

Rainwater Harvesting Implementation Network



2010

ANNUAL

REPORT

FOREWORD

The year 2010 set an important landmark for the water sector worldwide. On the 28th of July, after many years of work and lobby, the General Assembly of the United Nations declared that *“safe and clean drinking water and sanitation is a human right essential to the full enjoyment of life and all other human rights”*.

This right, as it was confirmed in a resolution in October, entails legally binding obligations for those states adhering to the United Nations, to respect, protect and fulfill this right. This will have a great impact on the water and sanitation sector at a global level, boosting initiatives to take up this responsibility. Given the growing water scarcity and the implication of the Right to Water that vulnerable and marginalized groups must also be reached with water services, the option of rain water harvesting has once more gained importance as an equitable, cost-effective and decentralized solution of providing water security.

2010 has also been an important year for the RAIN Foundation. It was a turning year, during which funding of most running programmes came to their end and were evaluated, and funding for new programmes was secured. Indeed, the RAIN team and in-country partners did their utmost to reach the set targets to finalise all programmes successfully, and much effort was put into preparing the years to come: a new vision and strategy for the coming five years were developed, promotional and fundraising efforts multiplied.

The greatest achievement in this respect was the winning of a very substantial MFS fund for the period 2011-2015, under a new and broad partnership, called the Dutch WASH Alliance. The new programme will not only secure the continuity of the RAIN Foundation for the coming five years but it will also provide expanding opportunities: in terms of countries, approaches and partners. This would not have been possible without the relentless hard work of a very dedicated team of professionals at the RAIN headquarters and likewise committed partners in the countries RAIN works in. A very big *Thank you!* goes to all those involved.

In the coming years, RAIN will be able to build upon these efforts and will continue to grow and expand its activities to a broader thematic scope and integration of its activities. I am confident that as a result thereof, the network of sponsors and involved institutions will grow even further; rain water harvesting will spread to additional countries, and eventually more and more vulnerable and currently marginalised people will be able to enjoy their right to water.

Last but not least: the Board of RAIN would like to end by thanking the entire RAIN team, our partners and our sponsors for all their support to our activities. Together, we are investing in the future; together, we are harvesting RAIN!



Paul van Koppen
Chair of the Board



OVERVIEW 2009

Time for reflection

Established at the end of 2003, the RAIN program really lifted off when it was granted two multi-year grants for the period 2006-2010. In addition to its operations in Nepal, Ethiopia and Senegal where the RAIN program was first implemented, RAIN extended its activities to Mali and Burkina Faso. The main objectives RAIN set itself in these new countries were to forge a breakthrough in awareness, acceptance and use of rainwater harvesting, to get a significant number of beneficiaries already reached to implement the program, and to innovate and diversify on the technical side and build sufficient local institutional capacity to run a Rainwater Harvesting (RWH) program.

The year 2010 was the final year of two major grants to the RAIN program and the last year to reach the targets and goals set five years ago. We are proud to announce that the set targets have been by and large achieved and that implementation figures have surpassed the original targets in West Africa and Nepal.

It was also a year of evaluation, reflection and sharing experiences in order to enhance mutual learning. To this effect a second International Rainwater Harvesting Capacity Centre (RHCC) meeting took place in Addis Abeba including a two-day workshop for RHCC and RAIN (PMU) personnel. This initiative was highly appreciated by both RHCCs and RAIN staff, and it was decided to make this an annual event. In the third quarter of 2010, RAIN commissioned two external bodies to evaluate its performance and programs, resulting in a complete survey of RAIN's activities. The overall conclusions were that, although RAIN could, with relatively little effort, improve its efficiency and effectiveness, the relevance of the program scored high in all five countries. The impact of RAIN's activities is also deemed to be extremely positive and is expected to be even more positive once its activities are integrated in a WASH approach. The main challenge for RAIN lies in stepping up the sustainability of its program: reducing costs, consolidating national institutional embedding and involvement of the private sector have been identified as important goals in this respect. The conclusions of this external evaluation are set out in a document entitled *RAIN lessons learned 2006-2010* which, besides summarising the findings, also includes the experience of RAIN staff, external documentation and other relevant studies. This document formed the

basis for a brochure and film that are available on RAIN's website.

Knowledge, network and outreach

Apart from 2010 being a year of reflection and evaluation, RAIN also continued to look ahead, increase RWH awareness among the public, expand its RWH network and broaden the existing knowledge of RWH. To crown this, the International Advisory Commission was expanded to five members.

During the Stockholm World Water Week 2010 RAIN co-organised the 3R session "*The Potential of 3R to Improve Water Quality and Quantity*", showing that 3R can effectively be used to resolve water quantity and quality problems. The event was well received and more than 150 persons participated in the presentations, plenary discussions and roundtables.

RAIN was also represented at the five-day Multiple Use water Services (MUS) Group meeting in the Netherlands early in 2010, for the first time as a core member of the Group. Moreover, RAIN hosted a two-day MUS Group meeting in the Netherlands in November 2010. Over the past few years, the MUS group has obtained considerable insight into the constituent elements of multiple-use services and the benefits it can bring. It is encouraging to see how more and more projects are piloting the implementation of MUS and are synthesizing their experiences into generic methodologies and guidelines for MUS implementation. In order to learn from and contribute to this new trend, the proposed theme for this MUS Group meeting was "Guidelines for MUS". The objective was to identify lessons learned from guidelines for planning and implementing multiple-use services. RAIN will remain one of the key players in the MUS Group and will use this platform to further strengthen its ambitions in MUS-related RWH.

Apart from (co)organising the above-mentioned events, RAIN also attended the following meetings and actively participated in a number of platforms:

- 'World Water Day' in Amsterdam, the Netherlands,
- IRC Triple-S symposium in Uganda,
- Pumps, Pipes & Promises conference organised by IRC, SEARNET conference in Addis Ababa, Ethiopia,

co-organised by the Ethiopian RWH Centre, ERHA, SEARNET and RAIN NWP NGO platform,

- AKVO meetings,
- A4A water harvesting group.

To increase RWH know-how, several very useful studies were conducted and hands-on tools were developed. Country specific context analyses of Burkina Faso, Mali, Ethiopia, Nepal, Kenya and Uganda were made. GIS mapping of RWH potential was carried out in Mali, Senegal, Burkina Faso and Ethiopia. Moreover, several impact studies have been done, and a sand dam feasibility study was conducted in Mali and Senegal. Also, a study on the life-cycle costs of RWH was undertaken by IRC with the aim of determining the costs and benefits of the different RWH options in comparison with other water sources. Finally, a fundraising tool was made with Future Water to indicate the potential of RWH in the light of the predicted water scarcity in 2030. In collaboration with WaterBoard Delfland and Aqua for All, RAIN finalised the project *“Creating tools for upscaling RWH and integrating it into policies and programme”*, which involved developing a wiki tool to support decision-making on RWH. This tool is a step-by-step guideline to assist and inform people on the possibilities and limitations of rainwater harvesting as well as to ensure that all aspects of RWH are included when starting a project. RAIN also developed a Google Earth application which will show the locations and give project information on the projects implemented by RAIN. The Google Earth application will be launched soon after completion of the database.

Several communication materials were developed to increase the outreach of the RAIN programme, such as the RAIN annual report 2009 in English and French, videos on RWH (via www.thewaterchannel.tv), a film and brochure on the lessons learned, and a scale model of 3R. RAIN also published a number of articles, including “3R – Water Recharge, Retention and reuse” in *Aidenvironment Journal* and ‘Rainwater harvesting in challenging environments: Towards institutional frameworks for sustainable domestic water supply’ in *Waterlines* (29:3). One of the major outreach events for RAIN in 2010 was organised in the Americain Hotel in Amsterdam, where the Dutch Channel Swimmers held a (musical) event to give exposure and raise funds for a RWH project in Senegal (see <http://www.dutchchannelswimmers2010.nl>). RAIN also participated in Run for Water by ‘Live Earth’, as one of four Dutch NGOs selected for the promotional event. The event was broadcast live on Dutch television and several Dutch celebrities such as HRH Prince Willem Alexander participated in the run.

Working towards the future

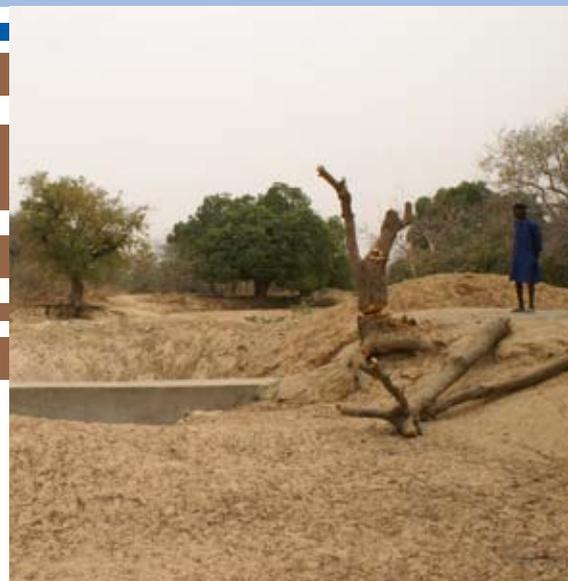
The conclusion of two major funding schemes also implied that RAIN had to look ahead and decide how to take it from here. New funding was sought, new partnerships forged and the RAIN's long term strategy was reconsidered. To this end, RAIN employed a strategic developer whose plans and suggestions were discussed in the team and with the Board before being finalised. Three of RAIN's guiding principles for the next five years will be:

1. To focus on MUS (Multiple Use) of water as we are convinced that rainwater can be used for multiple uses;
2. To focus on WASH as we believe that water management should not be confined to water alone, but should also take in sanitation and hygiene;
3. To focus on 3R (Retention, Reuse and Recharge) as this deals with the integrated approach to water (buffer) management on a larger (basin) scale.

In spring 2010, RAIN, together with IRC and HSC-Ripple, was granted funding from Partners for Water for a two-year project in Ethiopia. Another two-year program in Ethiopia was secured through collaboration with the WaterBoards *Velt & Vecht* and *Hollandse Delta*. As a member of the Dutch WASH Alliance (DWA), RAIN has been involved in an intensive fundraising effort in collaboration with Simavi, ICCO, WASTE, AMREF and Akvo, through different working groups and joint meetings. On 1 July 2010, a detailed proposal was submitted to the Netherlands Ministry of Foreign Affairs. In November 2011, to our great delight, the Dutch WASH Alliance was granted MFSII funding for the period 2011-2015, albeit with a substantial budget cut. This enables RAIN not only to continue and strengthen its activities in Burkina Faso, Mali, Ethiopia and Nepal, but has also given RAIN the opportunity to operate in two new countries: Uganda and Kenya and to engage in a strong international program.

Several other proposals were submitted in 2010, but unfortunately these were not accepted. Many other initiatives for proposals and collaborations were undertaken in 2010 and we are still awaiting approval. RAIN is confident that 2011 will lead to the endorsement of these pooled efforts towards new RWH projects and uplift the initiated synergies.

Ard Schoemaker
RAIN Programme Manager



Burkina Faso

Quality at all levels

In Burkina Faso, the program continued with the implementation of roof water harvesting tanks, but also started focusing on building capacity for the implementation of sand dams. An extensive training was organized in site selection and sand dam construction for ten partner implementing organizations, utilizing the knowledge and experiences from Kenyan and Dutch sand dam experts. Several international experts selected suitable sites, gave on-the-job training and closely monitored the ongoing implementation process. Nine sand dams were built, providing water for approximately 3600 beneficiaries. Also a sub-surface clay dam - an innovative (cost reducing) alternative to sand dams - was tested. In addition to implementation of the sand dams, 208 roof water harvesting tanks were constructed by the different implementing partners, providing over 4200 people with over 2700 m³ of storage capacity. The Rainwater Harvesting Capacity Centre (RHCC) functioned as a technical partner to the implementing organisations, providing them with advice, and has monitored and evaluated all the implementing activities.

Water quality has been high on the agenda throughout the year. A workshop was held for the technicians and coordinators of the partner implementing organizations concerning the results of the water quality tests that had been conducted in 2009. During this workshop the participants and the RHCC brainstormed about a protocol for water treatment with bleach. Delagua water quality test kits were also bought for the RHCC and the staff trained in using them. Tests have since been conducted by the RHCC with these. The RHCC also supervised a student in his research for a thesis on RWH and water quality.

In 2010 great emphasis was placed on learning. The RHCC successfully organized a regional workshop, bringing together all West African RHCCs (Burkina Faso, Senegal and Mali), many partner organizations and several water-related (governmental) stakeholders. During the workshop, the focus lay on the exchange of know-how, experience and best practices in Burkina Faso, Mali and Senegal. A range of stakeholders were present to discuss a common way forward in 2011. Thanks to the fund that was granted through MFSII, in 2011 and 2012 RAIN will be able to build on and consolidate these shared experiences.

Finally, an external evaluation of the five-year program was commissioned by RAIN. In the report on this evaluation, Hydroconseil provided RAIN with useful recommendations to further improve RAIN's work, while concluding that "there is a functioning framework [in Burkina Faso] that enables effective and rational intervention." Moreover, "the demand coming from the population and local authorities for this RWH technology is continuously on the increase. (...) There is no doubt that the reality we observed in the field legitimises the RAIN action."

Ethiopia

Diversification of techniques, partners and funds

In 2009, RAIN started the implementation of a pilot program in Ethiopia aimed at enhancing climate change resilience. Ironically, in 2010 the program was hampered by harsh challenges from the environment. Severe droughts (forcing people to move) on the one hand and floods (causing damage to the existing structures) on the other commanded the attention and flexibility of all parties concerned. In addition, severe inflation, high demand for



water harvesting structures and the (still) inadequate implementing capacity of the partners in the field further complicated matters. As a consequence, implementation levels unfortunately did not meet the set targets.

Nonetheless, eight sand dams, nine berkads (a traditional surface runoff system) and seven below ground tanks were built. Considering above-mentioned circumstances and the fact that this was an international pilot project involving a new technology in a new context, RAIN is extremely proud of these results. Moreover, a technical exchange visit to Kenya was organized for four different partner organizations to learn about alternative ways of building sand dams and increase implementing capacity in Ethiopia. Furthermore, Delagua water quality test kits were bought, the RHCC staff was trained in using the kits and a water quality survey of all implementation activities was carried out. The RHCC also facilitated the international SEARNET conference held in Awassa, Ethiopia, and participated actively in the African Water Week.

Implementation activities along with several studies have led to a more profound understanding of the techniques. Impact assessments and water use assessments were also conducted. Moreover, two independent researchers undertook an extensive R&D research on the performance assessment of rainwater harvesting for domestic supply and agricultural uses in rural communities of Ethiopia. In addition, a volunteer from the *Hoogheemraadschap De Stichtse Rijnlanden* studied the storage volume of sand dams in close collaboration with the ADAPTS project (www.adapts.nl).

These experiences have had a direct impact in that other organisations such as WaterAid have replicated the technology. They have helped RAIN secure more funding. Indeed, 2010 was quite a successful year for RAIN in terms of fundraising for Ethiopia.

Collaboration with the Dutch WaterBoard *Velt & Vecht* continued and even expanded, with a second WaterBoard, *Hollandse Delta*, joining this project. A proposal that RAIN jointly wrote with RiPPLE Ethiopia and IRC to perform an in-depth study of the costs and benefits, and impacts of RWH and MUS was accepted by Partners for Water. This program is set to start in April 2011. In addition, the first building blocks for a close collaboration with the Ethiopian Ministry of Health in the years to come have been laid. Last but not least, through the Dutch Wash Alliance RAIN has been granted substantial funding for the next five years to continue and expand its activities in Ethiopia. Together with AMREF, ICCO and WASTE, RAIN will increase access to WASH services for (semi) pastoralist communities in Afar and Oromiya. It will also invest in economic and environmental WASH and develop and build the capacity of national WASH actors. This will be coordinated by a programme element called 'Linking and Learning (advocacy and research)', in which RAIN's partner RiPPLE will play a leading role.

Mali

Institutional consolidation

Until 2010 the partner implementing organizations were supported by Rainwater Harvesting Capacity Centre (RHCC) Burkina as far as monitoring and technical evaluation was concerned. This year however, the program in Mali was strengthened by the establishment of its own Rainwater Harvesting Capacity Centre. It is hosted by Helvetas Mali, and is already fully operational. During the mid-term evaluation of the implementation projects, RHCC Mali was trained by RHCC Burkina, so that they can carry out the end-term evaluation of all 193 tanks built in 2010 (providing over 3000 beneficiaries with over 2000 m³ storage capacity) and all future technical support of partner implementing organizations themselves.



The RHCC Mali has started to play a pivotal role in the field of RWH. GPS data was collected with a view to the registration of each RWH system in the database. This database feeds a map section on RAIN's internet site www.rainfoundation.org where all locations, type of RWH structure, number of beneficiaries etc. can be found. A workshop was organized for partner organizations to update them on the results of the 2009 water quality research and discuss what measures should be taken during construction and awareness-raising to enhance the water quality. The RHCC was also given Delagua water quality testing kits and received training in how to operate these so that the RWH structures will be tested during all future monitoring and evaluation missions.

Besides providing technical support and monitoring activities, RHCC Mali has sought to promote and lobby for RWH. For this purpose, an array of promotional and lobby material was created including a model of a RWH structure model, posters, flyers, newsletters and RHCC actively sought media exposure, participating in various radio and television interviews and documentaries. To raise the awareness of beneficiaries to RWH, a theatre group was called in which stressed the importance of water quality, hygiene and management and operation of the rainwater harvesting tanks. Furthermore, many events and important meetings such as the *Revue sectorielle de l'Eau*, *La Rencontre des Maires* and a WHO/DNH workshop were attended to draw attention to RWH. RHCC further pointed its darts at the government, targeting a key person within the National Directorate of Water (DNH), handing over a technical file of RWH to the DNH as well as inviting and accompanying officials of the DNH and regional and local authorities to 'opening' ceremonies of newly built RWH structures.

Moreover, in collaboration with local counterparts, RAIN Foundation and other Dutch NGOs, such as ICCO, the

RHCC was actively involved in a large fundraising proposal to the Netherlands Ministry of Foreign Affairs. To pave the way for stepping up and diversifying activities in Mali in the years to come, research was conducted, leading to an extensive mapping of Mali showing the nationwide RWH potential. In addition, a feasibility study was carried to identify potential areas for sand dam implementation.

Nepal Towards self sustainability

The year 2010 was a busy and successful year for RAIN in Nepal. The partners NEWAH, Helvetas Nepal and BSP-Nepal succeeded in tripling the targets that were set for 2010, constructing 836 RWH systems and thus creating 8.155 m³ of water storage for more than 5,300 people. These will serve not only drinking needs, but also small-scale irrigation, cattle breeding and household needs. The RHCC at BSP-Nepal has received many requests from other villages and districts due to the increased awareness to rainwater harvesting as a water supply option, especially in water-stressed areas.

Another accomplishment was the initiation of a micro-credit and water harvesting pilot. To heighten the awareness of micro credit institutions to rainwater harvesting, a new product for them, the RHCC facilitated workshops for micro-finance institutes at national, regional and local level. This resulted in the signing of a memorandum of understanding with the national umbrella organisation NEFSCUN, which enables BSP-Nepal to initiate micro-credit projects all over the country. Already over 40 loans have been provided in combination with a subsidy from RAIN for rainwater harvesting systems. The first results are extremely positive, with the costs of water harvesting down by an



average of 17% in 2010. BSP-Nepal intends to provide workshops for NGOs as well in order to progressively diminish the number of subsidy-driven projects to create greater financial sustainability and local ownership.

BSP-Nepal initiated another pilot project together with IDE-Nepal which looked into multiple use services (MUS) of rainwater for water, food and energy, and tested a combination of water harvesting systems, i.e., plastic ponds, one-bag-cement tanks and rainwater jars. Water from the different RWH systems is being used for biogas, drinking, cattle breeding and small-scale irrigation. In 2011, the lessons learned will be documented and will be shared within the RAIN network in Nepal by way of a workshop in order to promote a more holistic approach in RWH projects.

A number of activities designed to build the capacity of the RWH network were organized: three NGOs were trained in water quality and the use of water quality testing kits; a workshop on gender was organised as well as a workshop on performing impact assessments. The technical advisor of the RHCC in Nepal participated in the HIER climate change conference in The Hague (The Netherlands), where she gave a presentation on climate change adaptation in Nepal.

Finally, two interaction programs were organized for staff from the district offices of Syangjha and Pokhara with a view to raising the awareness to RWH among decision-makers at district and village levels. The objective was to secure the inclusion of RWH in local development plans, to foster partnership with the local government, to identify ways of implementing RWH and to identify the RWH potential in the different districts of Nepal.

In addition to the above-mentioned activities, the RHCC was closely involved in the development of the five-year programme of the Dutch WASH Alliance under MFSII. Together with WASTE, ICCO, Simavi and their local

partners, an integrated WASH programme was developed in the course of the year and a steering group was formed. The RHCC was appointed to take the lead as Interim Country Coordinator of this programme since the end of 2010 in steering this complex and demanding process, which brings together the stakeholders in various workshops and meetings.

Senegal Striking roots

Although RAIN has been active in Senegal since 2006, a RHCC was not founded until 2010. The RHCC was chosen in consultation with and with the full consent of the existing implementing partners. The RHCC is hosted by CREPA, whose offices are located on the premises of the *Direction d'Hydraulique Rurale*. The close ties with the national water policy-makers is already paying off, for the *Direction d'Hydraulique Rural* and the *Direction des Bassins et Lacs Artificiels* are showing an increasing interest in the concept of RHW. To further support this lobby offensive, various partner implementing organizations have published their RWH experiences in newspapers and brochures. ASRADEC in Senegal has even made a short movie about the impacts of the rainwater harvesting tanks. Moreover, two workshops brought together all the relevant stakeholders to discuss the program to date, and evaluate the results.

This year, 2,683 beneficiaries have been reached through the different implementing partner organizations, with a total 196 roof water harvesting tanks installed, creating 2221 m³ of storage capacity. What is more, UNICEF Senegal has started building rainwater harvesting tanks in schools, hiring technical expertise from one of the local partners RAIN has been working with for the past five years. As a result of the first positive



experiences with RWH at schools, RAIN submitted a proposal to UNICEF Senegal.

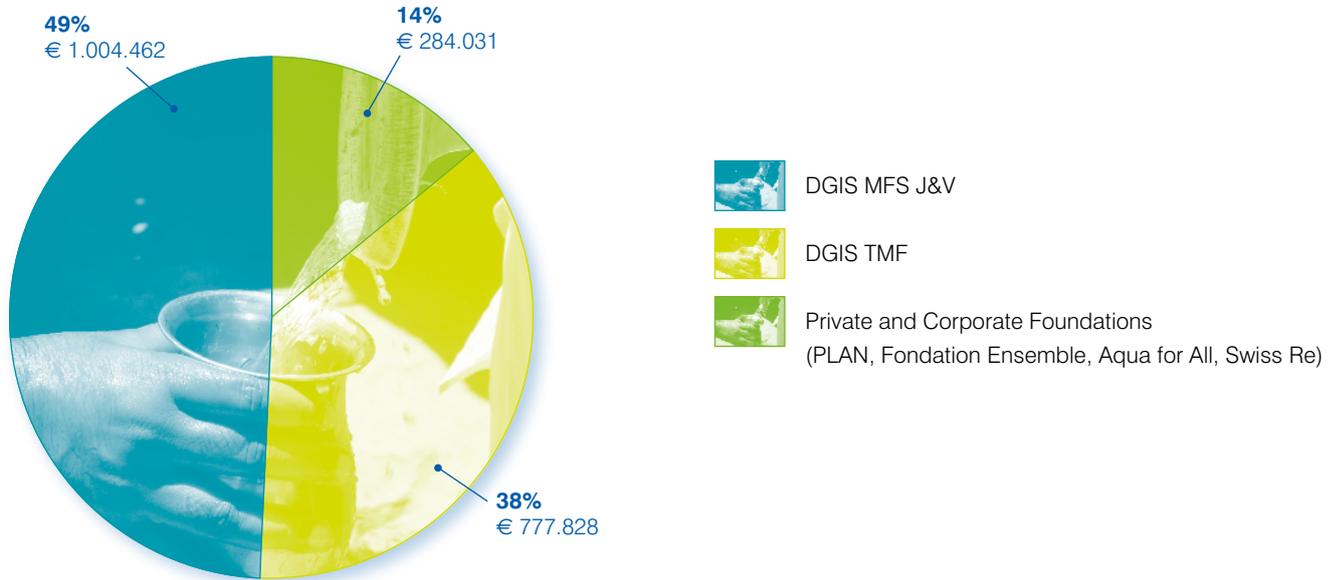
An interesting study was carried out in Senegal which explored the possibilities of combining RWH and microfinance. The outcomes showed that microfinance is still a challenge in Senegal, specifically for RAIN's current target group. A number of factors will need to be taken into account: the investment costs related to RWH, the stringent procedures of the microfinance banks and the need to raise the awareness of beneficiaries and the microfinance banks to the implications of microcredit in relation to water harvesting.

Climate change scenarios for Senegal demonstrate that water resources are the most vulnerable natural resources in the country, with a 5 to 25% drop in precipitation amounts (IFAD, 2010). As the quality and quantity of groundwater is progressively declining, the retention and conservation of water is becoming a real must and improvements in water resources management are urgently required. RWH and 3R approaches (Retention, Recharge and Reuse) can contribute importantly to sustainable water resources management solutions. As a first step towards the implementation thereof, RAIN commissioned a feasibility study to investigate the opportunities for sand dam technology, and to identify areas suitable for sand dams. Also, Future Water carried out an extensive mapping of the country to identify the nationwide RWH potential, based on various factors such as physical circumstances, land use, user demand, and population density.



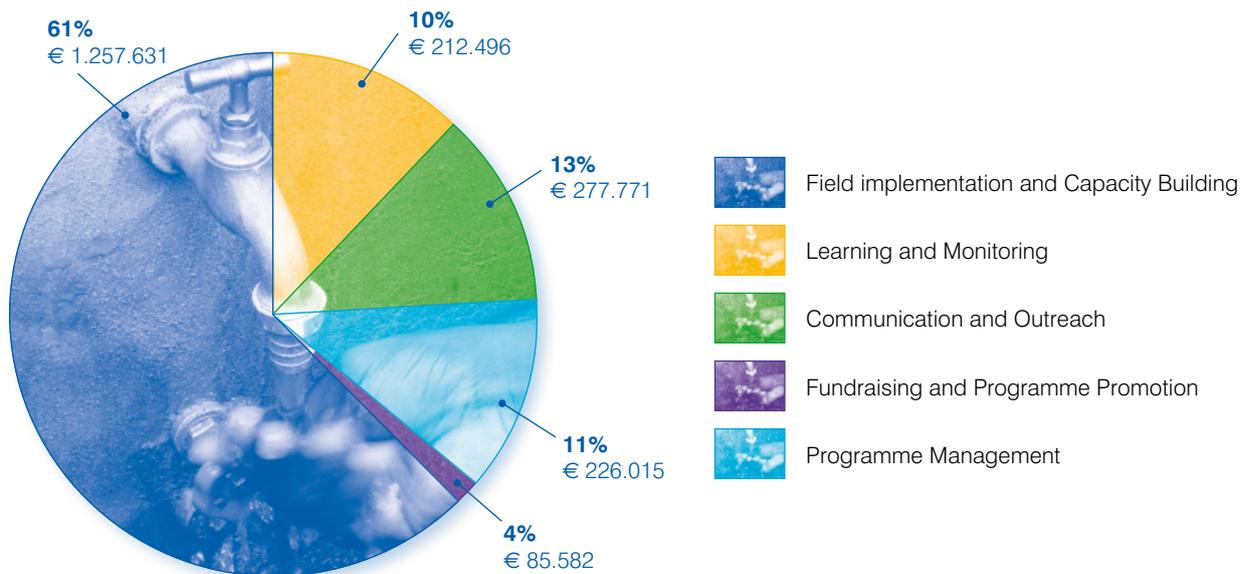
FINANCIAL

RAIN revenues 2010 in Euro, totalling 2.066.321 Euro



RAIN expenses 2010 in Euro, totalling 2.059.495 Euro

Remaining budget from 2010 will be used in 2011.



Over 2010 the financial statements were approved by an external accounting firm (Horlings, Amsterdam). The statements give a true and fair view of the financial position of RAIN as at December 31, 2010 and of its results. These were found to be in accordance with generally accepted accounting principles.



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NWP-NGO platform
Rainwater partnership (UNEP, IRSCA, IRHA, SEARNET/ICRAF, SASOL)
3R consortium (Acacia, Meta Meta)
Water Aid
WASH alliance (Simavi, Akvo, WASTE, AMREF, ICCO)

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