Rainwater Harvesting Implementation Network

The Rainwater Harvesting Implementation Network (RAIN) is an international network which aims to increase access to water for vulnerable sections of society in developing countries – women and children in particular – through the collecting and use of rainwater. This information sheet shows the facts & figures at a glance of RAIN's rainwater harvesting projects.

RAIN Facts & Figures

Did you know that…..

- ***1 out of 6 people*** *worldwide have no choice but to use potentially harmful sources of water?*
- ***Women and children*** *in West-Africa spend* ***4-5 hours*** *on average every day fetching water?*
- *When rainwater is harvested from rooftops and stored in underground tanks of 50 - 200* m^3 *total investment cost ranges from* ***0.02 to 0.14 eurocent per litre*** *? While* ***1 litre*** *of water from a* ***sand dam*** *costs on average only* ***0,2 eurocent per litre****?*
- *It takes* ***about 10 days*** *to build a 10* m^3 *rainwater harvesting tank? A rainwater harvesting tank should function for* ***15-20 years****?*
- *If simple maintenance measures are followed, rainwater harvesting provides* ***a reliable source of clean drinking***

The benefits of rainwater harvesting (RWH) have long been underestimated. However, in order to reach the Millennium Development Goal for drinking water by 2015 in areas where people have no access to reliable sources of water, storing rainwater is an obvious solution! Table 1 shows the rainwater harvesting potential from roof tops in the countries where RAIN is currently working. From dry sub-Saharan regions of Africa to remote rural hilltop villages in Nepal, rainwater harvesting is a valuable option.

RWH potential (m^3/roof/year)	Ethiopia	Nepal	Senegal	Burkina Faso	Mali
Minimum	20	40	7	6	2
average	***78***	***133***	***28***	***20***	***39***
maximum	120	748	780	170	206

RWH potential *(the rainfall that could be harvested from a rooftop)* ***= Annual P (m) * roof A (m^2)***
Where Annual P (m) = min., avg. & max. rainfall;
Roof A (m^2) = min.. ava. & max. roof size

Table 1: RWH potential from rooftops in Ethiopia, Nepal, Senegal, Burkina Faso and Mali (based on data from RAIN projects, December 2007).

Table 1 shows the differences between the rainwater harvesting potential of different countries. This is mostly a reflection of average rainfall, which is relatively high in Ethiopia and Nepal and low in West-Africa. Still ***24 – 48*** people (see table 2) could benefit with good quality water each year from rainwater harvesting with just ***1*** roof in West-Africa.

Number of beneficiaries (per roof/year (based on 3 litres/person/day)	Ethiopia	Nepal	Senegal	Burkina Faso	Mali
minimal	24	49	9	8	3
average	***95***	***162***	***34***	***24***	***48***
maximum	146	911	949	207	250

Table 2: Number of beneficiaries from 1 rooftop based on the RWH potential and on a water demand of 3 l/p/day during a dry period of 9 months (based on data from RAIN projects, December 2007).

RAIN's primary goal is to improve the livelihoods of people by providing safe and sufficient drinking water through rainwater harvesting.

RAIN's achievements until 2007 and beyond ……

RAIN and its implementing partners have been constructing RWH systems since 2004. Three Rainwater Harvesting Capacity Centres (RHCCs) have been established in Ethiopia, Nepal and Burkina Faso and at least 25 implementing organisations have been constructing RWH systems for the last 2-3 years. In ***3*** years the RAIN Programme has provided more than ***24.250*** people with drinking water in ***5*** developing countries. The figure and table below show the total number of beneficiaries from RAIN projects and the number of RWH systems and storage capacity build to date.

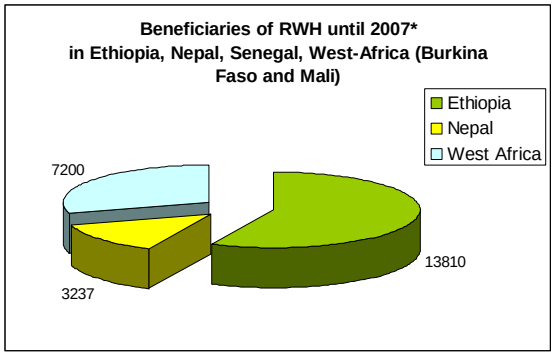

Figure 1: Users of RWH to date through the RAIN programme in Ethiopia, Nepal, Senegal, Burkina Faso and Mali.

	Ethiopia	Nepal	West-Africa (Burkina Faso, Mali & Senegal)
No. of RWH systems*	33	31	348
Storage capacity* (m3)	16.405	540	3.038

Table 3: Number of RWH systems constructed and total capacity.

* Based on available data: these are minimal numbers, since data is not complete yet.

RAIN has defined its goals for its West-Africa programme for ***2008*** which include the construction of ***700 RWH*** systems with a total capacity in Senegal and Mali of 4200 m^3 (2100m^3 each) and 2318 m^3 in Burkina Faso totalling ***6518 m^3***. This is ***twice the storage capacity built in 2007.*** Project proposals from 18 implementing partners in West-Africa have been submitted for 2008 and RAIN is confident in reaching this goal. New projects will begin in Ethiopia and Nepal, with RHCCs coordinating implementing partners in the achievement of projects focused on the provision of water, not only for drinking but also for sanitation, energy (biogas) and food production.

Comparison of RWH systems

In West-Africa RAIN has been constructing above ground ferrocement tanks fed by roof water harvesting. The cost of this system, including all support services, is approximately ***10 eurocent per litre***. Although very durable, relatively easy to construct and requiring little maintenance, these costs are relatively high. RAIN has initiated a Research & Development programme to optimise these tanks and make them more cost-effective (aiming for a ***cost-reduction of at least 25%***).

RWH systems implemented by RAIN until 2007	**Capacity* (m^3)**	**Cost (Euro/litre)**
Above ground ferrocement tank for roof water	10	0,105
Below ground reinforced concrete tank for surface runoff	60	0,088
Sand dam for surface runoff	3000	0,002**

Table 4: Different RWH systems implemented by RAIN, based on available data from projects implemented by 2007

* based on average capacity of RAIN's systems ** sand dam costs are converted from USD to Euro with an exchange rate of 1.47 (11-12-2007)

Other technologies which RAIN has been implementing and which have the advantage of large water storage capacity when compared to ferrocement tanks are (partially) below ground tanks and sand dams (a partially below ground reinforced cement dam build in a dry and sandy river bed). Both are relatively cheap with the surrounding soil offering stability in place of expensive reinforcement. ***See also RAIN's Newsletter, August 2007, for further R&D highlights.***

Contact us for more information:
www.rainfoundation.org
email: info@rainfoundation.org **or telephone:** + 31 20 5818 250