



**NARO/DFID Client-Oriented Agricultural  
Research and Dissemination Project**

**DFID** Department for  
International  
Development

**UNDERSTANDING THE COMMUNICATION CONTEXT IN TESO AND  
LANGO FARMING SYSTEMS: THE AGRICULTURAL INFORMATION  
SCOPING STUDY**

**ALEXIS TURRALL, ABBY MULHALL, DAVID REES, JULIUS OKWADI, JAMES EMEROT,  
ROBERT OMADI**

**EXECUTIVE SUMMARY  
(Revised March 2002)**

## Table of Contents

<b>1 SUMMARY</b> .....	<b>3</b>
<b>2 Introduction</b> .....	<b>4</b>
<b>3 Methodology</b> .....	<b>4</b>
3.1 The Intermediary Information Scoping Study (IISS) .....	4
3.2 Farmer Information Scoping Study (FISS) .....	5
<b>4 Results &amp; Discussion</b> .....	<b>7</b>
4.1 The Intermediary Information Scoping Study (IISS) .....	7
4.2 Farmer Information Scoping Study (FISS) .....	10
<b>5 References</b> .....	<b>17</b>

## List of Tables

Table 1. Typology of intermediaries .....	7
Table 2. Interactions between intermediaries – number of times mentioned during interviews .....	8
Table 3. Importance of different organisations as sources of agricultural information, according to 38 intermediary organisations in 4 districts (derived from mapping exercises) .....	8
Table 4 . Key findings from the intermediaries study.....	9
Table 5. Sources of information according to a total of 39 groups of farmers - percentage responses.....	11
Table 6. Overall importance of different information sources according to a total of 39 farmer groups.....	12
Table 7. Average preference scores given to each media type (10=most preferred) .....	12
Table 8. Farmers perceptions of strengths and weaknesses of different media types. ....	13
Table 9. Practical implications for implementation of GoU policies .....	14
Table 10. FISS results & recommendations .....	16

## List of Figures

Figure 1. Methodology used .....	6
----------------------------------	---

## **1 SUMMARY**

- a *An agricultural information scoping study was conducted in seven districts across the Teso and Lango farming systems in NE Uganda from January 2000 to January 2001.*
- b *Overall, the most important sources of agricultural information for intermediary organisations were the local public extension services (FEWs), AT (U) and the national agricultural research system.*
- c *Linkages with other NGOs, CBOs, universities (MUK), UNFA and Radio Uganda were cited by intermediary organisations as important sources of information much less frequently than those in (b) above. Linkages between civil society intermediaries and church-based development organisations, and private sector organisations were also occasionally mentioned.*
- d *AT (U) has the widest sphere and capacity of the NGOs to disseminate information on agriculture.*
- e *Intermediary organisations consider demonstrations and shows as the most effective mode for the dissemination of agricultural information.*
- f *The most common form of information exchange between intermediaries and end users is through verbal interaction.*
- g *The majority of intermediaries surveyed had little or no purposeful agricultural dissemination strategy. Few supplied written literature outlining their activities.*
- h *Neighbours, family and front-line extension workers were overall the most common sources of information for men and women farmers and groups.*
- i *Local markets and "middlemen" were also cited as important sources of information by farmers, whilst churches, NGOs and schools were cited by less than 20% of the farmer groups interviewed.*
- j *Civil society organisations (NGOs and CBOs) were perceived by farmers as locally important in some areas.*
- k *Only 29% of groups in remote areas mentioned local markets as a source of agricultural information, compared to over 50% in semi-rural and urban areas.*
- l *Churches and schools were more important as information sources in remote areas, compared to more urban settings.*
- m *Demonstrations, visits and seminars were farmers' most preferred media for information exchange.*
- n *There was little difference between men and women's media preferences, although there was some indication that women in remote and semi-remote areas preferred written materials over radio*
- o *Practical implications of these studies for the COARD project and for the implementation of current GoU policies are discussed.*

## 2 Introduction

The Agricultural Information Scoping Study (AISS) was conducted in seven districts<sup>1</sup> across the Teso and Lango farming systems in NE Uganda from January 2000 to January 2001. It involved a number of participants including Serere Agricultural and Animal Production Institute (SAARI), district extension offices, NGOs, researchers and farmers. The study was divided into two components: the Intermediary Information Scoping Study (IISS) which investigated the active organisations involved in receiving and disseminating information on agriculture and the Farmer Information Scoping Study (FISS) that researched the manner in which farmers access and share information pertaining to agriculture along with understanding their preferred media.

The study aimed to inform the Client-Oriented Agricultural Research and Dissemination project (COARD) and the National Agricultural Research Organisation (NARO) on the existing Agricultural Knowledge and Information Systems (AKIS) practiced in the project mandate area. The COARD project, funded by the Department for International Development (DFID), is situated at SAARI and supports participatory research and dissemination through agricultural competitive technology funds (ATFs).

The overall objective of the study was to identify different actors in the Teso and Lango farming systems in order to recommend uptake/dissemination pathways for agricultural technologies developed by SAARI and by the supported ATF projects. To achieve this, a comprehensive database was constructed along with a series of linkage map diagrams to ascertain the passage of information and the message sent out. To understand if the message from research outputs were perceived as relevant and suitable to end-users, farmers themselves were interviewed. Data on how information reached farmers and who the main actors were was also collated. Moreover, farmers were given the opportunity to identify their most preferred media type for any given message.

The process included:

- Discussions with NARO researchers and the project's technical advisers (TAs) on the study methodology
- A literature review of recent AKIS work and past development papers
- A pre-testing phase to adjust the adopted methodology
- A series of semi-structured group interviews
- Analysis of data collected

## 3 Methodology

### 3.1 The Intermediary Information Scoping Study (IISS)

The methodology adopted was arrived at by considering and analysing best practice examples from previous AKIS studies along with discussions with stakeholders. The methodology for both parts of the study changed slightly as the

---

<sup>1</sup> Districts included Soroti, Katakwi, Kaberamaido, Pallisa and Kumi (in the Teso farming systems) and Lira and Apac (in the Lango farming systems)

research study progressed and as the team became familiar with the how to achieve the desired outputs.

The methodology for the Intermediary Information Scoping Study (IISS) was conducted in stages to allow to clear and concise collection of data:

#### Stage 1

A discussion between the AISS research team and the Client Oriented Support Unit (CORSU) convened in order to arrive at the most appropriate methodology.

#### Stage 2

The District Extension Coordinators (DECs) across the seven districts were visited by the research team to identify ten active organisations who were involved with generating, transferring and communicating agricultural technologies to farmers. Details of these organisations were documented and collated into a database and were divided equally into geographical areas (eg rural, semi-rural and urban). It was perceived that 70% of the organisations should be interviewed from more than 25Kms away from the district headquarters, but in reality most organisations had their headquarters in the town centre.

#### Stage 3

Three tools were used to collect information from intermediaries:

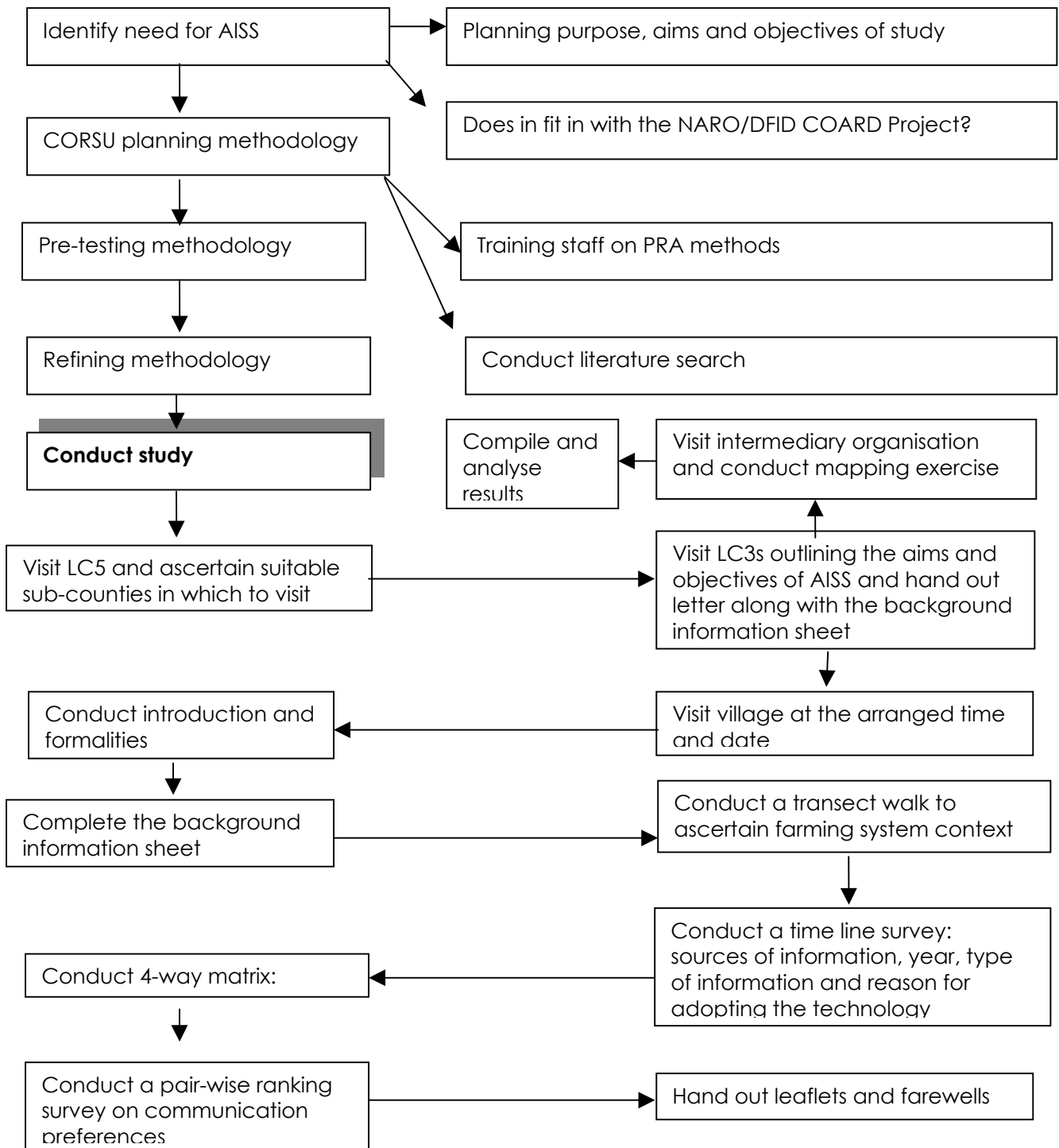
- **The mapping exercise** assisted organisations to produce a list reflecting the 'sources of information', 'the type of organisation' and 'the important agricultural enterprises'.
- **A survey form** asking the organisation how they communicated the information, who their target audiences were and the type of information they disseminated.
- **A background information form** gave details about the organisation in question.

### 3.2 Farmer Information Scoping Study (FISS)

The FISS consisted of four separate components:

- **A background information sheet** giving details on the farmers' location, cropping systems and capacity to receive and access information.
- **A transect walk** through farmers' fields to observe crops grown, livestock reared and the condition of the homestead.
- **A time-line** allowed farmers' to participate in listing sources of their information by identifying any changes in their agricultural systems over the past ten years. They were asked who intervened, by what media and what the subsequent impact was on changing their agricultural technique.
- **A pair-wise matrix** allowed farmers to identify preferred media channels for a given message. Participants were asked to rank their preferred media channel and give the reason for their choice. This exercise was conducted with separate groups of men from women.

**Figure 1. Methodology used**



## 4 Results & Discussion

### 4.1 The Intermediary Information Scoping Study (IISS)

A typology of intermediary organisations is shown in Table 1, and their reported interactions are summarised in Table 2. The relative importance, according to the interview results, of the different types of intermediary organisations are summarised in Table 3. Overall, the intermediary organisations interviewed placed most reliance on the local public extension service (FEWs), AT (U) and the national agricultural research system. NGOs and CBOs, universities (principally MUK) UNFA and Radio Uganda were also important, suggesting greater “horizontal linkages” (interactions between intermediaries themselves) than observed in neighbouring Kenya (den Bigelaar, 1995; Rees *et al*, 2000). Linkages between other intermediaries and churches, church-based development organisations, and private sector organisations were much less, similar to observations from Kenya (*ibid.*)

Other key points from the interviews with intermediary organisations are summarised in Table 4.

**Table 1. Typology of intermediaries**

	Soroti	Lira	Apac	Katakwi	Kumi	Pallisa
<b>INGOs</b>	AT(U) World vision	AT(U)	AT(U) Action aid CPAR	Action aid AT(U) Self help development		
<b>Private</b>	UOSPA	UOSPA Lango organic farmers association				
<b>Associations</b>	SODIFA	LFA LAWODA	AFA	KDFA		
<b>Farmers gps</b>		Ryem Kee Coop Lwor		Ocal farming gp Akoriok Ajockopik Moungagmy		
<b>National NGOs</b>	Holistic services	UWESO	ASDI IDEA			
<b>CBOs</b>	Maitalong			UWARA		
<b>Medias</b>	Etop VoT	Radio Lira Rupiney				
<b>Networking organisations</b>	SODANN	District NGO forum			KUNEDO	
<b>Church organisations</b>	SOCADIDO Church of Uganda	CCCU		SOCADIDO	Pentacostol association of God	
<b>District offices</b>	Soroti DEC	Lira DEC	Apac DEC	Katakwi DEC	Kumi DEC	Pallisa DEC
<b>Alliances</b>	UCA	UCA				

**Table 2. Interactions between intermediaries – number of times mentioned during interviews**

A: 20+	B:11-20	C:5-10	D: 1-4
<ul style="list-style-type: none"> <li>• FEWs</li> <li>• Farmers</li> <li>• AT(U)</li> <li>• NARO</li> </ul>	<ul style="list-style-type: none"> <li>• "Others"</li> <li>• UOSPA</li> <li>• Local NGOs/ CBOs</li> <li>• Universities</li> <li>• Radio Uganda</li> <li>• UNFA (District branches)</li> <li>• INGOs</li> </ul>	<ul style="list-style-type: none"> <li>• VOT</li> <li>• Etop &amp; Rupiny</li> <li>• NGO Fora</li> </ul>	<ul style="list-style-type: none"> <li>• Churches</li> <li>• Church-based DOs</li> <li>• DPSPS</li> <li>• SAIMCO</li> </ul>

**Table 3. Importance of different organisations as sources of agricultural information, according to 38 intermediary organisations in 4 districts (derived from mapping exercises)**

Organisation	Number and strength of linkages presented in linkage maps			
	Important	Strong	Sometimes Useful	Total
Farmer groups	19	1	0	20
SAARI	7	10	2	19
Other NARO	6	10	10	26
Local public extension (FEWs)	5	10	2	17
District Farm Institutes	3	4	3	10
Local government	0	1	1	2
AT (U) and UOSPA	2	11	7	21
INGOs	1	3	1	5
NGOs/ CBOs	0	11	3	14
NGO Fora	0	4	2	6
Churches & Church Development Organisations	0	0	2	2
National public extension & agencies	0	2	3	5
DPSPS	0	1	0	1
Universities/ colleges	0	5	3	8
International agencies	2	2	8	12

**Table 4 . Key findings from the intermediaries study**

Key findings	Evidence from study
Types of media used varies from one intermediary to another and agricultural information dissemination flows are inconsistent throughout the year.	With a total of 15 diverse groups of intermediaries active in Teso and Lango farming systems (Table 1), and with their own defined objectives, activities and funding, only seven had a non-verbal dissemination strategy.
Most important sources of information for intermediary organisations are local public extension service (FEWs), AT(U) and the national agricultural research system.	Table 2, Table 3
Other NGOs and CBOs, universities (MUK) UNFA and Radio Uganda also somewhat important	Table 2, Table 3
Linkages between other intermediaries and churches, church-based development organisations, and private sector organisations were much less	Table 2, Table 3
AT(U) has the widest sphere and capacity to disseminate information on agriculture	AT(U) is represented in every sub-county throughout Teso and Lango (AT(U) director). It is clear from Tables 1 and 2 and through personal observation that farmers and other intermediaries know about their existence
Those intermediaries interviewed suggested that demonstrations and shows were perceived to be most effective mode for the dissemination of agricultural information	Reasons for this include perceived low farmer literacy rates, the ability to physically observe and have the ability to ask questions.
The most common form of information exchange between intermediaries and end users is through verbal interaction	Farmers communications infrastructure remains basic and intermediaries lack dissemination capacity in other areas.
The majority of intermediaries surveyed had little or no agricultural dissemination built into their strategy. Few supplied written literature outlining their activities.	60% of intermediaries disseminated information on their associated activities through other means other than verbal interaction. Many of these only did so if they had the financial resources to do so.
Intermediaries source their information from a wide sphere	With access to sophisticated ICTs, many NGOs are potentially able to source agricultural information from areas over district or national boundaries. However, only 20% have this access. Others rely on information disseminated through their headquarters or through local contacts.
Radio was perceived as a major dissemination channel	85% of intermediary organisations interviewed mentioned the importance of radio as a dissemination channel

## 4.2 Farmer Information Scoping Study (FISS)

Neighbours, family and front-line extension workers were overall the most common sources of information (Table 5, Table 6), as observed in several other studies (den Bigelaar, 1995; Ramirez, 1997; Kimenye, 1999; Rees *et al* 2000). In contrast to those studies, local markets and “middlemen” were also cited as important sources of information, whilst churches, NGOs and schools were cited by less than 20% of the farmer groups interviewed (*ibid*). Civil society organisations (NGOs and CBOs) were overall perceived by farmers as locally important in some cases, but as a result of patchy coverage, less important overall than traditional farmer-farmer sources, local government extension, local markets or middlemen (Table 5, Table 6).

Only 29% of groups in remote areas mentioned local markets as a source of agricultural information, compared to over 50% in semi-rural and urban areas. Churches and schools seemed to be more important in remote areas, presumably reflecting relatively less contact with other sources (Table 5).

Radio was cited by 38% of farmer groups as a source of agricultural information, suggesting greater importance than indicated in other studies in Uganda (DENIVA, 1999) and Kenya (Rees *et al*, 2000), perhaps reflecting the continued efforts of local FM radio stations to improve their programming and relevance. Only 29% of groups in remote areas mentioned radio as a source of information however, compared to over 50% in semi-remote and urban areas (Table 5).

Private sector sources of information (other than middlemen and local markets) are very few in the Teso and Lango regions, reflecting the low level of urbanisation of the region (PMA 2000).

In agreement with the Intermediaries study, demonstrations, visits and seminars were farmers' most preferred media for information exchange (Table 7), although farmers were not asked to consider the relative costs of the different media, or the practicality of getting information at several different times during crop or animal growing cycles. There was little difference between men and womens' preferences, although there was some indication that women in remote and semi-remote areas preferred written materials over radio, probably because of the relative costs and access to these media. Table 8 summarises the strengths and weaknesses of different media types expressed by the various farmer groups.

Table 9 summarises some practical implications of these studies for the COARD project and for the implementation of current GoU policies (NAADS, NARO's medium-term plan and outreach initiative). Table 10 provides a summary of key points and recommendations from the farmer interviews.

**Table 5. Sources of information according to a total of 39 groups of farmers - percentage responses**

Sub-county	Pallisa	Kumi	K'maido	Soroti	Kataki	Lira	Apac	Gender		Location			Total	Overall
Location								M	W	Remote	Semi R	Urban		Rank
Neighbouring farmers	83	33	67	67	40	33	100	60	58	86	71	50	<b>59</b>	A
Parents/ family/friends	0	33	83	33	20	33	100	40	42	29	71	33	<b>41</b>	A
Local markets	67	67	33	0	0	100	100	50	53	29	71	50	<b>51</b>	A
Local councils and district staff	0	0	50	67	40	67	50	35	42	43	57	33	<b>38</b>	B
Churches	17	17	0	33	20	0	0	10	16	43	14	0	<b>13</b>	D
Village elites	0	0	0	33	0	33	0	10	11	0	14	17	<b>10</b>	D
Schools	17	17	0	0	0	0	0	0	11	29	0	0	<b>5</b>	E
FEWs	67	50	33	33	100	67	0	50	53	57	71	50	<b>51</b>	A
National/District Govt	13	18	0	7	6	3	15	10	8	7	14	8	<b>9</b>	E
Cross-district NGOs/ Church DOs	4	17	10	17	11	7	4	11	9	11	13	13	<b>10</b>	D
CBOs/ indigenous NGOs	15	10	0	3	2	7	5	6	6	4	7	8	<b>6</b>	E
Middlemen	100	17	17	0	40	0	0	20	32	29	43	17	<b>26</b>	C
Private Sector	0	0	0	0	0	33	0	5	5	0	0	17	<b>5</b>	E
Politicians	17	17	0	33	0	0	0	5	16	29	0	17	<b>10</b>	D
Radio	33	67	0	33	60	33	50	40	37	29	57	50	<b>38</b>	B
ETOP	0	17	0	0	40	0	0	15	0	29	0	17	<b>8</b>	E

**Table 6. Overall importance of different information sources according to a total of 39 farmer groups**

Overall Rank	Information source
A: >40%	Neighbours, family, markets, FEWs
B: 31-40%	Local councils, Radio
C: 21-30%	Middlemen
D: 11-20%	Churches, Cross-district NGOs, Village elites, Politicians
E: 1-10%	Schools, Natl./District Govt., CBOs/NGOs, Private Sector

Note: Cross-district NGOs+ indigenous NGOs/CBOs added together = 19% = D

**Table 7. Average preference scores given to each media type (10=most preferred)**

Location	Gender	Radio	Written	Visual	Seminars	Visits	Demos
Remote	Men group	<b>1</b>	<b>2</b>	3	7	7	10
	Women group	<b>0</b>	<b>5</b>	3	5	7	10
Semi-remote	Men group	1	<b>1</b>	4	8	7	9
	Women group	1	<b>3</b>	3	7	7	10
Near-Urban	Men group	1	2	4	7	7	10
	Women group	1	2	4	8	8	8
Remote		1	3	4	6	8	9
Semi-remote		2	1	3	8	7	8
Near-Urban		2	1	4	7	8	9
Men group		1	2	4	7	7	10
Women group		1	3	3	7	7	9
<b>ALL</b>		<b>1</b>	<b>2</b>	<b>4</b>	<b>7</b>	<b>7</b>	<b>9</b>

**Table 8. Farmers perceptions of strengths and weaknesses of different media types.**

Media Type	Strengths	Weaknesses	Comments
Demonstrations	<ul style="list-style-type: none"> <li>➤ Experiential learning</li> <li>➤ Physical contact</li> <li>➤ Use of all senses</li> </ul>	<ul style="list-style-type: none"> <li>➤ In reality not always available</li> <li>➤ Only gives example of specific crop or practice (i.e. intercropping maize with cotton)</li> </ul>	<ul style="list-style-type: none"> <li>➤ <i>Direct conversation with the 'demonstrator'.</i></li> <li>➤ <i>Only few farmers/ farmer groups can receive such information through this type of media.</i></li> </ul>
Radio	<ul style="list-style-type: none"> <li>➤ Good coverage throughout districts</li> <li>➤ Speediness of message</li> <li>➤ Reaches many people</li> <li>➤ Good for awareness raising and market information</li> </ul>	<ul style="list-style-type: none"> <li>➤ Low ownership</li> <li>➤ Low access for women</li> <li>➤ Expensive running costs (cells, repairs etc.)</li> <li>➤ Easy to miss information</li> <li>➤ Not repeated</li> <li>➤ Language (e.g. no separate channel for Kuman speakers in K'maido)</li> </ul>	<ul style="list-style-type: none"> <li>➤ <i>Few farmers in the Teso and Lango farming system own/ have access</i></li> <li>➤ <i>Majority who use radio are men who use it mainly for recreational purposes.</i></li> <li>➤ <i>Language barriers and timing of programmes detract from its full potential.</i></li> </ul>
Written	<ul style="list-style-type: none"> <li>➤ Good at reinforcing a farm trial or demonstration</li> <li>➤ Good interface between literate and illiterate</li> </ul>	<ul style="list-style-type: none"> <li>➤ Low literacy rates?</li> <li>➤ Difficult to understand without explanation</li> <li>➤ Poorly illustrated materials can confuse and complicate message</li> </ul>	<ul style="list-style-type: none"> <li>➤ <i>Popular with many farmers, especially when it reinforces practical training activities.</i></li> <li>➤ <i>Well prepared material with clear illustrations and diagram can be re-visited at later date.</i></li> <li>➤ <i>Low literacy rates &amp; education levels exist in some communities.</i></li> <li>➤ <i>Capacity for producing good materials amongst service providers not fully developed.</i></li> </ul>
Visits	<ul style="list-style-type: none"> <li>➤ Ability to ask questions</li> <li>➤ Prefer farmer visits to institutions such as SAARI</li> <li>➤ Interactive and stimulating</li> </ul>	<ul style="list-style-type: none"> <li>➤ Rarely occur</li> <li>➤ Only a selected number of people benefit</li> <li>➤ Little reinforcement</li> </ul>	
Visual	<ul style="list-style-type: none"> <li>➤ Uses all the senses</li> </ul>	<ul style="list-style-type: none"> <li>➤ The inability to ask questions of what is seen and heard</li> <li>➤ Attendance at night may be small in some areas such as Katakwi due to current instability and unrest.</li> </ul>	<ul style="list-style-type: none"> <li>➤ <i>Few farmers have had any contact with any form of visual interaction whether through a cinema screen or television. The media appeals to many farmers as it is deemed new and innovative.</i></li> </ul>
Seminars/ workshops	<ul style="list-style-type: none"> <li>➤ Farmer's benefit from clear explanations</li> <li>➤ Ability to ask questions</li> </ul>	<ul style="list-style-type: none"> <li>➤ Not everyone can be present</li> </ul>	<ul style="list-style-type: none"> <li>➤ <i>Time consuming and expensive.</i></li> <li>➤ <i>Can only be utilised by a small attended audience.</i></li> </ul>

**Table 9. Practical implications for implementation of GoU policies**

<b>PMA strategies</b>	<b>NAADS principles</b>	<b>NARO MTP (2001-2005) and NARO Outreach Strategy (2000)</b>	<b>COARD principles</b>	<b>Implications of FISS on PMA, NAADS, NARO MTP and COARD principles</b>
	Empowering the farmers in agricultural advisory processes and building demand for both research and agricultural advisory services	Improving efficiency and effectiveness of technology development/ transfer through greater participation of producers in all stages of research and dissemination, better targeting of research resources and stronger linkages with all sources of knowledge	Facilitates client-oriented participatory research and extension through two competitive funds	In order to empower farmers, research and extension need to be more pro-active, allowing farmers to make calculated decisions about available technologies. Training and research dissemination could be carried out through local markets using a 'multi-media' approach pertaining to the farmer's communication context.
Make poverty eradication the overriding objective of agricultural development	Targeting agricultural services to the poor farmers who constitute the majority		Located in one of poorest areas of Uganda, the project encourages teams to apply for funds to carry out research and dissemination which have been demanded by poor farmers	Poor farmers are CDR, located in remote areas, illiterate, possess little financial capital and have little access to information. Communicating research outputs should be configured to their communications context.
Ensuring that all intervention programmes are gender-focused and gender responsive	Mainstreaming gender issues	Incorporating gender and environmental concerns in all aspects of technology development and transfer (MTP)	The ATF-MC considers applications by a set of assessment criteria of which 'likely impact to women' is one.	Communication context and roles in sourcing and communicating information differs somewhat between men and women - time constraints, allocation of media resources, differing literacy rates (and education) and intra-household functions. Projects should therefore understand how best to target each gender group.
Removing direct government involvement in commercial	Commercialisation-including intensification of productivity and	Broadening the funding base and promoting the participation of the private sector in the funding and	An area of a 'thematic ATF call', encouraging the private sector to apply for funds and	Is there space for the private sector to conduct the work out in order to make it more efficient, effective and sustainable? A certain amount of cost recovery could be

<b>PMA strategies</b>	<b>NAADS principles</b>	<b>NARO MTP (2001-2005) and NARO Outreach Strategy (2000)</b>	<b>COARD principles</b>	<b>Implications of FISS on PMA, NAADS, NARO MTP and COARD principles</b>
aspects of agriculture and promoting the role of the private sector	specialisation	provision of agricultural research and related services (MTP)	therefore commercialise the approach	achieved through the selling of information (e.g. training manuals, leaflets and selling research technologies etc)
	Participatory processes in planning, monitoring and evaluation		Each ATF project has a built in PM&E mechanism to ensure regular reflection. A socio-economist takes care of the COARD PM&E strategy	Farmers naturally experiment with new technologies and monitor and evaluate their progress in order to assess whether they should adopt. Secondly, farmers seem to prefer to be communicated through a two-way process and bio-physical interaction (Seminars, visits, workshops, demonstrations compared with through an interface such as radio or written materials).
Supporting the dissemination and adoption of productivity-enhancing technologies	Managing natural resource productivity			Technical information should be delivered through demonstrations and visits. Market information, government policy, raising awareness on agricultural legislation and information on weather forecasts should be delivered over the radio or through visits.
	Increasing institutional efficiency through contracting out services, better linkages between research, advisors and farmers	Rather than develop new linkages, NARO, through its Outreach Initiative will encourage individual ARDCs, their partners, and farmers' groups to create systems which respond flexibly (Outreach, p7)	Fosters partnership between stakeholders by making collaboration a pre-requisite for applicants, thereby improving linkages between researchers, advisors and farmers	

**Table 10. FISS results & recommendations**

<b>Key findings from FISS</b>	<b>Recommendations for COARD</b>	<b>Implication and action for COARD</b>
Information needs vary somewhat with location, gender and other socio-economic factors.	ATF-supported projects to conduct communication context research studies in order to understand their target groups information wants and needs	Produce a set of guidelines, PRA methodologies and PRA communication principles for ATFs to follow.
The main sources of agricultural information are from social institutional networks close to farmers themselves such as friends, parents and neighbours	Form close and lasting links with NAADS	Share lessons with NAADS by inviting them to sit on the ATFsMC and create conducive mechanisms for NARO staff to apply.
Local markets and churches are regular arenas in remote areas where agricultural information is shared and exchanged	Encourage NARO and other applicants to use this interface as an arena to share information.	Prepare and run a series of workshops with funded ATFs on this approach.
Dissemination techniques using direct human interaction such as visits, seminars and demonstrations are deemed as the most popular according to farmers	Encourage funded projects to use these methodologies - combined and used in a conducive environment such as regional rural markets	
Distance from trading centres, major roads and towns affects up-take of technologies.	Poverty-reducing technologies should focus on poorer groups, especially women and the elderly	
Little information is disseminated on adding value to agricultural produce leading to high excesses during some periods of the year which directly effects price	Encourage greater private sector involvement by re-wording and re-inventing the information pack along with good marketing.	Explore this area with policy-makers (NARO, NAADS, DFID and PMA). Seek assistance from a specialist enterprise development consultant.
Radio as an information channel is adequate for raising awareness but has limitations when used for education and training purposes due to low ownership, language problems and the nature of the interface	Make venture capital available for start-up costs to promote and take-up research outputs.	
A multi-media approach to dissemination reinforces lessons learnt		
Written materials, visual dissemination and radio all have limited effectiveness for up-taking research technologies		
Most institutions lack the relevant capacity to design, produce and distribute agricultural messages	Build capacity in this area through training and design of dissemination techniques, also making resources available.	Strengthen ATFs (esp. TPFs) by organising and running 'communication training'

## 5 References

- NARO MTP 2001-2005. Responding to research challenges for modernising agriculture (2000)
- COARD OPR (2001)
- Plan for modernisation of agriculture (PMA): eradicating poverty in Uganda (2000)
- National agricultural advisory services programme (NAADS). Master document of the NAADS task force and joint donor groups. (2000)
- Biggelaar den C (1995). Linking actors in agricultural knowledge system in Embu district. **AFRENA Report No. 103. Nairobi: ICRAF.**
- Engel P G H. (1997). The social organisation of innovation. Amsterdam: Royal Tropical Institute.
- Garforth C and Usher R (1997). Promotion and uptake pathways for research output: a review of analytical frameworks and communication channels. **Agricultural Systems 55, 301-322**
- Kimenyi L N (1999). Assessment of technology dissemination and utilisation by women and men farmers: A case study of Embu and Mbeere districts. Pages 201-214 In Curry J, Kooijman M and Recke H (1999 eds.) Institutionalising gender in agricultural research: Experiences from Kenya. Nairobi: KARI
- Rees *et al* (2000). Agricultural knowledge and information systems in Kenya – Implications for technology dissemination and development. **AGREN Network Paper 107.**
- Ramirez R (1997). Understanding farmers' communication networks: Combining PRA with agricultural knowledge systems analysis. **Gatekeeper Series SA66, London: IIED**
- NRI (2000). Sustaining change: Proceedings of a workshop on the factors affecting uptake and adoption of research outputs.
- Norrish, P. and Ocilaje, (2001) Communications consultancy for the COARD project.
- Norrish *et al.* (2001) Improved communication strategies for RNR research outputs.
- Outline communication plan for NARO/DFID project, draft, COARD (July, 2000)
- The Outreach Initiative: Responding to farmers' needs (2000), NARO
- Akwang *et al.* (1998) Needs assessment for agricultural research in the Teso farming system
- Akwang (1998) Needs assessment for agricultural research in the Lango sub-farming system
- CTA/DENIVA project document (1999)
- Longley, K. *et al* (2001) Guidelines for the seed production and dissemination of improved varieties. Draft final report. ODI
- Brinn, P. and Kayoby, G. (2001) Report for the co-ordinated support to soil productivity initiatives in Teso and Lango. Draft report.