CROP PROTECTION PROGRAMME

Crop Protection communication and research promotional strategies for semi-arid East Africa (Kenya and Tanzania)- Strategy Validation, M&E methodology development and Lessons for Policy.
R 8428 (ZA 0657)

FINAL TECHNICAL REPORT

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Visiting a Para-extensionist's Self-help group stover management demonstration site during the July 2005 Stakeholder workshop, Mwingi, E. Kenya	Farmer group members discussing M and E issues at Morogoro workshop, Tanzania
	
Project team members moving stakeholder ideas on to the next stage at M and E workshop, Morogoro, Tanzania	Visiting a Field extension workers facilitated Farmer Field School during the July 2005 Stakeholder workshop, Mwingi, E Kenya

CONTENTS

List of Acronyms

General

CBO Community Based Organisation
CIAT International Centre for Tropical Agriculture
CPP Crop Protection Programme
CP Crop Protection
DFID Department for International Development
DANIDA Danish International Development Agency
FFS Farmer Field School
GDP Gross Domestic Product
IPM Integrated Pest Management
M&E Monitoring and Evaluation
NGO Non-Governmental Organisations
PM&E Participatory Monitoring and Evaluation
T&V Training and Visit (extension system)

Applying to Kenya

ATIRI Agricultural Technology and Information Response Initiative ()
CDK Catholic Diocese of Kitui (Development Programme)
C-MAD Community Mobilisation for Desertification
CRAC Centre Research Advisory Committee
KARI Kenya Agricultural Research Institute
KAPP Kenya Agricultural Productivity Project
NALEP National Agricultural and Livestock Extension Project
RELO Research Extension Liaison Officer
DFSTs District +
farming systems teams
RREACs Regional Research and Extension Advisory Committees
PCPB Pesticide Control Products Board
MOA Ministry of Agriculture

Applying to Tanzania

ACS Annual Conference of Stakeholders
AMSDP Agricultural Marketing System Development Programme
ARI Agricultural Research Institute (Ilonga)
ASDS Agricultural Sector Development Strategy
ASDP Agricultural Sector Development Programme
ASLM Agricultural Sector Lead Ministries
ASPS Agricultural Sector Programmes Support
ASSP Agricultural Services Support Programme
DADPs District Agricultural Development Plans
DRD Division of Research and Development
IPR Internal program reviews
INADES Institut Africain pour le Développement Economique et Social
LGAs Local Government Authorities
NAEP II National Agriculture Extension project phase two
NALERP National Agriculture and Livestock Extension Rehabilitation Programme
NARLP National Agriculture and Livestock Research Programme
NSC National Steering Committee
PADEP Participatory Agricultural Development and Empowerment Project
PIDP Participatory Irrigation Development Programme
PRSP Poverty Reduction Strategy Paper

RFSP Rural Financial Services Programme
LPRI Livestock and Poultry Research Institute (Mpwapwa)
RALDO Regional agricultural and livestock development office
TARP II Tanzania agricultural research project phase two
TDV 2025 Tanzania Development Vision 2025
VAEOs Village agricultural extension officers
ZARF Zonal Agricultural research funds
ZEC Zonal executive committees
ZRELO Zonal Research Extension Liaison Officer
ZTC Zonal technical committees

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1.0 EXECUTIVE SUMMARY

1. This report covers an 8-9 month period taking forward aspects of project R8349, *"Developing Crop Protection Research promotional strategies for semi-arid East Africa (Kenya and Tanzania)".* The project's purpose, nested within the CPP programmes purpose, was "the promotion of strategies to reduce the impact of pests and stabilise yields in semi-arid cereal based cropping systems for the benefit of poor people". The focus was on action research for improved promotional and communication mechanisms relating to crop protection (CP), focusing from sub-national research and extension organisations through to farmers.

2. Three inter-agency teams formed in late 2003 continued their work in Central Tanzania, Eastern and South-West Kenya. Their work included a further season of crop protection training and promotional activities, documentation and analysis of the project's M&E experiences and participatory review and identification of lessons to inform policy.

3. In Tanzania the formulation, implementation, monitoring and reporting on three district level crop protection communication strategies was undertaken. In Kenya two training of trainers workshops were followed up by programmes of field activities in which alternative dissemination pathways were used and compared.

4. All three sites were involved in the documentation, characterisation and review of their monitoring and evaluation activities. Various workshops and meetings were held to enable reflection, lesson learning and sharing of results. A workshop in Tanzania brought in other agricultural service projects and farmers to enable wider sharing of M&E approaches and experiences. Two workshops in Kenya provided a basis for the further development of lessons. These included lessons relating to the reform of research and extension systems in the two countries. Based on these meetings, strategies for engaging with policy makers to share lessons were discussed.

5. Findings are summarised under the three output areas:-

- Agricultural communication and research promotional strategies to meet farmer's crop protection needs for semi-arid parts of Tanzania and Kenya further developed, evaluated and validated.
- Policy lessons and implications identified and availed to influence the formulation and implementation of national agricultural research and extension strategies for Kenya (KAPP) and Tanzania (ASDP)
- Methods for monitoring and evaluation of agricultural promotion and communication strategies at three project sites in E. Africa assessed and wider lessons relating to M&E for improved organisational learning and evidence based policy identified.

6. In brief, through the project the quality of lesson learning around promotional and communication strategies was enhanced, and some progress was made in linking to policy players at various levels, and in deepening learning about monitoring and evaluation of communication and dissemination processes. This learning will inform future initiatives to enhance the impact agricultural development work in semi-arid East Africa, including the "Research into Use" programme proposed by DFID.

7. Specific areas of relevance include a) methods for assessing the cost-effectiveness of alternative extension and communication approaches and methods, b) the current situation and stakeholder preferences relating to knowledge access and management in the context of pluralistic research and extension provision and c) experiences of M&E in the context of decentralised pluralistic extension services emphasising participation.

2. BACKGROUND

Building on R8349

The preceding project R8349 addressed the challenge facing agricultural service providers in semi-arid areas of East Africa of improving farmers' access to information and technologies. Starting in November 2003, R8349 initiated strategies to enhance two-way communication between farmers, researchers and other service providers in Eastern Kenya (Mwingi and Kitui Districts), Western Kenya (Homa Bay and Rachounya Districts) and Central Tanzania (Dodoma Rural, Kongwa and Singida Rural Districts). The work with the project partners aimed to identify clear lessons regarding improved access to crop protection information and technologies within the context of local agricultural service provision in the semi-arid areas. The technologies promoted included those developed by a number of CPP projects.

The main achievements under the four outputs for R8349[1] were:-

Output 1 Methods for updating demand for crop protection (CP) outputs and sustaining feedback documented and assessed: Surveys identified demand mechanisms used and preferred by farmers and extension service providers in all three sites. The past performance of Research Extension Advisory Committees for CP demand identification and feedback was assessed for Kenya. In Tanzania a participatory monitoring and evaluation (PM&E) framework was developed as a mechanism for feedback on the performance of Zonal and District level CP communication strategies.

Output 2: Approaches for improving access to CP research outputs: Stakeholder consultations and field surveys identified farmers and other stakeholders constraints to accessing CP information. In Kenya available CP technologies were inventoried and catalogued, and training materials developed for priority CP technologies. In Central Tanzania a wide range of CP communication materials for farmers were developed.

Output 3: Methods of delivering CP outputs to farmers: At each site best-bet dissemination pathways/methods were piloted in 2-3 districts. Preliminary results were assessed through monitoring, stakeholder review and follow-up studies at all three sites.

Output 4: Lessons for policy documented A series of stakeholder workshops provided the basis for identifying and documenting emerging lessons. The emerging lessons were synthesised in the first draft FTR submitted in May 05, and further expanded in the resubmitted FTR of August 2005, incorporating learning since May.

Rationale for R8428

The extension of R8349 activities through this project was for three main reasons.

Firstly, the cross-site meeting marking the transition from R8349 to R8428 identified the need to consolidate the evidence base for the communication and promotional strategies being piloted. Site teams felt that a single season of testing of the various dissemination methods had not provided an adequate evidence base, explaining that while farmer trainers were trained, they were not all, in turn, able to train farmers in many of the technologies due to limited time and adverse seasonal conditions.

[1] Developing Crop Protection Research promotional strategies for semi-arid East Africa (Kenya and Tanzania) R 8349 (ZA 0601) FINAL TECHNICAL REPORT- Project Leader: Alistair Sutherland

Secondly, the teams noted the need to improve the monitoring and evaluation of the effectiveness of the various communication approaches, including capacity building in M&E. Variation in the M&E approaches used across the 3 sites was noted, providing further opportunities for lesson learning. Hence a further season of pilot testing of CP dissemination and communication strategies and related M&E in the three sites would improve harmonisation of M&E methods and further enhance opportunities for lesson learning.

Thirdly, a further season would provide the basis for a more strategic engagement with policy and other decision makers involved with the key agricultural sector programmes in each country; KAPP in Kenya and ASDP in Tanzania. In Kenya, KAPP was due to start in pilot districts in late 2004. R8349 had operated in one KAPP pilot district in W Kenya (Homa Bay), but none in E. Kenya. The E. Kenya team proposed to relocate activities to the proposed KAPP pilot District (Makueni). In Tanzania ASDP was due to start in Sept 05, and was yet to select pilot districts. A major opportunity was seen for the project to engage with the ASDP design team to ensure that lessons learnt could be used to enhance farmer/service provider interaction at district level and the delivery of knowledge on crop protection (and indeed other agricultural technologies) to service providers. However, although there was some engagement, the ASDP had not become fully operational over the life of the project. The component of ASSP that plans to provide research funds for zones to link to districts has yet again been held up due to World Bank concerns, a factor completely beyond this project's control.

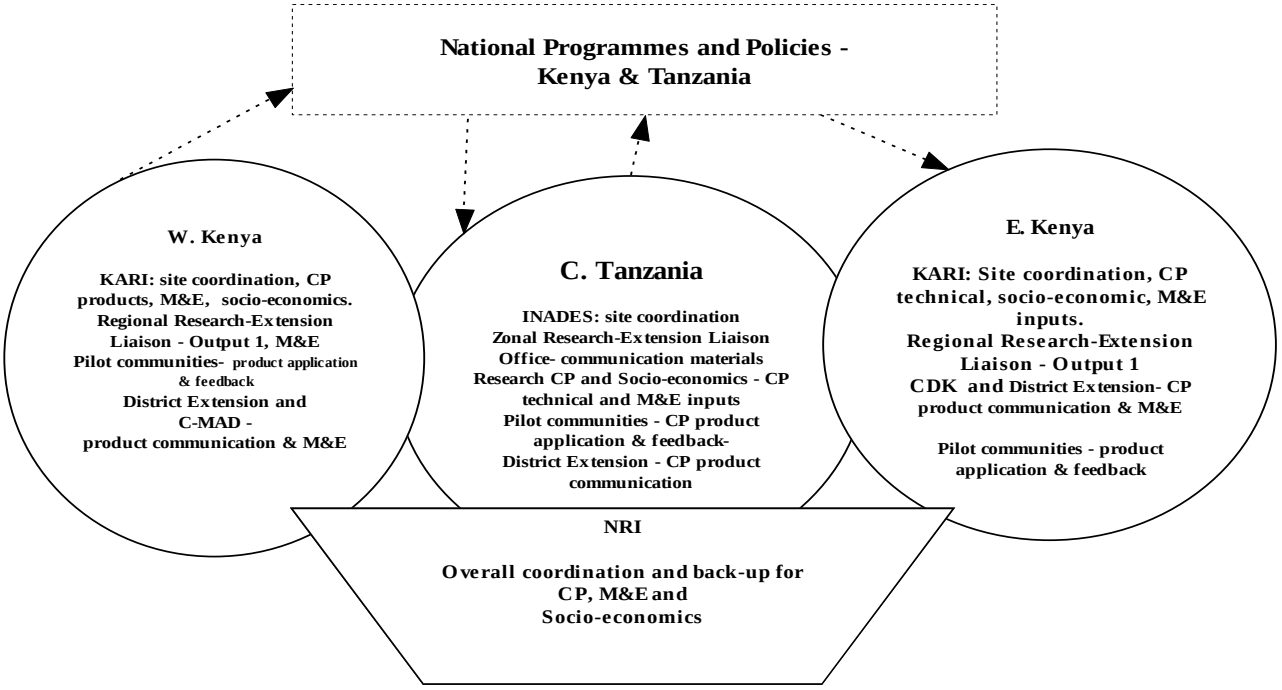
At the Naivasha meeting in March 2005, the site teams identified activity areas which included:-

- further analysis of the existing baseline survey and stakeholder data gathered on demand, feedback and access mechanisms and preferences,
- a second season through which to test the various methods for training front line staff and reaching farmers through various communication methods in the 3 sites,
- training and capacity building on basic and participatory monitoring and evaluation approaches, along with further development of indicators for monitoring and evaluation of the effectiveness and efficiency of the range of mechanisms identified and tested for feedback, improving access by stakeholders, and delivery research outputs to farmers.
- Development of strategies and material for influencing policy players (i.e. those formulating and interpreting policies relating to research promotion, extension planning and delivery, and research-extension linkages).

The areas high-lighted under output 4 (lessons for policy documented) of R8349 provided the basis for the work plans of the three site teams for R8428 outline in appendix 1. The preparation of work-plans with indicators also formed part of the requested M&E capacity building for the three teams. The results reported below are largely based on the 25 internal project reports (listed in appendix 2) arising from implementation of these work plans.

The structure for project implementation through the site teams with NRI playing a coordinating and back-stopping role is outlined in Figure 1.

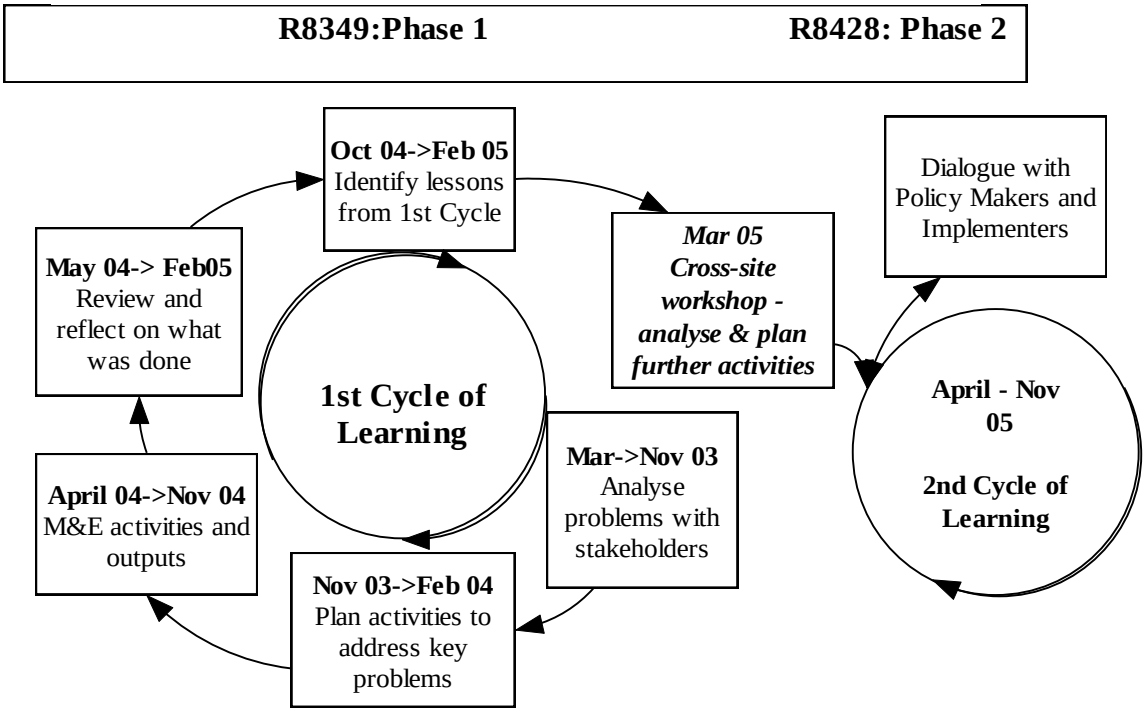
Figure 1: Project Sites, Main Actors and Roles



Overview of the Project approach

The project continued with its action-learning and multi-stakeholder approach, viewing this project largely as an opportunity for undertaking a second cycle of learning, consolidating the learning undertaken during R8349 as depicted in Figure 2.

Figure 2: Learning Cycles in Phases 1 & 2 of the Project



3. PROJECT PURPOSE

In the project log-frame the overall CPP purpose relating to semi-arid production systems is; *"Promotion of strategies to reduce the impact of pests and stabilise yields in semi-arid cereal-based cropping systems, for benefit of poor people."* More specifically, the project;

1) consolidated activities relating to mechanisms for CP demand identification, access, dissemination and feedback initiated in the fore-running promotional project R8349,

2) placed greater attention on the element of monitoring and evaluation, including learning about how to do M&E more effectively, including an element of capacity building

3) further developed the process of lesson learning and engagement with policy players.

4. RESEARCH ACTIVITIES & OUTPUTS

Based on the site work plans developed, activities were implemented and the process and results described in reports produced by the site teams. The site teams, together with the NRI team, further reviewed the activities with other stakeholders in various workshops. Workshop and activity reports are listed in section under dissemination outputs. The site plans, activity reports and workshop reports are outputs from the project process which have been further refined and consolidated in the summary presentation of activities and outputs in this section of the report.

Table 1 summarises the relationship between the 4 outputs of R8349 and the 3 outputs of the current project. The first three outputs for R8349 covering different elements of communication and promotional strategies, were combined into the current output 1. Output 4 of R8349 was elaborated as the current output 2, in relation to emerging programme initiatives developments in the two target countries. Output 3 was introduced as a result of a project add-on which involved documentation and analysis of the M&E practices within the project, in order to capture the lesson learning in relation to this.

TABLE 1: RELATIONSHIP OF R8349 & R8428 OUTPUTS

R8349 – Nov 03– February 2005	**R8428 April – December 2005**
1. Methods for updating demand for CP outputs and sustaining feedback documented and assessed 2. Approaches for improving stakeholders' access to Crop protection research outputs identified . 3. Methods for delivery of crop protection research outputs to uptake pathways and farmers piloted	1. Agricultural communication and research promotional strategies to meet farmers' crop protection needs for semi-arid parts of Tanzania and Kenya further developed, evaluated and validated.
	3 .Methods for M&E of agricultural promotion and communication strategies at three project sites in E. Africa assessed and wider lessons relating to M&E for organisational learning and evidence based practice identified.
4. Lesson learning and policy implications documented	2. Policy lessons and implications identified and availed to influence the formulation and implementation of national agricultural research and extension strategies for Kenya (KAPP) and Tanzania (ASDP)

At the start of each reported output, the main activities implemented in the three sites are summarised in Table format. The bracketed numbers in bold italics refer to the reports which document these activities as listed in appendix 2. Due to the large number of reported activities, and the exhortation for brevity by the reviewer of the FTR for 8349, only selected highlights are reported below. However, in interests of coherence and depth of understanding, results for some areas flagged by the first internal reviewer of R8349 (e.g. targeting by poverty and gender) are presented in significant detail under output 1.

4.1 OUTPUT 1 *"Agricultural communication and research promotional strategies to meet farmers crop protection needs for semi-arid parts of Tanzania and Kenya further developed, evaluated and validated."*

Table 2: Output 1 Activities Summary

Activities	**Progress in Two Countries**	
	Kenya	**Tanzania**
1.1 Improvement and validation of communication and promotional strategies	Pilot dissemination plans were refined in both sites and implemented covering 3 districts, including a new district (Makueni) ***(6)***, Training of trainer workshops held in Kisii ***(26)*** and Makueni ***(2)***,	District and Zonal communication strategies refined and implemented in one zone and in 3 districts; ***(10, 22)*** Post card survey – feedback on radio programmes ***(10)*** Interface analysis survey (with CPHP PHILA) ***(23)*** Consultation of how district officers access information; ***(24)*** Village survey of how farmers have put information into practice; ***(25)*** Assessment of exchange visits (with CPHP PHILA) ***(23)***
1.2 Linking dissemination efforts to marketing opportunities	E. Kenya participatory assessment of the link between sorghum processing plant and the demand for sorghum crop protection products/knowledge ***(4)***. SW Kenya link with CARE horticulture programme ***(19)***	Onion marketing stakeholder workshop ***(20,21)*** Sorghum marketing stakeholder workshop – (led by Dr Mbwaga on another project, CPP made small contribution)
1.3 Other related activities	S.W. Kenya – follow-up assessment of use of CP catalogue undertaken ***(8)***, Monitoring of research advisory committees ***(19)***	

4.1.1 Further learning to improve communication and promotion strategies

CP promotional/ communication activities under this second phase provided the site teams with rich opportunities for further learning. The CP technical content was similar to that covered in the first cropping season and the technical issues and communication/ learning materials used were fully described in the FTR for project R8349. Teams at each site further addressed the identified needs of both farmers and service providers in the participating pilot districts.

a) Improving service providers' access to CP information, training and products

Access mechanisms used by the public extension service providers

In all sites, farmers' main source of formal information and training were public extension. Using different methods (a postal survey in Kenya and group interviews in Tanzania) data was gathered on access mechanisms used by the public extension service providers, who in turn provide a service to frontline extension staff. In Tanzania this was the District Level staff, and in Kenya the Divisional level staff.

Central Tanzania – District Extension staff

In Central Tanzania a round table exchange was facilitated by INADES Formation and the NRI crop protection specialist on information, training and product needs of members of the district agricultural extension team. Three main questions were considered:

1. What types of information, training or products (particularly but not exclusively in crop protection) are currently being accessed and used by members of the district team?
2. Are new and different sources of information, training and products being used now compared with five years ago?
3. What additional information is needed by district level staff to help them support their activities and those of village agricultural extension workers?

With respect to types of information, District Subject matter specialists (SMSs) differentiated between updating their existing knowledge, and acquiring new knowledge. In both cases they listed a range of types of information, indicating that some new information is flowing. About 50% of the items listed were covered by this project (i.e. those with Asterisk). Other sources included a donor funded project, while another is a DFID CPHP research project. This suggests that currently without externally funded projects, access to new technical and related information/ knowledge at district level is likely to be very limited. Moreover, the "other types" of information listed related mainly to livestock and non-biophysical subjects. This further emphasises that regarding crop production (including crop protection), access by SMSs to new information is very limited.

Table 3: Examples of CP Related Information, Training and Products Updated by District SMSs – Central Tanzania.

Information	**Training**	**Products**
Control of LGB and other storage pests*; Storage structures*; *Striga* control*; Sorghum smut control*; Vitamin deficiencies in diets; Livestock vaccinations (CBPP in cattle)	Crop storage structures*; Use of sorghum varieties for *Striga* control*; stemborer control*; safe handling and use of fertilisers and pesticides; diet vitamin deficiencies; CBPP control	Good practice for draught animal training; use of Actellic, Stocal and Shumba Super dusts*; Animal vaccines; Botanicals*; foundation seed

Table 4: Examples of CP Related New Information, training and products for District SMSs – Central Tanzania.

Information	**Training**	**Products**
IPM in maize; ITK in control of LGB and onion pests*; Elegant grasshopper control*; seed production and health*; PRA process and implementation	Seed health*; seed production methods and inspection; soil fertility improvement; DE for LGB control; Use of ITK in pre-and post harvest pest control*; Household vulnerability assessment; Record keeping and database management; PRA; Group formation.	Seed of maize variety Synthetic White; Seed of sorghum varieties Wahi and Hakika seed*; Diatomaceous earth for grain storage; Seed inspection equipment.

The sources for information, training and products varied. Regarding new sources of information, mobile phones and the internet were listed and there is considerable interest in using the internet to access new information. However this is hampered by unavailability of terminals in the district office so officers have to fall back on their own resources to use internet cafes. Although there have been a number of training opportunities on various issues it is usual for only one staff member to attend. There is subsequently little sharing of what has been learnt with other members of the district team. Perhaps predictably, in relation to the process of converting public research into private goods, the public sector research and agricultural service providers figuring prominently in provision of information and training, with the private sector more prominent as sources of new marketable products.

Table 5: Sources of information, training and products for District SMSs – Central Tanzania.

Information	**Training**	**Products**
• Zonal Research Institutes, Ilonga • Ministry of Agriculture and Food Security (MAFS) • Ministry of water and Livestock (MW&L) • Plant Health Services Central Zone • ZRELO Central Zone • INADES Formation Tanzania • NRI • Internet searches • Tanzania Food and Nutrition Centre	• Zonal Research Institutes, ARI Ilonga • MAFS – various sections and projects e.g. PADEP; Diatomaceous earth (DE) project in Kongwa • MW&L • Plant Health Services Central Zone • ZRELO Central Zone • INADES • NRI • Internet searches • Tanzania Food and Nutrition Cente • Land Use Management project (LAMP), Singida • Sokoine University of Agriculture (SUA) • ASPS Seed Unit & Tanzania Official Seed Certification Institute (TOSCI) • KATC, Moshi	• ARI Ilonga (seed) • Breeders (seed) • TOSCI/MAFS (seed inspection equipment) • MW&L (Vaccines) • DE from Kongwa • Twiga Chemical Co. • East African Seed Co. (Arusha) • Suba Seed Co. •

Information needed by DSMS to do a better job included seven topics:-

1. Farmer group formation and management – more assistance and support requested to practice.
2. Market intelligence and strategies (how to make this available to growers).
3. More efficient use of internet to obtain information.
4. Good practice for on-farm seed production and storage – districts now have information on QDS but need to support individual farmers to use best practice for farm saved seed.
5. Implementation of PRA AND effective use of findings.
6. IPM and ITK and botanicals, DE for field and storage pests.
7. Roles and responsibilities of district staff under decentralisation AND information on current policies.

While crop protection was listed, five of the seven topics listed were "non-technical" relating to broader issues of concern to DSMSs. As underlined by this project's focus on understanding and improving institutional context, the above articulation of training needs by extension specialists underlines the need to link the communication of technical information with the local institutional and organisational context. For example, the DSMSs noted "there is not a culture of sharing information among members of district team after someone has been to a workshop or training session". This was further linked to a lack of clarity regarding de-centralisation and overlapping roles which make "clear planning and reporting difficult and confusing". District officers saw greater access to information on their roles and responsibilities within a changing institutional context as the most important issue that needs to be addressed to enable them to play a fuller role.

Eastern Kenya Divisional Extension Officers Information Sources

In Eastern Kenya, a postal survey was undertaken covering the agricultural extension offices of the 46 administrative divisions of four districts falling under the KARI Katumani mandate area. In Kenya the division is regarded as the focal point for the coordination and delivery of agricultural extension. 38 of the divisions responded providing their views of stakeholders, sources of CP information and methods for reaching farmers with CP information.

Their views on key stakeholders highlighted the perceived importance of the private sector in crop protection, and also perhaps the association of the term crop protection with chemical control. Public extension, research, NGOs and farmers also figured. The array of stakeholders listed clearly underlines the importance of partnership in CP service delivery at the divisional level. This project, while linking several of the key players listed, failed to engage significantly with the private sector players. In part this was due to the focus in E Kenya on "low input" and "knowledge intensive" technologies which were of limited interest to commercial companies. However with more potential synergies and opportunities for integrating this type of knowledge with commercial products could be further explored.

Table 6: Major stakeholders in crop protection information access and dissemination (as identified by divisional extension coordinators in semi-arid E Kenya)

Institution	**% reporting**	**Involvement in crop protection information access**
Agro-chemical companies	68	-Pesticides research, development and distribution -Crop protection information packaging and distribution -Training on safe use of pesticides
Agro-vet shops/ Stockists	42	
Public extension service providers	40	-Crop protection technologies dissemination through barazas, Farmer Field Schools, field days, individual farm visits
KARI	37	- Crop protection Research
NGOs and CBOs	26	-Crop protection research and packaging of crop protection information
Farmers	21	-Use of crop protection information to improve production yields
Provincial administration	8	-Convening of voluntary public gathering where crop protection information can be disseminated
Export companies	5	-Use of crop protection information to maintain required quality export quality standards

While public extension in divisions acknowledged the importance of private sector companies as a stakeholder in Crop Protection, this contrasts with their views of their means of acquiring information on new chemical products and varieties. They rely more on their own subject matter specialists at district level, and on local stockists, the radio and pamphlets, rather than direct contact with the companies. This probably reflects the limited reach into remoter rural areas of the private sector sales representatives, and perhaps a missed opportunity by the private sector to engage with the public sector providers at divisional level.

Table 7: DAEO's sources of information on new releases of pesticides and resistant crop varieties

Communication means	% reporting
District Subject Matter Specialists	74
Agro-vet shops/ Stockists	50
Radio	32
Pamphlets	21

With regard to public extension provider's views of how farmers learn about new releases, public extension appears as the primary source (implied by first four sources listed), followed by local stockists and the mass media.

Table 8: Sources through which farmers learn about new releases pesticides and resistant varieties

Sources	**% reporting**
Training by the public extension	47
Field days	45
Baraza	45
Demonstrations	40
Agro-vet shops/ Stockists	32
Radio	24
Publications	21
Field visits	16
Other farmers/ Para Extensionists	11
Farmer Field Schools	9

The main methods reported for communicating CP information to farmers suggest not only a range of methods, but also some that are seen as less effective than others. For example, while field days are reported by 100% of the respondents, only 18% regarded these as "most effective". Different understandings of "most effective" are implied by mention of public barazas alongside farmers field schools. Presumably barazas were seen as cost-effective, while field schools were seen as effective as communication mechanisms perhaps regardless of cost. The frequency with which farmer field schools were mentioned is indicative of the success in institutionalising this as an accepted public sector extension approach in E Kenya.

Table 9: DAEO's views of communication means for addressing pests and disease problems and those seen as most effective

Communication means	**% reporting use of**	**% reporting as the most effective**
Field days	100	18
Individual farm visits	100	16
Baraza	97	5
Farmer Field Schools	58	61
Demonstrations	11	
Radio	5	
Posters	3	
		100%

Contrasting Training of Trainer experiences

In contrast to Central Tanzania, Training of staff to train farmers was a feature of the programme in both SW and E Kenya which was repeated, but with a different emphasis in each team, as summarised in Table below.

Table 10: Comparison of Emphasis in 2005 TOT Activities in SW and E Kenya

	SW Kenya	**E Kenya**	
Districts	*Homa Bay & Rachuonya*	*Mwingi*	*Makueni*
Participants	7 public extn staff inc. 4 frontline, 2 NGO staff inc 1 frontline, 1 KARI	6 pub extn 3 frontline, 4 para-exten.	8 pub extn staff inc. 4 frontline, 1 NGO staff, 8 para-exten.
Training Content	Sorghum, sweet potatoes, groundnuts and horticultural crops; types of pests and diseases, managing and controlling them, agronomic principles and practices	Extension concepts and framework for farmer training workplans and reports.	Stover management maize and sorghum, Sorghum smut control, Grain storage a& seed selection and storage
Training approach	Presentations, practical lab and field exercises, marked tests.	Brain-storming and groupwork	Groupwork and individual exercises and presentations
Objective	Refresh and re-enforce 2004 season training	Revise monitoring and reporting formats and develop workplans	Train two pathways in KAPP District in selected CP technologies
Duration	4 Days	2 days	2.5 Days

In SW Kenya the emphasis was on re-training the same trainers in order to up-grade their knowledge and skills. However, a new trainee was included as someone who was going to work in a new community covered by the NALEP approach/pathway. This focus on refresher training was informed by the end of season survey which suggested that farmers trained had difficultly in correctly identifying pests and generally reported higher learning and uptake of the agronomic practices compared with the IPM practices. The format for training of trainers was changed, with a far greater emphasis on practical and field based exercises, than in the first training which had relied mainly on classroom based exercises using photographs of pests. The trainers were more satisfied with the results, and the feedback from the trainees was very positive. However, training plans and reporting formats were not agreed during the training.

The application of the training provided in SW Kenya was variable and illustrates the riskiness of making simple associations between CP training inputs provided on the one hand, performance in the training, and training application on the other. This season the project team relied on the local institutions to support implementation, and did not provide trainees with a budget for this or a reporting format. Subsequent follow up on the trainees provided indicated that only one of the 10 TOT trainees trained a significant number of farmers; 339 men, 234 and 246 youths. This was a public extension officer who had not attended the first training, had been out-performed by two other frontline staff in the assessment of learning in the TOT. The main difference was that this frontline extension worker had been allocated a specific responsibility to facilitate farmer training in a new focal area of the National Agriculture and Livestock Extension Programme (NALEP), whereas his colleagues were operating in other areas which were either old NALEP focal areas or non-focal areas. NALEP had provided close supervision and a clear reporting structure and had also facilitated in terms of transport and allowances. The NGO extension staff trained had limited application in the second season because shortly after the training, their contracts were ended due to lack of funding, and they had to look for new jobs. More senior technical staff trained did not undertake farmer training because they had other responsibilities. However, the site team leader felt that involving them

in the technical CP training was an important part of a longer term strategy of maintaining partnerships with public extension and valued NGOs. A key lesson from this was that it is very difficult to assess the application of training unless the trained person has a clear reporting format and system, which applied only the NALEP case. Aside from the importance of the institutional context for applying new CP knowledge, the value of re-training the same people is questioned by this experience. Perhaps the returns would be higher when new staff are trained compared to providing refresher training (this remains an untested hypothesis).

In E Kenya the TOT approach used differed between the old and new districts. In Mwingi District where training had been provided in the first season, a workshop was held with the TOT trainees to redesign reporting formats based on a shared understanding of terms used to describe extension methods, particularly barazas, demonstrations and existing groups. This was followed by the development of training plans and budgets by the trainees. In Makueni District, selected because of its status as a KAPP pilot District, the team had an opportunity to scale out the CP training course provided during the first season. The same course was repeated with positive feedback in the TOT participants evaluation, suggesting that it is a replicable course. In terms of application of the training provided in both Districts, the experience from E Kenya suggests that both frontline staff and community volunteers deliver training to farmers, whereas as more senior staff attending TOT are less likely to do so. This application is greatly enhanced when clear reporting formats, monitoring and modest facilitation in terms of lunch and transport allowances are provided.

Table 11: Farmer training delivered after 2005 TOT in SW and E Kenya

	SW Kenya	**E Kenya**	
Districts	*Homa Bay & Rachuonya*	*Mwingi*	*Makueni*
Farmers Trained by TOT trainees in 2005	819 - by 1 TOT Trainee – over 14 training sessions	324 (over 20 training sessions)	299 (and over 19 training sessions))
# Farmers trained by public Extn	819	97 by 2 front line extn workers	94 by 4 front line extn workers
# Farmers registered as trained by para-extension	0	202 by 4 para extensionists	235 by 8 para extensionists
Average no. of farmers trained per public extn agent and range	819	49 4-31	24 7-34
Average no. of farmers trained per para-extn. agent and range	0	51 9-28	29 10-41

Two pathways were used in the second season in E Kenya, public extension and para-extension (community volunteers). In Mwingi District the para-extension were operating as

volunteers under a local NGO, while in Makueni District they were community members who were selected by local extension staff on the basis that they had played a voluntary role in previous NGO projects. In both districts the results showed the potential for using the community volunteer as an extension pathway, as in both Districts they trained about twice the number of farmers who were trained by the public extension trainees, although the average no trained by both types of extension agent were similar in each District (Table). The numbers of farmers trained per TOT trainee was higher in Mwingi, probably due to their previous experience and also because they agreed their training plans earlier in the season enabling them more time to prepare.

b) Improving farmers' access to CP information, training and products

Assessment of participation and learning outcomes in Central Tanzania

In September 2005 a follow-up survey was carried with the following aims:

a) Identify and profile more clearly the types of people who have been reached by programme activities.
b) Indicate the extent to which the process has responded to the CP needs of different types of farmers
c) Evaluate in more detail with a range of farmers, which approaches have been useful in facilitating improved access to knowledge and how this knowledge is being used;

The survey took place in five villages: Merya and Mudida in Singida Rural district; Chamkoroma and Nolini in Kongwa district and Msanga in Dodoma Rural district. It included group interviews to obtain information on group members; access to information / knowledge and how it is being used to achieve goals. and ideas for improving farmers' access to information in the future. This was followed by Individual interviews with farmers to provide information about their livelihood situation, what they have learnt from CPP activities, how this information/ knowledge has changed they way they farm and reasons why or why not. A total of 84 farmers were interviewed, of which 68 were members of the farmer groups which had been working with the project. The information provided below is based on the 68 farmers who were members of farmer groups.

Who has been reached by programme activities?

The project has engaged directly with a total of 35 farmer groups with 390 members, 43% of whom are women (Mwanga et al 2005). Table X below provides some indication of the membership of the farmer groups. The sampling was purposive with the aim of including farmers from each wealth group and both women and men. However, the overall proportions are probably fairly indicative of the representation of the farmer groups in terms of wealth (ie a high proportion in higher wealth groups) and gender (although women are under represented in the sample compared to the number known to be in the groups). Overall, the farmer groups appear to have a much higher proportion of relatively wealthy farmers than in the communities where the groups are based. The representation of women in the farmer groups is also less than would be expected ie at least 50% female.

Clear differentiation of the community by wealth group is apparent. Poorer farmers in lower wealth category appear to be younger, much less likely to own cattle, have less access to labour, less likely to have off-farm income, have access to less land and are less food secure than better off households. This suggests that for poorer members of the community to benefit from improved access to information, training and products, they will need to emphasise relatively low-cost and low-labour input approaches to crop-protection. Better-off

households may be more interested in labour-intensive practices as they are better placed to hire in labour.

Table 12 Characteristics of households by village and wealth groups (CPP respondents)

						% hiring labour		Food secure months				
Village	Gender (% female)	Wealth group	N=	Av. age	% with cattle	In	Out	Last 12 months	Good year	Bad year	% with non-farm income	Mean area land (acres)
Merya		High	3	36	100	100	0	11	12	10	67	6
		Medium	8	37	63	88	13	10	12	8	50	8
		Low	2	26	50	50	0	10	12	7	0	5
	35	Total	13	35	69	85	8	10	12	8	46	7
Mudida		High	4	38	75	100	0	11	12	9	75	20
		Medium	5	46	80	80	60	9	12	5	40	8
		Low	6	36	17	67	50	9	11	5	50	5
	38	Total	15	40	53	80	40	10	12	6	53	10
Msanga		High	5	44	80	100	0	10	12	5	40	12
		Medium	9	42	22	67	11	9	13	7	78	8
		Low	1	33	0	0	0	12	12	7	100	1
	20	Total	15	42	40	73	7	10	12	6	67	9
Chamkoroma		High	7	44	43	100	0	12	13	9	71	16
		Medium	1	39	0	100	0	12	12	10	0	5
		Low	4	43	25	75	25	7	11	7	50	5
	18	Total	12	43	33	92	8	10	12	8	58	11
Nolini		High	3	46	33	100	0	12	12	11	100	44
		Medium	8	46	0	63	75	9	12	7	25	10
		Low	2	30	0	50	50	10	12	9	0	5
	60	Total	13	44	8	69	54	10	12	8	38	17
Total		High	22	42	64	100	0	11	12	8	68	18
		Medium	31	42	35	74	35	9	12	7	48	9
		Low	15	35	20	60	33	9	11	6	40	5
	34	Total	68	41	41	79	24	10	12	7	53	11

Figure 3 below summarises the number of farmers sampled in Central Tanzania in September 2005 by wealth group and gender, the number of respondents who received new ideas on agricultural management and the number who acted on these new ideas. The data from this limited sample does suggest that those farmers in the lower wealth groups and women were able to access at least some information that they were able to put into practice. This suggests that methods used in the communication strategies have the potential to reach a range of farmers. Table 13 also suggests that farmers in the groups are sharing at least some of their new knowledge with other farmers. The mean figure of each farmer sharing with 24 other people over two seasons is perhaps surprisingly high. However, the range is from zero

to 400 indicating that certain farmers are more likely to share information. There is clearly scope to fully up who, how and why certain individuals are sharing more and the outcomes.

Figure 3

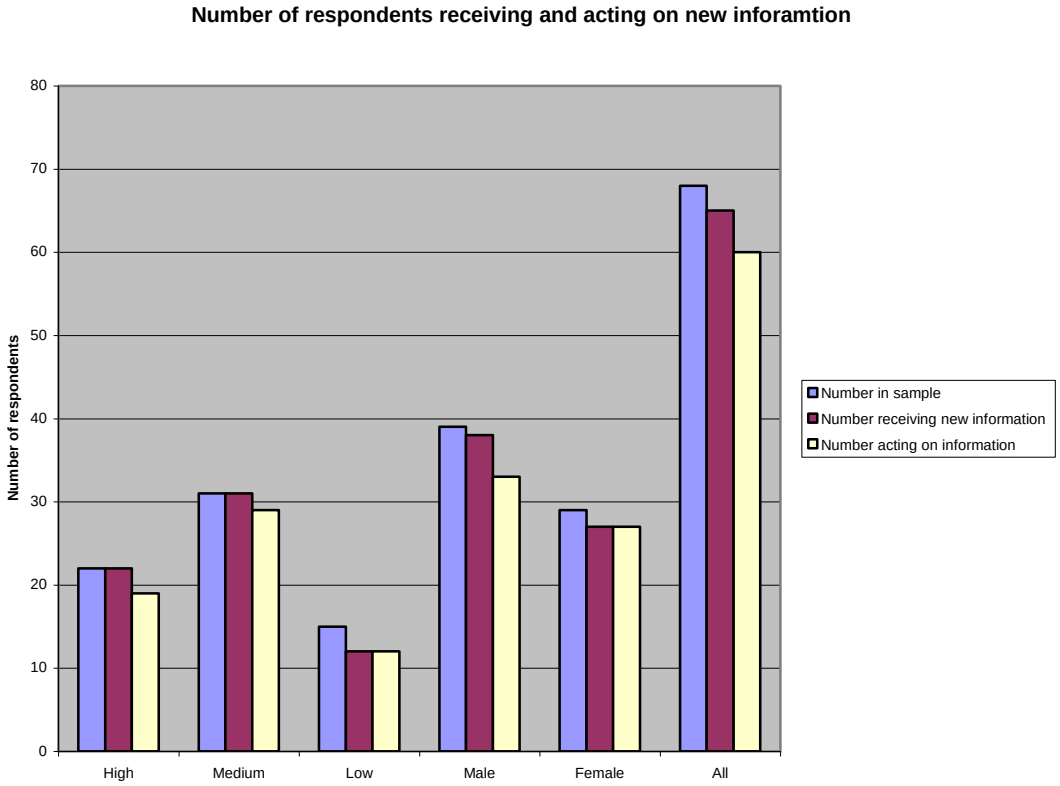


Table 13: Sharing of new information by farmer group members with others

	Wealth group of respondent			Gender of respondent		
	High	Medium	Low	Male	Female	All
Number in sample	22	31	15	39	29	68
Number receiving new information	22	31	12	38	27	65
Number sharing information	19	27	11	32	25	57
Total recipients	246	1057	83	1023	363	1386
Mean number of recipients/ farmer group member	13	39	8	32	15	24
SE of the mean	4.5	13.3	1.7	10.7	4.1	6.4
Range	0-100	0-400	0-20	0-400	0-108	0-400

The extent to which the process has responded to the CP needs of different types of farmers

Training and information needs of farmers varied at the district, village, group and individual level (see Table 14) . The programme aimed to be responsive in as a decentralized manner as feasible. Needs also change over time and there was some increase in the range of topics upon which farmers indicated they needed information from 2004 to 2005 (see Table 14). Marketing, for example, was a key issue raised in the second year of interaction between district staff and participating groups. This is likely to be as a result if greater awareness

raised through more intensive contact between district staff and farmers and increasing confidence in this relationship.

Table 14 Crop protection and related needs in district communication strategies in Years 1 and 2.

Year 1 (2003/2004)	Year 2 (2004/2005)
Dodoma Rural district	
Prevention and control of Striga and smut Information on control & prevention	Effective prevention and control of pest and diseases (*Striga* and smut in sorghum)
	Promotion of Hakika and Wahi sorghum
	Control of storage pests of grains
	Sorghum processing
Kongwa district	
Tomato pests and diseases Control To gain knowledge on pest and disease of tomatoes Proper and timely use of chemicals	Tomato disease and pest control
	Improving tomato market opportunities
Prevent and control smut disease	Control of sorghum smut
Prevent and control the weed Striga	Control of *Striga* in sorghum Control of *Striga* in maize
To prevent and control the stalkborer To Increase yield	Control of stalkborer
Singida Rural district	
Controlling pests and diseases of onion Proper and timely use of Agrochemicals Increased demand for Agrochemicals as result of increase awareness	Control of pests and diseases of onions Timely and proper use of agrochemicals and indigenous knowledge;
	Improving market situation
	Knowledge of "mkeki" and its control
Control of Larger Grain Borer Proper harvesting procedure Orientation and mobilization Agrochemicals and Indigenous knowledge Low purchasing power of Agrochemicals to farmers Proper and timely application of pesticides	Control of storage pests Timely and proper use of agrochemicals and indigenous knowledge; LGB biology
	Control of Striga and smut on sorghum Knowledge on control of Striga and smut on sorghum

Accessing new information on understanding and then controlling key pests that cause significant yield loss (eg *Striga*,cutworm, storage pests, stalkborer,) appears a priority for poorer, less food secure households. Better resources households are more likely to be interested in information requiring greater investment e.g. better storage facilities, safe handling of agrochemicals and also obtaining seed of new (including pest resistant) varieties (eg sorghum (Wahi, hakika), onions (egred creole, khaki) and tomato (Tanya)). Poorer households also indicated interest in varieties/seed, particularly where farmers had been trained in how to better mange farm saved seed.

When it came to putting new ideas into practice poorer farmers reported new knowledge helping them to improve use of manure, *Striga* resistant sorghum, the correct application of pesticide against storage pests and correct ripening of tomatoes to obtain seed. These practices had increased yield or reduced yield loss, improved shelf life and produce quality and hence food security (e.g. Mudida and Msanaga villages). It can be speculated that poorer households have previously had less access to knowledge that helps farmers to use inputs

efficiently. There was some indication that women had acted more than men with regard to ITK (eg use of neem, ash), but also using the recommended rate of pesticides for post harvest storage pests control was reported quite highly. Women also reported monitoring and experimenting-type activities more than men. Yield/ reduced pest losses was the main reported outcome from women, together with increased shelf life.

Table 15: New ideas reported by members of farmer groups by Village, wealth group and gender (% of respondents)

Merya village	Wealth group			Gender		Total
	High	Medium	Low	Male	Female	
Proper handling of agrochemicals	33	100	0	100	50	75
Agronomic practices	0	38	0	33	17	25
Control of cutworms in onions	33	13	100	0	50	25
Use of ITK in pest control	0	25	0	0	33	17
Group formation and maintenance	33	13	0	0	33	17
Identification of pests and diseases	0	13	100	17	17	17
New pests whiteflies, *keki*, nematodes	0	25	0	17	17	17
Striga control in cereals	0	13	0	17	0	8
Pest & disease monitoring for crop change	33	0	0	0	17	8
Number of respondents	3	8	1	6	6	12

Mudida village	Wealth group			Gender		Total
	High	Medium	Low	Male	Female	
Proper handling of agrochemicals	100	100	40	100	50	79
Striga control in cereals	25	80	40	63	33	50
Control of LBG	50	40	40	50	33	43
Proper grain storage	25	20	60	25	50	36
Use of ITK in pest control	25	60	20	25	50	36
Identification of pests and disease	0	20	20	0	33	14
Storage structure preparation and treatment	50	0	0	25	0	14
Group formation and maintenance	0	20	0	13	0	7
Pest and disease monitoring for crop change	0	20	0	0	17	7
Seed selection	0	20	0	13	0	7
Number of respondents	4	5	5	8	6	14

Msanga village	Wealth group			Gender		Total
	High	Medium	Low	Male	Female	
Striga control in cereals	60	22	100	30	60	40
Disease resistant varieties i.e wahi, hakika,	20	22	0	30	0	20
Own seed preparation	20	22	0	10	40	20
Smut control in cereals	40	11	0	30	0	20
New improved varieties	20	0	100	10	20	13
Control of LBG	0	22	0	10	20	13
Agronomic practices	20	11	0	10	20	13
proper handling of agrochemicals	20	11	0	10	20	13
Proper spacing and its benefits	0	11	0	10	0	7
Use of ITK in pest control	0	11	0	10	0	7
Preparation of Radio program	20	0	0	10	0	7
Seed treatment and storage	20	0	100	10	0	7
Seed selection	20	22	0	10	0	7
Number of respondents	*5*	*9*	*1*	*10*	*5*	*15*

Chamkoroma village	Wealth group			Gender		Total
	High	Medium	Low	Male	Female	
Tomato disease control	71	100	0	67	0	55
Agronomic practices	57	0	0	33	50	36
Use of ITK in pest control	29	0	67	33	50	36
Own seed preparation	29	0	67	33	50	36
Identification of pests and diseases	43	0	0	33	0	27
New improved varieties	14	0	0	0	50	9
Proper spacing and its benefits	14	0	0	0	50	9
proper handling of agrochemicals	14	0	0	11	0	9
Use of water pumps in micro irrigation	14	0	0	11	0	9
Pest and disease monitoring for crop change	14	0	0	0	50	9
Appropriate nursery preparation	14	0	0	11	0	9
Number of respondents	7	1	3	9	2	11

Nolini Village	Wealth group			Gender		Total
	High	Medium	Low	Male	Female	
Control of stalk borer in grain stalks	67	38	100	60	50	54
Striga control in cereals	0	50	0	60	13	31
Agronomic practices	0	25	50	0	38	23
Proper grain storage	33	25	0	20	25	23
Control of LBG	0	13	50	0	25	15
Use of ITK in pest control	0	25	0	20	13	15
Control of elegant grass hopper	0	0	50	0	13	8
Proper spacing and its benefits	0	0	50	0	13	8
proper harvesting of farm produce	0	13	0	0	13	8
Number of respondents	3	8	2	5	8	13

Table 16: How new ideas are being put into practices as reported by members of farmer groups by village, wealth group and gender (% of respondents)

Merya village	Wealth group of respondent			Gender of respondent		Total
	High	Medium	Low	Male	Female	
Teaching, sharing experience with others	33	38	0	33	33	33
Apply pesticides on my field i.e onions, cutworm, thrips	33	38	0	67	0	33
Spray regime followed	0	38	0	33	17	25
Monitoring and can identify pest i.e thrips, catterpille	33	13	100	0	50	25
Bought /borrowing and using sprayer	33	25	0	33	17	25
Purchase and use of industrial chemicals i.e shuma, actelic	33	13	0	17	17	17
Purchased using own sprayer i.e solo	33	13	0	0	33	17
Still a farmer group member	0	25	0	17	17	17
Follow instructions shown by manufacture	33	0	0	0	17	8
Use of agrochemicals properly	0	0	100	0	17	8
Recommended spacing used i.e in onion 2by5	0	13	0	17	0	8
Using raised bed nursery	0	13	0	0	17	8
Recommended rate oberved ie 1 pack actelic for 2 bgs grains	0	13	0	0	17	8
Planting neem trees around homestead	0	13	0	0	17	8
Number of respondents	3	8	1	6	6	12

Mudida village	Wealth group of respondent			Gender of respondent		Total
	High	Medium	Low	Male	Female	
Recommended rate observed ie 1 pack actelic for 2 bags grains	50	40	80	38	83	57
Purchase and use of industrial chemicals i.e shuma, actelic	0	60	0	38	0	21
Applying LGB control techniques	50	20	0	13	33	21
Using FYM	0	20	40	25	17	21
Crop rotating maize with sunflower, sorghum cowpea	0	40	20	38	0	21
Repaired my granary (kihenge)	50	0	20	38	0	21
Applying ITK i.e neem, sand, ash,	25	0	20	13	17	14
Up root and disposal of affected plants	0	20	20	13	17	14
Planting neem trees around homestead	50	0	0	13	17	14
Follow instructions shown by manufacture	0	0	20	13	0	7
Have a demo plot for more experimentation	0	20	0	13	0	7
Purchased and using own sprayer i.e solo	0	0	20	0	17	7
Varieties eg wahi and hakia tolerant to striga	0	20	0	13	0	7
Number of respondents	*4*	*5*	*5*	*8*	*6*	*14*

Msanga village	Wealth group of respondent			Gender of respondent		Total
	High	Medium	Low	Male	Female	
Varieties; Wahi and hakika tolerant to striga	50	50	100	38	80	54
Follow instructions shown by manufacture	50	25	0	25	40	31
Up root and disposal of affected plants	50	13	100	38	20	31
Recommended spacing used	25	25	0	38	0	23
Applying ITK i.e neem, sand, ash,	25	25	0	38	0	23
Teaching, sharing experience with others	0	13	0	13	0	8
Have a demo plot for more experimentation	0	13	0	0	20	8
Using protective glove when handling chemicals	25	0	0	13	0	8
Crop rotating maize with sunflower, sorghum cowpea	0	13	0	0	20	8
Use of marshal for seed treatment	0	13	0	13	0	8
Number of respondents	*4*	*8*	*1*	*8*	*5*	*13*

Chamkoroma village	Wealth group of respondent			Gender of respondent		Total
	High	Medium	Low	Male	Female	
Purchase and use of industrial chemicals i.e shuma, actelic	71	0	0	63	0	50
Prepare tomato seed using fully mature fruits	43	0	67	38	100	50
Applying ITK i.e neem, sand, ash,	29	0	33	13	100	30
Monitoring and can identify pest i.e thrips, catterpille	29	0	0	25	0	20
Varieties eg wahi and hakia tolerant to striga	14	0	33	25	0	20
Use of agrochemicals properly	14	0	0	13	0	10
Apply pesticides on my field	14	0	0	13	0	10
Recommended spacing used	14	0	0	0	50	10
Using raised bed nursery	14	0	0	13	0	10
Recommended rate observed I pack actelic for 2 bgs grains	14	0	0	13	0	10
Planting neem trees around homestead	14	0	0	13	0	10
Soil burning to kill soil born pest	14	0	0	13	0	10
Frequent field visits	14	0	0	0	50	10
Number of respondents	7	0	3	8	2	10

Nolini village	Wealth group of respondent			Gender of respondent		Total
	High	Medium	Low	Male	Female	
Applying ITK i.e neem, sand, ash,	0	63	0	25	50	42
Use of agrochemicals properly	0	38	50	25	38	33
Have a demo plot for more experimentation	0	13	100	0	50	33
Using FYM	0	38	0	50	13	25
Still a farmer group member	0	25	0	25	13	17
Up root and disposal of affected plants	0	25	0	25	13	17
Apply pesticides on my filed i.e onions, cutworm, thrips	50	0	0	25	0	8
Varieties eg wahi and hakika	0	13	0	25	0	8
Recommended spacing used i.e in onion 2 by 5	0	0	50	0	13	8
Follow instructions shown by manufacture	50	0	0	0	13	8
Number of respondents	2	8	2	4	8	12

Table 17: Outcomes of putting new ideas into practices as reported by members of farmer groups by wealth group and gender (% of respondents)

Merya village	Wealth group of respondent			Gender of respondent		Total
	High	Medium	Low	Male	Female	
Increased yield/crop loss reduced	100	88	0	83	83	83
Low pests and disease incidence on crop stand	0	50	0	33	33	33
Increased plant vigour	33	13	100	17	33	25
Improve knowledge sharing	0	25	0	0	33	17
Improved seedlings and plant heath Good looking	0	13	0	0	17	8
Reduced striga incidence	0	13	0	17	0	8
Improved population per acre	0	13	0	17	0	8
Increased family income	0	13	0	17	0	8
Quality of produce improved i.e large bulbs	0	13	0	0	17	8
No water lodging any more	0	13	0	0	17	8
Neem tree planted at home and school	0	13	0	0	17	8
Number of respondents	3	8	1	6	6	12

Mudida village	Wealth group of respondent			Gender of respondent		Total
	High	Medium	Low	Male	Female	
Longer shelf life of stored products i.e grains than before	75	60	80	88	50	71
Low pests and disease incidence on crop stand i.e.onion block	25	60	20	50	17	36
Increased yield/crop loss reduced	25	20	40	25	33	29
Increased plant vigour	25	20	40	25	33	29
Reduced striga incidence	0	40	0	25	0	14
Improve knowledge sharing	25	0	0	0	17	7
Number of respondents	*4*	*5*	*5*	*8*	*6*	*14*

Msanga village	Wealth group of respondent			Gender of respondent		Total
	High	Medium	Low	Male	Female	
Increased yield/crop loss reduced	50	60	100	50	100	60
Low pests and disease incidence on crop stand	25	40	0	25	50	30
Quality of produce improved	0	40	0	13	50	20
longer shelf life Stored products i.e grains than befor	25	20	0	25	0	20
Reduced striga incidence	0	0	100	0	50	10
Improve knowledge sharing	0	20	0	13	0	10
Number of respondents	*4*	*5*	*1*	*8*	*2*	*10*

Chamkoroma village	Wealth group of respondent			Gender of respondent		Total
	High	Medium	Low	Male	Female	
Increased yield/crop loss reduced	100	0	90	88	100	90
Low pests and disease incidence on crop stand	86	0	70	75	50	70
Improved population per acre	29	0	20	0	100	20
Improved seedlings and plant heath Good looking	14	0	10	13	0	10
Increased family income	0	0	10	13	0	10
Quality of produce improved	14	0	10	0	50	10
Increased plant vigour	14	0	10	13	0	10
Low soil born pest incidance	14	0	10	13	0	10
Number of respondents	7	0	3	8	2	10

Nolini village	Wealth group of respondent			Gender of respondent		Total
	High	Medium	Low	Male	Female	
Increased yield/crop loss reduced	0	75	100	60	63	62
Low pests and disease incidence on crop stand	67	38	0	60	25	38
Longer shelf life Stored products i.e grains than before	33	38	0	20	38	31
Increased plant vigour	0	25	0	20	13	15
Food security improved	0	13	50	20	13	15
Reduced striga incidence	0	13	0	20	0	8
Quality of produce improved	0	0	50	0	13	8
Number of respondents	2	8	2	4	8	12

Assessment of participation and learning outcomes in Kenya

Participation

In Kenya wealth data was not obtained on the farmers participating in the training activities due to the sensitivity of this information. However, in E Kenya data on the gender, age, and educational status of participating farmers was gathered by all trainers, while in S W Kenya data on their gender was recorded by one of the trainers.

In terms of gender it is clear that in E Kenya women farmers comprise the majority of trainees in both districts, whereas in SW Kenya men farmers are relatively more than women. This largely reflects the cultural differences between the respective ethnic groups (WaKamba and the Lou).

Table 18: Kenya Farmers Trained in 2005 Season by District and Gender

	Mwingi Farmers	**Makueni Farmers**	**Homa Bay Farmers**
Gender	**% Total (# 329)**	**% Total (#299)**	**% Total (#819)**
Male	37	17	41
Female	63	83	29
Youths	0	0	31
Total	**100**	**100**	**100**

The picture is of a farming population from a wide range of ages both for men and women attending CP training; starting from 18 years old and continuing into their 70s. In terms of age-categories of farmers trained, in E Kenya the age groups above 30 years old were quite evenly represented, whereas younger farmers were poorly represented. In E Kenya the age category of 50 plus was the largest, including more than a third of farmers trained. This probably reflects the fact that younger people are less likely to belong to self-help groups. This contrasts with the situation in SW Kenya. 16% of farmers trained were in the 50+ age-group in the previous season, while this season approximately one third of all the trained people were classified as "youths". The emphasis on training youths was part of the extension policy, illustrating the important effect that the selection of pathways can have on who is targeted by a particular message or programme. Hence in E Kenya working with existing groups looks very cost-effective in terms of set-up costs, but may result in others being excluded. The NALEP has a specific policy to target youths, and in the case of Homa Bay appears to be able to deliver on widening the target group.

Table 19: E Kenya Farmers Trained by Age Characterization

	Mwingi Farmers (2005 season register) # 312	**Makueni Farmers (2005 season register) #261**
Age category		
29 yrs and below	10	10
30 – 39 Yrs	33	25
40- 49 Yrs	24	29
50 and above Yrs	33	36
Total	100	100
Average age –Women	43	44
Age range – Women	18-70 Years old	20-79 Years old
Average age –Men	44	47
Age range – Men	20-76 Years old	20-78 Years old

In E Kenya the vast majority (85% in Mwingi and 81% in Makueni) had either no formal education or primary education, which implies a low level of literacy and numeracy. This contrasts somewhat with the figures for a sample of farmer trainees in SW Kenya in the 2004

season, where a significant proportion (34%) had secondary education or higher. This may reflect both higher education standards in SW Kenya and also the fact that more of the farmers there were men; reflecting gender selection practices in deciding which children go to secondary school.

Table 20: Kenya Farmers Trained in 2005 and 2004 Seasons Education status

	Mwingi Farmers 2005	Makueni Farmers 2005	E Kenya 2004	SW Kenya 2004
Education level	**% Total**	**% Total**	**% Total**	**% Total**
No formal education	31	15	21	11
Adult literacy	3	3	1	4
Primary	54	66	56	55
Secondary	12	16	22	30
Total	**100**	**100**	**100**	**100**

4.1.2 Challenges in linking CP promotion to markets

Each team selected a crop with the aim of exploring how the promotion and uptake of crop protection could be more effectively linked to markets. The rationale, based on comments from extension staff, was that farmers would be more interested in using crop protection technology for crops where the markets were profitable and reliable. Both high value (onions and tomatoes) and low value crops (sorghum) were selected.

High Value crops

Onions Through the 2004 season, the Central Tanzania team identified onions as a high value crop with significant pest and disease problems which could be addressed through improved access to information and training materials. In this 2005 season the team undertook a stakeholder survey followed by a workshop to discuss the results and implications. It was decided to collaborate with the DFID Crop Post harvest Programme funded project R8422 (operating in the Southern Highlands of Tanzania) and DAI PESA (USAID funded programme aiming to strengthen small and medium scale enterprises) to hold a stakeholder workshop in Morogoro in September 2005. The aim of the workshop was to share experiences and identify ways to improve onion marketing systems. Representative farmers from Mbarali district (farmer research group members) and Iringa participated together with farmers from Singida. Other key stakeholders included market traders, government regulators, extensionists and researchers. Following the workshop, farmers visited the main market in Dar es Salaam (Kariakoo) for further discussions with traders and others. This has provided the detailed ground work for a number of radio programmes.

The market price analysis clearly showed the financial advantages for farmers of accessing more distant markets, implying the potential for producers to get more involved in collaborative marketing. A range of other constraints facing onion producers was also noted, including short storage period, low quantity and quality of crop, high transport costs and lack of unity among producers. This placed the crop protection interventions within a wider context, illuminating the potential for greatly enhancing returns on crop protection investments for onions through addressing some of the key marketing constraints. At the same time, the complexity of the marketing issues raised (involving various vested interests and failures to apply existing laws designed to protect producers) make the task of delivering this benefit through improved market conditions a challenge that will require a much longer term approach involving integration along the market chain. As a step in this direction, radio programmes which will give voice to different stakeholders based on findings from the survey and

encouraging producers to get more directly involved in marketing activities was planned by the project team. Although the radio programmes have not been made during the life of the project, there are still plans to broadcast them.

Tomatoes In the 2004 season, the SW Kenya team identified tomatoes as one focus for crop protection training. A successful field day in Homa Bay was attended by an enthusiastic NGO team in 2004. There were discussions regarding collaboration with this NGO in the 2005 season so that crop protection training on tomatoes by the project team could be linked to marketing support activities facilitated by the NGO. When the team contacted the NGO at the start of 2005 once funding had been confirmed, it was discovered that the intended collaboration could not proceed because of the NGO's decision to move the horticultural marketing activities to another more distant district. However the project team had already produced a quantity of seed of the resistant tomato varieties and proceeded to market this with collaborating farmers as a means of addressing one aspect of the market. This resulted in further learning. The farmers who came forward to order and pay for the seed were mainly those involved in the NALEP public extension programme which had organised farmers into common interest groups. The farmers associated with the NGO agricultural programmes, being accustomed to a well established pattern handouts of agricultural inputs, were reluctant to purchase the seeds. Encouraged by the responsiveness of farmers to purchasing improved seeds, the team leader formulated a project proposal for funding which incorporated the crop protection aspects of horticultural production with credit for input supply and marketing support. This proposal has been accepted as a candidate for funding by the KAPP programme operating in Homa Bay.

Low value crops - Sorghum

In E Kenya, at the request of Makueni's District Agricultural Office, the team undertook stakeholder survey and workshop in the vicinity of a sorghum processing plant. The owner of the plant had reported problems in finding local sources of sorghum, and it was speculated that local farmers might not be producing for sale to the plant because of crop protection issues. Farmers from four villages in the surrounding areas were interviewed at their farms, and later came to a meeting attended by the owner of the processing plant, grain traders and extension staff to discuss the findings. The farmers (mainly women as sorghum was regarded mainly as a woman's crop) listed pests and diseases as among the constraints to producing more sorghum, but other important ones included labour for bird scaring, low prices and limited utilisation options. The data on prices paid by the owner for sorghum indicated that the while the minimum price for sorghum had not changed since the introduction of the processing plant, the maximum and average price had increased by more than 100% (though other factors may have contributed). This suggested a pattern of opportunistic buying (after good harvests when prices were lowest), which would not have been an incentive to local farmers. Further discussions on patterns of sorghum grain sales during the meeting showed that many of the local farmers were not aware of the higher prices paid by the processing plant owner, and had sold their grain to other local traders at low prices. This highlighted the issue of poor market information in the local area. Farmers also complained on poor seed availability. While the plant processor was not involved in input distribution, this would raise the possibility for contract growing, possibly with integration of crop protection and related production advice. As the case of sorghum and onions in Tanzania, this case illustrated both the importance and market issues, and the complexity of addressing these in a holistic fashion involving crop protection inputs within a short duration project.

In Tanzania there have been two meetings between producers, buyers and others in Central Zone. This initiative has been facilitated by Dr Mbwaga (ARI Ilonga) with a small contribution from this project. There is clearly a commercial industrial demand for sorghum, particularly for brewing, but much of this is currently met by imports from South Africa. A main issue has

been the quality of the sorghum which, due to threshing on the ground, frequently has a lot of stones etc which means the sorghum cannot be processed mechanically. The meetings appear to have made a contribution towards bringing the producers and end-users closer together.

4.1.3 Feedback on Mechanisms for improving Access

CP Catalogue

In SW Kenya the team produced and further improved and distributed a Crop Protection information catalogue as a means for improving access by extension service providers to relevant CP technologies. Feedback on the relevance an usefulness of the catalogue was gathered through 60 questionnaires administered to 8 institutions and farmer representatives. The results indicated a broad measure of satisfaction with the product, although different aspects were emphasised by different stakeholders. For example traders and farmers were mainly concerned about the clarity of language and photographs, as well as adequate descriptions. A number of the stakeholders commented on the need for more detailed information on indigenous CP technologies (i.e. local concoctions).

Table 21: Stakeholder Assessment of catalogue content and language.

Description statements	**Stakeholders**				
	Research officers	**Extension service providers**	**Admin-istrators**	**Traders**	**Farmers**
Description adequate	8	8	2	2	2
Document well organized	2	2	1		
Technologies relevant	3	5	2		
Language is simple and clear	20	5		4	4
Photographs self-explanatory and attract reading	1	5		2	4
Need detailed information of ITK	3	2		3	

With respect to the relevance and uses of the catalogue, a range of potential uses were identified including opportunities for training and sourcing funding support, and for field identification on the other. The latter use is indicative of the general shortage of appropriate information materials on crop pests and diseases in the project area.

Table 22. Stakeholders observations on Relevance and usefulness of the catalogue

Usefulness and relevance	Stakeholders				
	Research officers	Extension service providers	Admin-istrators	Traders	Farmers
Pest / disease identification	3	5	1	2	2
Farmer training	3	5	3	1	
Preparation of extension messages	3	2	1		
Contact addresses for networking	2	4	5	2	
Select technologies for ATIRI funding		3			3
Baseline information for research proposals	5	1	2		1
Identify crop varieties and where to source for them		1	2	1	1
Field handbook		3	2	2	
Reference document	6	4	3		

As a result of this feedback further revisions were made to the Catalogue (see annex 1, document 27). To make the Catalogue more available, the proposal is to prepare an electronic version to be posted on the KARI Kisii website when this becomes operational.

CP Training Manuals

Further positive feedback on the CP training manual produced by the E Kenya team came from the trainees of the Makueni TOT who attended the project review meeting. During the meeting one of the para-extensionists, after being challenged regarding their technical capability by a senior Ministry of Agriculture official present, responded by brandishing the training manual and explaining "now that we have the correct information in a readable format we are equipped to provide accurate training to farmers".

Other learning tools – Central Zone Tanzania

A range of communication methods and tools continue to be used in Central Zone district communication strategies. This was illustrated by feedback from the follow-up survey carried out in September 2005 (see Table 23). The table gives some indication of access to learning tools, but unlike the survey carried out at the end of the first season doesn't provide a more detailed understanding of how the tools have contributed to learning. As reported in the FTR for R8349 farmers demand a mix of learning opportunities and this appears to be central to the strategies employed by all pilot districts. There have been very positive responses from CABI East Africa regarding Swahili leaflets and posters produced by the Central Zone Communications office under this project. The project also collaborated with CPHP project R 8179 to explore how to assess the benefits of farmer exchange visits. This involved farmers from the Singida village going to Mlalai village in Kongwa (where DE trials have been undertaken) and asking farmers to record anything they considered interesting/ useful through

capturing on film (each pair of farmers had a disposal camera, making notes and giving feedback through a video diary).

Table 23: Learning approaches and tools in Central Zone Tanzania: percentage of respondents reporting as a means of accessing information or learning

Learning approach/ tool	Wealth group of respondent			Gender of respondent		Total
	High	Medium	Low	Male	Female	
Leaflets	59	68	75	68	63	66
Seminars	77	48	50	63	52	59
Radio programs	46	36	42	37	44	40
Demo plots	23	29	25	18	37	26
Workshop	36	10	8	24	11	19
Extension workers consultation	9	26	17	18	19	19
Video shows	14	23	17	13	26	19
Field excursion pest &disease monitoring	9	19	8	13	15	14
Through farmer group		19	17	5	22	12
FFS	14	10	8	8	15	11
Other farmers	5	10	17	3	19	9
Notice boards/record keeping books	9	3	25	11	7	9
Posters	14	10		11	8	9
Meetings	5	10	8	13		8
Experimentation by doing	5	7	8	8	4	6
Visiting researchers	5				4	2
No. of respondents	22	31	12	38	27	65

Piloting Dissemination Approaches and Methods – some lessons

The second season of piloting and assessing favoured dissemination approaches and methods was enabled through the 9 month project in all three sites, with differing levels of emphasis, support. This variation provided further opportunities for consolidating the learning about the strengths and weaknesses of the various extension approaches and methods, further conceptual debate and also learning about the importance of M&E.

The E. Kenya team continued to provide limited support to the trainees of the TOT to implement farmer training plans with the aim of generating further learning about the effectiveness of extension approaches and methods. As a result of this support, which included a revised format for reporting, data on the application of the extension approaches and methods was gathered. One very surprising result that was while the reporting guidelines and format, generated with participation from the farmer trainers, clearly defined the extension methods to be compared (barazas, demonstrations, FFS and self-help groups), in all the reported cases from both Mwingi and Makueni Districts only one extension method was used; training of existing self-help groups. It is possible that this method was selected as being the easiest to implement. This idea is supported by feedback from the participating field staff during a survey of their perceptions of the M&E system used that the "facilitation" provided for the training was not fully adequate. A further possibility is that more training was conducted than was actually reported. This idea is supported by at least one instance of knowledge of

training of an FFS using demonstrations coming to light which was not reflected in the training reports.

The SW Kenya experience further underlines the importance of providing adequate support and guidance to enable systematic comparison of different extension approaches and methods. Here the team took the position that it would provide the technical CP training, and leave it to the respective local institutions to support the application of training at field level. Hence the training was provided to public and NGO extension staff expected to covered the three proposed approaches; 1) farmer initiated farmer field schools (to follow on from the researcher initiated FFS of 2004), 2) Farmer to Farmer extension and 3)Focal Area Approach. The two public extension workers expected to train a farmer initiated FFS did not report any training activities, and the assumption was that as no funding was provided no FFS was formed. Of the two NGO staff trained only the front-line worker provided very limited training to farmers, before leaving as his contract ended. The public extension frontline staff responsible for a focal area trained a very large number of farmers, being supported by an ongoing extension programme which had a well developed monitoring and reporting system. The team reached the conclusion that in the absence of additional inputs from the project, the public extension system proved to provide a more sustainable service to farmers than the other pathways.

The results from a second season of piloting extension methods in Kenya raises questions relating to the sustainability of the various extension approaches. On the face of it, when minimal support is provided, use of existing self-help groups would seem to be one of the more sustainable methods. It is also a method that links well with the use of para-extensionists. However, it does raise questions about potential exclusion from extension programmes of some members of the community. To put this concern into perspective however, it was noted that in one of the pilot districts, 80% of the designated extension areas (sub-locations) have no allocated public extension worker. With such a gaping hole in service provision being typical in semi-arid areas, one could argue that any extension approach or method that shows a promise of sustainability is welcome.

Further discussions on the definitions of commonly used terms for extension methods and approaches, and their strengths and weaknesses, took up half a day groupwork in a stakeholder review and lesson learning workshop held in July 2005 which attracted some policy players (see 15). The public extension group provided some very clear definitions of terms used for extension methods and approaches. Each stakeholder group presented their perspectives on the strengths and weaknesses of various methods and approaches, and this was one of the topics of great interest to the public extension managers operating at various levels (from Divisions up to the Ministry Headquarters). Of particular interest was the information which the project had gathered on the cost-effectiveness of the various extension methods and approaches. The project teams were open in sharing that their methodology for making robust comparisons was still being developed, and that the project time-frame was inadequate time for the methods to be further developed at this stage.

Central Zone -The Central zone team carried out a final assessment of the project. The process started by developing statements/criteria, agreeing on measure and developed the following assessment chart. Then, individually, each member made a score against each criteria showing the level of agreement to each statement. The following are the aggregate results.

Table 24: C Tanzania Team's Self-assessment of project impact

	Statement	Strongly disagree	Disagree	Neither	Agree	Strongly agree
1.	The project was formulation in a participatory manner.	0	0	1	6	1
2.	The project was relevant to the needs and priorities of the stakeholders.	0	0	0	6	2
3.	Project objectives were SMARTS.	0	0	1	6	1
4.	Use of multi-stakeholder /multidisciplinary approach was very effective.	0	0	0	1	7
5.	The POA of the project was drawn up in a participatory manner.	0	0	0	6	2
6.	During implementation there was defined. A clear roles and responsibilities for each stakeholder/partner.	0	0	1	3	4
7.	There was a sufficient coordination of the project activities and sharing of information during the project life.	0	0	2	6	0
8.	There was timeliness implementation of project activities.	1	1	2	3	1
9.	Team work spirit was maintained throughout the project period.	0	0	0	5	3
10.	Resources were well managed and used appropriately.	0	0	0	6	2
11.	Project results reflects good value of money.	0	0	1	4	3
12.	There are good prospects for sustainability of the project out comes DADPs, PADEP, TASAF etc)	0	1	0	5	2
13.	Target population have benefited from the project.	0	0	3	3	2
14.	Project duration was sufficient enough to meet present objectives.	1	4	1	2	0
15.	Project area coverage was sufficient enough to produce tangible results.	1	3	1	3	0
16.	Participating organisations have drawn lesson for improving CPP promotion and communication strategies.	0	0	0	4	4
	Total	**3**	**9**	**13**	**69**	**34**

Scores= the number of participants who scored that cell for each statement out of 8 respondents

Generally it can be seen that most respondents were positive about the project performance and implementation and that useful lessons were drawn by participating institutions in the process. However, some participants felt that the project duration was short and covered a limited area. This tends to reflect the on-going issue of some participants wanting to put more emphasis on 'doing' while others stressing the importance of 'learning/ reflecting'.

The policy section 4.2.2 and 4.2.3 provides more information on lessons identified.

4.2 Output 2: Policy lessons and implications identified and availed to influence the formulation and implementation of national agricultural research and extension policies and strategies for Kenya (KAPP) and Tanzania (ASDP)

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Activities	Summary Progress in Two Countries	
	Kenya	**Tanzania:**
2.1 Cross-Site meeting	6 day meeting held involving all three site teams and NRI team involving sharing of lessons, M&E capacity building, development of site workplans, and workshop report ***(1)***.	
2.2 Documentation and sharing of key lessons and policy implications	E. Kenya – emerging lessons stakeholder workshop held, involving farmers and policy makers from research and extension – key results from E. Kenya and highlights from SW Kenya presented and debated – workshop report produced ***(6)***.	'Ideas' paper prepared by INADES ***(13)***
2.3 Final Documentation and publication of lessons and best practice	Analysis and writing up retreat in UK held with representatives from three site times. Included consultation with biometrician and resulted in production of reports for specific activities, outline of a policy influencing strategy for Tanzania and development of a research proposal on Knowledge Management ***(2,3,4,7,8,9,13)***. Kenya – further retreat for refinement of documentation of lessons from project and materials for engaging policy. Tanzania – final project meeting ***(22)*** and policy summary document finalized by INADES and other Central Zone team members ***(13)***	

4.2.1 Cross site meeting

The project built on its understanding from R8349 regarding what constitutes policy lessons and the process of engaging with policy formulation and implementation in the context of thee multi-stakeholder site teams operating at a "sub-national" level. Each team member had a particular understanding of what constitutes policy, and how organisations operating below the national level can effectively engage with policy. These perspectives were explored initially at the cross-site meeting, largely through group work involving the main stakeholder groups represented in each team who for the first time had the opportunity to share their learning as a stakeholder group representing all three sites. During the meeting stakeholder groups undertook a reflective exercise in which they examined their own learning, the evidence for this, contributing factors and outcomes from doing things differently. This exercise served to highlight the diversity of view-points and learning opportunities provided by the project. This raised the challenge of the complexity of documenting this learning in a way that will enable engagement with policy at various stages and levels. Table # illustrates the types of issues identified by the main project stakeholders for Output 4 of R8349, the pre-curser of Output 2 of this project.

What became apparent is that this type of project provides a very useful opportunity for various stakeholders implementing agricultural research and development (in this case in the context of crop protection), to safely explore the learning opportunities in the context of their roles both within their respective organisations. In this sense the project provided an opportunity for each member to take the learning and apply to other opportunities, both for engaging with policy, and more particularly for implementing projects and programmes addressing existing policies relating to agricultural development. The stakeholders representing research, extension and NGOs mainly identified opportunities for improving the implementation of existing policies and programmes. For NRI the learning opportunities were more about the design and implementation of this type of project in the context of working in more than one country at a time when the relevant national policies were being formulated.

A frustration felt by the team related to the fact that key policy players identified to participate in this workshop had been unable to attend due to their busy schedules.

Table 25: Cross-cutting group work at Naivasha Cross-site Workshop (Output 4: M&E, Lesson Learning and Policy Implications)

What are we doing differently since involvement with the project	What factors have contributed to this	What is the evidence that we are doing things differently	What are the outcomes from doing things differently
NGO GROUP			
Strong collaboration with other stakeholders	Sharing common interests on Crop Protection Issues Demonstrating joint efforts	Defined roles and responsibilities of each stakeholder Reports produced jointly – co-authorship	Stakeholders committed to their roles and responsibilities Recognition of each s'holders contribution
Z/RELO			
Drawing on lessons on CRAC relating to CP demand and feedback	Assured facilitation	Reports on CRAC review	Identified gaps to address
Reviewed demand and feedback mechanisms for crop protection	Facilitation, resources, capacity	Report on demand and feedback mechanisms	Improving CRAC role in feedback
Enhanced collaboration in CP information dissemination	Co-operation amongst players	Available posters, leaflets, video tapes, and CDs	Farmers adopted new technology
Better networking	Taking part in PRAs	Demand for extension communication materials	Farmer motivated starts giving feedback
Production of communication materials			Improved adoption
PUBLIC EXTENSION GROUP			
Equipped with new CP technologies and teaching aids and passing them to farmers	Working in a team, mult-disciplinary	Access to new technologies by farmers	Increase in production per acre from CP farmer groups compared with non CP farmer groups
Active and constant collaboration	Resource sharing NALEP approach emphasis	Demonstrations and training in focal area	Farmer adoption of CP technology – e.g. Wagita
Organised extension staff training focused on CP	Involvement in CP project NALEP (GOK)	Training session on CP	Extension staff trained on CP
Follow-up to beneficiaries of CP dissemination activities	Awareness of importance of M&E	Monitoring Questionnaires completed	Relatively effective dissemination pathways identified
Organising school drama competitions	Involvement in the CPP	One school drama competition conducted 133 farmers reached	

RESEARCH GROUP			
Continuous evaluation as an activity	Project set-up	Project reports	More participation by stakeholders
Involvement of all beneficiaries at every stage	Limited resources	Communication tools developed	Enhanced partnerships
NRI team			
More time spent in discussion with colleagues More challenged by multi-level interaction, contracting, reporting	Structure and complexity of the project	# of reports, email communications, meetings and workshops	More positive attitude to what colleagues can contribute, their complementary skills, ideas
Greater appreciation of the importance of "who" in the project process	Observation, interaction within and across projects	Hard communication outputs from two projects within the same country	In future focus more on people and capacity building within project framework.
Fluid process in designing this workshop	Scale and complexity of the project	Getting additional funds will indicate the projects success Likely to be more than one solution as situations are often location specific	Changes at the local and national level
Comparing teamwork at the 2 sites seen the difference	Using an organisation with recognised management skills as the coordinator	Team harmony and performance	Style and quality of the delivery of the outputs.

2.2 Documenting and sharing Key Lessons

Kenya Stakeholder meeting

In July 2005, midway through the 9 month extension period, the two Kenya site teams met up with a range of other invited stakeholders to share their findings in a stakeholder workshop and consider the implications for policy and practice (see 15, appendix 2). Building on the positive experience during March 2005, of using stakeholder groups to discuss these issues, each stakeholder group considered the following points in relation to the project

1. What has worked well – why?
2. What has not worked well - why?
3. What would you suggest could be done differently in future?
4. What would you recommend to ensure these things are done differently, including changes in policy and institutions?
5. What are the implications of what you have learned from this project for your work?

These questions (in addition to specific questions for each group), were considered by five stakeholder groups:-

- Para-extensionists and NGOs involved in agriculture
- Frontline public extension workers within divisions
- District level public extension officers
- Agricultural Researchers
- Nairobi representatives (Ministry of Agriculture and KARI Headquarters)

The group work examples from para-extensionist and Nairobi representatives are illustrative of the policy related outputs from stakeholder engagement in a workshop setting in Kenya. It is clear comparing the two outputs that the para-extension group are concerned about both practical and technical inputs to further equip them for a wider scope of agricultural development work, and at the same time formal recognition to legitimate their work. On the other hand the Nairobi groups concerns centred around sustaining the learning process and linkage between this project and much larger projects with similar focus (NALEP and KAPP). Both groups were able to propose clear recommendations, although the list from the second group was much longer and also included opportunities for this project to learn from the approaches of other projects.

PARA –EXTENTIONISTS (FARMERS) & NGO'S – GROUP-WORK – July 2005 Stakeholder Workshop

1. What worked well?	**Why**
ToT/Farmer-Farmer training's	a) Topics were well covered and understood Training manual provided Work plans were developed Facilitation/logistical support provided
Methods/pathways – Demonstration in built in an existing farmers group	b) All can easily learn/understand (especially illiterate group) Group committee can take responsibility of follow up ensuring adoption
Follow ups/monitoring/logic	c) Kavoi and Ext. Staff visited Para extensionists during implementation
2. What did not work well a) ToT b) Methods: Barazas- due to interjection of CP topic to a big baraza with different agenda c) Follow-up/monitoring/back up support	**Why** a) Confined to few crops and technologies b) Follow-ups from a baraza can hardly be achieved c) Not frequent enough

3. What to do differently in future

a) ToT
   - (i) Increase topics
   - (ii) Increase training duration and especially make training progressive in nature so that skills and knowledge develops.

b) Methods
   - **i)** Provision of information, Ed. & Comm Materials- posters, pamphlets etc
   - **ii)** Provide T. shirts & badges for identity to Para Extensionists.

d) Follow up
   - i) Increase frequency

4. Recommendations

ToT,
- i) Cover both aspects of crop & livestock production
- ii) Issue certificates to Para-Extension.
- iii) Formally introduce Para Extension to public administration.
- iv) For methods and follow-up same suggestions above

5. Implications for our work

a) As farmers
   - i) Increased awareness/knowledge on crop protection
   - ii) Improved seed security
   - iii) Adopted drought escaping crops(sorghum)-improved yields /food security
   - iv) Buying the right agro-chemicals

b) As a Para Extensionists.
   - i) Equipped with knowledge and materials to train farmers
   - ii) Has provided a better link between farmers and extension for technology transfer
   - iii) Has been a good learning/interaction forum for best practice in development work –especially to NGO's

GROUP-WORK – July 2005 Stakeholder Workshop - MOA/KARI HQ/RELO Group

What has worked well	**Why?**
Improved skills and increased capacity for both the public extension and farmers	Training was conducted which involved all the stakeholders in the capacity building
Involvement of farmers in extension (para-extensionists)	There is a shortage and limited coverage of the public extension workers
Triggered the need to compare approaches (test methodologies and pathways for disseminating specific technologies)	different approaches and methodologies used.
Feedback mechanisms have improved –	reports from para-extensionists
Catalogued crop protection technologies and produced manuals	improved access to CP technologies
Planning of the project was done with all the stakeholders	– key stakeholders gave their views
Enabled review of the feedback mechanisms	-in the review the project was able to identify weaknesses
What has not worked so well	**Why**
Focused on crop protection issues and not systems	it also concentrated on a few crops – they did not see the farmer as a system- short duration of the project
They have not separated the approaches and methodologies –	duration of the project
No elaborate M&E – it will be difficult to assess the project at the farm level	The monitoring did not involve all the stakeholders – the project was based on the surveys done earlier
The exit strategy is not clear	– it was an oversight possibly due to short duration
The language used in the pamphlets and manuals	The materials were done for training purposes

Suggestion: what should be done differently

- Look at the farmer as system and include more enterprises
- Separate the approaches and methods
- Clarify exit strategy, that is, how the project will link with NALEP, KAPP, etc
- Have an elaborate PM&E.
- Results to be presented to a wider stakeholder group, e.g. through CRAC
- There is need to enhance capacity for the para-extensionists

Implications

- Multi-disciplinary approaches (need entomologists, agronomists, etc) and link with other projects and be multi-sectoral
- Integrated approach for different enterprises (crops and livestock), look at holistic system
- Importance of joint planning and implementation of projects

Recommendations

- Undertake technology adoption and impact assessment
- Up-scaling, replicating and linking with other projects
- Improve on pathways and feedback mechanisms, e.g. improve on CRACS
- Link with KAPP/NALEP CBOs write proposals to ATIRI (Mwingi, Rachuonyo, Makueni and Homa Bay) and DSU (Makueni, Homa Bay), to upscale the technologies
- The core project teams in the both sites write concept notes/proposals to KAPP for competitive grants - refer advert DN/28th July
- Try the approach adopted by the CP uptake project in NALEP focal areas in Mwingi, Rachuonyo, Homa Bay districts
- NALEP/KAPP learn from the project (CP) especially on testing of methodologies
- Try the approach adopted by the CP uptake project in NALEP focal areas in Mwingi, Rachuonyo, Homabay districts
- Collaborate with KAPP and NALEP PM&E officers in the district and share frameworks with them. NALEP/KAPP learn from the project (CP) especially on testing of methodologies
- The core project teams in the both sites write concept notes/proposals to KAPP for competitive grants - refer advert DN/28th July

What the project can learn from NALEP/KAPP:-

- Multi-disciplinary/multi-sectoral approaches
- Do stakeholder analysis and bring on board the relevant ones at the initial planning
- Involve more stakeholders in the training – to cover the various aspects in the training
- Feedback on emerging issues to the relevant stakeholders
- The CBOs write proposals to ATIRI (Mwingi, Rachuonyo, Makueni and Homabay) and DSU (Makueni, Homabay), to upscale the technologies

Ad Hoc engagement with policy – Kenya

The benefits of involving a range of stakeholders in each project site in action research was that during the normal course of their work the project provided opportunities for reflecting on and engaging with policy issues. Some instances of this by members of the core teams (Box 1) were captured during a project closure meeting held in Naivasha Kenya in late January 2006.

Box 1: Instances of ad hoc Policy engagement from Core Teams in Kenya

1. **Research management:** The new Centre Director at KARI Katumani, on the basis of interaction with the site project leader, expressed the view that this project is important in the context of policy relating to extension and dissemination of KARI research outputs in at least three forums; The CRAC meeting of August 2005, the project review Workshop in Mwingi July 05 and at the Centre Directors' meeting. The comments were made in the context of learning about dissemination pathways and the relation between extension methods and the type of message.

2. Training Materials: Hearing about the project through informal networks, staff from the national centre for crop protection (KARI, NARL) requested to use the TOT CP training manual developed for Eastern Kenya as part of developing a training project in Crop Protection. Staff from the Ministry of Agriculture HQ visiting KARI Katumani used a copy of the same manual to inform a review they were undertaking of research-extension linkages to inform policy on the same.

3. Interest in the CP Catalogue: At an extension stakeholders workshop in SW Kenya the CP catalogue produced by a project stakeholder was used by a literature review team to identify where to go to gather more information on technologies, as part of implementing NALEP's demand driven extension approach. Several organisations have requested copies of the catalogue after hearing about it from colleagues - (Kenya Federation of National Agricultural Producers, CMAD, CARE, and two CBOs).

4. Incorporation of project results into KARI Annual Reports: the project was approved under KARI Katumani's research approval process and as such highlights of its findings are presented in the annual reports, including the 2004 Annual Report under KARI's socio-economics section, the 2005 Annual Report which included highlights from the survey of District Level perspectives on Monitoring and Evaluation and the survey of Divisional Level Extension Service Provider's views on information sources. Similarly in 2005 KARI Kisii reported on experiences with Participatory Monitoring and Evaluation with the specific intention of informing the current emphasis on M&E within KARI which is linked to the KAPP and its emphasis on M&E.

5. RELO input in review of linkage policy: a member of the core team for E Kenya was promoted during the project to work in the Ministry of Agriculture Headquarters. As part of their new work they are involved in the sectoral reform process at national level, with a specific responsibility for reviewing the existing policies for research-extension linkage mechanisms. In undertaking this review they have drawn on the learning gained from the review of CRAC as a linkage and feedback mechanism, and also invited the RELO from the SW Kenya core team to input into this process.

6. Research proposal to KAPP: the site coordinator for SW Kenya, on the basis of their project experiences in Homa Bay with promoting CP technology for vegetables, prepared a development oriented funding proposal to take the work forward. This was approved in principle for funding by the Kenya Agricultural Productivity Project (KAPP).

During this meeting the E Kenya site coordinator produced a report on learning from the project written by a Deputy District Agricultural Officer (Box 2). This case underscores that if provided with learning opportunities and empowered to present evidence, public sector extension managers will use new information to advocate for changes that address their overall development objectives. The stereo-type of a public sector managers pre-occupied by concerns for protecting their professional roles and mandates does not hold in this case.

BOX 2 District Level Perspective on New Extension Policy

Since the project started, a new policy and strategy for agricultural extension in Kenya has been drafted and disseminated. The Deputy DAO for Makueni attended the Naivasha workshop where it was agreed to extend the project to Makueni as an identified KAPP Pilot District for Eastern Kenya. The justification was to enable the project to inform KAPP policy in this District. A training of trainers was implemented in Makueni in April 05 for front line extension and farmer para-extension workers. In January 2006 the Deputy DAO provided feedback on the training provided as a 2 page report which highlighting the lesson learning so far from the project. The following points were emphasised in his report:-

Of the 186 extension units (sub-locations) in the district, only 36 (19%) have extension coverage from public extension – there is a major geographical gap in extension coverage.

The para-extensionists trained in the project TOT "showed that they can actually grasp extension technologies to pass to farmers. This was made even better by the fact that some are members of Farmer Field Schools and also self-help groups. Para-extensionists can effectively pass on technologies to farmers via FFS, Barazas and self-help groups."

"FFS are more effective when the technology takes a season to be evaluated, because they meet regularly for the evaluation."

"Barazas were good for awareness creation, but lack time for in-depth discussions,

Demonstrations, especially when incorporated into FFS, were very effective, especially if the group was 15-20 farmers.

"Existing self-help groups were useful for mobilisation, and if formed for the purpose relevant to the technology covered were a good forum to meet and pass on messages,

Recommendation
The report concluded that the Ministry of Agriculture Strategic Plan 2005-09 had not provided a role for para-extensionists, although it does encouraged the contribution of private extension providers. It recommended that "para-extensionists be formed into viable extension provision groups and get registration and be given specific tasks to accomplish at a fee. They could even come up with proposals of what they would wish to do and given training on this. This would bridge the huge gap caused by having very few extension workers".

The second Naivasha meeting included a self-assessment questionnaire completed by the project stakeholders which explored project's impact on their work. Some of the project teams comments extracted from this exercise are given in Box #. This exercise illustrated clearly that the amount of conscious learning from this type of project did not strictly relate to the amount of time spent on it. Some of the strongest examples of learning and application of the results to work situations came from team members who had spent less than 20% of their time on the project.

Box 3: Testimonies of Project Influence on Work Situations-

"what we do differently"

NGO manager: "Before the project we never used evaluate training to determine the extent to which learning has been effective. Nowadays we ensure that by the end of the training we get feedback from the trainees on effectiveness of learning"

Research Extension Liaison officer: "organised pre-CRAC differently using evidential gaps identified in review of CRAC minutes", "include PM&E in work plan of any project/activity", "using results of lessons learned to improve planning in future".

National extension administrator: "interaction with stakeholders in the agricultural sector was an important aspect of the project – assisted me to look at the role of various stakeholders important to technology development and transfer" "the review is going to be used to improve the effectiveness of CRAC in all KARI centres"

Divisional Extension Manager: "Greater appreciation of the importance of crop protection issues in relation to food security and livelihoods of poor farmers in Mwingi" , "consideration of cost implications of using various dissemination methods – particularly costing of preparation time and materials – this was not being taken into consideration in costing activities before the project".

In Naivasha the teams discussed further how they might engage with policy. As a starting point they brain-stormed their various understandings of what the word "policy" means (Box 4). The teams then gave specific examples of current policy relevant to the project including those relating specifically to; extension reform (Strategy for the Revitalisation of Agriculture, National Agricultural Extension Plan, and MOA Strategic Plan); research reform (KARI formed by Act of Parliament, KARI Strategic Plan, Research and Development Policy); and more general development policies (National Food Policy – Sessional Paper No 2, Economic Recovery Strategy for Wealth and Employment Creation – National Development Plan, PRSP)

Box 4: Kenya team response to the question "What is Policy?"

" a set of laws and regulations to influence change"
" set of rules and regulations - beyond projects, to govern institutions and organisations- how it does everything, management and administration"
"policy is at different levels, international, national, organisations"
" guidelines more than laws"
"binding guidelines to assist organisations in planning activities, projects - from an extension workers perspective"
"policy can also be a strategy"
"policies are guiding principles, instruments, regulations or guidelines to create an enabling environment and create support systems for research and development. Once you have a policy, needs to be translated – can be into legislation, e.g. bio-safety and biotechnology and there is a draft bill on this – based on the principles in the policy."
"policy formulation has a power dimension– balancing interests of various stakeholders and lobbying is key to the policy process"
"Government policy has to be approved by cabinet"
"NGOs have a board of directors who approve policy for the organisation"
"certain policies do not need to go to parliament or cabinet approval – for example the National Research and Extension Policy did not need to go up to cabinet, unlike the NASEP, which will have to go to cabinet to enable regulation of extension services."
"previously never had a policy for agriculture extension, just the ministry operating under the Agriculture Act, no proper supervision, that is where the NAEP came in."

The second question considered was "who contributes to and interprets new policies in agricultural research & development – the key policy players?"

Box 5: Views on Key Policy Players

"Stakeholders: farmers, extension providers, agribusiness, research, universities that do policy research,"
"teams appointed to develop policies such as Agricultural Sector Coordinating Unit-Group ("ASCU")"
" also the international organisations, MDGs, within the region or East African community
" service users should also contribute, i.e. the farmers
"drafting is done by the ASCU – no farmers in it".
"ASCU consults and collects views over 2 years"
"Process of consultation, formulation, further discussion of what is formulated, interpretation"
"National conference agrees the action needed, and work plans drawn up based on these
"Stakeholders interpret policy – e.g. KARI, NGOs, MOA (is a regulator)"
"policy can be driven by technocrats in the ministry"
"What about the legal framework for extension pluralism?
"the Nation Agricultural and Livestock Extension Programme is an implementation framework and could be seed as a legal document"
"NGOs could use the NALEP to develop their extension programme."
"The NASEP will require legal instruments to put it into practice, "
"NALEP is not binding, as no-one can be taken to court unless there is an act of parliament, for example GMO crops were ordered to be destroyed – this did not have legal backing".

The teams next considered how a project like this might influence the policy process (formulation, interpretation and implementation), and this discussion is summarised in Box 6.

Box 6: Views on Influencing the Policy Process

"stakeholders workshops were a starting point, creating awareness on what has been achieved and the recommendations"
"engaging policy players through activities in the pilot areas, linking with KAPP and NALEP in these areas."
"dialogue with those involved at policy level – such as KARI Centre Directors"
"who was involved in formulating the new policy NASEP?"
"senior officers from various ministries, Directors and PSs, KAPP coordinator, NALEP SIDA, KARI Assistant Directors, KENFAP (Umbrella farmer organisation). Then had stakeholders workshops in districts to present the policy – attended by NGOs, other extension providers. Done in the same way KAPP was done."
"so need to influence via KAPP and also the Policy and Agricultural Development Coordination Dept in the Ministry of Agriculture"
"on experience and advice from KARI ways of influencing and informing include very specific document, short enough to read – distribute to individuals"
"Field Days – invite policy makers to come and see to influence them"
"Presentations to KARI management – opportunities to use the various forums"
"Cannot be done in one day, need for a concerted efforts and need for follow up to make sure information has been received"
"policy makers understand figures, this is their language – e.g. policy analysis matrix"
"evidence based practice and policy is currently being emphasised, what types of evidence can this project bring to bear?"

The final step was to consider, in the light of observations made above, what those who had been involved in the project might do in the future to influence the policy process. Key points agreed were:-

Results of potential value and interest were listed as:-

- Evidence from pilot testing of dissemination pathways.

- Review of demand identification and feedback mechanisms (CRAC),
- Data on access mechanisms – to inform the discussion on extension pluralism,
- Crop Protection promotional and training materials – particularly the experience of de-centralised training material production,
- Experience of catalogues - in relation to recent KARI exercise on collection of technologies and KARI Kisii piloting of commercialisation of services
- The M&E experiences of the project

Further discussion on these areas highlighted the teams' views of the strengths and weaknesses of the existing evidence. On the basis of this discussion the E Kenya and SW Kenya teams met separately to discuss what they might focus on in future if resources were available to enable the work to continue. For the short-term, both teams identified a focus on examining further the impact of the project through two further studies. Firstly to gather more evidence on the impact of the project on the stakeholders involved in service review and delivery using a self-assessment questionnaire. Secondly, to further consolidate the evidence base on the piloting of the dissemination pathways through a follow up study of the farm level impact of the activities undertaken. They proposed to meet together, resources permitting, and develop a common framework for further evaluation of the performance at field level of the dissemination pathways piloted of the two seasons by the project teams.

Cross-site documentation and reflection retreat at NRI

During October 2005, a 3 week writing up and reflection retreat was organised which involved each site team sending a representative/s with the main responsibility for documenting the results from each site and thinking about policy engagement. The four specific outputs from this retreat were:-

i) Data processing through discussion with the project biometrician and further analysis,

ii) Reports on the various activities undertaken at each site drafted and exchanged for comments and further editing (see appendix 2),

iii) Policy issues and processes for influencing policy discussed and documented for Central Tanzania (see appendix 2, 13), and

iv) Based on the above, issues requiring further research identified and proposal for further funding drafted for submission to the ESCR/DFID research call of Nov 2005 with a focus on Knowledge Management in Agricultural Research and Development.

Evidence-based Lessons for Improving Farmers' Access to Agricultural Information and Influencing Policy Makers - Experience from Central Tanzania

This section is based on a paper (13) prepared by INADES Formation Tanzania and shared with team members at the NRI retreat and the final project meeting in Dodoma. It focuses particularly on the Tanzanian context

The project draws on findings from the CPP Semi-Arid Review (SAR – 2002) and stakeholders' workshops which confirmed a demand by farming communities for means of addressing CP issues. Agricultural service providers are therefore called upon to improve farmers' access to information, technologies and markets. But communicating knowledge is challenging in semi-arid SA areas because institutions, input supply and markets are less well developed compared to areas with higher agricultural potential. With this background in mind, the CPP in Tanzania focussed on communicating/promoting CP research outputs in Semi-Arid Central Tanzania, by

piloting CP communication strategies at both district and zonal levels. It was implemented via institutional collaboration involving public-private partnership.

After 2 cycles of implementation, some significant project outputs and lessons are emerging on best practices in improving farmers' access to agricultural information, as well as implications for influencing policy makers.

Some of these lessons could feed into the District Agriculture Development Plans (DADPs), while others a more general lessons on agricultural communication.

Objectives

Broadly, the project had dual objectives of short-term up-scaling the uptake of CP information and longer-term institutional/process issues of generating evidence-based lessons to inform policy. Specifically, the objectives were:

- Lesson-learning on improving communication strategies under decentralized agricultural extension systems (at districts' and zonal levels).
- Informing policy formulation and implementation.
- Setting up of effective M&E system for lesson-learning and policy influence, across all levels from village to zone.

The over-arching goal is to promote lesson-learning about how CP promotional and communication strategies could be made more effective for the benefit of small-holder farmers in semi-arid areas.

Emerging Lessons for improving farmers' access to agricultural information, training and products

These are summarised below under each of the four project themes:

i) Methods for updating farmer demand and getting feedback on CP needs documented and assessed

The focus was on piloting communication strategies in the context of a decentralised framework, where districts and zones are now the key levels in agricultural research and extension delivery. This was achieved by looking at how different stakeholders assessed their demand for CP information and what were the incentives for them to provide feedback. Emerging lessons include:

- Need for a participatory, multi-stakeholder approach to communicating CP needs. Participatory approaches assist in establishing effective demand and pro-poor dissemination of agricultural information.

  However, if the poorest of the poor are to be effectively involved in this process, there is a need for correct targeting of such categories of the population. Under the CPP, the survey results showed that the most reached category was the medium wealthy group and not the poorer section.

- Issues of awareness and accessibility are important in making informed decisions about communication needs. *This is important as the extension service delivery undergoes a transition decentralised agricultural service provision from supply-driven to farmer demand-driven service.*

- Since demands for CP information are context-specific, for effectiveness the feedback should also be site-specific. *This is revealed by wide variations in demand-driven CP communication needs identified across the three District under the CPP project, and the consequent strategies and tools adopted.*

  The CP needs range from management of Striga by multiplication an use of resistant sorghum cultivars (in Dodoma district), to cultural practices for management of sorghum smut to control maize stemborer (Dodoma rural and Kongwa), and control of onion, tomato and storage pests by application of agro-chemicals and local botanicals (Kongwa and Singida district).

- Institutional arrangements under decentralised framework could facilitate improved CP communication (public-private collaboration). *The DADPs identify the role of NGOs, CBOs, stockists, research centres and donors in the implementation of development initiatives*. However, for this arrangement to be effective, it needs an operational framework that facilitates institutional capacity building in action-learning manner to make it sustainable. *For example, ZRELO's role in the system needs to be reinforced through facilitating co-ordination and role in inter-institutional linkages, monitoring and evaluation, communication, advocacy and lobbying capacities, and support to the demand-driven approach to decentralised agriculture service provision.*

- There is increasing demand for information on the use and effectiveness of botanicals for CP among farmers. This is due to obvious attributes of botanicals vis-à-vis industrial chemicals. *For example, under the CPP, farmers in Mkoka found the incidence of stalkborer infestation (no. of infested cobs per plot) to be significantly lower in maize plots treated with neem (23 cobs), 'mhunungu' tree (47 cobs), and charcoal ashes (66 cobs), compared to those treated with Diazinon (73 cobs).*

  However, the public sector has not responded readily to this demand due to lack of incentives in terms of economic returns and lack of scientific validation behind the botanicals. Under the DADPs, districts could promote the botanicals by supporting the process of scientific validation in order to provide incentive for the private sector response.

- The dynamic nature of demand for communication strategies needs a flexible approach. E.g. Post-harvest CP issues (such as marketing of onions) emerged as the process of consultation strengthened in the course of project implementation.

- Capacity building is required for the PME system to be participatory and provide the necessary feedback mechanism from farmer groups to VAEO to district level. *Likewise, the PME system could simplified by synchronising it with the Participatory Impact Monitoring (PIM) tools to facilitate development of simple indicators for monitoring by farmers.*

ii) Approaches to improving stakeholders' access to CP research outputs identified

- Development of district communication strategy involving *important* stakeholders could be an effective means of facilitating farmers' access to agricultural information. *But bringing many stakeholders into the process has cost implications*. *This implies a need for a cost-sharing strategy in the service provision. The challenge is how the concept could be mainstreamed*? *With the current approach to performance-based funding of DADPs under the ASDS, and decentralised planning systems, there is an incentive for the districts to pilot such a strategy.*

- Despite the emerging constraints under the decentralised system, use of public extension service is still *an* important source of new CP information to farmers. *However, there are indications that actual practices are more likely to be informed by other sources, for example e.g. from parents.*

- The potential role of ZRELO in facilitating access to research information is paramount. There is a need to improve the capacity of ZRELO in terms of know-how and facilities. *It is also necessary for ZRELO office to acquire a certain degree of autonomy in its functioning, by reviewing the existing systems and structures, its location and role in the entire information/knowledge communication service.*

- Effective mechanisms are needed for making CP information accessible to farmers and service providers, without which it will continue to pile up in research centres.

- Quality control is important for effective use of CP information. Farmers' access is improved if the information presented is cost-effective, of good quality and presented in a user-friendly language and meets local needs.

iii). Methods of delivery of CP information to uptake pathways and farmers piloted

- With reduced central Government's role in providing extension services, there is need for effective and cost-effective ways of delivery of CP information. *The emerging CPP extension model, involving districts' linking with other stakeholders to contribute in facilitating demand-driven extension services to meet district communication strategies has offered one effective way of achieving this need.*
- Targeting farmers' organisations could improve access to CP information and facilitate widespread communication to others. *This underscores the importance of farmers' group strengthening.*

  Communication tools prepared with farmer participation can attract quick responses as it addresses farmers' needs. Also, correct targeting of communication tools (eg. timing of radio programmes) is necessary for effective use by different stakeholders/genders.
- *On the other hand, communication tools that give room for interactive learning are perceived as more useful by farmers. For example, findings from the assessment survey of communication tools conducted in February 2005 indicate that strategies which provide for interactive communication were found to be the most useful tools for learning. These include training sessions, demonstrations and farmer field schools.*

Communication Tool	Awareness	Detailed Learning	Clarification/ Adaptation
Leaflets	X	XX	
Posters	XX	X	
Seminars/Training		XXX	XXX
Demonstrations	X	XXX	XXX
Radio	XXXX	X	
Video	XXX	XX	
Field days	X	X	XXX
Notice Board	XX	X	
Note Books		XX	XX

Source: Assessment of Communication Tools and Approaches – CPP project February 2005

Key: = *= No Contribution*

= XXXX *= High Contribution*

- There is an emerging "zonal strategy", consisting of a set of "service activities" implemented by various stakeholders that responds to district strategies. However, it is challenging to see how the strategy could be sustained given the role so far played by ZRELO in the process.
- Communicating knowledge does not end in a transfer from one person to another, it is a complex process of sharing, learning and improvement by various actors. Farmers do not

simply adopt information ready made, but they filter, adapt and accept it in a range of different ways.

- A successful communication strategy may need to be linked to issues of markets. This is because demand for communication needs is influenced by the market value and demand for a particular product. In this regard, need for value addition through processing was identified as an emerging need. For example, an increase in production of onions in Singida, resulting from increased yield after successful disease control regime under CPP gave rise to increased demand for a better market for the produce.

(iv) Managerial/ organizational lessons

The approach to CP communication promotion used in this project via nter-institutional collaboration involving public-private partnership has revealed the following strong points:

- It supported team working spirit built around complimentarity by drawing on the different competencies available among partner members. Using this type of arrangement, it was been possible to ensure effective, efficient and transparent management of project resources, facilitate capacity building and lesson learning of project partners, maintain constant and inter-active communication among actors.
- It has also helped to change the mindset on the previous ideological differences that characterised the dichotomy between public and private agricultural service provision.

Possible strategies/approaches for influencing policy makers

One of the long-term objectives of CPP is to ensure that key lessons and best practices from the project feed into the policy processes at relevant levels. Involvement of key policy makers and implementers is deemed necessary for scaling up the strategy and institutionalising the process.

⇒ **Why?**

- Tanzania has de-centralised agricultural service provision under LGRP, placing greater responsibilities at district and local (village) levels.
- Need for developing dialogue between lesson learning at field/site level and those implementing and formulating policy at higher levels.
- Use lessons drawn to inform and influence on-going policy making & planning within the districts (DADPs) and zonal levels.
- There is conducive legal framework in the country. Policy makers in Tanzania are now more accommodating to CSOs' involvement, therefore there is need to exploit this opportunity.
- Ensure sustainability, up-scaling and support beyond project life.
- Contribute to ASDP by drawing lessons from the pilot zonal and pilot district communication strategies focusing on CP issues and other information needs.

⇒ **How (Possible methods/approaches)?**

- Forge links with policy makers at District/National levels. E.g. Establish contact with DEDs, DALDOS, Councillors and the ASDP Secretariat. *Currently, policy formulation is mainly top-down, due to lack of demonstrated evidence to influence changes in policy. If policies are to properly address the needs and concerns of the farmers, then sufficient evidence is needed to inform policy process and influence policy making.*
- Use district level forums to participate in district consultation/planning sessions which brings together all stakeholders.
- Strengthen and build the capacity of farmers' organisation to advocate for pro-poor policies.
- Meetings with District level staff and ASDP Co-ordination for exploring possible policy informing lessons, using posters.

- Mainstreaming district CPP strategies into district planning by *encouraging District extension staff to make use of the decentralised district planning processes.*
- Share the accumulated evidence on the project with relevant authorities through various documents produced.
- Support to the role of ZRELO in the whole process of communication and agricultural service provision in the zone.

⇒ **Strengths/Achievements**

- Recognition and commitment by some districts in supporting CP activities, eg. Preparing CP plans in some districts, on-farm seed production included in DADPs in Dodoma rural.
- Possibility of districts accessing funds for CP activities through DADPs.
- Relevance of CPP to ASSP & PADEP (under ASDP) – improving agricultural service provision based on district plans.
- Farmers' participation in M&E process is necessary for empowerment, as well as ensuring its continuity in the aftermath of the project;
- Since improving agricultural communication requires significant financial outlay and commitment, our challenge is 'How to ensure resource availability and continuity?'. Or else, 'Are there cost-effective strategies of communication?';
- Commitment and accountability by major actors in the communication process is important for ensuring efficient communication strategy.

⇒ **Limitations/Constraints**

- Lack of crop protection research capacity based within Central Zone – The zone has no on-station research site representative of maize growing environments in Kongwa, Singida and Iramba ASDP not yet fully operational.
- Limited capacity of ZRELO to undertake advocacy.
- Resource constraints in the districts has in the past curtailed CP plans.
- Limited project coverage for visibility.
- Farmers organisations (networks) not well organised and lacks capacity for advocacy.
- Market demand for the agricultural products may influence the attention and position of policy makers.

⇒ **Challenges**

- Developing effective dialogue with policy makers from lower to higher levels.
- How to align/link with other programmes feeding into ASDP such as PADEP, AMSDP, PIDP, etc.
- Identifying opportunities for aligning with ASDP through DADPs in CPP target districts.
- ZRELO/INADES to explore more about DADPs and identify opportunities for linkage.
- Commitment by all stakeholders to support public-private partnership in supporting agricultural service provision.

Conclusion

⇒ The CPP has managed to pilot some effective methods for improving access to CP information for the benefit of small farmers. However, given the scope and length of the project, it is still questionable, how the lessons drawn could be mainstreamed for wider use.

⇒ More efforts needed to use lessons learnt for informing/influencing policy formulation and implementation process at the district and national levels eg. by influencing district priority setting.

⇒ Building and strengthening linkages with local policy makers (eg. DED, District councillors) is important for uptake.

⇒ Forging stronger links with ASDP and its component projects and explore areas for complimenting and exchange of information & experiences.

⇒ ZRELO office build its capacity to take lead in mainstreaming CP into policy making.

⇒ Forge more linkages for up-scaling and developmental impact beyond project life.

4.3 Output 3: Methods for monitoring and evaluation of agricultural promotion and communication strategies at three project sites in E. Africa assessed and wider lessons relating to M&E for improved organisational learning and evidence based policy identified.

Activities	**Progress in Two Countries**	
	Kenya	**Tanzania**
3.1 M&E capacity building	Capacity building activities form 3 site teams incorporated into Cross-site meeting, including introduction of basic concepts in relation to identified training needs, practical exercises in development of indicators and related data needs, and initial sharing of M&E experiences across 3 site teams ***(1)***.	
3.2 Monitoring and evaluation of promotion/ communication process	E. Kenya – monitoring of implementation of dissemination plans and use of TOT by farmer trainers undertaken ***(7)***. W. Kenya – gathering of data on pilot dissemination using PM&E tools developed ***(9)***.	On-going PM and E system established in phase 1 based on 3 pilot districts **(10)**
3.3 Methodologies (including KPIs) for M&E of agricultural research and extension communications, training and dissemination developed	E. Kenya meeting of core team and farmer trainers to develop M&E framework for pilot dissemination activities ***(3)***. W. Kenya – participatory development with communities of indicators and plans for M&E of dissemination activities ***(9)***.	On-going PM and E from phase 1 **(10)**
3.4 Characterise and review M and E methods at three sites	Field visits by M&E specialist and interviews of site teams to characterise M&E process in E. and S.W. Kenya sites **(16).** Study of perceptions on M&E process from district and community levels in E. Kenya **(17)** and S.W. Kenya ***(11)***.	Field visits by M&E specialist, including capacity guidance/tips on community based PM&E, and interviews of core team to characterise M&E process in Central Tanzania ***(16)***.
3.5 Workshop for sharing of M&E experiences and further analysis	Participation of core teams in Tanzania M&E experience sharing workshop – with four presentations on experiences from E and SW Kenya ***(10)***.	INADES hosted M and E workshop (Morogoro) ***(10)***. Presentations from NGOs and government projects ***(10)***. Presentations from Central Zone team – districts, farmers and project overall ***(10)***.
3.6 Synthesis paper of experiences and lessons on M& E	Draft synthesis paper produced being circulated for comment **(16)**.	

Activities 3.1, 3.2 and 3.3 are subsumed under the reported highlights in the introduction and under output 1. Two main areas of work are reported below; the characterisation of M&E methods at the three sites (3.4), which incorporates the synthesis of experiences and lessons

(3.5) and the highlights from the workshop held in Tanzania at which M&E experiences were shared by stakeholders from within and beyond the project.

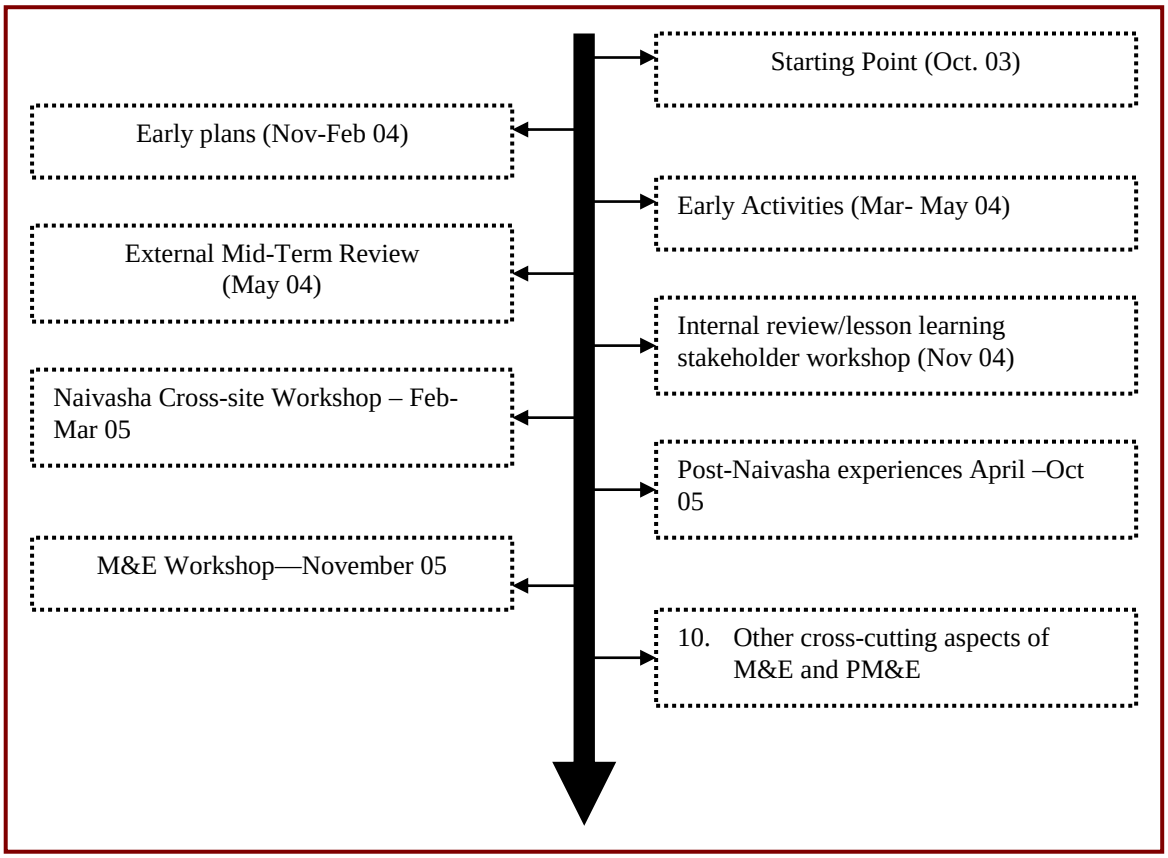
Documentation of M&E and PM&E

The main purpose of the documentation on M&E and PM&E was to identify wider lessons for improving practice, both with respect to organisational learning and the production of evidence based policy and practice. This was with specific emphasis on influencing policy makers and implementers of projects in the agricultural sector, particularly on Crop Protection, with the hope that lessons of use to a wider audience, particularly the development community concerned with M&E practice would be identified. For purposes of documenting M&E practice and processes, the period covered under R8349 ("phase one") was also covered. An M&E specialist was brought into the NRI team shortly in July 2005 (during "phase 2"), having provided a capacity building input during the Naivasha workshop in March 2005 which marked the transition to the second phase. The framework, methodology and some of the main conclusions reached as they relate to the documentation of M&E processes in the three sites are presented below.

The Framework for Documenting the M& E and PM&E Process within the Project

In order to have a common framework to document the process how M&E and PM&E were implemented within the project, two central and interrelated dimensions were considered: i) The general set of events that had happened in common in the life of the project and were more or less the same across the three sites as summarised in Figure 4, and ii) The particulars of events of each site regarding the M&E and PM&E experiences as documented through multi stakeholders point of views and experiences on M&E and PM&E (see appendix 2, especially documents 9,10,11,16,17).

Figure 4: Significant Events relating to M&E within the Project



With the above framework as a background, various tools were used by the M&E specialist to collect the appropriate data for the documentation including: field visits to farmers involved in the three projects sites, interviews with the three main teams implementing the project and other stakeholders, participation in two of the project workshops and, finally, a critical reading of a set of documents produced by the project. The findings are covered in more detail in a draft paper (see 16 appendix 2).

Main Conclusions

Capacity and capacity building: Regarding the initial capacity within the project's three sites, documentation suggests that all three site teams had some capacity in M&E and some had capacity in both M&E and PM&E; the teams were not starting from zero level capacity. The Western Kenya team had M&E resources (framework, M&E paper, training in Logical Framework) but did not recognise these, perhaps because the resources were dispersed and not packed in a structure that would help the team to make more sense of this activity. With regard to capacity in PM&E the team leader had attended training at the start of the project, and after some time the whole team were trained in PM&E and started to practice it. The PM&E training resulted in the team experiencing a mind-set change that led them to appreciate the value not only of the technologies and their dissemination but particularly of the farmers using of technologies. The Eastern Kenya team, with some exposure to participatory research methodologies but not specifically to PM&E took the road of concentring carefully on training project participants on data collection and reporting. The lack of formal training in PM&E affected the implementation of M&E in this site as can be observed in the assessment of the team at the end of the project. They concluded that although the some achievements were met through the approach used, specific parts relating to PM&E were not well developed with farmers. In contrast, the extensionists and para-extensionists (community

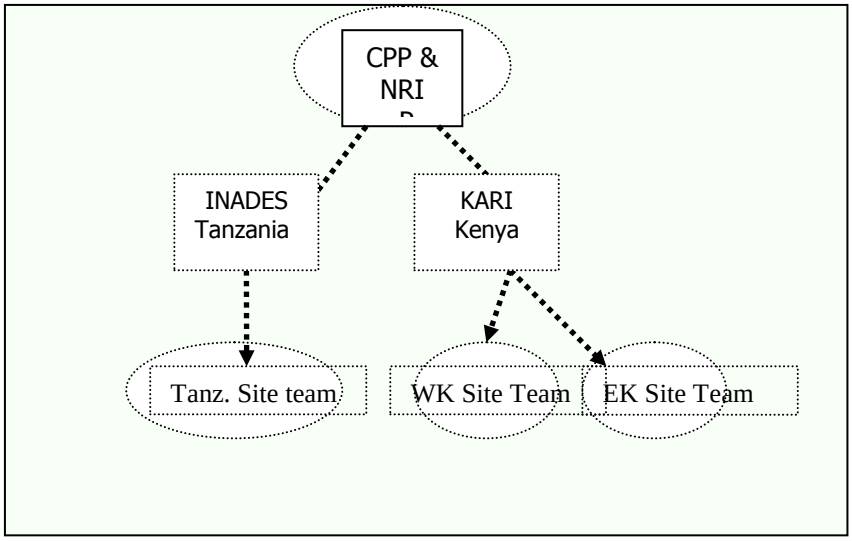
volunteers trained) benefited greatly from the framework for reporting which according to them was clearly articulated. The Tanzanian team's capacity on both M&E and PM&E was present at the beginning of the project at a high level in a few members of the team. In this case the focus was more about reflecting on the gaps and ambiguities the P/M&E system was facing. The team's recognition that the local people's point of view (farmers and extensionists) was significant was the force behind the teams emphasis on PM&E. This was reflected in the handling of indicators, decision making and certain level of empowerment displayed by the farmers. The main challenge remaining is the mainstreaming and scaling up of PM&E as a practice at upstream level, to integrate with Districts and national levels frameworks within Tanzania. For example the coordination of data collection by national institutions on health, education could be coordinated with agriculture at the district levels.

While the teams used their existing capacity fairly effectively, additional capacity building inputs around PM&E were irregular, not systematic and came relatively late during implementation. One reason for this was the way the start of both phases of the project related to seasonal cropping cycles. By the time that the notification of funding approval enabled planning meetings to be held, the agricultural season was already starting in two of the three sites (E Kenya and C. Tanzania). This meant that the main effort was on starting implementation to meet cropping deadlines, with the intention of designing monitoring and evaluation tools later. A further aspect was the open-ended process of activity planning which was undertaken at stakeholder workshops. While the workshops were able to agree on the main scope and objectives of planned activities, there was not adequate time for more detailed planning, which was undertaken by smaller groups. Hence at the level of detailed planning after stakeholder meetings there was a need to bring in PM&E expertise at various levels, requiring a higher level of specialist input and capacity building than anticipated during project design.

Project Level M&E/PM&E Framework: Although many basic elements of a framework on M&E and PM&E (i.e. purpose, scope, performance indicators, data collection, data analysis and reporting) were present in the activities of the three project site teams, they were not formalised into an overall structure that would provide all linkages among across the sites and between the upstream and downstream levels. It was only towards the end of the project that such attempt was done, with a modest success, but with the potential to have a stronger impact.

The issue of a formalised and comprehensive framework linking the upstream and downstream levels of project operations was further complicated through the handling of routine project level M&E on the one hand, and PM&E on the other, as two separate although related activities. First, at the project level and as part of the DFID Crop Protection Programme monitoring activities followed the traditional logical framework approach; monitoring of indicators and reporting (three times a year and annually). In much the same way, a mid term external evaluation of the project performed during the first year of implementation was guided by the logical framework. Second, at the project sites monitoring was performed at two levels. At the local organisational level, the project was monitored as part of the portfolios of each lead institution in charge of co-ordinating project implementation. In the case of Kenya the Kenya Agricultural Research Institute and in Tanzanian the non Governmental Organisation (NGO) INADES, each of which had their own internal project approval, monitoring and reporting mechanisms. At level of detailed implementation, the project and its specific outputs to be achieved were monitored directly by the implementing multi stakeholder teams (researchers, government workers, NGO workers, extensionists and para-extensionists) responsible. It was at the level of the site teams in charge of directly implementing the project that the explicit intention of practicing monitoring in a participatory way resided, although there were some differences in PM&E practice between Kenya and Tanzania. The

mainstreaming of PM&E at the upstream level within the public organisations involved in the project was, and is, one of the main challenges. The diagram below represents these levels.



Instutionalising PM&E – Challenges: The issue of the institutionalisation of PM&E was, and is, inherently interesting because the project experience shows is that the hierarchical structure of many public organisations hinders them away from experimenting with flat and circular structures that have proved effective in some private sector organisations wanting to shift away from hierarchy, top-down decision making and non-participatory approaches. The project experience has shown that PM&E within public agricultural service organisations (research and extension) is talked about as something to be practiced with communities, but hardly institutionalised, particularly with respect to its use in management and decision making within organisations. Project level M&E (including requirements for PM&E) tends to be imposed by funders, and as a result is not very effective for organisational learning. Project level M&E is still the predominant practice. This was illustrated in the three site teams' description of their experience. They were familiar with the logical framework at the beginning of the project and confident with it when asked to participate in its assemblage at the beginning of the second phase

A further area explored was the choice between M&E and PM&E and their location as activities at project-levels or at the organisational level. Hence although currently many agricultural institutions recognise the need for improving their (M&E) systems, and some others go further to endorse PM&E, there is little indication how this might work at the institutional level in terms of management, mainstreaming and decision making. The descriptions of the three site teams suggest that M&E is largely understood as a form of traditional reporting and accountancy practice at the institutional level. Only at project level is there an evident effort to practice M&E and PM&E differently – i.e. as a way of assessing and learning from change in a way that is more inclusive and in tune with the views and aspirations of those most directly affected by interventions.

Data management: The site teams' descriptions of different events illustrate the struggle they had with managing data collection, interpretation, analysis and dissemination of data relating to the wide range of activities undertaken, and that this was a very significant issue for them. In the absence of an overarching framework for PM&E at the start of the project, the teams overcame this difficulty by designing their own forms and checklists. At various stages there were offers of support on all the socio-economic aspects that went beyond the technical aspect of CP. This support came however at various levels of intensity. Initially it was through

proposed formats and offers comment on drafts of recording formats. At a very advance level of implementation of the project the co-opted M&E specialist provided much more hands-on guidance which would have been very useful to have it from the very beginning of the project. The SW Kenya team struggled most with this aspect, as it did not have consistent input from a local socio-economist team member. This teams training from a PM&E specialist quite early on (September 04), addressed the basic principles of outcome mapping, but no support was provided in the design of forms and data management for the ongoing project activities. This suggests that even when there are researchers in a team who are trained in some types of data capture and analysis (e.g. field experiments, PRAs, formal surveys), it would be risky to make assumptions regarding their capacity to undertake more sophisticated PM&E of processes of the type to influence evidence based practice and policy without provision of clear guidance and support. The inclusion of a much stronger specialist PM&E input at the start of the project would have been more appropriate, than bringing in this expertise at a later stage.

Incentives: Although not covered in depth during the documentation process, the issue of incentives when practicing M&E and PM&E was briefly discussed. For example this is something the three sites valued via the exchange visit of international character in which various member of the team were expose to best international practices. They also reported positively on the knowledge gained through all the several reflective workshops the project implemented. This reflects that the sharing and exchange of experiences does act as an incentive to the various levels of project stakeholders, and underlines the importance of making PM&E as inclusive as is practical. For example when farmers are invited to participate in workshops and make presentations alongside other stakeholders, they are empowered and this acts as an incentive for them to gather and process information.

BOX #: MAIN LESSONS LEARNT AROUND THE IMPLEMENTATION OF M&E AND PM&E

- Capacity building inputs on M&E and PM&E within the project although proficient were irregular and not systematic. The resulting impression is that there was not a proper tailoring of inputs to the specific needs of the three site teams and the various stakeholders within them. The major emphasis on training came, for example, towards the middle of the phase one instead of towards the very beginning. A better planning strategy of training from the very beginning of the project would have guaranteed a higher understanding of M&E and PM&E activities and therefore a higher impact on the way learning happens and is practiced in this type of action-learning project.

- Aside from the logical framework, the project lacked of a comprehensive and systematic framework for M&E and PM&E at project level. A framework[2] by the project manager was offered to the Kenyan and Tanzanian sites, but its focus was mainly in the outputs of the project sites and did not cover the cross-site aspects. A cross-site framework was attempted at the commencement of the second phase, but by this time there was limited time for it to impact on project-level learning and exchange of ideas which happened in a rich way only at the end of the phase one.

- Research programmes committed to poverty alleviation need more sensitivity towards the seasonal calendars of the farmers that may not mesh with donor funding calendars. Farming seasons depend on the weather and donor funding is annual; creating a serious clash of time rhythm. The delays during both phases affected not only the expectation of farmers participating, but also did not allowing sufficient time for the design and planning of PM&E activities at key levels.

- The collection, interpretation, analysis, reporting and dissemination of data as part of either monitoring or participatory monitoring is an activity that requires a minimum level of technical capacity, particularly on social science aspects such as knowledge gained, empowerment, gender

[2] Planning, Monitoring Evaluation and Documentation of Dissemination Effectiveness and the Lessons Learning Process: Notes, Frameworks and Instruments. Alistair Sutherland, NRI, Nov 2004.

participation and poverty issues. Implementers design their own forms and checklists but in some occasions where guidance is not available or requested these lack some basic principles. Throughout the project there was a struggle with the data collection and analysis, with negative consequences on reporting and the production of adequate evidence for professional practice and policy. In the context of M&E and PM&E the data collection, interpretation, analysis, reporting and dissemination is more important than the design of indicators. However the design of indicators is emphasised in the current literature on M&E, often to the neglect of activities the former.

- The project has an outstanding performance in the production of documents, but many of them, especially the ones documenting workshops suggest limited analytical and critical capacity. They lack also abstracts that summarize the most important points of each event. Documentation of processes in the context of action learning projects has to be understood as different from mere description. The production of documents is a task that deserves critical re-thinking since for many audiences a project is just what the documents say about it.

- The last significant lesson in the context of M&E and PM&E relates to the linkages among and in between levels and sites. This is in fact the biggest challenge in terms of M&E and PM&E for many projects and programmes currently. As it was mentioned earlier, the M&E and PM&E activities were focused mainly on the achievement of the project outputs at each site and only towards the end was there an attempt to have a cross and multi site M&E and P&ME framework. The result was different groupings of data on similar topics which were quite challenging to integrate. M&E was applied to the achievement of the outputs from a very upstream level, as part of accountability to project and programme managers following the logical framework. PM&E was applied at the downstream level with all types of participatory tools but with modest mainstreaming within the public agricultural institutions. If the project had tried to link these elements earlier this would have better equipped it to advance results very much needed for many public institutions that are decentralising their agricultural services.

Workshop on M&E and PM&E: Highlights – Morogoro, Tanzania

With the aim to enable sharing experiences of undertaking M&E with the three site teams as well as in other similar agricultural projects in Tanzania, the project organised a two day workshop in November 2005.[3]

Specific objectives of the workshop included i) a broad characterization of the scope of M&E undertaking by the participant projects; ii) identifying common challenges faced in the design and implementation of M&E in the context of decentralisation; iii) sharing examples of practical solution to common challenges; and, iv) identification of gaps/areas of M&E requiring improvement. The text[4] documenting the workshop addresses the following findings:

Scope: The scope of M&E within the three sites showed mainly three strands as they related to stakeholders. First, for the farmers and extensionists, monitoring and reporting of communication strategies which were implemented took place mainly at the district and community levels. Second, at the level of the sites, farmers and extensionists tried to mainstream, continuously, the implementation of the project PM&E at higher levels (i.e. institutional). However, this was not fully successful. Third, the team sites under the guidance of NRI struggled to develop mechanisms for the identification of the main results (outputs and outcomes) relating to the researchable aspects of the project, including the lessons and evidence for policy engagement.

[3] The workshop that was originally scheduled in September 2005 was postponed till November 05 due to a serious car accident of one the consultants responsible for it while collecting M&E data in Tanzania in August 2005.

[4] Reflective Workshop on Processes of Monitoring & Evaluation for Improved Agricultural Service Provision, 18-19 November 2005 at National Conference Centre, Muslim University, Morogoro, Tanzania.

Regarding the scope, the projects represented at the workshop illustrated a varied range of M&E approaches and frameworks prevailing. Common to all was the orientation towards tracking results with the respective use of performance indicators. In most cases the scope of M&E was determined by project deliverables, with apparently limited emphasis on internal operations and learning. This was sharply in contrast with the CPP project where learning was a pervasive thread through all the activities not only regarding M&E but others.

Challenges: One of the main challenges identified related to the limited understanding of the M&E concepts, frameworks and methods at the district level and below. This was also true for the research community, which has to operate at local levels. Another significant challenge reported by various stakeholders was the design and use of standard reporting formats and the selection of appropriate indicators. The extent to which the M&E challenges had been considered in relation to new institutional arrangements for M&E within the decentralisation movement in Tanzania was, however, not explored due to time limitations.

The reports of practice by the projects represented suggests that their strategies to address the challenges identified during the workshop were not well documented in their reports and presentations. However, in the discussions during the workshop some issues regarding strategies were suggested. In the absence of frameworks and methods, projects developed their own tools (formats to collect data) and indicators. Meanwhile larger program and donor concerns with accountability require from all implementers the use of the logical framework as a way to guarantee that they are planning and monitoring appropriately. This is described in detail in the project accounts of their M&E practice.

Challenges, which were apparently not addressed, were the reported lack of co-ordination of M&E activities at the district level in Tanzania and the development of appropriate indicators. The later point had direct implications on how participatory the elaboration of indicators could be.

Gaps: The workshop report mentions various areas and gaps, which need attention. Amongst them the most significant ones identified in stakeholder groups were:-

- The setting of reliable indicators and in particular in the case of the NGOs, the setting of impact indicators.
- Capacity building in M&E, as it relates to concepts and method, was also mentioned as a common gap among almost all stakeholders besides the NGOs and the policy stakeholders who expressed more satisfaction about this aspect.
- Reporting formats was an area of concern mainly for the public extensionists and farmers.
- Incentives, roles, reporting systems, links to planning and the setting up of M&E systems were listed issues related to the institutionalisation of M&E and PM&E and were identified by researchers, extensionists, and NGOs.

5.0 Contribution of Outputs to developmental impact

In many sub-Saharan African countries worsening poverty is closely linked to low levels of agricultural productivity, stagnating or declining agricultural production per capita, increasing food insecurity and declining labour productivity, to which HIV/AIDS is a major contributory factor. Poverty remains a predominantly rural phenomenon, with much of the burden of production falling on women, the elderly and increasingly on children. Agriculture underpins most rural livelihoods and national economies. In the medium term, enhancing agricultural growth and productivity are key to a viable and widely applicable poverty reduction strategy.

Improving access to new research outputs and other sources of knowledge is important in this context because of the widening "knowledge gap" between richer and poorer countries. The past contribution of agricultural knowledge to development has been well documented through many accounts of the Green Revolution. The more diverse and complex farming contexts of Africa present a different challenge, suggesting a need for acquisition, sharing and application of knowledge to address more localized problems and opportunities including the specific needs of resource-poor farmers. This requires institutions, systems and processes that go far beyond those currently in place, hence the focus in this project to learn lessons about developing local and intermediate level organisations and methodologies.

The project outputs relate to the important context of agricultural service delivery to widely scattered smallholders in semi-arid areas of East Africa. The multi-agency teams at the three sites went through a process of learning by doing and reflecting. Their focus, in relation to crop protection, was on demand identification and feedback mechanisms, access mechanisms and preferences, promotion and delivery mechanisms, monitoring and evaluation and engaging with policy. While time and resources were not available for a full assessment of the projects contribution to development, preliminary findings suggest the following contributions:-

- Raised awareness regarding the importance of crop protection to farmers among the various extension providers and also the participating farmers.

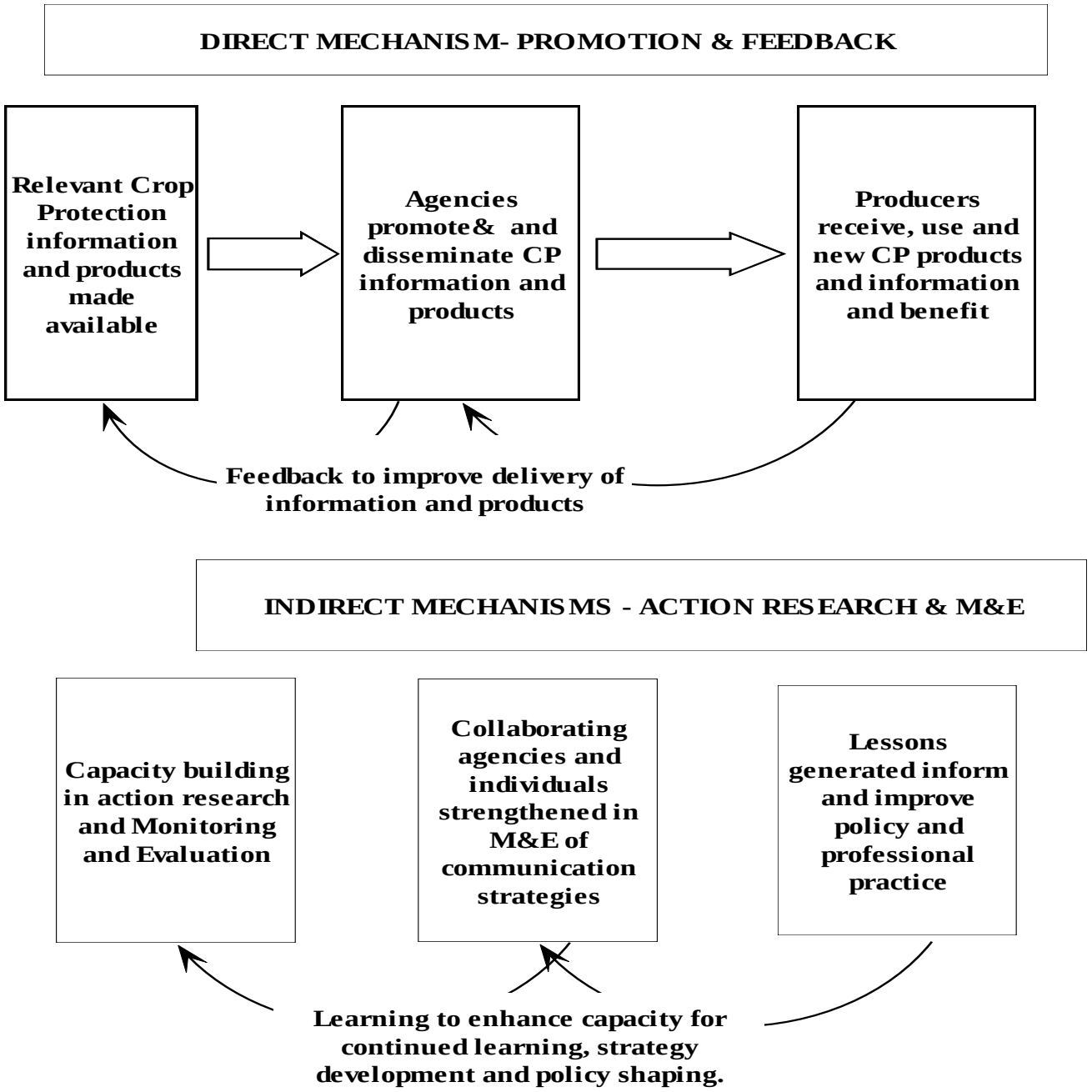
- A strengthened evidence base for reviewing existing policies and institutional mechanisms relating to the national agricultural research and extension systems of Kenya and Tanzania.

- Identification of some methods for exploring and evaluating institutional mechanisms and approaches for agricultural service delivery at the "meso" level, and the opportunities and challenges for impact through improved capacity building at this level,

- A modest contribution to capacity development for action research and for crop protection training and information development and management,

- Identification of a key researchable area of strategic importance – the process of agricultural knowledge management. The response of an anonymous reviewer to the ESRC research proposal submitted by members of the project team noted *"this is a subject on which there is a dearth of reliable information. The information from this work should be of critical importance to improving the delivery of needed services to the poor - not only in the areas surveyed but more generally in southern and eastern Africa."*

Figure 10 RESULTS CHAINS OF DEVELOPMENTAL IMPACT: DIRECT AND INDIRECT



The envisaged increased intensity of strategic engagement with policy makers was less than hoped for, further highlighting the challenges of implementing this type of project within a restricted time frame. Further, the types of skills and strategies required for policy engagement, along with the partnerships needed to achieve this, were, on further reflection, not fully mobilized by the project. For example the NGO partners selected for their record in field implementation in Kenya did not have a strong track record in policy engagement. In Tanzania, the selected NGO had a strong track record in policy engagement, and because of this also became overloaded with research projects linked to policy, to the point where its

capacity and resources for processing the information and bringing it to bear on the policy process were overstretched within the limited time available for this.

On the positive side, the project enabled the formation of useful alliances and partnerships which provide a strong platform for further work in this area, both in terms of scaling up the positive experiences, and undertaking further research into the more challenging areas of agricultural knowledge management.

The key researchable questions identified were:-

1. What is the impact of decentralisation policies on the ability of meso-level service providers and poor households to access agricultural advice and integrate it into their farming systems?

2. In the setting of a plurality of service providers what are the emerging "rules of the game" with respect to agricultural information and advice "markets" and the implications for knowledge flows, access, and responsiveness to the situation of the poor?

3. In the context of trends in agricultural advisory services and evidence-based decision making, how do the newer approaches for local-level agricultural knowledge sharing compare in their performance, cost-effectiveness, inclusiveness and sustainability (including empowerment and capacity building of field-based extension workers and community volunteers)?

4. In the context of widening options for "cash-poor" households via initiatives to share and up-scale indigenous agricultural knowledge, what knowledge validation mechanisms are both sustainable and acceptable to the key stakeholders?

5. In the context of organisational learning and public accountability, what internal planning, monitoring and evaluation (PM&E) mechanisms can: a) best enable meso-level agricultural service providers to address service quality, relevance and sustainability and b) more accurately link outputs and outcomes at meso-level to national M&E frameworks linked to poverty and the millennium development goals (MDGs)?

These questions are inter-related, and each forms a significant area of what is a largely under-researched area of strategic importance for impacting poverty through improved agricultural service provision. This project provided the basis for identifying such areas which in itself is a significant contribution to the development research agenda.

7.0 Appendices

7. 1. Workplans from Site Teams

7.1.1 WORKPLAN – EASTERN KENYA

ACTIVITY	AIM	HOW	WHO	WHEN	EPECTED ACHIEVEMENTG/ OUTCOME	INDICATORS OF ACHIEVEDMENT	HOW TO MEASURE AND REPORT
1.1.1D/DAO/Kavoi	To both the capacity of extension and Para Extension	ToT for extension service producers	D/DAO- Machakos	3rd WK of March 05	17 Extension providers trained on selected C.P technologies	1 ToT workshop p held No of trainees (M/F)	ToT workshop proceedings (Forms B/D/A
1.1.2 To disseminate C.P Technologies through piloting 4 selected pathways	Pilot 4 selected dissemination pathways -FFS -Barazas Demonstrations Para Extensionists	Implement individual ToT action plans	12 Trainers Extension staff Para Extension	By July 05	Selected C.P technologies disseminated to farmers	No. Of C.P to Technologies dissemination No. Farmers trained (M/F)	Trainer report
1.1.3. Mwingi	To plan of 2nd phase of activities (Mwingi)	Hold a planning meeting for 2nd phase –2 days	Implementers of 1st phase of C.P Project	March 05	2nd phase action plan developed	No of individual trainers w/plan developed	Proceedings of the meeting
1.1.4 RELO (HQT)	O give feedback to CRAC with a view of improving CRAC as a feedback mechanisms	To present review recommendation to CRAC & follow-up their implementation	RELO (HQT)	Next CRAC Meeting -KARI-Katumani	Feedback mechanisms on research outputs & Information strengthened	Review report presented to CRAC & adopted	CRAC meetings proceedings
1.1.5. AC.P. Project Co-coordinator	To improve access to C.P researched output & information to extension service providers	Finalise inventory on C.P research output	Project Coordinator	July 05	Inventory completed & disseminated (Report /Booklet	No of people providing feedback	

1.2.1 C.P. Project Coordinator	To assess C.P linkage between increase in demand for C.P output due to processing & value addition	Evaluation demand triggered by processing & value addition of traditional feed crop	D/DAO-Makueni C.P. project Coordinator	June.05	Link between C.P output demand & value addition evaluated	Increased demand for C .P output	Evaluation report
2.2.1 D/DAO/DCO+DAED	To supervise & provide backstopping to trainers	Technical backstopping by Div+District staff through field visits	DAEO, D/DAO,F.S.O/wk) DCO (Makueni DAEO,DCO(Mwingi)	April-pJuly.05	Technical know how of trainers strengthened	Increased skills in farmers training	Data collection to through focused groups discussions
2.2.2 C.P Project Coordinator	To asses the effectiveness of different pathways	Post-season evaluation in dissemination & uptake payways	C.P. Project team (Mwingi/Makueni)	July-Aug.05	Cost effectiveness of different pathways evaluated	No of pathways evaluated	Report published
2.5.1 C.P. Project Coordinator	To share lesion learned with key stakeholders	Hold stakeholder W/shop	C.P. project coordinator	Dec.05	Lesson learned shared with stakeholders & policy makers	P.Makers invited stakeholders W/shop held and participating	W/shop proceedings
2.5.2. C.P. Project Coordinator	To review and document findings and share with key stakeholder	Hold final stakeholders dissemination W/shop	-do-		-do-	Final W/shop held	W/Shop proceeding

7.1.2 WORKPLAN – SOUTH WESTERN KENYA

ACTIVITY	AIM	HOW	WHO	WHEN	EPECTED ACHIEVEMENTG/ OUTCOME	INDICATORS OF ACHIEVEDMENT	HOW TO MEASURE AND REPORT
1.1 ToT Training	Capacity building for sustainability enhanced	1 day residential training	KARI/NGO (C-MAD)	March 05	Enhanced capacity in ToT in CPP. Curriculum developed Improved feed back mechanisms	No of trained ToT by gender -Pre/Post evaluation (%knowledge gained)	Training report Workshop reports
1.1.2 Testing & Evaluation of feedback mechanisms	-To improve feedback mechanisms (CRAC & CTC -To give feedback report on RREAC review	Hold workshops in view of DS suggested in review	RELO	April,May,June,05	Effective pathway identified	No of SMS attending No of quality report No of S/H represented	1. Questionnaire 2. Checklist 3. Report
1.1.3. Testing and monitoring of pathways	To identify effective pathways	Pilot testing 3 pathways	KARI/MoA/C-MAD)	March-Aug.05	Enhanced assess to CPP	No of farmer practicing CP techs No of farmer competent in CP technologies	Feedback reports from users Updated catalogue
1.1.4 Updating of catalogue	Improve content and presentation	Collect more C.P. information from other sources	KARI	March-June.05	Consumption of CP outputs enhanced	No of S/H demanding and accessing catalogue	Records sheets
1.2.0 Linking & Promotional strategies to marketing	To increase demand of C.P output	Pilot activities in horticulture linked with CARE H/B on I.G.A	KARI/CARE/MoA	Ma.Aug.05	PM&E indicators developed	No of farmers using CP products No of CP products used	
2.1.1 Feedback Mechanisms	Develop indicator s for with other staff monitoring	Stakeholder workshop	RELO	March.,05	PM&E indicators developed	No of indicators developed No of S/H involved	Workshop report

2.1.2 Training of ToTs	-do-	Training workshop	KARI/MoA/C-MAD	Mazrch,05	PM&E indicators developed	No of indicator developed for assessment	Training report
2.1.3. Evaluation of pathways	Develop indicators with participating farmers	Focussed G/P discussion at pilot site visual tools	KARI/MoA/C-MD, CARE Farmers	March	Cost effectiveness of different pathways evaluated	No of indicator developed for assessment	Report

7.1.3 WORKPLAN – Central Zone TANZANIA PHASE II

OUTPUT 1 Agricultural communication and research promotional strategies to meet farmers CP needs for semi-arid parts of Tanzania and Kenya further developed, evaluated and validated

ACTIVITY	AIM	HOW	WHO	WHEN	EXPECTED ACHIEVEMENTS/ OUTCOMES	INDICATORS OF ACHIEVEDMENT	HOW TO MEASURE AND REPORT
1.1.1 Improve zonal strategy	Improving & validating strategies	Identification of CP communications needs through responding to district demands -Collection of information -Choosing communication tools - Preparation -Multiplication -Dissemination -PM &E	ZRELO ZILO ZCO	April-Dec.05	a)More effective delivery of CP information & technologies b) Increased stakeholder creativity addressing CP communication c) Increased awareness of CP information through CP tools d) Improved capacity of ZRELO to engage with a wider range of stakeholders	a) Reduction in units cost of communication methods New feedback methods eg postcards from radio listeners b) At least one novel method for CP communication used at every level i.e group, village, district zone. c) Knowledge of farmers in target group increased with regard to CP based on specific questions Qualitative assessment of ZRELOs office capacity at all stages of communication process before /after	a)Use of postcard -X sectional survey b) Reports from project partners c) X-sectional survey d) Qualitative assessment of ZRELO'S Office perceptions of their capacity before /after

1.1.2 Improve district strategies: a) Singida b) Dodoma c) Kongwa	Improving & validating strategies	Identification of CP needs from farmers and other zonal stakeholders through sensitisation, training, and farmers experimentation/ research. Research on ITK and identification of pests e.g. mkeki and its control PM &E linking farmers to other s/holder	DSMSCP- DSMS statistics VAEOS	April-Dec.05	Increased capacity building at district level ,for CP communication e.g improved access to internet; access to expert advice.. Increased awareness understanding and capacity to practice better CP Management by farmers Districts contribute towards CP communication strategies	Extension staff capacity improved through better communication and increased access to CP knowledge and skills Farmer groups with better communication and improved access to CP knowledge and skills (Ref to indicators for zone) At least 1 district contributes to CP communication strategies	X- sectional survey
1.1.3 Groups strengthening Linking farmers groups with other stokeholds	Farmersto exercise greater influence on D/Z CPCS	-Training - Exchange visits -Networking	- INADES,DSMS,ZRELO	April-Dec.05	CP decision at District & Zonal levels responding to farmer needs	Relevance of district –Zonal strategies to farmers	X sectional survey

1.2 Linking CP dissemination to market opportunities	Increase demand for CP information & products	Link producers to end users -Broadcast marketing success stories in the radio (linked to CPHP S.H Project)	Ilonga -INADES -DSMS -ZCO	April End of March-April	Improved communication and hence product quality to meet end users needs Awareness raised Sorghum) Improved communication and hence market opportunities to meet farmers' needs (maize and onions)	-Agreement between farmers & users -Quality product supplied? -Meeting between farmers, traders, blockers - Radio programmes informing stakeholders about market needs	Meeting report -X sectional survey report

OUTPUT 2 Policy lessons and implications identified and availed to influence the formulation and implementation of national agricultural research and extension strategies for Tanzania (ASDP)

ACTIVITY	**AIM**	**HOW**	**WHO**	**WHEN**	**EPECTED ACHIEVEMENT/ OUTCOME**	**INDICATORS OF ACHIEVEDMENT**	**HOW TO MEASURE AND REPORT**
2.1. M&E capacity building W/shop							
2.2 Methodology for M&E	Track/measure CP control approach/methodology/tool in order to assess effectiveness of district and zonal communication strategies	By piloting PM&E	ZRELO,/ZILO DSMS statistics VAEOs farmers INADES NRI	April-Dec 05	New ideas on PM&E implementation for agric comm. strategies identified	At least 1 new idea identified shared at village, district and zonal levels	To be developed

2.3 Monitoring evaluation (M&E) of process	Appropriate to meet the needs of farmer & other S/holders	By capacity building of actor at all level	ZRELO,/ZILO DSMS statistics VAEOs farmers INADES NRI	April-Dec 05	M&E systems more participatory & effective	Farmers and other stakeholders expectation to be in harmony with programme Increased number of demands on CP information and products from farmers Increased flow a CP materials and information from district extension	Number of CP information flowing Farmer assessment survey
2.4 Cross site meeting	To understand how the process worked	By operational sing PM & E system	ZILO ZRELO	-Sep 05	Increased understanding and sharing	Good PM and E practices identified	Workshop analysis
2.5 Documentation & sharing of key lessons & hence improvement	Sharing & learning across site	Meeting	TEAM	Sep 05	Contribute to national & local policy implementation of agric service delivery	Commitment by policy implementers	Resource allocated to zonal & district strategies
2.6 Documentation & publication	To document and publish in order to share lessons & practices To influence policy to appropriate CP com. Strategies	Writing document Engage with policy makers. Including lobbying Key s/holders e.g.ASSP	Team representatives	.Oct – Nov 05 Aug-Nov 05	Policy makers and implementers informed about project outcomes and lessons	Quality publications Participate and share project findings in at least one appropriate forum	Stakeholders assessment of project outcomes eg through documents

Appendix 2

R8428: REPORTS & PUBLICATIONS PRODUCED – April 2005 to January 2006
CROSS-SITE REPORTS & PAPERS
1. R. Lamboll, A. Sutherland and C. Moreno (eds.) (2005) Report on Semi-Arid Crop Protection Promotion Project: Cross-Site Phase 1 Review And Phase 2 Planning Workshop –27 Feb to 5th March 2005. pp 103.
10. A Sutherland (ed) (2005) Reflective Workshop on Processes of Monitoring & Evaluation for improved Agricultural Service Provision 18-19 November 2005 at National Conference Centre, Muslim University, Morogoro, Tanzania pp 96
16. Moreno C. (2006)– Documenting the (Participatory) Monitoring & Evaluation "Story" In a Crop Protection Project In Three Semi-Arid Sites of Kenya and Tanzania - Draft Paper.
EASTERN KENYA REPORTS & PAPERS
2. J. Kavoi (2005) Proceedings of a Training of Trainers' Workshop Held In Emali, Makueni District On 5th To 8th April 2005 pp 25
3. J. Kavoi (2005) Proceedings of the Trainers' Review Workshop 29th -31st March 2005, Syungome Guest House, Mwingi Town pp 14
4. Bett, C. and Kavoi, J.(2006) Impact of Sorghum Processing Plant on Sorghum Production in Kasikeu Division of Makueni District, September, 2005 pp 7
5. A Sutherland (July 2005) Report on Outputs from TOT held in Mwingi and Action Plans Arising – prepared for pp 5
6. J Kavoi, A. Biegon and A. Sutherland (eds) (2005) Report on Promotion And Uptake Of Crop Protection Technologies Project Key Stakeholders Workshop; Mwingi Cottage Hotel, 25-28th July, 2005 pp57.
7. Kavoi, *J.* (2005) Summary Report of farmer training in Makueni District Season Two, 2005 pp 5
12. Kavoi, J. (2005) Summary Report of farmer training in Mwingi District Season Two, 2005 pp 5
14. Ndegwa, R.
15. Kavoi, J, Beigon, P and Sutherland A (eds) Key Stakeholders Workshop Proceedings – Workshop Report, July 25-28th Mwingi Cottage Hotel. Pp 57.
17. Bett, C and Kavoi, J (2006) Experiences of Monitoring and Evaluation of project activities in Semi-arid Eastern Kenya - the Case of Mwingi and Makueni Districts pp. 12
18. Kavoi, J (2006) Development of Appropriate Strategies for Improved Agricultural Technology Dissemination and Uptake: Lesson Learning on Policy Issues that Influence Technology Dissemination and Adoption in Semi-Arid Eastern Kenya and Documentation of Cost-effectiveness of Different Technology Dissemination and Uptake Methods
SOUTH-WESTERN KENYA REPORTS & PAPERS
8. M. N. Makelo (2005) Assessment Of Crop Protection Catalogue By Stakeholders In The Semi-Arid Areas Of Western Kenya pp.
9. J.O. Ogecha and M.N. Makelo (2005) Report On Capacity Building In Participatory Monitoring & Evaluation Kisii –Kari pp. 18
11. Owili O. L. M and Bosire, G. (2005) Stakeholders Perspectives on the Monitoring And Evaluation Process South Western Kenya – A Case Study Of Crop Promotion And Protection (Cpp) Project Implemented In Homa-Bay And Rachuonyo Districts, Nyanza, Province, Kenya. Report pp. 16
19. J.O. Ogecha and M.N. Makelo (2006) Promotion Strategies Of Crop Protection In Semi-Arid Western Kenya - Report Of Second Season Activities
26. Ogecha, J.O., Makelo, M. and Makini, F. (2005) Report on Training of Trainers Workshop- Updating Crop Protection Knowledge and Skills, Kisii. Pp
27. M. Nyangwara, M. Makelo (2005) Catalogue of Crop Protection Research Information for the Semi-Arid areas of Western Kenya (Revised and updated version).
CENTRAL TANZANIA REPORTS & PAPERS

13. Katunzi, A (2005) Evidence-based Lessons for Improving Farmers' Access to Agricultural Information and Influencing Policy Makers - Experience from CPP Project in Central Tanzania pp 7
20. Mika, J (2005) Report on a Workshop on Onion Marketing, Veta, 23 September 2005. pp 43
21. . Mika, J (2005) Warsha ya Masoko ya Vitungu (Swahili Version of report 20)pp 33
22. *A. Katunzi and P. Lameck* (2006) Report on CPP Project Closing Meeting, *18th February 2006, INADES pp 7*
23. Mwanga J & Lameck, P. (2005) Comparative Analysis of how Public Service Providers (PSPs) and Farmers Centered Organizations (FCOs) work with farmers Semiarid Central in Tanzania (With post harvest focus): Case study, pp 40
24. Riches, C. (2005) Access by District Subject Matter Specialists to information – Meeting Report Sept 2005
25. Mwanga, J, Katunzi, A, Tungaraza, S, Sakwera, L, Ntumbula, W, Semwaiko, J and Lamboll, R (2005) How Knowledge Acquired by Target Groups has been used in Central Semi-Arid Tanzania: Field Report on Follow-up Survey. Draft Report.

Biometricians Signature

The projects named biometrician must sign off the Final Technical Report before it is submitted to CPP. This can either be done by the projects named biometrician signing in the space provided below, or by a letter or email from the named biometrician accompanying the Final Technical Report submitted to CPP. (Please note that NR International reserves the right to retain the final quarter's payment pending NR International's receipt and approval of the Final Technical Report, duly signed by the project's biometrician)

NOT APPLICABLE

I confirm that the biometric issues have been adequately addressed in the Final Technical Report:

Signature:	SEE EMAIL ATTACHED
Name (typed):	Flavia Jollife
Position:	Biometrician, University of Greenwich
Date:	14.10.2005