# NATURAL RESOURCES SYSTEMS PROGRAMME

## *FINAL TECHNICAL REPORT*[1]

### DFID Project Number

**R8381**

### Project Title

Institutionalised Scaling-up and Uptake Promotion of Outputs from Soil and Water Management Research in East and Central Africa

### Project Leader

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### Organisations

**SWMnet** - Soil and Water Management Research Network *of*
**ASARECA –** the Association for Strengthening Agricultural Research in Eastern and Central Africa, *in partnership with*
**ICRISAT -** the International Crops Research Institute for the Semi Arid Tropics
**ARTC -** the Agricultural Research and Technology Corporation of the Sudan
**EARO -** Ethiopian Agricultural Research Organization
**KARI -** Kenya Agricultural Research Institute
**DRD -** Department of Research and Development – Ministry of Agriculture and Food Security - Tanzania

### NRSP Production System

**SA 1.3.1(f) cross cuts to HS 1.3.3(d)**

### Date

October, 2005

[1] This document is an output from a project funded by the UK Department for International Development (DFID) for the benefit of developing countries. The views expressed are not necessarily those of DFID.

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## Abbreviations and Acronyms

| | |
|---|---|
| **ARTC** | Agricultural Research and Technology Corporation of the Sudan |
| **ASARECA** | Association for Strengthening Agricultural Research in Eastern and Central Africa |
| **ATIRI** | Agricultural Technology Information and Response Initiative |
| **CGS** | Competitive Grants Systems |
| **CIM** | Conceptual Impact Model |
| **DFID** | Department for International Development of the UK |
| **DRD** | Department of Research and Development – Ministry of Agriculture and Food Security - Tanzania |
| **DVD** | Digital Video Diskette |
| **EARO** | Ethiopian Agricultural Research Organization |
| **ECA** | Eastern and Central Africa |
| **ICRISAT** | International Crops Research Institute for the Semi Arid Tropics |
| **IWMI** | International Water Management Institute |
| **KARI** | Kenya Agricultural Research Institute |
| **KMS** | Knowledge Management Systems |
| **M&E** | Monitoring and Evaluation |
| **MDGs** | Millennium Development Goals |
| **NARES** | National Agricultural Research and Extension System |
| **NARS** | National Agricultural Research System |
| **NEPAD** | New Partnership for Africa Development |
| **NRM** | Natural Resource Management |
| **NRSP** | Natural Resources Systems Programme |
| **R4D** | Research For Development |
| **SSA** | Sub Saharan Africa |
| **S&WM** | Soil & Water Management |
| **SWMnet** | Soil and Water Management Research Network of ASARECA |
| **ToT** | Training of Trainers |

# 1 Executive Summary

The purpose of the project was to ignite a process towards the institutionalization of a culture of promoting uptake, scaling-up and effective use of results from research on soil and water management in Eastern and Central Africa. This was delivered through three outputs:

- Increased understanding of barriers that limit effective uptake promotion,
- Raised awareness of research managers on the need to put emphasis and investment in uptake promotion, and
- Improved capacity and skills of researchers on relevant approaches.

For output one the results show that:

i) Policy and strategy documents of government ministries, departments and national organizations, recognize and put a lot of emphasis on ensuring that results from agricultural research reach the farmer. However, these good intentions have not been turned into action.

ii) The role of research systems in uptake promotion is not recognized due to mind set on uni-directional dissemination of results from research to extension to farmers. Therefore, only a limited amount of time and budgets are allocated to project activities concerning communication, uptake promotion and scaling-up of research results.

iii) The majority of researchers are not adequately trained for communication and uptake promotion. They consider this to be the main reason for the little communication and uptake promotion currently being implemented by researchers.

iv) Monitoring and evaluation of projects do not include assessment of uptake, utilization and impact of research results. Therefore, rewards and incentives such as salary increments, promotion and prizes are given on the basis of activities rather then outcomes and impact.

The second output was delivered through an extensive awareness raising and advocacy programme that included meetings, presentations and communication through print and electronic media. Awareness was raised among policy makers such as ministers, directors and most importantly senior research managers. It is estimated that between 700-800 stakeholders were reached by these efforts. This has started to show some effect at both regional and national levels. Institutional strategy for knowledge management and sharing are being proposed. Scaling-up and uptake promotion is already a common feature in programmes and projects promoted by ASARECA. For output three, two major courses for professional development and training of trainers were designed, implemented and promoted. Evidence is emerging showing that new research plans across the whole region and not just in the target countries, contain robust communication and uptake promotion plans. Although there is no hard evidence yet, the champions generated by the project have already initiated a concrete advocacy process towards the improvement of courses given to graduate students to include a strong emphasis on how to formulate strategies for communication and uptake promotion.

The main recommendations from the appraisals and feedbacks, are:

i) Because the policy support is generally in place, research organizations should design and implement strategies and provide adequate funding for knowledge management, uptake promotion and scaling-up.

ii) Researchers should fully participate in uptake promotion and scaling-up activities as part and parcel of research projects and should package their results into products that target the different needs and circumstances of their stakeholders.

iii) Relevant organizations should implement professional development programmes on knowledge management, including prospecting and brokering. In addition, the training curricula of graduate programmes should be reviewed to include skills development in communication, uptake promotion, and scaling-up.

iv) Researchers should be required to produce proof of uptake and effective scaling-up of research results as part of the criteria for promotion, salary increments and other incentives.

## 2 Background

The Millennium Development Goals (MDGs) have set a target to reduce by half the proportion (existing in 2000) of people living in poverty and hunger, by the year 2015. To achieve this target, there is a need to identify quick-win actions – especially in sub-Saharan Africa where the majority of world's poor and hungry are concentrated. One of these actions would be to increase the level of utilisation and benefits from the already existing knowledge and technologies – especially those found to work well in pilot sites within Sub-Saharan Africa (SSA), or widely in other developing countries. The guiding hypothesis is that increased synthesis of existing knowledge to facilitate innovations is the quickest way for the national agricultural research and extension systems (NARES) in sub-Saharan Africa to assist poor farmers, NGOs, planners and policy makers to overcome obstacles to increased agricultural productivity. This hypothesis is supported at the highest level of global policy where the UN General Secretary, HE Koffi Annan has stated that: the ***knowledge*** required for Sub-Saharan Africa to achieve its own green revolution ***is not lacking, what is lacking as ever, is the will to turn this knowledge into practice*** (MDG Technical Support Centre, 2004). Within SSA, the agricultural programme of the New Partnership for Africa Development (NEPAD) is focusing on:

- *Enhancing rate of adoption and effective utilization of most effective knowledge, information and technologies (KIT) – with particular attention to reduction of costs and risks of adopting new technologies and practices,*
- *Institutionalizing delivery and promotion systems that quickly bring innovations to farmers and agribusiness, then*
- *Efficient and effective generation or adaptation of new knowledge and technologies*

(NEPAD, 2003 - page 3).

In general, science and innovation has been given high prominence in most of the documents recently published to elaborate on the strategies of many development organizations and governments in the race to meet the MDGs within the next ten years. Top on the list is the many volumes produced by the various tasks forces under the Millennium Project. One of

these reports, on investing in development, calls for major investments to mobilize global science and technology for the MDGs. The millennium task force on Science, Technology and Innovation noted that: *the challenge facing the global community is to create conditions that will enable developing countries to make full use of the global fund of knowledge to address development challenges*. For this to happen the report calls for: *increased ability of developing countries to conduct knowledge prospecting, that is, the searching, identifying, adapting and diffusing knowledge and technologies from all sources*. (Millennium Project – STI Task Force, 2005). DFID in its draft Strategy for Research on Sustainable Agriculture (SRSA) proposes to support and ***encourage scaling-up of successful innovations and best practices*** ... (DFID-CRO, 2005[2]). These are only few examples of what is now commonly and actively being promoted by nearly all organizations working in development (see Annex C1 of this report for more details). But then when all these push is going-on, why R8381?

While agricultural innovation requires the involvement of nearly all the stakeholders in the agricultural sector, the agricultural research system should be the catalyst by generating the necessary information and evidence around which learning and innovation of economic significance can take place. Research capacity of a country provides the building blocks for knowledge acquisition, learning, innovation and action (Box 1). Therefore, what the NARS does or does not do is of critical importance to a national agricultural innovation system. Research, especially publicly funded one provides opportunity to experiment with different options to reduce the risk of innovation by the rest of agricultural sector. This makes the research system to be best placed among the agricultural sector stakeholders, to understand available knowledge and technologies and to spearhead their adaptation to fit the local obstacles, circumstances and opportunities. It is for this reason that the **mission** of the Soil and Water Management Research Network (SWMnet) of ASARECA[3] is: *to assist stakeholders in the ECA sub-region to gain access and effectively utilize the best locally and globally generated knowledge, information and technologies on soil and water management.* The project R8381 was initiated from the realization that this mission of SWMnet can not be achieved without a wholesale change of culture of the organizations that make up the S&WM research systems in the ECA sub-region.

**Box 1: Why the current emphasis on knowledge utilization?**

The competitive position and the quality of a country's economy are determined to a large extent by the size and density of the country's "knowledge cloud" – namely the body of knowledge that has the potential to affect the economy. If many people posses a lot of good knowledge, then the "cloud" is dense. This would lead to "rain" in the form of innovations in the areas of technologies, processes, new industries, better strategies for the market place etc. Therefore the density of the "knowledge cloud" plays a major role in a national innovation system and each country should make the management of this cloud, a high priority of its research system.

*Modified after Janssen, 2002*

The second driver of this project was the conclusions made by Gundel *et al*. (2001) in their report on scaling-up strategies for research in natural resources management. The report concluded that: *researchers and their institutions have to become accountable for their*

[2] **http:/www.dfid.gov.uk/research/srsa-consultation.pdf**

[3] The Association for Strengthening Research in East and Central Africa (ASARECA) is a non-political organization of the national agricultural research systems (NARS) of ten countries: Burundi, the Democratic Republic of Congo (DRC), Eritrea, Ethiopia, Kenya, Madagascar, Rwanda, Sudan, Tanzania and Uganda. It operates 17 networks and programmes such as SWMnet.

*contribution to scaling-up, which in return requires the identification of indicators to show research effectiveness in terms of impact*. This recommendation put a lot of emphasis on the research system which is operating with a mind-set fixated on technology generation and transfer. Furthermore, scaling-up of NRSP's Conceptual Impact Model (CIM) would also require a change in mind-sets of the research as well as the extension system. The enormity of the mind-set problem is clear from limited successes that have been registered since rapid rural approaches (RRA) were introduced in the 1970s and 1980s. The initial idea was to involve the farmer in agricultural research and development (R&D). Soon after and so as to encompass more wide issues especially the decision making mechanisms, the 'consultative' RRA evolved to more 'participatory' approaches. The main limitation has been that the practices on the ground often did not match the promise of these approaches. For example, although they are sold as systems approaches, they often focused too much on the farmer – rather than whole systems of policies, institutions, enterprises and scale. Since this is the same demands put on the research systems by the CIM, there was a need for a fresh look on why research systems are failing to be pro-active in uptake promotion and scaling-up of their research results.

## 3 Project Purpose

The goal of this project was stated as: livelihoods of the poor farmers in East and Central Africa are **improved** through effective and integrated management of land and water resources for agricultural enterprises. As already stated above, increased utilization of the already existing knowledge and technologies – especially those found to work well in other areas could be a faster way of contributing to this goal. The failure to generate economic development, livelihoods and welfare from natural resources wealth, especially human, land and water is a major challenge facing the people, their governments and development partners in the ECA sub-region. However, it is well known that research and development in natural resources (including soils and water) management has been given a lot of emphasis and support since Agenda 21 was ratified in 1992. Little has been achieved because only a very small proportion of research results lead to practical advice to natural resources managers and users.

Therefore, the purpose of the project was driven by the need for cultural change discussed in section 2 above, so as to accelerate the pace at which research results are put into use. To do this, the project focused on research managers as well as researchers themselves, with its purpose stated as: to **institutionalize** a culture of promoting uptake, scaling-up and effective use of results from soil and water management research in East and Central Africa. The project was designed to facilitate changes in the development of research programmes and plans at national or institutional levels, with an objectively verifiable indicator being evidence that new research proposals contain robust communication and uptake promotion plans. Another change which was intended to be achieved is to do with improvement of courses given to graduate students on research planning, with the indicator of progress being evidence that training programmes have been modified to include a strong emphasis on communication planning.

To deliver its purpose, the project was designed to produce three major outputs, with respect to increase understanding of major constraints and barriers, raised awareness of research managers, and improved capacity and skills of researchers. The target was to create a community of champions for scaling-up, uptake, and utilization of existing and future results and experiences from both research and development work on integrated management of land and water in the sub-region. These outputs are elaborated further in the next section.

# 4 Outputs

## 4.1 Results and Findings Achieved by the Project

### 4.1.1 Output 1 - Constraints and barriers limiting uptake promotion by research institutions and partners, elaborated and understood

In its first output, the project managed to produce an increased understanding of the constraints and barriers limiting pro-active participation of the research system in uptake promotion and scaling-up of own research results. The major opportunities, constraints and barriers are discussed below.

On **policy and strategy** of government ministries, departments and relevant organizations, the rapid review showed that more often than not existing policies and strategies actually recognize and put a lot of emphasis on ensuring that agricultural research results reach the farmer. This is an opportunity which has been missed by relevant organizations because of two barriers:

i) A general low accessibility of the various policy and strategy documents to managers and researchers. For instance, in Ethiopia, 62% of those interviewed indicated that accessing documents on national policies and strategies is very difficult. In Kenya, 32% of those interviewed said they have no access to documents describing national policy and strategies guiding their research work.

ii) Monitoring, evaluation and impact assessment are weak on tracing impact of NRM research. Very little efforts are made to undertake an in-depth analysis of the relationship between communication, sharing, scaling-up and extent of uptake and utilization.

On **the role of research systems in uptake promotion** the appraisal results showed that it is not recognized due to mind set on uni-directional dissemination of results from research to extension to farmers. Therefore, only a limited amount of time and budgets are allocated to project activities concerning communication, uptake promotion and scaling-up of research results. In general therefore, researchers are trained and are able only to communicate to fellow researchers or to extension officers. To this end, the most dominant means used to promote research outputs is either field days (for extension and farmers) and presentation and publication in proceedings of conferences, workshops and seminars, and in rare cases in local and international journals (for fellow researchers) (Figures 1(a, b, c and d)).

**Figure 1:** a) Ethiopia

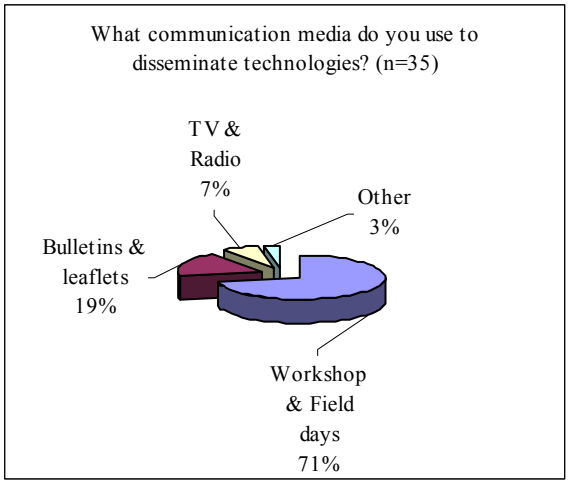


**Figure 1:** b) Sudan

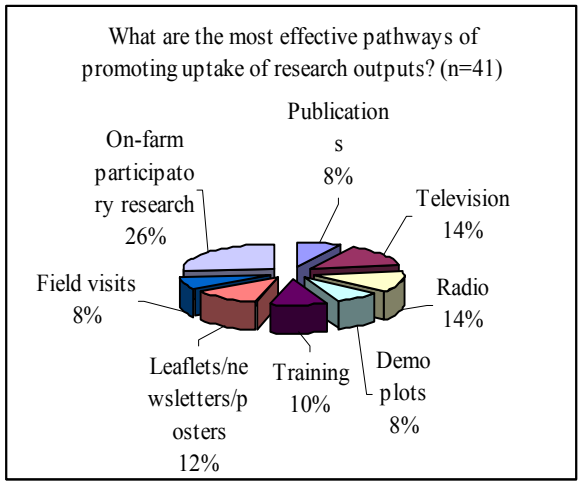

**Figure 1:** c) Kenya

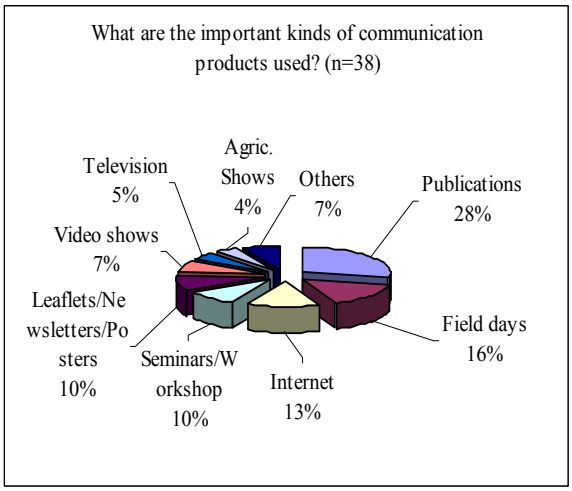


**Figure 1:** d) Tanzania

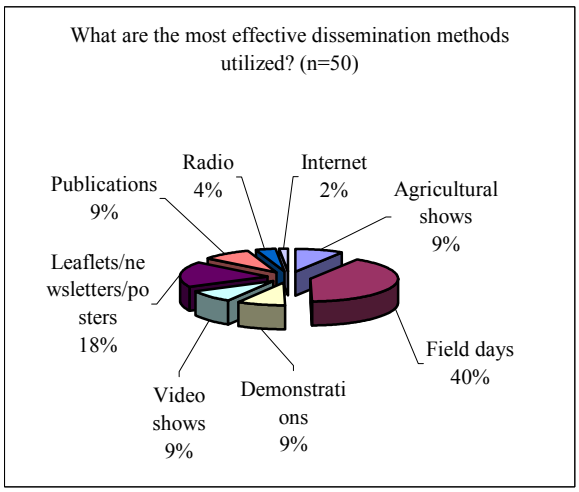


**Figure 1: Communication means used by researchers in soil and water management in the four case study countries**

Results presented in Figure 2 indicate a high imbalance of the amount of time and funds allocated to different stages of the continuum from research - to - utilization. The time allocated to fieldwork was significantly higher and more than double of what was allocated for data analysis and report writing respectively. The researchers' time allocation to knowledge sharing was about 30% of what is allocated to field data collection. The final stage of giving targeted advice to clients is allocated only a minuscule 4% of the funds allocated to field work. These differences are highly significant ($p \leq 0.1\%$) (see Annex B1.4, Section 3.5 Table 10 for test statistics). Apparently, funds allocation to knowledge sharing though lower than that for fieldwork the difference is not significant ($P > 5\%$). This is explained by the pre-dominance of workshops and field days in the knowledge sharing process (see Figure 1) which require a lot of funds for transport and per-diems for participants, without increasing the time allocation by the researchers.

The research findings show that this state of affairs is a result of the fact that the majority of researchers are not adequately trained for communication and uptake promotion. They consider this to be the main reason for the little communication and uptake promotion currently being implemented by researchers. Furthermore, monitoring and evaluation of projects do not include assessment of uptake, utilization and impact of research results. Therefore, rewards and incentives such as salary increments, promotion and prizes do not demand evidence of utilization and impact of research outputs. Apart from the thinking that the role of researchers is just to produce technologies, the main barrier is the little ability to monitor and attribute impact to particular research efforts so that researchers can be remunerated in relation to uptake and effective scaling-up results of their research. More work is need to be done to develop robust tools for assessing and attributing impact before sensitive incentives such as promotion and salary increments can be linked to successes in utilization of research results. However, it is important to emphasize that researchers can not continue with the current business model where a lot of money is spent on research and yet the situation of smallholder farmers is deteriorating instead of improving.

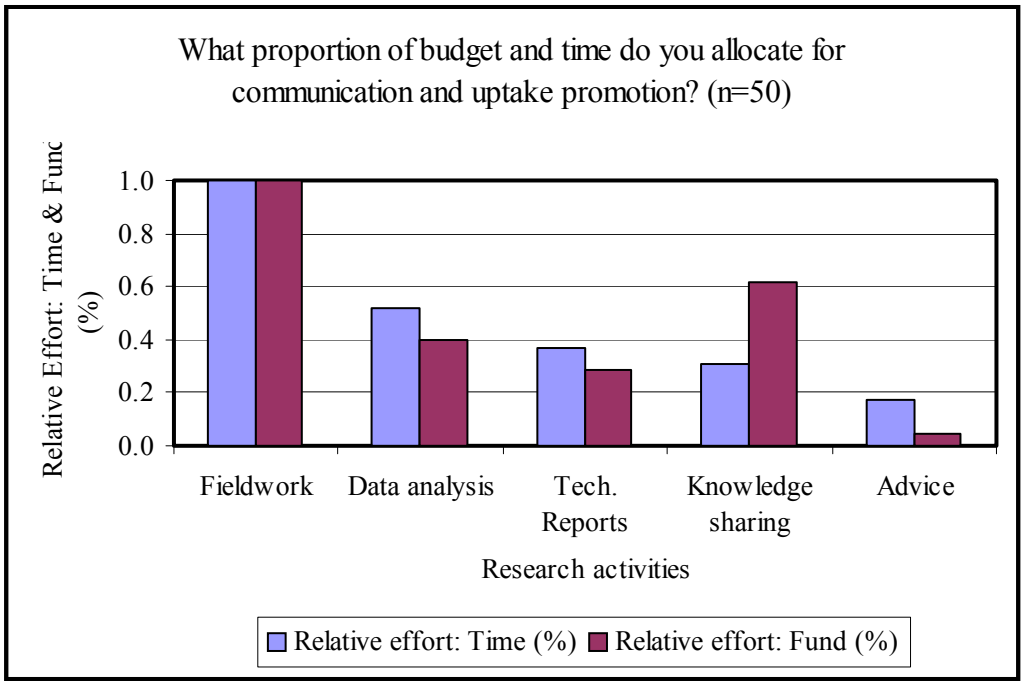


**Figure 2: Average percentage allocation of Time and Funds for different stages along the research to utilization chain**

### 4.1.2 Understanding by key research managers and planners, of the importance of communication and uptake promotion strategies for impact of R4D in S&WM increased and enhanced

During 2004 and part of 2005 ASARECA was undertaking an exercise of strategic planning and priority setting. This provided the project with an opportunity to make presentations, raise awareness and reach out to a lot of stakeholders. The main messages were based on the findings of the literature review, the NRSP-CIM (DFID-NRSP, 2002), the NRSP best practice guidelines (DFID, 2002), as well as the findings of the appraisal of constraints and barriers as reported in section 3.1 above. Project communication products (see Annex C) were being used while being developed. For example, the process of collecting footage for the video as well as its pre-testing with large audiences, served the purpose of awareness raising very well. The first project poster was translated to Arabic and Swahili and was used extensively across the sub-region.

Results included an increased understanding of the concepts of knowledge management, scaling-up and uptake promotion. Furthermore, the existing barriers were discussed and suggestions made regarding potential actions to be taken. In general the awareness raising process of the project was extensive and targeted at the right stakeholders at the right time, that is, when these stakeholders were involved in the formulation of strategies to direct agricultural research for development in the next 5 – 10 years. It is estimated that between 700 - 800 stakeholders were reached by the awareness raising efforts.

### 4.1.3 Capacity for skills development in communication planning and uptake promotion, developed among the SWMnet stakeholders in ECA

In its third output the project developed a training module on communication and knowledge sharing for the professional development course on development of proposals for R4D projects in S&WM (See Annex B2.1). This module (See Annex B2.2/3 Appendix I, module

2) was shared with other networks of ASARECA and national partners. It has been used widely and nearly 250 researchers in the region have been reached. This has tremendously increased the capacity for preparing and implementing communication planning and uptake promotion in the sub-region. The effect is already been seen in the proposal documents of new projects. Furthermore, the researchers have started advocacy in their institutions towards the development of communication, uptake promotion or knowledge management strategies for projects, programmes and institutions.

The project also developed and implemented a comprehensive Training of Trainers (ToT) package including training materials (see Annex B2.2 and 2.3). The course was implemented once and was attended by 38 participants including research planners, managers and implementers. The training was designed to equip the participants with skills and confidence to:

- Respond to, while influencing existing policies in relation to knowledge management;
- Assess knowledge products chain and articulate the role of research systems;
- Develop knowledge management and sharing strategies for organizations, programmes and projects;
- Select and use the most appropriate knowledge sharing means; and
- Develop and implement similar courses for others.

Participants invested the highest proportion of time in working groups and feedback seminars. They developed recommendations of how to mainstream knowledge management and scale-up research findings in the region. Details of the main outputs from these exercises are reported in Appendix IV of Annex B2.3.

## 4.2 Extent of Delivery

Nearly all the indicators specified for the delivery of outputs have been met. For output 1 reports identifying constraints, barriers, key needs for awareness raising, and training needs, are in place and project Communication Plan (CP) was produced and implemented. For output 2, remarkable achievement has been recorded as ASARECA and consequently its member NARS, have decided to consider a communication plan and an uptake promotion strategy – as high priority criteria in the appraisal, monitoring and evaluation of research projects. For output 3, three training sessions at regional level and two at country levels have been implemented for research planners and managers. It is fair to say that the outputs were delivered to a very high degree and a good foundation created for continued effect beyond the life of the project.

## 4.3 Communication Products Produced for Stakeholders

The project produced fewer products than anticipated in the CP but these were very effective in supporting the awareness raising process described in the previous sections. The most widely used paper products were grey literature published by SWMnet and circulated widely. These are:

i) SWMnet Discussion Paper (3) on the literature of knowledge management and scaling-up (Annexes C-1)
ii) SWMnet Proceedings (2) of the expert consultation including the CP (Annexes C-2). This served in many occasions as a training example of how a CP should look like.
iii) Three posters used in promoting the research itself as well as the findings and recommendations.
    - The first poster was produced to advertise the project in English, Arabic and

Kiswahili. It was designed to target nearly all the communication stakeholders of the project (Annex C4.1 – C4.3)

- The second poster was produced to present project findings on the gap that exist between knowledge generation and impact and recommendations on how this gap can be removed. It mainly targeted researchers and extension managers and staff (Annex C4.4).
- The third poster was produced to present the SWMnet led action of leveraging more benefits for Africa from Indian experience in watershed management (Annex C4.5)

Media products produced included:

i) Power Point Slides Presentation used for the face2face meetings, seminars and workshops.
ii) An awareness raising film on DVD and video for extensive media use.
iii) A radio interview.

# 5 Research Activities

## 5.1 Appraisal of Constraints and Barriers Limiting Uptake Promotion by Research Institutions and Partners

Appraisals were conducted in Ethiopia, Kenya, Sudan and Tanzania using a methodology designed at an Experts' Consultation workshop bringing together eight experts, two from each of the participating countries, and the project team of six. The workshop used both plenary and group discussion sessions to establish eight main hypotheses to guide a rapid survey. It also produced the Communication Plan of the project. (see Annex C-2 for the proceedings). The hypotheses were:

**Hypothesis 1:** The role of research systems, institutions and researchers in uptake promotion is rarely recognized or promoted in policies and strategies that guide research in S&WM.

**Hypothesis 2:** The mind-set of most research planners, managers and researchers in S&WM are still fixated in the linear dissemination approach of reaching the ultimate beneficiaries through extension services.

**Hypothesis 3:** Research programmes and projects rarely include communication and uptake promotion plans.

**Hypothesis 4:** Research programmes and projects are rarely evaluated for communication, knowledge sharing, uptake and utilization of knowledge and technologies produced.

**Hypothesis 5:** A very small proportion of programmes and project budgets and activities are committed or used in the communication and uptake promotion of research results.

**Hypothesis 6:** Research outputs rarely include specific advice to farmers, input suppliers (e.g. fertilizer suppliers), extension service, policy makers and other clients.

**Hypothesis 7:** Researchers are not adequately trained for communication and uptake promotion.

**Hypothesis 8:** The reward and incentive systems like salaries, promotion and prizes to researchers do not insist on evidence of utilization and impact of research.

Both secondary and primary data were used in addressing these hypotheses. The sampling approach to obtain these data was different for each of the four countries but all followed a similar approach for each hypothesis (see section 2.1 of Annex A and country reports in Annex B-1).

### 5.1.1 The first hypothesis

The secondary data to address the first hypothesis included documents on policies and strategies, which were collected and synthesized to respond to specified research questions. The evaluated documents included the equivalents in each country for:

- Poverty Reduction Strategy,
- Agricultural Sector Development Strategy,
- Natural Resources Management and Conservation policies and strategies (e.g. land, water and the environment),
- National Science and Research Policy and Strategy, and
- Strategic plans of target research organization and universities in Ethiopia, Kenya, Sudan and Tanzania.

The actual policy and strategy documents obtained and evaluated for each of the four countries are described in detail in Annex A – section 2.1.1.

### 5.1.2 The second hypothesis

Two questions were formulated for testing the second hypothesis. These include:

- What are the existing modes and strategies of information sharing and promotion of the uptake of technologies?
- What are the attitudes of researchers and managers towards their role in this process?

Secondary data were obtained through reviewing policy and strategy documents. Such documents included ministerial and institutional strategic plans and guidelines for proposal writing. Further information such as university curricula was obtained from training institutions. Primary data was also used and was collected using semi-structured interviews with senior officers in the research, extension, and university faculties. The interviews aimed at finding out what they think are the roles of research systems in ensuring effective promotion, uptake and utilization of research results with specific focus on soil and water management. The specific data collection process for each of the case study countries is described in detail in Annex A – section 2.1.2.

### 5.1.3 The third, fifth and sixth hypotheses

Due to similarities, a single process was used to collect data for third, fifth and sixth hypotheses. The necessary secondary data were obtained by reviewing a number of project documents to assess for the inclusion of promotion and uptake pathways to communicate research outputs to the various end-users. These included project and program documents and reports, focusing on case studies of programmes and projects. Country-wise distribution of case studies was four in Sudan, two in Tanzania and four in Kenya. The relevant documents about the selected programmes and projects included proposal document, appraisal reports, proceedings of annual plans and review meetings, progress reports, technical reports, publications, other communication products and activities. Furthermore, M&E and impact assessment reports were obtained and synthesized to answer the research questions. Then an assessment of the communication and uptake promotion contents and budget allocation in the proposals, activities and final products was carried out for each project. This was followed by determination of the extent to which serious advice was extracted from the project technical reports and given to the relevant stakeholders for ensuring uptake and utilization of the research results. Primary data were collected through a questionnaire administered to selected researchers and managers in the NARS as described in more details in Annex A – section 2.1.3.

### 5.1.4 The fourth hypothesis

Secondary data that were used included guidelines and operational procedures of the M&E units or departments where they exist; guidelines for M&E of soil and water management research projects where they exist; actual M&E reports; and any other relevant document. Primary data were collected through administration of a questionnaire to selected soil and water management researchers. In **Ethiopia,** documents of research programmes and projects implemented over the last 10 years were collected and assessed. While in **Kenya,** policy and strategy documents were analysed and evaluated for communication, and uptake of knowledge at ATIRI and Small-scale drip irrigation project. Questionnaires were administered to selected researchers to enlist their views in technology uptake. For the **Sudan,** data was again obtained from documents of the four long-term projects and programs described earlier. In **Tanzania** like in Kenya, various policy and strategy documents were reviewed for their content of communication and utilization of research products. Similarly a questionnaire was administered to researchers to determine if they include communication plans in their research projects and programmes.

### 5.1.5 Seventh and eighth hypotheses

Secondary data for testing the seventh hypothesis included documents on training curricula from universities with respect to research planning courses given to postgraduate students in programmes related to S&WM. Furthermore, an assessment of short courses given to researchers for in-service professional development were used to assess to what extent communication and uptake promotion techniques are given emphasis. And finally to test the eighth hypothesis the team collected and assessed documents describing strategies of governments and organizations with respect to the rewarding of researchers in the NARS – to see to what extent there is impact orientation in the criteria. Primary data used to test these two hypotheses were collected using a semi-structured questionnaire administered to researchers in soil and water management as described in Annex A – section 2.1.5.

### 5.1.6 Data analysis and hypothesis testing

Data analysis approaches were basically of two types depending on the nature of the data collected. These are content analysis and descriptive analysis. Content analysis approach was used in analyzing the content of policy and strategy documents, project reports and university curricula. The major outputs of content analysis were key messages addressing the specific hypotheses. Descriptive analysis involved determination of descriptive statistics such as mean, numbers, percentages and graphics. Where the amount of quantitative data was statistically plausible the variations were tested for statistical significance.

## 5.2 Increasing the Awareness and Understanding by Key Research Managers and Planners

The delivery of the second output of the project, implementation was guided by the project communication plan produced by an expert consultation workshop at regional level (see Annex C-2). This section describes the institutions targeted for awareness raising and the methods and tools used.

### 5.2.1 Regional (ASARECA) and international stakeholders

The aim was to influence decisions and planning at regional and international level. Awareness raising at international level was implemented by presentations made at two international conferences: 1) the East Africa Integrated River Basin Management Conference, attended by about 130 participants from all over the world, and 2) the 22$^{nd}$ annual conference of the Soil Science Society of East Africa. Awareness raising and advocacy at regional level were achieved through three main means. First, products of the project especially the literature review (SWMnet Discussion Paper 3) was circulated widely. Second, the project prepared and made slide presentations (see Annex B-2.1) to several workshops and meetings, related to the strategy planning and priority setting process across the region and different networks of ASARECA, as well as for the Sub-Saharan Africa Challenge Program (SSA-CP). Third, the project organized consultations of experts in soil and water management in the sub-region.

### 5.2.2 National agricultural research and extension system (NARES)

This group included national agricultural research organizations/institutes, universities especially directorates of PG studies, and faculties & departments with PG programmes in S&WM or related subjects, and public extension system responsible for S&WM. These communication stakeholders were reached through the workshops organized at ASARECA level as explained above. However, several activities were also carried out at country levels.

The main approaches used in the target countries included presentations at face2face meetings, mainly national workshops organized to review research and extension programmes.

### 5.2.3 Ministers and directors of general planning

Under this category the project targeted ministries and directorates responsible for agriculture, rural development, NRM, and research. The aim of communicating with this category of stakeholders was to raise their awareness leading to support to the identified needs for policy frameworks which are supportive to scaling-up and uptake promotion of outputs from agricultural research and S&WM research in particular. The project made a poster presentation to a meeting of Ministers of Agriculture from the Common Market for Eastern and Southern Africa (COMESA). In the Sudan, meetings with several senior ministers were implemented as well as a major half day workshop for the Ministry of Agriculture in Khartoum. In all the four target countries face2face meetings were held with directors and assistant directors in several ministries and organizations.

### 5.2.4 Communication products

The project produced fewer products than anticipated in the communication plan but these were very effective in supporting the awareness raising process described in the previous sections. These are presented in Annex C and briefly described below.

i) SWMnet proceedings and discussion paper (Annexes C-1 & C-2). These two products were effectively used to support the desire of stakeholders to understand more about knowledge management and how to develop communication plans. It is true that some of the target stakeholders were already planning to improve knowledge management, but this project added value and perhaps improved the speed and efficiency at which these actions were taken. This is because several aspects of these products have been used as templates by many of the target stakeholders.
ii) Three posters were used in promoting the research itself as well as the findings and recommendations. These posters have and are continuing to raise awareness and again helping to speed policy decisions.
iii) Media products including Power Point Slides Presentations, an awareness raising film on DVD, project documents, reference materials, reports, and training manuals. These materials have provided SWMnet and its partners a base from which improvements will be made to continue meeting the stakeholders needs for information and awareness raising in the emerging thrust of knowledge management and scaling-up.

## 5.3 Developing Capacity for Providing Training and Skills in Communication Planning and Uptake Promotion

The synthesis of literature review provided the initial ideas of the critical training needs. These ideas were presented and discussed by the expert consultations to agree on the training outline. Furthermore, feedbacks from the awareness raising activities described in the previous section were used to confirm these needs. The training and capacity building was done at three levels:

i) **Integration of knowledge management and scaling-up into a regional training on research 4 development.** The course has been adopted and used extensively in the training of researchers from all the countries that are members of ASARECA. In total the course material has been used by nine short courses implemented by ASARECA, six of its networks, and two other organizations.

ii) **Regional level professional development and training of trainers** designed to respond to the findings of the assessment of constraints and barriers reported in chapter 4. The findings indicated that researchers in the region required skills and confidence with respect to:
- How to respond to, while influencing existing policies in relation to knowledge management, uptake promotion and scaling-up,
- Assessment of knowledge chains and critical analysis of actors along these chains,
- Developing knowledge management strategies for organizations and programmes as well as communication plans for projects, and
- How to select and use the most appropriate knowledge sharing means.

iii) The project then developed and produced a training and reference manual which is presented in Annex B-2.2. The implementation in early July 2005 brought together 40 participants from 10 countries in Eastern, Central and Southern Africa. Participants were researchers, planners and managers in soil and water management from research and development. Experiential, adult and participatory approach to learning was used and the participants were responsible for own learning. Lectures were designed to only facilitate the learning process. A comprehensive report of the whole process is a major communication product of the project published as SWMnet Training Report 2, presented in Annex B 2.3. The training was put into immediate use during the group work and seminars as the groups worked on knowledge management strategies and plans for: 1) ASARECA, where the seminars included a review of the current design of the technology transfer project of ASARECA, and 2) communication and knowledge sharing plans for four projects funded through SWMnet.

iv) **Country level professional development** developed and implemented by those trained at the regional level. Two countries, Sudan and Tanzania have implemented one training session each, and initial plans have also been made in Rwanda and Uganda. The reports produced are presented in Annex B 2.4.

## 5.4 Modification to and achievement of the proposed research activities and inputs

No serious modifications were made to the research activities specified in the RD1. However, ASARECA and its network was given much more attention than originally anticipated because it was considered the most effective way to reach the majority of the project target institutions at national levels. All the planned inputs were made although the production of the Video took longer than expected and was too expensive to produce.

There were many highlights during the course of implementing the project. Examples included:

- The use of project products to influence the process of priority setting and strategy formulation for NRM work of ASARECA
- Interaction with Ministers of Agriculture from COMESA

# 6 Environmental assessment

## 6.1 What significant environmental impacts resulted from the research activities (both positive and negative)?

The research activities by themselves had little environmental impacts.

## 6.2 What will be the potentially significant environmental impacts (both positive and negative) of widespread dissemination and application of research findings?

In the long term the project outputs are expected to lead to increased utilization of technologies for the management of soil and water. Some of these may have either positive or negative environmental impacts but it is difficult to tell at the moment as it is not known what kind of use will emerge from the scaling-up being promoted by the outputs of this project.

## 6.3 Has there been evidence during the project's life of what is described in Section 6.2 and how were these impacts detected and monitored?

N/A

## 6.4 What follow up action, if any, is recommended?

From environmental point of view, it is important to ensure that the scaling-up of existing knowledge focus on "clean" technologies and also include the building of capacities to assess environmental impacts of particular technologies under different conditions. Tools exist which can be used to achieve these and investments are required to increase their resolutions and build capacity for effective utilization in developing countries. In short the scaling-up advocated by this project should focus on knowledge for environment, economic and social aspects of development.

# 7 Contribution of Outputs

## 7.1 NRSP Purpose and Production System Output

By influencing the strategies of ASARECA for knowledge management, NRM and its Competitive Grants Scheme (CGS), the project has built a foundation upon which new knowledge that enables poor people in Eastern and Central Africa to improve their livelihoods, will be delivered. The awareness raising and capacity building work of the project has injected the NRSP-CIM as a new approach to enabling professionals in regional organizations and programmes as well as the NARS in the region to adapt relevant NR management knowledge to prevailing circumstances promote this knowledge among the different key players. It is expected that this will lead development strategies of relevant institutions in the region, incorporating the knowledge for NR management develop through NRSP and other similar programmes. The evidence that knowledge management is receiving increased attention is found in the funding of two projects coordinated by SWMnet and intended to improve the sharing of knowledge and best-practices in the integrated management of: 1) agricultural water for smallholders, and 2) watersheds. The first is supported by IFAD and is designed to build a community of best practices across 14 countries in eastern and southern Africa. The second is designed to leverage innovation in Africa from the Indian experiences in integrated management of watersheds. Both involve two international research centres, ICRISAT and IWMI.

## 7.2 Impact of Outputs

The OVIs at the purpose level of the project were stated as :

By July 2005 evidence in at least 2 institutions in at least 2 target countries show that:

- New research plans at national or institutional levels – contain robust communication and uptake promotion plans, and

- It has been resolved to improve courses given to graduate students on research planning to include a strong emphasis on the formulation of communication plans for research projects.

Both have been attained because institutional strategy for knowledge management and sharing are being proposed by target institutions. Scaling-up and uptake promotion is already a common feature in programmes and projects promoted by ASARECA. Evidence is provided to show that new research plans across the whole region and not just in the target countries, contain robust communication and uptake promotion plans. Although there is no hard evidence yet, it has been resolved to improve courses given to graduate students on research planning to include a strong emphasis on communication strategies, the champions generated by the project have already initiated a concrete advocacy process towards this.

## 7.3 Uptake Promotion

### 7.3.1 Limitations

The methodologies used to quantify the state of affairs with respect to the promotion of research results from soil and water management in ECA region was a rapid appraisal devolved across four countries. Most of the managers and researchers working in S&WM in the four sampled countries were actually reached by the survey and their opinion gathered. As is the case with any rapid appraisal, this study has limitation of scope. The main limitations are:

- The overall focus on the research management and researchers, means that some of the barriers that are caused by this group itself (for example low quality of research results which are rejected by end-users) did not come out.
- The devolved collection of data and information was not harmonized across all the countries. This was attempted but is was realized that the circumstances found in the four countries were extremely different – something which was positive for studying the diverse nature of the NARS in the region but at the same time making it difficult to ask all the country teams to do similar things in the same way. One difficulty which was observed is for example the “un-expected” realization that researchers who are themselves very good in asking others to fill questionnaires are averse to doing the same themselves. The extent of this problem varied between the countries and was more serious in Ethiopia. Similar difficulty was found in the review of policy and strategy documents because they differ in style across the countries.
- It is accepted that more inputs of an expert with policy analysis abilities would have helped. Perhaps the whole team should have been trained more on policy analysis.

However, despite these limitations, feedback from the training sessions and awareness raising activities indicated that the analysis although preliminary and limited, added appreciated value to the target stakeholders. To conclude it is fair to say that the rapid

appraisal provided credible numbers (which rarely exist) to support a useful debate, but as would be expected, the statistical rigour is not of the highest level. The strength of the rapid appraisal emanate from the fact that senior managers in four countries were engaged in these appraisals which reinforced their awareness of the problem of limited uptake promotion of results from S&WM research. This helped the project to leave a footprint in the target organizations which will lead to further and in-depth investigations. Certainly it is the reverse of this strength which could be the major weakness – requesting busy senior staff to undertake a rapid appraisal.

### 7.3.2 Proposed means for further promotion of outputs

SWMnet and its member NARS will build on the three main outputs of the project in several ways. The most important means will be to mobilize the many champions created by the project to spread the message more extensively within the network. As already described in section 5.2.4 above the following main products will continue to be duplicated and used with target stakeholders:

- The SWMnet proceedings and discussion paper (Annexes C-1 & C-2).
- The three posters.
- Media products including Power Point Slides Presentations, DVD, project documents, reference materials, reports, and training manuals.

Furthermore, new products will also be produced as regular publications using SWMnet's regular budget for capacity building and publications.

Since SWMnet has secured two major projects on knowledge management, the outputs of R8381 will form the basis upon which further work will be done. For example more investigations will be done to strengthen the evidence for convincing the decision makers and managers of research systems that investment in knowledge management will pay better dividends than entirely new research. This kind of evidence is necessary for strengthening the advocacy work that has already started. It is expected that through such activities SWMnet will assist to elevate communication, knowledge sharing, uptake promotion and scaling-up to higher priority position in the Eastern, Central and Southern Africa. The advocacy and awareness raising process will therefore be intensified. This will require re-packaging of the products, especially the video which will be sharpened with inclusion of the aspects of the CIM. There is an opportunity to undertake this under the forthcoming DFID's "Research Into Use" programme, which ASARECA and SWMnet are likely to be key players in the Eastern and Central Africa region.

# 8 Publications and other communication materials

## 8.1 Books and book chapters

**Mafuka, P., Futakamba, M., Gasore, E., Nabahungu, L. and Hatibu, N. 2005** *Watershed Development and Resource Management in eastern and Central Africa: Relevance and potential of India-Africa Knowledge Exchange[In Sharma et al. (eds) – Watershed Management Challenges]* IWMI 269 - 283

## 8.2 Journal articles

### 8.2.1 Peer reviewed and published

**Author or Authors, Initial. Year.** *Title.* Publisher/Journal. XXpp. (Page numbers)

### 8.2.2 Pending publication (in press)

**Author or Authors, Initial. Year.** *Title.* Publisher/Journal submitted to. XXpp. (Page numbers)

### 8.2.3 Drafted

**Author or Authors, Initial. Year.** *Title.* Institution. XXpp. (Page numbers)

## 8.3 Institutional Report Series

**Author or Authors, Initial. Year.** *Title.* Publisher/Institution. XXpp. (Page numbers)

## 8.4 Symposium, conference and workshop papers and posters

**Hatibu, N. 2004.** *Integrated Management of Watersheds: Role of Knowledge Management in Soil and Water.* 22nd Annual Conference of the Soil Science Society of East Africa, Arusha, Tanzania – 29th November – 3rd December 2004 Soil Science Society of East Africa. in press

**Lutkamu, M.H., M.C. Shetto, H.F. Mahoo and N. Hatibu 2005** *Scaling-up and Uptake Promotion of Research Findings on NRM in Tanzania* East Africa Integrated River Basin Management Conference SWMRG-SUA. 20pp

## 8.5 Newsletter articles

**Hatibu, N. 2004.** *CHANGING MIND-SETS ABOUT TECHNOLOGY TRANSFER* SWMnetting Isuue 1, April 2004 4pp

## 8.6 Academic theses

**Author or Authors, Initial. Year.** *Title.* Publisher/Institution. XXpp. (Page numbers)

## 8.7 Extension leaflets, brochures, policy briefs and posters

**SWMnet 2004** *A Culture of Promoting Uptake, Scaling-up and Effective Use of Results from S&WM Research* SWMnet 1pp

**SWMnet 2005** *Building a Culture of Promoting Uptake, Scaling-up and Effective Use of Results from S&WM* SWMnet 1pp

**SWMnet 2005** SWMnet - *Creating Innovation in Integrated NRM through South-South Partnership* SWMnet 1pp

## 8.8 Manuals and guidelines

**Author or Authors, Initial. Year.** *Title.* Publisher/Institution. XXpp. (Page numbers)

**Author or Authors, Initial. Year.** *Title.* Publisher/Institution. XXpp. (Page numbers)

**Author or Authors, Initial. Year.** *Title.* Publisher/Institution. XXpp. (Page numbers)

## 8.9 Media presentations (videos, web sites, TV, radio, interviews etc)

**SWMnet 2005** *A Call for a Culture Promoting Uptake, Scaling-up and Effective Use of Results from S&WM Research* SWMnet DVD

**SWMnet 2005** *Scale-up Knowledge before Technology* WRENMedia Radio

## 8.10 Reports and data records

### 8.10.1 Project technical reports including project internal workshop papers and proceedings

**Dubale, P. *et al*. 2004** *SWMnet Proceedings 2* SWMnet 65pp

### 8.10.2 Literature reviews

**Dubale, P. *et al*. 2004** *SWMnet Discussion Paper 3* SWMnet 17pp

### 8.10.3 Scoping studies

**Author or Authors, Initial. Year.** *Title.* Publisher/Institution. XXpp. (Page numbers)

### 8.10.4 Datasets

**Author or Authors, Initial. Year.** *Title.* Publisher/Institution. Format.

### 8.10.5 Project web site, and/or other project related web addresses

www.asareca.org/swmnet

Web site address

# 9 References cited in the report, sections 1-7

**DFID, 2002.** Socio-economics methodologies for natural resources research: Best Practice Guidelines. Chatham, UK: Natural Resources Institute.

**DFID-NRSP, 2002.** Scaling-up and communication: Guidelines for enhancing the development impact of natural resources systems research. Hemel Hempstead, UK **: DFID**-Natural Resources Systems Programme. 8pp.

**Gundel, S.; Hancock J.; and Anderson, S., 2001**. Scaling-up strategies for research in natural resources management: a comparative review. Natural Resources Institute (NRI), Chatham, UK. 61 pp

**MDGs Technical Support Centre, 2004**. Proceedings of the high level seminar on the United Nations Millennium Project. Addis Ababa, Ethiopia: 5 July 2004

**Janssen, W., 2002**. Institutional innovations in public agricultural research in five developed countries. ISNAR Briefing paper 52.http:// www.isnar.cgiar.org/publications/briefing

**NEPAD, 2003.** Comprehensive Africa agricultural development programme. Midrand, South Africa: NEPAD Secretariat. 102pp

UN Millennium Project. 2005. Innovation: applying knowledge in development. Task Force on Science, Technology and Innovation. London, UK: Earthscan, 194pp

# 10 Project logframe

| Project Number | Log frame and Production System reference number |
|---|---|
| R8381 | SA 1.3.1 f) cross cuts to HS 1.3.3 d) |

| Narrative summary | Objectively verifiable indicators | Means of verification | Important assumptions |
|---|---|---|---|
| **Goal** | | | |
| Livelihoods of the poor farmers in East and Central Africa **improved** through effective and integrated management of land and water resources for agricultural enterprises | By end of 2006 there is evidence that as a result of SWMnet work, there is increased investment to empower poor farmers to implement and benefit more from integrated watershed management, in at least one of the target countries | Inventories of relevant agricultural and rural development programmes as contained in the ASARECA baseline data now under preparation | |
| **Purpose** | | | |
| A culture of promoting uptake, scaling-up and effective use of results from soil and water management research in East and Central Africa **institutionalized** | By July 2005 evidence in at least 2 institutions in at least 2 target countries show that:<br>• New research plans at national or institutional levels – contain robust communication and uptake promotion plans<br>• It has been resolved to improve courses given to graduate students on research planning to include a strong emphasis on communication plan | Assessment of documentation of national or institutional plans for research in S&WM in the target countries<br>Minutes of relevant university departments with graduate programmes in S&WM | The available development funding for land and water management will be maintained or enhanced to allow effective application of research results over a wide scale |
| **Outputs** | | | |
| 1. Constraints and barriers limiting uptake promotion by research institutions and partners, **elaborated** and **understood** | By August 2004, a report identifying key needs for awareness raising and training is in place and project Communication Plan (CP) is implemented | Project progress report and Communication Plan | The positive support and demand for increased impact from research in NRM is maintained while adequate resources are made available at national level for impact orientation |
| 2. Understanding by key research managers and planners, of the importance of communication and uptake promotion strategies for impact of R4D in S&WM **increased** and **enhanced** | By June 2005 at least one NARS institution in each of the target countries has decided to consider a communication plan and an uptake promotion strategy – as a high priority criteria in the appraisal, monitoring and evaluation of research projects | Assessment of documentation of national or institutional plans for research in S&WM in the target countries | |
| 3. Capacity for providing training and skills development in communication planning and uptake promotion, **developed** among the SWMnet stakeholders in ECA | July 2005, at least one training targeted at research planners and managers, has been implemented in each of the target countries | Training evaluation report<br>Report from feedback survey | |

| Activities | Milestones | Budget | Assumptions |
|---|---|---|---|
| **For Output 1:** Constraints and barriers limiting uptake promotion by research institutions and partners, **elaborated** and **understood** | | | |
| 1.1. Undertake a rapid appraisal of planning and management of research in S&WM in the four target countries to establish the barriers and drivers of effective communication planning and uptake promotion | **MS1a** - 2004 May, rapid appraisal plan in place and implementation initiated in each of the four target countries<br>**MS1b** - 2004 July, Rapid appraisal finalized and country reports produced | Staff £8,975<br>O/heads £3,588<br>Operations £14,135<br>Sub-total £26,698 | The regional expert consultation will be attended by the most senior and experienced scientists |
| 1.2 Synthesize relevant findings from NRSP projects on uptake promotion with respects to needs identified in the region | **MS1c** - 2004 July, synthesis of NRSP results (R7037, 7888, R7865, R7866 etc) and adaptation to the ECA needs completed | | |
| 1.3 Implement a regional expert consultation to synthesize findings of the rapid appraisal, identify awareness raising and training needs, and finalize the project CP | **MS1d -** 2004 Aug, Regional expert consultation implemented and synthesis report and M&E baseline data produced.<br>**MS1e –** 2004 July Communication Plan agreed and distributed | | |
| **For Output 2:** Understanding by key research managers, of the importance of communication and uptake promotion strategies for impact of R4D in S&WM increased and enhanced | | | |
| 2.1 Define awareness raising approach suitable for the target research planners and managers in the four countries and develop communication products | **MS2a** - March 2005, communication products for awareness raising produced | Staff £6,865<br>O/heads £2,748<br>Operations £13,690<br>Sub-total £23,303 | Senior research managers in the target countries will be available for the awareness raising seminars and other activities |
| 2.2 Conduct awareness raising and other communication activities in each of the four countries – targeting relevant research planning managers, research managers, and graduate schools offering programmes in S&WM | **MS2b** – April 2005, awareness raising activities completed and lessons synthesized into a report | | |
| **For Output 3:** Capacity for providing training and skills development in communication planning and uptake promotion, **developed** among the SWMnet stakeholders in ECA | | | |
| 3.1 Develop a comprehensive Training of Trainers (ToT) package including training materials targeted at research planners and managers and focusing on institutionalizing uptake promotion strategies developed by NRSP | **Ms3a** – March 2005, ToT plan and materials developed and published | Staff £7,305<br>O/heads £3,904<br>Operations £35,325<br>Sub-total £46,534 | Communication planning and uptake promotion will be integrated into already planned and financed national level capacity building activities for researchers in the target countries |
| 3.2 Develop also training modules suitable for researchers and include in the already planned SWMnet training on development of R4D projects in S&WM | **MS3b** - October 2004, contribution of modules made to training on development of R4D projects in S&WM | | |
| 3.3 Implement one regional ToT targeted at research planners and managers and focusing on institutionalizing uptake promotion strategies developed by NRSP. | **MS3c** – May 2005 regional ToT targeted at research planners and managers implemented | | |
| 3.4 Synthesize, document and promote lessons to SWMnet stakeholders, other networks of ASARECA, and regional and international organisations supporting agricultural research for development in sub-Saharan Africa | **MS3d** – July 2005, Final Technical Report (FTR) produced<br>**MS3e** – September 2005, lessons learned collated and documented and posted in SWMnet Website | | |

## 11 Keywords

Knowledge management, scaling-up, soil and water management, ASARECA, SWMnet, uptake promotion, knowledge prospecting, knowledge brokering, knowledge products chain