Rain Water Harvesting Structures
in the villages of Churu district, Rajasthan

An Indigenous Strategy towards Safe Drinking Water Supply

Lead Partner :

Safe WATER NETWORK

Funded By :

PEPSICO FOUNDATION

Project Partners :

Centre for microFinance

Bhoruka Charitable Trust

IIHMR JAIPUR

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Executive Summary

The western part of Rajasthan State in India is part of the Thar Desert. The area receives about 300 mm rainfall annually. There is no perennial river in the area and the ground water is brackish. The area is full of sand dunes. The rainwater gets absorbed fast in the sandy soil and therefore there is hardly any run off. Churu district is part of the western Rajasthan with a population of 16,732 people and the district has acute shortage of drinking water, not to talk of safe drinking water.

Safe Water Network supported an innovative project in fifty five villages of Churu district, to harvest rain water from roof tops in to water tanks (cisterns) benefitting more than 1000 families of which majority of families are poor (below poverty line, BPL) during 2009-11. The project created total water storage capacity of 24 million liters by constructing 975 household cisterns- Rainwater Harvesting Structures (RWHS) and 40 community cisterns RWHS. This intervention has provided drinking water to 16,732 people.

The community contributed 25% to 50% of the cistern cost. 175 families took credit from Self Help Groups to make RWHS and repaid the loan. The money collected as repayment of loan is now used as revolving grant to help more families construct RWHS by taking loan. The loan product for RWHS is unique and probably first of its kind.

Bhorukha Charitable Trust facilitated the creation of RWHS cisterns whose design was developed by scientists from Indian Institute of Delhi. in field and also trained 142 masons, Indian Institute of Health Management Research (IHMR) provided research and evaluated water quality of existing village water sources and established protocols for regular chlorination of stored water in kunds and Center for Microfinance CmF created loan products and provided technical support on microFinance theme. This is the first time ever that a loan product was created for RWTH and that too in rural sector. The entire operations were managed by women through their Self Help Groups (SHGs) starting from identification of beneficiaries, identification of sites, tagging the water bodies, construction of RWHS and maintaining them, giving loans and collecting repayment installments etc. Safe Water Network provided technical and financial assistance in the project.

All 975 individual household and 40 community RWHSs are completely used round the year. When the rainwater is consumed, families use the RWHS as storage facilities and refill the cisterns from purchased potable water. The project has ensured the availability of safe drinking water to poor at door step which has in turn reduced drudgery of women who are responsible for fetching water in household. It has also reduced incidence of water borne diseases in beneficiaries' families.

Micro Finance seems to hold the key to the solution. If the poor family gets credit to invest on roof top rain water harvesting system, they can repay the credit in installments and ensure their water security. In many places, micro finance is playing a crucial role in aiding poor to add basic amenities like toilets, cooking stoves, electricity etc. in their households to improve their living conditions and ensure better quality of life. Thus, microfinance-aided RTRWH cisterns make a compelling case to be created for reducing drudgery of women and improving their health in water scarce Rajasthan and other parts of India.

Introduction

Rajasthan is a water deficit state. It has about 5% of total population of country and about 10% of total area but has about only 1% water resource. The scanty rainfall and very low water resources have impacted agriculture and animal husbandry (major livelihood source of people). Increasing population (about 27 % decadal growth) is exerting enormous pressure on existing water resources. The western part of state is severely impacted due to water shortage.

This area has very difficult geo- climatic setting where the annual rainfall is only 300 mm and that too is erratic. The soil is very sandy and rainwater quickly gets absorbed in sand. Under the sand there is calcareous layer and the ground water is very brackish. People living in the area face drinking water problem on two accounts- firstly the water availability are very low and secondly the quality of water is not good. The drinking water is a major issue in large number of habitations and it is an issue that is adversely impacting women and girl children because arrangement of drinking water is the responsibility of women. Women have to walk considerable distance in scorching heat to fetch water and they get exposed to sun stroke and other health hazard as well. The water scarcity and brackish nature of ground water has its own deleterious impact on the health of people.

In the project area, government has provided piped drinking water to the villages but most of the time no water comes out of the pipelines. Traditionally, people collect rainwater in underground cisterns use the water for drinking purpose round the year. But only economically better off families have such cisterns and the poor families have to buy water from the market.

People who have financial resources make rain water harvesting tanks and collect rainwater for use. The rainwater is safe for drinking. The quantity of water harvested depends on quantum of rainfall and size of the harvesting structure. Normally the rainfall is in months of July and continues up to August. A tank once filled would last till February or March. After March people start buying water from tankers and fill their tanks.

Large number of families who do not have sufficient money to make water harvesting tanks, buy small water tanks of cement concrete or HDPE (of 200 to 300 liters) and they have to buy half tanker or camel cart tanker very frequently. In one of the cash flow study conducted by CmF in Churu district, it was found that a normal size family (5 members) spends about Rs. 800/- per month on water – purchase and transportation.

Government and philanthropic donors have been helping people with one time grant to help in making water storage tanks. But the ‘grant/ donation’ model has its own limitation of scale up- number of needy is too large and grants are too few.

The roof top rain water harvesting and storing system of 15,000 liters capacity costs around Rs. 22,000/- for a family. Looking at the expenses that the family incurs on purchase and transportation of potable water, it appears that if the family invests in the rain water harvesting system, the entire cost will be recovered within 2 years. But then why people are not investing on such a system?

The answer lies in two things, one the roof top rain water harvesting technology is yet to be demonstrated at the household level. In good old days, there has been a practice of rain water (ground)

harvesting in community cisterns. But over a period of time, as the community organizations withered away, the common cisterns also got defunct. The second reason is that poor families do not have enough money to invest one time and therefore they have to incur the monthly expenses (though it is very high).

Background:

Safe Water Network (SWN) supported a project with 200 families in 15 villages of Rajgarh Block of Churu district wherein Bhoruka Charitable Trust – local NGO working in the area for last 30 years worked with community and facilitated the construction of Rain Water Harvesting Structures for making safe drinking water available to poor families.

It was felt that the scale of the problem (demand for water harvesting tanks) is so big that the grants would never be enough to reach out to all families. Additionally, the grants usually do not ensure desired level of community involvement for maintenance and use of the strictures and also many non-deserving people are able to get in to the system.

SWN, BCT and CmF discussed the idea of piloting a credit based system where the target family constructs the roof top rain water harvesting structure from the loan and repays the loan in regular installments. It was observed that many families buy water from market and they spend enough money which would be sufficient to repay the loan.

Center for microFinance undertook a cash flow study of Self Help Group member families (who were identified as project target families). It came out that the families spend about Rs. 500-800 per month to buy and transport drinking water; more than 50% families have regular cash flows; more than 50% households do not have RWHS and such families are poor and belong to socially marginalized as well. Such people actually end up spending more money on purchase of water and on health (due to poor quality water) then the cost of constructing RWHS.

Encouraged by the success of the first phase, SWN supported the second phase of the project with additional 750 families. The learning from first phase was incorporated in second phase – both in the design of the structure and also in the program management.

The objective of the project was to develop a sustainable model that ensured significant potential to improve availability of potable water. The model aimed at providing a wholesome solution for the drinking water problem in a village, which included; empowering people to develop their own operation and maintenance system, raising awareness about safe drinking water in a village, developing a Micro-credit infrastructure in a village and developing self-help groups which enable people to avail the benefits of economic development that happens as an outcome of an availability of sustainable drinking water solution in the village. There were three key areas of focus – Developing a Micro-credit infrastructure, providing quality assurance and developing a cost effective RWH Structure Design.
The specific objectives of the project were a) to demonstrate an integrated solution of drinking water problem in the area, b) increasing awareness of community on safe drinking water, c) to test out a

mechanism where community construct RWHS by taking loan and repay the same and d) Technical Advisory Support

Designing of the Rain Water Harvesting Structure

The first challenge was to design appropriate Rain Water Harvesting Structure for the area. The Safe Water Network took help of renowned technical institution- Indian Institute of Technology, New Delhi in designing of the RWHS. The capacity of the tank was kept at 15,000 liters keeping the annual rainfall and the average size of the roof area; so that the tank should get filled with even less than normal rainfall.

Traditionally the water harvesting tanks are made with the use of lime as cementing material. But the lime takes about 30 days to mature and cement takes about 6 days. Therefore cement was chosen for use.

If the tank is allowed to dry completely, it can develop cracks and even a slight crack in underground tank can make it completely useless. Therefore care was taken in design of the tank in such a way that the bottom of the tank was kept in concave shape and the water withdrawal pipe was kept about 30 CM above of the bottom so that at least some water is always in the tank.

To ensure good quality of water in tank and to avoid contamination, various measures were taken in practice as well as in design. For example to draw water from tank, hand pumps were fitted in the dome. Even the hand pumps were of stainless steel to avoid contamination by rust etc. The practice of chlorination by using prescribed dose of chlorine tablets and use of alum in tank was promoted through regular training and awareness building.

Another possible contamination is 'seepage of drain water from septic tanks' if the septic tank is in close proximity of the RWHS. The site of RWHS was selected to ensure at least 30 feet distance from septic tanks.

All water sources in the project villages were earmarked and the quality of the water of each source was tested for quality. All the water sources of bad quality were color coded and community was made aware of the quality of each water source.

The RWHS are fitted with filters and all beneficiaries are trained to clean the filters as per prescribed schedule. As a matter of practice to avoid contamination, the first rain water is flushed out. The roof is also cleaned prior to rainy season.

Selection of the beneficiaries:

As water supply is considered the responsibility of the state, there are many efforts by government in this regard. For example, the government has put pipelines to supply water but the water hardly flows in the pipelines. Government had also supported construction of water tanks to harvest rainwater under its Watershed Development Program by giving grants. Normally the government grants hardly reaches to target beneficiaries because it is cornered by influential people and government officials.

Selection of real needy beneficiaries was the challenge before the project and BCT effectively managed it with active participation of people. BCT discussed the project details in most transparent manner in the village meetings. A project implementation committee was formed in all project villages. The committee comprised people selected by village and they represented all major castes and groups of the village. The committee was entrusted to prepare a list of the potential beneficiaries (those who do not had traditional RWHS and were economically poor). The poorest of the poor were given first priority and so on.

The meeting of potential beneficiaries was held in the village and the BCT staff explained all the requirement of the project like the size of roof top, design of the RWHS, minimum distance to be kept from septic tank and most important the beneficiary has to have his/her own land for construction of RWHS. It was also explained that the people belonging to 'Below Poverty Line' category will have to contribute 25% of the cost of RWHS (in cash or kind) and others will contribute 50% of the cost. People were told to have consultation in their families and let their expression of interest be communicated to the BCT village worker.

Construction of RWHS

Construction of quality Rain Water Harvesting Structure (RWHS) was the next challenge. Traditionally such structures are made with 'lime'. But it takes about 30 days to make the structure with lime and moreover the availability of lime is also not assured. Some of the structures made with government grants are made with cement and many of them had cracked. SWN and BCT team did a quick study of such structures and found that the cracked structures were mainly due to faulty design and because of poor quality material.

BCT undertook the training of local masons. About 142 masons from the project villages were trained for 10 days and each mason was asked to construct one structure under close supervision of the expert team. Beneficiaries were explained that the proper material has to be used otherwise the whole structure will be redundant if it develop cracks.

To ensure proper use of quality material and also to ensure proper design of the structure, each and every structure was monitored on daily basis by BCT worker. The project support was provided in form of material (and not cash). The stakes of the beneficiaries were built by taking their contribution in form of labor (they dug the pit) and material (they arranged sand, and gravel). The cement, bricks, pipes, hand pump and other material was procured centrally by BCT and supplied to beneficiaries. This helped in ensuring quality, appropriate quantity and best prices.

Awareness Building on sanitation, quality aspects of drinking water and maintenance of RWHS

Due to acute shortage of water, people in the project area have practice of mixing sweet water with brackish water to make it drinkable. The water transported through tractor mounted tanks also get polluted because of rust.

Under the project, sanitation awareness drive was undertaken with beneficiaries and also through schools to make children aware on the importance of washing hands, keeping drinking water clean, use of long handle mug to draw water from pots, use of stainless steel hand pump to draw water from RWHS.

In addition to this, many of improved practices like cleaning of roof before rains, flushing out the first rain water, cleaning rainwater through attached water filter, regular cleaning of filter, use of alum and chlorine tablets, etc. were explained and adopted. As a result, the percentage of people covering the tank has increased from 79 to 99 percent. The number of people cleaning the tank has also increased from 54 to 88 percent.

Credit Product:

Roof top rainwater harvesting has been successfully demonstrated as one of the efficient methods for meeting the drinking water needs of rural households. Safe Water Network in collaboration with Bhoruka Charitable Trust had initiated construction of roof top rain water harvesting structures in Rajgarh block of Churu in the year 2008 in 15 villages which was later extended to 40 villages in the second phase of the project in 2009-10. Provision of grants for constructions of rain water harvesting tanks addresses the need of a few beneficiaries only. Thus, there arises a need to offer a solution that is more sustainable and scalable and adopts a comprehensive approach to combine both demand and supply. Considering this, Phase II of the project was designed to include components like provision of microcredit services to the clients for construction of rain water harvesting structures.

Traditionally, communities in this part of the country have depended heavily on rain water for meeting their drinking water needs and have evolved innovative techniques of harvesting rain water like the traditional underground tanks known as the Kunds with artificially paved catchments. But with the breakdown of community institutions the use and maintenance of Kunds have decreased significantly. Roof top rain water harvesting structures, RWHS uses the same concept of underground tank for water storage as the Kunds but connects the former to roof which acts as the catchment. The structural details of the unit have been provided later in the paper.

Though the importance of rain water harvesting is an establish fact, rural families have been found rarely to invest in the same. One of the significant causes is the one time big investment required for construction which often the families fail to meet and thus continue to either purchase water or collect water from different sources however high the opportunity cost may be. Microfinance could hold the solutions to this. Poor households could take credit for meeting the construction costs and repay the loan in monthly installments.

With this concept a pilot was initiated in Rajgarh Block of Churu District for a micro credit product of drinking water. Centre for microFinance Jaipur was the knowledge partner and provided technical support on different aspects of the pilot to the implementing agency. The pilot started with 150 households and the rotating credit was envisaged to be used for reaching out to more and more people

in the future. The micro credit product was implemented with existing SHGs promoted by Bhoruka Charitable Trust across 25 Villages.

Cash Flow Study

The first task of the pilot involved carrying out a cash flow study of the project area. The study included a survey of 100 Households carried across 15 villages in project area which was supplemented with Focused Group Discussions with the SHG members to access their perception about a microcredit product on water.

The average annual income of a household was Rs. 49,000 and average annual expenditure per household was Rs. 42, 600 thus the average annual savings being Rs. 5,680. However, investment in assets and expenditures on life cycle events turn most of the households into a deficit situation which leads to availing credit from different sources. The average indebtedness of a household was found to be Rs. 30,500/- and total average loan availed by the households as Rs. 41,200. The major sources of credit were found to be moneylenders (22%) and friends/relatives (49%). In case of credit borrowed from banks or SHGs, repayment was found to be monthly.

The cash flow study also showed that water related expenditure amounted to 7% of the total household expenditure. Groundwater being brackish did not serve the purpose of cooking or drinking. For this water has to be either purchased or fetched from sources of fresh water or borrowed from neighbors having kunds/ RWHS. The source of water to be used for drinking and cooking food was found to be located at an average distance of 1km. In the case of nearby sources also, considerable time was spent in bringing water due to long queues. Water is brought twice a day in vessels of storage capacity of 12-15 liters and primarily the women of the household are involved in the activity for an average three hours a day. Average annual expenditure on water per HH was found to be Rs. 3090.

Designing of loan product

Based on the findings of the study credit products were designed with loan amounts and repayments matching the cash flows of the clients for construction of RWHS. Two credit products were designed of Rs. 10,000 and Rs. 15,000. As illustrated from the cash flow, the debt capacity of the households in the area of operation is approximately Rs. 20,000. Thus, microcredit of Rs. 10,000 and Rs. 15,000 fall in a favorable range. The loan product of Rs. 10,000 only included the material cost of stone slabs, cement, steel windows, name plate, hand pump, PVC pipe, Bend +T, clip, nail and filter. The beneficiary contributed his share in form of cost of bricks, mason and labor charges. Apart from the material cost as indicated above, the loan product of Rs 15,000 included Rs 5,000 as cash. The purchase and delivery of material was carried out by the implementing agency, i.e. BCT. This was done purposefully to prevent use of inferior quality material and thus prolong the life of the structures. The loan term of the products was kept at 2 and 3 Years respectively. Equated Monthly Installments, EMI of Rs 250 and Rs 500 were fixed for both the products.

Product Features

Jalnidhi- a microcredit product for safe drinking water

Product Features

Products	JL10	JL15
Loan Amount	Rs.10,000*	Rs.15,000**
Repayment Period	24 months	36 months
Interest Rate* (diminishing)**	12% per annum	12% per annum
Monthly Installment	Rs.500	Rs. 500

Repayment mode	Equated Monthly Installment (EMI)
Delivery of product	Only through SHG
Collateral	SHG Guarantee
Repayment Starts	After 1 month of construction of tank or 2 months of availing the loan, whichever is earlier
Penalty	No prepayment penalty SHG will decide the penalty for missed installments

Roof Top Rainwater Harvesting System

Product Description

- Underground cistern of total capacity 15,000 Liters (Diameter 8ft, Depth 10.5ft).
- Site of construction- Courtyard of residential buildings
- Sand Filter attached to inlet pipe for removal of filterable solids.
- Hand pump provided to minimize contamination of water.
- Approximate cost of construction: Rs 22,000

The above box provides a quick glance at the features of the loan product. The loan product was designed to be necessarily delivered through Self Help groups. Due to grant component of the product, no prepayment penalty was included. However,

Sum assured	Rs. 10,000	Rs. 20,000
Premium (to be paid only once)	Rs. 100	Rs. 200
Term of Policy	3 years	3 years
Maturity Benefit	Rs.110	Rs. 220

the SHGs would decide their own penalties for missed installments or non-repayment of installments. No loan collaterals were involved as the peer pressure in SHG would act as the collateral. In case of default my members, the SHGs would be liable to pay the installment. Hence, the extension of loan to

members was also restricted to 12-2 members per SHG. Out of the 150 SHG members of the pilot group, 2 had opted for the Rs 10,000 loan product and the rest had opted for the Rs. 15,000 loan product. Two risks were assumed during product design first risk being natural risks like drought, which would severely affect the inward cash flow of the households and subsequently the repayment. The second risk is human risk which includes death of client. Insurance service along with the product was hence designed. The clients were covered under Birla Sun Life: Bima Kavach. The detail of the product is as provided in the above table.

Product Dissemination

The first step of the product dissemination strategy included trainings of staff of implementing agency, BCT. Intensive training on the features of product, criteria of beneficiary selection, process of loan disbursement and repayment collection was imparted. Apart from the above orientation of the staff about the basics of microfinance and accounting practices was also carried out. Management of loan product involves strong documentation as well as account maintenance. The above trainings were carried out in keeping these objectives in mind. Relevant formats for loan application, loan sanction, tripartite agreement, and material receipt were also developed for proper documentation. The formats being used by the implementing team have been attached as annexure.

Observations

In majority of the villages where the RWHS had been provided to people as a grant product, the community was not ready to accept the same as a loan product. Even with persistent efforts of staff only by 25 RWHS could be successfully constructed.

It was being continuously difficult for the staff to convince the community in the 40 villages and other neighboring villages for credit product. People were ready to wait for a grant product but were not ready to accept the loan product. Faced with this new difficulty, decision was taken by the implementing team to include new villages for introducing and popularizing the loan product. 15 new villages were thus included for the pilot. The other criteria followed in selecting these villages were extreme dearth of drinking water and existence of good quality SHGs.

Selection of SHG and beneficiaries

The selection of beneficiaries is an important step in this process. To prevent cases of default a few criteria were designed for selection or rather screening of members by the respective SHGs. The SHGs after receiving application for "Jalnidhi" from several members would screen the members as per the following eligibility criteria:

1. She should be a SHG member for at least 2 years
2. Should have taken at least 1 loan from SHG with a credit history of 100% repayment
3. Can have maximum one outstanding loan from SHG of amount less than Rs.5000

The above three criteria generally help in preventing moral hazard based on the credit history of the member and thus reducing the risk of providing loan to the member. Apart from eligibility criteria for members, eligibility criteria of SHGs were also fixed which are as follows:

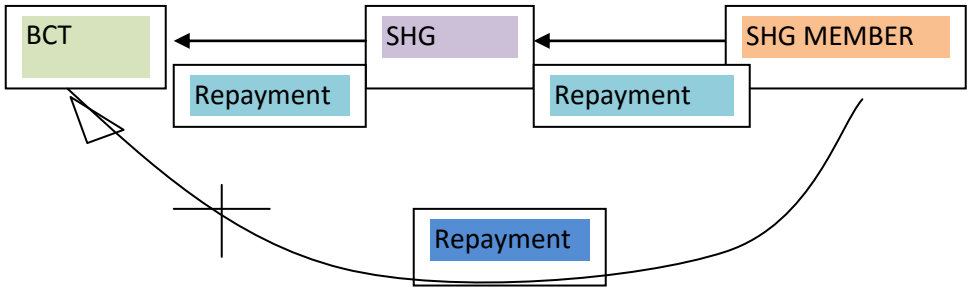
1. SHG should be functioning for at least 2 years
2. SHG should have at least 1 credit linkage with bank/MFI
3. SHG should not have any default history

Selection of SHGs is very crucial for the success of this pilot model. SHGs play a very important role in establishment of peer pressure and thus ensuring timely repayment and discouragement of default. Though the above criteria were assumed to be sufficient for selection of SHGs in the pilot, during process documentation it was realized the criteria are broad and do not reflect the group dynamics and the accounting strengths. It is suggested that more detailed criteria for SHG selection should be adopted reflecting practices of decision making, implementation of group norms, process of loan decisions, recovery of loans from defaulters and practice of book keeping.

Process of loan disbursement

In principle, the SHG is the crucial link between the member and the credit providing agency. The credit is always routed through the SHG to the clients. This process is very crucial for group strengthening and ensuring sustainability. In case of Jalnidhi, the cash amount was provided to the SHGs however, the material provided to the members was entered in the records of the SHG.

Construction of Rainwater Harvesting structures and Repayment



After completion of construction of the tank the repayment of the loan initiates. The loan repayment was planned to follow the route as depicted in the above diagram i.e. from member/client to SHG to BCT. This ensures lesser default as delay in repayment from member can be avoided by SHG repaying on behalf of the member to BCT.

Repayment faced a number of issues in the pilot. The regular monthly installment rate of Rs500 was fixed for the repayment however, the repayment schedule faced irregularities and the loan was generally returned in lump sum amounts coinciding with the crop cycles. The EMI of Rs500 was decided based on the cash flow study and interactions with clients and other SHG members also substantiated that majority of the households were capable of paying monthly installment amount of Rs 500. So, it

can be concluded that high installment amount was not the cause of irregular repayment, as assumed initially.

It was observed that the installments were collected by BCT directly from the members and not from the SHGs. This could have been one of the major reasons for irregularities in the monthly repayments. In certain cases members are unable to repay due to various reasons. In such situations, according to the proposed repayment procedure, the SHG would repay the installment to BCT and according to its group norms collect the installment from the member later. To avoid willful default the SHG levies compound interest on members for late payment of EMI.

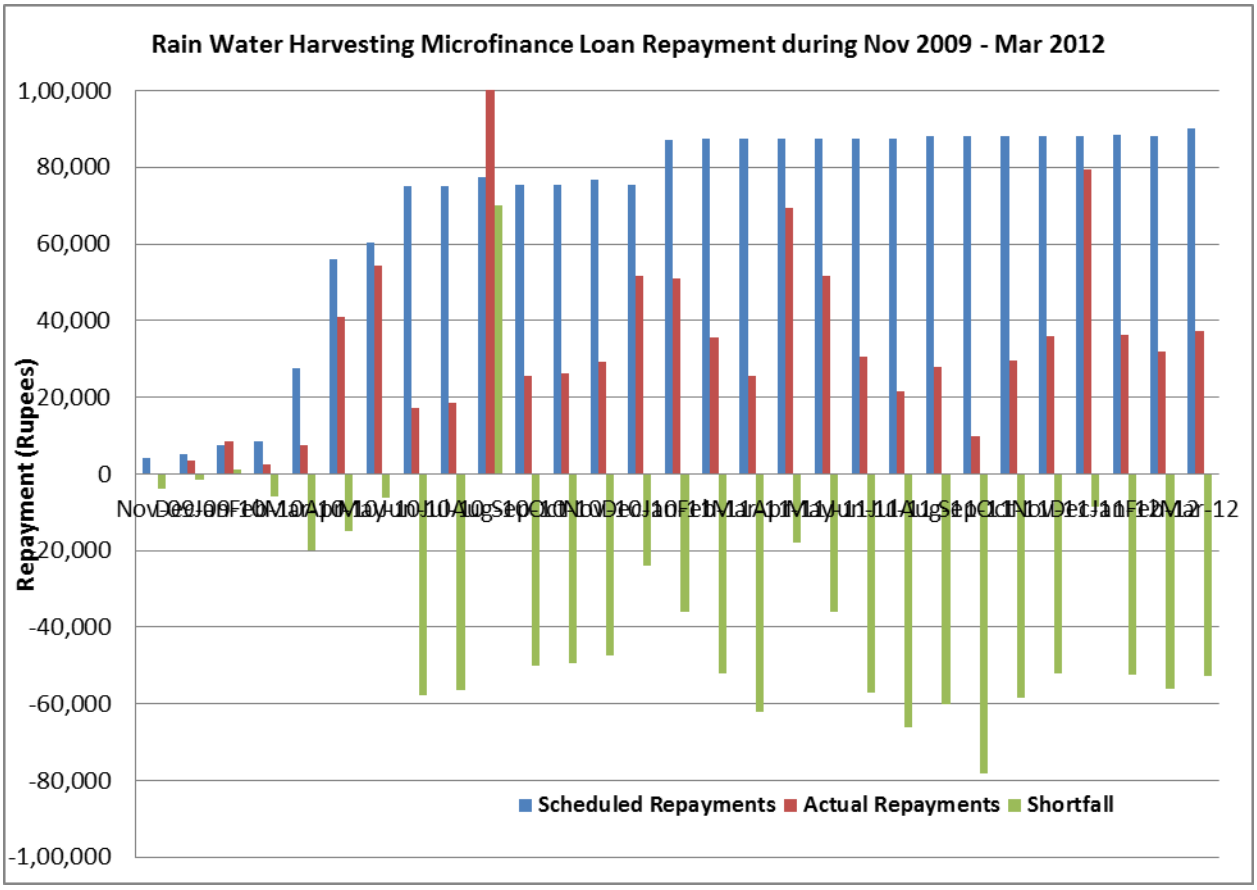
During the FGDs it was also observed that there were a percentage of members who were keen to take the credit product but restrained because the monthly installment amount of Rs 500 was high for them. They found a monthly installment of Rs300-400 more suitable. Thus, to reach out to more people flexibility in the product in terms of EMI should also be explored.

There were certain other specific issues related to repayment. In many villages the client had refused to repay because in the neighboring villages there have been grant products. In the FGDs these were detected as cases of moral hazard wherein the client had purposefully decided to default.

Capacity building: A training need assessment of the implementing team at the beginning of the programme was carried out to determine the gap areas for capacity building of the team with respect to this project. Apart from the capacity building of the team a grading of the existing SHGs was also carried and based on the findings a scheduled training programme for them was designed. Broadly the team will require capacity building improvements on two fronts- technical aspects of RWHS like construction and maintenance of structure and on microFinance.

Monitoring was done at three levels; first by the Field supervisors, second by the Project Coordinator and thirdly by a joint committee comprising of representatives from the Financing, Implementing and the Knowledge partner.

The first and second level monitoring was on monthly basis for gauging progress of the project activities as against project targets, resolve of conflicts etc. The Third level monitoring was more of a review nature to identify the gaps in the project, ascertain the progress as per the goal of the project. The third level monitoring or review was half yearly.



Conclusion

The pilot project of about 1000 RWHS with families in Churu District of Rajasthan (India) has established the fact that the community has potential to find solution to its drinking water problem. Further, collaboration of a number of stakeholders is necessary to help the community in maintaining quality of construction, in management of the intervention and so on. The pilot also indicates that state government should use the peoples' capacity and peoples' institutions to intervene to reach out to poor.

The micro credit product – helping poor to set up their RWHS by taking loan and repaying in installments has proved that people are willing to do so. The micro finance institutions can effectively deliver this product in their areas of operation. But the best model of micro finance product would be through Self Help Groups and SHG Federations. Government can provide the grants (if any) to SHGs and the SHG Federations which will help in lending at lower rates to the poor. Banks do not have extensive branch network in all districts; so they may give bulk loan to SHGs and SHG federations for RWHS.

The technical support of Safe Water Network was a key factor in the success of the program. The design of the structure, its management aspects, capacity building of local masons, chlorination, and many other practices like cleaning of roof, flushing of first rain water, maintaining distance of RWHS from septic tanks etc. proved highly useful. SWN has proven technical knowhow and it can play the role of technical partner in any further similar initiative in India or elsewhere.

The access of poor to safe drinking water increased from the project. The women who are largely responsible for fetching water in the family are the happiest most from the project. It reduced their drudgery and the girl child could spend the time saved on studies. The women also spent the time saved on better care of children.

There are four critical components for up-scaling the RWS solution – a) Availability of credit on time and in sufficient amount; b) Delivery channel to advance loan to client and to collect repayments– Self Help Groups or MFIs, c) RWH technology – it is available and can be refined for cost reduction and d) Service provider for arranging material, training of mason, supervision for quality of construction etc.- usually a local not for profit

The banks should have a credit product for RWH and provides credit directly to SHGs; the SHG promoting non-profits can take responsibility of facilitating this entire business. i.e. identifying good quality SHGs, identification of SHG members/ clients for the product, providing technical support and facilitating repayment collection etc.

MFIs are good in rolling out such products on a scale but unfortunately the presence of MFIs is not there where such product is in demand. Also no MFI will be willing to start new operations on single product and that too with long term product like this. Thus, the other best channel is of SHGs and NGOs.

As quality of water is also an issue, private sector players can be engaged in a) technological innovation for improving the design of RWH and cost reduction, b) Water purification by appropriate filters and treatment etc.

Studies in similar areas have shown that poor prefer to build the assets largely from their savings and only a part is financed from credit. There is a need to design a saving product where people can build some savings before taking the credit. It would help in building their stakes and defaults would be less.

The credit product will also have to be tailor made for local context with details of 'rate of interest', total loan size, repayment system, size and frequency of installment (looking at their cash flows), etc. The experience in Churu tells that adequate flexibility has to be incorporated in the product design to allow part and lump sum payment whenever the family has cash inflow from say crop sale or an animal sale.

Strengthening Self Help Groups to effectively deliver and manage the above mentioned products is absolutely necessary. It includes training of SHG leaders and members to manage the credit product and to have appropriate MIS and account keeping. Regular monitoring and hand holding support to SHGs and project team to manage the microFinance products is also needed. The roll out of the credit product needs documenting the whole process, disseminating to government and banks.