

# Chapter 9

## Promotion of rainwater harvesting as a business

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### 9.1 INTRODUCTION

Without access to safe water, people, especially those in rural areas, are trapped in a cycle of poverty and disease. Women walk long distances to collect water, which reduces their involvement in productive work for their households. On some days, children forego school to collect water for home use. Water and sanitation-related diseases such as diarrhea and typhoid are common.

Rainwater harvesting is a viable solution to the access to water situation; the water is within the homestead, and if collected and stored properly it is free from major contaminants. It brings tremendous benefits in terms of reduction in water-borne diseases, improved school retention and increased productive time (for women) due to water-collection time saved. As such it contributes to the fulfillment of the SDGs related to health, poverty reduction, gender and education, as well as meeting the country's National Development Plan that identifies provision of adequate water supply and improved sanitation as one of the key strategies for promoting economic growth and reducing poverty.

Because of high poverty levels, households are unable to raise money to procure rainwater-harvesting systems (let alone other amenities) on their own. As a result,

several households are involved in community groups, dealing in saving and loaning for various purposes, but often not for investment or water provisioning. Most of these groups are registered and recognized (as community-based organizations, CBOs) by local governments in their areas of operation. These groups are an excellent entry point to facilitate self-supply of rainwater harvesting facilities for economic development, and this is illustrated further in our case in this chapter.

Rainwater harvesting is a simple and low cost water supply technique that involves the capturing and storing of rainwater from roof and ground catchments for domestic, agricultural, industrial and environmental purposes. When surface runoff is collected in reservoirs, it can be used for the management of floods and droughts (environment conservation). Surface runoff can also be used for recharging groundwater, which will positively impact on springs and shallow wells. Rainwater harvesting yields numerous social and economic benefits, and contributes to poverty alleviation and sustainable development.

In Uganda, rainwater harvesting is increasingly becoming important both for agriculture and domestic water use. This is due to increasing drought spells, erratic rainy seasons which cause poor agricultural yields resulting in negative impact on the country's economy. Some rainwater harvesting technologies are being promoted both by the Government and NGOs in several parts of the country. These range from water storage techniques at micro and macro level e.g. small scale dams, underground and above ground tanks to in-situ technologies e.g. soil and water conservation technologies. Farmers, Government, Donors and NGOs have invested huge resources (land, labor, and capital) in order to harvest water using different techniques.

Promotion of Rainwater harvesting for sustainable livelihoods is the main focus of the Uganda Rainwater Association (URWA). URWA contributes to integrated water resources management (IWRM) through promotion of efficient management of rainwater. Rainwater harvesting as a business has been a neglected component of water resource management yet it has a direct impact on people's livelihoods. This recognition presents new challenges which need to be addressed and opportunities to be leveraged. Against this background, URWA embarked on empowering entrepreneurs with skills and knowledge to be able to make more informed decisions and choices about managing rainwater for their wellbeing. As the impact of climate change manifests itself, we tighten our belts to pay serious attention beyond the conventional sources of water and look towards integrated rainwater harvesting techniques to boost our business ventures.

## 9.2 RAINWATER HARVESTING AS A BUSINESS

Water is precious. We cannot shy away from the fact that pressure and the demand on the water resource grow day by day. Therefore, there is a need to utilize the best practices of rainwater harvesting to make sure that there is no water shortage in the

future. Water is society's most basic need; without it nothing can live. It is vital for health, production, and economic growth. Access to clean, safe and reliable water supply is a universal human right. Although Uganda is endowed with water in terms of rainfall and water bodies, this water is not accessible to all in the right amounts and quality at the right time. We have been warned several times by climatologists that there are difficult times ahead because of climate change. As the climate warms, rainfall will become more erratic with severe floods, and droughts will be more frequent, longer and more severe with catastrophic consequences, thus the need to seriously promote rainwater harvesting and venture into business for economic growth.

### **9.2.1 A Case of the Rainwater4Sale project in Lwengo District, Uganda**

Rainfall variability has emerged as one of the most challenging among climate change events for communities in general. In this regard, the lifestyles of different social groups can be negatively affected from time to time by excessive rainfall and extended drought, caused by rainfall variability. The small farmers and the households in Lwengo District are extremely vulnerable to these changes as the entire wellbeing of the farming community is completely dependent on the capacity of these communities to access the right amounts of water at all times to ensure yields from the crops and livestock. In Lwengo, during the dry period, farmers lack water to meet the needs of the farm. An imperative for rain fed farming therefore, is that a technology or innovation to store water for later use when needed. The percentage of households using rainwater harvesting in rural areas of Uganda is low. Moreover, with increasing populations and high unemployment there is more need for water for domestic use, production, and other purposes to enhance economic development. Rainwater harvesting has the potential to provide water for these purposes, and improve food production for communities who have a high dependence on agriculture.

Against this background, a Rain4Sale pilot project was carried out in two sub-counties of Lwengo District. In Lwengo, and Uganda at large, there is a persisting problem of rainfall being "too much or too little" on a seasonal basis. With climate change, the dry season becomes drier and the wet season wetter. This results in uncontrolled surface runoff, soil erosion, and flooding of low lying areas. All these misfortunes impact negatively on the economic standards of community members. There is no piped water in these sub-counties, and these communities were willing to adopt rainwater harvesting to meet their needs.

The aim of this project was to implement water harvesting and conservation techniques that would assist the communities in this catchment area to improve their livelihoods by enhancing their income through sales of stored rainwater for different purposes.

In June 2016, financial support was acquired from RAIN to give to entrepreneurs to build 50 m<sup>3</sup> rainwater harvesting systems in Lwengo District. The rainwater harvesting business model was introduced to four entrepreneurs. They received loans for construction of rainwater harvesting (RWH) installations and are currently paying back in installments. Some reimburse quarterly, while others reimburse monthly.

Rainwater harvesting business model is a sustainable way of initiating a profitable venture. The entrepreneurs collect and store the rainwater into 50 m<sup>3</sup> ferrocement tank (Figure 9.1). They have adopted the best practices of utilizing rainwater for domestic use, agricultural use, and environment conservation. This water is also sold to communities who use it for drinking. The entrepreneurs use the water for livestock (Figure 9.2) and irrigation, and are earning income from the products. In addition to the above, this technology provides social development, economic wellbeing and environmental sustainability. The rain for sales project provided employment to some masons in the community. They were trained and mobilized to implement this technology. Communities are encouraged to mobilize construction materials so as to build rainwater harvesting systems and provide water for domestic and economic purposes. In this project, women confess that the rainwater harvesting technology facilitates them by providing water which is otherwise brought from distanced water sources and reduces their physical hardship and mental stress as well as time required to haul water from other water sources.

The saved time is thus used for other productive purposes such as domestic work, agriculture and livestock activities (Figures 9.3, 9.4 & 9.5), and child care. Installing these rainwater harvesting systems reduced the water supply costs and also provides significant savings.

URWA's focus was initially entirely on rain water harvesting, collection and re-use, but today it goes well beyond the selling of rain water. We encourage entrepreneurs to re-use the rain water for production, and sanitation improvement.



**Figure 9.1** 50 m<sup>3</sup> ferrocement tanks. (Source: Kikundwa Anne).

Existing surface water and groundwater resources are being depleted. Already, there are places in Uganda that are experiencing shortages because demands are greater than available supplies. Rainwater harvesting therefore provides us with an opportunity to conserve and extend our existing resources. It is important to note therefore, that rainwater harvesting is not intended to replace other conventional sources of water. Harvesting rainwater simply provides an additional measure of security to communities during times of water scarcity.

We continuously interact with entrepreneurs to ensure best practices of operation and maintenance, client satisfaction issues, and aspects of the safe water chain. Quarterly monitoring is ongoing. The entrepreneurs report any issues that come up regarding the business.



**Figure 9.2** Piggery. (Source: Kikundwa Anne).



**Figure 9.3** Brick laying. (Source: Kikundwa Anne).



**Figure 9.4** Kitchen gardening. (Source: Kikundwa Anne).



**Figure 9.5** Passion fruit growing project. (Source: Kikundwa Anne).

### 9.2.2 Lessons learned

Different people may have the same problems, but they need to be addressed differently because what works for one person may not necessarily work for another. This has been witnessed amongst the different entrepreneurs who had a common goal of making money out of rainwater sales, but used different approaches in the utilization of rainwater as a business.

Collaboration of all stakeholders is crucial because different actors have different important roles that will contribute to the success of projects. Successful projects are not a 'one man' business, but a result of combined efforts from all stakeholders.

For inspiring change, partnerships should be emphasized. This helps the concerned parties to make informed decisions and perform better.

Not all plans flow as well as predicted. There are ups and downs in project implementation and these require going back to the drawing board to develop appropriate strategies.

### 9.2.3 Challenges and how they were addressed

We have had issues when it comes to loans reimbursement. Not all the entrepreneurs were repaying on time, or sometimes a repayment period would find them with another period's debt. We sat with the entrepreneurs and to lay out strategies on how to address this issue.

Record keeping was a challenge. This was addressed by introducing Journal Vouchers where entries of how many jerrycans sold, and the amount are recorded on a daily basis.

During the dry season, water drains away quickly and the customers get back to their conventional sources of water. Sometimes they queue at his home thinking that he is refusing to sell the water to them.

During the rainy season, the costs per jerry can are low, and the customers are fewer. This reduces the sales, but the entrepreneurs were encouraged to store the water and maximize sales during the dry season.

## 9.3 CONCLUSION

Rainwater harvesting is a simple, inexpensive technology that promotes sustainable water management. This technology should be adopted for economic development. Lessons from the Rain4Sale project testify to this. When projects are implemented, stakeholder involvement in the project does not end at the project phase-out stage but must continue through and through for sustainability and continuity. We have heard of projects that die due to lack of monitoring and follow ups. In this rain for sales project, lessons drawn need to be used to inform other projects that may come up, and also address issues that may come up and hinder the smooth running of the rain-for-sale business. There is so much interest of late in rainwater harvesting. Rainwater harvesting is enjoying a revival in popularity.

We continue to spread the self- supply gospel to embrace promotion of rainwater harvesting as a business.

## **WHO WE ARE**

The Uganda Rain Water Association (URWA) is a membership organization founded in December 1997; it was registered in 1999 as a Company Limited by Guarantee followed by a 2006 registration as a local NGO, to raise rainwater management and utilization among all development sectors in Uganda. URWA supports communities to improve their socio-economic situation through mobilization, information, skills and experience sharing and collaboration between its members. The major focus of community support is integrated rainwater harvesting and management for improved livelihoods. They are facilitated to promote rainwater harvesting for domestic use, environment conservation and production.

## **OUR MANDATE**

We support communities to improve their socio-economic situation through rainwater harvesting for domestic water supply, agricultural production, and environment use. We do this through mobilization, sharing information, advocating, building capacity and researching on innovative technologies and approaches of harvesting and managing rainwater.