USER REACTION STUDY

ON THE

TARA HANDPUMP

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1. Introduction

The TARA deepset handpump was developed in Bangladesh as an alternative to the traditional deepset pump over a period of 2 years. The objective was to find an acceptable (to the people) alternative technology which would be less expensive, easier to maintain and reasonably long lasting.

About 1,650 TARAs had been installed under the GOB programme of rural water supply during 1986-87 ADP.

The TARA was designed to effectively operate at the limit of 15 meters maximum depth of static water level (SWL). It was felt by the design team that before further regular installation of the TARA, it should be found out if the performance of the TARA is satisfactory (to the users) even during the driest months when SWL falls to near 15 meters. If this were not the case, further improvement of the pump would be in order and the regular programme of TARA installation deferred until required improvements were achieved. Hence this study.

This report does not reflect findings about the TARA pump in general but only about TARAs operating at the limit.

2. The Study

2.1 Objective:

The objective of the study was to try and find from TARA users:

a) If there was any difficulty in using the TARA during the dry season; and

b) If so, how difficult ? What sort of difficulty ?

2.2 Sample

Plans were made to solicit views from users of TARA pumps that are required to operate at a water table depth of 15 meters or close to that during the dry season. 30 such user groups were to be visited. Since women do most of the pumping, attempts would be made to meet more women users and get their views.

2.3 Timing

Unfortunately the study could not be conducted before early September 1987, about 3 months after the dry season. Also, this was when the devastating floods were just receding.

2.4 Method

The study was designed to use a conversational approach following a guideline/checklist (attached as Annex I). Since the basic area of query would be very limited, answers would be recorded in a separate recording sheet (attached, Annex II) immediately after each "interview". White sheets (not pads) would, however, be used as necessary to take down responses as a memory aid.

2.6 Modifications

A major change was adopted in the approach of the study from the very onset of the field work. Contrary to the original intention of avoiding leading questions, respondents were specifically asked about "difficulties", and "hardness" in operating the pumps in "Chaitra", the driest month of the year. The total lack of complains about any difficulty at all during the dry months so surprised the interviewers that after the very first routine survey was over, leading questions were asked only to check if the approach during the routine "official" interview had inhibited respondents in some way or was not clear enough, or did not leave enough opportunity for complains. Responses still did not vary. This developed into a pattern and after a few such interviews leading questions were deliberately built into the approach. Responses to all leading questions were recorded and used for the report.

2.7 Manpower

Three teams, 2 comprising two trained and experienced, non-UNICEF women, and one comprising a woman and a man, were used for the interviews. Each team was accompanied by one UNICEF field officer, trained and familiar with the TARA so that technical problems with the pumps, if any, could be checked, properly identified (and corrected, when possible), UNICEF staff experienced in communication also accompanied 2 of the teams.

2.8 Note on methods of arriving at percentages

When responses are sought from groups of the kind dealt within this study two popular approaches are followed.

In cases where very accurate enumeration of responses is not necessary, only group opinions are considered and responses reflecting the view of 65% or more of the individuals constituting the group is considered the "group response" and the remaining 35% or less is ignored, if their response/opinion is different.

When more accurate enumeration is sought (only possible with small groups and small number of groups) "group response" is broken down and differing opinions are all considered/recorded. In this case differing responses/opinions are classified under paraphrased expressions and eventually tabulated as "individual response".

In either case the accuracy of numbers/%s cannot be guaranteed because of possible errors in quick head counts. Percentages, therefore, are rounded off to the nearest 5% or 10% depending on the size of the sample.

Where group dynamics produces a natural leader(s), his/their opinion(s) is considered 100%, if un-opposed (either in words or other expressions). It is not necessary or prudent to ask every number each time if s/he agrees.

For this study the second method ("individual response") was used, and percentages were rounded off to the nearest 5%.

3. Details of Pumps Visited

3.1. Upazilas visited, with unions, lowest static water level (SWL) and year of installation:

Upazilas	Unions	Lowest SWL	Year of installation
Savar	Sadar	-	late 1986
	Gazipur	-	
Trishal	Baliac	44'-11" *	"
Zulbaria	Rampur	-	
	Sadar	50'-0" **	"
	Kusmail	46'-0" **	"
	Bakta	47'-0" **	"
	Radhakarai	47'-0" **	"

* measured during first fortnight of May 1987.
** measured during first fortnight of May 1986
\- records not available

3.2 Total number of TARA pumps visited : 31

3.3 Total number of groups interviewed : 31
(mixed groups of men, women and children)

3.4 Breakdown of composition of these 31 groups:

Category	Number *
Men	251
Women	156
Children	420

Sub-category (children)	Number *
5 to 8 years	179
9 to 12 years	142
13 to 15 years	99

* These numbers may not be accurate because of the difficulties of counting heads without distraction of the respondents and the fact that such group sizes keep waxing and waning. Maximum care, however, was taken to get a correct count of the "constant crowd". Suspected deviation would be minimal.

3.5 Condition of pumps as observed in the study:

1. In perfect running condition with no defect : 22
2. Inoperative : 1
3. In running condition with some defects : 8

3.6 Defects observed:

1. Leaking foot valve : 5
2. Foot-valve-guide broken : 1
3. Piston assembly detached from bottom connector : 1 (inoperative pump)
4. Water leaked into the pump-rod : 4

Note: In two cases (pumps) both defects, 1. and 2. above applied, hence 11 defects in 9 pumps.

4. Major Findings

The opinions expressed by the various categories of respondants, women, men and children of various age groups, can be classified into three types:

1. That the pump is not difficult to operate at any time, including the month of Chaitra;
2. That the pump yields less water (lower discharge rate) during Chaitra; and
3. That it is harder to pump the TARA during Chaitra.

While the first and last of these opinions came out of direct questions about the operating aspects, (hardness in particular, of the TARA), the second was volunteered by the respondents themselves.

4.1 Percentage of respondents who felt that the TARA was not difficult to pump at any time including the month of Chaitra:

Respondents	% holding this opinion
Women	90
Men	80
Children (5 to 8 years)	Statistically insignificant
" (9 to 12 ")	90
" (13 to 15 ")	40

4.2 Percentage of respondents who felt that the TARA has less water discharge during Chaitra:

Respondents	% holding this opinion
Women	20
Men	5
Children (5 to 15 years)	5 *

* It was not possible to keep track of the number of child respondents by specific age groups, hence the amalgamation.

4.3 Percentage of respondents who felt the TARA is harder to pump during Chaitra:

Respondents	% holding this opinion
Women	< 5
Men	< 5
Children (5 to 15 years)	< 5

4.4 How much harder is it to pump the TARA during Chaitra ?

A dependable assessment would be possible if:

a) an attempt was made in each of the 31 cases to actually see which age groups could use the pump now; and

b) answers to questions about who actually use the pump during Chaitra were accurately answered. (We have no fool proof method of estimating the accuracy/correctness of responses in this regard).

A comparison would then yield reasonably dependable findings.

However, in this study in approximately 50% of the cases 5- to 8-year-olds were actually seen pumping the TARA and filling small pots, approximately 2/3 litre in size.

On the other hand answers to queries (see b above) revealed the following:

Respondents	% of respondents who use the TARA during Chaitra for drawing water without any difficulty	% of respondents who find it difficult or are unable to use the TARA during Chaitra
05 - 08 years	70	30
09 - 12 "	40	60
13 - 15 "	80	20
Women	90	10
Men	90	10

80% of the children between 13 and 15 years, 90% of the women and 90% of the men did not report of any extra hardness during Chaitra and claim they can use the TARA in Chaitra quite as easily as in any other time of the year. While this cannot be true scientifically, it may be concluded that these people actually do not perceive any significant difference between Chaitra and other times and/or do not face any significant difficulty in using the TARA in Chaitra.

It would not be out of place to reiterate here that respondents were asked specifically about difficulties in using the pumps at any time and of extra efforts required, if any, during Chaitra and Baishakh (mid-March through mid-June).

It seems absurd that among the children, a greater percentage of those between 9 and 12 years find it difficult to use the TARA during Chaitra than those within the age group 05 - 08 years, 60% compared to 30%. The explanation could be:

a) The response from the younger children is less reliable; and/or

b) It is the older age-group (09 - 12 years and 13 - 15 years) that is actually required to do any serious pumping during Chaitra and, for that matter, during any other month. Younger children do so only occasionally and mostly pump the TARA more for fun and therefore do not perceive the extra hardness of the pump in any particular month.

4.5 Some other relevant or interesting findings from the study:

- The TARA pump should be fitted with a handle like that of the No. 6 pump. (one opinion, man).

- The Government should install deep tubewells with power pumps instead of the TARA. (one opinion, man).

- There should be many more TARA pumps in the area (localities visited for this study) because all shallow wells dry up during Chaitra (common request from all respondents).

5. Second Study

Subsequent to this study, it was proposed that a similar study be conducted, this time among individual owners of private TARA pumps in and around Mirpur area of Dhaka.

5.1 Details of Pumps Visited

The very same method was applied; 15 pumps were visited. The findings were as follows:

1. Total number of pumps visited : 15

2. " " " groups interviewed : 15
(mixed groups of men, women, children)

3. Breakdown of composition of these 15 groups:

Category	Number
Men	15
Women	68
Children	51

Sub-category	Number
5 to 8 years	8
9 to 12 years	20
13 to 15 years	23

4. Condition of pumps as observed:

a)	In perfect running condition, no defect :	10
b)	Inoperative :	1
c)	In running condition with some defects :	4

5. Defects observed:

a)	Leather cup seal eroded :	3
b)	Handle nut loose :	1
c)	Rising main broken :	1
d)	Pump rod disconnected :	1
e)	Foot-valve leaking :	1

5.2 Findings of Second Study

1. % of respondents who did not find the TARA hard to operate in Chaitra:

Respondents	%
Male	80
Female	90
Children	95

2. % of respondents who find it hard but use the pump during Chaitra:

Respondents	%
Male	20
Female	10
Children	5

3. % of respondents who find it too difficult and therefore do not/ cannot use the TARA during Chaitra:

Respondents	%
Male	0
Female	0
Children	0

6. Conclusion

Despite limitations imposed by the timing of the study, it seems sufficiently clear that the present design of the TARA pump is adequately efficient in all seasons in Bangladesh. Seasonal variations in pumping difficulties are not significant from the users' perspective. The TARA is in great demand.

The extra hardness in pumping the TARA is insignificant compared to a situation where no water would be available without the TARA. Users per pump increase greatly during the driest months.

A very few breakdowns were observed. While minor improvements would continue, it seems fair that provision of the present pump continues without requiring any major break for substantial modifications.

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ANNEX-I

INTERVIEWERS' GUIDELINE
AND
CHECKLIST

- Select the most appropriate time (not when the women are likely to be very busy cooking or otherwise)
- Try to talk at the site (of the pumps)
- Only when absolutely impossible (considering floods etc.) take a setting close by, in or near C/T or a user's house.
- Do not plunge into discussions about the pump right away; - ask general questions - welfare, damages etc.
- Introduce yourself carefully. Introduce yourself as someone concerned about the recent floods and particularly about drinking water facilities. Start broad and slowly and naturally narrow down to water and the TARA. The pump's ease to operate is most likely not a topic of great importance for the users now (with floods etc). Within this be true or not do not divulge the specific purpose of the interview.
- Build questions to ultimately find this out but never ask a questions or discuss the pump/use using words like "hard", "difficult", "strenuous" etc.
- Do not build a series of questions aiming at the particular objective of the study, or else respondents may sense this and try to choose answers suiting them or you, not haltering whether these are true or not.
- Avoid asking about the pump use during a particular month/period until and unless the respondents themselves refer to such a month/period as being different from the rest of the year/now.
- Use open ended interview technique, discussion/consultation approach.
- Also use observation, e.g. encourage children to pump possibly leading to questions like do you generally/always pump water from this well? And so on.
- Make sure you do not in any way pose a threat to the respondents (e.g. that you may recommend that the pump be taken away unless you hear only good things about it). DO NOT INTIMIDATE. You are not testing the knowledge or wisdom of the respondents.

The Approach and Some Sample Questions

Please use your judgement for sequence. The sequence set here is only anticipatory. Please also note that there are suggested queries which are not directly relevant to the objective of the study itself. But these are included with the purpose of creating a natural atmosphere and to avoid direct questions about the ease or difficulty in using the TARA at any specific time of the year. The idea is to let complains of any kind, if any, to come out naturally without specific probing because such probings may influence answers negatively or positively.

1. Greetings, welfare questions etc. e.g. about floods, crop damage (if it is evident) family member relief etc.

2. (As a natural pass-over) Do you have any difficulty in getting drinking water?

3. Where do you get it from?

4. Where is this pump? (to be asked only when sitting is away from the pump site).

5. This pump? (if at pump site)

6. When was it installed? (Pumps selected will have been installed before/during peak dry season, therefore accurate answer unimportant).

7. How is the pump working now? (Unless complain of pump not working has already been made by respondent). [If complains some go to # 14. One else continue upto # 16. Also ask # 21 and end.]

8. How is the water? (quality)

9. Enough? (question about discharge).

10. (a) Who fetches the water? (Do not say "now" or "generally" etc.)

    (b) Can everyone use the pump? "(Asking required after answer to 10(a)).

11. Always?

12. (If answer indicates a drop off of some users ("pumpers!") during any particular period). Why?

13. Expand on 10, 11, 12 approximately to ascertain age groups of children, proportion of women/men users. Avoid asking about %, ask questions using phrases "most of the time?", "sometimes" etc. Also do not ask age directly, e.g. do not ask "What age children can pump it (generally/now/then - meaning the difficult season)" rather ask e.g. "How old are you" (if there is a child (user) around. And/or "How old is your son/daughter?" (if she/he is relevant as a user). Also try to guess the age. Some more possible questions to be asked to children:

    How old are you?

    Do you help your Mum fetch water? Do you have any younger brothers or sisters? How old are they? Do they help fetch water too? Always, if not, who does and who doesn't help. Why don't they help?

14. Is there any either pump around?

15. (If yes) Which one do people use most?

16. (If seasonal variation indiccated get details) Why?

17. What do you think is wrong with it?

18. How long has this been the case?

19. Did it break down in the past?

20. (If "yes") How long did it remain that way? Who repaired, at what cost etc. (Go back to #8 and end at #13)

21. Any suggestion for improvement?

TM/psb
ref: tarapump.doc/TM1

১। কোয়ার্টারের নম্বর: ২। গ্রাম:

৩। ইউনিয়ন: ৪। উপজিলা:

৫। দলের লোক সংখ্যা: ১৫ বছরের নীচে-
মহিলা ________ পুরুষ ________ শিশু কিশোর ________

৬। শিশু কিশোরদের বয়স:
৫ থেকে ৮ বছর ________ ৯ থেকে ১২ বছর ________
১৩ থেকে ১৫ বছর ________

X ৭। যাঁদের উত্তর বিশেষ- ভাবে হয়:
মহিলা ☐, পুরুষ ☐, শিশু ☐ ৫ থেকে-৮,
কিশোর ☐ ৮ থেকে- ১৫

৮। আমার বড় বড়ই- পানি- ভয় হয় / কোন বিশেষ সময় বিশেষ- ই হয় না ☐ /

যাঁরা এ কথা বলেছেন:
মহিলা ☐, পুরুষ ☐, ৫ থেকে ৮ শিশু ☐
৮ থেকে ১৫ কিশোর ☐

৯। বছরের কোন কোন সময়ে খাবার নিয়ে অসুবিধা হয় ☐ ।

কাদের এ কষ্ট হয়েছে?

মহিলা ☐ ; পুরুষ ☐ ; (০ থেকে ৫) শিশু ☐ ; (৬ থেকে ১৫) কিশোর ☐

~~কি অসুবিধার~~

কাদের কি অসুবিধার কথা বলেছেন? পরামর্শ দিলে তাও লিখুন

মহিলারা

পুরুষরা

শিশুরা

কিশোররা

১০। নিউট্রিশনটির জন্য কিছু টাকা আছে ☐ । নেই ☐
অন্তর্ভুক্তগুলো: