User-Centred Design and Humanitarian Adaptiveness

Sofya Bourne

CASE STUDY

ALNAP

ALNAP is a global network of NGOs, UN agencies, members of the Red Cross/Crescent Movement, donors, academics and consultants dedicated to learning how to improve response to humanitarian crises.

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Acronyms

ALNAP	Active Learning Network for Accountability and Performance
ARC	American Refugee Committee
HPG	Humanitarian Policy Group
FSM	Faecal sludge management
HIF	Humanitarian Innovation Fund
IRC	International Rescue Committee
ITC	Informal tented settlements
KII	Key informant interview
OGB	Oxfam GB
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
PSN	People with special needs
QRC	Qatar Red Crescent
SARAR	Self-esteem, Associative strengths, Resourcefulness, Action-planning and Responsibility
SCUK	Save the Children UK
SESRI	Qatar University Social and Economic Survey Research Institute
UCD	User-centred design
UNHCR	United Nations High Commissioner for Refugees
WASH	Water, Sanitation and Hygiene
WHH	Welthungerhilfe

1. Background

In 2017-2018, research undertaken by the Active Learning Network for Accountability and Performance (ALNAP) set out to understand what factors support or inhibit adaptive humanitarian interventions. Adaptive capabilities of humanitarian actors, or adaptiveness, can be defined as 'an organisation's ability to adjust and make necessary changes to achieve a set of goals within dynamic or complex external environments' (Obrecht and Bourne 2018). The research found that humanitarian actors can be flexible in some ways and contexts but rigid in others. For example, humanitarian organisations can mobilise a large-scale response within hours of a sudden-onset natural disaster, a common scenario that is written into their standard operating procedures. But the same agencies may struggle to respond to an unfamiliar kind of crisis with speed and at scale, as became evident during the Ebola outbreak in 2014. Overall, the research highlighted the need for humanitarian organisations to be more adaptive at operational, programmatic and, when necessary, strategic levels. This has implications not only for the internal structures and processes of humanitarian agencies but also for how they relate to each other and to crisis-affected populations.

More adaptive humanitarian responses cannot be achieved with a single set of tools or a list of best practices. Different approaches and methodologies are needed to support adaptiveness depending on the level of flexibility needed in a given response, as well as on the operational context and the existing adaptive capabilities of humanitarian actors. To support its membership and the wider humanitarian community in becoming more adaptive, ALNAP is producing a set of case studies on different practices and ways of working that can facilitate different types of adaptiveness. The present study is the first in this series.

As noted in the background paper published by ALNAP in September 2018, 'to be responsive to changes in a crisis, including requests from crisis-affected people, humanitarian agencies need to have 1) the capacity to identify, decide on and implement relevant adaptations to programmes, and 2) the ability to mobilise and move resources to support them' (Obrecht and Bourne 2018). Yet, even though designing and delivering aid programmes is a core function of humanitarian organisations, there is little empirical evidence of the kinds of approaches and tools that can support organisations in identifying, deciding on and implementing changes to programming.

Gathering and acting on feedback from affected communities is a key means to identify potential triggers for change during the design and implementation of humanitarian programmes. This study is focused on user-centred design (UCD), an approach often used outside the humanitarian sector to design products and services that are tailored to the needs and preferences of end-users and are created with the users' involvement in the design process. Because UCD is meant to facilitate a structured, quick, and iterative design process that is oriented towards the perspectives of users, it has the potential to help humanitarian organisations design programmes that are more responsive to the needs of affected people, i.e. more user-centred, which in turn could support greater adaptiveness of humanitarian programmes. But can the benefits of UCD hold when this approach is applied in the context of the contemporary humanitarian system? This case study seeks to explore the utility, applicability and effectiveness of UCD in supporting humanitarian adaptiveness, and to understand whether UCD can enable humanitarian actors to be more adaptive, or whether these organisations need to have well-developed adaptive capabilities to be able to apply UCD in a way that facilitates different types of adaptiveness in their responses.

2. Methodology

In order to gain an in-depth understanding of the relationship between UCD and adaptive capabilities in humanitarian action, this study seeks to answer the following questions:

- What is user-centred design? How is it different from traditional approaches to programme design used by humanitarian actors?
- How does the use of UCD methodology in designing an intervention influence an organisation's ability to adapt its programming throughout the programme cycle?
- How can organisational structures, systems and capabilities support or impede the effectiveness of UCD as a tool for designing adaptive and relevant humanitarian action?
- Which humanitarian contexts is UCD most suitable for? How can it be scaled up as a methodology for humanitarian programme design?
- What practical steps can humanitarian organisations take to adopt UCD in their work?

To develop this case study, ALNAP partnered with Elrha. In 2017, Elrha's Humanitarian Innovation Fund (the HIF) funded a WASH (Water, Sanitation and Hygiene) Innovation Challenge titled 'User-centred sanitation design through rapid community engagement' in order to develop and test user-centred community-engagement methodologies in early stages of acute humanitarian emergency responses. The five projects funded through this challenge are profiled as part of this case study.

The projects were implemented by three partnerships:

- Welthungerhilfe (WWH) and Snook in Uganda;
- Qatar Red Crescent (QRC) and the Qatar University Social and Economic Survey Research Institute (SESRI) in Lebanon; and
- Save the Children UK (SCUK) and Eclipse Experience in Iraq and Bangladesh.

The diversity of projects and locations represented in the HIF WASH Innovation Challenge allowed ALNAP to study the application of different forms of the UCD approach in different operational and organisational contexts.

The subject of this case study is *the UCD approach itself* and its relation to adaptive capabilities, rather than any individual project or humanitarian actor. As such, this research is not an evaluation of the WASH Innovation Challenge or its composite projects. Rather, the participating projects were used as sources of primary research material to describe how UCD might support adaptive humanitarian action.

2.1 Data collection and analysis

Data collection for this case study included primary and secondary research carried out from April to September 2018. The researcher relied on project documents (project inception documents, project proposals, interim and final reports for the three projects covered in this study), 12 key informant interviews with implementing agencies' staff, four interviews and two demonstration sessions with design partners, and five key informant interviews with design experts working within and outside the humanitarian field. The staff and design partners interviewed for the study were selected because of their involvement in the WASH Innovation Challenge projects. The respondents included two field staff who were not involved in the Challenge project but had experience in implementing standard, non-UCD WASH programmes in Uganda, who were interviewed to build an understanding of how UCD differed from standard approaches used by Challenge participants in WASH programming. Experts interviewed were selected as a result of a background literature review conducted at the beginning of this study.

Additional information for the case study was collected through a collaboration with Oxfam GB (OGB), the research and evaluation partner for the HIF WASH Innovation Challenge. OGB conducted evaluations of all participating projects with the aim of understanding the extent to which UCD can enhance community ownership and control over programme design decision-making processes and contribute to more effective emergency responses (Oxfam Evaluation Protocol Draft 14). As ALNAP was unable to secure field visits to project sites due to logistical constraints (see Limitations section for details), this case study relies on a synthesis of select findings from the OGB evaluations as the primary source of aid recipients' views of and experiences with UCD in Uganda and Lebanon.

The data collected through key informant interviews and OGB evaluations was complemented by a desk review of relevant literature on user-centred design, with a particular focus on the use of this approach in the public and social sectors, both nationally and internationally, and on related topics: agile management, design thinking, and human-centred design. Forty-four sources were reviewed in total, selected according to the following criteria: a) they were publications, reports, case studies or academic articles; b) they focused on approaches and/or practical case studies of the use of user-centred design; and c) they extended beyond the technology sector or the development of new technologies/software using these methodologies.

2.2 Limitations

This case study encountered a number of limitations that qualify the findings presented below.

Literature review: The short timeframe available for the literature review prevented a broader and more in-depth review of available evidence. Further, the lack of well-documented evidence regarding practical approaches and case studies on the use of UCD in projects and programmes in the aid sector or similar field was a challenge.

Field visits: ALNAP was unable to conduct field visits to the HIF Challenge project locations due to security constraints and a misalignment between project implementation timelines and the timeframe of this research. As a result, in-person observations were not possible and interviews with field staff were conducted remotely, affecting the strength of the collected data. This was remedied to a certain extent by the collaboration between ALNAP and OGB described above.

Key informants: One of the implementing partners, SCUK, was unable to support this study at the time of primary research due to the limited availability of its field staff and logistical challenges. As a result, the evidence pertaining to the projects implemented by SCUK in Iraq and Bangladesh are represented through the perspective of its design partner, Eclipse Experience, as well as SCUK's peer-review inputs to this study and the publicly available learning document published by Eclipse and Save the Children in September 2018.

The researcher was unable to interview senior management at SESRI, so a detailed interview was conducted with the lead designer of the UCD methodology used in the QRC/SESRI pilot, who now works for QRC.

QRC field staff in Lebanon who have been involved in non-UCD WASH programmes were not available for interviews. This was partially mitigated through key informant interviews with pilot project staff, most of whom had previous experience of implementing humanitarian WASH projects using standard programming approaches.

Generalisability: Studying UCD within the boundaries of an innovation challenge raises questions regarding the extent to which the findings can be generalised. There may be aspects unique to how the HIF Challenge was set up, such as its embrace of adaptation and experimentation within the programme cycle, which may limit the generalisability of findings regarding the usefulness of UCD for supporting adaptive humanitarian programming.

Disclosure and mitigation of bias: Following the first draft of this report, the author, an independent consultant at the time of writing, joined the permanent staff of Eclipse Experience, one of the WASH Innovation Challenge design partners. Both the author and the lead ALNAP researcher took steps in the analysis of the projects, applying the same, clearly defined criteria for assessing UCD methods and success of outcomes, to ensure that the author's changed circumstances did not affect the analysis and presentation of the findings or any other aspect of this case study.

3. Understanding user-centred design

3.1 Defining user-centred design

Based on the review of relevant literature and discussions with design practitioners, for the purposes of this research, **user-centred design** is understood as **a creative problem-solving approach used to design products, services and programmes across a wide range of sectors that puts the needs and experiences of intended end-users at the centre of the design process and engages the users throughout this process.**

User-centred design is an approach rather than a methodology: it offers guidance to practitioners through its core principles and various tools and activities associated with the practice. This allows for the versatile nature of UCD, as it can inform bespoke methodologies in programme design that match different operational and organisational contexts and can be used to solve a range of problems. At the same time, this can also make it difficult to assess or implement UCD as a standard methodology. The goal of UCD is pragmatic: to find solutions that strike the balance between meeting users' preferences and needs while also being feasible and sustainable from a business perspective.

User-centred design is characterised by a set of key principles.

First, it is, naturally, **user-centred**, meaning that it is focused on producing solutions that are built around users' needs, experiences and lives, rather than requiring them to adapt their lives and preferences to match the solutions.

Second, it is **participatory**. People who are identified as users of the product or service that is being designed are involved in decision-making throughout the process, from the problem-identification stage to the introduction of the complete solution. The level of involvement can vary depending on such factors as the project brief, available resources, access to user groups or ethics, but it generally falls along the spectrum from consultations to co-creating solutions with the users.

Third, it is **iterative**. Instead of progressing in a linear way, with the complete product or service being delivered at once and to standard specifications predetermined by the implementing agency, user-centred design projects are a sequence of research-design-test loops, whereby user research findings feed into the design of subsequent versions of a product or service that are tested and improved in incremental steps.

Based on these characteristics, the UCD approach has the potential to support an organisation's adaptive capabilities: the ability to respond and change in the face of new information about users' preferences or experiences could potentially provide better services to those whom the organisation aims to reach. In the private sector, this translates into higher profits; in the aid sector it could lead to better and more effective aid for the recipients of development and humanitarian assistance. Due to UCD's reliance on iterative cycles of design, evaluation and re-design, an organisation's ability to implement a UCD approach could also be a litmus test for its ability to adapt: organisations that lack adaptive capabilities will struggle to apply UCD approaches effectively.

3.2 The process of user-centred design

As described above, user-centred design is an approach rather than a methodology, meaning that there are many ways in which it can be applied in practice. Based on the reviewed literature and the interviews with design practitioners conducted for this study, it is possible to identify three general stages that all UCD processes follow:

- understanding the needs of users;
- designing and iterating potential solutions to these needs based on fast prototyping and evaluations that enhance the understanding of users' experiences; and
- the final delivery of the optimal solution.

Much of the UCD process and tools focus on the middle stage in Figure 1, where potential solutions are continuously tested for relevance and effectiveness regarding users' needs as well as considerations of feasibility and sustainability.

User-centred design is versatile and can be tailored to the unique needs of specific user groups or organisations. This means that not every UCD project would follow these steps exactly or in this particular order but most UCD processes incorporate these steps in one way or another.

Understanding users' needs involves going beyond quantitative measures of needs assessments often employed in humanitarian action. This stage assumes a closer involvement with the users, and exploring rather than quantifying their needs and priorities. In practice, this means that facilitators of a design process may choose to use qualitative research methods over quantitative approaches to understand a given problem from the user's perspective or develop a mixed-methods research methodology. The main objectives at this stage are for the designer to understand the needs of the users from their perspective, test their own assumptions about users' needs and experiences, uncover deeper reasons for the users' needs, and at times reframe the initial understanding of the problem altogether.

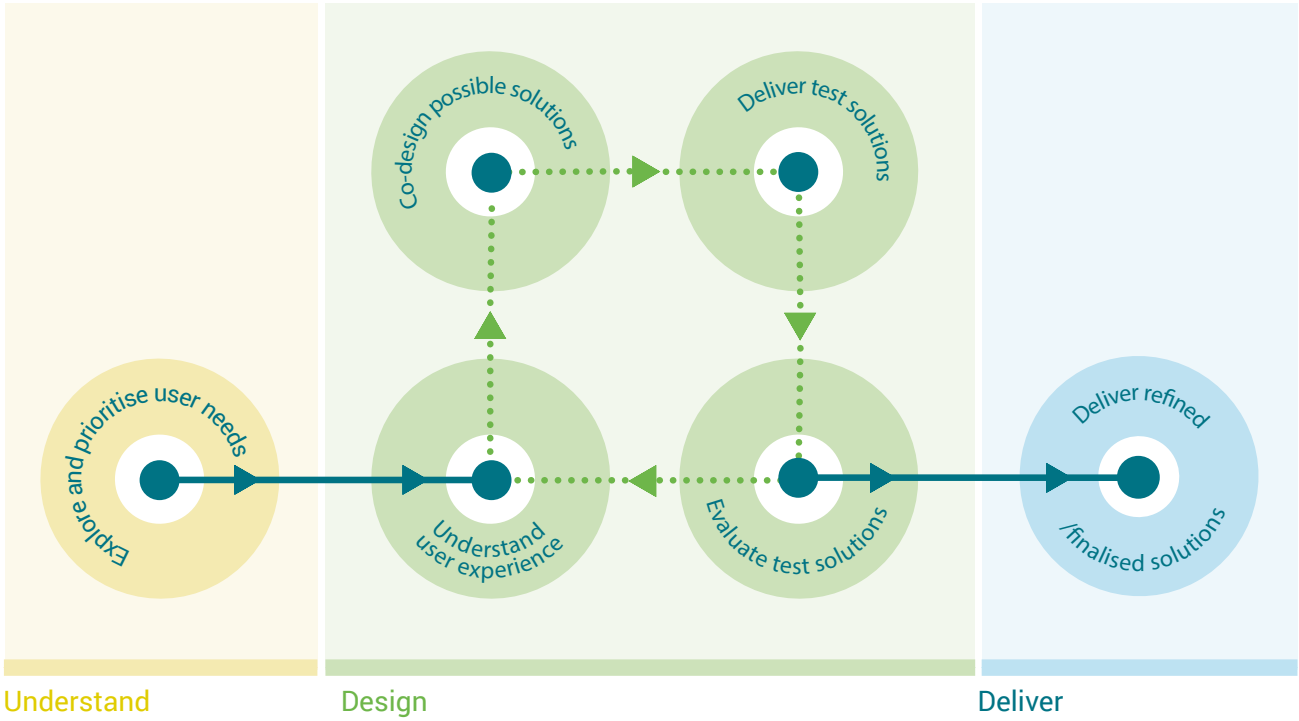
The needs and priorities of users uncovered in the first stage of UCD inform **the design of possible solutions**. At the design stage, the focus is on generating a number of ideas for possible solutions using insights into the users' experience. Depending on how a given UCD process is set up, the ideas can be

Box 1: User-centred design, human-centred design and design thinking

User-centred design is closely related to two other concepts that have entered the aid sector vocabulary in recent years: design thinking and human-centred design. Design thinking is a 'team based, user centred process, powered by a thorough understanding of what users want and need' that is well-suited to finding solutions to complex, wicked, or 'ill-defined [problems] in any organisational or social context' (Brown, 2008; Tschimmel, 2012 in Dijksterhuis & Silvius, 2016). Human-centred design, a concept popularised by the international design consultancy IDEO, is defined as 'a creative approach to problem solving [...], a process that starts with the people you're designing for and ends with new solutions that are tailor made to suit their needs' (DesignKit.org). Human-centred design is based on three stages: inspiration, ideation, and implementation, and aims to develop successful solutions by keeping the intended users of the solutions at the heart of the design process.

Design experts interviewed for this case study were asked to explain the difference between these concepts and user-centred design, with mixed success. Some downplayed the difference, suggesting that a focus on common characteristics was a more useful approach to understanding what these concepts meant in practice. Others distinguished UCD as dealing primarily with issues of product or service usability and understood human-centred design to engage people not merely as users but as human beings who exist within and are active agents of complex (adaptive) systems. The decision to focus on UCD in the present case study was informed by the fact that the HIF WASH Innovation Challenge pilots tested user-centred approaches. However, the latter distinction has implications for the types of adaptiveness that UCD can and cannot support and is discussed in more detail in Section 7.

Figure 1. Key stages of user-centred design process



generated with the users – e.g. through a workshop or similar exercise – or they can be generated by the designers based on the users' research insights and then tested again with them. The objective at this stage is to identify one or several ideas that can be taken forward through development and further testing.

Iteration is central to the design stage, which is why the line between the design and **the delivery of solutions** can often appear blurred. User-centred design encourages rapid testing of ideas as part of delivery, starting with an early version of a product or service. This early version, referred to as a 'prototype' by design practitioners, can be as simple as a paper mock-up of a product or a few illustrations of potential service characteristics. It can also be more advanced: for example, in a humanitarian emergency context, an emergency tent could be seen as a prototype for more durable shelter options that may become available at later stages of the response. The reason for using prototypes in the design process is to quickly test, evaluate and improve a given solution – all with the repeated input from the intended users – to arrive at the stage where the solution is either discarded as non-viable or is optimised for users' current priority needs and is also feasible and sustainable to implement. This process is meant to facilitate a move away from a scenario where an organisation designs and delivers a product or service in its final form – with all the related investment of time and resources on the part of the organisation – only to realise that the solution does not adequately meet users' needs or preferences.

3.3 State of evidence

While user-centred design and its sister approaches (see Textbox 1) have been used to support humanitarian innovation, the adoption of UCD is nascent in providing humanitarian services on the ground as part of emergency response.

One of the earliest examples of UCD being applied in the international humanitarian sector, albeit focused on a service for aid workers rather than for crisis-affected people, is the Humanitarian Data Exchange, a joint project between the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) and frog, a design consultancy firm. IDEO.org, the social-design arm of IDEO, dedicated one of its earlier Amplify innovation challenges to refugee education.

More recently, the American Refugee Committee (ARC) teamed up with IDEO to redesign the experience of refugee camps and created Kuja Kuja, a customer-service initiative that enables ARC staff to identify and respond to refugee communities' changing needs or other feedback systematically, transparently and in real time. The Humanitarian Policy Group (HPG) led an experimental project to explore how design thinking can be used to 'redesign' the humanitarian system, and in June 2018, the Design for Humanity Summit, the first event held as part of the Design for Humanity Initiative, consolidated the arrival of design approaches in the humanitarian sector. The Humanitarian Innovation Fund regularly supports projects and initiatives that use UCD as part of their innovation processes (C. Hestbaek Peer Review Comments, January 2019). The promising potential of UCD has also captured the imagination of practitioners in the wider public sector, both nationally and internationally, including the international development community. Referred to interchangeably as design thinking or human-centred design (see Textbox 1), this approach has been actively promoted by The Bill & Melinda Gates Foundation (Gates, 2015) and used by non-profit organisations to achieve their goals (e.g. International Rescue Committee (IRC), BBC Media Action). The potential of design in solving complex social challenges has also been recognised by design experts, with many prominent design consultancies venturing more frequently into the public and social sectors where they work to provide innovative, user-centred solutions in government services, emergency deployment, housing rights and other fields (Herrick, 2017; IDEO, 2015a; Mauldin, 2014).

These examples highlight a variety of potential applications for user-centred design but a gap in empirical evidence on its effectiveness is equally apparent. The background literature review conducted for this case study did not yield any academically rigorous, experimental or quasi-experimental studies on UCD as a process or on its comparative advantage in achieving organisational outcomes in humanitarian sector or beyond. It is our hope that this case study contributes to building the evidence base on this approach and prompts further research into how UCD can support more effective and adaptive humanitarian programming.

3.4 User-centred design versus adaptive humanitarian programming

ALNAP research on adaptiveness identified a number of factors that can inhibit adaptive programming, including unclear approaches to programme design, standardised programme-response options, and weak systems of monitoring and feedback that do not support decision-making and leave field staff ill-equipped to make informed decisions about operational and programmatic changes that may be necessary to deliver the programme effectively (Obrecht and Bourne, 2018).

Our hypothesis is that user-centred design has the potential to address these barriers because of the characteristics described in the previous sections. First, UCD can clarify and structure the programme design process. Second, it can also help organisations move away from standardised response designs and options by engaging crisis-affected populations in programme design through structured interactions. Lastly, it can strengthen and systematise an organisation's approach to monitoring programme performance through feedback from affected people. The following sections use the empirical evidence from three HIF-funded WASH programmes to test these hypotheses.

4. Applying UCD in the design of emergency sanitation

In 2013, the HIF commissioned a gap analysis for the emergency WASH sector, which identified 'community participation and empowerment of vulnerable groups, including monitoring and evaluation from the outset' as a major gap (Bastable and Russell, 2013). This conclusion was confirmed by a landscape review of current community-engagement practices in the WASH sector commissioned by the HIF in 2017. The review found that 'the engagement of affected communities in the design and implementation of sanitation facilities is patchy and weak, with little documented evidence', and particularly in the early stages of the response, 'it is often little more than cursory consultation – or ... it often doesn't happen at all' (Sandison, 2018).

The HIF believed that UCD could offer a structured and quick way of engaging communities in the design of sanitation programmes, thus helping humanitarian organisations provide more appropriate sanitation facilities, which in turn would contribute to their effectiveness and sustainability. To test this, in 2017 the Fund launched a WASH Innovation Challenge to develop and employ user-centred WASH projects in acute emergency humanitarian settings. The purpose of this challenge was to understand 'how to design, implement, and evaluate approaches to user-centred sanitation that incorporate rapid community engagement and are appropriate for the first stage of rapid-onset emergencies' (WASH Challenge Handbook 3). Following a call for proposals and two rounds of applications, including a workshop on UCD for shortlisted applicants, the HIF selected three partnerships to implement the challenge:

- Qatar Red Crescent (QRC) and the Social and Economic Survey Research Institute (SESRI) at Qatar University;
- Welthungerhilfe (WHH) and Snook; and
- Save the Children UK (SCUK) and Eclipse Experience.

The rest of this section introduces these three partnerships in more detail and describes the design processes each of their projects followed. Because the application of the UCD approach can vary so widely in practice and because it was used in such different ways by the participating organisations, each subsection on the partnership includes an assessment of how far each process matched the general framework of UCD, outlined in the sections above and details here.

In order to draw conclusions on the effectiveness of user-centred design for supporting the adaptive capabilities of humanitarian organisations, it is important to first establish the extent to which each of the HIF WASH Innovation Challenge projects aligned with the conceptual framework for UCD outlined at the beginning of this case study (see Section 3). The framework can be briefly summarised as comprising three components.

Alignment with the general UCD process

First, user-centred design generally follows a six-step process as outlined in Figure 1:

1. Explore and prioritise users' needs
2. Understand users' experience
3. Co-design possible solutions with users
4. Deliver test solutions
5. Evaluate test solutions
6. Deliver refined/finalised solutions

Alignment with UCD principles

Second, user-centred design is characterised by three key principles. It is:

1. user-centred,
2. participatory, and
3. iterative.

Support for adaptiveness

Third, user-centred design has the potential to address some of the barriers to adaptiveness that humanitarian organisations face in their work:

i. Unclear approaches to programme design;
ii. Standardised response options; and
iii. Weak monitoring and feedback systems that do not support decision-making and leave field staff ill-equipped to make informed decisions about changes that may be necessary to implement the programme effectively.

4.1 QRC and SESRI partnership in Lebanon

4.1.1 Project background

Qatar Red Crescent (QRC), in collaboration with the Social and Economic Survey Research Institute (SESRI) at Qatar University, were selected to implement a UCD project in four informal tented settlements (ITS) inhabited by Syrian refugees in Joub Janine, Bekaa valley in Lebanon.

The concept for this project and the methodology used in its implementation was developed by the Project Coordinator for this pilot under the supervision of the Head of QRC Mission in Lebanon and a Senior Policy Analyst at SESRI. The Project Coordinator, who had previously worked both for SESRI and QRC, and at the time of writing was employed by QRC to develop the HIF Challenge pilot, is a social scientist with a background in ethnographic research. This background allowed the Project Coordinator to quickly understand UCD principles and tools and develop the methodology for this project. While the HIF Challenge was initially designed to test the use of UCD in early stages of an acute emergency response, the context in Lebanon at the time of implementation was a protracted emergency.

4.1.2 Design process

The development of the methodology for this project began with partners drawing on their cumulative knowledge of WASH interventions, qualitative ethnographic research methods, and design-thinking literature to modify the standard field assessment that QRC uses for WASH programming by augmenting it with several open-ended questions that the field staff referred to as a 'rapid ethnographic survey'. The pilot design was informed by a design-thinking methodology introduced by Jeanne Liedtka and Tim Ogilvie in Designing for Growth: A Design Thinking Toolkit for Managers. The methodology follows four basic questions – what is, what if, what wows, what works – to help teams uncover the current state of affairs in a given context, imagine what users' experiences could look like if key challenges they face were solved, and explore which solutions could be appropriate and feasible for a given context.

Phase 1: What is?

The first stage of the project, the implementation of the survey, focused on the first question: 'What is?' The survey was designed to give aid recipients the space to speak about their problems with sanitation in camps

without the burden of thinking about solutions right away. This was achieved by including several open-ended questions focused on the problems with the use and maintenance of the latrines that people in the targeted settlements experienced. The Hygiene Promotion team, who carried out the data collection, were trained by the Project Coordinator to ask for and collect qualitative responses to the open-ended question in a written format. The assessment was carried out with a sample of 145 household representatives.

Augmenting the field assessment survey in this way enabled the QRC team to gather important information about the challenges ('pain points') that users faced when using existing latrines that complemented the technical assessment of sanitation and water facilities in these camps. While having the open-ended questions in the survey led to a greater variation in responses and required additional time for the manual analysis of responses, it allowed the team to identify and prioritise the problems that the communities were facing based on the perspectives of the community members, and it also helped the community members feel that they were a part of the solution (KII18).

Following the data collection, the team proceeded to the first co-creation stage, which consisted of several sessions attended by the Project Coordinator, the Hygiene Promotion staff, and the WASH engineers working with QRC. Importantly, QRC did not include users at the first co-creation stage, as many members of the targeted community were not literate and did not read or write in Arabic, which was believed to have hampered the analysis of survey data. The vast diversity of needs was also a factor in the decision to not include users in the first co-creation stage, as QRC staff wanted to identify the most important needs first and then conduct further co-creation sessions with users who had expressed them.

In these sessions, the team manually carried out collaborative analysis of the collected data. They identified trends in key problems that were shared with them by the communities within and across each of the four settlements targeted by the project. The key common need was to address the issue of darkness in and around latrines. Other issues were specific to each settlement and included lack of privacy, overcrowding, rodent activity, and latrines being too far away from people's dwellings. The field assessment also revealed a number of technical issues in the camps, such as a number of latrines that needed locks on doors, superstructure rehabilitation, or cleanable slabs.

> ...there was so much data, and what the user-centred design offered is to really focus on what's important to the users, without compromising all that. (KII15)

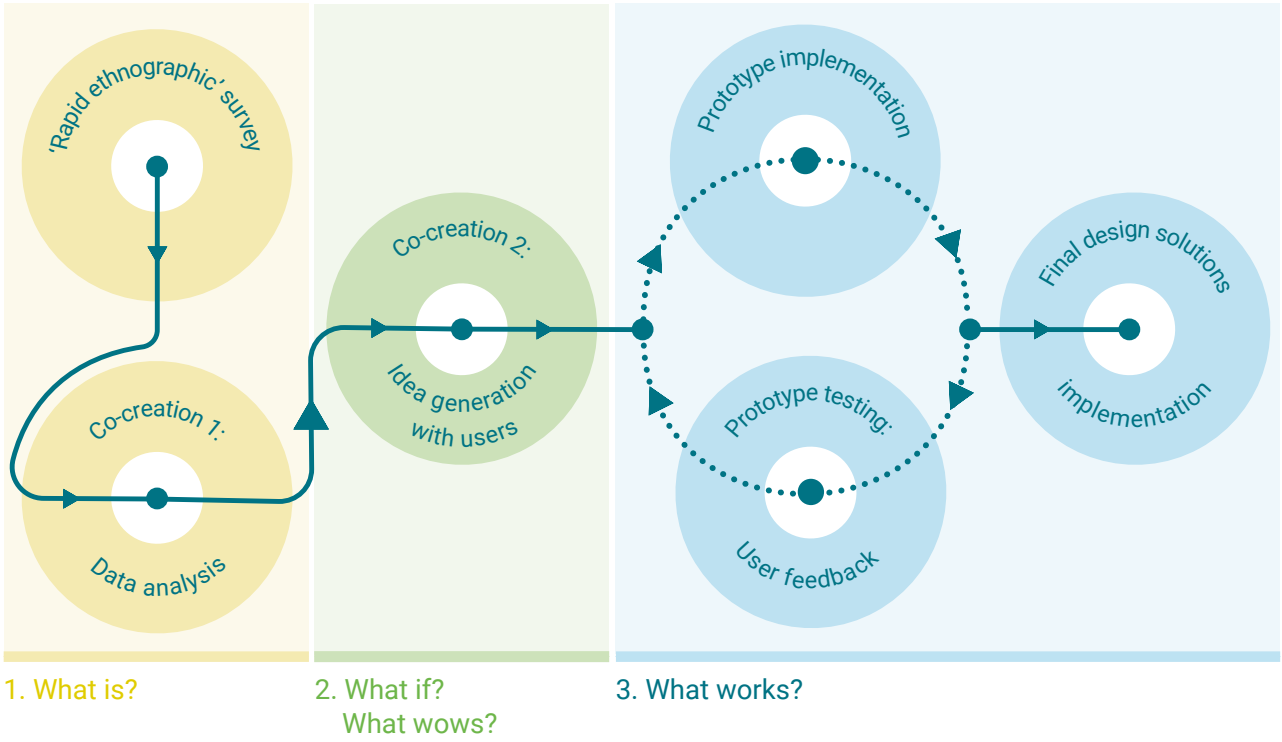
During the data analysis the QRC team noted that the concerns expressed by the community often aligned with the technical problems with latrine facilities identified through the field assessment. For instance, in cases where the community identified privacy as an issue, latrines lacked locks or were too far from people's tents. Yet, at the same time, the hybrid data-collection tool enabled QRC to identify issues that a standard WASH survey would not have picked up:

> What was really important is that darkness is something that... I think that if we didn't do this, we wouldn't have focused on darkness, because it goes in to protection, it goes in to other ... sectors of humanitarian work but it was really, really, really important ... to the users of the latrine, because that's what we want, we want the users of the latrines to increase. (KII15)

Phase 2: What if? What wows?

Once the team processed the data and identified priority needs, they proceeded to the second stage of co-creation, which corresponded with the questions of 'What if?' and 'What wows?'. Over 12 meetings, QRC invited the community members to brainstorm technical solutions to their priority needs. For example, on the issue of darkness, the QRC team first set out to understand how the community coped with the lack of light at present and then to understand what kind of solutions they would find acceptable. Interviews with QRC staff suggest that the second stage of co-creation closely resembled a negotiation with the affected communities, in that the ideas of the community members had to be weighed against the parameters of

Figure 2. User-centred design methodology developed and implemented in the QRC/SESRI pilot in Lebanon



sustainability, safety and feasibility, and the expectations of the communities had to be carefully managed. It is important to note here, however, that OGB evaluation findings suggest that its respondents perceived this process differently, reporting that the QRC staff gave them a list of possible latrine design solutions and asked them to indicate which solutions they wanted (Oxfam Evaluation Data Synthesis, October 2018).

The QRC team found themselves having to focus session participants' attention on the problem at hand, managing ideas and demands that went beyond what was feasible to provide within the time and resources allocated to the project. They also had to navigate camp politics and the concerns that arose about the inclusion of camp superintendents, or shawish, in the co-creation sessions. The team decided against including the superintendents in the sessions attended by camp residents, in order to prevent passive participation from the residents in the context of a power imbalance between them and the superintendents. Instead, the team ran a separate session with the shawish to ensure their inclusion in programme design.

Phase 3: What works?

Following the two stages of co-creation, the QRC team proceeded to the implementation and monitoring stages, with activities focused on understanding 'What works?' The prototyping and changes to latrine design in this phase of the project are discussed in further detail below. Overall, QRC engaged in two stages of installing and testing different prototypes, aided by a customer-service component of the methodology that involved close monitoring of the prototypes. The monitoring was carried out through continuous engagement with the community members involved in testing, including frequent site walks and household visits.

4.1.3 Adaptations

Lighting

Concerns about lighting in and around the latrines were raised in all project locations and were thus identified as the highest priority need for the latrine users. As a result, the field team decided to prioritise this need in Phase 2 of the project. Before this, however, the team had to overcome some internal resistance to this approach. As lighting was not considered a WASH concern, some QRC staff did not understand why the team were planning to supply lights to the targeted communities. In negotiating this solution internally, the UCD project staff noted the importance of buy-in from organisational leadership, or in this case, from the Field Team Manager, who supported the team in advocating going ahead with this solution:

> It's very important that, even when you have the process, you need also to have the people who believe in it, and kind of support you for it, and [the Field Team Manager] was very supportive, in the sense that he did want to support this. So, he did push for this solution with us... (KII15)

For lighting inside the latrine, the field team tested a single lightbulb powered by a solar panel with one user over a period of two days before introducing the prototype to all camps. For external lighting, the solution was to attach LED lights on the edges of the tents that were closest to the latrines in order to light the entrance of the latrines. This solution was different from the traditional way in which public lights are set up in refugee camps: these are usually large, expensive floodlights that require separate funding and various levels of bureaucratic approval. The LED lights overcame these obstacles by using electricity that was already available inside the tents in the settlements. The solution also had additional unintended effects, such as creating an ambient atmosphere outside the tents that led to families gathering outside for tea in the evening. This in turn led to a greater sense of security among the users of the latrines despite the field staff having initially expressed worries about this factor preventing community members from using the latrines when their family members and neighbours were all gathered outside.

Water

In another settlement, the team installed water tanks inside the latrines to meet community needs regarding cleanliness and culturally appropriate latrine use, as well as providing soap and soap stands in all latrines. This was in a location where latrines were situated too far away from any water source and the water distributed by other partner organisations was in line with conventional standards but not always enough to use in the latrines. To conserve water, Hygiene Promoters also came up with an idea for a 'smart' sink made out of a large plastic bottle to which all households in the settlements have access. The design of the sink allows users to collect soap water left over from handwashing and use it to clean and flush the latrines after use.

Latrine pits replacement

There were certain needs identified through the UCD process that QRC was unable to respond to within the scope of the project but advocated for with other humanitarian partners working in the settlements. In one settlement, community members requested that new latrine pits be dug as the pits they dug themselves on arriving several years ago did not meet the minimum standards of cleanliness and safety and were infested with rodents. However, faecal sludge management (FSM) is a responsibility of a different international non-government organisation (INGO) working in the targeted settlements. Furthermore, although QRC could have used the project budget on installing new pits, the field team had to weigh this expense against other solutions to other 'pain points' identified across all four locations, and ultimately decided that installing new pits would draw too much funding from implementing other solutions (such as lighting) that would answer the needs of more community members. Instead, QRC contacted the NGO responsible for FSM in the targeted settlements and informed the WASH-sector partners and the sector coordinator about this issue. It

turned out that the responsible INGO staff were not aware of the existence of these latrine pits, which were not up to standard in the first place. At the time of the interview, QRC continued to support the INGO in finding a solution to this issue, and in the meantime QRC put up warning signs in places where the pits were exposed to prevent children from falling in.

Pollution

In another location some 15 latrines were found to be located next to a severely polluted swale or channel. QRC did not have the capacity or resources to commission the cleaning out of this area but because the extremely poor environmental conditions affected the latrines being used by members of the targeted communities, QRC deemed it to be within the scope of their work to advocate with the local environmental authorities for the swale to be cleaned out.

4.1.4 Outcomes

Community satisfaction with the community engagement process

OGB evaluation findings shared with ALNAP offer some insight into the extent to which the engaged communities understood the UCD process. Aside from the difference in perceptions of the co-creation sessions noted earlier, women from the target community interviewed by OGB generally described the design process in a way that matched the description given by QRC staff in interviews for this case study. OGB findings also suggest that men in the community were less clear about the process by which QRC engaged community members in programme design. They recalled a gathering being organised where they could voice their opinion and QRC household visits. Nevertheless, the OGB evaluation notes that 'in general, the men were confused [and] not very informed about the consultation process and the answers were not clear' (Oxfam Evaluation Data Synthesis, October 2018). This is likely to be because male community members were less involved in the process in part due to their availability and in part due to QRC's decision to focus predominantly on women during this project. This decision was explained by QRC staff as being informed by the women's cultural role as caregivers, which meant they were usually the ones taking children and people with special needs (PSNs) to use the latrines, and therefore were deemed the most relevant user group on which to focus. Both groups reported regular contact with QRC and recalled a customer-satisfaction survey being administered by QRC staff after each prototype.

Changes to latrines and user satisfaction

OGB evaluation findings confirm the changes that QRC staff reported making to the latrines in the targeted settlements: LED lights, water tanks and taps, cleaning materials (brushes, a bucket, soap and detergent), locks on the latrine doors, a shelf for detergent, and widening of the existing latrines.

Notably, women interviewed for the evaluation reported that 'they were no longer scared of going to the toilet because of the door [to which QRC added locks] and said the toilets felt cleaner, wide enough for women and children to go together and that the children were not scared to go alone to the toilets and now washed their hands alone' (Oxfam Evaluation Data Synthesis, October 2018).

The evaluation did not offer substantive evidence of improved WASH outcomes as a result of the project, although field staff interviews for this case study reported initial outcomes to include significant reduction in the amount of excreta on slabs inside the latrines at the stage of the first prototype monitoring (KII15, KII18; QRC Interim Project Report, August 2018).

Staff also reported highly positive reception of the project by the targeted communities; many spoke of the 'ice' between the staff and the refugees being broken and the project becoming a communal undertaking (KII15, KII16, KII17). A senior member of the QRC mission in Lebanon summarised the results of the project as follows:

> ... the results were superb, people really liked what we did, and people maintained the latrines in a way that was for me unthinkable. (KII22)

Despite this positive perception of the project among QRC staff, community members interviewed by OGB reported some dissatisfaction with the project due to its limited scope, which restricted the kinds of changes and adaptations that QRC could make to the latrines. Community members wanted new latrines, larger latrine pits, a new sewage system, garbage removal, and better drainage – changes that QRC could not make within the scope of the project. Some community members also noted that some of the lights provided by QRC either burnt out or were of low quality and dimmed very quickly.

4.1.5 How close was this method to UCD?

Each of the three projects used a different version of the UCD method, working with different design partners. In order to reach conclusions about the potential of UCD for supporting adaptive humanitarian action, it is important to understand to what degree the approach used in each project reflected the core principles and steps of a common UCD approach. Table 1 outlines how the process used by the QRC team in Lebanon fits within the UCD conceptual framework outlined above (see Section 3 and introduction to Section 4).

As such, the project implemented QRC in Lebanon demonstrated a moderate level of alignment with the conceptual framework of UCD. It largely followed the six stages of the UCD process and had some strong UCD elements, but it was also limited in its ability to align the programme design with users' needs and move away from standardised programme design options.

4.2 Welthungerhilfe and Snook partnership in Uganda

4.2.1 Background

The German NGO Welthungerhilfe (WHH), in partnership with a UK-based design company Snook, were selected to implement a user-centred design project in camps housing South Sudanese refugees in northern Uganda.

One of the tools commonly used by Welthungerhilfe staff to engage community members in WASH programming is the Participatory Hygiene and Sanitation Transformation methodology, or PHAST. This methodology was developed in 1993 by adapting a well-established approach to participatory development known as Self-esteem, Associative strengths, Resourcefulness, Action-planning and Responsibility (SARAR) to hygiene and sanitation programming. PHAST methodology is based on the idea that understanding the importance of good hygiene practices will enable communities to draw on their own knowledge and capacities to plan for better water and sanitation management (Wood S. et al., 1998). PHAST consists of seven steps carried out with community members:Problem identification

1. Problem analysis
2. Planning for solutions
3. Selecting options for sanitation improvements
4. Planning for new facilities and behaviour change
5. Planning for monitoring and evaluation
6. Participatory evaluation (Wood S. et al., 1998).

There are many common features shared by PHAST and UCD, particularly related to the identification and analysis of community needs and involvement of communities in identifying better solutions. However, the selection of solutions in PHAST is largely based on those offered by the implementing organisation.

Table 1. QRC/SESRI methodology in comparison to the UCD conceptual framework

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
Explore and prioritise user needs	Understand user experience	Co-design possible solutions with users	Deliver test solutions	Evaluate test solutions	Deliver refined/finalised solutions
• 'Rapid ethnographic' survey used to identify needs within a predetermined project scope; • Based on survey results, needs were prioritised in Co-creation 1	• Co-creation 2 used to discuss priority needs with users to better understand their experiences; • Customer-service surveys and household visits throughout the project used to understand users' experience during prototyping	• Co-creation 2 used to brainstorm possible solutions with users and agree on options for prototyping	• Prototypes of potential solutions procured and tested in two rounds	• Prototypes evaluated after each round of testing though customer-service questionnaires, field observations and household visits	• Successful prototypes implemented by the end of the project

How well does it align with UCD principles?

(a) User-centred? Weak. QRC explored user needs within the predetermined scope of the project (sanitation facilities redesign). Although the team aimed to meet as many priority needs as possible, factors outside their control (e.g. other humanitarian actors' priorities, responsibilities within the settlements and budget considerations) limited the scope of design changes they were able to implement, and thus limited their ability to meet all priority needs of the targeted users identified during the project.

(b) Participatory? Moderate. The OGB evaluation suggests that solutions were presented to users by QRC (rather than being developed through a collaborative ideation process). QRC staff, however, reported that while they used a list of possible solutions in the co-creating sessions, the process was of brainstorming and negotiation in order to generate solutions that what would meet users' needs but also be feasible to implement within the project scope and considering the resources available. Sustained participation of community members in prototyping and iterating on the tested solutions was also reported.

(c) Iterative? Moderate. Iteration during the prototyping stages was more about scale (e.g. testing with one user or one camp, then introducing to a larger population) and incremental tweaks (e.g. changing the height of a shelf in response to user feedback after a testing round) than testing out completely different solutions.

(i) Clear programme design approach? Moderate. QRC staff were able to articulate how programme design happens normally: decisions are made based on humanitarian staff expertise, humanitarian standards and quantitative needs assessments (see Section 5 for details). Rather than making the programme design approach significantly clearer, in this case user-centred design made it more informed by and tailored to the needs and preferences of the community.

(ii) Move away from standardised programme design? Moderate. Where QRC were not responsible for programming (e.g. water delivery or FSM issues), they were unable to move away from standard practices and were limited to advocating for changes in programme design with other humanitarian actors.

(iii) Supported staff to make well-informed changes? Strong. QRC staff were able to demonstrate how their UCD methodology informed their decision-making during this project. There are two dimensions to adaptations in this project. On the one hand, testing solutions with users before final delivery allowed QRC to make adjustments during the project based on feedback from community members. On the other hand, as this project was implemented in a protracted situation, it can be understood to an extent as a monitoring exercise in and of itself. Latrines built to standard designs already existed in the targeted settlements and UCD enabled QRC to understand how they were and were not meeting users' needs and adapt them accordingly.

Furthermore, because the methodology has roots in participatory development, it is too heavy and time-consuming to support users' engagement in humanitarian programming, especially in the early stages of an acute emergency response, and offers little in terms of engaging aid recipients in programme design from the outset (KII23). As a result, Welthungerhilfe proposed to augment PHAST with a UCD approach developed in collaboration with Snook (WHH Progress Report, April 2018). The expected outcomes for the project were to help community members feel more comfortable in using maintained latrines, to increase their satisfaction with the latrines, and to generate evidence of the value of community engagement in sanitation during emergencies (WHH Project Profile).

> The project targeted two settlements inhabited by South Sudanese refugees: the Bidibidi settlement in Yumbe district and the Imvepi settlement in the Arua district in northern Uganda. During the grant-application process, these settlements were experiencing an influx of South Sudanese refugees but by the time of project implementation the situation had stabilised and there were no new arrivals among the target population. As a result, Welthungerhilfe focused on building household latrines and latrines for people with special needs (PSNs) to replace the emergency community latrines that were previously constructed in response to a rapid influx of refugees (see Figure 3).

4.2.2 Design process

The project began with a two-week field visit by Snook to the targeted refugee settlements in December 2017. The aim of this field visit was to understand the current community-engagement practices employed by Welthungerhilfe in different communities, and to gain an initial understanding of the needs and experiences of different latrine users, including how these varied across such groups as women, children and PSNs. During the field visit, Snook team members were invited to participate in sector-specific and cross-sectoral coordination meetings with other partners, such as the United Nations High Commissioner for Refugees (UNHCR) and the Office of the Prime Minister (OPM), attended a PHAST community-engagement session in one of the settlements, and conducted user research with members of the affected communities and WHH staff about current user needs and WASH practices.

Based on this user research, Snook held a session with field staff to map out 'user journeys' that would support Snook in developing rapid community-engagement tools for WHH to co-design sanitation facilities with community members. Drawing on the insights gathered from the field visit, Snook developed a set of visual prompts, based on a simplified version of PHAST, that they shared with WHH for testing. However, Welthungerhilfe asked the design team to revise these questions because they were deemed too focused on hygiene promotion and education rather than on the physical design of latrines. This feedback was informed by the HIF Challenge brief, which had an explicit focus on the design of sanitation facilities and excluded behaviour-change interventions based on the HIF hypothesis that better, more user-centred sanitation facilities would minimise the need for behaviour-change activities as people would be more inclined to use and maintain them if they meet their specific needs and preferences (C. Hestbaek, expert interview, August 2018).

Following this feedback, Snook team and a senior staff member at WHH worked together to refine the UCD component into a succinct set of questions focused on identifying specific user needs related to the latrines design:

> ...over a couple of days [...] we thrashed out what are the minimum questions, [...] a basic question set that we thought would be used in a rapid-onset emergency that you could just quickly understand, like, 'Do people want lights or not lights?', 'How far away do they want it to be?' So, we kind of worked through, um, together, we mapped out a set of basic questions, and then a set of further questions that were related specifically to children ... and people with special needs. (Snook Demo Session)

Having received the refined set of questions, WHH field staff incorporated the rapid survey in the same mobile software platform that they normally use to collect needs-assessment data from the communities. The staff then tested the questionnaire in the targeted settlements with a sample of 200 households (out of 400 targeted) and sent the collected data back to Snook for analysis. Snook proceeded to analyse the first data set to understand how they could improve the tool they developed. Based on this analysis and additional feedback from WHH staff regarding other questions that would be useful to add to the tool, Snook developed a further iteration of the questionnaire and shared it with the field staff. The staff then conducted another round of data collection and forwarded the collected data to Snook for further analysis and the development of concrete design suggestions. However, due to the different understandings between Snook, the field staff, and the WHH country team staff on the scope of Snook's engagement, there was a prolonged delay in communication. As a result of this delay, WHH staff decided to go ahead with the construction of household latrines, taking the needs and concerns uncovered in the first round of survey testing into account. WHH also constructed the PSN latrines using the second iteration of the survey questions designed by Snook, but there was no further communication between WHH and Snook about the survey questions.

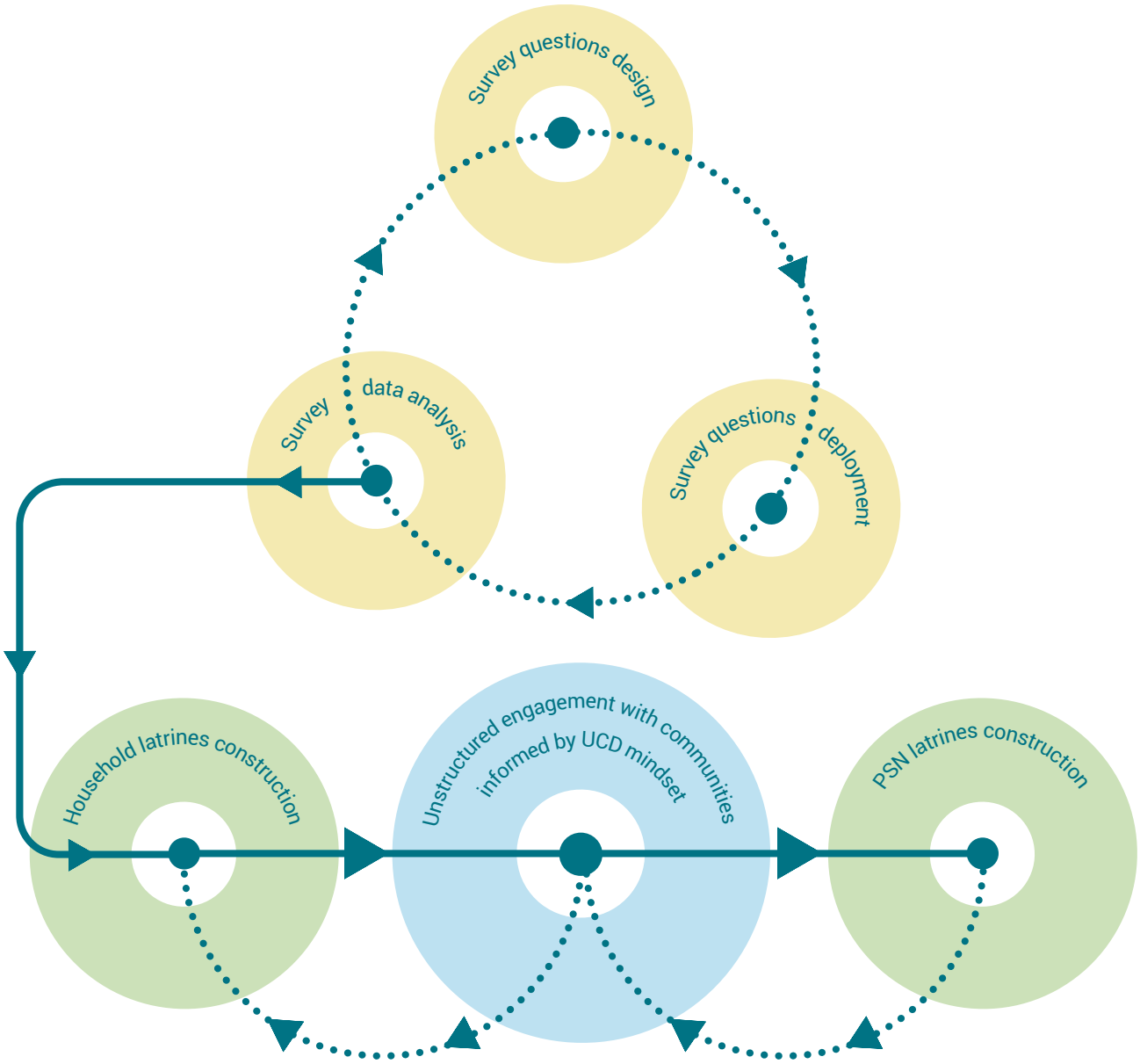
4.2.3 Adaptations

Despite some confusion about the responsibilities of each of the partners, WHH staff used the two iterations of the UCD-informed questions to better understand the needs of the communities in Imvepi and Bidibidi camps and support them in building improved latrines to replace the existing emergency communal latrines.

First set of design changes

Following the first set of questions and the related data collection, the field team identified a number of concerns among community members about the emergency communal latrines they were using at the time. The main concern in both camps was privacy. This issue stemmed from the fact that the doors on emergency communal latrines were made of plastic sheeting and lacked proper locks.

Figure 3. User-centred design process developed and implemented in the Welthungerhilfe/Snook pilot in Uganda



In some cases, cloth was used instead of plastic, resulting in a lack of privacy and more serious protection concerns, particularly for women (KII09, KII12, KII14). The height of the door was also an issue contributing to privacy concerns, as community members were worried that they could be seen from the outside while using latrines (KII24). In response, the field team supplied community members with locks and doors of appropriate height to be used in the construction of household latrines (KII24).

Another major concern from the first consultation round was the bad smell, which discouraged people from using the emergency communal latrines since this made them very unpleasant. As a result, ventilation pipes were included in the improved designs, leading to better ventilation in the new household latrines (KII12, KII14).

Second set of design changes

There were still a few outstanding concerns about privacy after the construction of household latrines, including lighting. Households in Imvepi and Bidibidi camps were provided with portable solar lamps upon arrival, supplied by UNHCR. However, in conversations between WHH staff and community members it became apparent that these lamps were insufficient for use in household latrines, as one light had to be shared among all household members. As a result, many users were unable to take the light into the latrine with them and reported being afraid of using the latrines in the dark and not wanting to use their phones as a source of light because of incidents of phones being dropped into the latrine pits. In response to this concern, WHH procured a limited number of portable solar lamps to test with several households, and then proceeded to distribute 400 lamps to targeted households in the camps.

An area where the incorporation of the UCD methodology appeared especially valuable was the construction of latrines for PSNs. Using the second iteration of survey questions developed by Snook, Welthungerhilfe identified needs among PSNs that had not been addressed and would not have been identified without the UCD approach (KII14, KII24).

[This project] made us understand that … what we we've been giving, we've not been thinking much, and we were treating all the population the same. But now the UCD gives us the opportunity to deeper understand these people we work with. And we appreciate the fact that the-, when you move to some households, and when they have community engagement meetings and then they demonstrate what kind of facilities they would feel comfortable with, then you will find that somewhere we have done a bit of a disservice to these populations. They're struggling to use the latrines that we have supported them [with] before. Because what we have is the design of latrines for people with special needs [developed] by Office of the Prime Minister but also UNHCR. So, most partners are constructing latrines based on this design, but you find that this design lacks specific inclusions that should have been made for this category of people. (KII14)

Accessibility and usability of household latrines were the primary issues for people with special needs. As a result, WHH included handrails and locks at an accessible height in all PSN latrines (KII24) and the implementing partner also installed ramps to enable easier access to the latrines. Some improvements were carried out on a case-by-case basis. For example, for a blind man in one of the camps WHH built elongated metal barriers on either side of the path towards the latrine so that he could find his way using his walking stick. In another instance, an amputee asked for a seat to be installed inside the latrine, as his was how he was used to using the latrines and the only way he could do so with dignity.

There were also some needs among the community that WHH staff could not prioritise. One example given in the interviews was the request for the separation of male and female latrines. This issue came up based on users' experiences in using the communal latrines but because the latrines built as part of this project were at the household level, this issue was not deemed to be a priority compared to other needs.

4.2.4 Outcomes

The OGB evaluation highlighted significant differences in community-engagement levels, the extent of adaptation and user-satisfaction levels between community members who benefited from the materials provided by WHH for the construction of household latrines and those who benefited from the construction of PSN latrines.

Household latrines: UCD process

The UCD process was not successfully used in the construction of household latrines. Consultations with community members took place mostly during one community meeting and were limited to identification of needs and negotiations over the kind of materials community members needed to construct the household latrines and what materials WHH could supply. OGB evaluators concluded: 'This communal meeting appears to have been based on a basic design (pit latrine) presented by WHH, rather than an open exploration of needs and preferences (e.g. FGD (mixed sex) said that WHH suggested the provision of a slab, door and vent pipe – the latter being WHH's design, not the community). The transcripts about this consultation are almost all simply a list of what the people asked for (to build latrines), rather than an assessment of cultural or individual preferences or design alternatives' (Oxfam Evaluation Data Synthesis, October 2018).

Household latrines: Changes to latrines and user satisfaction

Welthungerhilfe generally supplied the kinds of construction materials that the community requested, and the community noted that it was easy to give feedback to WHH staff (hygiene promoters) because of frequent household visits, but it was not easy to get a response to this feedback. WHH did not provide latrine-cleaning supplies that were requested by the community alongside the construction materials.

The community reported that the initial consultation largely dictated what they were given and as a result, what kind of household latrines they could build. The list of requested construction materials went to procurement after the consultation and could not be changed at a later stage. The construction materials were also of a standard size and type: 'one man said the door did not fit his existing latrine; another said the logs were the wrong size for the pit he'd dug' (Oxfam Evaluation Data Synthesis, October 2018). The main additional support that was requested by the community and provided by WHH was for torches for using the latrines at night.

Generally, community members who had to build household latrines were not very satisfied in either project settlement. Because the construction was carried out by community members, the quality of latrines suffered. Some people (particularly women) could not dig deep enough pits or construct the latrine structures easily. The evaluation data also highlighted the pervasive issue of groundwater, with many latrines becoming quickly waterlogged and unsafe. The evaluators note that 'alternative designs (to a pit latrine) do not appear to have been considered by WHH, even though several of those interviewed had proposed alternatives (and one had built himself a pour-flush latrine to tackle the problem of high groundwater)'(Oxfam Evaluation Data Synthesis, October 2018). A mason interviewed by OGB evaluators said that the household latrines built in areas with high groundwater levels were not safe and would eventually collapse. In peer-review comments, WHH shared that engaging able-bodied community members in latrine construction was standard practice and that the community members did not have a problem with constructing their own latrines.

PSN latrines: UCD process

OGB evaluation data indicates that the application of a user-centred design process was significantly more successful during the construction of PSN latrines. This was supported by a 5% contingency in the construction budget for these latrines, which meant that staff could add things that came up during the ongoing consultations with people with special needs.

Following the initial community meeting, WHH engaged people in the community in the development of criteria for the identification of people with special needs. This included people with visual and physical impairments and elderly people. A second community meeting was held specifically with people who met these criteria where modifications to standard latrine designs were discussed. People with special needs engaged in the OGB evaluation also reported further opportunities to provide feedback on latrine designs, including during additional household visits by hygiene promoters, the selection of latrine sites (which was ultimately decided on by the contractor hired for the latrine construction) and following construction. Evaluation data highlights that 'design options were discussed using pictures, and [PSN] generated additional input, like the inclusion of a bathing shelter, not originally part of the design. According to PSN FGD they were given the opportunity to identify desired latrine designs from paper illustrations', which OFB evaluators noted as an apparent substitute for prototyping (Oxfam Evaluation Data Synthesis, October 2018).

PSN latrines: Changes to latrines and user satisfaction

PSN latrine designs were tailored to the unique needs of different people. Design adaptations included: 'visually impaired have their latrines fitted with guide rails, the older persons have theirs fitted with holding rails to assist with squatting, others have ramps and others have raised toilet holes, the inclusion of rumps and hand-rails. One had requested that the doors to the bathroom and the latrine open on opposite sides, and this had been done' (Oxfam Evaluation Data Synthesis, October 2018).

People with special needs were satisfied with the new latrines. They commented that these were 'the best compared to all other community latrines constructed by other agencies or other WHH projects'. The only factor in which they felt they had no say over was the siting of the latrines. OGB evaluators noted that satisfaction with the programme was strengthened by a higher quality of the PSN latrines, which were built with bricks and a tin roof and completed by local masons contracted by WHH, compared to the 300 household latrines constructed by the community members.

4.2.5 How close to UCD was this method?

Each of the three projects used a different version of the UCD method, working with different design partners. In order to reach conclusions about the potential of UCD for supporting adaptive humanitarian action, it is important to understand to what degree the approach used in each project reflected the core principles and steps of a common UCD approach. Table 2 outlines how the process used by the Welthungerhilfe team in Uganda fits within the UCD conceptual framework.

As such, the project implemented by Welthungerhilfe in Uganda exhibited an uneven level of alignment with the conceptual framework of UCD across the user groups targeted by the intervention. The design of household latrines did not follow the six stages of the UCD process and only partially aligned with UCD characteristics and principles. The process did not lead to a clearer programme design approach and had very limited success in moving away from standardised programme design options and supporting field team's decision-making. The design of PSN latrines was significantly more in alignment with the UCD framework and overall more successful in producing high-quality PSN latrines that were tailored to diverse needs.

Table 2. WHH/Snook methodology in comparison to the UCD conceptual framework

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
Explore and prioritise users' needs	Understand users' experience	Co-design possible solutions with users	Deliver test solutions	Evaluate test solutions	Deliver refined/ finalised solutions
• Initial needs assessment conducted through community consultations and two rounds of surveys developed by the design partner.	• There is no evidence to suggest that WHH team worked to unpack priority needs and understand users' experience in depth before or during the project implementation.	• Strong evidence of co-creation of PSN latrine designs. • Weak evidence of co-creation of household latrines. WHH asked what users wanted and procured some of the requested materials that were not standard (e.g. ventilation pipes).	• No evidence of prototyping in design of household or PSN latrines aside from testing portable night lamps discussed above. • Evidence of highly tailored designs being implemented for PSN latrine users.		

How well does it align with UCD principles?

(a) User-centred? Weak for household latrines; strong for PSN latrines. Needs assessment was conducted through two rounds of short surveys and community consultations but there was no deeper exploration of users' preferences and experiences and community members targeted for the construction of household latrines reported having very limited opportunity to express their preference and influence decision-making. WHH procured some of the materials that people asked for to construct household latrines but constructed highly tailored PSN latrines. Other important needs were not met, e.g. households were not supported in constructing better pits to address the issue of high groundwater in some areas.

(b) Participatory? Weak for household latrines; strong for PSN latrines. Community members who were targeted to construct household latrines had very limited opportunity to influence decision-making, particularly in later stages of project implementation. Community members targeted for the construction of PSN latrines had significantly more say in the design of their latrines and were able to influence decision-making on programme design throughout the project cycle.

(c) Iterative? No evidence of in-project iteration as part of the UCD approach but the implemented designs were adapted from the standard designs used by WHH, particularly for PSN latrines.

(i) Clear programme design approach? Weak. Staff could not clearly articulate the approach to programme design for standard interventions or for this project. In this case UCD did not support a clearer programme design approach.

(ii) Move away from standardised programme design? Moderate for household latrines; strong for PSN latrines. Tailored PSN latrines were reported to significantly deviate from standard designs. Household latrines were only somewhat different from standard design specifications (e.g. they included a ventilation pipe, different door sizes).

(iii) Supported staff to make well-informed changes? Weak for household latrines; strong for PSN latrines. Decisions about what materials to procure for household latrines and what PSN latrines should look like were informed by user feedback, albeit with varying levels of success, as discussed above. Staff were also aware of the issue of groundwater and the related needs of household latrines' users but were unable to address this.

4.3 Save the Children UK and Eclipse Experience partnership in Iraq and Bangladesh

4.3.1 Background

Save the Children UK and Eclipse Experience, a London-based design research company, were selected to implement two user-centred projects in displacement camps in Bangladesh and Iraq. Both pilots were focused on informing the design of child-friendly latrines, either through constructing new latrine blocks in Bangladesh or making alterations to the existing latrines in Iraq. In both countries, the projects focused on children aged from five to 12 years and their caregivers.

The two pilots were implemented in two different contexts using a common methodology. In Bangladesh, the project took place in the Jadimura Displacement Camp in Cox's Bazar, which hosts approximately 14,800 Rohingya refugees. The project engaged 200 children and 143 caregivers to inform construction of new latrines through user-centred design. Implemented just months after the latest large displacement of Rohingya people from Myanmar to Cox's Bazar, the pilot focused on the construction of new child-friendly latrines. The acute nature of the emergency meant that the only latrines available were temporary emergency latrines rapidly constructed by NGOs at the beginning of the response or that were in place before the displacement and belonged to local landowners. Both types of latrines were of poor quality and there were too few of them.

In Iraq, the project took place in the Sharia Displacement Camp (Block E) in Kurdistan, which hosts 5,657 refugees. The project engaged 407 children and 167 caregivers from the Yazidi community to inform alterations to existing latrines through user-centred design. The project was implemented in a protracted emergency context, where previously built sanitation facilities were well-established and where SCUK was preparing to hand over its responsibilities in the camp to local authorities. As was the case in Lebanon, this context in Iraq – a protracted crisis, compounded by the imminent transfer of responsibilities to the management of local government authorities – limited the extent of changes to existing latrine designs that SCUK could implement.

As mentioned in the Limitations section above, SCUK staff were unable to participate in this research due to significant time constraints on the organisation's field staff. As a result, the following description of the pilots was written based on the interviews carried out with the Eclipse Experience team in May 2018 and on the publicly available report of the project produced jointly by SCUK and Eclipse Experience in September 2018. It was later supplemented through peer-review comments provided by an SCUK staff member who was a project manager for the pilots. The analysis below is thus limited to findings from these sources and does not incorporate the perspectives of SCUK field staff.

4.3.2 Design process

Eclipse Experience developed the UCD methodology for this project. The main considerations in developing this methodology were to ensure that it is engaging and easy for people to use and that it is user-friendly for staff who were going to implement it.

The same methodology was applied in both contexts, with minor adaptations. For example, lessons from the pilot in Bangladesh informed the decision to divide participants by age and sex during the co-creation sessions in Iraq.

In developing the methodology, Eclipse Experience worked closely with SCUK staff and heavily relied on knowledge-sharing sessions and continuous exchanges of feedback. While neither pilot took place in an early stage of an acute emergency response, the teams worked to implement each pilot within a 12-week timeframe, which mimics the duration of early stages of an emergency response (Figure 4).

The methodology had two key components: a digital engagement component and a co-creation component.

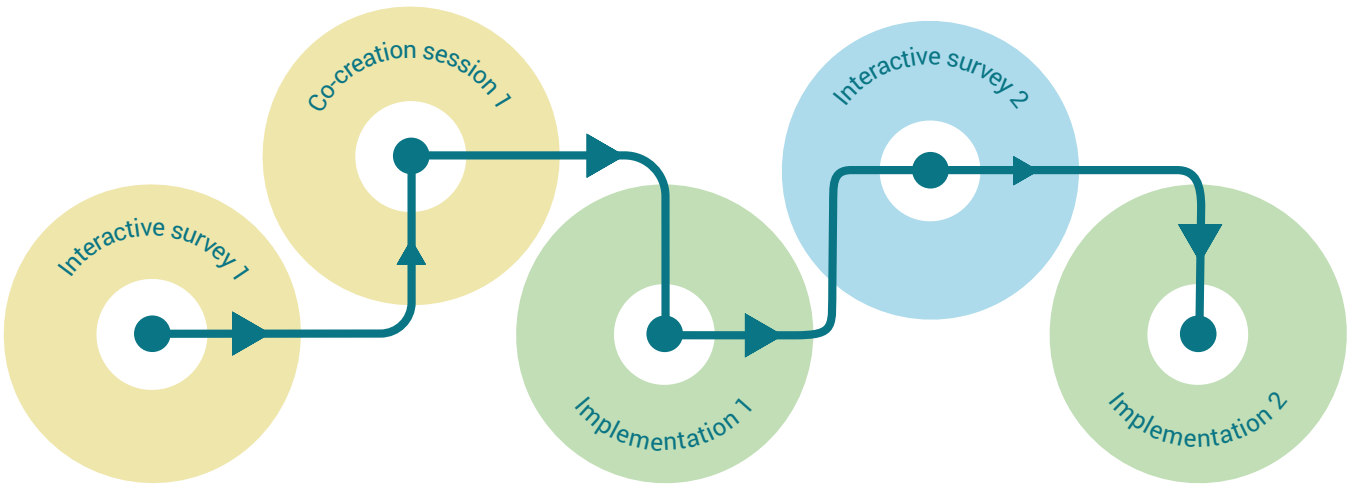
Digital engagement was carried out through interactive digital surveys implemented by field staff and deployed on tablets via a specialised research app. SCUK gave Eclipse specifications for the design based on what was most familiar to communities in Iraq and Bangladesh. In Iraq, the images used in the digital survey aligned with existing facilities and in Bangladesh they were similar to the poor-quality emergency latrines with which people were familiar. The digital survey was used to identify 'pain points' associated with the facilities and their use. The average duration of administering the digital survey was reported as 10 minutes per respondent. Needs identified through digital engagement were prioritised automatically by the survey software: it produced heatmaps and graphs of all problems identified by survey respondents and ranked them according to two criteria: frequency and seriousness of issue, the latter also defined by users as part of the survey. Insights from the surveys were then used to inform the content of co-creation sessions.

The sessions, facilitated by field staff with small groups of children and caregivers (20 people on average per session), were designed to explore their needs in more depth and to facilitate the identification of possible design solutions to address these needs.

The implementation of the project began with staff training in both countries. During this stage the Eclipse Experience team visited the project sites in Bangladesh and Iraq and worked with field teams to introduce them to the methodology, both in terms of its underlying principles and its technical aspects (e.g. how to use the interactive survey app, how to conduct co-creation sessions). Launch sessions with community members (children targeted by the projects, their caregivers and community representatives) also took place before the start of data collection in order to introduce the targeted communities to the methodology and build a relationship between the field teams and the communities.

Following the launch session, field teams undertook the first digital survey. The survey used simple images and heatmaps activated through touch motion on the tablet screens to capture the main problems that users encountered before, during and after using the latrines, and gather some preliminary information on the nature of these 'pain points' and their severity (see Figure 5 for sample illustrations). The app used for the survey performed an automatic analysis of collected data, both qualitative and quantitative, and the analysed data was returned to SCUK in the form of dashboard reports that could be accessed by programme staff, including managers and engineers, in real time. To make this rapid analysis possible, certain provisions

Figure 4. User-centred design process developed and implemented in SCUK/Eclipse Experience pilots in Iraq and Bangladesh



were built into the survey design, such as character limits for qualitative information fields, and a limit on the number of 'pain points' that the respondents could select. Instructions on how to use the survey were also included in the app itself, alongside an informed consent-collection script and additional questions that recorded users' demographics and respondents' satisfaction with the sanitation facilities and SCUK's response. Field staff engaged both with children and their caregivers, using slightly altered surveys for each (e.g. the children's survey excluded household-related information and used smiley faces for a 'pain scale', a rating of how much a certain pain point was an issue for the respondents). The surveys also differed slightly between the two countries in that in Bangladesh, the data collected was in relation to a hypothetical latrine design, while in Iraq a current latrine design was illustrated and used in the survey. The surveys were available in Bengali[1] and Arabic. In both countries the field teams were able to cover the targeted user groups within three or four days.

The first interactive survey enabled the field teams to identify the most common and pervasive 'pain points' among the target populations. These findings then informed the co-creation sessions held with community members. In these sessions, the facilitators used activities such as the 5 Whys and the H-Assessments[2] to further explore the 'pain points' identified through the interactive survey. The sessions also provided a space for the community members to brainstorm possible solutions and propose these to SCUK staff.

These design suggestions were then reviewed by SCUK engineers, who weighed the solutions against the available budget, resources and feasibility in a given context, and then proceeded with procuring the necessary materials and implementing the selected designs, either as alterations to current latrines or in the construction of new latrines.

Following the completion of construction and alterations, field teams conducted the second interactive survey. This survey focused on collecting users' feedback related to the latrines designed according to the communities' suggestions, measuring the users' satisfaction with the new or newly altered latrines, and understanding if further alterations were needed. In Bangladesh, findings from this survey led to further alterations implemented by WASH engineers, and in both contexts field teams followed up on outstanding concerns, e.g. related to cleanliness, supply theft, and bin distribution.

4.3.3 Adaptations

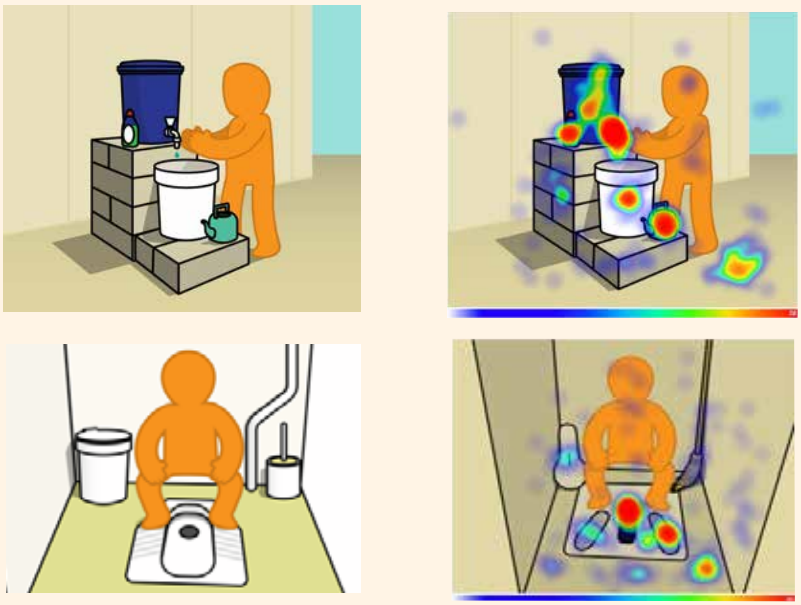
Design specifications in Bangladesh

As a more acute emergency context, Bangladesh allowed for more significant design alterations. This is because the latrines were being built from scratch, which meant that structural adaptations could be made in line with 'pain points' and suggestions identified by the refugee community. For example, the location of and structural components in the latrines were identified as major 'pain points'. The community thought that emergency latrines were located too far away from their homes and were not easy to walk to. As a response, SCUK constructed the latrines in convenient locations and built improved paths to the latrines to make it easy and safe to walk to them, particularly during the rainy season. Inside the latrines, SCUK installed smaller slab footrests to respond to the concern that children were at risk of falling into the latrine pits, child-friendly locks (located at a child's height, easy to open and close) and worked to ensure the cleanliness of latrines is kept up by engaging responsible households and providing cleaning products and tools.

Design changes in Iraq

In Iraq, the latrines were already built in communities targeted by this project. As a result, the changes could not be structural due to resources that would be required to invest in new latrines at this stage of the response (in the context of imminent handover to national authorities). SCUK responded to hygiene concerns by repairing all handwashing stations and including built-in soap dishes, as well as by installing waste bins outside the latrine blocks and ensuring regular emptying. Cleanliness concerns inside the latrines

Figure 5. Examples of illustrations used in the digital interactive surveys in Bangladesh and Iraq. Users were asked to tap on areas of the illustrations that posed a problem for them, and then were asked several follow up questions to clarify and rate the problem.



Source: David Hallangen, Save the Children UK and Eclipse (CC BY-NC 4.0.)

and in the surrounding areas were mostly addressed through additional hygiene-promotion activities (e.g. sessions focused on effective latrine use, cleaners' training). Darkness and the insufficient number of latrines, which were also among the concerns raised by the community, were not addressed due to a lack of funds (see Section 7 below for details).

4.3.4 Outcomes

The following findings on user satisfaction are based on data collected in the first and second round of interactive surveys and reported by Eclipse Experience. Data from the OGB evaluation of the two projects was not available for this case study. It is important to note that these findings should be read with the understanding that the end-line surveys were performed by the implementing agency, not a third party, and could be influenced by positive bias that is often noted in post-intervention surveys with aid recipients.

In Bangladesh, as reported by Eclipse, the change in satisfaction with the latrines between Interactive Survey I and II was dramatic. In the first survey, 2% of children and 2.1% of caregivers found the latrines to be 'very appropriate', while another 7.5% of children and 44.1% of caregivers found them to be somewhat appropriate. The remaining respondents thought the latrines were somewhat or very inappropriate or neither appropriate nor inappropriate. In the second survey, 96.8% of children and 97.9% of caregivers said the latrines were 'very appropriate'. The community's confidence that SCUK would listen to and act on their feedback also improved, with 91.7% of caregivers responding that they felt extremely confident that this would be the case at the end of the project, compared to 60.1% at the beginning.

In Iraq, the changes were slightly less significant, but the baselines were very different than in Bangladesh. The number of children seeing latrines as 'very appropriate' or 'somewhat appropriate' increased from 10.8% to 50% by the end of the project. Among the caregivers, that proportion increased from 19.2% to 46.9%. In terms of community confidence that SCUK would listen to and act on their feedback, 95.2% of caregivers

Table 3. SCUK/Eclipse Experience methodology in comparison to the UCD conceptual framework

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
Explore and prioritise users' needs	Understand users' experience	Co-design possible solutions with users	Deliver test solutions	Evaluate test solutions	Deliver refined/finalised solutions
• Needs identified and prioritised through digital interactive surveys	• Needs explored in greater detail in the community co-creation sessions	• Potential solutions co-designed with users in the co-creation sessions	• Sanitation facilities built based on suggestions made by users in co-creation sessions. • Some indicative evidence of solution prototyping by SCUK engineers	• A second round of digital surveys used to evaluate the implemented test solutions and act on any further outstanding issues	• Further alterations made and designs finalised based on data from the second round of surveys

How well does it align with UCD principles?

(a) User-centred? Moderate. Needs were identified and explored with users through a methodology that combined community member surveys with co-creation sessions. Priority needs met in Bangladesh. In Iraq needs met only partially due to budget constraints and the protracted nature of the context (SCUK were preparing to hand over the camp where the pilot was run to local authorities at the time of the pilot).

(b) Participatory? Strong. Users engaged at multiple stages of the programme design process, first through interactive digital surveys, and next through co-creation sessions, where participants had the opportunity to discuss the root causes of their priority needs and brainstorm ideas with the field staff for how to address these.

(b) Iterative? Strong. A second round of surveys informed additional alterations to sanitation facilities in Bangladesh and follow-up by field staff on outstanding concerns, e.g. cleanliness and bin distribution, in both contexts. Some evidence from design partner interviews suggests prototyping during construction (e.g. SCUK engineers testing four types of slabs with community members before selecting the best option for procurement and implementation).

(i) Clear programme design approach? Inconclusive due to lack of interview data with field staff.

(ii) Move away from standardised programme design? Moderate. In Bangladesh this was more profound than in Iraq, where the extent of changes that were possible based on users' needs was limited.

(iii) Supported staff to make well-informed changes? Strong. Design decisions were co-created with users and directly informed by their needs and preferences.

reported being 'not at all confident' at the beginning of the project, while only 6.1% retained that position by the end of the project; 34.7% of caregivers were moderately confident in this by the end of the project, and 30.6% were very confident.

4.3.5 How close to UCD was this method?

Each of the three projects used a different version of the UCD method, working with different design partners. In order to reach conclusions about the potential of UCD for supporting adaptive humanitarian action, it is important to understand to what degree the approach used in each project reflected the core principles and steps of a common UCD approach. Table 3 outlines how the process used by the SCUK teams in Bangladesh and Iraq fits within the UCD conceptual framework.

As such, the projects implemented by SCUK in Bangladesh and Iraq exhibited a high level of alignment with the user-centred design conceptual framework. It followed the six stages of the UCD process and was largely aligned with UCD characteristics and principles. The process resulted in a clear approach to programme design in both locations, although limitations of the present research prevent drawing a conclusion on how this approach compared in clarity to standard approaches to programme design used by field teams. However, the success of the project in Iraq was limited by a number of external and internal factors, including budgetary constraints, low management buy-in, and the protracted nature of the crisis, and thus the priority needs of community members identified through the UCD methodology were not fully met.

5. What made these projects different from traditional programme design approaches?

The previous section explores the extent to which the WASH Innovation Challenge projects aligned with the conceptual framework of user-centred design defined earlier in this paper. It also demonstrates the parallels between UCD and key policy commitments related to participation and community engagement in the humanitarian sector, such as the IASC Commitments on Accountability to Affected People, the Core Humanitarian Standard and the Sphere Standards. The cases indicate that UCD indeed has the potential to help humanitarians operationalise these commitments and bridge the gap between policy and practical decision-making, albeit to varying degrees depending on operational and contextual constraints. Before exploring how UCD relates to the adaptive capabilities of humanitarian organisations, this section considers how the approaches described in the previous section compare to traditional programme design approaches used by the implementing partners.

It is important to highlight that most of the adaptations made to latrine design are included in the Sphere standards for WASH. This means that features such as appropriate locks and lighting are not being consistently provided, despite being considered standard – andraises questions about whether in-depth consultative processes such as UCD are really necessary for identifying design features that are already described in sector standards and guidance. It does not appear that the three projects in the HIF WASH challenge are outliers in terms of quality programming, as this is a widely-recognised problem in the WASH sector (Oxfam International and WEDC, 2018; Oxfam GB, 2019).

These projects demonstrate how UCD can effectively support organisations in providing aid that is in line with humanitarian standards of quality: inadequate lighting and missing or broken locks were a priority need for community members in all projects of the WASH Innovation Challenge. Where minimum standards are already being met, UCD could potentially lead to design specifications that reflect more detailed community preferences, although this was not observed in these projects.

When asked to describe their regular approach to WASH programming in humanitarian settings, QRC staff described a process where the project team conduct a field visit to the location of the planned intervention, carry out an assessment of sectoral needs (e.g. calculating the number of latrines the organisation needs to provide based on the number of household in the target area), create a list of specifications and materials for procurements based on the needs assessment and then provide the latrines built to these specifications (KII15, KII16). The deeper level of engagement with community members through the survey component and co-creation sessions, as well as the prototyping of potential solutions, were identified as clear distinctions between the pilot project and the traditional programming approach used by Qatar Red Crescent.

Welthungerhilfe staff described a similar process, but added that coordination meeting with other humanitarian partners in the area should also take place when planning a project, as well as a community meeting, where participants are engaged to identify priority needs in their community (KII10, KII13). In response to a request for tools conventionally used in programme design, WHH staff shared a KAP (Knowledge, Attitudes, Practices) survey template. However, the staff responses suggest that this consultation component does not lead to a deeper understanding of users' needs and is rather an exercise through which agency staff can identity the standard response options to match such needs (KII12). Further, the KAP survey is generally conducted only before and after a project is implemented, which was highlighted as an important difference from the HIF Challenge pilot, where the engagement with community members was more frequent (WHH Peer Review Comments, January 2019). Despite this frequency, findings from key informant interviews and the OGB evaluation related to the UCD process used by WHH suggest that the pilot project implemented as part of the HIF WASH Innovation Challenge was largely similar to its standard programming approach, with the exception of the PSN latrines construction process.

No definitive conclusions could be made about the extent to which the pilot projects in Iraq and Bangladesh were different from standard programming approaches used by SCUK due to the limitations of this research discussed earlier. However, in peer-review comments, SCUK indicated that generally communities are consulted about what they need but not about the best way for SCUK to meet these needs. As such, the HIF Challenge projects were different because they focused on 'understanding through a more participatory process how ... latrines could be made to be most appropriate and [then on] negotiating ... possible solutions with children and caregivers' (SCUK Peer Review Comments, January 2019).

To further clarify the distinction between the pilots and the standard programming approaches used by implementing partners, research participants were asked to explain how WASH programmes were normally designed in their experience and how they perceived the WASH Innovation Challenge projects to be different from other WASH projects they had worked on in the past. In response, key informants often contrasted the pilots with what they deemed traditional approaches to humanitarian WASH programming: top-down, led by implementing agency, with standard response options implemented based on a quantitative understanding of humanitarian need (KII14, KII17, KII18, KII20). The distinction made by key informants between UCD and traditional approaches focused along three general axes discussed below in further detail:

- Opening programme design to community input;
- Checking assumptions and moving away from standard response options; and
- Adapting with efficiency.

5.1 Opening programme design to community input

Respondents emphasised the top-down nature of humanitarian WASH programming, both within their own organisations and also more generally across the sector (KII10, KII14). In reflecting on conventional consultation practices, respondents described them as infrequent, extractive, focused predominantly on gathering quantitative, technical assessment-type data used for validation of standard programme approaches and making little distinction between the nuanced needs of different groups within the crisis-affected community (KII10, KII17, KII18, KII20).

> We've never worked in close proximity, and that is not something again the QRC is only at fault at, but many INGOs actually do not work in close proximity with beneficiaries. And the way things used to happen is that, you know, we send our best engineers and programme managers and they would usually look at, like they would scan a given camp and then they would come up with their version of what is needed to abide to, say, SPHERE standards or standards that we feel are good enough. The problem with that approach is that it doesn't go in coherence with what people need. (KII22)

Key informants also noted that refugee communities are often seen as numbers, as beneficiaries, as passive recipients of aid (KII15, KII17, KII18, KII22). Generally, staff responses suggested that, while consultation and feedback mechanisms are now fairly common in humanitarian responses, their application and implementation can often be a tick-box exercise, rather than a process for understanding how a given programme can be changed or improved. These observations are in line with findings on accountability and participation from the latest State of the Humanitarian System Report (ALNAP 2018).

In contrast, both QRC and WHH staff cited the repeated involvement of community members throughout the process of programme design during the pilots as a key feature that distinguished them from the standard programme approaches with which they were familiar. This level of engagement and collaboration with community members was unprecedented for the respondents, and supported a shift in their perception of crisis-affected people:

> … another thing that's radical, and, not radical, but that's, you know, kind of drastic, why it's very hard for humanitarian organisations to look at this as something they can use: the way you look at them, as beneficiaries. So, automatically, you're always thinking that, they are in need, [so] you give them something, you know? They're not users. If you think about them as users, or as customers … you really want them to be satisfied with you the whole time. (KII15)

> The other thing is, I think, when you go to such a level of interaction with refugees and when you invite them to come in and give their opinions and to express their needs … what we are doing is we are unleashing their innovation potentials [sic]. And that is something that we usually tend to under-utilize. We tend to view them as helpless or maybe incapable. But you'd be amazed how pragmatic these people are and how sometimes the solutions they suggest are even [more] cost efficient than what we think is best for them. It's, I mean, it's really ironic in the sense but it's actually very true. (KII22)

As such, respondents perceived UCD to be different to standard programming approaches because of its role in cultivating a different mindset among field staff and orienting them to be more flexible and responsive to the needs and preferences of the affected communities that may not be in line with standard response options the staff were used to.

It is interesting that humanitarian staff identified this as the main distinguishing feature of user-centred design. There is no shortage of frameworks and approaches in the humanitarian sector that aim to support humanitarian organisations in achieving this level of engagement with crisis-affected populations, so the immediate question here is why the field staff perceived this characteristic of the pilots to be unique? Is it because the existing approaches to community engagement are not systematically used across the humanitarian sector and thus what UCD offered appeared novel and unique to respondents? Or did UCD offer a unique way to structure community engagement that led to a shift in staff mindset and made the goal of community engagement – i.e. informing programme design – clearer and more achievable? Evidence is insufficient to draw a decisive conclusion on this matter, not least because the pilots were not set up to compare UCD with other community-engagement approaches. What is worth highlighting, however, is the fact that Qatar Red Crescent and Welthungerhilfe used approaches that were in moderate and low alignment, respectively, with UCD principles and characteristics. Despite this, the pilots were still in stark contrast to previous programming in the eyes of field staff, which suggests that UCD has the potential to offer a very different form of engagement with affected populations compared to the current consultation methods used by humanitarian agencies.

5.2 Checking assumptions and moving away from standard response options

Latrine designs in traditional WASH programmes are normally standardised, assigned by the organisations responsible for camp management (e.g, local or national authorities, United Nations agencies), and implemented with the expectation that users will adjust their practices and behaviours to fit the designs rather than the other way around (KII10, KII12, KII19). While standardisation supports rapid response, it can inhibit adaptiveness and lead to poor uptake among communities who come from a different cultural and social context, or who have varying individual needs (KII12, KII18).

UCD offers a systematic way to understand users' needs and the ways in which standard responses may not reflect their experiences, and then to apply this understanding to inform programme design. As such, UCD can support humanitarian actors in moving away from 'one-size-fits-all' solutions that the implementing agencies consider to be right, but may not be right for the users. For example, QRC staff shared an example from one of the settlements in which they worked during their project, where they engaged in discussions with people with

special needs about the type of latrine that was suitable for them. QRC staff initially assumed that this group would want to have latrines inside their tents for ease of access but during the co-creation sessions with this group of users it became apparent that such a solution was inappropriate (KII15, KII16).

> For vulnerable groups in our case, we would go for a latrine within their tent, within their shelter.... But when it comes to user-centred design, that was totally not acceptable for them. They just do not want their latrine within their tent, within their shelter where they sleep. They just do not want it. For me as an engineer, I would just check for vulnerable groups. 'Okay, give them latrines within their tents.' [But] that's not what they want to use. ... If it's inside their tent, they won't use it. (KII16)

Instead, outside latrines situated close to the tents of people with special needs were identified as a better solution despite initially not being considered the right approach by the WASH engineers.

However, as demonstrated in Section 4 and discussed in further detail in the following sections, the ability of the UCD approach to support this move away from standard solutions largely depends on the way in which it is implemented in practice. In all three of the WASH projects in this study, options for latrine design and input were restricted, based on discussion with the lead humanitarian agencies. In the case of QRC or the SCUK project in Iraq, this was because latrines were already in use, and the project aimed to make improvements to existing structures – therefore, models of the existing latrines were used as the basis for soliciting design inputs from affected people. In Bangladesh and Uganda, procurement considerations – i.e. what materials SCUK and WHH respectively felt they could procure at reasonable cost – may have played a role in restricting the scope of design options presented, although this explanation could not be fully verified through the interviews.

5.3 Adapting with efficiency

Adaptation to programming often happens in humanitarian responses, but in ad hoc ways rather than through a consistent process of learning and review – these changes are also often played down in project reporting, as the aim is to show compliance with the project proposal rather than to demonstrate continuous learning and improvement. One of UCD's potential contributions to adaptiveness is its use of structured iteration. Field staff interviewed for this case study highlighted several ways they engaged in iteration during the pilots.

In Lebanon, QRC staff gave an example of several rounds of testing they engaged in before deciding on the solution to the issue of darkness inside the latrines. First, the team tested a single solar-powered lightbulb with a single user over the course of 24 hours. The user left the lightbulb on throughout the night, which led to the power in the bulb being used up before the morning. In the second iteration, the team asked the user to turn the light off when it is not being used, which allowed for the power to be conserved throughout the night. Having received positive feedback from the user on this solution, the team procured more lightbulbs to be installed inside other latrines in the settlement.

Similarly, staff in Uganda discussed procuring a small number of portable lights to address the problem of darkness in and around the household latrines and testing them with several members of the target communities before making the decision about the suitability of this solution and commitment to a larger procurement. In both cases the continuous engagement with the targeted communities enabled the implementing agencies to test different solutions and make adaptations to standard sanitation facilities.

There is some evidence to suggest, however, that it is not so much the existence of programme adaptations itself but rather the quality and efficiency of these changes that makes UCD different from traditional programming approaches. A key assumption of user-centred design is that if a solution is tailored to users' needs, that solution will be more successful (which, in the humanitarian sector, means more effective,

relevant and otherwise in alignment with the quality criteria of the Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC). By engaging in UCD, humanitarian organisations are expected to frontload any adaptations to the design of sanitation facilities and thus prevent the need for major changes down the line, when the facilities are found not to meet users' needs. The projects reviewed for this research support this assumption, at least partially. Observations in Lebanon of reduced rates of excreta on latrine slabs, which QRC staff used as a proxy to measure latrine maintenance by the community, indicate that latrines that better meet users' needs may result in greater usage and maintenance of the latrines by community members (QRC Interim Project Report, August 2018). Another illustrative example was offered by Welthungerhilfe staff who, in contrasting UCD to traditional programming approaches, recounted a WASH programme that their team implemented prior to working on the UCD pilots:

> For me, this kind of idea is good because what I have seen is that before ... user centred design came, we had constructed facility that ended up in chaos. For example, we had constructed the communal latrines. Then so many issues came up. The issues were like ... women were complaining, 'When we go to the latrine, then the men come to see us.' [...] Most of the latrines were more placed together. The distance between the male and the female latrine was so close and unfortunately, the most unfortunate bit was most of the latrines were not marked whether male or female. ... Then, when the issues came up, then it was a protection issue, then UNHCR came. Then the concern was that all the partners who constructed had to go back and then relook at the communal latrines and then add other components like putting a proper signage on them, whether it was male, female that people can see visible and with the proper demarcation. So by then, you will realise that with this user centred design, if you have captured the idea of a person and then you're going to put the facility exactly how the person thinks it [should] be, and then you will not have this kind of back and forth movement where you have to put the facilities, again you have to go back and redo the same thing, which is sometimes quite expensive, it is costly in terms of time [and] also in terms of materials. (KII12)

The more efficient adaptations that UCD seems to facilitate raise an important question: by bringing forward iteration on programme design to the beginning of the project, does UCD actually lead to less adaptiveness over the course of a given programme? And if so, does it matter if the programme overall is of higher quality as a result?

While the HIF Challenge pilots provide little evidence to support a definitive answer to these questions, it appears that this indeed may be the case, particularly when a project is limited in scope and aims to achieve a very specific goal, e.g. construct child-friendly latrines, as in the case of pilots in Iraq and Bangladesh. Given the project-oriented nature of the humanitarian system, the limited adaptiveness over the course of a given project may not be an issue if the UCD process contributes to a solution that meets its objectives. When this may become an issue is when we consider that the reality of humanitarian contexts is rarely restricted to the limits of a single project or even a series of projects. Humanitarian contexts change, often in unpredictable ways, as do the needs of crisis-affected people. It is this dynamic and complex nature of humanitarian situations that requires humanitarian organisations to develop strong adaptive capabilities. This reality then leads to another important question: given that the needs of crisis-affected people and the operational context inevitably change with the passage of time, to what extent can UCD be used not only as an approach to programme design and as a programme monitoring approach in humanitarian context? In other words, what would a user-centred response strategy look like? This research offers only vague indications that UCD can be used for programme monitoring, based on the fact that projects in Lebanon and Iraq iterated on existing latrine designs and the pilot in Uganda gathered feedback from community members based on their experience of using communal latrines. A more concrete response to this question would require further pilots and further exploration as humanitarian organisations develop their understanding of the value and utility of UCD in humanitarian action.

6. Summary findings: Does UCD support adaptive humanitarian action?

6.1. How UCD supports adaptive capabilities

There are three main components of adaptive capabilities in humanitarian organisations:

- **Knowing when to change**: Being able to identify the right time and motivation for changing what, where and how humanitarian action is
- **Deciding on the change**: Identifying the correct 'pivot' or change to make
- **Implementing the change**: Bringing about the change through mobilisation of resources and adjustments to plans (Obrecht and Bourne 2018).

User-centred design supports **knowing when to change** in two ways.

First, UCD builds a series of changes into the programme cycle up-front through solution prototyping and programme design iteration. Triggers for change – that is, the different stages for prototyping – are embedded in the process, and the process thus guides field teams towards identifying when changes to programme design are necessary. As UCD also aims to support organisations in providing more effective and relevant solutions by prototyping often and early, rather than offering a complete solution without testing it in context with intended users, the UCD process can also help organisations prevent the need for more changes down the line by achieving the optimal solution from the outset.

On the other hand, there is some indication that UCD can be used to identify and implement changes to existing programme choices. In all contexts covered by this study, latrines already existed in one form or another. In Iraq and Lebanon – both protracted crises – field teams worked to improve the design of the existing latrines, which to some extent prevented them from making more profound design changes. In Uganda, new latrines were being constructed in place of existing emergency communal latrines, and in Bangladesh in place of rudimentary private latrines that were built by landowners prior to the refugee influx. In all cases, UCD could be seen as reflecting the mindset shift that is required for adaptive programming (Obrecht and Bourne 2018), drawing attention to how current services can be improved or made more effective and relevant. UCD was employed almost as a monitoring mechanism that enabled field teams to identify the need for adaptations in certain aspects of the designs of the existing sanitation facilities.

Deciding on the change, i.e. identifying the right change to make, is the component of adaptive capabilities that UCD supports most strongly. Instead of grounding programme design decisions solely in the objective assessment of the situation and technical knowledge or expertise, humanitarian organisations are provided with an additional layer of information – subjective information based on crisis-affected communities' needs, preferences and experiences – to inform their decisions. One type of information does not negate the importance of the other. Rather, they are complementary and provide a more complete description of the situation on the ground. As such, UCD helps humanitarian organisations make better-informed programme design decisions and make changes to programme design that are better aligned with the needs and context on the ground.

However, in the projects examined for this study, agencies limited the scope for decisions on change in their consultation with communities: existing or common latrine designs were used as the basis for the co-creation sessions rather than offering a wider range of potential latrine designs. In several cases, these existing designs did not meet the Sphere standards, which explains why many of the suggestions made by communities overlap with design specifications already in the Sphere Handbook. Agencies often think about what changes can feasibly be implemented before consultation, and therefore 'deciding on the change' is often affected and limited by considerations on 'implementing the change'. Budget flexibility is a critical factor in this and will often determine the extent to which users' needs and preferences influence the design of a programme.

The relationship between user-centred design and the final component of adaptive capabilities, **implementing the change**, is complicated. Currently, UCD does not appear to influence an organisation's ability to implement changes, but rather is influenced by this ability or its absence.
As this case study has shown, there is a range of operational, organisational and systemic barriers that can prevent organisations from being adaptive when employing UCD in their programming. These barriers are discussed in greater detail in the following section.

What UCD offers is a structured approach of identifying priority humanitarian needs and engaging affected people in programme design to help ensure that this is informed by users' needs instead of standard response options. But the barriers to implementing programme changes described below highlight that UCD is only one piece of a puzzle and is constrained by the larger organisational and systemic environments in which it is used. If these are not conducive to adaptation, the potential of UCD is significantly curtailed.

6.2. Factors affecting the ability of UCD to support more adaptive humanitarian action

Factors that constrained adaptiveness in the HIF WASH Innovation Challenge pilots can be broadly grouped into three categories: operational, organisational and systemic. The following section considers these in detail.

6.2.1 Operational factors affecting the ability of UCD to support adaptiveness

Inadequate implementation budget

Inadequate funding constrained the implementation of in Uganda and Iraq. In Uganda, budget constraints did not allow for additional field visits by the design partner. This limited UCD training provided to Welthungerhilfe field staff to introductory sessions and initial user-research activities carried out during the Snook field visit at the beginning of the project, thus placing the responsibility of adapting the UCD questions and understanding the details of the approach on field staff. Budget constraints also affected the kind of latrines that WHH was able to build with the users:

> Another thing is we have seen [is] that the resources that have been available to us in this particular project may not be enough to address the situation if we want to address [it]. For example, populations who are living in [areas prone to flooding], who are living in loose soil, and we look at the budget and we see that you need to do some innovation and try to line the pit from underground. Then you look at the budget you have and the number of population you have. Then you think … this budget is not enough. So, then you see that you are still going to give a facility which at some point may still end up being a problem when these kinds of scenarios come back. (KII12)

As noted in the OGB evaluation data above, adaptations were virtually impossible in the construction of household latrines in Uganda but were more feasible in the construction of PSN latrines in part because the project budget had a 5% contingency for their construction.

In Iraq, inadequate funding for the implementation of design decisions co-created with affected communities led to only partial implementation of these decisions (Save the Children and Eclipse Experience 2018). The funding shortfall was a result of two factors. On the one hand, the Iraq team initially informed SCUK that 'there was sufficient budget to cover rehabilitation of the latrines [but] it later emerged that this budget was wholly insufficient for anything other than minor additions' (SCUK Peer Review Comments, January 2019). Second, there was confusion over how the Iraq team could charge costs to the HIF budget. SCUK shared that 'the combination of not having adequate funding within other related WASH projects and not knowing how to charge costs to the HIF project caused delays, and [ultimately] resulted in insufficient funding for implementing changes in response to the 'pain points' and solutions identified through the UCD methodology, particularly the more substantial and costly ones, such as the location of the latrines and changes to the latrine hole and foot' (ibid.) Further, this challenge was not communicated to the implementing teams nor the community members in a timely manner, which led to community dissatisfaction with the process as the changes they expected were not implemented by SCUK (ibid).

While in Lebanon budget constraints were not cited as a major challenge, key informant interviews highlighted how the decisions that field staff have to make regarding the kinds of changes that are feasible are affected by funding considerations. Replacement of manual latrine pits with holding tanks was identified as a key need in one of the settlements through the UCD process, but this lay beyond the scope of the project as it related to FSM rather than sanitation facilities design. QRC staff noted that the donor was open to responding to this need as long as the activity fit within the project budget. However, because this activity would have taken up a large part of the overall budget, it would have made it impossible to implement design changes that were a greater priority for all four settlements, namely solar lights in and around the latrines. The field staff decided to draw on external resources to replace the latrine pits:

> There's a lot of funds going in to that, so we cannot prioritise that over the darkness, right? So, it is a need only for one camp, and that need for one camp, to actually implement it, it's going to take a lot of finances. So, what we did is, we are cooperating with the NGO responsible for [faecal sludge management], because they are responsible to provide these... (KII15)

This example indicates the importance of coordination among humanitarian actors and of the ability of individual organisations to prioritise needs and solutions identified through UCD in order to implement the necessary adaptations.

6.2.2 Availability of aid recipients for community engagement

Both QRC and WHH teams experienced delays in implementing the pilots due to community members' availability. QRC had to align the co-creation sessions schedule with schedules of community members, many of whom often worked during the day and were not available to participate in the sessions during working hours (KII15, KII16). This resulted in the initially planned two or three co-creation sessions being extended to 12 in total.

Community members' availability also affected the length of implementation for some prototypes and resulted in the need to procure technical expertise and support on the part of QRC (see more on procurement below), as the community members were not around to be involved in installing the prototypes at all hours of the day (KII15, KII17). This, in turn, had implications for the kind of technical support that QRC staff had to procure to make changes to the latrines:

> The contracting with people to come and do it is different. We wanted to engage the community also in the implementation of the solution, but the problem was that they work all day long and plus they do not have the skill. We wanted to train them to do it but still, they have one-hour break which is really hard for them to let go of their break hour to come and get training for how to implement this. They helped us as much as they can [but] we needed someone that had the technical skill and the tools to do it. (KII16)

Similarly, Welthungerhilfe staff highlighted the limited availability of men in the targeted communities, who at times prioritised livelihood activities over engagement in the WASH project, and the low capacity of some users to carry out construction activities, particularly in households headed by women, children or people with special needs. These factors contributed to delays in latrine construction and required additional support from WHH staff, including support in carrying out the construction process itself.

6.2.3. Organisational factors affecting success

Procurement processes

ALNAP adaptiveness research explored humanitarian organisations' approaches to procurement and supply-chain management in relation to adaptive capabilities. It found that one of the ways current procurement processes limit flexibility is by providing standard sets of goods.

Evidence from the present case study confirms these findings. Issues related to procurement processes were discussed at length in Lebanon, where the internal systems of QRC were found to be at odds with the need for procuring small amounts of materials or items for solution prototyping in different settlements, thus impeding adaptive capabilities of the organisation:

> ... the amounts are examples, the amounts are small and then later on, you ask for more which is a problem for the policies. You have to know right from the beginning what you need. You don't just do it [step by step]. It was hard for [the procurement staff] because it's different to get what you're doing. (KII16)

This issue is likely to be a common one for any organisation seeking to procure small quantities of non-standard materials, as this is much more expensive due to economies of scale.

Onerous structures in relation to procurement are common in humanitarian operations because they are often geared to supply necessary materials as fast as possible and also because it is a high-risk area for fraud. However, to procure materials necessary for the type of iterative implementation that UCD requires, humanitarian organisations may need to consider how to change their procurement processes. In fact, a senior member of QRC staff identified procurement as a key area that QRC would have to address in order to be able to make programming changes identified through UCD processes in future projects:

> ... think of it from a purchase order perspective. You've got the number of purchase orders that would be coming would be much more than we are ever used to. Because like I said, in the original way of doing business, we usually compile everything, and we produce one purchase order and even that purchase order is perhaps at best 4-5 clauses. But with this, we have to think differently, and we have to act differently. We have to decentralize the process and we have to streamline the process. Without doing that, we're not going to be able to deliver, and then we risk that advantage that we have with people. So that requires us to change our old ways drastically. (KII22)

Insights on the procurement process in Bangladesh and Iraq were not available, as the design partner was not involved in that side of the pilot implementation. However, in the peer-review comments, SCUK indicated that the team in Bangladesh initially struggled to procure some of the materials, i.e. latrine slabs with closer-spaced foot rests, to implement the solutions identified in co-creation sessions with the users.

This type of slab was not available on the market in Bangladesh, so in the end the team decided to construct the required slabs themselves.

Welthungerhilfe staff did not identify procurement as a major challenge but did highlight that procuring some of the materials required for construction of UCD-informed designs took longer than normal (two or three weeks) as these were not available locally and that procurement staff could not be rushed as they had to comply with relevant organisational guidelines to obtain the necessary construction materials (KII09). As discussed above, the OGB evaluation data from the WHH pilot showed that once the materials for the construction of household latrines were requested from the procurement, further changes were not possible.

Leadership buy-in

Evidence from the pilots suggests that in cases where staff at different levels of an implementing organisation were supportive of the methodology and acted as its 'champions', the implementation of UCD was easier and smoother. In Lebanon, for example, the drive and leadership of project staff in leadership roles, i.e. the methodology designer and Project Coordinator, the Field Team Manager, and QRC Head of Mission, played a key role in securing the buy-in of other staff members and moving the project through bottlenecks when these occurred, including with regard to making user-specified changed to sanitation facilities.

In Bangladesh, an acute emergency context, frequent changes in leadership resulted in implementation delays and lack of consistent leadership on the ground. Save the Children and Eclipse Experience (2018) highlighted that 'staff rotations meant that new management was not as informed and invested in the pilot and often other activities were prioritised'. The Eclipse team noted that having a designated individual on the ground who could serve a focal point-type role would be conducive to streamlining and managing similar UCD projects in the future (KII05, KII06). In peer-review comments, SCUK shared a similar challenge in Iraq, where the low level of buy-in from the WASH Programme Manager led to temporary staff being put in charge of implementation (e.g. to implement interactive surveys and co-creation sessions). In Uganda, Snook also suggested that having a staff member with a strategic understanding of the project accompany them during the field visit and an opportunity to work with such a focal point – and with the field team – in a more concerted, hands-on manner throughout the project would have facilitated the development and implementation of the hybrid UCD-PHAST methodology (KII08, KII21).

Human resources: ability of staff to adapt to new ways of working

In Lebanon, some QRC staff struggled to see the value of exploring users' needs and co-creating design solutions with them compared to implementing their standard organisation-led programming approach with which they were more familiar. Field staff were eager to start implementing the project right away, before data collection and analysis were complete, procurement staff pushed back on recurring requests for small quantities of materials, and staff at HQ level in Lebanon and Qatar initially saw the project as a research exercise, not as a response (KII15). Field staff were the first to understand the UCD process, as they saw and experienced its results first-hand as they began implementing the pilot (KII15, KII16, KII17, KII22). By the end of the project, staff at all levels saw the project as 'superb' (KII22), not just in dramatically improving the cleanliness and use of the latrines but also in terms of building a close, positive relationship between the organisation and the refugee communities. Hands-on implementation of UCD and demonstrating the results in practice were highlighted as the key factor in changing staff positions from the traditional status quo to seeing the value of adapting their practices and employing UCD (KII15, KII22).

SCUK and Eclipse Experience cited a number of examples that demonstrate different ways in which Save the Children staff had to adapt their ways of working when implementing these UCD projects.

First, Eclipse Experience staff noted that understanding the UCD methodology was initially difficult for SCUK staff, particularly junior staff members who were frontline implementers but were largely unfamiliar with the type of community engagement facilitated by the UCD approach, i.e. engagement that systematically solicited opinions and design ideas from the community and fed this information directly into decision-making on programme design and adaptations (Save the Children and Eclipse Experience 2018).

Furthermore, local staff hired in Bangladesh, and particularly those hired recently to respond to the Rohingya refugee influx, were 'used to very hierarchical and rigid working practices internally, as opposed to participatory or collaborative working practices' (SCUK Peer Review Comments, January 2019). This meant that the staff were faced with a steep learning curve as part of the HIF Challenge project, particularly in practising this way of working with the refugee community.

Lastly, Eclipse Experience also highlighted that senior SCUK staff were initially sceptical of the lightweight nature of the digital tool and were wary of inducing 'research fatigue' among field staff and community members alike, but these concerns were addressed once the teams proceeded to developing the methodology and the related digital tool (KII21).

Human resources: hiring locally

Research participants commented on the importance of contextual understanding to field teams and trusting relationships with targeted communities that local staff can contribute to UCD projects. For example, in Iraq and Bangladesh, field staff who were from the community or already had a positive relationship with community members were instrumental in implementing user-research activities and building trust by knowing whom to approach in the community, when to approach them, or when certain family members were busy (e.g. mothers occupied with preparing meals, or children being in school) (KII20, KII06). Further, as effective UCD methodologies are built on mutual trust, employing local staff and volunteers to implement UCD projects supports the development of a trusting relationship between them and the users, which in turn can facilitate the type of candid discussions needed to understand the problem in question and co-create appropriate, feasible and sustainable solutions.

> Typically, we used to hire professionals who have, you know, vast experience as working in this. And usually they're different than the beneficiaries. What I think this project helped us realize is, when you hire people from within the community, the people can relate much better than when you bring in people like, you know, professionals who are-. Though those professionals know how to basically not to cross any red line but there will always be that-, at least from a beneficiary perspective, there will always be us versus them. While when you hire staff from within and give them the training, it's-, the relation is much different, the dynamic is much different. (KII22)

Lastly, employing and training local staff or members of affected communities to use UCD democratises the approach and can redress the unequal power dynamics that are created when Western design companies are hired to implement UCD projects in low- and middle-income countries (KII06, KII07, KII20).

6.2.4 Systemic challenges

Fragmentation of responsibilities

ALNAP research on adaptiveness suggests that one way in which humanitarian actors try to reduce the uncertainty of the complex environments in which they operate is through specialisation, meaning that organisations select 'particular sectors or problems within the humanitarian crisis space which they will be prepared to address' (Obrecht and Bourne, 2018). This, in turn, limits their adaptive capabilities in important ways, as evidence from this case study illustrates.

In several of the cases, agencies were prevented from adapting their work by the rigidity of other organisations. For example, QRC could not make significant structural changes to the latrines (e.g. installing new slabs) or respond to certain cleanliness concerns (e.g. those that required solutions related to FSM) because other humanitarian actors owned the latrines and were responsible for that aspect of sanitation programmes. This fragmentation of responsibilities not only affects which design adaptations a given organisation can or cannot implement but also the long-term viability of these changes:

> ...there were issues that could affect the maintenance and the hygiene of the latrine that were really outside of, you know, what this project aims to do. For instance, the backflow. So these letters are connected to ground pits and then when these pits aren't de-sludged frequently, then what you have is a situation where the black water will eventually back up and then will overflow, and that would basically ruin everything, you know, all the good things that we've done would be ruined because, you know, you can have the best lights in there, you can have the safest doors, whatever, but people won't go there [if] it's not clean. And it's not their problem or our problem because it's not clean. However, this is where the domino effect comes in, because one latrine or a couple of latrines, the pits get filled and are rendered not usable, those people then move to other latrines, and then basically what they end up doing is overcrowding those other latrines and filling those latrines at a much higher frequency than the schedule of desludging works. So basically what we're doing here is just contaminating, we're just increasing the negative impacts and affecting the entire project. (KII22)

SCUK also highlighted that the field team in Bangladesh were unable to respond to users' needs regarding inadequate water provision because it was another organisation's responsibility (SCUK Peer Review Comments, January 2019). If coordination and partnership structures are strong, the fragmentation of responsibilities and specialisation of organisations can facilitate a more adaptive collective response, but where they are weak, these hinder the ability to adapt a more relevant response. Generally, the disconnect between different organisations working within the settlements and the resulting lack of a holistic approach to responding to users' needs was highlighted as an impediment to implementing the necessary programming changes identified through the UCD process (KII17; KII22).

Standardisation of response

User-centred design can help humanitarian actors move away from standard approaches to programme design (see Section 5.2 for details). But standard response options can also restrict the implementation of UCD in humanitarian contexts, particularly when coupled with fragmentation of responsibilities described above.

Standardisation is another way in which humanitarian actors try to cope with uncertainty. It can be defined as the practice of 'providing a set of pre-established goods and services' that are designed to specific standards, such as the Sphere Standards or organisational performance indicators used for quality assurance of aid delivery (Obrecht and Bourne 2018). Standardisation can support the provision of humanitarian aid quickly and at scale, but it can also limit humanitarian organisations' ability to implement solutions that deviate from standard programming options. Cases reviewed for this research highlighted how standard programme designs relate to organisations' ability to make adaptations based on the UCD process.

In Uganda, respondents noted that introducing improvements to standard latrine designs was not an issue, as these designs basically met minimum standards (KII14). Similarly, in Bangladesh, the UCD project went against the expectations that all agencies providing WASH facilities to the refugees would build latrines according to a standard design agreed by the government and the WASH sector (SCUK Peer Review Comments, January 2019). At the same time, in Lebanon, UNHCR set standards for water distribution that prevented QRC staff from advocating for more water to be distributed in one of the settlements, despite this need being highlighted through the UCD process. As a result, the team had to seek out an alternative solution: creating a way for communities to re-use water from handwashing for latrine cleaning and maintenance.

Power structures governing humanitarian action

In Lebanon, field staff had to navigate sensitive in-settlement politics. For example, settlement superintendents came up as constraining factor in this project. They were isolated from refugee respondents during the co-creation session to prevent the power imbalance from tainting the findings, and in one instance, a superintendent threatened to dismantle all latrines in a targeted camp because, as QRC staff explained, he wanted certain aspects of the project, which were at the time being tested in a neighbouring settlement, to be implemented in his settlement as well (KII15). More profoundly, Lebanese regulations prevent humanitarian actors from installing any underground sanitation infrastructure or other types of permanent solution, which also naturally limits the options for the solutions that humanitarians can implement at the request from the crisis-affected communities. At the same time, in some instances, QRC staff were able to use the humanitarian power structures to their advantage. The staff recalled instances when, advocating for UCD solutions within their own organisation with teams that were especially unreceptive to the approach, they had to put their foot down and say that using this type of approach was a donor requirement (KII15).

In Uganda, although the team were able to modify the standard designs provided by UNHCR and the OPM during the UCD pilot, it was unclear whether they would have the same freedom to implement the design alterations in the future if these are not an integral part of a donor-funded project, as they were in the case of the WASH Innovation Challenge. A staff member who worked on non-UCD WASH programming for Welthungerhilfe reflected on the difficulties of making changes within traditional WASH programmes:

> … an example that I can give you is-, I'd already spoken about the design of the latrine, which comes from OPM and UNHCR. So if that is the design that is already given and you have already requested for money to put those kind of structures in place but the beneficiary comes to you and says 'This does not suit my interest', so maybe the [new] design might be a little more expensive than they've already designed, or it could be something that one would think it is possible to do. But again, if the higher authorities have already put that, you find that it becomes a little tricky for [the beneficiaries] to also say that what you're doing is not the right thing. So, we always find it a little difficult to make changes when the above authority has spoken. So, it's a bit more of a dictatorship than a discussion sometimes. (KII10)

Framing of the objectives of humanitarian programmes

In all cases, key informants noted that community members often wanted to use the time in co-creation sessions to speak about needs and challenges they had that fell outside the scope of the engagement. For example, the QRC team found themselves having to focus session participants' attention on improvements to sanitation facilities – managing the ideas and demands that went beyond what was feasible to provide within the time and resources allocated to the project. Similar challenges were reported for projects in Uganda, Iraq and Bangladesh.

This raises an important question about the tension between what user-centred design is meant to do and what humanitarian organisations are set up to do. Arguably, humanitarian organisations often operate in a grant-centred rather than user-centred way (R. Mays, expert interview, March 2018). Funding and contracts dictate priorities and objectives and contribute to the fracturing of a holistic human experience into sectoral needs (ibid). The WASH Innovation Challenge projects were explicitly set up to design sanitation facilities based on users' needs, preferences and design suggestions. As such, they allowed for adaptations and iterations within the scope of this objective. But the framing of the projects also precluded the possibility of more extensive pivots and left little room for teams to explore the whole spectrum of users' needs, going beyond sanitation facilities use, or perhaps even beyond WASH needs.

It can be argued that this is where the distinction between user-centred design and human-centred design lies: in the difference between a focus on a product or service usability and a focus on responding to users'

needs more holistically, more broadly, by improving the complex systems in which all human beings inhabit and with which they interact (R. Mays, expert interview, March 2018; C. Hestbaek, expert interview, August 2018). But, as discussed above, the processes and principles that underpin user- and human-centred design are largely the same. The bigger question is how to set the scope for adaptations in humanitarian action and determine what is 'in' and what is 'out' of potential scope in terms of the problems addressed as well as solutions considered.

As organisations attempt to understand how user-centred design can best support adaptiveness in humanitarian programme design, what needs to be examined in the first instance is the definition and boundaries of programme design itself. Does programme design start when the field teams get the funding and the green light to proceed with designing programmes on the ground? Or does it begin in donor offices and organisational headquarters when annual budgets, priorities and plans are being drawn up for the year ahead? If it is the former, addressing some of the operational and organisational constraints discussed in this paper and refining available UCD tools can help humanitarian actors to apply UCD in their operations, improve accountability practices and even practise adaptiveness – but within the constraints of the current humanitarian system. If it is the latter, then the focus has to shift from creating user-centred products and services to exploring and creating a human-centred humanitarian system. Neither path is inherently wrong; both require a closer examination of institutional objectives and goals on the part of humanitarian actors.

7. Conclusion: Applying UCD to Improve Adaptiveness in Humanitarian Operations

Overall, this study's finds that UCD can support adaptive humanitarian action, but that further applications of UCD –particularly as a method to support changes in humanitarian programming – should bear in mind the following considerations:

UCD supports a specific type of adaptation: adaptation in programme design and early stages of intervention. Making repeated changes over the course of a programme cycle can be costly – while agencies should be open to making changes that are vital to be effective and relevant, they might also benefit from methods that reduce the need for necessary changes. UCD offers potential efficiency gains by building adaptiveness into the early stages of a project. It is less relevant as a method for continuous improvement throughout the course of a programme, but may reduce the need for such improvements by using prototyping and intensified consultation early on.

UCD can support improvements to humanitarian programmes, but requires significant support to work well. Overall, while staff felt positive about the method and while there is some evidence that communities also benefited from the use of UCD, in order to work well, UCD needs a range of organisational changes to support it. Importantly, the value of UCD appears to hinge strongly on its ability to support adaptations in response to community requests: where UCD was seen to have positive effects, this was due to the changes it facilitated. Where things did not work well, it appeared to be due to requests for changes and adaptations identified through the method that could not be acted upon, either owing to organisational mandate or to agency problems with procurement or the funding needed to make the changes.

UCD does not need to be highly structured in order to be beneficial. UCD was expected to contribute to adaptation by offering a structured process for receiving and acting on inputs from aid recipients. Yet, surprisingly, the experience of QRC demonstrates that positive results can be achieved through more informal and less structured application of the UCD principles. This is promising, as it suggests that greater adaptiveness can be achieved even without a formal partnership with a design firm to support the application of UCD.

UCD appears to depart from current community engagement approaches by frontloading aid-recipient consultation into the design phase and using prototyping. The main advantage of UCD is its focus on building consultation into the design phase of a programme cycle and creating more tangible feedback loops through the use of prototyping. That said, none of the groups observed seemed to make full use of the potential for multiple-stage prototyping that UCD offers.

UCD faces many similar challenges to general participation and consultation approaches in the sector. Many of the challenges in implementing UCD are commonly known in the sector as challenges to participation and consultation of aid recipients. These challenges are often ignored, and include: a) who retains decision-making power when communities ask for services or items that are beyond an individual agency's scope, budget or technical expertise; b) how to reconcile competing or contradictory preferences among community members; and c) the time and availability of 'users'/community members who are highly vulnerable and trying to survive and recover from a crisis (Donini and Brown 2014). UCD does not necessarily provide better solutions to these problems than current participatory approaches, although it distinguishes itself by addressing the issue of participation in programme design, an area that has also been challenging for humanitarian agencies (ibid.).

7.1 Which contexts is user-centred design suitable for?

As the HIF WASH Innovation Challenge projects illustrated, UCD can be applied both in acute and protracted emergency setting. However, each context comes with its unique constraints that will define the kind of programming adaptations that user-centred design can facilitate.

In Lebanon and Iraq, where the refugee camps have been established for a number of years at the time of the UCD pilots, humanitarian actors found it more difficult to make more extensive changes to latrine design, such as changes to the superstructure or latrine location (KII20, KII16). In projects in Uganda and Bangladesh, on the other hand, the implementing partners had significantly more freedom to design solutions, as the latrines were being constructed from scratch to replace emergency communal latrines in Uganda and emergency latrines in Bangladesh.

> When you create something from scratch, you have no limitations of how, where, what to do, but whenever it exists you need to deal with what exists, you know? The slabs, they already exist. If it didn't exit, it would be much easier just to elevate it a bit, set the slab latrine and just put the concrete, create the wall and that's it. Whenever it exits any modifications would cause harm or break for the existing slabs. (KII16)

On the other hand, in protracted contexts the relationship between the humanitarian staff and the affected communities is better developed than in acute emergency responses, which may lead to easier implementation of certain components of UCD methodologies, such as the co-creation sessions, and easier communication between members of the field team and between the field team and the design partners (KII20). This can be useful for adapting longer-term programmes or cyclical programmes run by humanitarian agencies in protracted settings. These positive aspects are reinforced if some of the field staff are recruited from the relevant communities (KII20, Eclipse Experience and Save the Children UK, 2018, KII22).

The pilots did not provide sufficient evidence on the suitability of UCD for supporting adaptive programming in the first stage of a rapid-onset emergency. The team that came the closest to testing this were SCUK and Eclipse Experience, who designed the pilots in Iraq and Bangladesh to be implemented within 12 weeks, a timeframe that resembles the duration of the first stage of an emergency response. Aside from duration, this stage of emergency is characterised by a concerted focus on providing life-saving aid quickly and at scale, as well as by rapid staff turnover and heightened vulnerability of crisis-affected people. While adaptive capacities are necessary in this stage, these capacities need to be centred more around the movement of goods and people rather than the design of interventions. While UCD is an important tool for adaptive approaches to humanitarian action, it is only one of many, and needs to be deployed in situations where changes to response design are feasible and do not negatively affect urgent life-saving action.

7.2 How can humanitarian actors begin using UCD to support adaptive capabilities?

Adaptiveness in humanitarian action will require a shift in organisational and systemic practices as well as in mindset of humanitarian actors to reach its full potential. User-centred design is a tool that can be used by humanitarian organisations to stimulate adaptiveness within their programmes. It was found to be useful in supporting staff to include community perspectives in the design of latrines, identifying changes to design that would not otherwise be likely be identified, and which were seen as contributing positively to aid recipients' use and experience of latrines. In this, it helped humanitarian organisations to provide sanitation facilities that were in line with the Sphere standards and the Common Humanitarian Standard. However, the successful use of UCD hinges on a number of supporting factors being in place, without which UCD can potentially lead to negative effects, particularly through raising expectations for changes that are not realised.

But user-centred design is only one piece of the puzzle. As this case study illustrates, even an approach such as UCD, which is iterative and adaptive by nature, faces significant constraints in facilitating adaptations when it comes in contact with the rigid structures of the humanitarian system.

It is therefore important that in considering how to UCD to their own programmes, humanitarian actors explore how this approach would be situated in relation to the barriers and enablers to adaptiveness within their own organisations and operating environments. This research identified some of these barriers, including insufficient funding to implement the design decisions informed by UCD, onerous and rigid procurement processes, security protocols that limit exposure and access of humanitarian staff (particularly at more senior levels) to crisis-affected people, fragmentation of responsibilities between humanitarian actors, power structures and standardised responses. The case study also highlighted some of the enabling factors, such as leadership buy-in and adaptive capabilities among staff, including open-mindedness and creating problem-solving skills.

Humanitarian organisations looking to adopt more adaptive ways of working and improve their adaptive capabilities may be interested in trying out UCD in their operations, but it can often be difficult to decide where to begin. While larger, systemic changes are necessary for humanitarian responses to become more adaptive as a whole, there are steps that humanitarian staff at all levels can try now if they want to apply UCD in their work.

If you are a senior member of staff, you are best placed to effect change from the top and address some of the organisational barriers discussed in this paper. Here's where you can start:

- Write user-centred design into your next programme proposal
  - » Allocating such resources as time and funding to a user-centred design process is essential to enable the kind of community engagement and iteration that UCD requires to inform programme design decisions. Include rapid prototyping and iteration stages into the proposed programme and write the budget accordingly – 5% contingency is a good place to start.
- Review your organisation's employment and procurement processes
  - » Are you employing the right staff? Can you procure small quantities of disparate goods to support prototyping? Consider how current hiring and procurement processes support and impede UCD and decide on an action plan to mitigate the potential barriers to adaptation these processes pose.
- Include user-centred design training as part of your staff's professional development
  - » If your organisation has an innovation unit, they may already run courses in UCD or one of its sister approaches to interested staff. Third-party courses are also easily accessible online, including this free hands-on training in human-centred design from Acumen+ and IDEO.
- Further suggestions for senior humanitarian staff can be found in the forthcoming reflections piece that will be published in 2019 by the HIF based on lessons from the WASH Innovation Challenge.

If you hold a middle-management role in a humanitarian organisation, you can champion UCD in your workplace by advocating for it with senior decision-makers, while empowering your staff to work in more adaptive, user-centred ways.

- Review your team's community-engagement capacity
  - » How does your team engage with crisis-affected communities in programme design? Can your standard feedback-collection tools such as the needs assessment survey be adapted to include one or two open-ended questions designed to prompt users' own reflections of what they struggle with the most in relation to a particular service? To start working in a user-centred way, you don't need to overhaul the entire programme design methodology. Starting small – by adding a qualitative question or two that are easy to incorporate into existing surveys – will help your team develop a habit of listening to users' voices and develop a deeper understanding of their lived experiences.

  - » For examples of qualitative research tools available for you to use in a UCD process, see the UCD Toolkit or the project resources that Save the Children and Eclipse Experience have made available to the public.
- Understand how to optimise your team's decision-making process to support rapid adaptation
  - » Do your staff come to you to approve every programme decision, or do they have the autonomy and authority to make incremental changes to the project plan within specified boundaries? A simple process-mapping exercises can help you identify bottlenecks in the current programme design and implementation processes that hinder adaptive capabilities of your team. Here you can find a concise guide to both basic and more complex process-mapping exercises.

Even the most junior staff can incorporate some user-centred design tools and principles into their work. Here are a few ways to start:

- Explore different tools and approaches that you can incorporate in your day-to-day work
  - » IDEO Design Kit is a good place to start, as it is full of practical tools and methods that can be applied at every stage of the UCD process.
- Run a small prototype test for an interesting idea
  - » The greatest value of prototyping is that it enables you to test ideas without investing too much time or money. If you have an idea of how to solve a particular need expressed by someone you know in the crisis-affected community, sketch it out, construct it from a piece of paper or use an existing product or service component as a prototype to understand how that person feels about it and what they would like to see changed. Such low-fidelity, 'quick and dirty' prototypes are also great ways to start a conversation that can help you better understand a particular need or experience.
- Pitch an idea for a UCD pilot to your manager
  - » User-centred design processes can run in parallel with existing programmes and are best demonstrated and understood through learning by doing. See if there is space to include a small UCD pilot as part of an upcoming project that your organisation is planning.

Endnotes

1 In Bangladesh, the survey questions then had to be interpreted into Chittagonian dialect, which is the closest to the Rohingya language.

2 The 5 Whys is an exercise that aims to determine the root cause of a given problem. A 'Why' question is asked, to which a respondent provides an answer, which is then followed up with four more question-and-answer exchanges. The H-assessment is an exercise that helps participants to evaluate ideas for possible solutions. In an H-form matrix, participants are asked to write down weaknesses of a given idea on the left-hand side, strengths on the right-hand side, and the idea itself and suggestions for improvement in the middle section. These are then discussed in a group setting.

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