



MaD PROJECT REVIEW

Project Name	Pump Repairs – January 2010
Province / District / Commune	Siem Reap/Bakong District/ Bakong Commune
Target Group	Families with broken pumps in Bakong Commune
Project Timing: Expected Start Date	01 st January 2010
Expected Finish Date	01 st February 2010
Project Duration	1 month

Brief Background to the Situation

Over the past few years Bakong Commune has been donated a large number of water pumps, bringing the total number in the commune up to over 800. Whilst these pumps only require simple repairs and maintenance to continue functioning, very few members of the community have been taught how to maintain and repair their pumps and most cannot afford outside assistance to repair their pumps once they stop functioning.

Consequently, although Bakong Commune does have a large number of pumps, an ever increasing proportion of these have ceased to function. The Chief of the commune communicated to us before we began working on this project last year that around 640 of the 800 pumps in his commune were currently not working. It was clear that unless there was some sort of intervention this number would continue to increase until only the wealthiest members of the commune were left with fully functional pumps.

Needs Assessment

Just over half of the families that MaD repaired pumps for this month claimed that they had resorted to obtaining their water from open wells (or similar sources), which they had used before they had been donated a pump. One of the principal reasons that pumps are installed in the first place is to deter rural families from accessing their drinking water from open wells, as this water is often dangerous to human health due to being accessed from such a shallow level and open to contaminants from the surrounding environment.

The rest of the families that MaD repaired pumps for had been using a nearby pump before their own pump was repaired. Many of these families complained that this made their lives very difficult as they had to carry large amounts of water back to their own houses every day. This was an especially apparent issue for families who were growing crops (either for subsistence or sale), as they required an increased amount of water. Some claimed that their crops had been suffering as a result.

It was clear that numerous pumps had been out of use for a long time. Many were overgrown with weeds and plants and were covered in rust. At other sites, there was evidence that the family had tried to repair their pump but had failed. Interviews with such families confirmed this information: they had tried to repair the pump when it broke, but didn't know what to do and so gave up.

Objectives

Goal

To repair and refurbish 20 water pumps in Bakong Commune in January 2010

Objectives

Whilst making progress towards this goal, we aim to:



- Increase the efficiency of our Khmer team, of volunteers and of our pump repair work in general
- Ensure high degrees of participation from the local community as we are carrying out our work
- Work towards making our project sustainable so that the local community no longer needs the assistance of MaD, or any other NGO/organisation, in order to repair their pumps in the future

Outcome

By the 5th of February we had repaired and refurbished 24 water pumps in Bakong Commune. On top of this we had checked and carried out basic repair work (but not refurbished) to 6 more pumps. In addition, we also drilled and installed one new UNICEF pump for a family in Bakong Commune during this time.

Evaluation

Sources of evaluation material:

The information presented in this evaluation was obtained from:

- Interviews with 75% of the families who received assistance
- Interviews with volunteers who were involved in this project
- Evaluation sessions with MaD's team members

General evaluation:

On the whole this project was reviewed very positively by both the community members and the volunteers who worked on it. Volunteers commented that it was very rewarding to see a pump start producing water once again and to see how grateful and delighted families were once they had fresh water again. The community confirmed this, with 100% of interviewed families commenting that they were exceedingly grateful for MaD's work and very happy that they had a working pump once again. Several families donated fruit or vegetables to MaD in order to show their appreciation to MaD for making it easier to grow and water their crops once again.

Maximising efficiency of the project:

Poor organisation among our Khmer team continued to be a criticism from volunteers and it continues to be something that MaD struggles with and works to improve. Nevertheless, we have made a huge amount of progress in this area compared to when we first started working with this team over a year ago and we have made more progress during this project.

One particular problem that we have faced in the past is giving each set of volunteers that work on the project complete freedom to organise materials and project delivery. Whilst this is good in theory, in practice it has created problems for our Khmer team as different volunteers have different ideas as to how things should be organised. Therefore, once one set of volunteers has set up a system to try and make the project more organised and has taught the Khmer team how to use this system, another set of volunteers may think differently and change this system once they start working on the project, whereupon we have to start from square one in terms of training the Khmer team once again.

From now on, we will be using a set system in terms of how we organise our materials. This system has been developed over the past month and has worked very well for both our volunteers and our Khmer team. This system will be used by all volunteers in the future, who will shown how the system works during their induction and will be given the freedom to suggest improvements to the system, but will not be allowed to completely change/reorganise it. By doing this we will minimise such problems as spending ten minutes to find one part amongst our stock, having to go the hardware store in mid repair in order to buy a new part and so on.



Furthermore, we will also have a checklist that will be given to volunteers which they can use to check if they have all the right parts/tools before they leave to work for the morning/afternoon.

Another problem in terms of efficiency that was highlighted was that it took far longer than necessary to break the concrete bases of the pumps. This was especially problematic when the entire base was made out of solid concrete, rather than being made up with bricks and held together by concrete as is often the case. In order to resolve this problem, we will be buying a larger hammer (a sledge hammer), which can be used to break the first parts of the concrete much more effectively.

Maximising efficiency of volunteers' involvement

One issue that was highlighted by some of this month's volunteers was that they felt very lost during the first few days of the project as they did not fully understand what they had to do. It was only after they worked on the project for a few days that they understood how to repair pumps and what they could be doing at each stage of the reparation process. In order to minimise the time that it takes volunteers to understand the pump refurbishment process and to fully immerse themselves in the project, we have written a pump repair manual which will be sent to all volunteers before they start work on the project. This manual includes: a step by step guide on how to repair and refurbish a pump; an explanation on how we organise the project and our materials; a list of what to bring out on the project (water, sunscreen etc); some background information as to why this project is important and how their contribution will help us to achieve our goals. Volunteers will also be given a more formal induction by an English speaking member of the MaD team during the first day of the project, who can explain the refurbishment process whilst they repair a pump, as some volunteers felt that it was difficult to learn about the pump repair process when they were only working with a Khmer person who spoke little English.

Volunteers also communicated that they found it difficult to communicate with our Khmer team or involve local community members in the repair process as they could not explain to them what they needed doing (for example, that they should clean the pump, fetch some cement or help to break the concrete). In order to help volunteers with this, we will be creating a Khmer vocabulary list of essential words for pump repairs, which we will laminate and give to volunteers so that they can take this out to work with them and refer to it when they need to communicate a particular word in Khmer.

Our second set of RDP volunteers worked together as a team of three and communicated that they thought that three volunteers working with our Khmer team and the local community on one pump repair was simply too many people and that it resulted in a lot of standing around. From now on, if we have more than two volunteers working on pump repairs they will be split into two different teams in order to minimise this problem and increase our efficiency.

Maximising community participation in the project

Participation from family members who were receiving assistance with their broken pumps was mixed. Whilst a great deal of families who were receiving assistance helped with pump repair process in any way that they could, there were some who did nothing. We have stressed to our Khmer team members that they *must* involve the families receiving assistance in the repair process. In the latter half of the month we added a new member to our Khmer team for pump repairs (Sol), and volunteers commented that he was particularly good at ensuring this (and at repairing pumps in general) and so we have made him a permanent member of our team.



Giving volunteers a vocabulary list and stressing the importance of involving the local community in the repair manual and during their induction will help to ensure that they are more capable of ensuring that the local community are involved during the pump refurbishment process.

All of the families that were interviewed commented that they were very happy with how involved MaD was with their community.

Ensuring sustainability

Again results indicating the degree of sustainability of this project were mixed. Some community members commented that by helping our team to repair their water pumps they learned more about the reparation process and now felt more confident that they would be able to repair it by themselves if it broke again in the future. These comments alone indicate just how crucial it is to involve members of the community in the reparation process.

However, other members of the community said that they would have liked MaD to have given them training in how to repair pumps so that they could do so in the future. These mixed comments go to demonstrate the mixed degrees of participation from the local community.

During our meeting with our Khmer team, we have now told them that they must explain to the participating family which part of their pump is broken and why and show them how they are going to repair it. At the end of each pump repair, our Khmer team have also been told to make sure they tell each family how to properly look after their pump in order to prolong the time it takes for another part to wear out and need replacing.

Holding formal, in depth training sessions for all the members of the community has been tried in the past and has not been successful. We therefore feel it is better to give families training in *basic* pump repairs and maintenance as they are helping to repair their pump and to rely on locally elected pump monitors (who are given in depth pump repair training by MaD) to carry out more complicated repairs when necessary. This system has been implemented in Bakong Commune.

However, interviews held with members of the local community indicated that our pump monitor system is not currently working effectively in Bakong Commune. Whilst pump monitors have been elected and trained and we have told the village chief to disseminate this information to families in the commune, many families commented that they would continue to rely on MaD if their pump broke again in the future, indicating that they did not know about the pump monitor system that has been set up. This information was confirmed when we went to do check-backs on newly refurbished pumps this month and found that several were not working once again. Whilst all of them only had minor problems, the fact that the family had not called upon their local pump monitor to repair them goes to show that this system is currently not working as well as it should be in the community.

We have organised another meeting with the village chief in order to make sure that he disseminates this information amongst his community. Furthermore, we have also told our Khmer team to tell all families that we repair pumps for in the future who the pump monitor is in their community and that they should call upon him if they have any problems with their pump in the future.

A major issue in terms of sustainability that became apparent through our feedback sessions with the local community was that many families commented that they would be able to repair their pumps in the future if they had the money, but would not be able to if they could not afford the new parts that need replacing (pump monitors are only supposed to repair the pumps, they are not expected to buy the parts that need replacing). This is a problem for all poor rural families that have water pumps. Most of



these families only earn \$2 a day and to replace a valve, for example, costs \$8, an incredibly expensive investment for poor families. Not being able to afford to repair their pumps can often result in a downwards spiral of poverty for families that rely on the water from the pumps to water their crops, as they then find themselves with less crops to eat/sell which means they earn even less money, which then means they are even less likely to be able to repair their pump (without outside assistance from an organisation such as MaD).

Fixing such a problem without fostering dependence on an NGO such as MaD is a huge undertaking and is one that is simply beyond MaD's capacity at this time (if it were to be successful it would have to involve eliminating rural poverty in the community that we work in!) However, our team have agreed that the best way forward at this time is for our Khmer team to encourage families that they repair pumps for to put aside a small amount of money each week which they can save up and use when their pump needs repairing once again.