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Report Authors

Gaunt, J.L. and Sikka, A.K

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Acknowledgements

The guidance notes provided by DFID NRSP suggest that this annex to a project final technical report, Annex A, provides the opportunity for a project to tell the story of a project “as the project would like to report it”. This story is one of two projects, complex in many ways. The innovations and dialectic approach to support institutional development tested by the project have resulted in significant impact in the project domain and uptake beyond, the lessons learnt have wider implications as organisations and research orient themselves for future challenges.

Many have contributed to this project, their involvement is reflected in the respective project contract documents and as authors on the supporting materials and publications of the project, which provided the starting point for preparing this report.

The team representing ICAR-RCER comprising of Dr. S. R. Singh, Dr. R. D. Singh, Dr. A. R. Khan, Dr. B. Saha, Dr. U. S. Gautam, Dr. P. R. Bhatnagar, Dr. D. Subramanyam, Dr. S. S. Singh, Dr. N. Chandra, Dr. A. Upadhyaya, Er. A. K. Singh, Dr. L. K. Prasad and Dr. P. K. Das are duly acknowledged.

Individuals took lead responsibility for sections of this annex as follows, Richard Palmer-Jones (section 1), MS Ashok (section 3), John Gaunt (Sections 2, 4 & 8), Dr Sikka (section 5), John Best and Rasheed Sulaiman worked with all team members to prepare sections 6 & 7.

As is to be expected when set alongside each other a great deal of editing and substantial restructuring of the original material was required to draw out the story as told in this annex. At the request of the MS Ashok, his unedited contribution is provided (Appendix 2). This provides an important account of the the project from the perspective of an experienced development professional.

We undertook the task of editing with support, particularly from John Best. In this process we sought to maintain the authenticity of the original materials provided by team members, whilst delivering a report that would hold the attention of reviewer and reader alike. We apologise to our colleagues for any omissions or errors that result from that process.

1. Project Contexts

1.1 Introduction

These projects were undertaken in areas of the eastern Indo-Gangetic plains characterised as having high bio-physical potential but low productivity. The areas of eastern Uttar Pradesh and northern Bihar, from Lucknow District to the eastern border of Bihar State, roughly 81° 30' E to 88° 00' W and from 24° 20' to 27° 30' N (Appendix I: Map 1) are seen as having abundant solar and hydrological resources with fertile soils, but nevertheless average yields of the main rice and wheat crops, are low and its people are poor. Eastern India generally has lagged in agricultural production and well-being of the population behind north-western India for more than 150 years.

After independence, in this area of India redistributive land reforms and land consolidation, and the public development of irrigation infrastructure and promotion of modern agricultural technologies were the main approaches followed by the Green Revolution (GR). The areas to the north-west – western Uttar Pradesh, Haryana and Punjab - and to the east – West Bengal and Bangladesh - have experienced their own versions of green revolutions, but the areas in the Indo-Gangetic plains of Bihar and Eastern Uttar Pradesh have lagged behind.

Several hypotheses have been advanced to account for this laggardly performance; environmental, sociological and economic, and institutional. Thus for some it is the wild flooding and slow drainage, low insolation in the Kharif and lack of controlled irrigation in the winter that accounts for this situation. Others argue that the obstacles lie mainly in the lack of roads and communications infrastructures, the poverty of its people, poor local governance. Yet others diagnose deeper reasons for this underdevelopment in the agrarian structure of small and fragmented holdings with prevalence of share-cropping, exploitive traders, and poor development of credit markets and persistence of usurious money lending. Irrigation is important for high productivity in this environment, but a weak state is associated with poor and unresponsive management of the large irrigation schemes that have been built in the region over the past 150 and more years.

In recent years a number of innovative approaches to agricultural and rural development have emerged from the modernisationist¹ and top-down approaches typical of the original green revolution. Some of these have developed within the official agricultural research community, while others have been developed within non-governmental organizations (NGOs) each with their strengths and weaknesses. While the official sector had competence in formal science and technology developments the NGOs were seen as better able to communicate and link to the poor².

Farming Systems Research (FSR), Training and Visit (T&V), On-Farm Water Management (OFWM), with its associated institutions of Water Users Associations (WUA) and Command Area Development Agencies (CADA), were dominant approaches in the 1970s through the 1990s. The search for ways to induce adoption of new agricultural technologies by the poor, and also the not so poor in backward and disadvantaged areas such as our domain, were often based on assumptions that either the technologies did not suit the target populations, or that the

¹ The modernisationist perspective is reflected in beliefs that agricultural productivity growth, as in the green revolution, was to be achieved through concentration on full time farmers, but would be generally good for the poor – would trickle down them – and that there was no need for a differentiated analysis of the needs of different strata of local society, for example the larger and smaller landholders, the landless, women, and so on.

² The general trends have been reviewed in Ellis and Biggs, 2001, and other articles in the same journal volume.

methods of contact and communication were biased against success. These diagnoses helped spawn new approaches which included Farmer Field Schools, the Institute Village Linkage Programme (IVLP), micro-finance and rural livelihoods initiatives. Criticisms of the gender and environmental aspects of traditional approaches generated emphasis on Women and Gender in Development (WID and GAD), and in sustainability.

More recently, the trend towards private sector involvement and attempts to incorporate development NGOs in official development interventions, have encouraged further institutional innovations in pursuit of objectives of pro-poor development and growth.

At the time this project was initiated it was thought desirable to bring these trends or strands of development activities together through the frame of rural livelihoods. The premise of the projects is that there are multiple interlocking obstacles to development from environmental, socio-economic and institutional factors, but that recently-developed technological and institutional innovations can be brought to bear so that productivity and well-being will improve.

This section sets out our understanding of these environmental, socio-economic and institutional contexts of the projects.

1.2 Environmental Context

While the recommendation domain of the projects is the eastern Indo-Gangetic plains the project sites are in Patna and in M-UP Districts on the Sone and Gandak canal systems (Appendix I, Map 2). The area is hot and humid with a monsoon lasting from early June to mid October, followed by a long dry season with which is divided into cold (November-March and hot (April – June) periods. Annual rainfall is between 1200 and 1400 mm, the bulk of which falls in August and September. The soils are alluvium derived and vary greatly in texture from sandy to silty clay loams; lighter textured soils are characteristic of elevated areas and of the soils in the northern piedmont belt of the region. Heavier textured soils often more suited to irrigation, and yet prone to water logging, are common in lower lying areas and along the major watercourses that run through the area. Surface and sub-surface drainage can be free or severely impeded; flooding is a problem in many parts of the domain but not in the two the areas chosen for research.

The Ganges River traverses the plains from west to east collecting runoff from snowmelt from the Himalay to the north, and the Vidhya range to the south. Two of its major tributaries are the Gandak flowing from the north out of Nepal and running along the border between M-UP District in UP State and West Champaran in Bihar State, and the Sone whose headwaters are in Madhya Pradesh State and joins the Ganges just west of Patna city. Unregulated river flow from the Gandak serves the right bank Gandak canal system while the Sone has a number of storage reservoirs which provide only limited storage and control for irrigation.

The Sone River is an interstate river originating from the *Amarkantak* plateau in Madhya Pradesh. The Sone irrigation system was started in the mid 19th century The main Project area is located in the RP Channel 5 (RPC-V) of the Sone canal system and comprises of twenty villages. A second site is located in *Gandak* canal command in district Maharajganj in eastern U.P. The Sone command is spread over five districts in South Bihar: *Rohtas, Bhjopur, Patna, Gaya and Aurangabad*.

Patna Right Parallel Channel-V

Originally built to irrigate in the dry rabi season for most of its life the Sone canal has mainly provided supplementary irrigation to rice at the end of the kharif season from mid September. Intensive developments were undertaken in the 1960s including a new barrage, and remodelling

of the main canal system, in part to meet increased water needs for supplementary irrigation. Two main canals take water from the barrage to the left and right bank command areas. As noted by Berkoff³, the irrigation system of this area is more akin to canal systems of south UP such as the Sarda, rather than north Bihar and eastern UP. River flow is highly seasonal despite the Rihand, Bansagar and North Koel dams on the Sone river system, because Bihar does not control releases from these dams which are used primarily for electricity generation. Since the system is operated to supplement rainfall, canal capacity constrains the area that can be irrigated when rainfall is not at design levels. While designed for average conditions, the variability of rainfall in relation to evapo-transpiration leads, in conjunction with slow response of canal releases and shut-offs, to changing demand, and to excess or scarcity of canal supplies; these result in either surplus water flows when rainfall is abundant (causing drainage problems) or water scarcity when rainfall is below average or not well-distributed within the irrigation cycles. The consequent conflict between water users and the canal managers, and among canal water users, leads to inequitable and inefficient water distribution.

RPC-V is situated towards the end of the right bank main canal some 15 miles south-west of Patna city (Appendix 1 Map:3). RPC-V runs parallel to the main right bank canal that runs along the highest land irrigating the area immediately to the south-east. The culturable command area of RPC-V is some 2200 hectares covering parts of 20 villages in Nabatpur and Bikram Community Development Blocks (Appendix 1 Map: 4). Many of the villages with land under RPC-V are split by the main canal with some unirrigated higher land to the north. Given the general slope of the area to the north-east, RPC-V drains to the south-east and tail-flows drain into an *ahar*⁴ that runs from around Danara village in a north easterly direction along the edge of the CCA before debouching into a large *ahar* in Saharampur village that drains immediately into the Punpun river, which then meets the Ganges to the west of Patna city.

Immediately to the south of RPC-V, Adampur distributary takes off from near the same point on the Sone right bank canal and runs to the south of the *ahar* that drains both distributaries. Adampur distributary irrigates on both its northern and southern banks, but was poorly maintained and managed for much of the project period leading to more or less continuous flows in the *ahar* that it shares with RPC-V.

Drainage is impeded at all stages during the monsoon and even in the *rabi* season lower lying lands near the *ahar* that drains RPC-V can be waterlogged; at the start of the monsoon water backs up from the drainage into the Punpun and to the lower lying land in the tail villages (Rampur and Bedauli villages) forcing earlier planting of *kharif* rice in these areas.

The higher land along which the main canal and RPC-V run has lighter soils but, at least in those areas commanded by RPC-V, more ready access to irrigation. The lower lying lands towards the *ahar* are heavier textured but have less ready access to irrigation. Cropping patterns and choice of crop varieties reflect these natural and man-made resources.

³ Berkoff, J. 1990. Irrigation management on the Indo-Gangetic Plain. World Bank technical Paper. <http://econpapers.repec.org/paper/ftwobate/129.htm> (verified 30th Nov 2005)

⁴ *Ahar*: small stream or drain (see also *pyne*): An *ahar* is a catchment basin embanked on three sides, the 'fourth' side being the natural gradient of the land itself. *Ahar* beds were also used to grow a *rabi* (winter) crop after draining out the excess water that remained after *kharif* (summer) cultivation. *Pynes* are artificial channels constructed to utilise river water in agricultural fields. Starting out from the river, *pynes* meander through fields to end up in an *ahar*. Most *pynes* flow within 10 km of a river and their length is not more than 20 km.

Maharajganj

“Eastern UP belongs to the same agro-ecological region as north Bihar (AEZ13 in the NBSS & LUP classification⁵), and is generally included in the problematic “eastern region” that has been characterised as relatively backward since the middle of the 19th century (Stokes⁶). However the Maharajganj (M-UP) research location is somewhat different to the RPC-V site in that it lies in the Himalyan piedmont region and is characterised by lighter textured and more freely draining soils. Rural population densities are somewhat lower than in Patna⁷, Agricultural productivity in the early 1960s was also lower in Maharajganj⁸ than in neighbouring Districts of north⁹ and south¹⁰ Bihar, but by 1990 this relationship had reversed (Bhalla and Singh¹¹). Even though this region of eastern UP is not generally seen as having experienced a green revolution, casual observation in the course of the project showed many aspects of a more modernised agriculture, such as many tubewells, tractors, and even combine harvesters. Cropping patterns are broadly similar, dominated by rice in the monsoon, with sugar-cane an important crop, and oilseeds and wheat in the winter season. The Head Count Ratio measure of poverty in the National Sample Survey Region that includes Maharajganj District was estimated in 1999/2000 at 28% compared to 29% in north Bihar and 32% in South Bihar (the NSSR that contains RPC-V)¹².”

The M-UP research area is approached by leaving the main road from the major railway town of Gorakhpur to the border crossing with Nepal at about 35km from Gorakhpur, at the village of Shyamdeorwa. The road from Gorakhpur to the border is in good condition and the research site lies to the north and west of this village (Map 5&6).

The land is in the command areas of the Shayamdeorwa, Ranipur and Pipra Minors which are fed from the Chhapiya Distributary which is itself fed via the Naraini Branch of the Deoria branch of the West Gandak irrigation scheme. The offtake of the Deoria branch is at about km 20 of the West Gandak main canal; the Naraini starts at about km 18 of the Deroria branch canal, and the Chhapiya distributary is at about km 45 of the Nariaini branch canal. The Deoria branch is about 120 km in length, so the research area is in the top end of the West Gandak canal system and is consequently not generally short of water. The area is bordered by the drains of the minors; to the east the project boundary is the drain that is shared with the Partawal distributary, while the Parsa and Brahra minors drain to their east into the drain that is the western border of the project area. All the drains collect into the Tura Nullah at the south west corner of the project area that eventually drains to the Rapti river a few miles east of Gorakhpur.

⁵ NBSS&LUP. 1992. Agro-Ecological Regions of India. Nagpur: National Bureau of Soil Survey and Land Use Planning. India

⁶ Stokes E. 1978. Dynamism and Enervation in North Indian Agriculture: the Historical Dimension. E. Stokes, author. Cambridge: Cambridge University Press.

⁷ Rural densities of Maharajganj and Patna districts in 1991 were 543 and 776 per sq.km. respectively (author's calculations from Indian Census, 1991, District data CD).

⁸ Maharajganj is included in the former district of Gorakhpur

⁹ Champaran and Saran districts

¹⁰ Bhojpur and Patna districts

¹¹ Bhalla, G. S. Singh G. 1997. Recent Developments In Indian Agriculture - A State Level Analysis. Economic And Political Weekly.; 32(13):A2. A18.

¹² Author's calculations from the unit records of the 55th Round of the National Sample Survey Consumer Expenditure Survey, using the Official Poverty Lines set by the Planning Commission, Government of India.

We have less detailed knowledge of the land and water resources of the M-UP project area, in part because this area was not intensively studied by the research institution before the project initiated activities and in part because lead researchers deliberately had a minimal presence at the research site. The land slopes to the south and west before draining to the south, with a slightly greater gradient than in RPC-V, and soils are of much lighter texture. Drainage congestion is nevertheless a problem, and seems to be associated with poor management of flows in the canal and seepage from canals which are constructed from the light textured soil. Just to the west of the project area is some higher land which falls into a protected forest in which local people cut timber for firewood.

Although falling within the same AEZ (13) the land and water resources of M-UP are considerably different from those of Patna District. The area within the drainage boundaries shown on Map 6 is some 2,200 hectares; within the larger area bounded by the Chhapaiya distributory and the Gorakhpur road is about 4,000ha. There are 23 villages with land within the drainage area, and 49 in the larger area down to the tail of the Pipra minor.

The, rural and urban population densities and urbanisation are significantly lower, and the nearest major town, Gorakhpur, is significantly smaller than Patna.

Nevertheless the major crops are rice in the kharif season and wheat in the rabi; indeed wheat is more significant given the slightly lower winter temperatures and the longer period for which cold temperatures last (Appendix 1 Fig. 1).

1.3 Social and Economic Context

Bihar and eastern Uttar Pradesh have, as noted above, long been characterised by social and economic backwardness, widespread social conflict, poor law and order, and, especially in the case of Bihar. Despite having quite a high proportion of irrigated to total land the social, economic, and physical infrastructure for economic development has been notably lacking and may have deteriorated over the last 30 years.

Average farm sizes are low (around 1 ha per household), and landlessness is prevalent (37% of households¹³); sharecropping, increasingly characterised by insecure seasonal or annual leases, occurs on a significant proportion of cultivated land¹⁴. Labour migration both within the state and inter-state, both seasonal and longer term has become very widespread (Sharma¹⁵).

The headcount poverty ratio (HCR) in 1993 was 40% for UP and more than 63% for Bihar, when the all-India average HCR was 40% (NSS, 50th Round)¹⁶. Among the States and Union Territories of India Bihar had the lowest Human Development Index in 2001 and UP was 29th out of 32 reflecting high infant mortality rates and low education attainments in addition to low average income and expenditure levels.

Landownership, while characterised by small average farm size and considerable fragmentation, is highly unequal; land ownership is aligned with caste with the backward castes owning little land and dependent mainly on labouring for their livelihood. Rural social relations in these regions are characterised by conflict between castes and social classes, especially between

¹³ Household data, NSS 50th Round, 1993-4, data for National Sample Survey Regions

¹⁴ 25% in 1999-2000, according to a recent Survey (Sharma, 2005:967)

¹⁵ Sharma, A. N. 2005. Agrarian Relations and Socio-economic Change in Bihar. *Economic and Political Weekly*; 40(10):960-72.

¹⁶ Rural HCRs were 41, 66, and 43% respectively, at the 50th round.

landowning local elites and agricultural labourers. A high proportion of the poor become migrant labourers both seasonal and longer term (Sharma¹⁷). Land tenure has become less secure under the tenancy reforms so that in some cases land owners seem reluctant either to cultivate their own land or let it to tenants who may later claim possession rights.

Over the past 30 or so years various social movements have entailed considerable conflict at local level. Accounts of local violence between agrarian classes and against women are frequent in the literature on Bihar. Since landowning elites tend to dominate the formal and informal institutions of rural society, they are seen in the prevailing approaches to rural development as gatekeepers, if not actual obstacles, to contacting the rural poor and women.

Bihar as a state experienced only modest agricultural growth over the last two decades; agriculture is dominated by rice in the monsoon season, and oilseeds, pulses and wheat in the rabi season. The limited development of infrastructure is associated with limited diversification of agriculture. As noted above the livelihoods of the poor are dominated by labouring and migration for labour. Nevertheless, the abolition of zamindari¹⁸ in the 1950s and subsequent developments means that much of the land is in the hands of medium-sized farmers who cultivate directly with family labour and hired labour, even though there some areas which are seasonally uncultivated as (allegedly absentee) landowners do not engage tenants.

1.4 Institutional context

Though a wide range of partners have been involved in the project, the project was implemented by scientists and research staff of ICAR-RCER and staff of CIRRUS employed in the project sites. Other partners have contributed to the project mostly by way of specific managerial, consultancy and training inputs.

The key features of the main actors are as follows:

The ICAR Research Centre for the Eastern Region (ICAR-RCER) was formerly known as Directorate of Water Management Resources (DWMR), becoming absorbed in ICAR shortly before the beginning of the project. It is staffed by scientists from a wide range of disciplines including agricultural engineering, agronomy, soil science, groundwater modelling, hydrology, statistics, as well as agricultural economics and extension. The team of scientists deployed by ICAR-RCER for R7830 and for interactions with R7839 consisted of specialists in various branches of agricultural sciences, including an agricultural economist and an agricultural extension specialist.

CIRRUS is a private company with an expertise and wide experience in community micro-organisational development. The team deployed by CIRRUS consisted of a management specialist with experience in designing, appraising and operating poverty reduction programmes/projects plus two persons with extensive 'hands-on' field experience within such programmes/projects. By the third year, three more persons, including an agricultural specialist had been added. Several (part time) community based facilitators had been trained and placed by end of project.

¹⁷ Sharma comparing migrant labour in the early 1980s with 1999-2000 found short and long term migration among workers rose from some 10% to more nearly 20% of workers, with a trend towards a greater proportion of long term migration.

¹⁸ Zamindari: the term applied to the system of land administration introduced by Lord Cornwallis into colonial Bengal and Bihar; the former Mughal tax farmers were to become improving English landlords. Contrast with ryotwari and bhattachari systems introduced in other regions.

The lead institution, Rothamsted Research (before 2002 the Institute for Arable Crops Research - IACR) is the UK's premier plant science research institute, and has led a number of DFID/NRSP projects with mainly technical and biophysical research emphases. Other formal partners included the Overseas Development Group, University of East Anglia (social science with extensive knowledge of the project area), Silsoe Research Institute (ergonomics)¹⁹, CABI biosciences (Farmer field School methods and field diagnosis) and The International Water Management Institute. Others were included through consultancy contracts to make specific inputs. Of these, inputs by Reading University (communications and processes documentation) and the ICAR National Centre for Agricultural Economic and Policy (process documentation and institutional learning) were significant.

Institutions that came into existence through the project itself are:

Village self-help groups (SHG), with membership drawn predominantly from the poor and socially disadvantaged. Outlet management groups (OMG) were formed as an innovation within the existing Water Users Association (WUA).

Centre for Promoting Sustainable Livelihood (CPSL), a NGO formed by CIRRUS people in order to continue the project's work post-2003 on a self-financing basis when CIRRUS project budget allocation came to an end.

Sustainable livelihood promotion societies (SPLSs), groups of SHG facilitators meeting for mutual support and also to create a legal entity via which bank accounts can be operated by facilitators.

Within the projects are to be found two institutional arenas²⁰: firstly, that of the project initiators consisting of ICAR scientists, members of an Indian private company, and a varied group of international partners as described above and, secondly, that of the recommendation domain or target groups of rural society in Bihar and Eastern Uttar Pradesh. These arenas intersect through the interventions by the project initiators in the target areas. The interactions within the arena of the project initiators and the intersection of the project with local society can be conceptualised as interfaces²¹ where radically different social groups negotiate understandings and transact resources. The primary interface is between the official institutions of the project and local society; the interaction among project partners, development practitioners and ICAR scientists is another interface²² where understandings are not necessarily shared because the social structures of the three participating groups differ radically, and what will have the

¹⁹ The contract with Silsoe Research was terminated by mutual agreement in 2002

²⁰ An arena for this purpose goes beyond the geographical space in which social interaction takes place to include the populations and institutions within them and their networks to wider social spaces. Institutions in this context should be broadly conceived to include not only formal and informal organisations but also the shared understandings that constitute the culture and ways of doing things socially. Although a geographical area may constitute the primary space of interaction, wider spaces are also involved in that actors acting within the arena draw upon wider social, economic, political and other resources in their interactions within the arena. An irrigation scheme (or a distributory) can be conceived as an arena defined by the hydrological units of the space; but social phenomena within the arena – including allocation of water and so on – brings in institutions and actors from the wider administrative area, for example local administrative and law enforcement agencies, politicians, and so on.

²¹ "Interfaces typically occur at points where different, and often conflicting, lifeworlds or social fields intersect, or more concretely, in social situations or arenas in which interactions become oriented around problems of bridging, accommodating, segregating or contesting social, evaluative and cognitive standpoints. Interface analysis aims to elucidate the types and sources of social discontinuity and linkage present in such situations and to identify the organisational and cultural means of reproducing or transforming them." Long, 1999

²² The term interface should not be taken to be just a two sided phenomenon, but to be multi-faceted, constituted by multiple diverse interacting actors, interests, and so on.

appearance of a joint project must be negotiated in the course of the project. This section elaborates the institutional context using the concepts of arenas and interfaces.

Interfaces are often mediated by brokers or translators between the different realms that are involved in the interface. Prior to the project an interface existed between ICAR and local society, most interactions were routed through the extension staff of ICAR and members of the existing water users association. This prior institutionalisation was not present in M-UP.

The interface between international partners, international and national consultants and ICAR-RCER staff was not mediated through intermediaries on either side. The project typically enjoyed open meetings of all partners with formal communications routed through the ICAR-RCER Director as required by protocol. Interaction largely took place in relatively infrequent workshops where most or all external partners were present and ICAR staff joined with them in presentations and discussions of work and ideas. Thus translations took place through the contributions of individual consultants in the workshops, informal interactions during presences in Patna, and through written communications.

A mid-term review was conducted by DFID NRSP without participation by the external consultants other than the project leader of R7839.

The international scientists and ICAR natural and social scientists have traditionally a strong orientation towards publication in scientific and mainstream social science journals, mainly, but not exclusively in south Asia. Promotion, access to research funds, to scientific conferences and other rewards are mainly through professional scientific achievement. The main professional activities are therefore guided by the career structures of mainstream government-funded orthodox science both Internationally and within India.

The research and extension paradigms which were current in ICAR stemmed from the Transfer of Technology approach that characterised the Green Revolution. It was notable, as discussed further below, that the overall mandate of DWMR was within the “on-farm water management” paradigm that is embodied in India’s Command Area Development Agencies (CADA), that had been developed from the early 1970s in response to the perceived problems of large scale irrigation systems. This meant that relatively little work was done on main system management since within the OFWM paradigm the problems of irrigation are defined as “below the outlet”, or in this case, at the distributary level.

This perspective was embodied in the mandate of both DWMR and its nearest neighbour, the Bihar State Water And Land Management Institute (WALMI) whose campus and office block DWMR shared. This perspective governed the staffing of DWMR as well as its framing of their agricultural and irrigation research and interventions. This approach, while nominally participatory largely is grounded modernisation theory in that it does not theorise inequality as the major obstacle to participatory development. Thus it tends to work with existing power structures without special efforts to incorporate the poor.

The modernisationist perspectives on agricultural and rural development; is apparent in a number of influences on DWMR and forms the basis of a number of their projects. Thus fashions in agricultural research and extension such as the T&V; Institute-Village Linkage Programme (IVLP) with their programmes of Technology Assessment and Refinement; and Farmer Field Schools (FFS) are approaches which have very limited conceptualisation of the differentiated needs of marginal and landless farmers (sharecroppers) and other non-landowning members of rural society (including women).

The modernisation perspective contrasted strongly with the frames brought by most of the outsiders, who saw it as part of the project concept to expose DWMR / ICAR-RCER to the more

recent alternative approaches. The main mechanism to achieve this was to include a private sector partner practised in participatory development to facilitate group formation and to be the main medium for execution of the participatory components of the project. Thus a new interface between local society and DWMR would be created, with CIRRUS generally serving as an ever present counterweight to the modernisation approach at DWMR. However, in a project with strong orientation to agricultural and water technology developments, the lack of expertise private sector partner on these topics²³ meant that the partner would struggle to achieve the status of a credible partner to the scientists without a change of paradigm on the part of the latter.

The international and private sector development actors²⁴ have careers that lie to a greater extent within the international development consultancy field, with objectives both of future consultancies funded by aid agencies and participations and publication in development studies and inter-disciplinary fora and journals.

The international partners were consequently more strongly oriented towards a number of current fashions and trends in development theory and practice current in the first years of the new millennium – poverty, livelihoods, participation, groups, women in development and gender, environment, civil society and governance, pro-poor growth, sustainable rural livelihoods, self-help groups, micro-finance, women in development, privatisation, were among the important themes in development practice current as these projects were formulated.

These perspectives, or frames²⁵, were largely brought by the outsiders to the project both from the private sector partner and from UK development practitioners and – importantly – the UK funder, DFID. Even within this group orientations varied, with some almost entirely oriented towards development aid funding and DFID patronage, and others towards peers such as the developed country agricultural research institutions, and the UK development academic. A third group of consultants came from the International Water Management Institute (IWMI) based in Colombo. The frame of these consultants had evolved over time from the OFWM perspective to include main system management; these consultants were much more exposed to (indeed were at the forefront of) recent trends in irrigation management. The paradigm of these consultants was Participatory Irrigation Management (PIM) which had developed broader agendas since the OFWM period²⁶.

Different members of the consultancy team had different and sometimes contending views, among themselves as well as with the ICAR-RCER partners, but broadly shared objectives of developing a project within the participatory technology development agenda with emphasis on livelihoods of the poor, and action through groups of poor people.

²³ Very few development based organisations in the private or NGO sector have expertise in technical topics in irrigation, soil, crop, livestock and agricultural engineering fields. While initially their expertise was mainly in social mobilisation, the rise of micro-credit led to the development of considerable financial expertise. The leader of CIRRUS has no significant expertise in agronomy or irrigation.

²⁴ This grouping included natural and social scientists and initially a gender specialist

²⁵ frames are “persistent patterns of selection, emphasis, and exclusion that provide a coherent interpretation and evaluation of events.”

²⁶ The International Food Policy Institute (IFPRI) and the International Irrigation Management Institution (IIMI -which was later renamed as IWMI) had been involved with the Bihar WALMI in a typical OFWM project on the Paliganj distributary in the 1980s. Given the considerable overlap of the objectives of DWMR and indeed the two projects it is instructive that at no time was there any significant exploration of the Paliganj experience in the course of these projects (despite repeated prompting). Indeed, one of the villages including in the Paliganj study is within the command of RPC-V. This is significant of the institutional isolation of ICAR from local institutes and the lack of inter-agency communications.

Hence the diverse actors brought to the project very different institutional locations and theoretical perspectives towards agricultural and irrigation research development and rural society.

While most of the project participants were concerned with issues of appropriate agricultural and irrigation technologies and institutions, and how to elaborate a project to address these issues in a participatory and pro-poor, gender and environmentally-sensitive manner, perhaps the crucial issue which framed the debates leading to plans for the project was the issue of institutional scalability especially of the self-help groups whose formation was to be facilitated.

A prime virtue of the participatory interventions of the type envisaged by the project was to be their self-replicability throughout the recommendation domain. Past experience suggested that such groups when facilitated as instruments of other objectives of the project (e.g. for agricultural technology development, or irrigation participation) would have no capacity for replication or extension beyond project boundaries in time and space, and indeed were likely to have a limited life expectancy after project withdrawal, or would become dependent on continued outside support involving transfers unless a new approach was applied.

2. Developmental purpose and research objectives

2.1 Developmental purpose

As indicated above the institutional context and arenas of projects R7830 and R7839 are complex. Mosse (2004)²⁷ describes project design as “*the art, firstly of making a convincing argument and developing a causal model (relating inputs, outputs and impacts) oriented upwards to justify the allocation of resources by validating higher policy goals; and secondly bringing together diverse, even incompatible interests – of national governments, implementing agencies, collaborating NGOs, research institutions, or donor advisers of different hues*”

The project logframe provides the causal model or framework and for projects funded by DFID NRSP and quoting a reviewer from DFID NRSP of an earlier version of this annex “*the purpose statement represents a developmental ‘wish’ that could be attainable if the research objectives (as given in the logframe output narratives) are achieved*”. The purpose level is also provides a key point of intersection between the project logframe and the NRSP programme management logframe.

The original purpose statements for each project, as given below, reflects the technological focus of both projects.

R7839

Improved techniques for soil and crop management, as a component of ICM, for improved rural livelihoods (including livelihoods of poor) developed, field-tested and made available for uptake.

R7830

New knowledge of land and water management practices for improved rural livelihoods (including livelihoods of poor) developed, field-tested and made available for uptake.

As the interests of the projects partners unfolded, and the donors interests became more strongly expressed, the project team responded by revising their logframes (the process that lead to this is covered more fully in section 7 below).

The revisions included combining the two logframes as a single project logframe. The revisions outlined that “***Together the projects seek “new knowledge of strategies 1. for effective delivery of rural services, and 2. for the implementation of local (institutional) arrangements, that enable rural men and women, specifically including the poor, to improve their livelihoods through agriculturally based activities including land and water management demonstrated and promoted to key stakeholders with interest in rural service delivery.”***

This reworking of the purpose statement provided a clearer articulation of the pre-existing focus of the projects’ research on both institutional arrangements and strategies for delivery of rural services, the emphasis on promoting the uptake of their findings reflected a response to changing / developing interests of the donor and was not addressed in the original project design.

²⁷ Mosse D. 2004. Is Good Policy Unimplementable? Reflections on the Ethnography of Aid Policy and Practice. *Development and Change*. 35(4): 639-671.

Reworking of the project at this level led to a realisation that demonstration of the technical viability (or even potential livelihood benefits of adopting) new land and water or crop and soil management strategies would not represent successful achievement by the project.

By the end of the project it was expected that a shift (or at least exploration of) new farming and agri-enterprise strategies with consequent economic (and other) livelihood benefits, supported by evidence of new local arrangements for effective delivery of rural services would be evident would be evident in the project area. Further by 2005 (beyond the life of the project) it was expected that, research strategies of target institutions would draw upon findings of these projects.

2.2 Research objectives

As was described above ICAR-RCER had pre-existing links in RPC-V through a very narrow interface, with land-owning male farmers. This pre-existing relationship was typical of that which ICAR-RCER would typically establish in a project area.

Much of the experience of the projects is about i) establishing ways to reach others in the community. Our desire to achieve such an interface was signalled from the initial stages of the project (as reflected in the specific recognition of the “**poor**” in the original purpose level statements..

This was then elaborated further to indicate that the project aimed to reach “**rural men and women, specifically including the poor**”. Project text further elaborates this talking of the “**socially disadvantaged**”. This term signals an awareness of the importance of caste and other social relationships in determining livelihood outcomes.

In ensuring that we reached and understood how we reached such groups the projects took an important strategic decision. Rather than use targeting techniques to identify, and then ensure that we reached, pre-defined target groups we used **Geographic targeting** as described in annex B i & viii, to situate the project in areas where:

- i) Poverty is endemic.
- ii) Extensive previous experience of working with SHGs did not exist.
- iii) Opportunities had been identified for improvements in agricultural production.

This decision, combined with the adoption of non-deterministic ways of working enabled us to study how the approaches and methods we developed would appeal to and empower individuals within the project areas.

As was described in section 1, two project areas were identified these are coded RPC-V and M-UP. A key difference is that in M-UP neither ICAR-RCER nor CIRRUS had a pre-existing presence. Also the site was situated at some distance from the project base. These areas were used in different ways to support the research as will become apparent in the respective sections of the report and the supporting annexes.

In summary RPC-V and its surrounding areas with their proximity to the project headquarters of both CIRRUS and ICAR-RCER was the area where the projects in fact undertook most research and developed i) a new approach to facilitate community development (objective 1) and a new method for participatory technology development (objective 3).

At RPC-V the project also sought to support the development of new institutional arrangements to achieve more effective and equitable ways to manage water (objective 2).

The M-UP site offered the possibility for the team to test some aspects of the approach for community development and method for PTD. The opportunity to work at a remote site where the team had much less experience can be seen as analogue for the development challenge of scaling up.

The project objectives are summarised briefly below:

Objective 1. Sustainable and scaleable institutional arrangements at the community level that facilitate livelihood improvement for the poor and marginalised developed and their viability demonstrated

The projects sought to develop an approach for community development that would:

1. Empower poor and socially disadvantaged to take self determined actions to improve their own situation
2. Be sufficiently cost effective to operate without external social funding²⁸
3. Enable adoption and adaptation of technologies for improved agricultural production.

It was anticipated that as a consequence of the empowerment anticipated new institutional arrangements would emerge for service delivery including arrangements providing access to agricultural services, including greater equity in knowledge exchange and pro-active participation in technology assessment and adaptation.

The findings related to this objective are summarised below in section 3.

Objective 2. Practical and more equitable options for water management demonstrated and evaluated by stakeholders including the poor and marginalised

The premise upon which the projects were based was that, given the high potential but low actual productivity of the project areas, potential economic gains from increased productivity could provide resources and incentive to engage in a process of institution building for irrigation and agricultural development leading to higher productivity and improved livelihoods. A number of technical options had been identified that it was believed, if adopted would be lead to the increases in productivity anticipated.

Prior to the project, the existing water user association (WUA) at RPC-V consisted of only land owning farmers and mainly of large-scale farmers. A key hypothesis was that by including a wider constituency in decision making related to canal management, agricultural productivity would be improved.

Thus the project sought:

1. To identify and work out ways to engage poor and marginal stakeholders and to empower them in relation to the larger-scale farmers who traditionally dominate the OFWM.
2. Explore non-incentivised ways to promote the adoption of technologies identified by scientists as offering ways to improve production

The key findings related to this objective are presented in section 5 below.

²⁸ (Nabard, 1999) anticipated that funds for the capacity building of NGOs, SHG federations and SHGs will have to be provided by external agencies.

Objective 3. Diversified and economically beneficial land use and crop management practices/technologies developed and tested with communities

Our expectation was that individuals empowered through the approach developed above (objective 1) would engage in participatory technology development (PTD) activities for agriculture, if they saw this as offering possible opportunities for them.

Participatory research approaches, without exception, have assumed academically qualified researchers, scientists and their host organisations as participants in research. Typically research has focused on the research or technology development outcomes achieved or on providing accounts of the relationships between the actors involved.

Our research sought to test a new model for PTD. The model saw individuals as undertaking for PTD. Researchers (or their project created analogues) were not assumed as direct participants in the PTD process. Rather, they were anticipated as having an important role both in providing i) access to existing information and ii) in backstopping or responding to demands that emerged from the PTD approach.

The findings are presented in section 4.

Objective 4. Findings of project communicated to key stakeholders at local and national levels as a means to support the potential adoption of the project's process and methods in non-target sites by non-project staff

Replication would be achieved through communication of project findings and the promotion of uptake of lessons learnt, and the products of the project by the research partners (and their respective organisations) as well as those commissioning and funding development and research efforts in other areas.

3. Sustainable and scaleable institutional arrangements at the community level that facilitate livelihood improvement

3.1 Introduction

The starting point for the task of institutional development was the experience of CIRBUS staff with social mobilisation elsewhere in India²⁹ and the contrasting perspectives of project partners. Section 1 identified the actors in the projects, and introduces the concept of the institutional ‘arenas’ in which they worked. It is the purpose of this section to outline the way in which the community-level institutions anticipated by the logframe were developed and the principles on which they were based. Section 7 below analyses the ways in which a degree of convergence between these principles and those represented in arenas occupied by other project actors was achieved.

An analysis of the current methods used for both the development of community level institutions and PTD is presented in Appendix B i. A key realisation from our analysis was sheer scale of the development challenge.

From this analysis we identified the need to develop a new approach for community development it should be sufficiently cost effective that it would not require external investment at social cost to be scaled up. Banks which provide micro-finance along with their other usual banking services are termed as micro-finance service providers have access considerable resources to lend to the poor and socially disadvantaged and the regulatory framework allows for microfinance institutions(MFI)³⁰ to deliver services.

Further we sought an approach that would empower the poor and socially disadvantaged and we hypothesised that given the targeting of the project in areas where opportunities increased to improve agricultural production that this empowerment would enable adoption and adaptation of technologies for improved agricultural production through PTD.

This analysis led the project to develop an approach based on a (social-) entrepreneurial model, in which participation is not incentivised or subsidised from external sources³¹. Costs for facilitation and support would be drawn either from clients themselves or supported from the margin that is available on micro-finance transactions.

Our expectation was that this innovation would allow community development activities to be undertaken independently of external investments and that if this could be achieved then the approach would be inherently scaleable.

The CIRBUS team leader has outlined key features of this approach as follows, expressing it in operational terms and contrasting it with the ‘transfer of technology’ approach which was influential among other project actors:

- ✚ There is no way of knowing in advance whether any of the assumptions and planned technology interventions would meet the needs or interest of the project constituency.

²⁹ Of catalysing over 500 SHGs, in Madhya Pradesh, Karnataka, Andhra Pradesh, Tamil Nadu.

³⁰ Institutions such as NGOs, federation of SHGs, Mutually Aided Co-operative Societies (MACS), state and national co-operatives and Non-Banking Financial Companies (NBFCs) which provide specified financial services targeted to the poor, may be classified as micro-finance institutions.

³¹ In the view of the CIRBUS team leader adoption of this approach represented the rejection of a structural approach to the institutional development originally anticipated by the project and reflected in output 1 of the logframe.

- ✚ All people in project villages, including the poor should be given opportunities to form genuinely self-selecting groups, pool whatever resources and energies they wished to, and determine their own priorities and courses of action, *independently of the project*.
- ✚ If it did turn out that some of them, at whatever stage, wished to engage with issues related to land, water, crops and/or soil, and would like to collaborate with project scientists, then the existence of such groups would create an opportunity for this.
- ✚ All external actors need to improve their own understanding of people in village communities, especially the poor, the socially excluded and women, and of livelihoods of such people, and to improve their own understanding of how their respective organisations and specialisms related or could relate to livelihoods of the poor.
- ✚ Based on this improved understanding, the challenge to the project team is to avoid offering 'solutions', but make information/knowledge/experience available to people in ways that would help them to make informed choices.
- ✚ The project should refrain from providing any incentives or subsidies that could distort the making of such choices³².
- ✚ The people would themselves define and develop institutional structures, rules and processes, and take full responsibility from the beginning for mobilising resources and management³³ of processes. The project team would merely point at options previously exercised by other communities in similar situations, and constantly challenge people to review their own assumptions and to evaluate critically all available options.

3.2 A dialectic approach

Space was negotiated to allow CIRBUS (see project inception report) to experiment with, and establish, what we now call a *dialectic*³⁴ approach to micro-organisation development, whereby an ever-growing and evolving network of institutions, relationships and norms are established through iterative and dynamic processes whose chief features are:

- ✚ self-examination by communities as well as by the external facilitator,
- ✚ reference to external experiences and information,
- ✚ review of available resources, capacities and opportunities,
- ✚ challenging of assumptions held by various stakeholders, and
- ✚ repeated re-examination of positions and arguments,
- ✚ facilitating emergence and stabilisation of micro-organisations.
- ✚ facilitating analysis of micro-level situations of people in these organisations.

³² The whole project (to the extent it is of any use to communities) is of course, in a sense, a subsidy, especially demonstrations, exposure visits and the like.

³³ By contrast, in government and international donor supported programmes (e.g. watershed, joint forest management and participative irrigation), these functions are defined by international and domestic consultants or project staff, or sometimes by legislation.

³⁴ "*dialectic*: ... the art or practice of logical discussion as employed in investigating the truth of a theory or opinion ..."; "*infrastructure*: ... the basic underlying framework or features of a system ... (Webster's Dictionary, 1994, pp 397 and 731). In this report, we ascribe these meanings to the words *dialectic* and *infrastructure*.

- ✚ focus on the poorest and most socially disadvantaged in villages, without excluding others.
- ✚ No incentives or inputs would be offered or provided.

Organisations would be encouraged to:

- ✚ interact with each other and external agencies at will, and to negotiate with them on an equal footing, even challenging them where necessary.
- ✚ respond to specific demands³⁵ and needs by first reviewing their own views, strategies, technologies and prescriptions, and then customising their 'wares' to meet demand, possibly in collaboration with others within and outside the project team.
- ✚ test and develop cost-effective and efficient ways of delivery and collection of fees or charges; thereby developing scaleable **approaches** and products.
- ✚ initiate internal change within organisations involved in the process in order to improve alignment and response to local community needs.

The way in which the dialectic approach was facilitated and tested is described more fully in Appendix B-ii. The time-scale and key features of the approach adopted by the project at RPC-V (referred to as cluster 1 in Annex B-ii) are set out in Table 1.

The ***dialectic approach*** was supported by a number of products:

- ✚ A simple method developed by the project to profile villages used identify local 'volunteers' as agents for the project
- ✚ A simple information management system³⁶.
- ✚ Customised exercises and tools developed by the project and used to support the activities of field staff (Annex B xiii)

A key innovation tested by the project was the use of an approach to facilitation whereby an externally recruited development professional engages local agents (called volunteers on the basis of the fact that they volunteered their services) to facilitate community level development as described in detail. The volunteers were in fact reimbursed for their services. These payments were initially supported by the CIRRUUS as one of the costs of formation, but as is signalled above, the approach involved encouraging these volunteers to graduate to other sources of support.

The method for facilitation was underpinned by a simple information system. The system consists of a simple record of group meetings, savings and loans (including loan purposes) which is maintained by volunteers and then (after basic logical and arithmetical checks) transferred to an electronic database. SHGs then have for their own internal use all necessary data while the external agency has the same data for research and analytical purposes. The use of the database reduces the scope for false and misleading reporting, and generates information capable of independent verification.

³⁵ Implicit in the use of the term response is an encouragement to consider the use of credit as a source of funds where appropriate to enable this response.

³⁶ The information system used by the CIRRUUS team was based on Microsoft Access database structures previously developed by one of the CIRRUUS team in the mid 1990s to address a need observed in experience with several other projects. The structure of the database is the intellectual property of CIRRUUS Management Services (P) Ltd. (Bangalore, India).

The information system acted as a 'force multiplier' when used together with dialectic approach. It ensured that SHGs always had up to date information. It was possible for volunteers and CIRBUS team members to make surprise visits, and to cross-check information.

This has important implications for potential 'for profit' service providers, especially micro-finance institutions (MFI), a number of which have shown a keen interest in the SHG model developed in the projects. For example, in mid-2004, CPSL was able to use the database to respond within a day (when 20 days had been given to provide the information) to a detailed set of questions from the microfinance division of ICICI Bank about numbers of SHGs, amounts of group savings, and amounts and purposes of group loans.

The system was also used to examine patterns of behaviour by SHGs and their members (e.g. small inter-lending activities). As the wider project team began to engage with the emerging opportunity that the dialectic approach offered, and the scale at which the large number of groups required them to operate, analysis of patterns in loan use emerged as a way to prioritise and target communication products (see section 4 and 5.2 below).

Table 1. Model of SHG formation and development, including volunteer involvement and microfinance

Stage of group development	Role of CIRRUS workers + volunteers	Microfinance	Notes
Months 1-4/5 Group establishment	<p>Entry to village by CIRRUS; volunteers identified & recruited.</p> <p>Volunteers interact with poor people to form SHGs</p> <p>Regular time and place for weekly group meetings established</p> <p>Volunteers facilitate group meetings where members identify needs and how these can be met.</p> <p>Volunteers record group meetings and savings/loan accounts; feed back data to CIRRUS</p> <p>Agency workers make weekly visits to village, to attend group meetings.</p>	<p>Group saving / group fund started</p> <p>Group saving continues; small loans to members made out of group fund</p> <p>Group is 'established' when:</p> <ul style="list-style-type: none"> - 16 weekly meetings have been held - loans from group fund are repaid and exceed borrowing <p>At this stage, loan made to group of Rs 500 (from a revolving fund, provided by CIRRUS)</p>	<p>Saving may be of very small amounts (typically Rs 0.50 – Rs. 3.00 per member per week)</p> <p>Loans not necessarily for income-generating activities; may be to meet health or social needs</p> <p>A small payment (Rs 25 per meeting) is made by CIRRUS to volunteers for facilitating a group during its establishment and consolidation phases</p> <p>Data saved electronically is important for monitoring and subsequent negotiation with MFIs</p>
Months 5/6- 12/13 Group consolidation	<p>Volunteers facilitate group meetings.</p> <p>Volunteers collect repayments of CIRRUS loan and make loans to other groups from the fund they hold (i.e. manage revolving fund).</p> <p>Volunteers may also broker contact with service providers or suppliers; or may themselves offer supplies (seed etc)</p> <p>Volunteers form their own SHGs for mutual support & exchange of information</p>	<p>Group saving & lending continues , now includes loans to members from CIRRUS loan fund</p> <p>Repayment of loan made to SHG from CIRRUS loan fund is made in instalments</p>	<p>Typical interest rate for loans to members 2% per month (i.e. 24% per annum)</p> <p>Loan repayment terms must be flexible, match expected cash flows of SHGs</p> <p>Loans are 'untied' i.e. use of funds entirely determined by individual borrower, not by lender</p>

<p>Months 13/14 onwards Group maturity/ sustainability</p>	<p>In order to relate to the MFI (& have a bank account), volunteers register their SHGs as NGO/CBO</p> <p>Volunteers facilitate group meetings and manage MFI loan as a revolving fund</p> <p>CIRRUS workers stop making regular visits, once group reaches maturity. No payment to volunteers after 48 meetings. Volunteers depend for income on:</p> <ul style="list-style-type: none"> - managing revolving loan funds - information & service brokering activities <p>Income from above sources provides incentive to volunteers to facilitate the formation of new SHGs; demand for new groups comes from non-group members observing the activity of groups.</p> <p>Volunteers extend activities as brokers of supplies and information and serve mature groups according to groups' demand</p>	<p>Group is 'mature', when:</p> <ul style="list-style-type: none"> - 48 weekly meetings have been held - initial CIRRUS loan (Rs 500) is repaid <p>A loan is now made to group of funds from an external microfinance agency (MFI), typically of Rs 2,000-3,000</p> <p>Loans from MFI funds now available and used by SHG members for investment / agriculture / income-generating activities</p>	<p>SHGs of volunteers registered as SLPS emerge as MFIs [Sustainable Livelihood Promotion Societ(ies)]</p> <p>Group's creditworthiness was established by repayment of initial CIRRUS loan; the CIRRUS guarantees the MFI loan, since at this stage the group has no creditworthiness with the MFI.</p> <p>[In RPC-V, Rs 50,000 from CIRRUS was used for this loan (all repaid)]</p> <p>MFI loan is made to the volunteer groups (SLPSs), typically at 12% interest. They on-lend to village SHGs at c. 24%</p> <p>Early loans – during consolidation phase - are often used to meet urgent consumption needs and to release borrowers from usurious lending.</p> <p>Some volunteer SLPs collect monthly payments from members to a group fund, which is then used to make loans to members of farmer SHGs.</p>
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3.3 Findings

The project has succeeded in establishing a non-deterministic way to catalyse micro-organisations that are independent and self-sustaining. In this endeavour it has achieved innovations which contrast in an important way with more conventional approaches to micro-institutional development. Although there are similarities in language used by such approaches (which may be ostensibly participatory and process-oriented) there are important differences in practice. Experience shows that typical 'process' approaches are time-consuming and rely on human resources located within or controlled from an external organisation. Scalability becomes a problem. Table 2 sets out key features of the dialectic approach compared with those of a 'process' approach.

As indicated above the dialectic approach focuses on individuals. Our project demonstrates the value of *unspectacular entry* into villages, the value of local volunteers, of *incremental non-deterministic facilitation*, and *avoidance of distorting incentives* and flooding communities with external funds, resources, technologies and advice. This unspectacular, incremental approach is especially useful in areas that are prone to endemic violence and suffer from poor governance. Traditional entry point activities only serve to raise expectations and help the not-poor and less-poor to crowd out the very-poor and the poorest.

Avoidance of *a priori* links to any externally conceived programme, project or activity is a key feature of the concept. Any links to such programmes must be promoted only after community based organisations and their networks have reached a certain stage of maturity.

The dialectic approach was tested in three locations. Two of those were in the Patna District of Bihar (RPC-V and Patna 2) as described in Annex B-ii and the third in Maharajganj in Eastern Uttar Pradesh (M-UP). Here we briefly:

- a. Assess the timeframe and costs for community level facilitation.
- b. Examine the sensitivity of the facilitation process to the management factors.
- c. Indicate how the approach leads to empowerment and livelihood impact.
- d. Examine its effectiveness as an entry point for PTD.

a) Time-frame and cost

The CIRRUUS team has significantly shortened the time-frame for micro-organisation development to 12 to 18 months, compared to the 5 to 7 years taken by most government, NGO and internationally funded projects. The timeframe is influenced to a certain extent by factors such as the level of professional experience of the lead facilitator and site location (see b below), however even allowing for this variation the contrast is significant.

Dr Rasheed Sulaiman (NCAP) provides an evaluation of the dialectic approach. Concluding that the approach developed by the project represented an innovation drawing contrasts to other experiences in India (Annex B-xi) and this analysis is developed further in Appendix B-ii.

With the limited data available, Sulaiman found that these unit costs compare well with government or internationally funded programmes and confirmed both the high qualities of the groups formed and the innovative aspects of the project approach.

Table 2. Comparison of dialectic approach and process approaches to micro-organisation development

<i>Features of 'Dialectic' approach</i>	<i>Features of 'Process' approaches</i>
Driven by stakeholders (beneficiaries and social entrepreneurs at field level)	Driven by an external agenda (government, donor, NGO), even though may be participatory in form
Unspectacular entry, unspectacular ways of working	Attention and expectations generated by initial visits. May be an inauguration, involving community leaders and elites
Engage with poorest community people	Even where there is some success in engaging with poor people, involvement of elites rarely avoided,
No problem identification using a PLA or problem-census approach; instead, the needs of the group are allowed to emerge from <i>within</i> small groups vja a dialectic process in which members explore many aspects of their livelihood	Formal problem identification exercise may precede group formation and prematurely set agenda for groups
Time-period for agency intervention is limited (e.g. 12-24 months) and communicated to beneficiaries at the beginning	Intervention lasts 'as long as needed' or up to limit of funding; may extend to years
No incentives in cash or kind; no subsidies except input of volunteers in facilitation and support by agency staff: initial resource for group mobilisation comes from small savings by group members	Subsidisation of inputs common (posing risk of 'elite capture')
Intervention takes the form of facilitation only, not direction: groups themselves determine what development activities they engage in to enhance members' livelihoods	Purpose to which microfinance loans or subsidies are put is determined by the project; possibly drawing on an initial 'problem identification exercise.
No imposition of external milestones or targets	(see above)
No attempt by the agency to promote a particular (income-generating) activity, or to 'steer' the group to determine how group funds are used.	(see above)
Access to microfinance loans is dependent on establishment of a viable group with a saving / lending discipline (typically over 4 months)	Micro-credit may be made available to beneficiaries at an early stage
Loans are 'untied' i.e. use of funds entirely determined by individual borrower, not by lender; loans not necessarily used for income-generating activities; may be to meet consumption, health or social needs.	Micro-credit may be tied to project-determined activities (see above)
Community and local volunteers used as facilitators (as an aspect of 'unspectacular entry'). Visiting agency staff act in support of volunteers only	Visiting agency staff play the main role of facilitator
Facilitators meet & interact with people at times and places decided by them, not by facilitators	Times of meetings determined by programme of visiting agency staff
Not highly dependent on literacy or level of education; simple accounting and record-keeping mean these process could be transparent and accountable	Literacy may be favoured by record-keeping requirements
Facilitators keep record of group meetings/interactions and facilitate keeping of groups' records of their savings and loan accounts. Agency stores electronically records of groups and their activities	Complex record keeping may be required, posing problems of retrieval etc.
Volunteers work for their SHGs as brokers of information and of access to services from a range of providers (commercial, public-sector, NGO)	Services offered may be limited to those within the agency's own programme
Volunteers themselves form support groups to exchange information and ideas; these (and income gained from brokerage activities) enable them to form and facilitate new SHGs without agency support, leading to a self sustaining / up-scaleable process	Agency withdrawal may mean end to development / upscaling of group formation process
Low-cost; increasingly self-funding after establishment and consolidation stages	'Handout-seeking' may remain a feature of micro-organisations, even in mature phase

We consider the costs of group formation in two ways. The first is simply to divide the number of groups formed by the budget allocated to the organisation responsible for implementing the community development activities. This gives a cost for group formation of £140 (Rs 10,500) per group. This figure is relatively high when compared to the range of Rs.300³⁷ - 5,000 per group established from the literature.

However, using project costs in this way is not an appropriate comparison as these costs include significant costs associated with management and research assignments. Post project the mechanism for forming and nurturing SHGs operates as Rs.2,000-3,000 per group (provided 100 groups taken as a unit and in situations proximate to the head office of the lead organisation). For example CPSL³⁸ estimate that when operating in a new remote location costs rise to Rs 5,000 per group.

Thus we can see that costs are also context specific. Factors such as geographic location in terms of the extent to which the locations are far or near from site office, literacy levels, prior good or bad experience with respect to SHG formation in the region, all affects costs considerably as many of these factors decide how long and intensive the support has to be continued (see also b below and section 7).

The costs presented for the dialectic approach represent the total costs of establishing a viable SHG and the facilitation of the emergence of viable MFIs³⁹ whilst the contrasting examples typically only consider the operational costs related to forming groups and do not include the cost of time of professionals working in the organisations promoting these initiatives nor, crucially, the costs associated with the provision of ongoing support over periods that can extend to decades.

Thus, we conclude that the costs of the dialectic approach are comparable to the operational costs of SHG formation by conventional models and in real terms the cost of the dialectic approach is dramatically lower than other programmes.

b) Sensitivity of the facilitation process to the management factors

Key factors that will determine both costs and the potential to scale up are i) the sensitivity of the process to the level of experience of the development professional that leads the approach ii) the number of villages an individual can support and the duration over which support is required and iii) the level of face to face backstopping support required by professionals who are based in the field. To gather preliminary data on these factors we tested the dialectic approach at a three locations or clusters (Annex B i).

The clusters were not initiated simultaneously, RPC-V was developed first (commencing May 2001) by the leader of the field team (a professional with approximately 18 years previous experience). The originally defined cluster comprised 20 villages, but due to requests from villagers this was extended to 25.

The second cluster at Patna covered a larger number of villages (42). The leader of the Patna 2 had a similar level of professional experience as the leader at RPC-V but was only allowed to devote a small proportion of their time (20%) to supervise the facilitation process.

³⁷ Forming and sustaining groups at Rs. 300/- seems to be a gross underestimation. How these figures are arrived at is not mentioned in the report.

³⁸ Sunil Chaudhary, personal communication Nov 10th 2005

³⁹ The cost estimates for the dialectic approach include all staff costs and the resources required for capacity building and promotion for the dialectic approach.

At Maharajanj cluster 3 (M-UP) the leader had significantly less development experience (3 months professional experience). In this instance the individual was only required to work in 5 villages, but again due to local demand this was extended to 8. It should also be noted that Maharajanj is some several hundred km from Patna, therefore this individual had much less opportunity for direct interaction and support from colleagues in Patna.

The criteria used to assess the effectiveness of the facilitation were:

1. Numbers of groups formed and their composition.
2. Time required for groups to reached maturity (defined by their entry into micro-finance arrangements).
3. Time to withdrawal of support to SHGs by volunteers

In RPC-V the rate of group formation peaked at around 20 new groups formed per month. Support to individual groups was withdrawn after a period of approximately 12 months and resources for the formation of groups was withdrawn in April 2003.

After withdrawal of support for group formation it can be seen that group formation continued. Neither withdrawal of support for individual groups or for the process of group formation affected the survival of groups or the rate of formation.

This reflects the fact that both the revolving fund was in place and that by the time of final withdrawal of the project the volunteers initially hired by the project had both taken on roles in supporting groups but had formed a local NGO SLPS that had secured resources that enabled them to continue to be active as an MFI in the cluster area.

In the second cluster, where the process was lead by a different individual than cluster 1 (devoting 20% of their time to this task), the rate of group formation exceeded that experienced in cluster 1. Groups were initiated at a rate of around 50 groups per month once momentum was gained.

This is not perhaps surprising as by this time the method for facilitation had been fully developed and communities in Patna-2 were aware of what had happened in RPC-V. The close proximity of this cluster to the field office of the project meant that communication was not an issue.

Once project support for group formation was withdrawn groups continued to meet and function with support from the volunteers and access to the project supported revolving fund. Group formation however did not continue, the reasons for this have not been fully documented, it may reflect the fact that volunteers had not yet taken on an MFI role or that the resources were not available from alternative sources to enable the volunteers to continue this activity.

In the third cluster at M-UP initial progress in group formation was slower than experienced at the first two clusters. Internal assessment of the reasons suggested that a manual or guidelines were needed as resource to support the individual. After these were prepared and made available in there was a marked increase in the rate of group formation (month 4 – Feb 2003).

The total no of groups formed is more than eighty over a period of less than 1 year very similar to the levels achieved in cluster 1. Given that the in cluster 3 the project worked in only 8 villages compared to 25 villages in cluster 1 it can be seen that the more groups formed in a single village than at RPC-V or Patna 2. The reason for this was the larger size of villages in this area rather than other underlying socio-economic factors.

The numbers of groups that chose not to continue to meet was higher than in other project locations. Further examination of the findings at M-UP, reported in section 6, suggest that a key factor in the closure of groups was that the project did not establish a rotating source of credit nor a link to external sources of credit.

Comparing across these clusters we conclude that the process of group formation is influenced by the experience of the leader, but that with adequate support the process can be supported by relatively inexperienced individuals.

The importance of both the provision of a revolving fund, at a time when SHGs would not be able to access credit through conventional MFI sources and the facilitation of the development of MFIs was crucial to the success of the SHG formation.

c) Empowerment and livelihood impact

The dialectic approach sees empowerment as an important outcome (see Annex B i). We consider that a person or group is empowered if they possess the capacity to make effective choices; an important dimension of this was the ability to translate their choices into desired actions and outcomes. Thus it can be appreciated that we see PTD being a desired outcome of empowerment through the dialectic approach.

We applied a framework for the analysis of empowerment developed by Alsop and Heinsohn⁴⁰ to examine the nature of empowerment. These findings are reported (Annex B i: Table 4).

In examining the level of empowerment we do not disaggregate data by location rather to indicate what empowerment looks like, drawing upon both qualitative and quantitative evidence as appropriate to rationalise data obtained from a number of sources.

From this analysis it becomes clear that most of the outcomes are informal. The excerpt below taken from the original contribution by the CIRBUS team leader (Annex A: Appendix 2) indicates that we see this as an important feature of the dialectic approach.

..... “Large, powerful and well-endowed external agencies (including democratically elected governments) are often blind or insensitive to much detail that is relevant at the individual or local-community level. Unimaginative application of legal, political, economic, social and moral principles and doctrines leads to rigid uniformity in policies and programmes, and to limited choices for individuals, exacerbating rather than relieving poverty. External regulation and control of key institutions, inputs and resources relevant to poverty reduction stifles local initiative. The individual is powerless in the face of large external institutions and is usually overwhelmed by them.

Institutional arrangements that enable individuals to confront and deal with large and powerful external entities, to explore, develop and experiment with new options are therefore fundamental to any poverty reduction strategy.....”

In making this observation we are not arguing that reform and development of formal institutions is not required. Indeed in the context of the rule and institutions that govern the research process we argue below (section 7) that reform of formal institutional arrangements that govern research will be required to scale up the findings of this project.

d) Effectiveness as an entry point for PTD

As a consequence of the non-deterministic nature of the dialectic approach, we see the emergence of examples of PTD in areas where technologies were not initially demonstrated, or where information was provided in response to demand from SHG. These non-determined

⁴⁰ Measuring Empowerment in Practice: Structuring Analysis and Framing Indicators. 2005. R Alsop and N Heinsohn. World Bank Policy Research Working Paper 3510. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=665062 (verified 30th Nov 2005)

examples of PTD are summarised (Annex B i: Table 5) and represents evidence of empowerment.

In particular experimentation emerged in areas that were not originally anticipated by the project. This was particularly important as a number of these in meeting demanded expressed by the landless, socially disadvantaged and women. We do not examine how these examples unfold in this section as these are considered in section 4 below and explored in more detail in Annex B viii.

Our analysis inevitably underestimates the true extent of experimentation as it only records those examples in which the project or its agents became directly involved. Examination of loan profiles⁴¹ over time provides strong evidence that as immediate subsistence needs were met individuals shifted investment to agricultural inputs. In some instances this simply reflects an additional source of credit being applied to purchase inputs (but that these would have been purchased anyway). However in others it reflects what are in essence new ventures and experimentation. Our data do not allow us to differentiate this.

3.4 Prospects for sustainability and scaling up

From the preceding account and supporting evidence base, it should be clear that the dialectic approach represents and innovation⁴². The approach allows local capabilities to be developed in ways that lead to beneficial outcomes and that the costs for facilitation and support are significantly lower than the currently used processes. Our experiences suggest that these costs of facilitating the approach could be recovered either directly from clients themselves or using the margin that is available on micro-finance transactions.

It is instructive to examine how individuals directly involved in the project developed their own strategies to take forward those elements of the dialectic approach that they saw as important.

The director of CIRRUS focused on the need to develop a business model whereby the margins available through on-lending were used to finance the service delivery.

The key to this model is the development of robust and cost effective systems that can support a very large scale operation. The target scale for this business is considerable requiring an annual turnover of tens of millions Indian rupees (hundred of thousand GB pounds) to be viable.

Crucial to the development of a business that can operate at such a scale has been the further development of the information system⁴³ and associated management systems.

The second model developed by project field staff and local volunteers focuses on developing local hubs for service delivery. The centre for the Promotion of Sustainable Livelihoods (CPSL) was formed by the professional staff formerly employed by the project. This organisation sees itself generating income through a number of sources: I

⁴¹ Kumar, R. Mishra, V.K. and Khan, K. 2004. Analysis of the performance of field based technology demonstrations, both in terms of technical performance, reach and suitability to target groups Cirrus Pvt Ltd 13 pp

Chaudhary, S. 2004. An Examination of the self help group process. Cirrus Pvt Ltd 55 pp.

Kumar, R. Mishra, V.K. and Khan, K. 2004. Routes of Participation Cirrus Pvt Ltd 33 pp.

⁴² Innovation: a creation (a new device or process) resulting from study and experimentation <http://wordnet.princeton.edu/perl/webwn> (29th Nov 2005)

⁴³ The system as used had several limitations. There was no independent validation and audit. There were no security systems. There were no electronic filters and checks for errors and inconsistency. (CIRRUS has now overcome several of these shortcomings in another project that commenced on 26 September 2004.)

- ✚ Facilitation of the dialectic approach using grant funds available from MFIs on a not for profit basis as an NGO.
- ✚ Provision of management services (such as microfinance database services, SHG development advice, training and support materials) at cost to existing groups. These may be organisations such as SLPS that emerge as part of the dialectic approach or may be pre-existing organisation.
- ✚ Provision of consultancy services on the basis of demand

In assessing the second model it is important to distinguish between examples where projects seek to maintain or sustain project created organisations by substitution of one source of grant funds for another, to support an inherently unsustainable model. Our approach was not to create such structures; the nature of the dialectic approach was such that it encouraged the emergence of new arrangements. The formation of SLPSs and CPSL are examples of such arrangements.

It is too early to assess the long term sustainability of either model. At the time of writing this report 2005, both ventures appear to be developing well. Cirrus is already using and further developing the method in five states of India, in a joint venture with Shriram Investments Ltd. and expects to extend this to at least five other states by mid 2007.

CPSL has been appointed DFID PACs programme (<http://www.empowerpoor.org>) has commissioned former the as a Development Resource organization for Bihar. CPSL will introduce the dialectic approach to a further 17 NGOs involved in the PACS programme in more than seven districts and is beginning to derive an income stream from payments for services by groups of volunteers.

Looking beyond these organisations another element of our project strategy was to promote the uptake of project products, this is reported more fully in section ? however a notable example in the context of uptake of the dialectic approach was the DFID Rural Livelihoods Project which commenced in 2004 in Madhya Pradesh (http://www.dfidindia.org/states/mp_state.htm) which has drawn on ideas and concepts from R7839 and incorporated these into their draft guidelines and both ICAR and project partners have taken forward the lessons learnt into ongoing research plans and proposals.

4 New approaches to participatory technology development

4.1 Introduction

Our aim was to develop sustainable and scalable institutional arrangements, at the local level, that would act as a foundation for PTD. In this section we describe the development and pilot testing of a model for PTD.

In section 3.1 we outline that a key constraint to the effective implementation of PTD at a development scale is the expectation that scientists or their agents are direct participants in the research.

To put the challenge in context, in the district of M-UP in eastern Uttar Pradesh where the project operated there are 1,207 villages⁴⁴ and 13 community Development Centres. Each Centre has an Agriculture Extension Officer. So in total there are 13 officers across the district to provide information to the villagers. The total rural population in the district is 1,593,461. Therefore on average one extension officer is providing support to more than 125,000 people living in rural areas. There are 60 scheduled and rural bank branches in the district. On an average one branch has to deal with nearly 26,000 people.

From this example it can be seen that, given there are even fewer researchers than extension workers and geographic extent of their responsibility greater.

Further analysis of the literature can be found Annexes B i and viii. A key finding was that whilst there is significant literature that examines the relationships between the actors in participatory research and the researcher, the scientist or their agent is a presumed participant. We would argue that a PTD that relies upon researchers as active 'participants' is not viable.

Further, if we accept empowerment as "enhancing an individual's or group's capacity to make choices and transform those choices into desired actions and outcomes" then the prioritisation phase of PTD research, which typically use a Participatory Rural Appraisal (PRA) or Rapid Rural Appraisal (RRA) to identified and rationalise the interest of the community (as interpreted by the external agent) against their interests can be argued to constrain 'choice'.

Indeed we saw the initial problem identification / prioritisation phase of PTD projects, as being inconsistent with our interpretation of empowerment and choice and as being particularly susceptible to being influenced by the interests of external agents and powerful members of the community.

Thus, the challenge faced by the project, in developing a scalable model for PTD, was to find a way to stimulate and support experimentation that did not assume direct scientist participation, avoided a PRA type technology prioritisation phase and which had extremely low resource requirements.

The characteristics of the PTD model developed by the project are summarised below (Table 3). From this table it can be appreciated that the dialectic approach replaces the PRA or RRA.

The role of the research scientists in the early phase of the project is in the geographic targeting and identification of the opportunities for technology demonstrations and to develop strategies for raising awareness of possible opportunities.

⁴⁴ Sankhiyiy Patrika 1999 Government of Uttar Pradesh

The PTD model tested was only reached after much negotiation within the project team. This process of awareness-raising was proposed by, and depended crucially on the non IRCER team

Table 3. Key elements of the PTD process

<i>Key elements of PTD Model</i>	<i>Characteristics</i>	<i>Notes</i>
Geographic targeting uses existing knowledge of the socio-economic, environmental and agricultural situation to locate a project.	Project location can be matched with likely opportunity for technology	Extremely low resource requirement in India can draw on published sources.
The dialectic approach (which has many elements of PRA embodied within it) is implemented used to empower individuals.	Non-deterministic approach to community development facilitated by development professional	Avoids influence of scientists or interests of donor on process Low cost of dialect approach means that large areas can be covered at a low cost. Requires either a revolving fund or link to MFI Does not raise expectations or divert project into confidence winning gestures as bribes for involvement Less prone to capture by elites and vested interests
Technology demonstrations and broadcasting of ideas	Demonstrations can be undertaken independently of the dialectic approach as part of promotion strategy to raise an awareness of new opportunities. Ideas targeted in response to group feedback and loan use can only begin to engage after 1 year (i.e . after a complete cropping cycle)	Can be undertaken in parallel to the initiation of the dialectic approach. Typically these demonstrations will be of new technologies judged to have high potential for uptake. Relies on geographic targeting as feedback from the dialectic approach, both directly from group meetings and livelihood analysis as well as analysis of micro-finance database, takes 6 months – 1yr
Facilitation of PTD outcomes in response to demand expressed through dialectic approach	Both the demonstrations and dialectic approach leads to expressions of interest in trying new options.	Response is in consultancy mode. Initially takes on role of a broker, facilitating appropriate linkages and access to information Dialectic approach ensures that participants enter into PTD with a clear understanding of risks etc. Non-incentivisation helps to ensure that this has been achieved.
Support of institutions and linkages that emerge	Emergence of institutions as service providers and linkages with existing service providers is an important outcome of the PTD method	Where areas of experimentation register significant demand the project can soon be overwhelmed. This offers a way to meet this demand

members. The testing of the process thus has two dimensions activities and negotiations which at any point allowed the project to move forward. The management approach as described in section 7 allowed the group to re-negotiate positions.

The first key negotiation was that during the initial phases of the project early rice transplanting, deep summer ploughing and zero tillage (Annexes B-iv, ix and x respectively) were identified as the best bet technologies. The project team moved immediately to field demonstration with these technologies in RPC-V using their pre-existing strategies for demonstration modelled on the NATP RWC approach as described in Annex B x: .

We conceptualised and agreed to test the following 5-stage process (Box 1) for the 'broadcast of information' beyond these demonstrations the intention being to raise awareness within communities (initially those being engaged through the dialectic approach) of ideas in the research domain and to stimulate the process of experimentation.

Box 1. Stages conceptualised for broadcasting ideas

- Stage 1: Identification of technologies and information that may suit needs identified through SHG and other mechanisms.
- Stage 2: Broadcast of information to groups, possibly with some targeting
- Stage 3: Analyse response from groups and others EG crops of interest further refinement of demand
- Stage 4: Consider response and develop appropriate materials
- Stage 5: 1st meeting with no commitments by any party to further meetings

The broadcasting efforts that followed were initiated by ICAR-RCER and mediated by CIRRUS volunteers. Members from the project team (both ICAR-RCER and CIRRUS staff) attended a number of meetings of SHGs and volunteers during 2002 in response to this initial promotion.

Discussions included choices of crops suitable for the environment and the constraints to adopting them. These meetings were the first examples where the role of scientists had changed. There was initial scepticism on the part of SHGs as to the value of the meeting. However realising that their questions were being answered, a rapport developed, group members became ready to listen to the scientists. These experiences occurred at a time when the projects were still pursuing many activities independently and was very important to the development of awareness within the ICAR-RCER team of the possible opportunities that the dialectic approach offered (see section 7.2 for further discussion). During this period key CIRRUS staff also became more aware of the information within the scientists arena and generally more knowledgeable on technical matters through exposure to scientists.

During a second visit, leaflets were provided to group members who responded to some of the areas of interest raised. Volunteers also worked with SHGs to analyse the purpose of loans taken by group members. For example, a facilitator would ask a group why they were investing money in agriculture, and in which inputs.

In moving to M-UP we decided to further test our ideas. Whereas at RPC-V project activities began with both social development activities and detailed demand identification by scientists, at site 2 scientists made a scoping visit backed up by a survey.

4.2 Findings

a) Geographic targeting with minimal survey is sufficient to position a PTD initiative

At RPC-V the geographic targeting was supported by a snowball survey approach was followed using key informants and a rank-based quotient analysis together (Annex b-ii with field transect

walks and informal field diagnosis of problems. At M-UP the approach used involved a much less intensive survey (section 7).

The issues identified by the two approaches for demand identification described above were compared during a project workshop and we found close agreement between the issues raised by both methods (Annex B i). Further the intensive survey added little to the understanding of the team at the time of preparing the original proposal.

This finding gave the team confidence geographic targeting based on existing knowledge of the project domain was sufficient to position a project and that information collected directly from the SHG process could be used to refine understanding of demand.

The important point here is not compare or analyse demand, or that either assessment be “correct” rather that this comparison gave the team sufficient confidence to move forward in testing the new PTD model further. Discussion and examination of SHG data during internal project workshops provided a very powerful way to raise awareness of project team members and substantiate the interest and engagement of poor people in agriculture (and this could be further disaggregated by gender, social group or caste or other factors as the group required).

Building upon limited scoping the pattern of loans and their use can also be used to identify potential areas of demand. Given the non-deterministic approach adopted by the project, as SHGs start saving and these savings become available to members as loans, the purpose for which loans were used reflect the needs of individual members. Over time we were able to analyse the purpose for which loans were being used to verify and further refine our understanding of demand (Annex B-viii).

The initial findings suggesting that the use of pre-existing knowledge is sufficient for initial geographic targeting and that the understanding of ‘demand’ can be further refined through the analysis and interpretation of data collected through the SHG process and in response to demand expressed directly from community based organisations.

At M-UP the team decided to fully test the entry component of the PTD model with the entry being made through the dialectic approach. We refrained from extensive survey of

b) *The new PTD model is less resource intensive than conventional approaches*

In section 3 we addressed the costs of the dialectic approach. Our findings are that this approach can potentially be implemented at no external cost.

As tested the dialectic approach was integral to this PTD model. PTD activities emerge as an outcome of the dialectic approach as was described in section 3. Thus, it is important to realise, particularly in the context of the development challenge described above, that it is not the number of PTD outcomes alone that is important, but numbers that the dialectic approach / PTD method reached.

So it can be argued that as the dialectic approach reached 75 villages, with a total of more than 500 groups and more than 4000 people the dialectic approach has directly enabled individuals to explore new livelihood opportunities. We can also argue, based on the analysis undertaken by CIRRU⁴⁵ that awareness reaches beyond the groups formally engaged by the dialectic approach. This number could be contested given that at M-UP we did not operate for long enough to assess fully the PTD outcomes.

⁴⁵ Kumar, R. Mishra, V.K. and Khan, K. 2004. Routes of Participation Cirrus Pvt Ltd p15-16

Such a discussion is actually immaterial, for a research project this reach is impressive (for example contrast this reach with the limited expectations of the team 5 groups practicing PTD at each site accepted by our donor in the original project design).

However if we return to the example in the introduction of more than 1.5 M people in one district in M-UP with on average one extension officer is providing support to more than 125,000 people. We cannot claim to have tested our model at a development scale. Further, it is perhaps important to note that in moving to M-UP the team chose to focus initially on broadcasting a single idea or technology.

Despite this caveat, our findings show that the strategic use of researchers, and their resources, was possible through the PTD model. See for example Annex B-x which provides an elaboration of the experience of those scientists involved in the promotion of zero-tillage, includes a qualitative economic assessment, by IRCER scientists contrasting the project PTD model against what was regarded by them as the traditional (ICAR) model for PTD and the NATP – RWC model (reproduced below).

3.2.3. Qualitative economics of communication methodologies compared

Parameters	Traditional	NATP-RWC	Project (IRCER -Cirrus)
Input support	Inputs at all sites	Input at permanent site only	Only knowledge
Staff	Full time	Part time	Least time
Technology cost	Full support	Partial	No incentives
Participation level	Individual	Individual	SHGs/Interest groups
Capacity accumulation	Post-demonstration	Pre/post-demonstration	During demonstration
Level of communication	Staff to farmers	Staff/contact farmers to farmers	SHGs/interest groups to farmers

This analysis clearly shows that the strategy for communication is regarded as requiring fewer resources both in terms of provision of input support and incentives as well as recognising that the key provision support being provided relates to information that was implemented through the involvement in the PTD process

Instead of using a subsidized in field demonstration of zero-tillage at M-UP⁴⁶, volunteers and scientists developed a message or question to be used to solicit interest. The question ‘can you sow a wheat crop without ploughing?’ was used by CIRRUS staff to initiate discussion on zero-tillage. This generated keen interest in the technology. In June 2003 scientist visited the area to introduce equipment for zero tillage. Field demonstration was now an event where the equipment was on show - enabling farmers and others to see it being used, to view a video on a laptop computer and discuss the equipment. Subsequently some SHG members from M-UP visited Bihar to see ZT in operation at the RPC-V project site. This then led to a number of PTD outcomes around zero-tillage in M-UP.

Another example of how the project responded to the challenge of scaling up can be seen from the of experimentation with hybrid rice seeds and other crop diversification interests (Annex B-

⁴⁶ Transporting equipment to M-UP was funded by the project, but no further subsidy was involved.

viii), efforts were brokered initially by CIRRU staff, but demand for products and support exceeded the capacity of the team. In this case demand for vegetable seeds and crop protection products and support in their evaluation was met through the emergence of volunteers mediating a link to the market, providing both inputs and information and advice. SHGs were willing to pay a premium for such service. Thus we can see that in this instance the facilitation of local institutional arrangements provided a strategy to enable the project to respond to demand.

c) *Unexpected outcomes must be anticipated*

As described in section 3 a strict analysis of the number of PTD outcomes is difficult as we can only examine project supported PTD outcomes. Annex B i: Table 5 discriminates between unpredicted or unexpected outcomes. The use of this term is perhaps somewhat misleading, because such unpredicted outcomes were in fact anticipated.

A key element that runs through the PTD experiences is that SHGs managed the risks that could be taken (by spreading them among group members and between groups) and by building risk-taking ability through the use of self generated capital funds. Engaging in small first steps built confidence and experience. Failure and risk was accepted even by poor SHG members; not all experiments were successful, but the risks were evaluated prior to the experimentation by participants.

As described above new institutional arrangements are important. Wholesalers who had initially dismissed the Bihar sites as a potential market actually approached groups – once their credibility as customers had been established through the consolidated purchases made by volunteers. Negotiations led to a position where the merchants underwrote the risk of crop failure – on mutually agreed terms with communities.

Land owners were amenable to land being leased to poor groups who then managed the land very intensively (usually using tubewell irrigation) for high value vegetable crops.

Existing service providers became involved in experimentation and service provision for tillage operations; scientists provided only backstopping technical support and access to equipment on a trial basis.

4.3 *Conclusions*

The PTD model presented represents an important innovation, by completely separating the approach used to enable expression of demand (replacing it with a cost effective non-deterministic method for community development).

The PTD model focuses on information and awareness-raising strategy to encourage experimentation and the development of appropriate arrangements to respond to demand as it emerges and evolves seeing this as part of an ongoing process of innovation. This includes supporting the development, through the self mobilisation process, of new entrepreneurs as well as the strengthening of linkages with existing players, means that many services traditionally provided by research or development projects are largely met by these actors.

This PTD model provides important feedback to researchers on where demand for their technologies lies and helps to identify new areas of demand. What remains unexplored at this stage is how information gathered from such a PTD method can be used by researchers to frame “tomorrow’s research questions” and opportunities to make fundamental advances to existing technology.

5. Practical ways forward for land and water management

5.1 Introduction

As originally conceived, project R7830 set out to provide “New knowledge of land and water management practices for improved rural livelihoods”. The premise upon which the project was based was that, given the high potential but low actual productivity of the project areas, potential economic gains from increased productivity could provide resources and incentive to engage in a process of institution building for irrigation and agricultural development leading to higher productivity and improved livelihoods.

As outlined earlier (section 1) the project was designed around the ‘on-farm water management’ (OFWM) approach built on the diagnosis that irrigation problems lay ‘below the outlet’ with typical top-end / bottom-end distribution problems leading to inefficiency and inequity in water use.

The average cost of canal water in India is less than 5% of the value of the crop it is used to produce. During 1989-90, the average revenue collected from canal water users was Rs.50/ha whereas the average cost of canal maintenance was Rs.270/ha. Low irrigation rates and increased establishment charges result in neglect of canal maintenance leading to infrastructural deterioration, unreliability, excessive water losses, social conflicts and low agricultural production. Water conflicts are common in most of the systems, leading to vandalism and disruption of the physical facilities and degradation of the system.

Participatory Irrigation Management (PIM) has been proposed as a way to improve water management. However a slow and steady approach towards PIM in India has been recommended by Mollinga, 2003⁴⁷ with a caution that it is not the panacea for all the difficulties. Under PIM the formation of WUAs is governed by the Government of India CADA policy guidelines on Participatory Irrigation Management. In general these guidelines specify a two-tier system in the form of a WUA covering a group of outlets or a minor and a Distributary Level Committee (DLC). In Bihar there are DLCs and Village Level Committees (VLCs). Typically these committees involve and focus on the interests of land-owning farmers.

Prior to the project, the existing water users’ association (WUA) at project site 1 consisted of only land owning farmers and mainly of large-scale farmers. A key hypothesis was that by including a wider constituency in decision making related to canal management, agricultural productivity would be improved.

Thus the project sought to identify and work out ways to engage poor and marginal stakeholders and to empower them in relation to the larger-scale farmers who traditionally dominate the OFWM.

5.2 Project Approach

Initial project negotiations during the inception phase led to a recognition that a key aspect of the approach proposed with R7839 involved avoiding incentivisation. Acknowledging this, no formal commitments were made between users and motivators in R7830, beyond those associated with the initial technology demonstration activities.

⁴⁷ Mollinga, P. On the Water Front: Water Distribution, Technology and Agrarian Change in a South Indian Canal Irrigation System. New Delhi: Orient Longman; 2003.

As was discussed above the project partners came from very different positions and in the first year or more of the project activities proceeded more or less independently with the following thrusts:

- ✚ Facilitation of community development activities undertaken by R7839 (see section 3)
- ✚ Information collection by R7830, supported by field diagnosis and GIS mapping activities in R7839
- ✚ Validation and demonstration of the benefits of early rice transplanting in R7830.

Information collection

During 2001 and 2002 an information gathering exercise drew on published sources, socio-economic surveys, and informal dialogue with the community.

These activities helped in identifying constraints and problems that are specific to water management and raising awareness within the team of scientists (from all partner organisations) of the field situation.

Maps were anticipated as important products to facilitate communication between different stakeholders such as team members, advisors, planners, executors, and users for strategic planning and development. The vision for GIS as a tool that would facilitate interaction at various levels within the project is laid out in the project inception report.

A large scale demonstration and field based promotion of the benefits of early rice transplanting on rice and subsequent wheat production was undertaken based on previous research undertaken by IRCER indicating the potential production benefits of the practice.

At the same time as these activities were underway, CIRRUS was working independently to facilitate community development activities. Initially these activities were maintained as discrete activities as was required by the dialectic concept (see section 3). There were however significant tensions as others wanted to form SHGs to pursue various technical and livelihood opportunities. Interventions and negotiations between the team members of R7839 discouraged this.

Whilst the parallel / independent approach continued in the field, dialogue within the project team led to an agreement to trial an approach where ideas would be 'broadcast' and that the team would respond to expressions of interest.

Participatory process developed for water management

The participatory process comprising of five major key elements was developed.

1. Identification of technologies and broadcasting ideas,
2. Identification of interest/focus groups/members,
3. Enhancing know-how of interest/focus groups/members through group discussions supported by quality communication product (leaflets in local language),
4. Providing technical know-how on technologies to interest/focus groups/members through on-site discussions and strategic field demonstrations.
5. Slow withdrawal of experts from study area to facilitate increased interactions amongst interest/focus groups/members with other members of the community over technologies/interventions adopted for further self dissemination.

In response to information collection and field familiarisation and feedback derived from analysis of the SHG database a series of communication products (leaflets) were prepared. The purpose of these was to raise awareness of ideas and technologies. The leaflets provided basic technical know-how. Where interest was expressed, meetings between project staff and various groups were held in different canal reaches among SHGs / WUAs and even individual farmers to discuss the advantages and disadvantages of the technologies.

The technologies covered by these leaflets are listed below:

- ✚ Selection of pumps for groundwater exploitation
- ✚ Water management in rice
- ✚ Multiple water use
- ✚ Canal water management
- ✚ Efficient use of rainwater
- ✚ Water management in wheat
- ✚ Advantages of irrigation through field channels and the importance of gates on outlets
- ✚ Optimisation of rice transplanting

Initially promotion was done through CIRRUS volunteers using materials and developed and suggestions provided by IRCER scientists. Given that SHGs had proved more attractive to poorer groups and women who were often landless or sharecroppers, many of the options and technologies, relating to canal and water management were not of immediate interest and initial response was low.

It was recognised that although the process of facilitating SHG and community development was important, other actors within the community had interests and stakes in water management. As IRCER staff had experience in direct communication with representatives of this group they became more actively involved in promotion.

The communication products (both leaflets and models) were developed during 2002, and were given significant priority after the visit of project team members to the UK in Sept 2002. The leaflets were widely distributed prior to the Kharif (rice season) in 2003.

Development of models as decision support tools

In addition to the leaflets, decision-support tools were developed. In the course of dialogue with the communities and experiences in the field during 2001/2, water regulation at each outlet level was confirmed as an apparent issue. With support from IWMI⁴⁸, the project had already moved away from initial plans to undertake very complex main canal and distributary models (for which parameterisation and validation data were not available) to develop simpler water balance modelling approaches and collect appropriate field data to support the model development and validation.

Analysis of the communication needs suggested that information to support discussions on how to change water control was not available. In view of this feedback, efforts were initiated to devise simple tools based on the modelling efforts that would support decision making.

Two tools were developed:

⁴⁸ Training visits were made by 2 IRCER scientists to IWMI Colombo, and IWMI scientists participated in project workshops for the first two years of the project.

A simple water balance model to help in water management at different levels of decision-making was developed. The model used MS Excel spreadsheet and output was linked to the project GIS to produce visual outputs (either examined interactively on a computer or as paper based outputs). As an interactive tool it was easy to demonstrate the effect of various decisions on emerging water distribution scenarios to communicate to stakeholders e.g. at canal managers', WUA and users' (farmers') level.

A simple interactive tool to explore the financial implications of options for conjunctive use of canal and ground water was developed, programmed in Visual Basic, both in English and Hindi. This tool calculates

- ✚ Annual fixed and operational cost of irrigation from tubewell and canal
- ✚ Yield and total cost of produce
- ✚ Excess expenditure incurred in tubewell irrigation over and above the canal water charges
- ✚ Required yield increase to compensate additional cost of irrigation through tubewell.

5.3 Technological Interventions, Observations and Analysis

Observations about Participatory process

The study drew a great interest and provided much needed awareness amongst community and learning to project members on participatory process for technology development in livelihood programs. The outcome shows that participatory process that involves a wider constituency of stakeholders including WUAs, SHGs, OMs and other interest groups provides good opportunities for the adoption of need based OFWM technologies, leading to more effective PIM. This could be helpful in the effective implementation of PIM in irrigation projects. The convergence of parallel approaches and ideas of project partners was a notable achievement in forging better working partnerships so the work moved forward in better understanding. This learning is expected to feed into the development of similar projects focusing on integrated land and water management issues. The study also reflected that OFWM approaches that ignore (while widely acknowledging) the problems caused by erratic and unpredictable main canal system management can only have limited success. A broader framework to establish linkage and dialogue between water users and canal managers was developed by: firstly, providing an institutional mechanism for dialogue and secondly, need-based technical backstopping.

The project successfully demonstrated that subsidies and incentives can be avoided and are not necessarily essential for the adoption of effective OFWM interventions in the command when such interventions are supported with effective communication, dialogue and the process of participation. Need-based, low-cost interventions such as selection of pumps for groundwater exploration, water management in rice, optimization of rice transplanting time, multiple water use, canal water management, and efficient use of rainwater, undertaken by the farmers using their own resources have shown encouraging response and similar interventions are expected to be taken up by large number of members. This is a testimony to the success of the participatory process and its sustainability.

Outlet management

Prior to the Kharif season in 2003 the dialogue with the members of WUAs, individual farmers, and members of SHGs, examined the status and constraints of the area as diagnosed from earlier studies. These discussions focused on issues of distribution. The canal distributes water through distributaries RPC-V and sub-distributary (the Tengrila Branch), from which water flows through outlets into field channels and hence to fields, reaching other fields not adjacent to a

field channel, by field-field flow. Hence plots usually receive water from one outlet (sometimes they may be served from two outlets).

It was realised that the outlet was a level at which important management options were made. However, the existing two-tier system in WUA did not provide fair representation to members to support decisions related to outlet management. Thus the WUA took a major step, forming outlet management groups (OMGs) at each outlet to oversee the effective operation of the outlets.

Initially a single OMG took a historical step by deciding to regulate the flow from their outlet by installing a low-cost wooden gate (Rs.20 for the gate and Rs.80 for associated brickwork). Having seen the gates established at outlet 4, two more OMGs decided to install similar gates at their outlets. During the whole season these were used to regulate the canal water for irrigation. By mid 2004 a total of 6 OMGs had installed gates.

This reorganisation led to a more effective operation within the WUAs; existing members now had more say in canal water distribution through wider participation in canal management.

Other water management options

A questionnaire survey was used to analyse the effectiveness of the communication products listed above and to assess the present level of adoption or experimentation and future plans for the various interventions promoted.

This analysis showed a distinct difference in the interest in technologies, depending both on position within the command area and on socio-economic situation.

The survey suggested that within various sections of the community, awareness and technical know-how provided through various communication products plus strategic participatory field demonstration of various interventions generated varying interest.

Having shifted the project emphasis to promote cost-effective and/or low-cost innovations, that did not require engaging with issues of canal management directly, it was observed that landless, sharecroppers, and poorest of the poor also participated in experimentation with interventions of their choice.

Overall, raising of bund height followed by use of pumped groundwater to achieve earlier transplanting in rice was the dominant practice tested. This may reflect that the techniques concerned had been promoted since inception of the project, but it may also be due to farmers' opting at this stage to undertake low/no cost interventions.

Productive utilization of under-utilized or un-utilized seasonal waterlogged areas, depressions and abandoned pits has been successfully demonstrated following a participatory approach. Poor farmers including landless and/or small holders came forward to undertake multiple uses of water with aquaculture interventions as the core activity with whatever limited resources they had for improving their livelihoods. The results of these interventions produced an overwhelming response and their benefits have already started to spread through word-of-mouth. Villagers are enthusiastically taking up these interventions and more than 20 farmers/groups have already approached ICAR-RCER for technical support for adopting these interventions.

Responses had indicated the view that multiple uses of water (selection of pumps, canal management) represented an important opportunity; but this was perhaps less-favoured in light of current capability and willingness to take risks.

To promote the integration of aquaculture, critical inputs such as quality fingerlings were made available to those interested in pilot testing the technologies for demonstration and participatory evaluation. However, the strategy used was designed to encourage members of the community take over these roles as described above for other seed based technologies (section 4).

On farm water management needs linkages to main canal management

Surprisingly, little demand was expressed for improved canal management, even though there is a high degree of dependency on canal water. Further clarification revealed the perception that improvement within the distributary had to be linked with main canal water supply.

Pursuing this matter, IRCER and CIRRU facilitated the formation of interest groups or focus groups to enable dialogue on these issues. These discussions involved a wide constituency of stakeholders including WUAs, SHGs, OMGs and other interest groups, providing good opportunities for the adoption of need-based OFWM technologies. The dialogue highlighted that to achieve the objectives of OFWM the supply of water from canal must be ensured.

This highlighted barriers to action over the mis-management of the main canal that needed to be addressed in order to explore the possibilities of balancing expectations of water users and canal managers.

WUA and other community members and canal managers were consulted about how day-to-day decisions on canal management and operations of outlets can be made. Dialogues were made during the development of a water balance model in order to generate information on water availability and use under different scenarios. The water balance model and conjunctive water use model were used and further developed in order to provide scenarios that could be used to support the dialogue⁴⁹.

The project team interacted with both groups in several meetings in Patna (see working paper / Delhi workshop proceedings). Canal managers agreed that in order to correct or reduce the mismatch between canal water supply and demand, a strong linkage between OFWM and canal operation and management is needed. OFWM alone cannot improve water productivity and livelihood. This had been understood by the scientists since the beginning of the project. But a mechanism other than personal interventions by senior IRCER staff (based on personal relationships) had not existed to influence canal management.

The innovation where IRCER facilitated a dialogue between the community, WUA State-level officials and canal managers led to the development of more robust institutional arrangements supported by decision support tools. This offers the prospect for sustainability of these arrangements and may also offer a model that could be repeated elsewhere.

Subsequently, the State level actors together with IRCER undertook to promote their findings to the Ministry of Water resources. Initial contacts and dialogue between Dr Sikka and Dr AS Dhingra, Commissioner Ministry of Water Resources, Command Area Development indicated that the project experiences and products were of interest to the Ministry that was seeking to support efforts that would lead to more effective water management through linking of "on farm" and main canal water management decisions.

Participation by Dr AS Dhingra, Commissioner Ministry of Water Resources, Command Area Development in the working group sessions of the project's national workshop "Realising Potential: Livelihoods, Poverty and Governance" held during August 2004 in New Dew Delhi created an important venue for dialogue both clarifying the issues to be addressed and

⁴⁹ Offline linkage between maps and water balance model has been established to develop a Decision Support System (DSS). Percentage of area covered by paddy under different outlets and date of transplanting of paddy from the GIS database were used as input to water balance model to generate different scenarios of water availability (deficit and surplus) under each outlet command. This aimed to facilitate water management related interventions by outlet management group in cases of different amount of discharges from main canal during on and off periods of canal operation. Different water availability scenarios were generated for controlled and uncontrolled situation of water use from distributary also.

identifying possible ways such that strategies for Participatory Irrigation Management (PIM) could lead to more effective use of water.

Project members and project stakeholders at the State level were able to draw the attention of the Ministry of Water Resources on how linkages between local on-farm water management and main canal management could be achieved? This dialogue was supported by a range of communication products including a policy brief, position paper and a series of professionally produced posters.

This dialogue continues as the Ministry develops new strategies, and associated funding streams, for a program to achieve more effective water management through linking “on-farm” and main canal water management decisions. Having raised awareness of project findings and tools developed by R7830, further direct engagement with the Ministry of Water Resources is anticipated.

5.4 Key findings

Landless, sharecroppers or small-scale and marginal farmers do not consider development of infrastructure for improved water management practices as their priority, particularly as this may mean incurring heavy expenditure. Further, beyond increased commodity crop production in rice and wheat, opportunity exists to increase production and returns on water use through other means: extension of the irrigated area (through gains in water use gained through conjunctive water use), crop diversification and introduction of aquaculture.

Participatory processes that involve a wider constituency of stakeholders including WUAs, SHGs, OMGs and other interest groups provide good opportunities for the adoption of need based OFWM technologies, leading to more effective PIM. This could be helpful in the effective implementation of PIM in irrigation projects.

The project successfully demonstrated that subsidies and incentives can be avoided and are not necessarily essential for the adoption of effective OFWM interventions in the command when such interventions are supported with effective communication, dialogue and the process of participation.

Optimizing rice-transplanting time has encouraged the conjunctive use of groundwater and enhanced rice-wheat productivity.

A simple interactive operational tool developed and demonstrated amongst water users to analyse options for conjunctive use of canal and groundwater has provided a ‘window of opportunity’ to engage the rural poor through social mobilization, awareness and capacity building, knowledge-sharing and improvement.

OFWM approaches that ignore (while widely acknowledging) the problems caused by erratic and unpredictable main canal system management can only have limited success. To pursue wider issues of land and water management, it was essential to strengthen the development of institutional arrangements at the local level. A broader framework to establish linkage and dialogue between water users and canal managers was developed by: firstly providing an institutional mechanism for dialogue and secondly, need-based technical backstopping.

A combination of new technologies used to construct cadastral maps and to capture directly observable characteristics of plots facilitated scientific diagnosis, and dialogue among experts and local community to solve land and water management related problems and interventions.

The interactive decision-support tool based on a water balance approach and linked with GIS at distributary command level illustrates various water management options and their effect on

spatial and temporal water availability in the command. This served as a tool to facilitate dialogue amongst various stakeholders and helped in decision-making.

Continuous dialogue between scientists and with canal managers resulted in timely release of water to optimise rice transplanting.

Need based low-cost interventions such as selection of pumps for groundwater exploration, water management in rice, optimisation of rice transplanting time, multiple water use, canal water management, and efficient use of rainwater, undertaken by the farmers using their own resources have shown encouraging response and similar interventions are expected to be taken up by large number of members. .

Preparation and distribution of communication products (in the form of leaflets, strategic field demonstrations etc.) and promotion through group meetings and on-site discussions with SHGs, WUAs or individual members was an effective way to raise awareness of opportunities and support PTD efforts by individuals.

The project provides a potential case study for both State Level Officials and the Ministry of Water Resources to show how improved OFWM can be linked to improved main canal management?

6. Maharjanj: testing the model

This chapter revisits the social mobilisation process and PTD model which the project pioneered in RPC-V and Patna 1 (as outlined in sections 3 & 4). It must be appreciated that where the RPC-V site was operational for 3 years. Our aim at this site was to test elements of the dialectic approach and PTD model that would provide important insights to the potential for scaling up.

In particular this section attempts to interpret the experience of implementing the dialectic approach at a remote location (see also Annex B-i) and of how the PTD model and in particular the identification of ideas for promotion, would work at a remote location (Annex B viii), where although the team was confident in the geographic targeting used, they had limited personal exposure. The critical account of the process in M-UP offers insights into the essential features of the dialectic approach and PTD model developed by the project in RPC-V.

6.1 Review of the social mobilisation process and SHG formation

The innovative approach to social mobilisation which was developed within the projects is described in section 3 above (and - in more detail -in R7839 Appendix B-i); its main features are:

- ✚ 'unspectacular entry' to a rural community,
- ✚ formation of *self-help groups* (SHGs), of which there may be several within one village,
- ✚ a *dialectic approach* in which the poor rural people who become group members are enabled from the beginning to determine how group membership and the groups' resources are used to meet their needs,
- ✚ *group saving*, to create a fund which is used to make small loans to members for purposes which meet immediate livelihood needs, including health-care and social obligations,
- ✚ *local 'volunteers'* who catalyse SHGs, and work for their SHGs as brokers of information and of access to services,
- ✚ *income-earning opportunities* for volunteers from fund management and brokering activities,
- ✚ *support for volunteers and SHGs from the agency for a limited time*,
- ✚ *no dependency on long-term-agency intervention*, either for sustainability of groups or for up-scaling, once a cadre of volunteers and volunteer groups are established,
- ✚ *mobilisation of external finance* for groups which have demonstrated their viability - initially via a small loan from the agency, subsequently by a sizeable loan from a microfinance institution (MFI) guaranteed by the agency⁵⁰

Table 2 of Section 3 presents a time-scale for group formation. The *sustainability* and the *replicability* of this paradigm of social mobilisation have been established by the project's experience in the Bihar project clusters RPC-V and Patna 2, where formation of SHGs has taken place, facilitated by CIRRUUS staff and volunteers.

⁵⁰ In RPC-V such loans came from an advance of Rs 50,000 made by CMS (which has now all been repaid). In the paradigm which has been adopted and is now being applied by CPSL, this loan comes from bank funds. In RPC-V a loan from an external agency (i.e. SGVA – a rural development bank).

6.2 Testing the social mobilisation process to M-UP

In September 2002 the project initiated an attempt to introduce the process of social mobilisation via self-help groups to the other project site, M-UP. CIRRUS facilitators began to facilitate self-help group formation in September/October 2002, and GIS surveying (by Project Research Assistants based at Gorakhpur) began in January 2003, continuing to June 2003. An attempt to involve SHGs in GIS of their own village locations met with only limited success. Interaction between SHGs and scientists did not take place until mid 2003.

A time-line for group formation in M-UP (and number of groups formed) is set out in the right-hand section of table 4, alongside the model time-line for establishment and development of an individual group based on the experience of RPC-V (see table 2 of section 3).

SHG formation took place initially in 5 villages, expanded to 8 villages. The start of the process of SHG formation was quite slow. Reasons for this are that the CIRRUS facilitators were inexperienced (some had been recruited from the cadre of volunteers in RPC-V) and had less support from key CIRRUS people because of the distance of the site from Patna. A rather high proportion of the groups started during the first 6 months of project entry to M-UP did not survive for more than a few months (see table 4). It was this experience (of groups failing at an early stage of development) that led to the preparation of a detailed manual for volunteers and to greater support by experienced CIRRUS staff, with the result that the failure rate was reduced after the first 6 months.

The information that there would be no project funding for work in M-UP after FY 03-04 came in June/July 03, and volunteers were told in August that there would be no funding (for volunteer payments or for loans) for groups started from October 03 onwards. In spite of this a number of groups were started around this time.

The first 'CIRRUS loans' of Rs 500 per group were made only in July 03, when the end of funding had already been signalled. Funds from an external lender to make the larger (Rs 2-3000) loans to matured groups were never mobilised, so these loans were never made.

The following comments are offered on the process of SHG formation and social mobilisation in M-UP, based on table 3 and the account above:

1. There was an uncertain start to the group formation process, with a number of groups failing to survive for more than a few months.
2. The slow pace of development is further indicated by the fact that agency loans were offered to established groups only after 12 months from the start of the group formation process (rather than after 4 months as in the model developed in RPC-V).
3. The presence of the development agency, CIRRUS, in M-UP amounted to some 20 months in all. The experience in RPC-V (and the adjacent areas of Bihar to which the SHG model was up-scaled) indicates that it takes a minimum of 12 months for a group to reach maturity and possibly up to 18/20 months before its sustainability is secure. In M-UP – given the slow start to the process of group formation noted above – the agency presence was hardly long enough to see more than about half the groups formed reach maturity.
4. No external loan from a microfinance institution was mobilised.
5. Although individual volunteers were active, volunteer groups were not formed, and there was no development of volunteer groups into registered Sustainable Livelihood Promotion Societies (SLPSs) which would have enabled them to relate to an external MFI.

Table 4. Comparison of group formation time-scale of RPC-V model with M-UP

Model based on RPC-V		M-UP		
Month	Activity	Month	Activity	Groups formed
Months 1-4	Entry to village: volunteers recruited, interact with poor people to form SHGs	2002 Aug	SHG formation began plus recruitment of volunteers	5 (3 closed by Mar 03)
Group establishment	Group saving / group fund started; loans to members	Sept	SHG formation plus recruitment of volunteers	4 (2 closed by Feb 03)
	Volunteers record group meetings and savings/loan accounts	Oct	SHG formation plus recruitment of volunteers. Manual prepared to help volunteers / CPSL workers	4 (2 closed by May 03)
	Agency workers make weekly visits to village, to attend group meetings	Nov	Manual improved effectiveness of interventions.	4 (2 closed by May 03)
Months 5- 12	Group <i>established</i> when 16 meetings have been held. Loan of Rs 500 made to group (from a fund, provided by the Agency)	Dec	Group savings & borrowing	5 (3 closed by May 03)
Group consolidation	Group continues savings & lending	2003 Jan	Group savings & borrowing Multiplier effect (loan more than saving) identified in established groups	9 (6 closed by Mar 03)
	Repayment of agency loan by instalments; fund revolved by volunteers to other groups	Feb	Group formation continued Group saving/borrowing	5 (2 closed by Jun 03)
	Volunteers broker contact with service providers & suppliers	Mar		6 (2 closed by Jun 03)
	Volunteers form their own SHGs for mutual support & exchange of information	Apr		4
	Group is ' <i>mature</i> ', when: - 48 weekly meetings have been held - initial agency loan is repaid	May		6
		June	↓ ↓	7
		July	Loans (Rs 500) made to 8 established groups	8
Months 13/14 – 18/19	Loan made to group of funds from an external microfinance agency (MFI), typically Rs 2000-3000	Aug	Volunteers told that no groups established after Oct would get funds	6
Group maturity/ sustainability	Volunteers manage loan, thereby earning income	Sept	(CPSL registered)	2
	Income from loan repayments provides incentive to volunteers to facilitate the formation of new SHGs	Oct		
	Volunteers extend activities as brokers of supplies and information	Nov		8
		Dec		1
		2004 Jan - March	CPSL staff withdrew Of 80+ groups formed, 63 in existence, 36 matured	1

Comparing the experience of the RPC-V and M-UP project sites allows factors key to the sustainability of the social mobilisation process to be identified. The crucial factor was possibly the lack of an MFI loan to provide finance for mature groups. In RPC-V it was largely the existence of this funding which generated an income for the volunteers after they ceased being funded by the project, and the fact that the income stream to volunteers from managing MFI loans never came about in M-UP meant there was little incentive for formation of volunteer SHGs, nor for volunteers to take the initiative to form new village-level groups. The failure of a strong volunteer cadre to grow meant that the momentum of volunteer groups supporting volunteers to promote new village-level groups failed to develop, and in its place there has appeared a downward spiral of volunteers travelling away from the area to look for employment, and leaving less than fully mature groups unsupported.

6.3 PTD in M-UP

The model of PTD which was developed in RPC-V is outlined in section 4 above, and the approach adopted in M-UP is described in detail in Appendix B viii. This took the form of a scoping exercise involving SHG members, CIRRUS facilitators and ICAR-RCER scientists, carried out in the first part of 2003. This was some 10 months after initial 'entry' to M-UP for social mobilisation, so a number of SHGs were by that time established or close to being established.

An issue to emerge from the scoping exercise was the need for timely land preparation for wheat, following the rice harvest. It seemed that zero tillage (ZT) might offer a possibility of meeting this need. Although machine-based, ZT was regarded as appropriate for poor farmers because it is cost-saving in that it reduces the need for a time-sensitive input of labour to achieve timely land-preparation and planting of wheat, and also results in much less serious weed infestation (thus reducing labour requirements for weeding).

Instead of moving straight to (subsidized) technology promotion⁵¹, volunteers prepared groups by 'broadcasting' the question 'can you sow a wheat crop without ploughing?' This generated keen interest in the demonstrations of ZT in June 2003 (which involved both a field demonstration and enabling farmers to view a video on a laptop computer). Subsequently some SHG members from M-UP visited Bihar to see ZT in operation at the RPC-V project site.

ZT was trialed for wheat in the 2003-4 rabi season, and subsequently for rice in June 2004. Two groups took up the equipment and tractor-owning members have contracted to cultivate at rates of around Rs. 550 per acre (including tractor hire and fuel), covering some 35 acs in all in rabi 2003-4. A 0.5 acre rice crop planted in June 04 was observed in September 04 to be showing good growth and was reported by the plot owner to have resulted in a saving of Rs 800-1000 in labour costs. However, the weed growth was more in the ZT plot than in adjoining plots (which had been prepared by puddling). Machine operators, and their groups, were keen for the machines to be left in place at the end of the project.

At the EoP there are two contrasting sets of views to be found within the project team with regard to the experience of participatory technology development in M-UP. The first sets the M-UP experience against that of RPC-V, where there was much closer involvement of ICAR-RCER scientists with the process, where a range of technologies were introduced and trialed, and where uptake successes can be measured after 3-4 years of project engagement with PTD. This perspective sees the M-UP initiative as beginning late in terms of both the projects' life and,

⁵¹ Transporting equipment to M-UP was funded by the project, but no further subsidy was involved.

given the longer than expected time-scale for SHG formation, not capable of being judged a success or a failure because of its short life.

An alternative view (associated with the team members who have been most closely involved with PTD in M-UP on the ground) is that the initiative was instructive, and can be described as successful in that:

- ✚ space was given to interested individuals and groups to experiment with the technology at levels of risk they were willing to bear
- ✚ costs to those experimenting in this way were realistic (since the technology was introduced without subsidy)
- ✚ scientists' time was effectively used, yet their input was limited (so in principle they would be able to support a number of situations in which this model was used)
- ✚ although at EoP (i.e. just over a year after the scoping exercise) a large uptake of ZT could not be demonstrated, groups and individuals who had observed or trialled ZT were at this point continuing to experiment and critically evaluating the opportunities offered by the technology before committing further resources.

The short timeframe and the distance of M-UP from Bihar have meant that the M-UP experience involved quite frugal, yet effective, use of the high-cost resource of senior team member time, and thus enabled the impact of this to be tested on the ground. The outcome was a robust example of encouraging PTD in a way which was non-directive, and inclusive of poor people who were able to see benefits for themselves in adoption.

6.4 The projects' engagement with M-UP: observations by project team members

The following observations have been made by members of the project team with regard to the process of SHG formation and development in M-UP:

- ✚ There was a different pattern of loan purpose in M-UP, with more loans taken for agricultural purposes at an early stage (rather than loans for consumption or health purposes).
- ✚ Socio-economic status of inhabitants of the M-UP project site is generally higher than that of RPC-V, with landlessness much less prevalent
- ✚ Land consolidation has taken place in M-UP, so there may have been less scope for facilitating/developing changes in water management practices (water management being in the hands of the Irrigation Department), and there are no water-users associations.

6.5 The projects' engagement with M-UP: observations by SHG members

A review of the status of SHGs in M-UP was undertaken (by the project staff) in late October/early November 2004, i.e. some 7-8 months after withdrawal from the M-UP site⁵². The history of 56 groups (out of a total of c.80 originally formed) was traced. Of these only 12 are still functioning, while the remaining 45 have stopped regular meetings and weekly contribution

⁵² See *Status Report of Maharajganj SHG* by AK Singh and MK Singh, November 2004, on which the rest of this sub-section is based.

(mostly some significant time after the project withdrawal, during the period April to June 2004). In a series of group interviews, participants and ex-participants:

- Valued the concept of the SHG (and the role of volunteers).
- Valued achievements of the SHGs (e.g. savings, loans, mutual support).
- Attributed failure of groups to survive ('discontinuance') to limited agency support, intra-group conflicts to which volunteers were unable to mediate a resolution, and failure of external finance to be mobilised.
- Expressed disappointment that linkages with financial institutions have not developed, and viewed that revival of individual groups and of the social mobilisation process depended largely on this.

The members and former group members were asked to feed back on the experience of SHG membership under the 9 headings below. The following is a synthesis of views expressed in group interviews.

1. *Strong points* mentioned were that formation of SHGs has increased co-operation amongst the group members, and the self help group process has enhanced their capacity in decision making. It has also developed a habit amongst the members for saving and shown the importance of regular saving. Since most of the decisions were taken through consensus amongst the members, this enhanced social harmony amongst group members as well as between their families.

2. *Major Problems* were:

- ✚ Withdrawal of volunteers' support to groups after the withdrawal of CIRRUS. (This affected women's groups especially, as they do not have any help to write their weekly accounts etc.)
- ✚ Some groups proposed to invest the group savings on behalf of the groups but consensus amongst members was never reached.
- ✚ Most groups have tried hard to open group bank accounts but they failed.
- ✚ Some groups found that irregular meetings and irregular weekly contributions resulted in discontinuation of groups.
- ✚ Some groups faced social problems like caste, disbelief amongst each other and other personal problems which resulted in withdrawal of membership by some of the members and sometimes in discontinuation of groups.
- ✚ Savings helped to build up capacity but due to small contributions the process is slow.

3. *Benefits of the existence of groups and group membership* were mentioned as

- ✚ Exposure of groups and members to ICAR-RCER scientists have enhanced their knowledge regarding agricultural practices.
- ✚ An opportunity to generate additional income through group savings by loaning the money.
- ✚ Feeling of independence that resulted from being able to meet small needs through group loans.
- ✚ Money from group loans enables agricultural inputs to be applied timely
- ✚ School fees can be paid regularly.

4. *Further support needs* are seen as:

- ✚ Linkages with banks to provide better opportunity for investments and income generation.
- ✚ Support from volunteers who were a source of inspiration for regular meetings and also were helpful in managing the group accounts and sorting out any conflicts.
- ✚ Longer presence of ICAR-RCER, who during the projects gave a type of support not available from other line departments.
- ✚ Training on new agricultural technology related to water management, zero tillage, fisheries, poultry ,livestock rearing etc.

5. *Reasons for discontinuation* were various. Early withdrawal of the project is one of the main reasons put forward. Many groups feel that they are not yet mature enough for effective future planning, having never been involved in such type of processes. Some members expected that formation of groups would lead to their receiving external funding; and when this failed to emerge they distributed the saved amount among members and closed the groups. In a few groups it was reported that there was disbelief amongst the members regarding group activities, which created conflicts not resolved by the volunteers; hence they closed the groups.

6. *Support to the groups from volunteers* was highly valued, for the following reasons:

- It was largely due to volunteers that regular meetings and weekly savings took place.
- Sometimes members consulted volunteers on their personal problems and found they were helpful in sorting out the problems.
- Volunteers helped to write groups' balance sheets and explain these.
- Volunteers were often a source of new knowledge to many of the SHGs.

7. In response to the question of *whether the group was useful during its existence*, most of the groups answered positively. However in relation to the question of ...

8. *Whether there is any plan to revive the discontinued groups*, most members were not sure on this aspect as they think that discontinuation has shattered their dreams. To the question of what their dreams were, they responded that they were expecting that they will be linked to financial institutions which may open up new opportunity for improving their livelihoods. Some groups have their savings still intact and they still hope that CPSL or any other agency may come to their help. Some of the volunteers reported that they can revive some of their discontinued groups and could even try other groups also, but for that they need support similar to that offered by CPSL and ICAR.

9. On the question of *how can plans for revival be put into practice?* none of the group members were able to answer but many of the volunteers told that they knew of opportunity for linkages with banks to get financial assistance to undertake activities, source of information etc. if it were guaranteed the revival can take place.

6.6 Lessons of the M-UP experience

The difficulty of supporting a project initiative several hundred kilometres from the Bihar site was possibly under-rated at first. However the need which became apparent at the beginning for 'backstopping' support was met and an important outcome was the drawing up of guidelines for field staff which have become a significant part of codifying the process of SHG development.

The relatively short period of the projects' engagement at M-UP is a recurring theme in all discussions relating to M-UP. Although the paradigm outlined in Section 3 (and reviewed above in table 4) envisages a SHG becoming mature in 12 months and self-sustaining within 18 months, an uncertain start (as was the case with many groups in M-UP) can extend this time-

scale. It seems likely that a support framework for volunteers is important in this situation; and it appears that this was not strong enough in M-UP to promote the volunteer self-help groups (SLPSs) which should have been formed at this stage (i.e. some 6-9 months from the beginning of village SHG formation – or even earlier).

The lack of either a revolving fund and of an MFI loan to provide finance for mature groups was probably critical. In Bihar it was largely the existence of this funding which generated an income for the volunteers, since the volunteers managed loan repayments as a revolving fund. In M-UP, the lack of this income for volunteers meant there was little incentive for formation of volunteer SHGs, or for volunteers to take the initiative to form new village-level groups. Had the support framework been stronger, volunteers might have taken on a service-provider role (particularly as a higher proportion of loans were going to agricultural uses) even though they did not have the role of fund manager. However, it is likely that the two roles are highly complementary – but possibly in an asymmetric sense. The external finance is primary, providing an income which means that the volunteer is no longer dependent on the project, and also enabling group members to make the investments or to demand the inputs to which the volunteer can facilitate access. The brokering role of the volunteer is possibly secondary, catalysed by the external funding and therefore more difficult to initiate without such funding.

As planned, the input by ICAR-RCER scientists at M-UP was very limited, as compared with RPC-V. However the model for promotion, which focused on facilitating and supporting experimentation by groups, as reported in the proceedings of the Delhi workshop, led to a much more diverse set of experimentation with the single technology being promoted. As with other initiatives, given the time constraints of the project a follow-up study will be required to understand how this experimentation translates into adoption in the future.

7 Lessons learnt: Reflections upon the institutional aspects of the projects

The two projects involved collaboration between no fewer than 8 organisations representing a range of different development perspectives and approaches. Some of these played a central role; others were the home or base organisations of members of the project team who made inputs more as individuals, with the result that their institutions remained distant from the projects. Yet others have come into existence as a result of the projects. A view which – at the end of the projects - is widely accepted among the main actors, is that the two projects brought together, and succeeded in holding together for over four years, organisations and individuals with very different beliefs and perspectives with regard to development, poverty and anti-poverty strategies. Moreover, the projects provided space within which each was able to reach an understanding of the perspectives of others, and this convergence was important in enabling project outputs to be achieved.

In this section we explore the impact of the projects on the participating institutions, the extent to which changes in the participating institutions⁵³ have been important to the outcomes of the projects, and the extent to which institutional changes are likely to sustain beyond the end of the projects. The section is based on a review carried out by Rasheed Sulaiman and John Best towards the end of the projects, which involved interviewing most of the main actors; it also draws directly on contributions by 7839 Team Leader and – importantly – material originally provided by MS Ashok as his contribution to section 2 of this annex.

7.1 Phases of the project and process of convergence

Although there are different accounts of this, it appears generally accepted that the project was characterised by a series of phases in which a gradual accommodation between the main actors took place, and to some extent a merging of the contrasting perspectives which they represent. In summary:

The project's first 18 months (from project inception in March 2001 up to September 2002 saw the two main groups of actors in the projects progressing on parallel tracks from a base of the institutional perspectives outlined above (section 1.4). CIRRUUS pursued its remit to 'catalyse' self help groups with a poverty focus, via a cadre of village based volunteers, while the ICAR-RCER team focused on technology promotion, via its existing constituency of such groups as water users associations.

September – October 2002 was a turning point which saw the beginning of a reconciliation of opposing views within the project team. This was greatly facilitated by the drawing up of a common logframe for the two projects.

the following 18 months October 2002 – March 2004 saw the momentum of SHG formation continue (at a pace that the team responsible was barely able to manage) while a change from a 'scientific' to a 'development' focus could be identified, associated with the development of a combined communication strategy for the two projects and the beginning of a process of interaction between scientists and SHG (members and the volunteers).

⁵³ 'Institutional change' is here taken to mean not only (or mainly) change in structure but change in methods of working including communication and relationships within and between institutions. Change takes place through reflecting on, and learning from, experience.

The final phase to November 2004 (which included the final project workshop in August 2004) saw withdrawal of the project from SHG support (although prematurely so in one location).

Consolidation of views within the project team (from late 2002 onwards) can be traced crucially to some of the scientists in the project team becoming aware of new opportunities created by the very large 'surface of direct contact' with communities that the new institutional network of SHGs had made possible.

They were thus challenged to make use of the unprecedented levels of direct access now available to very poor households, whose stakes in land, water and agriculture had never been previously recognised by scientists. Convergence between CIRRUS and the rest of the project team developed slowly, facilitated by a change of leadership in ICAR-RCER and by the influence of the leader of the R7839 team. The sub-sections below outline perspectives of main actors of the processes at work in the projects

7.2 Lessons for the main actors

a) ICAR-RCER

The following processes developed during the projects have been identified by the ICAR-RCER / partners as significant departures from the approaches which had previously influenced the institution's engagement with rural people, and – further – as features of the projects which have been important in influencing the project outcome.

Working with SHGs of the poor. The research team had previously been working primarily with water user association (WUA) members who generally own land. Interacting with SHGs (see sections 3 and 6 above) was important in widening their understanding of the technological and other concerns and demands of the rural poor. It has also helped the scientists in widening their understanding of the technological and other concerns and demands of the rural poor. It has also helped the scientists to use their generic knowledge to suit the needs and resource constraints of the farmers and this has in fact contributed to a better understanding of the whole innovation process.

No or very limited use of subsidies for inputs. The project from the initial stages made it a principle that it should not subsidise inputs or other costs. Except sharing some of the costs in transportation to project sites of the zero tillage machine, the project has virtually not subsidised any activity or input. This has been different from the existing practice of subsidisation of inputs to promote new technologies (as for example under the Institute-Village Link Programme (IVLP) or the minikit programme). The approach of limited subsidisation of inputs has been new to the scientists as well as the community members who have always been lured by the subsidies to achieve a desired action.

Partnership with a wide range of actors. The project brought a wide range of partners to address a research and development task, in a way that was new to many of the ICAR-RCER team. Traditionally, a research institute like ICAR-RCER has been partnering only with researchers in other scientific organisations (whose status as "researchers" has been significant in identifying them as suitable collaborators). Partnering with an organisation such as CIRRUS (perceived initially to be not a research organisation) has been something new for the researchers; and it has helped them to understand better the broader debate on livelihoods as well as issues and processes related to group formation, to group facilitation, and to micro-financing. Over a period of time, the interaction between the SHGs (members and the volunteers) and the scientists became more robust and routine, so that they have indeed become partners in the whole project. Other stakeholders with whom the project worked include, water users' associations,

women farmers and the landless poor.(and indeed the fact that such stakeholders have come to be viewed as partners indicated how much their status has changed).

Evolving nature of project interventions. The projects have been evolving all through the period and the interactions among the partners have resulted in challenging the assumptions of the different partners and the strategies planned initially with the limited knowledge and experience. This has been a learning project by all means as the project interventions evolved step-wise, informed by previous experiences and new learnings. This has helped the project to quickly respond to new and unforeseen developments that have occurred during the project process.

b) CIRRUS

The team deployed by CIRRUS consisted of a management specialist with experience in designing, appraising and operating poverty reduction programmes/projects plus two persons with extensive 'hands-on' field experience within such programmes/projects. By the third year, three more persons, including an agricultural specialist had been added.

The perspective which CIRRUS brought to the projects had grown out of its experience, and contrasted markedly with that of ICAR-RCER. Tensions between the perspectives as associated with CIRRUS on the one hand and ICAR-RCER on the other became evident very early, during the inception process.

CIRRUS characterise these as 'dominant' and 'minority' views in the project team; and CIRRUS certainly felt embattled at this stage, sensing that the way their team relied on personal experience and very little on research and analysis made them barely acceptable to some other team members.

CIRRUS's agreed role in the project was to catalyse and support development of groups of poor people in project villages in order to enable them independently to access external service providers – for microcredit, agricultural technologies, and other livelihood related services.

Whilst groups designed to further specific project agenda related to water, crops, soil, and mapping were regarded by most scientists as desirable. The CIRRUS team on the other hand persisted in its view that such agenda must be introduced only after micro-organisations had stabilised, must be demand-led, and the terms negotiated on an equal footing. This was a key to the dialectic approach envisaged by CIRRUS

A significant way in which the tension was reflected is the very small number of micro-organisations required (by the logframe) to be developed by the project. The CIRRUS team believed that it could draw on its previous experience and not only repeat but also improve on this performance despite special difficulties in Bihar of inequality, social conflict and law and order.

There was however considerable scepticism within the larger project team of the relevance and practicality of the CIRRUS approach (although many of the international team were strongly supportive of CIRRUS). In the event, CIRRUS decided not to argue for targets that could be regarded as exaggerated. However, numbers of micro-organisations developed by exceeded even the CIRRUS team's own internal expectations.

Whilst the material from which this account is drawn did not acknowledge learning by the CIRRUS team, other project members highlight that at various points in the project CIRRUS staff indicated that the project experience had enabled them to experiment with new ways of working. It is suggested that the CIRRUS field staff may have recognised and the importance of dialogue with science and technology people and that over the course of the project mutual respect

developed. The CIRRUS team also learnt that social entrepreneurs (volunteers) could come from all walks of life and did not have to be from the poor but could also come from the elite.

c) Village self-help groups

From the starting point of the 'alternative perspective' of development intervention which is outlined above, the CIRRUS team set out to develop an interface between micro-organisations and the rest of the project team that would commence open-ended processes, and possibly enable exploration of opportunities for working together on terms mutually acceptable to each.

The principles and practice of facilitating village self-help groups are set out in Section 3 above. Section 6 analyses the experience of formation and development of SHGs in the M-UP project location, and draws from the relative lack of success of this experience to identify the critical factors that enable sustainable SHGs to emerge, and that allow for the group formation process to become self-sustaining. These are, it is suggested:

- (a) Initial facilitation and support by a volunteer in the early stages of group formation
- (b) Access to external microfinance, once initial group saving is established
- (c) Continuing role of volunteers as brokers of supplies, services, microfinance and information to groups
- (d) A 'critical mass' of groups is formed, which generates an indigenous demand for group formation from non-group members
- (e) Self-help groups of volunteers support them in their brokering roles.

Although the process of group formation and development has been described as self-sustaining, it is important to recognise that initiation of the process requires (substantial if low-cost) intervention by a development agency. The crucial components of this intervention are:

- (a) training and support for the volunteers in the early stage of their work with SHGs (up to the point as which a 'critical mass' is reached)
- (b) facilitating access to external finance, for groups which establish themselves and show their viability by saving and lending from their own resources
- (c) facilitating/supporting the formation of self-help groups of volunteers.

While SHGs developed according to this model have a validity in providing a means by which poor people can enhance their livelihoods, they have had an additional dimension in these projects (as has been seen), namely in creating opportunities for engagement between poor rural people and scientists in the project team. Achievement of such contact was an important contribution of the projects.

The SHGs have a high degree of poverty focus. This is indicated by the data of group membership presented above (section 3.3); but a useful additional insight is provided by the very small amounts that some of the groups choose to save weekly. A typical amount is Rs 1-3, but some groups settled on as little as Rs 0.50. However, the experience of CIRRUS is that groups with weekly savings at the lower end of the scale have a better survival rate than those saving higher amounts, indicating that the SHGs are proving effective in meeting the needs of very poor members.

d) CPSL and SLPS

The role of the village level facilitators (known – perhaps misleadingly – as ‘volunteers’) who promote formation of the village-level (‘farmer’) SHGs is a critical one. It is the volunteers (typically unemployed people from the same village as that in which they are working, or a neighbouring village) who enable the ‘unspectacular entry’ which CIRRUUS stresses, and who are on hand to support groups to maturity (normally over the first year of a group’s life). Volunteers received a small payment during the pre-maturity period for each group meeting that they facilitated; however group sustainability depends (to a considerable extent) on volunteers remaining active and in contact with groups after the end of this period: this may be either to transfer their capacities to groups (thus making themselves redundant), or to provide services and through this generate income which is enough to keep both volunteers and groups in existence.

The role of the volunteers in relation to newly matured groups to date has been:

- ✚ on-lending of funds from a microfinance lender
- ✚ brokering information and supplies (e.g. seed, agrochemicals)

...while their post-withdrawal role consists (in addition to the above) of

- ✚ facilitating new SHGs (in response to the demonstration effect of existing SHGs)
- ✚ managing a revolving fund to provide ‘pump-priming’ loans to newly-established groups.

SHGs formed by the volunteers themselves have proved important in enabling volunteers to exchange information and provide support to each other. Further, by registering as a society a volunteer SHG becomes a legal entity capable of relating directly to a bank or a microfinance institution (MFI). The registered societies which have emerged from the volunteer SHGs have been given the name ‘Sustainable Livelihood Promotion Societies’ (SPLS), and they have the following functions:

- ✚ to enable volunteers offer support to each (in effect serving as a volunteer SHG)
- ✚ to enable volunteers to share information to strengthen their brokering role.
- ✚ to serve as a legal entity through which volunteers can relate directly to a microfinance institution (MFI).
- ✚ to generate income for volunteers (by fund management and brokering) which provides an incentive for them to encourage new groups⁵⁴.
- ✚ (possibly) to act as a vehicle for volunteers to channel their own savings into a group fund for on-lending.⁵⁵

In addition to the emergence of SLPSs (in RPC-V), the prospect that CIRRUUS’s budget and thus the projects’ social mobilisation activities would come to an end in FY 2003/04 prompted CIRRUUS staff members working in both RPC-V and M-UP to form an independent organisation, the Centre for Promotion of Sustainable Livelihood (CPSL). Thus two new types of institution emerged within the project in response to particular needs. Their formation makes an important

⁵⁴ Cases have been reported in Bihar (not M-UP) of potential SHG members offering direct payments to volunteers to facilitate a group, on the basis that the group will in due course be able to access MFI loans and inputs via the volunteer .

⁵⁵ Some SLPSs are reported to collect as much as Rs100 per (volunteer) member per month into a group fund which is then used to make loans to members of farmer SHGs.

contribution to the sustainability of the innovations introduced by the project, given that the project itself did not create infrastructure that could not be supported beyond its life.

The vision that services could be provided through the private sector was firmly rooted in the project; and it can well be claimed that the project has created openings for local private entities enter, participate in and add value to existing value chains linking the rural and commercial sectors. One of the most significant developments has been the evolution of the volunteers from facilitating the SHGs in conducting meeting and recording transactions into service providers with the roles outlined above.

e) International partners

The International team had markedly differing views on how the project should proceed. These views not only related to their expectations of each other, but of their partners. The intended mode of operation of the project represented a new model for most of the team. This required significant accommodation and learning by team members.

Initial project team interactions, during the inception process, revealed significant tensions, and differences in professional perspective, within the international team (some of which are outlined in 1.4 above) in characterising the institutional context and arenas for the project. The leader of R7839 found it unhelpful to view these as a 'split' between ICAR-RCER and the other team members. This was not the case, however the team was being asked to work in new ways and to move beyond the boundaries of the current research norms.

The initial challenge, as described below, was to find sufficient areas of common ground to move forward. As the project unfolded, all team members found themselves adjusting their understanding and views. For example, the project leader of R7839 clearly feels that he had never really appreciated, and probably still does not, understand what poverty meant. He found it difficult to conceive that it was necessary to modify the microfinance database to record a fraction of an Indian Rupee, because some individuals were saving and transacting such small units.

A constant challenge for the international team was to understand the balance between imposing their view on the project staff and creating space for team members to innovate. The project and approach of ICAR-RCER created an open forum in which views could be raised and exchanged.

Despite the flexibility offered by the project design the failure of ICAR-RCER to utilise their budget, particularly to hire project staff even though budget was available for this. The result was that the project operated without its full complement of staff for most of its life (and in consequence was faced at one point with a sizeable budget under spend). A knock-on effect of the shortage of resources was the tension among senior ICAR-RCER staff who perceived they were competing for resources.

An early budget underspend, together with the prominence of GIS in the early stages of the project, caused some difficulties: notably a perception that GIS was absorbing a disproportionate share of resources while the project as a whole was understaffed in relation to its tasks. Mid 2002, saw the appointment of personnel through CIRRUS with project funding, and thus in large measure a resolution of the difficulties. This in considerable measure strengthened the team approach. The experience in overcoming these understandable constraints may provide important insight for the design of future projects,

The project team(s) were overwhelmingly male. Apart from the women volunteers (who were not project staff) there were only two (young) women among the R7839 international team members. Their contribution was limited, ultimately by their own choice. The issue here was not

only (or mainly) one of gender but probably also one of seniority, protocol and professional respect⁵⁶.

While it may be important for a junior international team member to achieve acceptance by falling in with national expectations of a junior colleague, there must come a point – in a project with a limited life – when these expectations may need to be breached if the junior member is to make their contribution. This was not tested in the case of R7839.

An important feature of the input by the R7839 team members is that it was (in the case of most team members) considerably in excess of their funded days. An important reason for this was the aim (indeed commitment) of virtually all the team members to be genuine partners of their national colleagues and thus supportive rather than directive.

However, there were points at which the requirement of NRSP that project outputs be of international standard (the materials for the Delhi workshop are a case in point) necessitated attention to detail which absorbed many days. Further, it is the perception of a number of the international team members that a large amount of time had to be allocated to transactional activities and to attempts at training and capacity-building. This left relatively little time for research work to their own agenda, which in turn made it hard to produce international-standard outputs.

7.3 Innovation in Research Management

A key challenge for the management of the project was the large number of institutions and individuals involved in the project. Key distinguishing features of the research were that:

- ✚ Interventions made by the project were not within the capacity of any single organisation. A partnership between research and non-research partners, and those involved in rural development, between actors with varying focus and capacity was required. The project provided a learning platform for actors with different perspectives to share and contribute to a common objective
- ✚ Institutional innovations and understanding of “the process” were seen as equally or more important than technical innovations and knowledge if the livelihoods of rural poor are to increase.
- ✚ Research was undertaken at the appropriate scale and involved relevant partnerships.

Given the extremes of views within the project, and the fact that achieving a common vision for the project(s) was not initially possible, the project leader of R7839 rather took the view that an interdisciplinary outcome depended on creating an ‘arena’ (or, rather, arenas) within which members of the team could work towards project outputs without necessarily cooperating closely or fully understanding the different perspectives which were represented in the team.

In doing so he had to identify critical areas where immediate consensus was needed, in other areas he agreed to (or suggested) courses of action with individual team members which were not subject to consensus.

Examples of such compromises were:

⁵⁶ In particular the performance of one of the individuals fell below the expectation of the R7839 project leader and ultimately it was agreed that this individual would play no further part in the project. The second team member (by their own choice) played a relatively minor role in the projects. The lessons are not particularly clear.

- ✚ Negotiated agreement between CIRRUS and ICAR-RCER recognising the role of CIRRUS in group formation, agreeing a mechanism for review, and providing space for CIRRUS activities to proceed.
- ✚ New field activities (diagnostic activities and field walks) were proposed to raise awareness of scientists that learning could be achieved in the field (literally *in* the field – not just from the centre of the village); the GIS work seen as part of the PTD process but giving opportunity for familiarisation by the team of the project area.

A key to the success of the project was that all project team members continued to engage with each other. The project workshops created an important venue for this dialogue. The workshops took an unanticipated form. Given that the project was operating within 'arenas' as team members presented their research often discussions took a very critical, but none-the-less crucial form.

During project workshops, particularly in the first two thirds of the project, the project leaders sought, to ensure that the different perspectives embodied by the project were raised and debated. In particular the data and feedback from the SHG process were used to challenge the strongly held views of both national and International partners.

The team was encouraged to explore and challenge the positions of others and thereby to engage with the arenas in which the project operated. Team members were encouraged to re-examine their own positions and understandings. Boundaries were redefined and renegotiated as new understandings and opportunities emerged (as described above).

We see that this dynamic which accommodated changes in the understanding and position of individuals as crucial to achieving *interdisciplinarity*, as opposed to *multidisciplinarity*, in such a project. This was not management by consensus *nor* by neglect!

The flexibility created with respect to resource utilisation has been raised by others as a benefit of the project that enabled successful implementation. It is important to recognise that this flexibility was not implicit in the project design nor the RD1 contracts provided by Hunting Technical Services on behalf of DFID.

In fact the Government rules, as embodied in the DFID contract proved, cumbersome and extremely expensive to administer, and did not provide a suitable operating framework. On occasion responding to the needs of the project and requirements of DFID NRSP to achieve an on-target spend in each financial year, caused considerable management difficulties for the project.

This resulted in an administrative burden for Rothamsted Research, the costs of which were not recovered from the project. Further, CIRRUS performed an important role in assisting in the disbursement of funds in India. Whilst an overhead fee was agreed for this fund disbursement support, this rarely compensated for the considerable inconvenience such arrangements caused.

These observations are not meant as a criticism of management by NRSP rather lessons that we hope will have a wider utility to those seeking to encourage and support such research in the future.

7.4 Implications for organisational changes

The project has contributed to the institutional changes in ICAR-RCER, it has resulted in the emergence of local and community-level institutions in CPSL and SLPSs, and it has raised questions relating to the way in which an international institution and international team members relate to national counterparts. This final section aims to summarise these.

Important among changes in ICAR-RCER are:

- ✚ Greater acceptance of research projects that address broad developmental goals and an acknowledgement on the need for more interactions with farmers and the poor
- ✚ Better understanding on the dimensions of poverty and opportunities for using scientific expertise to reduce the vulnerability of the poor
- ✚ Blurring of the water-tight boundaries between research and extension and a recognition that researchers can act as service providers, delivering knowledge in various forms and promoting this in various ways
- ✚ Recognition of the potential benefits of projects that build on partnerships: a likely benefit to ICAR-RCER (in danger of being overlooked) is a better micro-level understanding of the ecology in which they are working, thanks to time spent in the field by ICAR-RCER team members, and listening to voices from the field,

However it remains to be seen how far these changes are going to be sustained in the institute. To sustain them, ICAR-RCER scientists identified the following as being required:

- ✚ More encouragement by ICAR for research projects addressing broader developmental goals
- ✚ Recognition of this kind of work in Scientist evaluation
- ✚ More opportunities to publish this kind of work (i.e. cross-disciplinary and/or with a developmental focus) in Indian scientific journals
- ✚ Active search for partners who can complement the skills and expertise of the Institute
- ✚ Liberal rules for hiring consultants to address specific expertise requirements
- ✚ Freedom to change the project activities during the course of the project and reallocate finances to support these changes
- ✚ Greater decentralisation of powers regarding project management to Principal Investigators of the project.

Internationally, and even nationally, research goals are shifting explicitly from productivity enhancement to poverty reduction and environmental conservation. The poor in developing countries depend largely on the natural resources to earn their livelihoods. The current project provides several lessons for the management of NRM research. This has been discussed in detail in several places in this report. At the risk of repeating the same, the important principles are listed below:

- ✚ Explicit focus on projects addressing wider developmental goals and the poor
- ✚ Partnerships with a wide range of actors (including non-research actors) as a key operating principle
- ✚ Greater focus on institutional innovations, documenting, analysing and learning lessons from them
- ✚ Institutional learning to guide new strategies
- ✚ Decentralisation of research decisions and flexibility in project design to quickly respond to the evolving experience.

8. Conclusions and Policy implications

Sustainable and scaleable institutional arrangements at the community level that facilitate livelihood improvement

The dialectic approach developed and tested by this project offers an innovative model for institutional development at the community level. The project has demonstrated that the approach is distinct from pre-existing process models in a number of respects and that it offers considerable cost savings over existing approaches.

Processes initiated by the project are now (at the end of the project) just over 3 years old or less and are yet to mature. It is too early to claim that people in project villages have been empowered, or that any significant poverty reduction has taken place. The best that can be claimed is that the institutional trajectory appears promising and sustainable, as of today.

It is clear that when the poor and very poor dominate such networks by their numbers, as is the case with our project, the networks are far more effective as guardians of interests of the poor than any external agency (including NGOs) can ever be. This has important implications for improvement of village level governance (panchayats), poverty focussed programmes, relief works in times of calamity and distress, and service delivery.

Two initiatives with contrasting characteristics in which former project partners are involved are directly scaling out and further developing the approach. These ventures have attracted significant private sector capital and donor funds.

Others have taken up aspects of the approach or elements of it, as a consequence of the project promotion strategy. Attribution is always difficult in such situations but it is clear that the projects have been influential in thinking in the national context of India.

Participatory technology development

The projects have challenged conventional models promoting innovation or adoption of new technology (including those characterised as 'participatory technology development'). To the extent that these typically depend on researchers as active participants, they are unlikely to be scaleable to rural populations of the size and density of those in the project areas.

The approach to PTD pioneered in the projects is informed by the (well-founded) premise that people constantly experiment with, or at least explore, new livelihood strategies. It involves engaging SHGs in dialogue about technical needs and using the dialectic approach to empower community members. Frugal yet effective use of the high-cost resource of scientists' time is a key element to scalability, achieved by well-prepared interactions between scientists and farmer groups, typically at key learning events such as demonstrations and through the preparation of communication products. Outside these interactions, space is given to interested individuals and groups to experiment with the technology at levels of risk they are willing to bear (and at realistic cost - since technologies are introduced without subsidy); feed back and further mediation with researchers is facilitated through the established dialectic process and via the volunteers in their brokering role.

This PTD model offers real prospect as a strategy to position researchers as service providers supporting experimentation by individuals operating at a viable scale for development purposes.

Institutional learning and change

The success of the dialectic approach depends upon these Government agencies, scientists, academic institutions, international and bilateral/multilateral donors and their consultants, being able to accept and support such a non-deterministic approach.

This project was able to demonstrate the potential of the dialectic approach because it was provided a mandate, by both DFID NRSP and ICAR to explore new ways of working, the team responded both on a personal and organisational level within the project. At this level the project demonstrated how PTD approaches could be developed that were compatible with the dialectic approach.

Testing the dialectic approach required a fundamental shift in nature of our research method and approach to project partnerships. If this knowledge is to be of value in the development process not only do agricultural research organisations need to think about how to generate these kinds of experiences, document, analyse and communicate these kinds of lessons.

To enable these opportunities to be further explored, tested and more widely implemented will require both policy support and programmes – that enable and encourage new ways of working.

Organisations need time to change, adapt and respond to opportunities and rapidly changing situations created by the kind of institutional infrastructure implied. Our project experience suggests that there is a need for substantial institutional change within government agencies, research bodies, bilateral/ multilateral agencies, NGOs, and the way they relate to one another.

Opportunity for improved water management

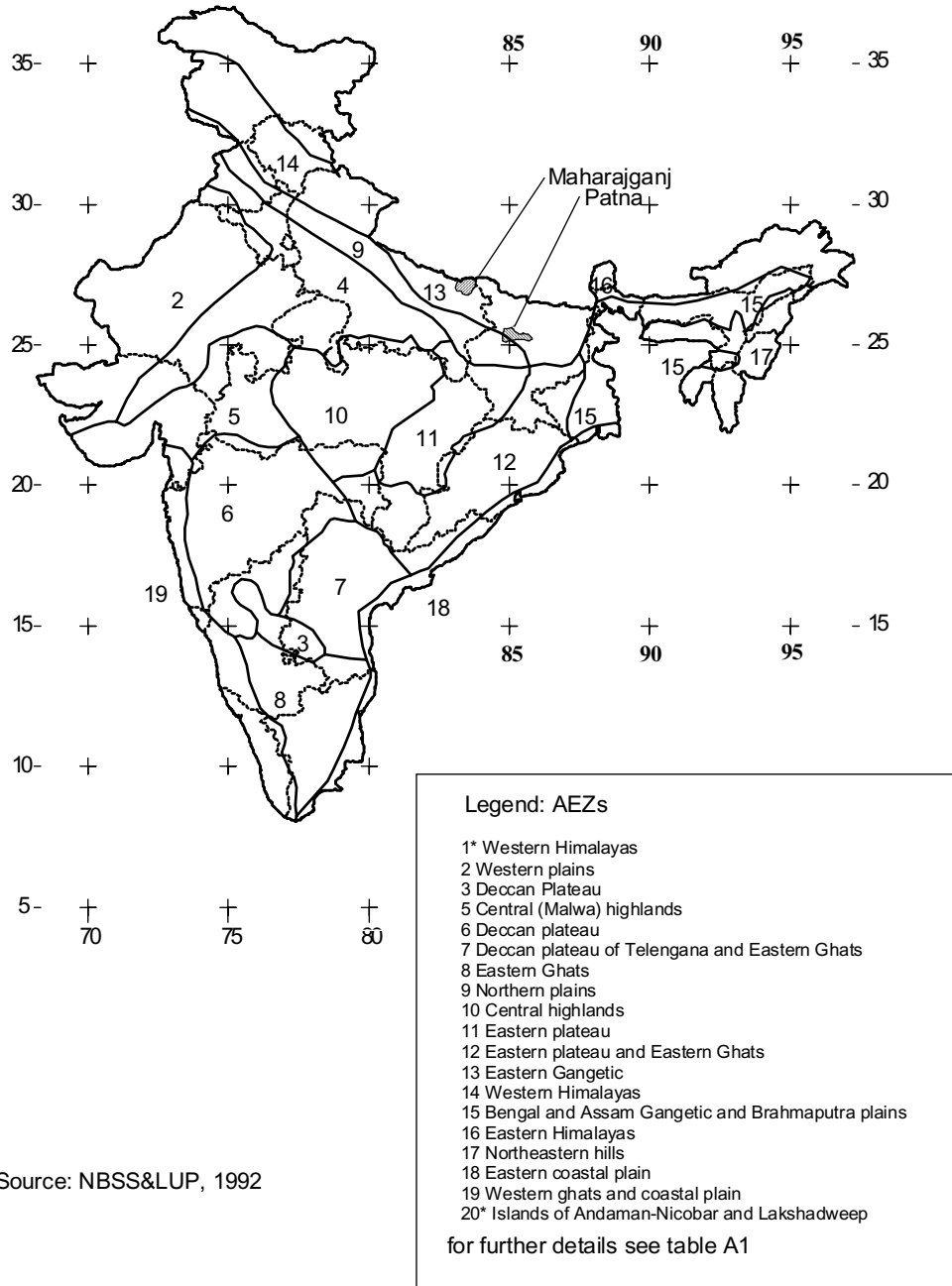
The project highlighted that issues of main canal management also need to be addressed to achieve effective OFWM.

Further the project demonstrated a process by which strengthened local institutional arrangements and subsequently dialogue (facilitated by CIRRUUS and ICAR-RCER) between the community, WUA State level officials and canal managers, supported by decision support tools, raised awareness, at all levels, of needs for canal management.

Such institutional arrangements, if found to be robust, may provide a model that could be repeated elsewhere. Further testing is required, particularly to explore whether local institutions and development professionals, such as SLPS or CPSL, can become actively involved in facilitating such processes, given the scale and complexity of canal and water resources management.

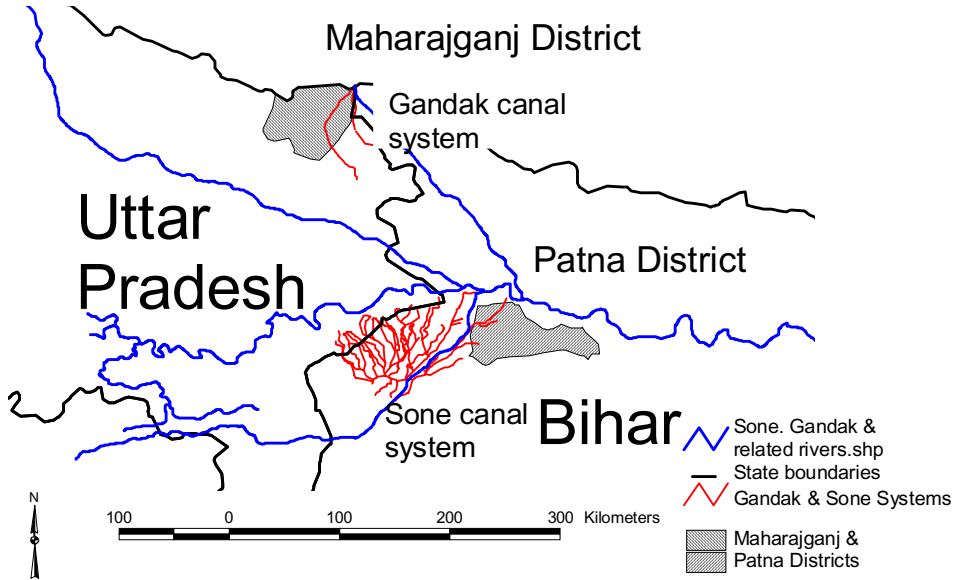
Appendix I. Context: Maps and Figures

Map 1. Indian States and Agro-ecological Zones

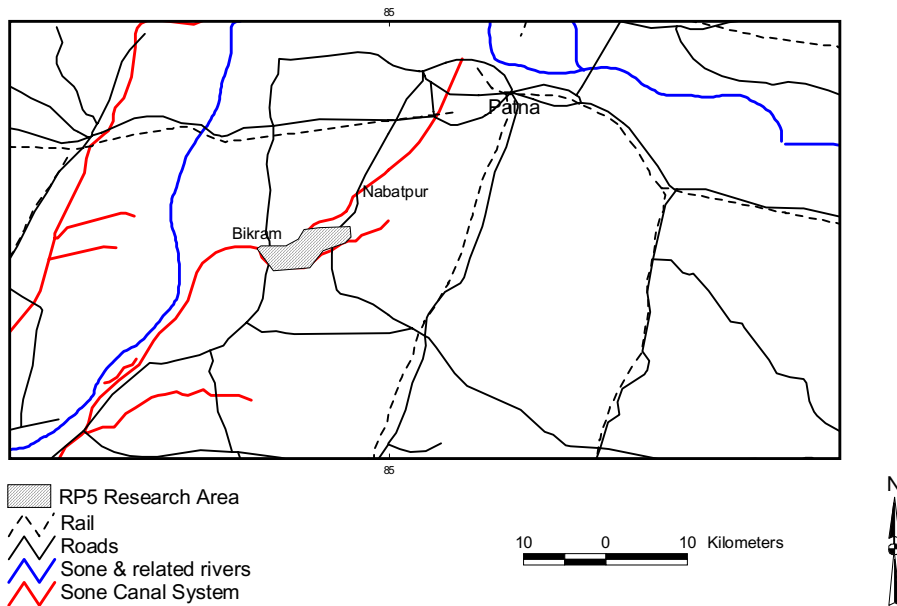


Source: NBSS&LUP, 1992

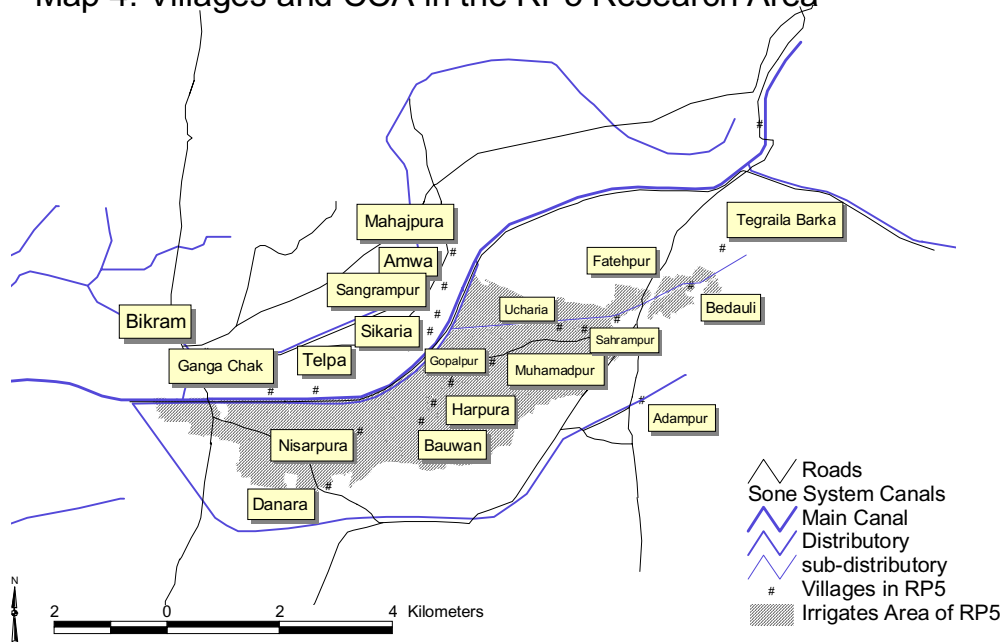
Map 2: Patna and Maharajganj Districts and Major Irrigation Schemes



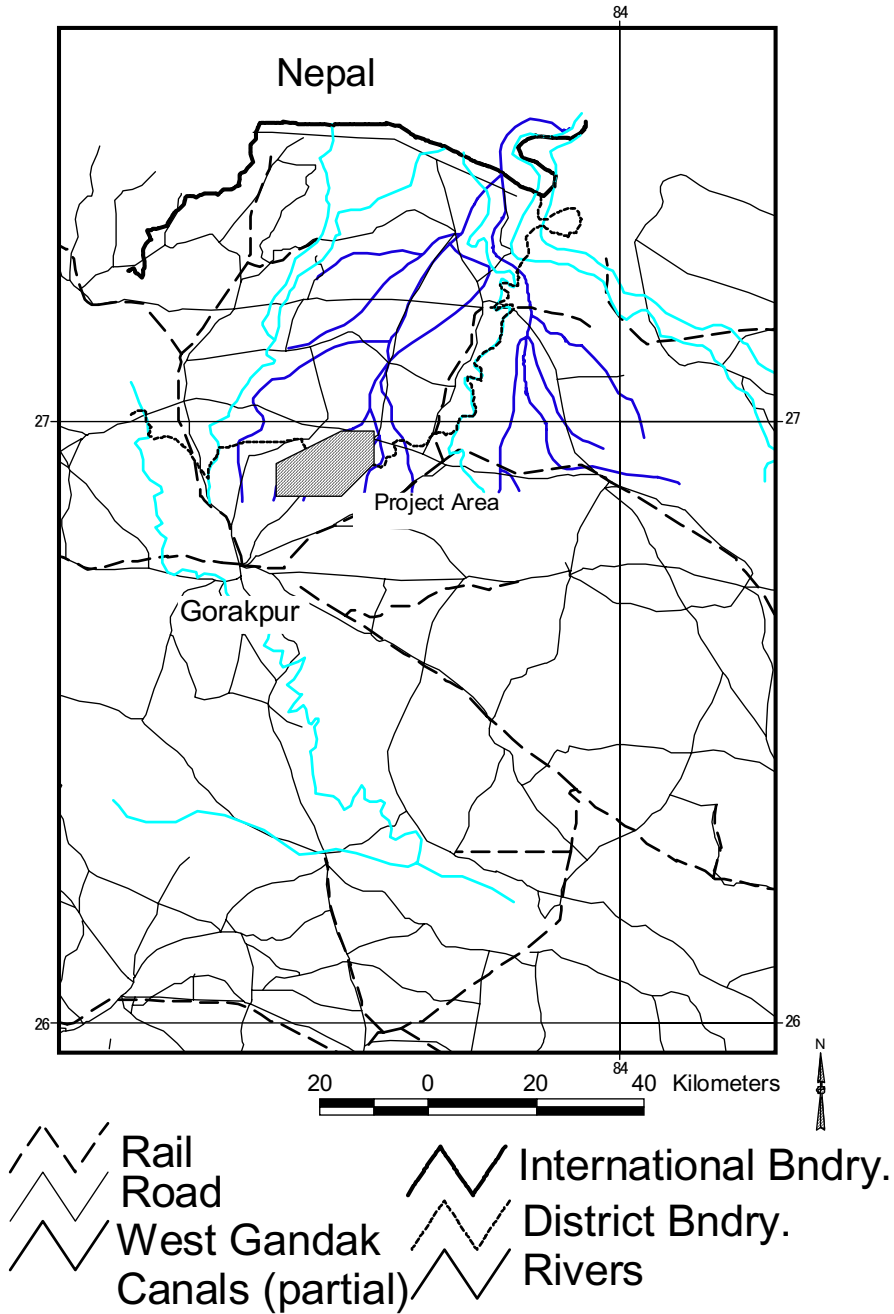
Map 3: RP5 Research Area



Map 4: Villages and CCA in the RP5 Research Area



Map 5 Maharajganj Project Area and (Selected) Infrastructure



Map 6: Canals and Drains of the Maharajanj Research Area

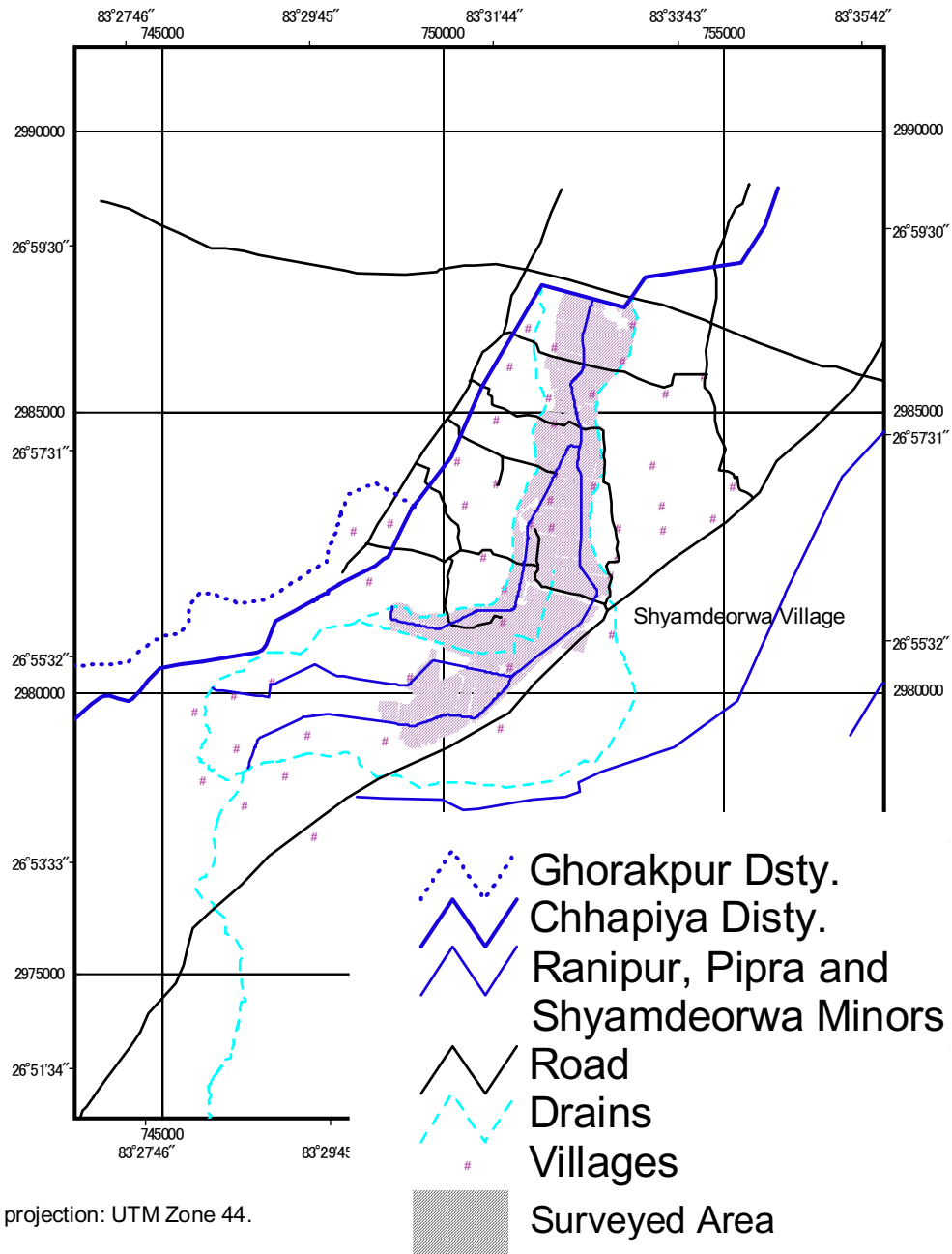
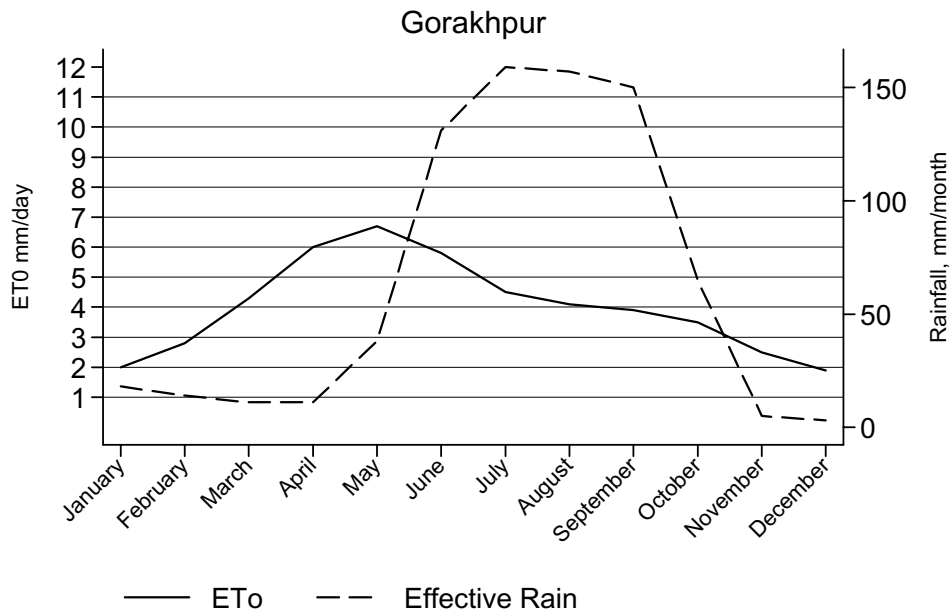
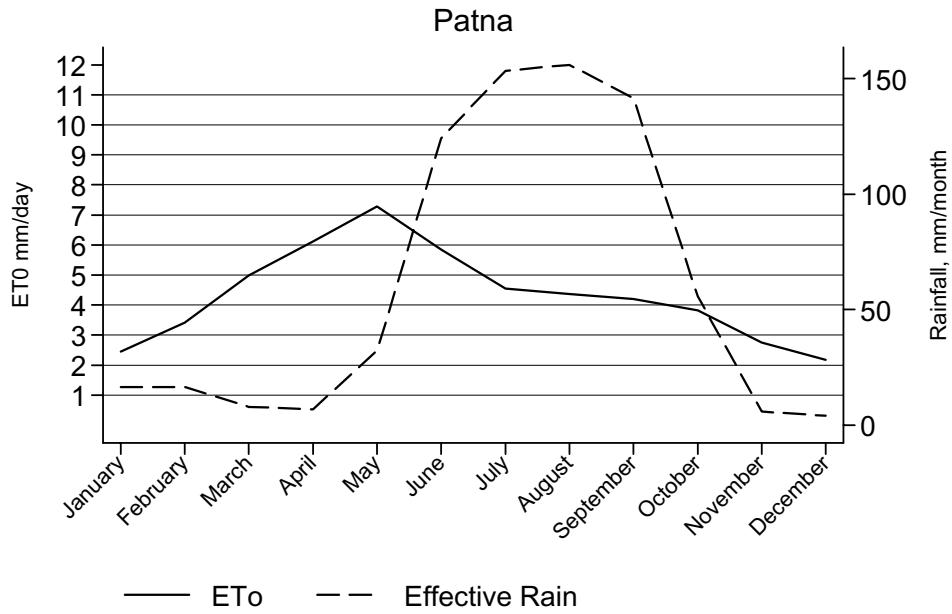
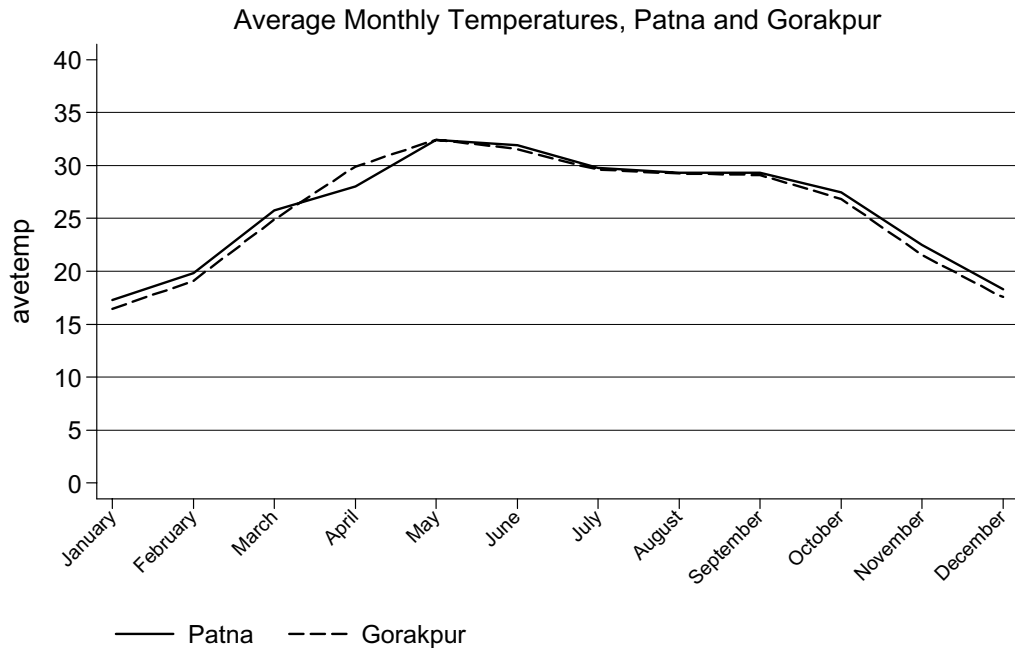


Figure 1: Effective Rainfall and Estimated Evapotranspiration



Source: FAO Climwat database



Appendix 2. FTR contribution by MS Ashok CIRRUS

R7839/30 - Institutions

M.S.Ashok

Introduction

1. R7839/30 provides insights into how poor people can and will develop for themselves strategies, activities, organisations, and institutional arrangements for poverty reduction that are more robust and sustainable than those promoted by external agencies through conventional methods. This can (potentially) attract investment and services from the private sector. R7839/30 was an experiment that sought to innovate and improve on previous approaches to development of village-based micro-organisations and their relations with external institutions. This section is an account of the experiment.
2. The view that poverty is the result of particular deficiencies – financial, technological, social, economic or other, and that poverty can be overcome by just providing a particular input or a particular cocktail of inputs is a regrettable fallacy. The persistence of governments, donors and institutions dominated by bureaucrats, technocrats or specialists, with programmes and strategies based on such beliefs is incomprehensible to those who experience poverty or have to deal with it on a day-to-day basis. Although poverty has a strong correlation with several kinds of deficiencies, inputs and infusions are not necessarily the solution to the problem⁵⁷.
3. R7839/30 brought together, and actually succeeded in holding together for over three years, organisations and individuals with very divergent beliefs and perspectives with regard to poverty and anti-poverty strategies. The project provided space to each one of them to articulate, experiment and interact. The implications of the experience are only beginning to emerge.
4. The next section lists actors relevant to the experience, and their starting positions.

The Actors

5. A cluster of some 21 villages⁵⁸ near the city of Patna – capital of the Indian state of Bihar – was selected as the initial focus for project activities. A second cluster of villages in Maharajganj District (in the neighbouring state of Uttar Pradesh) was developed later. People in these villages were the principal actors. Others, who interacted with them on the ground on a day-to-day basis were:
 - o ICAR⁵⁹ Research Complex for the Eastern Region; (IRCER)
 - o Cirrus Management Services Private Limited; (Cirrus)
6. The role of Cirrus was to catalyse and support development of groups of poor people in project villages in order to enable them independently to access external service providers – for microcredit, agricultural technologies, and other livelihood related services.
7. Others in R7839/30 were to use the interface with communities developed by Cirrus in ways

⁵⁷ Communities, societies and nations impoverished or devastated by war or natural calamity, but whose institutions, structure and traditions survive, may be quickly **restored**, even catalysed to higher levels, through direct infusions and inputs. E.g. Western Europe and the Marshall Plan after World War II, and Californian/Alaskan areas affected by earthquakes and floods. This anticipates and reinforces one of the main conclusions of the R7839/30 experience.

⁵⁸ This cluster is usually referred to as RP5, since the villages are in the command area of an irrigation channel by that name.

⁵⁹ Indian Council for Agricultural Research

appropriate to their respective roles. All roles were intended to converge on the single goal of poverty reduction.

8. Rothamsted Research was the principal contracted agency to implement R7839 and ICAR for R7830. Each sub-contracted a number of other organisations. Cirrus was sub-contracted by Rothamsted Research.
9. The team of scientists deployed by IRCER for R7830 and for interactions with R7839 consisted of specialists in various branches of agricultural sciences, including an agricultural economist and two agricultural extension specialists.
10. The team deployed by Cirrus consisted of a management specialist with experience in designing, appraising and operating poverty reduction programmes/projects plus two persons with extensive 'hands-on' field experience within such programmes/projects. By the third year, three more persons, including an agricultural specialist had been added. Several (part time) community based facilitators had been trained and placed by end of project.
11. The International Water & Management Institute (IWMI) interacted with R7839/30, especially in the early stages of the project, providing insights, inputs, information and training.
12. Several British universities and organisations provided induction/orientation inputs at the time of project inception.
13. A number of individuals from organisations sub-contracted as project partners were involved in R7839/30. Many provided valuable inputs to processes on the ground, and sharpened the quality of analysis. Their respective organisations however remained distant and detached from R7839/30, neither influencing nor being influenced by it.
14. All members of the R7839/30 team were men, except two women from Rothamsted Research who provided short inputs. Each – (men and women) – came to the Project with much personal and organisational 'baggage'. To the extent that some of the baggage was jettisoned, modified or replaced, the Project may be said to have succeeded. As might be expected, individuals and organisations that were more intensively involved with the project were influenced more by the experience. Some were transformed, and entered into new arrangements and engagements even before end-of-project. Several actors remained distant and unmoved.
15. The range of communication and other 'products' of the project do not adequately describe or explain such changes or lack of it. Perhaps it is too early.
16. The next section describes roles and starting positions of the main actors.

Starting Positions: Understanding, Assumptions, Knowledge, Information, Doctrines

17. Incidence of poverty in the project area was high; higher in Bihar than in Uttar Pradesh. Social, economic and agricultural conditions were very much as described in various reports and studies by government, NGO and international agencies.
18. People in project villages seemed to accept existing conditions as inevitable. Early interactions⁶⁰ indicated no particular expectation, drive or strategy for new or changed institutional arrangements. (Most of the persons contacted in the early stages of the project were landowners, and not of the poorest in their communities.) Articulations were mainly with respect to livelihoods, or on subjects broached by visitors. Prices and issues related to procurement/disposal (agricultural inputs, labour and produce) were frequently mentioned. Declining or negative margins in the hands of farmers was also often mentioned. Most people had no alternative to farming and land related activities. A few had opportunities for employment outside the village, government being the most frequent and

⁶⁰ A number of field visits were made by project team members, individually and in groups, pre-inception and during inception.

preferred employer.

19. Existing institutions in project villages fell into two categories:
 - o Traditional – arising chiefly from caste affiliations, and constantly evolving.
 - o External – markets, political, government. Except for local markets, which had evolved and mutated from traditional practices, all visible institutions were designed and controlled from outside villages. Members of local units of such institutions were generally those who had resources and assets, and leadership was in the hands of the most influential of them. External agencies, including project partners like IRCER, usually interacted with and through them. E.g. the water users' association and milk producers' cooperative in the village cluster near Patna; (see Para 5). In the same cluster, IRCER had established a few groups of young farmers, all landowners and mostly related to other local leaders. IRCER had also developed partnerships with a number of individual farmers for specific trials, demonstrations and experiments. One NGO had reportedly initiated a few groups of poor people in the cluster. The NGO was contacted as a potential project partner. The groups did not seem active; some could not be identified on the ground.
20. People in communities seemed to regard institutional arrangements as a 'given'. Change was not regarded as practical, even though dissatisfaction was high.
21. Starting positions of most actors with respect to institutional arrangements were based more on personal opinion and 'received wisdom' (from their organisations and academic associates) than on research or analysis. This was not surprising since most of them were scientists or economists, also in the habit of accepting existing institutional arrangements as a 'given' – in their own lives, within their organisations and inevitably, with regard to communities they worked with.
22. The Cirrus team consisted of persons with several years of training and experience with institutions, especially with community micro-organisation development. They were more familiar with practice than theory or research methodology. They relied on personal experience and opinion, and very little on research and analysis. This deficiency made the Cirrus team barely acceptable to some project partners.
23. From the very beginning, were two main and irreconcilable points of view within the project team.
24. **The dominant view** was that:
 - o Agricultural technologies should target people who own land; the rest not being farmers in the true sense.
 - o Farmers could be targeted by mobilising them into groups or contacting them as individuals.
 - o It is the function of agricultural scientists to analyse problems that face agriculture, and to develop solutions. Other scientists and experts should do likewise. Such research could be informed by feedback and other inputs from farmers.
 - o Solutions developed by scientists and experts are to be pilot tested and demonstrated, through partnerships with individual farmers or groups. It is usually necessary to 'incentivize' such partnerships to obtain cooperation, and to cover costs and the risks of participating farmers.
 - o Research processes and findings should then be documented, papers published, and the results offered in the public domain for uptake/adoption.
 - o People are sure to adopt practices so developed, in due course.
 - o This will lead to poverty reduction.
25. **The minority view**, held by the Cirrus team⁶¹, is summarised below:

⁶¹ This group took a somewhat 'fundamentalist' position with respect to participation, while the other did so in relation to technology.

- There was no way of knowing in advance whether any of the assumptions made by the project team was true.
 - All people in project villages, including the poor should be given opportunities to form genuinely self-selecting groups, pool whatever resources and energies they wished to, and determine their own priorities and courses of action, **irrespective and independently of the project**.
 - If it did turn out that **some of them**, at whatever stage, wished to engage with issues related to land, water, crops and/or soil, and would like to collaborate with project scientists, that would be a happy coincidence, and matters could be taken further.
 - **All external actors** without exception needed first to improve their own understanding of people in village communities, especially the poor, the socially excluded and women, and of livelihoods of such people, and improve their own understanding of how their respective organisations and specialisms related or could relate to livelihoods of the poor.
 - Improved understanding needed to be **combined** with the large information/knowledge/experience base available to the project team and offered to people in ways that would help them to **make informed choices**. The project team would **offer people nothing more than information and opportunities** for exposure, leavened with frequent discussions (conducted on an equal footing where everyone would be free to challenge everyone else). The project team would desist from offering 'solutions', and only seek to **generate a productive 'ferment'** which, it was hoped, would lead to wise and informed choices by the people.
 - The project should **refrain from providing any incentives or subsidies** that could distort people's decisions⁶².
 - The people would themselves define and develop institutional structures, rules and processes, and take full responsibility *from the beginning* for mobilising resources and management⁶³ of processes. The project team would merely point at options previously exercised by other communities in similar situations, and constantly challenge people to review their own assumptions and to evaluate critically all available options.
26. The first (dominant view) was based on conventional wisdom that underpins most government and internationally funded programmes.
27. The second view was based on personal experience of working within and with NGO, government, and internationally funded programmes; underpinned by a set of **beliefs**; summarised below⁶⁴:
- Poverty is characterised by **lack of choice** in relation to livelihoods. One might go so far as to assert that poverty **consists of** lack of choice. Semantics aside, it is difficult to disagree with the proposition that when individuals, households or communities are able to exercise limited or no choice with respect to food, occupation, habitat, health and education, they face poverty. Fewer options mean greater poverty. Desperate or extreme poverty is a dead-end, no-choice situation. Erosion of political and personal rights, dignity and security are almost inevitable accompaniments of poverty, sometimes as causes and often as effects. Poverty is a physical as well as a psychological

⁶² The whole project (to the extent it is of any use to communities) is of course, in a sense, a subsidy, especially demonstrations, exposure visits and the like.

⁶³ In government and international donor supported watershed, joint forest management and participative irrigation programmes, these are defined by international and domestic consultants, project staff, and sometimes by legislation. xyz

⁶⁴ What follows presumes that individual liberty and choice are consistent with economic development, that economic development at the individual and local level is more important than at national, state or district level (especially for large countries and populations), and that the economic dimension is an important but by no means the main dimension relevant to poverty reduction. Many economists, sociologists and political scientists seem to think otherwise, especially if one considers their recommendations and practice. That includes communists, socialists, capitalists, and advocates of market-economy and social equity.

state, best described and understood by the person who experiences it.

- Exercise of choice is essentially a personal matter. Poverty is about people, persons, and individuals.
- Since poverty reduction must lead to expanded choice for individuals, it is best to begin with individuals. Anti-poverty strategies must open new paths, broaden existing paths and attack forces that diminish choice; not just provide inputs.
- Although people in poverty have much in common, the causes of each person's poverty and possible ways out are intertwined with specific and diverse local economic, social, cultural, historical and psychological contexts. Large, powerful and well-endowed external agencies (including democratically elected governments) are often blind or insensitive to much detail that is relevant at the individual or local-community level. Unimaginative application of legal, political, economic, social and moral principles and doctrines leads to rigid uniformity in policies and programmes, and to limited choices for individuals, exacerbating rather than relieving poverty. External regulation and control of key institutions, inputs and resources relevant to poverty reduction stifles local initiative. The individual is powerless in the face of large external institutions and is usually overwhelmed by them.
- Institutional arrangements that enable individuals to confront and deal with large and powerful external entities, to explore, develop and experiment with new options are therefore fundamental to any poverty reduction strategy. Normative 'People's Organisations' whose nature, structure and processes are determined or controlled by external agencies, however benign, are a contradiction, and are as fundamentally opposed to the principle of exercise of choice by individuals as were soviet collectives.
- Micro-organisations of poor people like self-help groups, user groups, common interest groups and farmers' groups have been tried out by NGOs, international donors and government programmes. Unfortunately, most projects promote micro-organisations as extensions or appendages of themselves. They create micro-organisations and federations based on pre-determined and externally fashioned visions, organisational designs, rules, eligibility criteria (for membership) and institutional relationships. In such programmes, the *locus of control* remains outside local communities, with experts (overseas and Indian), facilitators⁶⁵, leaders and workers located within the external intervener's organisational domain, controlled and dominated from within that domain. It is no accident that poor people are often referred to by them as 'targets' or 'beneficiaries'. Programmes are frequently initiated through externally (mis)conceived 'entry-point activities' that raise unrealistic expectations and promote quiescence by holding out the hope of more to come. Space for development of a critique or for re-design – once a project has commenced – is extremely rare. Micro-organisations focussed on an asset or activity are mere paid agents of implementation and rarely survive end-of-project. Most microcredit, watershed, joint forest management, and 'participative' irrigation (distribution) management are deeply flawed in this respect because they serve **external purposes and priorities** that usually vanish at end of project. This inability of micro-organisations to survive on their own is often used to perpetuate the presence and growth of external actors – NGO, government and others, and their domains, leading to spiralling costs, wasted investment and eventually, insupportable loads on government and donor resources.
- Many other ideas and concepts underlying such projects/programmes are also flawed. E.g., micro-enterprises and farm-based activities are most frequently undertaken by individuals or small partnerships based on personal acquaintance and bonds distinct and non-congruent with micro-organisations promoted by external interveners. Yet, the intervener often requires such activities to be taken up by micro-organisations promoted (and held together) by himself. Multiplicity and heterogeneity of micro-organisations and relationships confuses and threatens the external intervener, who fails to realise that no single organisational structure is capable of serving all needs

⁶⁵ often referred to as animators, volunteers, village workers, 'jankars'

of any person, household or community. It is not only possible but also feasible for an individual to be an effective member of a number of organisations and networks at the same time.

o Most people, especially the poor are able to absorb usefully finance, technology, information, market-access and resources only in **small doses**, and in **combinations specific and customised** to their particular situations.

o Self-designed, self-selecting and self-managed micro-organisations of the poor, is the way forward. External agencies (e.g. project partners) could:

- Facilitate emergence and stabilisation of micro-organisations.
- Facilitate analysis of micro-level situations of people in these organisations
- Respond to specific demands and needs by first reviewing their own views, strategies, technologies and prescriptions, and then customising their 'wares' to meet demand, possibly in collaboration with others within and outside the project team.
- Test and develop cost-effective and efficient ways of delivery and collection of fees or charges; thereby developing scaleable approaches and products.
- Initiate internal change within organisations involved in the process in order to improve alignment and response to local community needs.

o In theory, this is what 'participative' programmes for watersheds, forest resources, irrigation, and decentralised governance are supposed to do. They generally fail, mainly because it is very easy to lapse into a prescriptive, target-oriented mode. There is usually a high level of inertia, at least initially, in communities; that must be overcome by persistent effort. There is often a lack of genuine belief (in external agencies) that participative approaches are really possible.

o International agencies, governments and their NGO sub-contractors are usually under pressure to meet expenditure targets. Combined with tendencies to over-budget, to have fixed rather than flexible-dynamic budgets, this results almost invariably in premature and excessive inputs that flood field staff and communities alike. The result – 'run-offs', wastage and over-empowerment of project staff at the expense of people and communities.

o Project staff often choose easy ways out. Mis-reporting, double counting/ multiple counting, 'poaching' on others' territories/achievements and most regrettably, losing focus on the poor, especially the poorest, are common failings. Some believe that the poorest are incapable of economic activity and therefore unsuitable for micro-credit. The Cirrus team believes that is completely untrue, and runs counter to personal experience and the experience of several NGOs⁶⁶.

o An exclusive focus on the poor would deprive them of opportunities to improve and develop new economic and other relations with the non-poor. Collaboration between the poor and local not-poor could lead to economies of scale, redistribution of risks, and new enterprises.

o External agencies tend to emphasise upward and outward-looking accountability, and impose documentation and information requirements to meet their own needs. This loads people with high costs, making the intervention unsustainable after end-of-project. Information and documentation needs of people and communities must therefore be kept separate and managed independently of project requirements. Internal and downward accountability must be emphasised from the beginning, using methods, criteria and processes designed by people for themselves. It is external agencies must adjust and adapt to people, not the other way round.

o Inputs (all kinds of resources as well as time), processes, outputs and 'benefits' must be identified, listed, measured, and 'costed' from the beginning, in a business-like, cost-conscious way, in the same way that a scientist monitors an experiment in a laboratory. Any imperfections in monitoring must be recognised explicitly.

⁶⁶ Alternate Management Systems for Savings and Credit of the Rural Poor, Aloysius Prakash Fernandez, 1992

- There is much experience available in the domain of business management that is relevant to poverty reduction.
28. Contradictions between the dominant and minority views in the project team became evident very early, during the inception process. Groups designed to further specific project agenda related to water, crops, soil, and mapping were regarded by most scientists as desirable. The Cirrus team persisted in its view that such agenda must be introduced only after micro-organisations had stabilised, must be demand-led, and the terms negotiated on an equal footing.
 29. The first set of project logframes (2000 and 2001) makes almost no mention of institutions and processes. The lack of confidence in the Cirrus view is reflected in the very small number of micro-organisations required to be developed by the project. The logframes are clearly techno centric. That is where R7839/30 began. In early years of the project, the Cirrus team operated largely on its own.

New Knowledge & Experience Sought

30. On the basis of an appraisal of the available budget, human and other resources the Cirrus team set out to prove that it was possible to establish:
 - A non-deterministic way to catalyse micro-organisations that would be independent and self-sustaining from the beginning.
 - A simple information system that would focus on internal needs of micro-organisations, would reduce the scope for false and misleading reporting, and generate information independently verifiable by third parties.
 - An interface between micro-organisations and the rest of the project team that would commence open-ended processes, and possibly enable exploration of opportunities for working together on terms mutually acceptable to each.
31. Cirrus would start with and focus on the poorest and most socially disadvantaged in villages, without excluding others. No incentives or inputs would be offered or provided. The organisations would be encouraged to interact with each other and external agencies at will, and to negotiate with them on an equal footing, even challenging them where necessary.
32. The team developed its operational doctrine by drawing on several streams of experience, including:
 - The NGO experience with self-help groups and micro-credit (in India, particularly Myrada and the Shriram Rural Development Project).
 - The Eastern & Western Rainfed Farming Projects (DFID).
 - Rural Women's Development & Empowerment Project (World Bank).
 - Watershed and joint forest management programmes of the Government of India and various state governments.
 - Decentralisation and *panchayat raj*⁶⁷ in India.
33. The information system used by the Cirrus team was based on Microsoft Access database structures previously developed by one of the Cirrus team through experience with several other projects.

The Experience; as it Unfolded

34. The first 18 months (up to January 2003) saw R7839/30 progressing on two (or more) independent

⁶⁷ Local self government institutions, mandated by the Indian Constitution through an amendment

tracks. In this period, a number of local village-based volunteers were trained and developed by Cirrus. They constituted the spearhead for micro-organisation development.

35. In this period, some 122 SHGs with a higher than usual poverty focus were catalysed into existence, of which about 100 were still functioning in March 2004 when activities in the field were wound up. (See Attachment 1 for list of all SHGs developed by the Cirrus team, including those that had ceased to function by March 2004.)
36. Communities quickly learned from each other and most processes became self-perpetuating, requiring little or no further support from the project. Even the minimal support provided by the project for SHG formation was withdrawn within about a year of entry into a village. Before withdrawal, however, the following institutions/systems were established, in many, if not most cases:
- Village-level coordination committees by federating local SHGs.
 - A network of local volunteers – part-time workers who received a nominal payment for the time they spent on catalysing SHGs, but no payment thereafter. Some of these adopted formal organisational structures in 2003, by becoming registered societies, in order to continue to serve their communities.
 - A robust, low-cost, micro-information collection system. Almost all SHGs took responsibility to collect information on savings, credit, recoveries and certain other specific elements of information on agreed formats, and to transmit the data sheets to project staff each week. This was then transferred to an electronic database managed by the Cirrus team. After departure of the Cirrus team (March 2004), the database ceased to be updated. Most groups reportedly continue to maintain accounts and data manually on the same formats. If a micro-credit service provider were to enter the scene, it would take little time or effort to re-activate the system.
37. The 15 months (following January 2003) was a period of scaling up in many dimensions. An unexpected momentum had built up, which the Cirrus team was barely able to manage, given the limited resources available. Some 42 new SHGs were added in this period (in the 21 project villages in Patna District), with no direct project support whatsoever. In January 2003, the Cirrus team decided to attempt validation of its experience in new clusters of villages, with vastly reduced resources. This had not been envisaged at the time of project inception. At the same time, work in a new cluster was also initiated in Maharajganj District, as envisaged. All clusters were successful; (see Attachment 1).

	Groups formed			Notes
	Site 1	Clusters	Site 2	
6/02-1/03	122			Project facilitation withdrawn from each group by month ? after formation all support for groups in the area withdrawn by 01/03
1/03 – 12/03	42			Promotion and facilitation by project team ceased in all locations.
12/03 03/04				Groups spontaneously formed

38. By December 2003, SHG promotion by the project team ceased because available project resources had been exhausted, but numbers of SHGs continued to grow. By March 2004, there were some 528 SHGs had formed across all locations over the entire duration of the project of which about 480 were functioning in March 2004.

39. Savings and credit activities reportedly continue to this day in most SHGs. SHGs continued to submit weekly datasheets to the project team regularly until the Cirrus field team was dissolved in March 2004.
40. The Cirrus team was able to achieve a high poverty focus. The original 21-odd project villages (Patna District) are populated by about 4,300 households in all, of which some 1,600 (37%) are estimated to be poor, of which 932 have an SHG member. Some 58% of the poor have been covered in about two years. By December 2002, on an average, every second poor household and almost every fourth household in the area had an SHG member. In some villages, nearly all poor households are SHG members.
41. Each SHG meets on a particular day of the week, at a time and place known to everyone in the area. The same is true of village coordination committees, and groups of volunteers. An efficient word-of-mouth communication system complements the local telephone and connects the entire local community, giving the poor unprecedented levels of access to information, and opportunities to make use of it. People began to develop new links to the external world, usually quite independently of any support from the project team, although any ideas from the project team were always welcome. They began to access new markets, to make bulk purchases of farm inputs, to negotiate arrangements among themselves, to manage local resources, to explore micro-enterprise opportunities, to negotiate new equations within villages and outside them. A complex second-generation web of institutions and relationships began to develop, and continues to develop to this day.
42. People in villages had always been told quite clearly that the project would end in less than 3 years, and that the project team would not provide active support to any SHG for more than a year. Even in this period, no material support would be provided. All financial and material resources were mobilised by the people themselves, and every detail of day-to-day management was always in their hands. In the second year, the Cirrus team began to exit from several villages. There were no pleas for extension. Withdrawal of the project team from a village was seen as a sign of graduation and maturity, not as a calamity.
43. Nevertheless, there remained unfulfilled expectations in communities. The failure of local banks to respond to microcredit needs acted as an inhibitor. New kinds of service providers and partners, including business partners are required. Some SHGs have reportedly closed down after withdrawal of the Cirrus team. Some could be in hibernation.
44. Requests for project extension came from a different and not entirely unexpected quarter – people for whom the project had become a source of personal income – members of the Cirrus team. The tendency of external agencies (government and international donors) to extend projects⁶⁸ is well known, as is the tendency of project staff to perpetuate his/her presence. Members of the Cirrus team had followed the example of village volunteers and formed an independent organisation of their own. They hoped for and requested extended project support. When that did not materialise, they explored other alternatives, and are reportedly doing well now. This is a positive development. More projects need to leave behind human resources of the kind that R7839/30 has left behind. Project staff and community volunteers need to be encouraged to 'reinvent' themselves before end-of-project in order to remain relevant and useful to local communities.
45. Convergence between Cirrus and the rest of the project team developed slowly, and acquired some substance only in the final year of the project, after a change of leadership in IRCER and on the insistence of the leader of the R7839 team. That aspect of the project experience is described elsewhere. Only a short outline is provided here. On the whole, it was too little and too late.
46. October 2002 saw the beginning of reconciliation of opposing views within the project team.

⁶⁸ "If some is good, more must be better", as Galbraith has said pithily, in the context of deficit financing. (These may not be his exact words.)

Scientists in the project team became aware of new opportunities created by the very large 'surface of direct contact' with communities that the new institutional network had made possible. They were challenged to make use of the unprecedented levels of direct access now available to very poor households, whose stakes in land, water and agriculture had never been previously recognised by scientists.

47. A number of informal meetings were organised by the Cirrus team where scientists interacted with people who related to agriculture, land and water in different ways. A gradual attitudinal shift took place, from a prescriptive to an interactive mode. Many found the process painful.
48. People in villages had meanwhile learned to assert themselves and begun to insist on *their* priorities. While they welcomed meaningful support from external agencies (including the project team), they rejected any external imposition. Even the poorest now scarcely hesitated to 'tell off' anyone who presumed to 'talk down' to them, including members of the Cirrus team, scientists and the odd government official.
49. New equations continue to develop within project villages. Old and bitter confrontations are slowly beginning to give way to new collaborations, based on internally negotiated 'win-win' situations. There are fewer troubled waters available in which local opportunists can fish.
50. Processes initiated by the Cirrus team are now just over 3 years old and are yet to mature. Nevertheless, they appear to be far more mature than those initiated by government, internationally funded, or NGO-managed projects that are twice or thrice as old and use much larger resources. Having said that, it would be too much for the project to claim that people in project villages have been empowered, or that any significant poverty reduction has taken place. The best that can be claimed is that the institutional trajectory appears promising and sustainable, as of today. Time will tell.

Achievements

51. ***The project has succeeded in establishing a non-deterministic way to catalyse micro-organisations that are independent and self-sustaining from the beginning.***
52. The Cirrus team, from the very beginning, rejected the *structural* approach to institutional development. It experimented with and established what might be called a ***dialectic***⁶⁹ approach to micro-organisation development, whereby an ever-growing and evolving network of institutions, relationships and norms are established through iterative and dynamic processes whose chief features are –
 - self-examination by communities as well as the external facilitator,
 - reference to external experiences and information,
 - review of available resources, capacities and opportunities,
 - challenging of assumptions held by various stakeholders, and
 - repeated re-examination of positions and arguments,
 all leading up to a series of practical and manageable decisions by communities. A member of the project team (Sunil Choudhary) has developed a set of 'frequently asked questions' together with an outline of processes used by him. (See Attachment 2, which is to be regarded illustrative rather than a prescription. In its other projects, Cirrus uses different tools, processes and methods based on the similar principles).

⁶⁹ "*dialectic*: the art or practice of logical discussion as employed in investigating the truth of a theory or opinion "; "*infrastructure*: the basic underlying framework or features of a system "; extracts from Webster's Encyclopedic Unabridged Dictionary of the English Language, 1994, Gramercy Books, New York/Avenel, pp 397 and 731. In this report, we ascribe these meanings to the words *dialectic* and *infrastructure*.

53. The dialectic approach is NOT to be confused with 'process' approaches. Although there are similarities in language used, there are important differences in practice. Experience shows that the 'process' approach is time-consuming and relies on human resources located within or controlled from an external organisation. Scalability becomes a problem.
54. This dialectic process is patiently followed and fostered independently with *each group* in *each village*, even if we appear to be 'reinventing the wheel', because it leads to community ownership, capacity development and internal bonding. The same principle applies to programme design and management, especially at the community-micro level.
55. Our project demonstrates the value of *unspectacular entry* into villages, the value of local volunteers, of *incremental non-deterministic facilitation*, and *avoidance of distorting incentives* and flooding communities with external funds, resources, technologies and advice⁷⁰. The unspectacular, incremental approach is especially useful in areas that are prone to endemic violence and suffer from poor governance. Traditional entry point activities only serve to raise expectations and help the not-poor and less-poor to crowd out the very-poor and the poorest.
56. Avoidance of *a priori* links to any externally conceived programme, project or activity is a key feature of our concept. Any links to such programmes must be promoted only after community based organisations and their networks have reached a certain stage of maturity.
57. We have developed and demonstrated capacity-building methods that are different, in that they are largely independent of literacy and education, and thereby enhance the scope for community led and managed interventions, and development of community-based human capital. We have conducted no formal training at all for institutional infrastructure related capacity development.
58. An important achievement of R7839/30 is that it is able to provide cost breakdowns for every bit of institutional infrastructure development attempted by our team, down to the last rupee. As the scale of intervention grows, unit costs will decline further and become more competitive.
59. The total budget for the Cirrus team was GBP 90,000. If this entire budget is allocated to the 482 SHGs that survived until March 2004, the average cost per SHG works out to about GBP 187 (about Rs.15,500). A more realistic estimate would be closer to GBP 140 (about Rs.11,600). The unit cost is expected to decline further as the scale goes up. In fact, Cirrus is currently operating at unit costs of about GBP 96 (Rs.8,000) per SHG in another project, and expects to reduce costs even further.
60. The Cirrus team has also significantly shortened the timeframe for micro-organisation development to 12 to 18 months, compared to the 5 to 7 years taken by most government, NGO and internationally funded projects.
61. The Cirrus team believes that its unit costs compare well with government or internationally funded programmes. Unfortunately, there is no cost analysis or even raw data readily available for a proper comparison. Only rough estimates are possible. Typically, a field worker in such projects is responsible for about five SHGs over a period of five years. A single field worker's salary and expenses are usually of the order of about R. 15,000 per month, i.e. Rs.180,000 per year or Rs. 900,000 over five years. The cost per SHG is therefore in the region of GBP 2,170 (Rs.180,000), excluding costs of supervision, administration, consultancy support and the like.
62. It is important to compare like with like. Are SHGs developed through the dialectic process as good as, superior or inferior to those developed by conventional methods? Independent observers and visitors to R7839/30 believe that it has achieved higher levels of poverty focus and sustainability. There is objective data to show that groups in project villages meet, save borrow and lend regularly, and are robust and sustainable. (Also, see Attachment 3, the project database).

⁷⁰ To use a biological analogy: The composition and volume of food ingested must be appropriate to nutritional needs and digestive abilities of an organism, failing which damage or even death results. Another analogy, an agricultural one: Flood irrigation is wasteful and can cause rot and damage. Drip irrigation is superior in many ways.

63. ***The project has established a simple information system that focuses on internal needs of micro-organisations, reduces the scope for false and misleading reporting, and generates information independently verifiable by third parties.***
64. Most projects impose documentation and accounting responsibilities on communities, SHGs and staff that are unrealistic, heavy, costly, unsustainable and in the end, not very useful. One NGO requires SHGs to maintain 16 registers to account for savings, loans, bank transactions, assets, discussions and decisions. Since such records are maintained manually, and not consistently, their usefulness is limited, to SHGs and project alike.
65. In the mid 1990s, a member of the Cirrus team began to develop a simple format that would capture essential financial and other information almost immediately on occurrence. After basic logical and arithmetical checks, this was transferred to an electronic database. SHGs would have for their own internal use all necessary data. The external agency would have the same data that could be used for research and analytical purposes. Time and effort needed would be minimised. Repetitive recording and accompanying errors would be minimised.
66. Cirrus had developed the database for use on one of its other projects. A modified version of the same was used in R7839/30. The database acted as a 'force multiplier' when used together with dialectic processes. It ensured that SHGs always had information that was captured close to the point of occurrence in space and time. Since the data was immediately transferred to an external electronic medium, it could not be tampered with or changed easily. The scope for mis-reporting and double/multiple counting was minimised. It now became possible for volunteers and Cirrus team members to make surprise visits, and to cross-check information. The database was extremely useful in convincing the rest of the project team about the authenticity of Cirrus claims with respect to micro-organisation development.
67. The project clearly established that people in villages could participate meaningfully in micro-level information management, that they would share efforts and costs when benefits accrued to them. This has important implications for potential 'for profit' service providers, especially micro-credit.
68. The information system however had several limitations. There was no independent validation and audit. There were no security systems. There were no electronic filters and checks for errors and inconsistency. (Cirrus has overcome several of these shortcomings in another project that commenced on 26 September 2004.)
69. A copy of the database is provided as Attachment 3, in the form that it was used by the Cirrus field team. The database is not for circulation. The structure of the database is the intellectual property of Cirrus Management Services (P) Ltd. (Bangalore, India). The data entered in its various tables belongs to DFID, and may be used for research and analysis.
70. ***The project has established an interface between micro-organisations, and potential external service providers (including the rest of the project team), for commencement of open-ended processes, and possibly exploration of opportunities for working together on terms mutually acceptable to each.***
71. In 2003, the Cirrus team organised a number of meetings between IRCER scientists and SHGs. Outcomes of that process are covered in another section.

Implications of the Project Experience with Institutions

72. See Attachment 4.

Further Work Indicated

73. There is much work to be done yet independently to validate claims of success made by R7839/30, and to compare its outputs, costs, quality and sustainability with other projects.
74. Findings and recommendations of other NRSP projects, especially in India, need to be compared

and integrated with those of R7839/30.

75. The R7839/30 experience has already evoked a good deal of interest; e.g.:
- The DFID Madhya Pradesh Rural Livelihoods Project
 - The World Bank.
 - The Shriram Group Companies, which has established a partnership with Cirrus Management Services (P) Ltd. for incubating and piloting a new kind of microcredit and livelihood support service organisation
76. Details are not immediately available on the first two.