

## Node: Suite Summary<sup>1,2</sup>

### **Eastern Africa: Drylands rainwater harvesting (RWH) and issues around rainwater management**

#### **Context**

Drylands account for at least 40% of the land areas of Tanzania and Kenya and 10% of Uganda and several million people depend on such lands for their livelihoods. Annual rainfall characteristically is low and erratic and soils are generally infertile with poor water holding capacity. Uncertain rainfall distribution makes arable cropping risky especially for production of crops that have a reasonable market value such as maize, rice and vegetables. Livestock is a feasible enterprise but the lack of reliable water supplies can restrict the extensive use of grazing lands and create pressure on scarce water resources. In such conditions, rainwater harvesting (RWH) can assist farmers to improve crop and livestock productivity, help them to have less risk-prone livelihoods, and enable them to generate income from their farming activities in spite of the marginal conditions for agriculture. RWH occupies a middle ground between farming that is solely dependent on rainfall and irrigation that uses infrastructure to store and regulate water supply. For those who lack the resources to invest in irrigation and whose farming activities are drought prone, RWH is a way to make better use of the water resources to which they have access.

Recognising the relevance of RWH to dryland farming in sub-Saharan Africa, DFID began supporting research to improve and promote RWH in 1990. The progress made in the initial years, 1990-95, led to the incorporation of RWH into NRSP's research agenda from 1996 with Tanzania as the main location for the research. In the areas chosen for field research, farmers already were exploiting rainwater run-off that naturally occurred in certain landscapes. In one target area a method for doing this, with the local name *majaluba*, was widely used for rainfed rice production. In terms of RWH development, researchers realised that lessons could be learnt from the *majaluba* system that could help the development of RWH for non-rice cropping systems. Nevertheless, a problem in RWH development was that the extreme variability in rainfall patterns and its dominant influence on the performance of the system, made it difficult to extrapolate and formulate RWH recommendations based on site-specific findings. This led to a twin-track approach of combining field experimentation on RWH systems with the development of a simulation model for predicting RWH performance using historical rainfall data.

From 1992, the Department of Agricultural Engineering of the Sokoine University of Agriculture (SUA) in Tanzania was involved in the RWH research either as a research partner with UK-based universities or as a project leader with partners drawn from other Tanzanian organisations and the UK in some instances. This local leadership of the research assisted linkage with other national organisations and also with relevant regional networks in Eastern and Central Africa (ECA).

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<sup>1</sup> This document summarises NRSP's work in one of its uptake promotion node: suites. For further details and links to project and project documents see <http://www.nrsp.org.uk/6.aspx>

<sup>2</sup> This document presents research funded by the UK Department for International Development (DFID) for the benefit of developing countries. The views expressed are not necessarily those of DFID.

## Research Topics

- What are the benefits of using RWH systems in terms of crop and livestock productivity and people's livelihoods, especially those of poor people?
- In areas where RWH has potential to improve agricultural productivity, what is the existing role of RWH in people's livelihoods including what types of RWH are already practised, their extent and the implications for development of RWH systems?
- Can a computer-based simulation model be developed that is: (a) relevant to improving the performance of dryland arable farming in sub-Saharan Africa and (b) useable by those responsible for achieving and/or assisting such improvements – farmers, extension agents, district and national planners?
- Taking the promotion of the findings and products of RWH research as an example: (a) what are the main factors that have enabled/assisted RWH adoption at policy-planning, advisory and farmer levels, and (b) what are the implications of these findings for the design and conduct of RWH research (and more widely for natural resources management research) including the use of simulation models?
- What strategies for soil and nutrient management are most appropriate for RWH systems and for the different categories of farmers that undertake RWH?
- Taking scaling-up of improved soil and water management (SWM) in ECA as an example: (a) what are the constraints and barriers that limit the promotion of research findings and products by relevant research organisations and their various partners; and (b) what aspects of capacity building in these organisations can best improve their contribution to uptake promotion, scaling-up and developmental use of SWM research findings and products?
- Based on the promotion of RWH experiences from Tanzania to Nigeria, what are the main requirements for the successful transfer of proven RWH innovations to new areas with obvious potential to benefit from RWH adoption?

## Projects

Seven projects comprise this node:suite. R6758 (Development of improved cropping systems incorporating rainwater harvesting, 1996-99); R7888 (Assessment of rainwater harvest demand and efficacy, 2000-01); R7949 (PARCHED-THIRST model: Development of a client-friendly version 2.1, 2001); R8088 (R8088A – Promotion of and support to the use of the Parched Thirst Model v2.1 in East Africa, and development of version 2.2, 2002-05; R8088B – Improving research strategies to assist scaling-up of pro-poor management of natural resources in semi-arid areas, 2003-05); R8115 (Improvement of soil fertility management practices in rainwater harvesting systems, 2002-05); R8381 (Institutionalised scaling-up and uptake promotion of outputs from soil and water management research in Eastern and Central Africa, 2004-2005) and R8390 (Needs assessment and uptake promotion of RWH research in Nigeria, 2004-05). In addition, the relationship between RWH adoption and poverty reduction was determined as part of R8116 (Improving management of common pool resources in rainwater harvesting systems, 2002-05; also see Eastern Africa Suite 3).

R6758 built on three DFID-funded projects undertaken before NRSP began. R5158 and subsequently R5170 developed the PARCHED THIRST (PT) model that predicted crop performance with RWH under differing rainfall regimes and for various farming systems. To support the modelling work, SUA conducted field trials to determine the performance of maize in a micro-catchment RWH system in the two rainfall seasons that characterise the annual cropping cycle of the drylands of mid-and northern Tanzania (R5752). Based on the

progress of these projects, R6758 continued the development of PT. Field research shifted to more on-farm participatory work on RWH and water conservation and, in response to farmer-demand, the performance of macro- as well as micro-catchment RWH systems was assessed. The project developed active professional links with other national agricultural research organisations, NGOs and relevant government departments especially in the three districts in which field research was conducted.

R7888. National and district-level stakeholders attending the end-of-project workshop of R6758 agreed that the main constraint to the adoption of RWH was lack of knowledge and expressed the need for researchers to focus on this constraint. R7888 was therefore designed to generate and disseminate knowledge that could be used to improve the understanding of the role of RWH by stakeholders at all levels, from farmers to policy makers. This was achieved by producing baseline data of the extent, performance and profitability of RWH systems in three target districts, and developing training materials and providing training and awareness raising to stakeholders at national and district levels.

R7949. Although R6758 produced PT Version 1.0, review of the model by potential users identified the need for a client-friendly version. R7949 addressed this need.

R8088. In the context of developing and promoting improved strategies for pro-poor drylands research, especially linkage with development, this project had two components: (a) to improve the access to, and service support for the use of PT by development-related planners in Tanzania and more widely in ECA. Setting up and operating a PT Help Office at SUA and further development of the client-friendly version of PT were the main thrusts; (b) to obtain evidence of how research design, including the promotion of research findings, should be improved so that the potential for scaling-up to developmental levels is enhanced. The documentation of communication and promotional work undertaken by the RWH research projects, 1992-2001, and the associated outcomes, were inputs to this study.

Based on survey findings and stakeholder feedback, R7888 recommended priority areas for further RWH research. This led to projects R8115 and R8116. R8115 addressed the development of strategies for soil and nutrient management in RWH systems, in the context of resource poor farmers with limited capacity to purchase fertiliser inputs and use organic residues. As part of R8116, the RWH socio-economic survey of R7888 was followed up in more detail to determine the economic benefits to the poor arising from RWH adoption. Household expenditures were determined of some 300 poor households across two districts (Maswa to the south of Lake Victoria and Same in the Western Pare Lowlands, providing a comparison of remote versus better serviced farming areas).

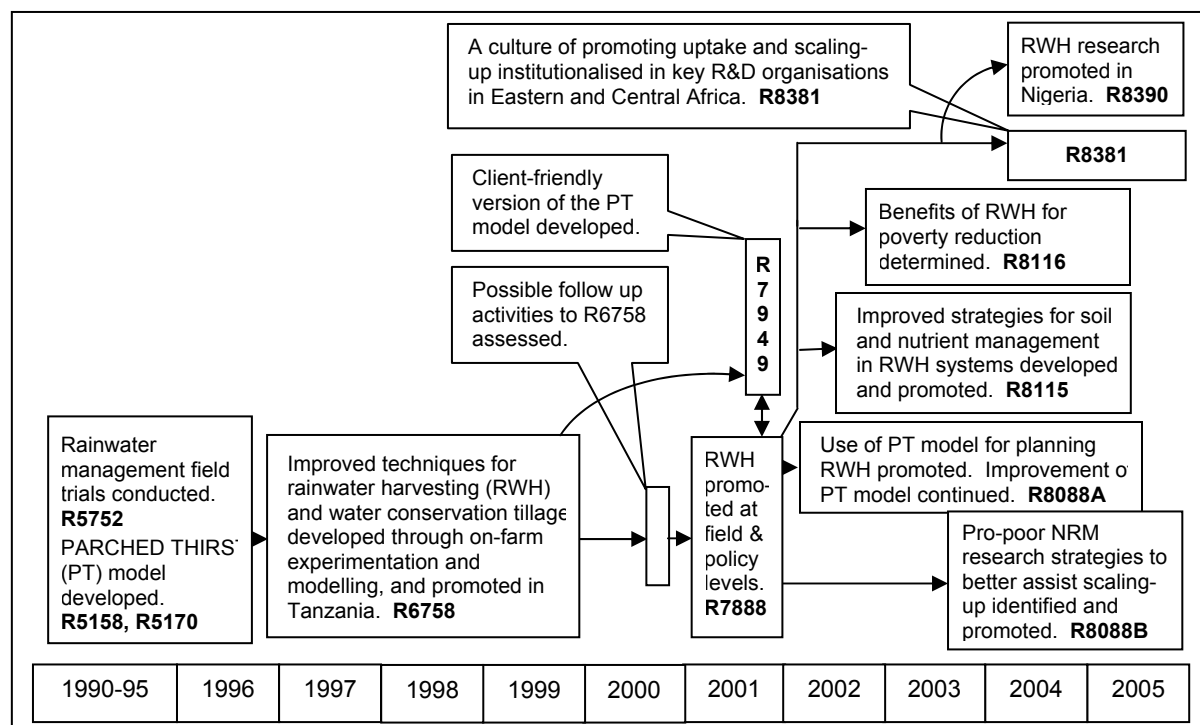
In common with R8088, R8381 also addressed the issue of scaling-up but worked on a sub-regional scale. The main government organisations for soil and water management research of four countries in ECA (Ethiopia, Kenya, Tanzania, and Sudan) that participate in the ASARECA<sup>3</sup> Soil and Water Management Network (SWMnet) were project partners. The critical institutional barriers that prevent wide-scale adoption and utilisation of research findings and products and the key needs for awareness raising and capacity building to overcome these barriers were identified. Subsequent activities then addressed these key needs through effective communication with key stakeholders, training, and the development of skills in communication planning.

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<sup>3</sup> Association for Strengthening Agricultural Research in Eastern and Central Africa

R8390 was a short project that determined the potential for transfer of RWH research experience from Tanzania to Nigeria (specifically Osun State) covering the policy environment, knowledge, attitudes and practices of key stakeholders and identification of key needs for the effective transfer of RWH messages.

### Project links within Eastern Africa Suite 1: 1995 - 2005



### Outputs

#### Findings

R6758. Through workshops conducted with various national and international stakeholders in ECA, the utility of the PT model as a practical tool to assist problem analysis and screening of RWH interventions was established, but with the caveat that this recognition mainly was within the research community. Field experimentation combined with simulation studies of macro-catchment RWH systems indicated that significant improvements in maize yields could be achieved in most short rains seasons. In contrast, in the higher rainfall regime of the second rainy season, benefits from practising RWH were relatively infrequent. Because RWH is not a neatly packaged technology, the need to tailor decision-making on the adoption of RWH practices to farmers' circumstances was recognised. The potential of a decision-support system that took account of such parameters as age, farm size, available labour, gender and knowledge was demonstrated. Knowledge of RWH was established as a key requirement, and the main constraint to adoption.

R7888. The existing scope of farm household RWH practices in the three target districts was established. Main findings were: (a) there was already a high level of adoption of in-situ RWH systems; (b) the adoption of macro-catchment RWH systems, that are more complex

by nature, varied between 18 and 62% of the surveyed households and at most one quarter of households practised macro-catchment systems with storage; (c) there was a direct correlated link between road drainage works and development of RWH systems in the surveyed areas; and (d) economic analysis showed that RWH enabled farmers profitably to grow high value crops such as maize, rice and vegetables in semi-arid areas, where it is normally not possible to grow these crops. The survey findings were provided to the target districts as a baseline database for use in planning and promoting RWH activities. Knowledge of the role of RWH among all stakeholders (policy-makers, planners, service providers, farmers) was increased in both target and non-target districts and nationally.

R7949. The PT model was advanced to a user friendly version (PT Version 2.1).

R8088A: Through vesting responsibility for the further development of the PT model with the SUA Directorate of the Computer Centre (that is mandated to develop and promote scientific software for agricultural applications), institutional support for its continued long term development was established. Further upgrades (to PT v2.4) took account of feedback from PT users of the earlier versions. Working interactively with key stakeholders in national and district government departments and relevant training institutions, a range of resource materials (a manual, case studies and virtual laboratory experiments) were developed to support the promotion and use of PT.

R8088B. Access to multiple sources of information on RWH was found to be a key factor in its adoption by farmers, and in the capacity of field-level service providers and policy-makers and planners to be pro-active in supporting RWH development. Even with access to RWH information, other factors influenced the extent of its use, and these were somewhat distinctive for each stakeholder-type. For example, the scale of livelihood resource endowment, including social capital, was important for farmers' adoption of RWH while availability of funding and the presence of development agencies with interest in RWH were important for pro-activity on RWH at both policy-planning and field advisory levels. In the context of achieving research uptake, insufficient attention to communication planning and budgeting, research-policy linkage, and monitoring of research impact at a livelihood level, were identified as key weaknesses in the design and conduct of research that is intended to contribute to development.

R8115. Seven main parameters were identified that farmers use as indicators of soil fertility (SF), with congruence in the parameters in two target districts, even though the districts were 800 km apart. However, whilst the indicators were useful for local soil type mapping as a precursor to developing SF management (SFM) strategies, in terms of nutrient content, they did not reliably differentiate between more and less fertile soils. Soil analysis was necessary to validate and quantify soil fertility attributes. Overall, soils that farmers perceived as fertile had relatively low nutrient content. Building on farmers' practices for SFM (such as intercropping, crop residue use, rotation), options for SFM were developed for different farmer wealth categories and these were promoted through training workshops and production and distribution of knowledge-sharing products on SFM. While farm visits and on-farm demonstrations were found to be the most effective method for improving farmer and extension agent awareness of crop responses to improved soil fertility and generating interest for adoption of SFM options, communication materials were also demanded for reference and use in advisory work. In response to this demand, the project developed a range of media products (e.g., posters, booklets, manuals).

R8116 (part). The households sampled were living at or only slightly above the poverty line (US\$1/person/day). In Maswa District (located in a relatively remote area), with the exception of the richest group of farmers (who had diverse livelihood activities and less dependence on farming), expenditures of households practising RWH were significantly higher than those not practising RWH. In Same District (located near a major highway with good access to urban markets) this finding was reversed. Expenditures of the richest households practising RWH were significantly higher than those who did not, while expenditures of all poorer households were similar irrespective of whether or not they practised RWH. Lack of equity in access to harvested water appeared to explain this finding. Data on crop yields with and without RWH showed that economic returns to both land and labour are greater with RWH, even in seasons with below average rainfall. Similarly, investment in private RWH structures benefited revenues from livestock especially during critical dry months. In addition to the evidence of benefits arising from practising RWH for both crop and livestock production, it was found that richer households undertook more diverse livelihood activities than poorer ones and had less dependence on arable farming. A gendered dimension to this finding was that female-headed households mainly undertook crop production activities and were amongst the poorest households in the study while richer households were male-headed and undertook non-farm as well as farm-based activities.

R8381. In the four countries studied, the main constraints and barriers to uptake of research results were found to be: (a) Government policy and strategy documents stress the importance of agricultural research findings reaching farmers. However, this focus often is too narrow and ignores other actors who have important roles in the uptake process e.g., policy-makers, financing institutions, business people involved in both input and output markets. (b) Research organisations do not generally recognise their wider role in uptake promotion. Most see their role as restricted to providing information to farmers via the extension services. A consequence of this is that insufficient time and funds are allocated to communication and uptake promotion. (c) Most researchers are not adequately trained for communication in the context of uptake promotion. Rather, their skills are limited to formal reporting through such channels as published papers and technical reports to meet, for example, government and donor agency requirements. (d) Incentives for researchers, such as salary increases and promotion, are awarded on the basis of research work undertaken for which the evidence-base is reports and papers produced rather than how well the work was promoted and the outcomes and impact of this. However, making the reward system more sensitive to developmental achievement presents many difficulties as research uptake is just one of many factors that can lead to developmental progress and livelihood improvement making attribution, and evidence for this, complex.

R8390. In regard of RWH promotion, RWH was found to fit well with the current Nigerian government policy of promoting all-season farming. However, attitudes of those stakeholders who could promote RWH initially were not supportive as they perceived unreliable rainfall as a fact of life to be endured rather a production constraint that could be managed. Although the project's communication plan successfully challenged and changed these views, RWH promotion encountered an uptake barrier within the project's relatively short duration. The fact that RWH is not a single recognisable improvement package requires service providers to promote it through interactive participatory methods rather than by delivery of a specific technical message. As a result, during the project period, developing a cadre of service providers that could work in the required mode was not achieved and this was a major limitation to the uptake process for RWH.

### *Research messages*

- Research has produced evidence that adoption of RWH in semi-arid areas has the potential to reduce poverty. For both crop and livestock enterprises, RWH can reduce poor people's vulnerability to the effects of poor rainfall distribution and dry spells that characterise seasons with below average rainfall. It can also improve productivity in seasons with above average rainfall.
- Studies of RWH adoption indicate that livelihood options and diverse livelihood activities are factors in livelihood improvement. Thus, although practising RWH can help to improve livelihoods, its role should be assessed in a livelihoods context that takes account of a range of livelihood options encompassing farm and non-farm opportunities.
- Although in some areas of Tanzania, RWH is already widely practised, it needs support from formal organisations (government and NGO) for its further technical development and geographic spread. Development support could improve local macro-catchment RWH systems (such as RWH linked to road drainage) that, in most instances, farming communities have developed on their own initiative. In addition, evidence of variability in the performance of RWH, and the range of factors causing this, indicate the need to: (a) improve equity in access to water resources and (b) develop entrepreneurial strategies that can improve profitability particularly through market access and linkages (also see Eastern Africa Suite 3).
- There is a proven role for the PT simulation model as a decision support tool for RWH development especially at the local (district) planning level. Vesting ownership of PT with relevant key national professionals is an asset to both its further development (including responsiveness to stakeholder needs for the use of PT) and its sustained promotion in Tanzania and internationally.
- Both an RWH research tracking study in Tanzania and a regional institutional study of constraints to the promotion, uptake and scaling-up of improved soil and water management (SWM) research identified similar requirements for improving the research-development linkage and achieving effective use of research findings and products for development. Comprehensive communication planning and budgeting, as part of the design and conduct of SWM research, is a key requirement. It must cover all stakeholders who have roles in the uptake and scaling-up processes and must tailor communication products and stakeholder interaction to their various needs.
- While, from the research side, effective multi-stakeholder communication is key to the potential uptake and scaling-up of RWH, additional factors influence the realisation of this potential at farmer and developmental stakeholder levels. Common factors (but with their own character according to the stakeholder concerned) are financial resources and partners that can support the mutual aim of undertaking RWH.
- Capacity building is required to assist SWM researchers to improve their communication planning in order to cater for stakeholder needs beyond the hitherto main emphasis on extension and farmers. In tandem with this, relevant organisations need to make some institutional changes (e.g., policy that explicitly supports the promotion of research uptake and scaling-up; changes in funding levels for communication work) in order to provide better support and incentives for researchers to improve research-development linkage.
- At the field level, a combination of several communication methods is needed for the promotion of improved methods for soil fertility management in RWH systems. These should include farm visits and on-farm demonstrations together with dissemination of a range of knowledge-sharing information products. At a policy

level, this translates to a need for increased funding for communication to enable researchers to give it more robust attention and help to ensure that research information and findings reach the targeted users.

- Because RWH is knowledge intensive and not a neatly packaged technology advocacy to promote its adoption is not enough. There is a need to build the RWH knowledge and experience of service providers especially in regard of adapting RWH to accommodate local circumstances. Demonstrations and training are key ways for building capabilities and achieving the necessary reorientation of extension staff to an adaptive and participatory mode of working.

#### *Key research products*

- SWMRG. 2005. Reducing poverty through rainwater harvesting: Evidence from the semi-arid areas of Maswa and Same districts, Tanzania. Morogoro, Tanzania: SWMRG, Sokoine University of Agriculture. 79pp.
- Hatibu, N. 2001. Assessment of rainwater harvesting demand and efficacy. Final Technical Report for project R7888. Morogoro, Tanzania: Sokoine University of Agriculture. 31pp.
- Gowing, J. 2000. Development of improved cropping systems incorporating rainwater harvesting. Final Technical Report of project R6758. Newcastle: Centre for Land Use and Water Resources Research, University of Newcastle. 44pp.
- Suite of papers by various multiple authors. 1999. Tanzanian Journal of Agricultural Science, 2(2). Special issue on Rain Water Harvesting for Crop Production in Semi-arid Tanzania.
- Hatibu, N., Young, M.D.B., Mahoo, H., Gowing, J.W. and Mzirai, O.B. 2003. Developing improved dryland cropping systems in semi-arid Tanzania: Experimental evidence for the benefits of rainwater harvesting. *Experimental Agriculture*, 39(3): 279-292.
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- Mzirai, O.B., Bwana, T., Tumbo, S.D., Rwehumbiza, F.B. and Mahoo, H.F. 2004. Parched-Thirst handbook (R8088A). Morogoro, Tanzania: SWMRG, Sokoine University of Agriculture. 58pp.
- Rwehumbiza, F.B. and Mbaguka, R.P. 2005. Soil and water conservation (R8088A). Module 4 in Tumbo, S.D. and Mahoo, H.F (Eds) A manual for virtual experiments in agriculture: The use of PARCHED-THIRST software in agricultural systems simulations. Annex B23 of the Final Technical Report for project R8088A. Morogoro, Tanzania: Sokoine University of Agriculture. 18pp.
- Mahoo, H. 2005. Improving research strategies to assist scaling-up of pro-poor management of natural resources in semi-arid areas (R8088B). Final Technical Report for project R8088B. Morogoro, Tanzania: SWMRG, Sokoine University of Agriculture. 53pp.
- SWMRG. 2005. Proceedings of the professional development course and training of trainers course in 'Managing and scaling-up of knowledge in soil and water management' (R8088B). ICE, SUA, 29th August - 2nd September 2005. Annex C8 of the Final Technical Report of project R8088B. Morogoro, Tanzania: SWMRG, Sokoine University of Agriculture. 79pp.

- Lutkamu, M.H., Shetto, M.C., Mahoo, H.F. Hatibu, N. 2005. Scaling-up and uptake promotion of research findings on NRM in Tanzania. Paper presented at East Africa Integrated River Basin Management conference. Annex C3 of the Final Technical Report of project R8381. Nairobi, Kenya: SWMnet of ASARECA. 19pp.
- Mahoo, H.F. 2005. Improvement of soil fertility management practices in rainwater harvesting systems. Final Technical Report for project R8115. Morogoro, Tanzania: Soil Water Management Research Group, Sokoine University of Agriculture. 28pp.
- SWMRG. 2003. Local indicators of soil fertility (LISF) in Maswa and Same districts, Tanzania. Annex B1 of the Final Technical Report of project R8115. Morogoro, Tanzania: SWMRG, Sokoine University of Agriculture. 15pp.
- SWMRG. 2003. A manual on procedures and methods for participatory assessment of soil fertility status, identification and development of soil fertility management strategies. Morogoro, Tanzania: SWMRG, Sokoine University of Agriculture. Annex B2 of the Final Technical Report for project R8115. 15pp.
- Hatibu, N. 2005. Institutionalised scaling-up and uptake promotion of outputs from soil and water management research in East and Central Africa. Final Technical Report for project R8381. Nairobi, Kenya: SWMnet of ASARECA. 27pp.
- Mohamed, A.A.W., Temu, N., Hatibu, N., Gatobu, S.K. and Ngumba, R. 2005. Managing and scaling-up of knowledge in soil and water management. Professional development course and training of trainers. SWMnet training manual 2. Annex B2.2 of the Final Technical Report for project R8381. Nairobi, Kenya: SWMnet of ASARECA. 72pp.
- Gowing, J. 2006. Needs assessment and uptake promotion of RWH research in Nigeria. Final Technical Report of project R8390. Newcastle: School of Agriculture, Food and Rural Development, University of Newcastle. 18pp.

## Impacts

### *In Tanzania*

- Knowledge of the role of RWH in crop and livestock production, and in livelihoods was increased among all stakeholders in the three target districts and beyond. This included understanding the utility of the PT model as a practical tool to assist RWH planning and access to evidence of the extent and types of RWH undertaken by farmers and farm households.
- Communication with national-level policy makers over an extended period led to recognition of the potential value of RWH and, by 2002, saw the emergence of supportive policies for RWH in relevant national development strategies.
- In both target and non-target districts, understanding of the potential of RWH, has led to its inclusion in their agricultural programmes and stimulated district-level stakeholders to seek funding support from national government and externally funded projects (with several examples of success).
- SUA's provision of training and software and hardware support has built capacity for using PT and has resulted in the adoption of PT by development agents and planners for designing improved RWH systems in the three target districts.
- In line with its mandated responsibilities, the SUA Computer Centre has provided the institutional 'home' for the PT model covering its further development and virtual and 'hands-on' advisory support for its use.
- Wider promotional work for PT is moving positively towards its use for RWH planning in other (non-target) districts and capacity building for the use of models like

PT in relevant training institutions and government departments. For example, SUA is working with the Tanzanian Meteorological Agency and the Ministry of Agriculture, Food and Cooperatives to integrate PT into the process of yield prediction and forecasting and food security analysis.

- In both target and non-target districts, through participation in training and demonstrations, and access to a range of knowledge-sharing products on RWH, farmers and service providers have improved their knowledge of RWH. Farmers have been able to make better informed choices and service provision on RWH development has improved. In addition, farmers' knowledge has created demand for support from district councils to develop more RWH structures.
- The livelihood studies in the target districts in Tanzania, provided evidence that poor farmers' adoption of RWH had benefited their livelihoods although, in some circumstances, the poorest farmers did not benefit.

#### *In Eastern and Central Africa*

- Through research on uptake promotion and scaling-up, at least 250 national professionals (in Tanzania and other countries in Eastern and Central Africa) understand the central importance of communication for best ensuring the uptake and use of research findings and products in development, have capability in multi-stakeholder communication planning, and are able to work as advocates for this aspect of the design and conduct of development-oriented research.
- There is evidence of organisational change in the agricultural research community of Eastern and Central Africa in ways that can help to overcome the identified barriers to the effective use of research findings and products. Several organisations have adopted use of the communication plan template that project R8381 produced and use the project's communication materials for reference. An uptake promotion strategy and associated communication plan are priority criteria for ASARECA's evaluation and funding of research proposals.

#### *In Nigeria*

- The state governor promised funding to continue RWH promotion in Osun State.

#### **Further work**

Both SUA, Tanzania and ASARECA-SWMnet will continue to promote the existing knowledge of RWH and to undertake further RWH research and uptake promotion to support the spread and further development of RWH in Eastern Africa and beyond. Their professional links with organisations outside Africa can draw in additional expertise as required. Work in Nigeria should continue with government-level support in the target state (Osun). Funds would be required to promote RWH in other areas in Nigeria.