Why are research results not reaching farmers' fields?

RIU

Validated RNRRS Output.

A compilation of the constraints limiting uptake and scaling-up of natural resources research results in Eastern Africa is helping policy makers get a better idea of these barriers. Awareness-raising products are explaining to researchers their role in the process. Training materials, including a learning manual, are helping build the capacity of researchers to influence institutional strategies and also design and implement plans for communication, sharing, promoting uptake, and scaling-up of their own research outputs. These materials are now used extensively throughout Eastern and Southern Africa, including in Angola, Botswana, Burundi, Comoros, D.R. Congo, Eritrea, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, South Africa, the Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.

Project Ref: **NRSP15:**
Topic: **4. Better Water Harvesting, Catchment Management & Environments**
Lead Organisation: **ASARECA, Uganda**
Source: **Natural Resources Systems Programme**

Research into Use
NR International
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Geographical regions included:

Eastern Africa, Ethiopia, Kenya, Southern Africa, Sudan, Tanzania,

Target Audiences for this content:

Crop farmers, Livestock farmers, Fishers, Forest-dependent poor,

Document Contents:

Description

NRSP15

A. Description of the Research Output(s)

1. Working title of output or cluster of outputs

Community of champions for uptake, scaling-up and capacity building of results from research in soil and water management in ECA

2. Name of relevant RNRRS Programme(s)

The Natural Resources Systems Programme (NRSP)

3. Relevant R numbers and institutional partners

R 8381

The Project Team

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Tanzania – Department of Research and Training (Mrs. Mary H. Lutkamu, Mr. Newton Temu, Mr. Phillip Mbuligwe, Mrs. Mary C. Shetto)

4. RNRRS output or cluster of outputs - (max. 400 words)

Three outputs with respect to evidence, awareness and capacity are being proposed. These are:

Systematic evidence and documentation, probably for the first time, of the **barriers and constraints limiting uptake promotion and scaling-up** of research results from natural resources research in Eastern Africa. This output aimed to address the problem that while policy and strategy documents of government ministries, departments and relevant organizations, recognize and put a lot of emphasis on ensuring that results from agricultural research reach the farmer, this emphasis has hardly been turned into action. This output is designed to assist policy makers gain better understanding of the barriers and thus take the right corrective measures.

Awareness raising products which included posters, leaflets, video and seminar presentations which were designed to elaborate the **role of researchers in uptake and scaling-up**, as well as the roles of stakeholders other than extension and farmers. The main problem tackled was the institutional structures that are based on uni-directional dissemination of results from research-to-extension-to-farmers. This has led to confinement of researchers and extension staff into narrow boxes defined by their organizational affiliation, leading to a failure to adopt a problem focussed approach that brings the necessary stakeholders together to act on research findings.

Compiled **needs for learning and capacity building** together with curricula for joint learning coupled with a learning manual. The main problem was that due to lack of champions for knowledge management, uptake promotion and scaling-up, for every 10 units invested in research field work, less than 2 units are used in turning the generated information to advice for, and action by end users and their support agents. The output is designed to build the capacity of researchers to influence institutional strategies and also design and implement robust plans for communication, sharing, promoting uptake, and scaling-up of own research outputs.

5. What is the type of output(s) being described here?

Product	*Technology*	*Service*	*Process or Methodology*	*Policy*	*Other Please specify*
		X	X	X	

6. What is the main commodity (ies) upon which the output(s) focussed?

The products are not commodity specific as they were developed for NRM but are also applicable to commodity research in general.

7. What production system(s) does/could the output(s) focus upon?

Semi-Arid	*High potential*	*Hillsides*	*Forest-Agriculture*	*Peri-urban*	*Land water*	*Tropical moist forest*	*Cross-cutting*
							X

8. What farming system(s) does the output(s) focus upon?

(Please tick one or more of the following options (see Annex B for definitions). Leave blank if not applicable)

Smallholder rainfed humid	*Irrigated*	*Wetland rice based*	*Smallholder rainfed highland*	*Smallholder rainfed dry/cold*	*Dualistic*	*Coastal artisanal fishing*

9. How could value be added to the output? - (max. 300 words)

The main focus should be in changing institutional and individual mindsets with respect to the concept of *knowledge prospecting*, that is, the searching, adapting and diffusing of knowledge, technologies and best-bet practices from all sources. Therefore, value will be added if clustered with outputs of:

R8428/8349 – Communication strategies for EA semi-arid systems;
R8429/R8281 – Linking demand with supply of agricultural information;
R8402 & ZB0380 – Knowledge management;
R7865 – Scaling-up process;
R8363 – Scaling-up through communication; and
Various projects (e.g. R8318) of the dissemination and delivery suite of the AHP.

The non-RNRRS outputs recommended for consideration are:

Guidelines on scaling-up of watershed management approaches from India, such as the Hariyali [1] guidelines.

- Ø The approaches and methodologies developed and tested by Agricultural Technology Information Research Initiative (ATIRI) in Kenya with respect to participatory knowledge management. Lessons from ATRI can also assist to improve the information networks designed to enhance exchange of information between researchers, intermediaries and users.

- Ø Report of the millennium task force on Science, Technology and Innovation [2].

- Ø The USAID's *Strategic Analysis and Knowledge Support System* (SAKSS), designed to capture and consolidate scattered data and information on Africa's agriculture from national statistics agencies, bilateral donors, the United Nations system, and other institutions. SAKSS is developing a robust framework for global compilation, synthesis and access to data, information and knowledge for meeting the Millennium Development Goals. The ultimate goal is to institutionalize a SAKSS-like system within national agencies (government ministries and/or research institutions) to enable African policymakers to have access to up-to-date analysis and knowledge necessary for planning, monitoring and evaluating long-term development strategies.

[1] The "Hariyali Guideline" is a product of many years of lessons from implementation of IWM in India and was approved by the GoI in 2005 (http://dolr.nic.in/HariyaliGuidelines.htm)
[2] Un Millennium Project (2005) – Innovation: *Applying Knowledge in Development*. Task force on Science, Technology and Innovation

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Validation

B. Validation of the Research Output(s)

10. How were the output(s) validated and who validated them? - (max. 500 words)

The outputs were validated through practical application to the target end users, namely researchers and their organizations at regional and national levels. At regional level, awareness and learning workshops were used to validate the outputs while implementing the objectives of the project. Specifically output 1 and 2 were used extensively with all the relevant stakeholders at several regional and national fora for the formulation of strategies to direct agricultural research for development in the next 5 – 10 years. More than 750 stakeholders that included policy makers, research managers, and researchers as well as end-users gave positive feed-back on the effectiveness of these products in dealing with the target problems. With respect to the third output, nearly 250 researchers in the region have been exposed to it and they all gave positive feedback. There is very strong evidence that there has been application, replication, adaptation and/or adoption of the outputs by target partner organisations at regional and national levels. The awareness raising and capacity building materials are being replicated and translated into local languages such as Kiswahili and Arabic and the capacity building manual is being modified to suit local conditions. We believe that this is evidence of validation. Few examples are given below:

- In Ethiopia, consultations with research policy makers using the output 1 have led to changes in the functions of research-farmer-extension linkage department.
- In Sudan, validation through seminars attended by the top management of the agricultural research corporation, directors of five research centres, the Dean of Water Management Institute of Gezira University and fellow scientists. Their feedback was to endorse implement output 3 in order to develop capacity of researchers not only those involved with soil and water management, but all scientists. Two TOT courses were carried out from ARC own resources in Central and Western Sudan including extension technology transfer staff from major irrigation schemes such as Gezira and Rahad.

In Kenya, new regulations for research projects have been adopted with uptake promotion and scaling-up as key criteria for ranking and evaluation of projects (Table 1). Furthermore, extensive resources have been used to put the outputs into use under both KAPP and SLMP projects.

Table 1: Modification to KARI's Project evaluation criteria as a result of the outputs

1. Are the mechanisms for sustainable exploitation of outputs included in the research report? [3]
2. Will the results of the research lead to a product or program that leads to new investment?
3. Will the research increase the potential to access credit and inputs?
4. Are the technology dissemination and up-take pathways included and sustainable?
5. Is there potential for up-scaling and out-scaling

[3] Each criteria is given a weighted score

- In Tanzania, investments have been made on training of trainers' courses on managing and scaling-up research outputs to create a community of champions. As a result of this awareness creation, SUA under its Department of Research and Post Graduate Studies (DRPGS) has established an uptake promotion office to accelerate promotion of research results.
- In Rwanda, the validation took place through consultation mainly within the policy makers and research managers at head office of agricultural research institute of Rwanda (ISAR). The validation has been effective by elaborating a new organisational structure with the creation of regional centres of ISAR. ISAR has strengthened its technology transfer programme following awareness raising to decision makers and increased demands from end-users and support organisations.
- In Uganda, the outputs were validated through consultations with research and extension mangers. As a result, there is demand to develop strategies for increased adoption of research interventions. Validation was also done through workshops organised by regional bodies like ASARECA where researchers and NGOs participated. In addition, at national level UNFFE organised workshops to review and plan season activities held in August 2005 at Kampala.

It was too early to observe *a*ny increases in productivity during those validation processes. Preliminary but incomplete evidence is emerging from an Ethiopian pilot scaling-up thrust to put research results into immediate use by framers.

11. Where and when have the output(s) been validated? - (max 300 words)

At regional level, the network created by ASARECA was utilized for the validation. For example outputs 1 and 2 were used and validated during 2005 at workshops such as

The ASARECA NRM experts' consultation workshop attended by 52 participants from international, regional and national organization.
The ASARECA NRM stakeholders' workshop attended by 54 participants from research, development and extension organizations as well as NGOs. Again participants were from international, regional and national institutions.
The strategic planning workshop of SWMnet which was attended by 52 stakeholders from research and development sub-sectors, representing international, regional and national organizations.
Two professional development courses were implemented at regional level.

In Ethiopia the validation were done at EIAR headquarters, Melkassa and Debrezeit Agricultural Research Centres in the Central Rift Valley, Debub and Mekele Universities. The main targets were researchers and university faculty staff. These validations of output 1 were implemented during 2005-2006. In Sudan, the first TOT was conducted in Central Sudan ARC headquarters (6-18 August 2005). A total of 39 researchers, Directors, extension workers and technology transfer staff

attended the TOT course, where 9 were women scientists. The second TOT, carried out in Western Sudan Al-Obeid research station (November 2005). During this ToT course the DVD was also shown. In Tanzania, the validation was carried out at the Ministry's headquarters and Agricultural Research Institute in Selian and Ukiriguru, and Sokoine University of Agriculture through consultation of policy makers, research managers and researchers. A TOT course was conducted at SUA in August 2005 involving researchers and lecturers (7 women, and 20 men scientists).

Current Situation

C. Current Situation

12. How and by whom are the outputs currently being used? - (max. 250 words)

At regional level all the three outputs are being utilized by ASARECA and its programmes. For example, the third output has become a standard component of the training of researchers under the Competitive Grants Scheme (CGS) of ASARECA. To some extent output one has influenced the development of a regional post-graduate programme [4]. Furthermore, these outputs forms a foundation for the implementation of a knowledge management project called IMAWESA. It is designed to improve and strengthen the sharing of knowledge, information and best practices emanating from field experiences in implementing development programmes in agricultural water management. This is considered to be critical, both for enhanced programme design and implementation, and for providing the substantive basis upon which to engage in policy dialogue. The target is the poor farmers, NGOs, planners and policy makers working on smallholder agricultural water management in 23 countries in Eastern and Southern Africa.

At national level, government departments and research organizations are using the outputs as a catalyst for initiating institutions, institutional changes or guidelines to facilitate robust uptake promotion and scaling-up. For example,
Ethiopia - new research projects of the EIAR incorporated a robust communication and knowledge sharing plans.
Kenya - output 1 is currently used as reference material in the three main KARI centres for soil and water management and the Jomo Kenyatta University of Agriculture and Technology and University of Nairobi.
Sudan - the Gezira Irrigation Authority formed a new section for Technology Transfer, Research and Basic Services. The head of the section was one of participants of the capacity and skills building workshops forming part of output 3.
Tanzania - PADEP has allocated funds for further training of researchers in managing and scaling-up of research outputs in 2006/07.

[4] RAIN (2006) Development of Postgraduate Programme for Enhancement of Skilss in Agricultural Information and Communication Management in ASARECA Region. Regional Agricultural Information Network of ASARECA

13. Where are the outputs currently being used? - (max. 250 words)

Through ASARECA, SWMnet and their partners the outputs are now being used in projects targeting more than 20 countries in Eastern and Southern Africa. ASARECA is the main user of the outputs in the region in the training of recipients of its CGS grants. The IMAWESA project is putting the outputs into use in 23 countries in Eastern and Southern Africa. The countries include Angola, Botswana, Burundi, Comoros, Democratic Republic of Congo (DRC), Eritrea, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, South Africa, the Sudan, Swaziland, United Republic of Tanzania, Uganda, Zambia and Zimbabwe.

Apart from the use at regional level, the outputs are put into use by government departments, research organizations and development projects in the target countries. For example:

Ethiopia, the main locations of use are the EIAR research centres, Melkassa, Holleta, Ambo, Jima and Debrezeit as well as the universities of Debub and Mekele.
In Kenya in the three main KARI centres for soil and water management and on a limited scale in Jomo Kenyatta University of Agriculture and Technology and University of Nairobi.
In Sudan the main locations are the Agricultural Research Corporation, Al Obeid Research Station, University of Gezira and Gezira Scheme.
In Tanzania, Department of Research and Training of MAFC, SUA and the four ARIs with champions trained in CKM.
In Uganda, at Research Institutions, MAAIF, UNFFE, and DFA offices and field training centres.
In Rwanda, used in several projects within ISAR (such as ISAR-Netherlands project in Ubugesera, RWH Project in Umutara).

14. What is the scale of current use? - (max 250 words)

Capacity building at regional and international level is relatively wide. Specifically the approach to the development of communication, knowledge sharing and learning plans has to some extent been institutionalized. Furthermore, ASARECA and few of its member NARS have implemented recommendations linked to output one, at a regional (and international) level. At regional level, usage was established within a period of few months after the outputs were produced mainly because of the regional nature of the organization hosting the project. Usage of the outputs is still spreading as evidenced by fresh requests to the team leader of R8381 for materials and inputs to seminars, training and workshops. Also there are fresh plans being made at country levels to put the outputs into use.

In Ethiopia, influencing policy and mind-set was achieved quickly but putting output 2 and 3 into use has been slow as the first national capacity building programme is planned for December 2006.
In Kenya, only 3 of the 18 KARI centres are using the outputs. Vertical scaling up has not yet taken root and the potential is enormous.
In Sudan, application of output 3 was very quick and is still spreading because there is demand for more training in uptake promotion and scaling-up. The Gezira Irrigation Authority is using output 1

and 2 for increased adoption of technological packages.
In Tanzania, out of 7 agricultural zones, researchers from four zones have received training. In addition, only 7 Scientists from the SUA are part of the community of champions. There Department of Research and Training has allocated funds for more training in the 2006/07.
Both Uganda and Rwanda were not target countries for the project and the extent of use is still small for all the outputs. Nevertheless, the usage of the outputs is spreading at an increasing rate particularly by the researchers and NGO managers.

15. Programmes, platforms, policy, institutional structures - *(max 350 words)*

The outputs were produced at a time when concerns about progress towards the attainment of the MDGs in SSA, were gaining momentum prompting UN Secretary General, H.E. Kofi Annan to make his famous declaration in July 2004 that ***knowledge required to achieve a green revolution in Africa is not lacking …, what is lacking, as ever, is the will to turn this knowledge into practice.*** Therefore, there was a global policy position demanding the outputs of this project. The same policy position was also found at regional and national levels. Therefore, the right policy environment and high level of demand assisted with the acceptance and adoption of the outputs. As it has already been made clear in the previous questions, the most important institutional structure was that the outputs were produced and promoted by a regional network – ASARECA. This accorded the outputs an elevated status which enhanced their wide acceptance.

At national levels, various ASARECA member countries have conducive policies and strategies that are supportive and demanding for impact of research. For example in Kenya, the strategy for the revitalisation of agriculture and poverty reduction strategies recognise agriculture as the vehicle for achieving the goals stated therein. Productivity in Agriculture has been very low; hence, the pressure to have impact from research is high. This is shared in all ECA countries like Ethiopia, Sudan, Uganda, Tanzania and Rwanda. In terms of capacity strengthening, the key facts of success included the high demand for capacity and skills on CKMS by many other organizations and regional and national levels. There are also more champions in the region who are spearheading development of new institutional arrangements, guidelines as well as training curricular to support uptake promotion and scaling-up. For Kenya, Uganda, Tanzania and Ethiopia, the NARES have memorandum of understanding (MOUs), which made it easier for vertical and horizontal scaling-up. Innovation plat-forms such as the KAPP competitive grants that is open to all, provide an avenue where agricultural researchers gather around solving agricultural problems rather than around institutions.

Current Promotion

D. Current Promotion/Uptake Pathways

16. Where is promotion currently taking place? - *(max 200 words)*

The responses presented in the previous sections make it clear that there are users of the outputs and they are doing internal promotion. For example by using the outputs to train teams for new projects commissioned by its CGS, ASARECA is promoting the outputs among its constituents. The most active promotion of some aspects of the outputs, especially the capacity to prepare CKS&L plans is taking place in about 20 countries that are targeted by the IMAWESA project which involves IFAD, ASARECA and ICRISAT. The extent of promotion of the outputs in the countries which were directly targeted by R8381 is summarized in Table 2 below.

At national level in countries such as Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda, promotion is taking place horizontally within organizations that have already adopted the outputs. These organizations are also doing limited vertical promotion to policy makers by putting outputs 1 and 2 into use. However, it must be said that it is very difficult to distinguish between using the outputs and promoting the outputs.

Table 2: Summary of extent of promotion

What outputs	Where	By whom	Scale
1. Communication products 2. Capacity building	Regional level	ASARECA (SWMnet and RAIN) ICRISAT	High
	Ethiopia	EIAR and Soil Science Society of Ethiopia	Very Low
	Kenya	KARI	Low
	Sudan	ARC, Gezira University	Moderate
	Tanzania	DRT and SUA	Low
	Uganda	KARI,UNFFE, DFA	Very low
	Rwanda	ISAR	Very low

17. What are the current barriers preventing or slowing the adoption of the output(s)? - *(max 200 words)*

The most critical barrier is the incomplete institutionalisation of the adoption of the outputs so that their promotion and scaling-up are included in regular plans and allocated budgets by the target organizations. This is caused by the inherent inertia found in most organizations with respect to introducing new ways of doing things and the fact that project R8381 was too short to provide the necessary sustained exposure of the outputs. Another problem is that at national level those responsible for promoting new outputs were part of the research-extension-farmer linkage system of dissemination which is challenged by the outputs themselves. Therefore, to some extent the outputs did not have a ready home at national level once the project was completed. This was compounded by the fact that while accepting the absolute importance of uptake promotion and scaling-up, the extent to which researchers should be involved in relation to the extension institutional set up is under intense debate.

The target institutions are constrained with resources availability for scaling-up, meaning they could allocate only limited resources to replicate the products such as the training manuals, DVDs

and others. The main cause is the inadequacy of guidelines on cost recovery from uptake promotion and scaling-up activities. The same problem has affected the ability of the community of champions to undertake vigorous uptake promotion.

18. What changes are needed to remove/reduce these barriers to adoption? - (max 200 words)

The institutionalization barrier requires a radical change in the sectoral and institutional set up of research, extension, training and agricultural development in general. There is a need for innovative platforms for building problem/objective focus to improve collaboration and interaction between the different sub-sectors with strong market linkages. However, this requires time and consistent attention which can only come through special projects on change management and transformation.

The other intervention necessary is to expand the availability of the outputs especially products and meta-products through improvement to target different categories of stakeholders so as to create a critical mass of champions.

There is also a need to develop and facilitate an effective cost recovery mechanism. This will require funds for seed capital, especially to establish the training and capacity building programmes that have been developed. Specific support is required in initiating training at universities to ensure that new crop of researchers are proficient in uptake promotion and scaling-up.

Finally the community of champions at all levels need to be expanded and then supported to function effectively.

19. What lessons have you learnt about the best ways to get the outputs used by the largest number of poor people? - (max 300 words)

The outputs are not specifically or directly aimed at 'poor people', but rather those who work with the poor. However, one major lesson is that use of outputs that lead to policy and institutional changes requires well positioned champions and projects should deliberately cultivate such champions. The lessons learned include:

Importance of having widely accepted and respected organizations or networks promoting such outputs. Therefore, a starting point is identification and critical analysis of such organizations followed by efforts to influence their policy position on the outputs being promoted – getting "buy-in". Then this should be supported by selecting and building communities of champions for the outputs, within communities, organizations as well as national and regional systems.

The need to select and implement an appropriate approach to promotion including language, packaging and repackaging of the products targeting needs and circumstances of different groups. A key step is public relationship which is achieved if the target groups and their organizations are involved right from the beginning so that they know where the outputs are coming from.

There is a need for constant improvement of the products representing the outputs as well as promotional materials to keep pace with changing situations and needs. Therefore, tremendous time, resources and efforts are needed to produce well targeted and packaged products. This must be supported by an in-built mechanism for follow-up of the utilization of products and responding quickly to any feedback.

Timing and exploitation of opportunities which focus the attention of society on issues to which the outputs are targeted at.
Changing the mind set takes time and requires use of integrated approaches, tact for lobbying and advocacy.

Impacts On Poverty

E. Impacts on Poverty to Date

20. Where have impact studies on poverty in relation to this output or cluster of outputs taken place?

There were no systematic impact assessment, carried out because of the project nature that targeted researchers and research managers. However, there was informal assessment of the impact of the outputs as reflected on the mindset change of the target group and institutional arrangements which will indirectly have positive impact on poverty reduction programmes.

21. How have the poor benefited from the application and/or adoption of the output(s)? - (max. 500 words)

Although the outputs of this project targeted researchers and policy makers we believe that the emerging institutional changes and in the way research results and adoption are evolving will provide a conducive environment for effective utilisation of research results. This will have an indirect impact on the livelihoods of the poor but since the outputs were produced only in 2005, it is too early to answer the set of questions below:

What positive impacts on livelihoods have been recorded and over what time period have these impacts been observed?

Human capital - a significant awareness among those who work for the poor has been built but nothing yet directly on the poor themselves
Social capital – a process of building regional and national networks for knowledge exchange has been initiated especially by the adoption by the ASARECA CGS of a very strong emphasis on inclusion of substantial component on up-take promotion and scaling-up in all the projects being supported. However, this is still happening at the level of those supporting the poor rather than the poor themselves.
Natural capital – No direct benefits as yet have been recorded

Physical capital - No direct benefits as yet have been recorded
Financial capital - No direct benefits as yet have been recorded

For whom i.e. which type of person (gender, poverty group (see glossary for definitions) has there been a positive impact?

As already stated above the outputs were not targeted directly at the poor and therefore nothing has been recorded yet.

Indicate the number of people who have realised a positive impact on their livelihood;

N/A

Using whatever appropriate indicator was used detail what was the average percentage increase recorded?

N/A

Environmental Impact

H. Environmental impact

24. What are the direct and indirect environmental benefits related to the output(s) and their outcome (s)? - (max 300 words)

The proposed outputs are expected to promote uptake, use and scaling-up of environmentally sound but science-based agriculture technologies and practices in the target countries by putting into use the wealth of agricultural science accumulated in the world since early 1990s. Science-based agricultural modernization is the only way that poverty and hunger can be eliminated in the world without compromising the environment. It is the great Norman E. Borlaug who once noted that "*…by increasing yields on the lands best suited to agriculture, world farmers have been able to leave untouched vast areas of land for other purposes. For example, had the global cereal yields of 1950 still prevailed in 1999, instead of the 600 million hectares that were used for production, we would have needed nearly 1.8 billion ha of land of the same quality to produce the current global harvest. Obviously, such a surplus of land was not available, and certainly not in populous Asia, where the population has increased from 1.2 to 3.8 billion over this time period. Moreover, had more environmentally fragile land been brought into agricultural production, the impact on soil erosion, loss of forests and grasslands, biodiversity and extinction of wildlife species would have been enormous…*".

Therefore, given the enormity of the challenge to reduce poverty and hunger in Africa and Asia, adoption of research outputs is paramount so that the environment can be protected. The outputs

being proposed will assist in this direction leading to indirect environmental benefits.

25. Are there any adverse environmental impacts related to the output(s) and their outcome(s)? - (*max 100 words*)

The use of these outputs is expected to lead to increased promotion, uptake and adoption of natural resources management strategies, technologies and practices developed by different research work. Evidence from agriculture development in the industrialized world indicates that advances in farming systems, especially the heavy reliance on agro-industrial inputs could lead to some serious negative environmental impacts. These include erosion, loss of soil fertility, depletion of nutrient reserves, salinization and alkalinization, pollution of water systems, as well as loss of crop and animal biodiversity. However, given the current low level of inputs use in the developing countries, it is possible to reduce the occurrence of these negative impacts with good planning and systems integration.

26. Do the outputs increase the capacity of poor people to cope with the effects of climate change, reduce the risks of natural disasters and increase their resilience? ***(****max 200 words****)***

Significant advances have been made in meteorology leading to increased accumulation of knowledge and understanding of global climatic patterns. However, this accumulated knowledge is seldom harnessed to assist the poor farmers and pastoralists, agro-entrepreneurs, and their support agents. The challenge is in the ability and will of relevant experts in developing countries to make full use of the knowledge being accumulated globally to address climate-induced risks affecting the poor. The outputs being proposed are designed to improve the will and the capacity of institutions and individual experts to conduct prospecting and brokering in climate knowledge and to adapt it to local needs and circumstances. This will assist in making the advances in climatology readily available to inform strategy formulation and decision-making at macro and micro levels for smallholder agricultural agro-enterprises, coping and adaptation strategies and protection of vulnerable communities. Therefore, these outputs will increase the capacity of institutions and experts working with the poor, to access knowledge and tools necessary to increase the capacity of poor people to cope with the effects of climate change, reduce the risks of natural disasters and increase their resilience.

Annex

Abbreviations and Acronyms

ARC Agricultural Research Council of the Sudan
ARIs Agricultural Research Institutes
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
CKM Communication and Knowledge Management
CKMS Communication and Knowledge Management Systems
CKS&L Communication, Knowledge Sharing and Learning
DFID Department for International Development of the UK
DRD/T Department of Research and Development/Training – Ministry of Agriculture and Food Security - Tanzania
EIAR Ethiopian Institute of Agricultural Research
ECA Eastern and Central Africa
ESSS Ethiopian Soil Science Society
ICAR Indian Council of Agricultural Research
ICRISAT International Crops Research Institute for the Semi Arid Tropics
IFAD International Fund for Agricultural Development
IMAWESA Improved Management of Agricultural Water in Eastern and Southern Africa
ISAR Agricultural Research Institute of Rwanda
IWMI International Water Management Institute
KARI Kenya Agricultural Research Institute
KAPP Kanya Agricultural Productivity Project
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
PADEP Participatory Agricultural Development and Empowerment Programme
PDC Professional Development Course
RADA Rwanda Agriculture Development Authority
RAIN Regional Agricultural Information Network
R4D Research For Development
SAKSS Strategic Analysis and Knowledge Support System
SSA Sub Saharan Africa
DRPGS Department of Research and Post Graduate studies
S&WM Soil & Water Management
SWMnet Soil and Water Management Research Network of ASARECA

ToT Training of Trainers
USAID United States Agency for International Development

Introduction

While agricultural innovation requires the involvement of nearly all the stakeholders in the agricultural sector, the agricultural research system is well placed to 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. Therefore, what the national agricultural research system (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 the 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 address local obstacles, circumstances and opportunities.

The project R8381 was initiated from the realization that this role of NARS can not be achieved without a wholesale change of culture of its constituent organizations. 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 contribution to scaling-up, which in return requires the identification of indicators to show research effectiveness in terms of impact*. Therefore, 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. To do this, project R8381 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 ignite a process and its objectively verifiable indicator at purpose level was stated as ***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 produced three clusters of outputs: (i) increase understanding of major constraints and barriers, (ii) raised awareness of research managers, and (iii) improved capacity and skills of researchers. The project created 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 provide an institutional and human capacity platform upon which RIU can build as described in this proforma. However, as the project was completed towards the end of 2006, it is too early to see some of the impacts requested in this proforma.

This proforma was prepared by a regional workshop of key stakeholders from the six target countries of Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda. This assisted to capture exact information of what is going on now with respect to the outputs from R8381.