (NTFP) project? In other words, what is it (some indicators or thumb rules) that will tell us whether these institutional changes and lessons are sustainable?
- Will institutional learning take place even if actors resort to old institutional arrangements after a particular coalition project is completed? What are the indicators that tell us whether institutional changes effected by this coalition will become 'habits' or rules/norms/conventions within/among these actors, or remain one-off events?
- What has the coalition done to promote these institutional lessons (ways to change practices, influence or induce change in partner organizations, build capacities for flexibility or responsiveness, etc.)?

The ILAC coalition used this as a tentative list of questions, modifying and adapting them to address the issues in each project coalition or innovation cluster it studied. While this set a base for our case studies on institutional learning, the process insights for capacity development and networking were not clear to us yet. Some of the processes underlying the decision-making deserved further scrutiny, the team decided. For example, they examined their own reasons for venturing into a partnership with CIPHET-DPIP (MP): one of the project partners knew DPIP officials, and everyone agreed that the committed and interested Director of CIPHET was definitely an added advantage. What was lacking in this experiment was a broader context – the social, cultural factors in which this partnership could take place, especially in M.P. Meanwhile we decided to explore the possibility of linking one of the Krishi Vigyan Kendra (KVK) with an organisation having a post harvest expertise and initiating an activity that could bring these two organisations together. It was partly these two examples that brought the team's attention to how little they felt they knew about networking practices, especially with an explicit evolutionary innovation systems perspective.

3.4.4   The second phase: processes that enable learning

This phase entailed responses to various changes in the project.

1. re-working the project management
2. allocating work to consultants
3. identifying and building a relationship with an extension organization to conduct a capacity development workshop as part of the interactive policy research
4. organizing the project's capacity development workshop, including the identification of participants
5. building the partnership between a post-harvest research organization and the poverty eradication programme in M.P.

Meanwhile, as far as the research and capacity development were concerned the ILAC coalition carried out three case studies about institutional learning in the three CPHP case studies and three non-CPHP case studies (TIDE, FRLHT, and the lac sector). They conducted an institutional history on IIM(A)'s fruit and vegetable unit, engaged in capacity development (e.g., with CapNet India, and with KVK faculty, organized in and hosted by CPCRI- KVK, in collaboration with TIDE and NCAP) and facilitated links between various organizations (including CIPHET, CIAE [Bhopal], and the members of the 'Learning Forum' of the MPRLP; TIDE and CPCRI). Then ILAC embarked on a training programme about the innovation systems conceptual framework and case studies. They conceived this capacity development workshop as a mutual learning exercise, building a common ground or wavelength among the partners/participants using the inputs from various angles to develop the content. In the next section we discuss the processes we adopted to achieve these technical outputs.

3.4.5   Process insights:

Coalition – practices and policies
This was a coalition with a strong internal agenda – that of developing and improving the application of innovation systems framework and approaches to agricultural and rural development problems. Since we were scattered across the globe, good communication and transparent decision making processes were crucial to maintain the cohesion of the coalition. So at the very outset within our project, operational rules to encourage transparency and collective deliberations in all decisions were agreed to avoid asymmetries in information flow and learning. This led the coalition to adopt various practices**:**

- Copying all e-mails regarding project matters to all coalition members

- Frequent meetings among all partners based in India

- Sharing important literature

- Debating and contesting ideas in the literature with respect to field experience

- Sharing field notes/drafts for comments and needed follow-up

- Shared understanding about lead responsibilities and authorship and credit

- Ensuring that differences in organizational cultures (international research centre, NGO, University, agricultural research council, industrial research council) associated with each member in the coalition would not interfere with progress

- Facing a disagreement or conflict head on – acknowledging its root cause and working together politely (without bringing personal ego or other personality problems to interfere with the process of conflict resolution) to address the root cause

- Exploring opportunities within each of the different organizations to generate an ambience for the uptake of lessons or joint learning with the project

- Consciously exploiting verbal communication channels and engaging directly and effectively with actors at different levels of post-harvest systems during the project phase (as compared to previous commitments to publish findings)

Almost all these practices and processes emerged through open discussions drawing from previous experience. Some of these practices also informed the way the coalition interacted with other networks or innovation clusters. Constant verbal and written communication with these other networks was an important process – and that was as much a research output as a research process in this project.

Discussion about the nature of outputs also influenced the way the coalition worked. The idea of another theoretical paper on how the innovations systems literature should take better account of development was vetoed by the coalition as yet another academic exercise. To impact on policy or practice in developing countries, the coalition knew it had to concentrate on enabling the acceptance and use of the innovation systems concepts in agricultural and rural development initiatives, public research institutes and policy making or other planning activities.

The coalition was asked in early 2004 about conflict resolution. Due to its loose and open organizational format and management style, none had emerged. It was recognized that any situation within the coalition that would negatively affect the work – the planning or operationalization of any part of the work – would be likely to lead to conflict. In the case of ILAC, it was only when they reached a patch of management problems (especially travel decisions, meetings, and re-imbursements towards these expenses) over a period of four months (April – July 2004) that conflict had to be seriously considered. The root cause was outside the coalition, but the innovation required to solve it was internal: the member managing technical issues also took on administrative/financial responsibilities and set up the necessary accounting procedures. This was only one example of the importance of recognizing the need for changing or flexible actor roles within a coalition, partly to resolve conflicts or ensure progress but also to ensure opportunities for learning new skills or expanding contacts.

Some of the best practices for institutional learning that we would like to highlight – based on our own 'internal' experience within the coalition – are:

1. Coalition formation:
   a. based on trust
   b. previous knowledge or interaction between members helps
   c. individual rather than organizational links inspire commitment

2. Coalition functioning:

    a. Flexibility

    b. Changing roles of actors – create the space for it

    c. Clear responsibility

    d. Open communication – especially about targets achieved/not achieved

    e. Frequent communication– stay in touch

    f. Timely response

    g. Effective response – find alternatives, take over/share work

    h. Mature response – never judge/ jump to conclusions hastily

    i. Freedom of operation within the targets set

    j. Willing support from members and management

    k. Feedback to the coalition – from other networks/coalitions/ local contexts

3. Coalition evolution:

    a. Co-evolution – acknowledge personal professional goals (allowing personal goals to integrate with coalition goals as much as possible)

    b. Enable assessment of current and emerging situations – maintain a 'view from a distance'

    c. Document changes (practices, decisions) and analyze internally

    d. Acknowledge and communicate lessons learned – create the space and time for learning

    e. Seek ways of addressing weaknesses/ find different ways of working

A weakness in the coalition – the absence of an advisory committee or board – led members to asking senior colleagues and other professional associates from a wide range of organizations for help, suggestions, contacts or corrective mechanisms. Members had to rely heavily on their own capabilities and resources, and be willing to learn new capacities, but, with the benefit of hindsight, an advisory structure would have been useful.

Various principles about working with, and enabling learning in, other coalitions/ organizations/networks were developed through two steps: (i) observe, document and analyse every new/modified process, relationship, practice or policy; (ii) ask what led to this change and acknowledge the lessons that may have led to it or lessons that have come about because of it. While the coalition was aware that change can be negative, or even damaging, these were principles that enabled position learning and change, that is, progressive according to innovation systems criteria.

3.4.6 Principles to enable learning:

1. Reflect upon and draw from previous experiences/lessons:
Whether it is in the selection of case studies or partner organizations it is best to reflect upon their previous experiences and existing skills. At the planning stage itself, the project team identified research, capacity development and networking as the three major interacting components within the project. Case studies and innovation clusters were selected, based on documentation and analysis of existing post harvest organizations and projects, with the following criteria: pro-poor, had coalitions of partners, and show changing roles of different partners. Innovation systems criteria were applied so that, for instance, building the partnership between TIDE and CPCRI (KVK) was the crucial enabling mechanism for addressing the lack of partnerships. This allowed CPCRI to learn about market constraints and the social contexts of technology, which it did not previously have the capacity to do. Previous contacts and networks and prior work experience of the coalition members facilitated the selection. Some case studies or organizations we suggested were rejected within the coalition on grounds of past rigidities or levels of mistrust.

2. Build a common ground: explain and explore
One of the major operational strategies adopted by the team during the case study interviews was to explain the innovation systems framework within which this study was located. As an organizational foundation for both the case studies and capacity development workshops, this kind of explanation was very useful for the organizations/actors involved to understand and empathize with questions posed by the coalition. It helped us understand their responses, organizational culture, and linkages as well as our objective of promoting networking among actors within post-harvest innovation systems.

This activity was time consuming, but the effort to build a common ground has significant pay offs. It lays the foundation for a good relationship and appropriate communication strategies during the assignment/project. For example, when the ILAC team brought together several actors involved in marketing to enable poverty reduction at a workshop, they witnessed this process. The key partners – TIDE (an NGO working with energy efficient technologies) and the KVK of CPCRI (a public sector technology transfer agency attached to a major research centre working on plantation crops) made it clear in their subsequent joint concept note how they innovated. The evolution of the concept note tells us an interesting story about how the common ground was built, the nature and tone of explaining the role of 'process innovations' and the care with which lines are drawn. Doing something as alien to the existing culture of science as getting an NGO to partner with and enable learning in a major public sector research institute requires careful preparation.

3. Be self-reflective: admit that we are learning
During year 1 the rationale for the title of the project –'institutional learning and change' and not just 'interactive policy research'– become even clearer: the latter was just an approach whereas the former was a wider social goal. Secondly, and more crucial to the learning experience, the team shared a commitment to 'institutional learning', an acknowledgement that they were unsure about how to address the issue, and a dissatisfaction with the explanations given about why 'learning' had built into or attempted

by other organizations (development agencies, research organizations, Ministries, etc.[11]) but had never really achieved the evolutionary aspects of institutional learning that innovation systems demanded.

Thirdly, the expected output – the larger social goal – raised questions. One was put during a Seminar at IFPRI (February 2003): what was the difference between institutional and organisational learning? How could 'institutional learning' enable better and more socially relevant impacts of science, for example to CGIAR, than 'organisational learning'? Two answers were presented; one was based on conventional institutional economics theory whereby 'institutions' are rules and norms and organizations are the structures governed by these rules, emphasizing the need to change overarching rules of the game rather than merely restructuring of projects/programmes/organizations. This did not convince the audience at the seminar (mainly scientists and economists from SPIA and IFPRI) or even the team. The second answer was that within the innovation systems framework, institutional learning implies that there is learning beyond the organization, among several actors involved in the innovation processes.

This learning would include organizational learning, but would demand learning and evolving with other components of the innovation system. For the project team this answer (though implied in the interactive policy research approach adopted by the project) brought a clarity that was missing until then. Institutional learning was about understanding *how* learning takes place in the system; the rules or norms or patterns of behaviour across the system – the components in, levels of, relationships among actors in the innovation system as well as between the innovation system and society. Development of capacities for learning and for enabling learning takes place across the system when institutional learning takes place.

This clarity brought some tension into the team – especially about how to go about achieving this ambitious goal. But with hindsight it can be said that the idea that had been nurtured throughout this project was that learning processes are crucial and have to be institutional – i.e., system-wide (or at least conscious of system-wide implications) if changes are to be made in the system (be it better livelihoods or poverty reduction or improved ecosystems). This lesson also has implications for the transparency that a coalition maintains with its partner organizations/individuals: a coalition has to convince its partners that it is also learning and strategies are chosen, tried and found suitable or unsuitable.

4. Do away with hierarchies:
The ILAC team consciously decided to do away with hierarchies, and in the process found that in a room with a few people who can communicate without being conscious of hierarchies, better communication takes place. People are willing to listen and to talk. This was a lesson brought from the team's experience of the lifeless conformity of public sector research organizations. In these research bureaucracies, the faceless "Doctor saab" (the

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[11] Learning has been included explicitly as an objective in the evaluation departments say, in SIDA, DFID, ECHO, etc. There are also "Lessons Learned Units" in organizations like DPA, DHA, and DPKO. OXFAM has a "Gender and Learning Unit" and even the World Bank has 'Learning Group on Participatory Development'.

name being used for scientists as most of them have doctorate degrees) identity conferred on scientists, sterilized them from interacting effectively with the messy "un-doctored" rural masses inhabiting the social contexts in which their science and technology was meant to work. In the capacity development workshop organized by the team, the participants, each one of them a special actor in an innovation cluster or research coalition, were all called "Fellows." The use of the title Doctor/Professor was avoided and all of the team, who lectured, led or facilitated discussions, and presented case studies – all were Fellows. This was an initial signal given to all participants that the workshop was meant to learn together and help bring changes in our system – innovation system or research and development coalition. The lack of hierarchy also enabled the participants in the workshop to challenge each other, enhance the ability to take criticism without rancour, and argue together as a group.

During the workshop suggestions from the participants were welcomed. One of the suggestions – more time for group activities and discussions – was implemented right from the second day of the eight day workshop. It was also discovered that non-hierarchical group formation helps people take the others along in their coalition. It also makes them acknowledge problems – or lessons – e.g. how one or two members of their group feel differently about the issues. For example, in a working group preparing 'checklists to document habits and practices in the innovation cluster,' the group's presentation made by one member highlighted that one member in our group believed that it is difficult to understand whether democratic decision-making processes exist in an organization without actually observing how a few decisions are actually made. So asking the actors in the innovation system to tell us about habits during a one/two day field visit may not be enough.

5. Communicate with clarity: learn with others
The other process we adopted was to identify and bring together actors/organizations that have complementary skills but have never interacted with each other, though they belong to the same post harvest innovation system. For instance: IDE (India)-CTD; TIDE-CPCRI-Kudumbasree; and CIPHET-DPIP (MP). Again, it was while reflecting through notes made during discussions (especially the CIPHET meetings, field visits, and the H.P workshop of April 2003) that we explored the processes (some of them unconscious / intuitive) we used to bring these actors together. The first was that we had in our earlier encounters with these actors, recorded their points of dissatisfaction or weaknesses in one particular area. While there could be several actors who could perhaps have filled or provided these technological or marketing or other institutional voids, it was bringing together the right kind of or the best 'fit' partners that would enable them to continue working together (even after the duration of our particular project). That judgment about the right partners came from some of these informal or intuitive assessments that we had done:

- Of the actor's commitment to pro-poor innovations and delivery mechanisms;

- About the actor's assurance or level of confidence in the special skills they had (without feeling threatened by the involvement of others);

- About the general spirit of 'taking people along' that each actor expressed – instead of taking over – sharing the contacts/networks/ literature/ technical skills they knew

would benefit the other actor. (The latter we noticed was much more evident in the CPCRI staff we interacted with, with whom we helped TIDE cement a good working relationship – given that TIDE had tried earlier to make contacts/working relationships with CPCRI and failed, it was obviously the right kind of people and their attitudes that mattered);

- Their attitude that formal agreements could come later – take the due course and time – but work in the field was to be given immediate priority/ attention. (Both the TIDE-CPCRI and IDE (India)-CTD linkages we enabled have initiated work in the field together based on a common understanding they reached among individual actors – the formal paper work about how and what kind of collaboration etc. continues, especially in the former case).

Reflecting on our discussions with each of the organizations, we discovered that we had evolved a functional and stable working relationship within the coalition that could empathize with (and even laugh at) disparaging remarks, egoistic statements and loaded claims made by some individuals/organizations. These instances do offer lessons that can be a thumb-rule to test the maturity of the coalition and the ability of the coalition to learn from them. The latter, that the coalition members have been learning, is evident when some of the members discuss/reflect on their responses (distress or tendency to repartee accusingly or fire a salvo) to such situations faced in their earlier work. The coalition recognizes this as an important learning experience.

6. Enable lessons from less favourable outputs:

Every opportunity to learn must be utilized by the coalition. This includes lessons drawn from successes as well as failures/potential activities. A delay or failure to achieve a target despite trying is a situation that offers lessons – it is important to acknowledge and learn from these. Learning in our coalition came from the delay in arranging the CIPHET-DPIP (MP) meeting as well as the Lac Sector Dialogue, as planned by the coalition discussions in Ludhiana and Ranchi. What is important is to recognize that our 'facilitated institutional learning and change exercise' work dealt with people and issues beyond one person or group or one organization. We learnt that promoting innovation systems concepts among relevant stakeholders necessitates dealing with the exigencies and rigidities of several actors/organizations. What is crucial is the planning for the next step (given that two proposed activities did not work out in time or worked out differently from our initial plan). In our case studies of CPHP projects as well as in the FRLHT case (medicinal plants), the lac sector, the fuel efficient dryers, there was evidence of major lessons the actors had drawn from their own failures to achieve targets set at the beginning of the project. But in some of the cases there was an active attempt to hide or camouflage these non-achievements, and in the lac sector especially we found that not acknowledging shortcomings had led the organizations in the sector to mistrust and even deride the other's achievements.

7. Learning abilities and coalitions evolve with learning space/time:

A crucial lesson we have deduced from the interactive policy research is that there must be a consciously created space and time for learning. The questions brought by this lesson concern how to build lasting learning platforms in an organization and in the wider

innovation system. Even TIDE, an organization whose institutional innovations we have documented and analysed resists the idea that it is an internal job to create the space and time for institutional learning. But we discovered that in their functioning they actually do devote time and space for learning. The cashew processing experiment initiated with womens SHGs in Kasargode, using fuel efficient devices and processing training from BAIF-supported women's groups in Maharashtra, is a clear example of regular feedback mechanisms, reporting procedures, continuous hand holding (during the project/ till the unit attains breakeven production levels), that TIDE has built into the work time of its staff.

A platform for learning is a necessary condition for successful technological and institutional innovations. In our examples of case studies we found that this platform was available in most of the public (science or policy) and private sector (sales or equipment manufacturing) partnerships mediated through/by civil society organizations, political parties, community based enterprises (like the micro enterprise groups under the poverty eradication programmes). These learning platforms extend beyond the immediate public-private partnerships, transforming the basic rules/norms of technology generation, development, dissemination and utilization. In a learning community the focus is on operationalizing systems thinking, building true collaborations and effective partnerships between actors in a complex innovation system (Fisk *et al*, 1998).

This recognition of complexity is a crucial input that a learning platform can provide. The relationships we decided to build for our training programmes and the facilitated institutional learning and change exercise work is that these need sustained efforts which are often beyond the ability of one person or group within an organization. We have found identification of a single individual (a focus or entry point) an ideal way to initiate a partnership/coalition. Though that is the way to start the work, we need to ensure that relationships are built across the organization – for instance, the transfer of one person (our key contact in the organization) will not delay or disrupt work. (There has been some discussion amongst us about identifying weak linkages and strong/lasting linkages. The coalition does not have an answer yet, but recognizes that the question itself points to an important lesson.) Should there be a lasting policy instrument/institutional arrangement that provides an incentive to build learning platforms to ensure that organizations with complementary skills can come together and have shared accountabilities and functional arrangements? How does each organization or individual involved in an innovation system become a learning organization in itself.

8. Be open minded – learn from unexpected outcomes:
Another lesson documented is that of an unexpected input/outcome. A coalition must find the time/resources to help or relate to other actors/organizations that have already a sense of involvement or ownership with the coalition. These are important social capital assets that must be built. For example an unexpected outcome was a demand from one of the actors from the previous CPHP project (tomato box) from Indian Institute of Management, Ahmedabad (IIMA) for inputs on improving a proposal. The IIMA team has now taken up some of the innovation systems lessons from their earlier interactions with the CPHP team-IDE (India) and has now come up with a new project to promote safe and healthy urban vegetable production and marketing. While the box maybe an important technical item in

their old project, the IIMA team has been regularly interacting with the ILAC coalition about the institutional aspects of their project and about how to facilitate the participation of vegetable producers groups, local vendors or markets, credit/transport agents, etc. Despite initial misgivings about the ILAC coalition's time schedule and resources, the coalition has corresponded with, helped revision of the project proposal, helped make essential contacts and cross checking with other actors/groups doing similar work in Gujarat, made visits to this IIMA, and has promised further help with institutional inputs. Some other opportunities identified with other actors/organizations have brought home to this coalition the message that the ability to respond to a request (particularly from actors who have known the coalition members) is an important indicator of credibility and strength of the coalition.

Besides this, the ILAC coalition has made contributions to the CG system's ILAC initiative launched in 2003. Other unexpected systems outcomes that we did not expect are evident in the relationship we helped build between IDE(India) and CTD, between TIDE and BAIF, between APEDA and TIDE, between ILAC project/CRISP and the International Livestock Research Institute as well as between CCD (Orissa) and TIDE.

9. Promote institutional learning through/for effective innovation systems:
This is still a chicken-and-egg question to us. We started this project with the conviction that institutional learning is essential to build effective innovation systems. But towards the end of the project we discovered several actors/components in dynamic and effective and evolving innovation systems who learn intuitively and did not even acknowledge that they are actively engaged in institutional learning. We have tried to explain that our purpose in studying institutional learning is not to explore how people engage in 'learning by doing.' Our purpose is to highlight processes or principles that others can take up and follow, from cases where institutional learning is evident and has led to successful innovation systems. Our purpose is to help potential innovation systems avoid spending the time and resources in re-inventing the wheel.

Some important lessons come out of the learning processes in successful innovation systems. First and foremost, learning took place in successful cases of rural development because of 'initiatives that came from different sources – a range of outsiders and insiders' (villagers). These people had 'deep respect for the capabilities of the people whose lives they hoped to help improve' and they sought and found some kind of 'key constituency/agency/research organization/development Department/NGO to spearhead the innovation system – the new technologies, new organizational formats and new opportunities.' There were 'certain hybrid organizational formats' – quasi-public-private, quasi NGO-public sector movement that enabled these innovations. Finally the common denominator was 'the process of institution building from below,' where institutional innovations were crucial at initial stages and became accepted operating procedures later. If these observations that perfectly fit the innovation systems criteria have been made before, and the importance of learning highlighted too, what is new about our work?

Our project and this institutional output enables others to observe their own processes and use that observation to deal with others/their partners in innovation systems and accompanying learning opportunities. How did partners get together? How did they learn

together? We have emphasized that each (potential) innovation cluster/initiator needs to explore these questions to understand how they can facilitate institutional learning in innovation systems. Some essential steps (though not in the same order) to facilitate learning approaches (Fisk, et al, 1998), create a learning platform and enable meaningful rural innovations through learning (Hall et al, 2004) are:

- *Identify people who can build partnerships* – There are several people in both conventional/mainstream and alternative organizations/groups, who are creating alternatives to currently accepted ways of doing or thinking. This highlights the importance of innovation systems involving the right people. If successful they can begin as a small group of individuals and become a learning community where experiences are shared, learning catalysed and change accelerated.

- *Help them build the relationships* – The message here is to build linkages between/among complementary pools of knowledge/expertise/experience/ views/rituals/etc. Building relationships across a diverse spectrum gives the group a greater chance to "leverage change."

- *Encourage systems thinking* – The actors/organizations who are party to the learning experiment have to see themselves as part of the system of rural problems and try to learn from local components/actors in the system. Multiple perspectives in a diverse group of actors often force the group to maintain a systems perspective.

- *Build strong and organic relationship with the main constituency(ies)* – If the learning group/community has a broad collaborative base representing a diversity of ideas and cultures, the constituency most attentive will naturally be involved. But the learning community has to make an effort to articulate its purpose and methods to the key constituency – in agricultural R&D it might be ICAR institutes, SAUs or NGOs.

- *Facilitate partnerships* – Find means for farmers, agricultural scientists and extension workers to partner with existing community-based organizations with a similar/common purpose or mission.

- *Explore and expand the relationship with the donors and policy makers* – ensuring that management will buy into the lessons learnt. Funding agencies in a learning community experiment as part of a wider innovation system addressing (technological and institutional innovations for) rural livelihoods, they are part of the learning community.

- *Document and cultivate all outcomes* – including new rules, new projects, new funding mechanisms/incentives etc.. facilitated by the learning community. This will enable the learning community explain 'how' the innovations were actually achieved/evolved. Others do not have to re-invent the wheel.

- *Develop an evaluation culture* – to document the project while it is on-going and also to use this self reflexive evaluation to correct or guide the project process.

Successful innovation systems and the learning approaches central to these systems often started off as a small project – a pilot effort or experiment in the margin, away from routine research conduct. It was openness and lack of preconceived notions and ideas

about what the rural problems are that forms the ground rule for all the institutional learning we have observed. To be involved in this dynamic learning approach public/private and civil society organizations should re-design their personnel policy, monitoring and evaluation mechanisms, and internal mandates to enable the emergence of learning communities appropriate to each context.

On a quasi-personal-professional note, we must add that this ILAC coalition has been extremely innovative in re-designing their own professional practices and contexts to enable their own learning and further participation in innovation systems.

4.   Reflections

A *coalition* is the process in which distinct/independent entities/institutions/partners work together for the common goal with synergistic effect. For a successful coalition, the partners need to have:

- Common goal
- Clarity of roles and responsibilities
- Ability to articulate their problems and prospects
- Empathetic ability to fit themselves in broader objective
- Enthusiasm to work in groups and sharing the synergies

Although it is clear that blueprints for developing learning capacity are counterproductive, certain lessons can be drawn from across these case studies:

1. **Shared and complementary interests**: All the main partners agreed specific and clear objectives for the project, so they were all working for the same outcomes. These shared interests were a major element of what brought the partners together, and they meant that the partners could work in a co-operative manner without conflict over what was desired from the project. In the Andhra Pradesh sorghum coalition, there were also commercial partners, whose interests lay not solely in poverty reduction but in using the outcomes of the project to commercial advantage. These interests, although not identical to those of other partners, were complementary, as the same activities led to satisfaction of both groups.

2. **Carefully chosen partners***:* Partners were carefully chosen by the groups originally conceiving the projects, on the basis of what interests were shared, what contributions were needed from partners and who could best provide these, and also previous experience of the groups involved. It was found that involving groups with different types of expertise, from academia, non-governmental organisations, private commerce and local associations, all of whom have the potential to make development projects more effective. Such broad coalition-building reduced the risk of producing research that was ineffective, rarely adopted or unsuitable for its intended end-users. It allows the whole to benefit from the skills and varying comparative advantage of each organisation or individual.

3. **Clear roles**: At the beginning of the project the partners decided clear roles for each member of the coalition, which were mutually agreed. Although partners sometimes found they had to be flexible and to go outside their set roles (for example, involving themselves in each other's spheres of activity), fundamental role changes were rare. Initially setting out distinct tasks for the partners was agreed to have been beneficial in terms of efficiency and good relations within the project.

4. **External co-operation***:* Outside organisations were frequently involved, such as commercial organisations for their expertise in a certain area, or stakeholders in a

specific aspect of the project. These groups were not necessarily members of the coalition but were important in the smooth progression and effective action of the project.

5. **Innovative champions***: ICRISAT in Andhra Pradesh and IDEI in Orissa both played the role of 'innovation champion' through which progressive methodology was promulgated. Single organisations, and even energetic, consensus-building individuals within them, who take on board coalition ideas and take an active role in creating coalitions are an important method for spreading this successful approach to development.

6. **Coalition management techniques**: It was not simply assumed that once formed, the coalition would automatically work harmoniously, and various methods were used for management of the coalition. These were designed to prevent conflict, domination by one or two of the partners and eventually the best outcome for all involved. They included allowing all members to speak at each meeting, alternating which organisation chaired and set out the agenda for meetings, and having members set out plans of spending and activity for each quarter, which were then discussed before being finalised, as well as regular meetings of a steering committee and visits between partners.

7. **Social capital, mutual respect and trust**: By working for a common goal and building a network, rather than being in a linear development process in which one group attempts to pressure another into adopting a new idea, the relationships between members were less adversarial. This allowed for the development of informal personal relationships and the fostering of a courteous and accommodating environment amongst the coalition members. This greatly aided the success and efficiency of projects, and helped resolve any disputes that did occur. These developments would not have been possible without frequent contact between partners, not just by telephone or e-mail but face-to-face meetings.

8. **Frequent communication**: regular communication between partners made the running of the project smoother, since all parties were informed about what their associates were doing, and what the state of the project was as a whole. Communication was facilitated by the good relationships between partners who did not feel so much that they had to present new information to their colleagues so formally and were able to discuss their views more openly.

9. **Learning from previous projects**: Projects were actively interested in learning from the successes and failures of previous projects, and spent time before forming formal collaborations examining which approach would suit them best, and how to deal with challenges specific to their own programmes in the structures governing their coalitions.

10. **Focus on institutional innovation as well as technological change**: Successful projects took a wide view of the ways in which they were able to achieve their objectives. This principally consisted of not confining themselves to attempting to

simply transfer their scientific innovations from trials to farms. The lac coalition realised that joint capacity building with SHGs was essential to the sustainability of the project. Managing the relationships between members of the Orissa coalition was clearly as important as any technical changes. In the case of the sorghum coalition although farmers might be willing to adopt new crops, those crops might not be useful in the market without changes in the attitudes of those buying the crops. Farmers simply adopted the mould-resistant strains scientists were advocating, actual poverty reduction would have been minimal. However, scientists also took care to demonstrate to other parts of the institutional system, such as poultry farmers and feed manufacturers, that these crops could be used safely for food, which created a new market for poor sorghum farmers. It also put the producers directly in touch with the buyers, so that dealers were gradually reducing in importance, further reducing the farmers' poverty. These are examples of how scientific research can only be effective in reducing poverty if it responds to the economic, institutional, political and social context.

These lessons may not be relevant to all initiatives – they may be especially pertinent to coalitions aiming to make better use of science and technology. So how do they differ from other types of network? Various 'policy networks' have been identified in research on knowledge utilisation and policy-making ranging from 'policy communities', with access to privileged information and decision-making, to 'advocacy coalitions' that share beliefs and aim to change policy. These 'coalitions' are 'networks' in the sense that the participants have voluntarily entered into the collective, they also remain part of autonomous organisations, and they come together for mutual or joint activities.[12] As a group of organisations with different values and interests, the coalitions could also be labelled 'issue networks'[13]; alternatively, as distinct but related organisations, including private companies in one case, who have come together to improve their performance or position, it might be categorised as 'strategic alliances.'[14] Although such labels are only of limited use, they can be helpful in exploring how different types of network or coalition will require different strategies for successful innovation, learning, communication and impact on poverty reduction.

At the same time, some lessons about improving the links between organisations are generic. Analysis into the relationship between research and policy-making/practice concluded that certain principles were common to all networks, partnerships or coalitions. Initiatives are more likely to lead to impact on poverty reduction if:

1. *Context:* Stakeholders have clear idea of the purpose of the partnership and plan a strategy that responds to the political and institutional set up, end-users' needs and pressures, and the 'windows of opportunity'.
2. *Evidence:* The key messages are credible and convincing. The acquisition of knowledge, the way it is substantiated, and its presentation and dissemination, will all affect whether it leaves a lasting impression and changes people ideas or behavior.

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[12] Church et al, (2002:14).
[13] Crewe and Young (2002:16).
[14] Creech and Willard (2001:84).

3. *Links:* appropriate links, alliances and chains of legitimacy are created between beneficiaries, researchers, NGOs, policy-makers and other stakeholders.[15]

These are all characteristics of these coalitions but it is clear that the process is still more complex and involved other critical ingredients. The coalitions are 'systems of innovation' in action (as described by Hall et al.[16]), and are characterised by some shared and some complementary interests, flexibility, and mutual learning. The literature on systems of innovation indicates that understanding successful partnerships requires an investigation of (a) the triggers that lead to innovation, (b) the process of collective learning, innovation, and 'creative imitation', (c) organisational culture, and (d) the quality of management of the collective.

The private sector literature on strategic alliances and networks reveals that 60 % fail or under-perform in part because relationships between partners were not built carefully in advance[17]. The care with which the coalitions were formed substantiates this point very clearly. They also confirm that coalition-building is a highly complicated process of interlocking social, political and economic relationships between institutions, groups and individuals. The importance of understanding relationships between stakeholders, rather than the transfer of knowledge or technical innovation as if it can be isolated from its social context is clear throughout. One aspect of this that plainly has huge significance, but does not adequate attention from researchers, is trust: 'across the literature, either in the development field or the organisational development literature, all agree that trust is of paramount importance when examining the network form.'[18] It is this area that deserves far greater scrutiny from researchers.

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[15] Crewe and Young, 2002.
[16] Lundwall 1992, and Hall et al. 2004.
[17] Creech and Willard (2001:58).
[18] Church et al. (2002:24).

APPENDIX 1 – REFERENCES

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