Community Driven Environmental Health Project (CDEHP)
Khyber Pakhtunkhwa Province, Pakistan

An Australian aid initiative implemented by International Rescue Committee
on behalf of the Australian Government

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Research Analysis

On

Latrines built under CDEHP and the impact of latrine charrettes

August 22, 2016

A research collaboration between the IRC and the University of Peshawar

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## Abbreviations

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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CDEHP</td>
<td>Community Driven Environmental Health Project</td>
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<tr>
<td>CLTS</td>
<td>Community Led Total Sanitation</td>
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<td>DFAT</td>
<td>Department For Foreign Affairs and Trade</td>
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<td>FGD</td>
<td>Focus Group Discussion</td>
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<td>IEC</td>
<td>Information, Education &amp; Communication</td>
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<td>IRC</td>
<td>International Rescue Committee</td>
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<tr>
<td>KII</td>
<td>Key Informant Interview</td>
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<td>KPC</td>
<td>Knowledge, Practice and Coverage</td>
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<td>PLA</td>
<td>Participatory Learning &amp; Action</td>
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<td>SLTS</td>
<td>School Led Total Sanitation</td>
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<tr>
<td>VIP</td>
<td>Ventilation Improved Pit</td>
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<tr>
<td>VWA</td>
<td>Village WASH Activist</td>
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<tr>
<td>VWC</td>
<td>Village WASH Committee</td>
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**Context:**
International Rescue Committees is implementing the "Community Driven Environmental Health Project" funded by the Australian Government's Department of Foreign Affair and Trade. This program aims to improve access to safe drinking water, improved and low-cost (affordable) sanitation, and to improve hygiene in the rural communities of Mardan, Nowshera and Peshawar districts of Khyber Pakhtunkhwa Province. The project relies for its success on a process of community engagement. This focuses first on the poor sanitation coverage in these areas, mobilizing the communities to tackle this issue using their own skills, energy and available local resources.

This study is part of the knowledge and learning component of CDEHP. The goal of the study is to identify best low cost latrine model/design, local masons and train them to develop low cost latrine material which is acceptable, affordable and according to the needs and requirement of the target group.

The impact study was a joint venture of International Rescue Committee and University of Peshawar. The research team was supported by the IRC’s Environmental Health team based at Peshawar and by the Technical Unit of the IRC. Specific objectives of this study are as below.

**Main Objective**
- The study of effectiveness of existing latrine models and development of improved designs and their impact on the desired project outcomes.

**Specific Objectives:**
- To assess the available low cost and most suitable latrine options, its cost and effectiveness in addressing the challenge of open defecation
- To determine the impact of design charrettes
- To identify cost effective model of latrines within the project area
- To find out design charrettes with artisans introducing and evaluating alternative building technologies and constructing model latrines
- To analyze the level of improvement and whether the use of latrines among poorer community members has enhanced due to availability of cheaper but acceptable models of latrine & improved materials supply.
1.1 Tools and Approaches
For this specific study, a mixed methods approach was used to collect data simultaneously or consecutively to understand the research problems. The data obtained following this approach is both qualitative and quantitative.

On the quantitative side, data collected on number of latrines and its usage is collected and analyzed. This is then further analyzed and correlated with the qualitative data obtained through research.

Two qualitative methods are used to gather information. Along with the overall objective, the qualitative methods below were designed to explore around the purposes of the study.

**Focus group discussions (FGDs)** A total of 24 FGDs were conducted in 12 villages of three districts (Four villages in each district). Hence two FGDs per village, one with men and one with women committee were carried out. The data acquired through this method revolves around the objectives of this study.

**Key informant Interviews (KII)** Key informants interviews were conducted with men and women community members who were involved in low cost latrine building at household level as well as with sister organization who visited IRC built latrine charrettes. 10 household interview were conducted in each village hence total 120 household interviews were conducted with 60 male and 60 female community members in 12 villages with four in each district.

1.2 Sampling
A multistep stratified random sampling protocol was adopted for sampling. As a first step, the three districts were divided into three subgroups. In the second step, sampling was conducted via simple random sampling in each subgroup. A typical sample size (n=12%) was decided to be
fairly representative as well as convenient for research purpose. The sample from total population was determined as per the following criteria;

Total No of Villages, N = 100  
Sample size, n = 12 (12% of N)  
Per village FGDs= 2 (1 male, 1 female) Total FGDs=24 (12 male, 12 female)  
Per village HH KII= 10, Total HH KII= 120

Villages were selected via purposive sampling and this was based on existing data. To increase the range of responses, those communities who were considered most effective and mobilized and those who were considered least effective and mobilized were selected as a sample.

The total number of respondents involved in this study were 462 community members; including 236 women and 226 men; these respondents represented committee members, village WASH activists, opinion leaders and people from villages. The data gathered though FGDs represent the opinion of whole group rather than individuals as in case of KIIs. Here it is important to mention that two women WASH committees in district Mardan refused to give information for FGDs, likewise five women in district Mardan and one man in Nowshera in KII. These are indicated with no response in the findings.

Chapter 2
Findings and Analysis

This chapter further explores the findings from the FGDs and KII revolving around the objectives of the study. These findings are encoded through framework analysis¹ and the contents are analyzed through the percentage of people among the targeted group giving response for various indicators to determine the impact.

¹ See details in Annexure
The types of latrines available in the local community are identified as pit, Pour Flush, Flush and VIP. When asked about the latrines models portrayed by IRC, 67% committees are aware of models including pit, dry pit, Flush and pour flush while 75% committees have identified such models in their locality; 79% committees have confirmed the copying of such models at their villages. The committees have learnt about the low cost latrines which are feasible and affordable for the community through these design charrettes.

1. **Affordability and Cost burden:**

71% of people are of the view that latrines in their area are low cost and affordable which includes pit, Flush, Pour Flush and VIP latrine as per figure 3.2 below.
According to 75% of people, these model latrines are being built in their locality, majority of which are after the intervention of CDEHP. The average cost burden of flush latrine on the community ranges from PKRs15000 to PKRs 60000 while for pit latrine PKRs 2000 to PKRs 10000 whereas Pour Flush latrines cost the community between PKRs18000 – PKRs35000.

2. **Expertise Development and Material availability:**

According to 46% community, masons received training for low cost sanitation technologies on latrine charrettes designs, cost and construction. They have imparted this knowledge through replication of low cost latrine designs and further trainings which has resulted in increased demand of services according to 50% people whereas 25% people believe this has benefitted them to some extent. Some of the reasons for adopting low cost latrine designs mentioned by community include affordability and better solution than Open defecation.

46% of people responded that materials are available locally. 58% people stated that they had access to a latrine before the intervention of IRC while 25% had access to some extent but mostly men were not using it and open defecation was a common practice. Due to the CLTS and PLA, different trainings and IEC material on WASH there was a perception that these activities have benefitted the community in eliminating open defecation and changing the behavior of community towards the latrine usage.

3. **Key Informant Interviews:**

The responses of 114 respondents are recorded below in figure 3.3 whereas 6 declined to respond. 23 latrines were constructed before the intervention of IRC, while community believes
that awareness sessions, motivation, support of Village WASH committees, CLTS, IEC material and training on low cost latrine are some of the factors influencing latrine construction.

Out of which, 41 latrines were constructed by community themselves by providing skilled and unskilled labor along with family members but also hired masons in few cases while 73 respondents hired masons to construct the low cost latrines.

Figure 2.3: Number and type of latrines built by community

<table>
<thead>
<tr>
<th>Likes about latrine construction</th>
<th>Dislikes about latrine construction</th>
</tr>
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<tbody>
<tr>
<td>Privacy, dignity &amp; safety (45%)</td>
<td>Time &amp; expenditure (29%)</td>
</tr>
<tr>
<td>Improved cleanliness &amp; health (25%)</td>
<td>Unavailability of Pit Latrine in rainy season (12%)</td>
</tr>
<tr>
<td>Easy access (12%)</td>
<td>Improper drainage system (9%)</td>
</tr>
<tr>
<td>Producing pleasant environment (9%)</td>
<td>Space allocation (5%)</td>
</tr>
<tr>
<td>Safe disposal of excreta (4%)</td>
<td>Maintenance (3%)</td>
</tr>
<tr>
<td></td>
<td>Water availability (3%)</td>
</tr>
<tr>
<td></td>
<td>Adaptability in use of latrine (2%)</td>
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<tr>
<td></td>
<td>Bad smell (2%)</td>
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</table>

Figure 2.4 Community response towards likeliness of latrine construction

Privacy, dignity & safety, improved cleanliness & health being the major convenience/factors in community's favor for latrine construction. Easy access is another factor for latrine construction.
4. Associated convenience/problems/challenges:

31% people have latrine maintenance problems as compared to 64% who can easily maintain their household latrines. 72% people can easily clean their latrines while 2% can do it to some extent as compared to 21% who can’t. 90% people would build improved sanitary latrines with proper hand washing place based on their learning while 5% to some extent. According to the people building a toilet is significant as it protects their dignity, produces pleasant environment thus reducing diseases, eradicating open defecation and providing safe place for women.

77% people believe that local masons have awareness of a variety of innovative / low cost sanitation technologies while 7% to some extent whereas 12% people are not sure as compared to 5% who gave no response.

83% people can easily purchase the sanitary items while 2% can to some extent as compared to 10% who can’t. The reason for not easily purchasing sanitary items is mainly the affordability and budget constraints. 65% people have the local sanitary marts while 29% people said that they have to purchase the latrine construction material from outside village ranging from 2km to 10 km radius but nevertheless, they can easily access the sanitary marts as compared to 1% who can’t easily access the market.

69% respondents are motivating their community to construct latrines as compared to 22% who are not; the reason being is that Village WASH committees are encouraging people to do construct latrines. Challenges are listed in figure 3.5 in ascending order according to community response.

Financial constraints (36%)
Lack of awareness (9%)
Time allocation (8%)
Space availability (7%)
Availability of water (3%)
Behavior & cultural barriers (3%)
Local mason identification (3%)
Accessibility to Material Supply (2%)
Expensive material (2%)

Figure 2.5: Challenges faced by community in constructing latrines
Most of the community constructed latrines due to awareness through CLTS, PLA tools and the benefits which come along with good hygiene and sanitation practices.

Chapter 3
Discussions and Conclusions

Before CDEHP interventions, perceptions regarding latrines were complex, around half of the households had latrines built, however those latrines were designated for women only. Men were reluctant to use latrines inside households. Men and children used to defecate in the open in spite of having latrines available. Through community engagement at different levels of the project; promoting low cost sanitation technologies through latrine charrettes, mason trainings and adopting tools like CLTS and PLA for sanitation discussions shaped their behavior and now they are using latrines. After the intervention and CDEHP, the number of latrines at household and communal level increased to 77%, while both men and women are reportedly using and cleaning it properly.

Latrine charrettes and mason trainings helped the communities to adopt low cost latrine models like pit, VIP and flush latrines in the villages. However the role of the village committees is very important in all the process too as in some villages they helped the destitute in the shape of slabs or other latrine materials for latrine construction.

Studies indicated that skilled and unskilled labor are available at each village however there is still needs for low cost designs to be taught to them as in new batches, masons and village activists were not able to take part in the activities like latrine charrettes as the activity was not carried forward due to budget constraints. Thus a strong mobilization skills are needed to convey such models in tools like CLTS and PLA in future.

Keeping the studies in view, latrines are none-the-less seen as desirable, and cost seems to be the main limiting factor in terms of coverage. Pit latrines are seen as considerably less desirable than pour-flush latrines, although technically, pit latrines may be a more effective means of
preventing disease transmission, given that septic tanks are often poorly constructed, and overflow through open pipes, rather than to constructed drain fields.

With the CDEHP intervention, an improvement is observed in the ratio of latrines vs population. Although the significant change/improvement in this ratio is yet to be determined. This intervention has also resulted in significantly increased accessibility of households for latrines which will obviously impact/improve the overall community health. The accessibility is more obvious in district Mardan than Peshawar.

While a majority of community has awareness about various latrine models available, they also have a good understanding about the cost effectiveness of such models; the most expensive being the flush system latrine, the cost burden of which is in the range of PKRs 15000 – 60000.

In light of research finding and analysis following recommendation come forward

- At community level Flush latrine is the best choice for latrine construction, the need is to work on lost cost latrine option in flush latrine.
- Community also get mobilized after some of the approaches like CLTS and PLA, and a need is to incorporate such approaches with different stake-holders.
- Latrine building has a positive role in making the village as open defecation free but need is to spread awareness among community on importance of latrine and negative effect of open defecation.
- In most of the villages sanitary items are available locally but there is need to invite vendors to control prices of sanitary items.
- Accruing to research conducted privacy and dignity are the best factors to use as a motivators for latrine building.
• High prices and time consummation during the latrine construction are main barriers need is to introduce low cost sanitation options for better coverage.

• There is need to introduce environment friendly latrine and community should be aware of the distance between water point and septic tanks.