Women in Barak, Ethiopia, share their experiences of a cash-for-work project as answers are collected using a mobile phone, March 2017. Photo: Oxfam

# ICTS IN HUMANITARIAN RESPONSE

## A learning review of a three-year, five-country programme

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**The Scaling Humanitarian ICTs Network (SHINE) funded by Sida, set out with the theory of change that the quality and efficiency of humanitarian aid can be improved in a variety of contexts through the adoption of Information Communications Technologies (ICTs). With applications in Ethiopia, DRC, Mali, Indonesia and Iraq, ICTs were introduced to enable digital registrations, mobile data collection, cash/voucher programming and systems for accountability. While ICTs hold promise for saving time, money and improving accuracy, this learning report sets out to unpack these benefits and identify the conditions that need to be in place in order for ICTs to significantly add value to humanitarian response.**

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# GLOSSARY

**Cash-for-work** is a short-term intervention used by humanitarian organizations to provide temporary employment in public projects

**Database management** involves monitoring, storing, cleaning and backing-up data to ensure data-driven applications perform optimally and risks are mitigated

**Digital beneficiary registration** involves capturing details of individuals via mobile devices for enrolment into Oxfam's programmes

**Hardware** refers to the physical components that constitute a computer system, which in this context means mobile or tablet devices, laptop computers or card printers

**Information communications technology** refers to any product that will store, retrieve, manipulate, transmit or receive information, such as personal computers, television, radio, email and mobile phones

**Interactive Voice Response** is a technology that allows a computer to interact with humans through the use of voice

**Mobile data collection** involves digitizing processes of gathering information using mobile phones or tablets instead of pen and paper

**Qualitative data** are typically descriptive data that is harder to measure. It is usually collected through open-ended questions asked during an interview or focus group discussion.

**Quantitative data** are easily measurable, e.g. when surveys have pre-defined answers in multiple choice or exclusive choice question format

**Responsible data** concerns the ethical, security and privacy challenges around data collection, management, analysis and disposal

**Skip logic** involves skipping between questions based on certain answers

**Specific tools mentioned**

**KoBoToolbox –** A suite of free and open-source tools supported by the Harvard Humanitarian Initiative for field data collection based on ODK Collect. It is unique to ODK because it is capable of itemsets/cascading selections in the KoBoForm Builder. http://www.kobotoolbox.org/

**LMMS –** Developed by World Vision International, Last Mile Mobile Solutions combines software applications with custom hardware to digitize (and simplify) beneficiary registration, verification, distribution planning and management, monitoring and reporting. Oxfam was involved in early testing and LMMS is an approved tool recommended by Oxfam's central Business Information and Technology board. http://www.wvi.org/disaster-management/last-mile-mobile-solution-lmms

**Meraki –** Developed by Cisco, Meraki mobile device management can support enforcement of device security policies, allowing for deployment software and apps, and remote, live troubleshooting. It is recommended for application on each mobile device by Oxfam's Information Services Department. https://meraki.cisco.com/

**Mobenzi –** One of Oxfam ICT in Programme team's recommended mobile data collection tools, Mobenzi has a pay-by-use credit costing model and is popular for ease of use and in-app analytics. https://www.mobenzi.com/

**Open Data Kit (ODK) –** A free and open-source set of tools that help organizations author, field, and manage mobile data collection solutions. https://opendatakit.org/

**RedRose One Solution –** a programme management system that enables delivery of paper and electronic vouchers as well as cash transfers. https://www.redrosecps.com/

**SurveyCTO –** based on ODK, a product of Dobility and the second of Oxfam ICT in Programme's recommended mobile data collection tools, SurveyCTO allows you to design forms, collect data and monitor for quality. The costing model is based on monthly charge for a server and is popular for ease of use and data handling. http://www.surveycto.com/index.html

# LIST OF ABBREVIATIONS

| | |
|---|---|
| DFID | Department for International Development |
| DRC | Democratic Republic of Congo |
| ECHO | European Civil Protection and Humanitarian Aid Operations |
| EFSVL | Emergency Food Security and Vulnerable Livelihoods |
| GPS | Global Positioning System |
| HPA | Humanitarian Partnership Agreement |
| ICT(s) | Information communication technology |
| ITO | Information and technology officer |
| INGO | International Non-Government Organization |
| IS | Information Services – Oxfam's internal information technology department |
| KAP | Knowledge Attitudes Practices – a quantitative method involving predefined questions formatted in standardized questionnaires |
| LORA | LMMS Offline Registration Application |
| LMMS | Last Mile Mobile Solutions |
| MEAL | Monitoring, evaluation, accountability and learning |
| NFI | Non-food items |
| ODK | Open Data Kit |
| PDM | Post-distribution monitoring |
| SHINE | Scaling Humanitarian ICTs Network |
| SIDA | Swedish International Cooperation Development Agency |
| WASH | Water, sanitation and hygiene |
| WFP | World Food Programme |

# EXECUTIVE SUMMARY

Information Communications Technologies hold much promise for the delivery of humanitarian programmes. This learning report is based on a three-year programme – the Scaling Humanitarian ICTs Network (SHINE) – which introduced appropriate tools, such as mobile data collection, digital registrations and electronic voucher systems, in five countries representing varied contexts and humanitarian situations. SHINE set out to uncover the contribution ICTs can make to quality and efficiency of programming, exploring the conditions and operational environment that allow for the successful introduction of ICTs.

A critical line of inquiry within this learning review was to uncover the value in a centrally designed programme with accompanying support and resources to unlock learning across multiple contexts. It has uncovered the need to build a picture of general good practice principles while being mindful of appropriate design in the face of contextual nuances; the need to be driven by programme objectives viewing ICTs in their enabling role; and the importance of human processes as well as technical ones. The enthusiasm and energy of staff to take on ICTs is crucial to success where an effective team set-up involved programme and technical support from IS and/or MEAL. Coordination between Oxfam, partners and other agencies is a critical challenge moving forward, and there are important questions to ask about selection and interoperability of different tools, data and approaches to enable more joined-up ways of working. While the learning review revealed that for the most part tools were relevant to the context and the community perceived the technology positively, there were instances when it was important to recognize it might *not* be appropriate to introduce ICTs. An area for development is around how ICTs can enhance analysis of data to ensure that Oxfam can use insights effectively, harnessing the real-time opportunities presented by digitization.

Oxfam is increasingly considering ICTs as a fundamental component of humanitarian response in this Information Age. This review makes recommendations for the next steps and for sustainability in how Oxfam and other humanitarian actors can adopt good practice in the application of digital tools, while at the same time maintaining the important role that ongoing learning plays in reflecting and iterating to maximize the value on offer from ICTs.

# 1 INTRODUCTION

The Scaling Humanitarian ICTs Network (SHINE) is a multi-country, three-year programme dedicated to scaling the use of information communications technologies to improve the quality and efficiency of humanitarian programmes through the project cycle. It began in June 2014 when Ethiopia was the first focal country to participate, with the Democratic Republic of Congo and Mali joining in April 2015. Iraq and Indonesia joined the programme in April 2016. The project closed in March 2017, although now hardware is in place and staff have been trained, many activities are set to continue as an ongoing feature of humanitarian programming.

While the rapidly developing digital landscape holds much promise for humanitarian actors, pathways to digitize are not straightforward. The proliferation of tools developed by private sector actors and by NGOs themselves has resulted in models with different pros and cons, making it difficult to choose the most appropriate solutions. Not least, the fact that technology itself is only a small part of the equation as the success of application is dependent on quality programming, team make-up, human processes and the operational environment. It has been uncommon for donors to fund initiatives to dedicate space and resources to learning about what makes theories about technology become reality in practice. This fund has demonstrated, through a wide breadth of contexts, geographies and humanitarian responses, how ICTs can support certain processes, including areas where it is appropriate to innovate or try new things, and areas where enough knowledge and experience makes it conducive to streamline tools and approaches. SHINE was purposefully designed to test support systems with a view to sustainable longer term use and to shape models for future adoption of ICTs in humanitarian contexts.

# 2 INTERVENTION AND CONTEXT

The SHINE programme set out to improve the quality and efficiency of humanitarian delivery in five countries through the adoption of ICTs. It was designed to embed ICTs with existing activities rather than generating standalone projects, and covered ongoing humanitarian response as well as preparedness and resilience building. The five outcomes as outlined in the original logic model are:

*Outcome 1*: Needs assessments are more timely, accurate and efficiently administered through mobile data collection tools

*Outcome 2*: Beneficiaries are more effectively registered and delivered essential services through mobile technology

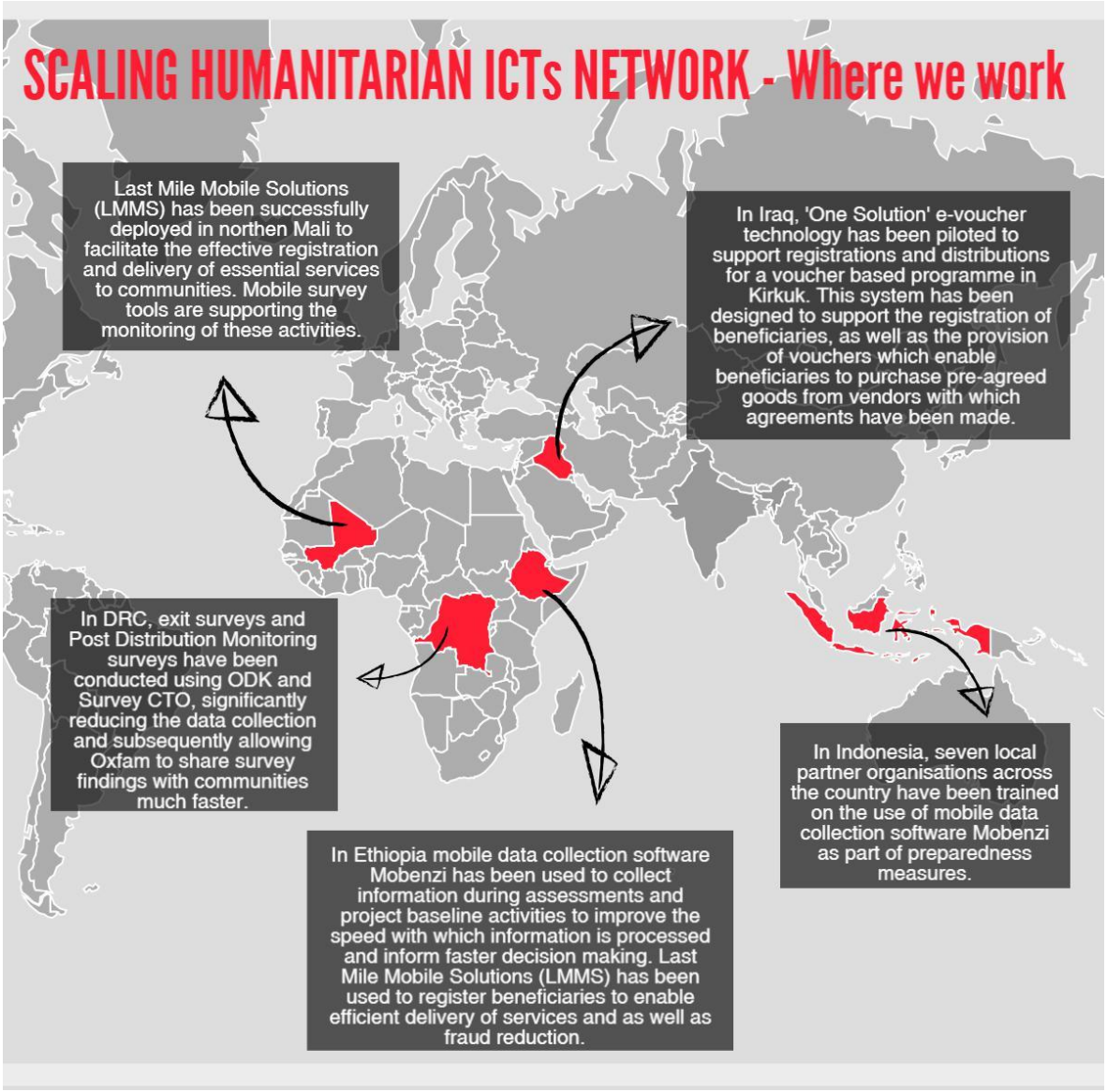
*Outcome 3*: Monitoring of humanitarian activities is more effective, efficient and transparent through use of mobile data collection, promoting greater accountability

*Outcome 4*: Beneficiary accountability mechanisms are more effective and efficient through the use of information communications technologies

*Outcome 5*: Increased awareness by peer agencies, the humanitarian sector and donors about successful approaches to increase quality and effectiveness through ICTs.


The five countries were selected after the design of the logic model and throughout the development of the programme on the basis of certain criteria to ensure that a variety of geographies and contexts were represented.[1] A summary of activities can be found in Figure 1.

**Figure 1: Map of SHINE activities**




Source : http://policy-practice.oxfam.org.uk/our-work/humanitarian/shine

Oxfam has a central ICT in Programme team that recommends tools, application design and supports the uptake of ICTs, dependent on the context. The approach has been driven by principles of responsible data, being user-driven and utilizing tools that already exist, recognizing the need for user-friendly and offline solutions.

Mobile data capture is by far the most advanced area, representing 44 percent of ICT usage types at Oxfam GB in financial year 2015/16.[2] This approach involves translating paper and pen surveys into a digital format where a survey is designed on a computer and sent to mobile phones or tablets, where enumerators conduct face-to-face interviews and use digital tools containing drop-down lists, radio buttons and open-text boxes to complete answers to questions. Most often these can be collected offline and uploaded to the central server when connectivity is restored. After a period of testing multiple tools on the market and a rigorous selection process, in July 2016 Oxfam released a mobile survey toolkit,[3] which lays out design considerations and Oxfam's two centrally approved tools: Mobenzi and SurveyCTO. Selection criteria included being a robust tool with a reactive official support channel, which ruled out the free open-source tools available. This is in line with Oxfam's commitment to value for money and ease of set-up, where often the costs involved in adopting free tools scale very quickly because they need more training or technical expertise. Other criteria included survey design,

reporting and analytics, language capability, data security standards, and cost. Full benefits can be found in the Mobile Survey Toolkit, in Table 2. The toolkit should be interpreted as a recommendation of good practice in tools and methodology; however is not prescriptive for Oxfam activities. Some SHINE country teams did introduce and use alternatives. DRC started using ODK, an example of a free open-source tool, but later switched to SurveyCTO. Mali continues to use Kobo, motivated by the free business model. However, it must be noted that the involvement of the ITO has been required to overcome the technical issues country teams often face in set-up, a significant contributing factor for its exclusion from standardized tools.

Beyond this, other digital tools have been customized for more specialized tasks, especially connected to digital registrations and electronic vouchers/cash transfers. Oxfam first started using World Vision's Last Mile Mobile Solutions (LMMS) to capture household information and manage distributions of NFIs in 2013, with pilots in the Philippines and Niger. It has since been approved by Oxfam's Business Information and Technology board and applied in at least 12 countries. Two new key features of the system developed from requirements that were raised by Oxfam teams. One was LORA (LMMS Offline Registration App), developed because Oxfam identified the need for offline data capture; the other was a move to Android operating system, allowing us to use more commonly available hardware rather than procuring specialist devices. LMMS has a relatively specialist application and is intentionally rigid in data fields that are used to ensure consistency in data captured.

The increasing uptake of cash transfer programming in humanitarian contexts has further changed the landscape for some of the specialist functionalities required. The huge growth of mobile money (payment services, which are operated under financial regulation and performed from or via a mobile device) offers great potential for humanitarian response, and these were considered alongside other digital financial provider offerings, such as bankcards, as options in some SHINE countries, but not deemed to be suitable because of connectivity, cost, liquidity and trust in the contexts. As part of SHINE, Oxfam launched the piloting of RedRose for the first time, which is a programme management system that enables delivery of paper and electronic vouchers, as well as cash transfers.

Information itself is also being increasingly viewed as part of our humanitarian delivery, with one example in SHINE being the introduction of an interactive voice response system called 3-2-1, where anyone can dial-in and navigate a list of options using their phone keypad and listen to pre-recorded messages. Other communications tools considered as part of SHINE linked to accountability and team coordination, but there have been no attempts to streamline these sorts of tools because of strong dependence on mobile operators, connectivity and ultimately access for the audience.

# 3 METHODOLOGY

## 3.1 METHODOLOGY

### 3.1.1 Objectives

- Reflect on learning connected to SHINE outcomes, sharing practical experiences and lessons learned.
- Consider the extent to which the SHINE theory of change has been borne out through country experiences, especially the extent to which ICTs have added value to activities across the humanitarian project cycle in a range of countries and contexts.
- Unpack the contributing factors to successful (and challenging) deployments of ICTs and make recommendations about applicability and sustainability, including addressing issues relating to longer term organizational change.
- Present recommendations for good practice to inform and improve quality of future ICT-enabled programme design, structure and resourcing for Oxfam and other humanitarian actors.

### 3.1.2 Questions

The questions set out in the original terms of reference for this learning review are outlined below. The title areas have been adapted from OECD DAC criteria.[4]

**Effectiveness**

1. What are the main factors that have blocked SHINE or enabled it to achieve its objectives?
2. What did Oxfam do, or what should it have done, to support country teams to spot and capitalize on critical junctures in time during the programme?
3. How were decisions taken about programme design, and how did this contribute to effectiveness, efficiency and achievements of SHINE in the countries involved?

**Relevance**

4. Did the SHINE project take gender and the empowerment of women into account? How was this done?
5. Was the SHINE design and subsequent implementation approach relevant to the context in the individual country?

**Efficiency**

6. To what degree were the resources of the programme adequately planned for and used in-country?
7. What was the added value (or cost) for the countries involved in terms of the related funds and the management/coordination of the programme?

**Sustainability**

8. To what extent has SHINE successfully contributed to shared learning in Oxfam and beyond about the use of ICTs to improve the quality and efficiency of aid across the humanitarian project cycle? What were the most successful models to bring about long-term sustainable change through the integration of ICTs?

9. What conditions and choices are there for exiting, scaling up, handover, or other types of transitions for the use of ICTs in humanitarian programmes in the individual country?

### 3.1.3 Data collection and analysis

This document is designed to be a learning report focused on pulling out key lessons and good practice for the introduction of ICTs in humanitarian contexts, based on experiences in the SHINE project. It is not an evaluation. The methodology began with a literature review; including the internal interim evaluation, monitoring reports, notes from country learning events and write-ups of focus group discussions.

Primary data were collected in March 2017 via in-depth interviews with key project stakeholders, including global coordinators and county focal points, from a variety of roles including humanitarian leads, MEAL, IS, and project managers. It also included discussions with the lead evaluator on the interim internal evaluation and Oxfam's focal point for the Sida HPA. The majority of these were in person, with some discussions held remotely over Skype. A field visit to Dire Dawe was conducted on 16–17 March 2017, where focus group discussions were led by the author with enumerators actively using mobile phones to collect data in a cash-for-work project and two groups of women involved in the project in the *kebeles* (villages) of Barak and Jedan. Two male groups in the same locations were facilitated and written up by the Ethiopia SHINE focal point.

A learning event with representation from all five countries was held in Addis Ababa on 20–21 March 2017, where each country presented key learning and discussed priority take-away lessons, including team set-up, selection tools and experiences with SHINE. A list of contributors can be found in Appendix 1.

## 3.2 LIMITATIONS

Dedicated learning events were held with relevant staff and partners in all SHINE countries and there was also a series of focus group conversations held with community members. However, the author was only able to visit one location, so had more exposure to local programme staff in Ethiopia than in any other SHINE country. Furthermore, the focus on interviewing people involved with SHINE may result in a limited view of how the programme is perceived more broadly in country teams.

This report should not be considered an evaluation because of the limited time available and the proximity of the author to the delivery of the project. As lead of the ICT in-programme team, the author was involved in writing the initial proposal and had close links to management of the project through its application. The impact of ICTs is hard to measure, since the tools and approaches are only ever enablers to quality programming and it is reliant on many interdependent factors. Any conclusions in this regard would need a robust evaluation methodology. There is, therefore, no attempt to comment on the impact of SHINE, but a focus instead on an analysis of the subjective options of those involved in the programme activities.

# 4 FINDINGS AND ANALYSIS

## 4.1 EFFECTIVENESS

### 4.1.1 Value-added of ICTs

As evidenced in multiple SHINE learning opportunities throughout the programme and the interim evaluation, it is important to stress that ICTs are never a replacement for good-quality programming. Right from the design stage of any programme, the alignment to quality programmes and human processes must be emphasized to allow exploration of the enabling role of ICTs. In the humanitarian space, ICTs have proven to add value; yet all too often statements about time and efficiency savings are claimed without being evidenced. The role of ICTs in SHINE will be unpacked in terms of both advantages and enablers (this section) and challenges and barriers (Section 4.1.2).

The most significant progress has been towards the achievement of outcomes 1 (assessments) and 3 (monitoring). Both outcomes have parallels in approaches to using mobile data collection, so have often been linked in SHINE reporting and reflections on learning. Mobile surveys have been the most popular and most successfully administered approach across SHINE activities. This is not surprising given it is an area of relative maturity for Oxfam, which has been piloting and testing for a number of years and streamlined an approach outlined within the Mobile Survey Toolkit,[5] which includes two recommended tools: Mobenzi and SurveyCTO. In SHINE activities, these two recommended tools represent the majority of tools selected for data collection, but there have also been some applications of KoBoToolbox and ODK. Mobile data collection has been the most popular and successfully deployed approach; with one participant suggesting that it was so in demand, ‘it’s like realizing how hungry you are when you start eating’.

**Time and cost saving**

The most common reported benefit of ICTs is time saving. Starting with collection itself, Indonesia timed the response of WASH interviews with key informants as taking 45–50 minutes on paper and 20–25 minutes using Mobenzi on mobile phones, based on the same survey. Critically, this allowed enumerators to conduct more interviews with more people and reallocate resources to support the response. SHINE focal points reported how mobile data capture eliminates the need for data input with automatic and real-time data accuracy checks. The MEAL coordinator in Iraq suggested data quality audits would previously take a week and coding of answers a further 3–4 days, but logging in Mobenzi allows automatic coding, flags being immediate raised with any data inconsistencies, and corrections coming immediately into effect. From start to finish, a PDM survey in Iraq took one week instead of three, allowing findings to be acted on a lot more quickly. The inability to skip required fields and the ability to restrict parameters for data entry has also been listed as a benefit compared with previous submissions of incomplete paper surveys. From the discussion with three enumerators in Dire Dawe, Ethiopia, they found the phones much more user-friendly than paper, as the process was simpler, down to the ease of entry and skip logic (author’s own wording).

Across the board there was agreement that although start-up costs of ICTs were a challenge because procuring hardware and software licences can be high, cost savings were experienced in the longer term. This is primarily linked to time saved and to cutting out data input phases. Cost savings were felt most especially when there were repeat uses of hardware – one participant commented on procurement of phones: ‘Once you buy you don’t need to keep buying.’

**Using data to inform response**

Most SHINE countries have introduced some form of registration/delivery of aid (outcome 2), and use of tools to register people has allowed Oxfam to authenticate people's identity and proactively reduce fraud risk. This has primarily been through World Vision's LMMS for management of NFI distributions or cash-for-work activities. After year 2, this expanded through the introduction of RedRose for electronic vouchers and reconciliation of payments to merchants/vendors in DRC and Iraq. In the RedRose System used in Iraq, 945 families were targeted for food and cash voucher support, and received a smart card they could use to procure food items from traders. This made it possible for Oxfam to immediately monitor demand for certain items bought using the smart cards and make preparations or project alterations according to demand. Under this outcome related to delivery, DRC has also started exploring an interactive voice response service called 3-2-1[6] which offers communities access to protection-related information in low-literacy contexts. This not only has the benefit of asynchronously allowing people to dial in at their own time, but metrics around how menus are navigated offer insights into priorities and audio can mitigate literacy barriers, making it more inclusive.

Some SHINE countries reported faster decision making; for example, based on vulnerability criteria collected following capture of social, economic and demographic data, especially when managers engaged with data collected in the system. For instance, during a needs assessment in Ethiopia, a trend in the data showed the community would prefer Oxfam not to build smaller hand-dug wells, but rather make one larger well. Having access to this data before activities commenced meant the approach was altered accordingly. In another situation, survey responses uncovered a practice of selling water that was freely available, alerting the WASH team who could immediately put up posters to raise awareness that water was free and put a stop to corrupt practice. In Ethiopia, the team also uses GPS location and time measurements about survey duration (built into the survey functionality) to ensure enumerators are accountable. ICTs have also proven to enable interagency working where Oxfam in Ethiopia is responsible for hygiene practices in two out of four zones; the team was able to transparently share data with other agencies to demonstrate progress.

**Security**

Given the fragile contexts in some of the SHINE countries, ICTs were cited as having contributed to improved security. In DRC, voucher reconciliation and payment of traders can be a tense process because of perceived miscalculations in the validation of paper vouchers, which can easily be misplaced and take a few days to manually count. Strong electronic records enhanced by RedRose ensured there was a limited margin of error or doubt, and involving finance teams meant payments to traders could be processed on the same day. In Iraq, women previously relied on their husbands to do the shopping because the risk of petty theft in markets left them nervous about carrying hard cash. In focus group discussions, women reported that smart cards allowed them to be more involved in market activities and to travel without fear of theft.

**Accountability**

The design of outcome 4 originally conceived of ICT tools enabling people to use readily available technology 'to contribute their feedback on Oxfam programming and also allow them to ask questions or seek further advice, which can be supported remotely',[7] which would underpin Oxfam's key commitments to accountability. In the design phase, this was one of the more underexplored applications of ICTs and the design was based on multiple assumptions about access and use of technology.

The interim evaluation suggested that regarding outcome 4, often 'SMS comes into people's minds.' There have been some attempts to introduce a feedback mechanism using text messages in Ethiopia, but this was problematic as although there seems to be wide penetration

of mobile phones, barriers of basic phone connectivity and the literacy of affected communities meant it was not put into action. Indonesia has been using WhatsApp (an Internet messaging application); but this is more for team coordination, whereas community feedback is being recorded through a more proactive face-to-face process. The review revealed that the previous assumptions were disproved and successful uses of technology for accountability requires a more creative response to field needs.

For example, the Iraq team introduced a hotline in Kirkuk for any feedback or problems in using RedRose, but this relied on unstructured verbal communication and a more intensive handling of calls. Mali set up a complaints mechanism using phones working with existing village local authorities who act as an intermediary. Most recently, Iraq has adopted a model first introduced in Jordan, with support from the Humanitarian Innovation Fund,[8] which places more emphasis on capturing face-to-face feedback enabled by ICTs – a model that will be further explored and appears to maintain more relevance in the way communities prefer to offer feedback. Some countries also had different interpretations of accountability; for example, Ethiopia listed accountability within the context of fair and up-to-date records in LMMS.

## 4.1.2 Challenges and the 'double burden'

Introducing ICTs has not been straightforward in all contexts throughout SHINE, and there have been some teething problems, especially in set-up investment and training. The majority of the time, these are not problems with technology itself, but rather the selection of the right technology for the problem or the need to focus on the detail in human processes, e.g. how staff handle data as it is referred across multiple teams.

**One-size-fits-all?**

There have been some instances of mismatch between needs in reality and the tool selected, which is often down to misunderstandings in tool functionality at the design phase or changing priorities or scale over time. In applications of LMMS, for example, some staff suggested limitations due to the rigidity in required fields that need to be submitted. This rigidity is actually an intentional feature to ensure that consistent registration data are captured; so the challenge is not a technical one, rather an example where the appropriate tool may not have been selected in the first place to meet the programme needs. LMMS was initially developed for distribution of items (rather than cash) and is more suited to repeat distributions in slower onset humanitarian response. with staff suggesting: 'For a long-term intervention LMMS is very useful, but for one-off we can't justify time and costs.' There are some contexts (one-off or large-scale over approximately 30,000 people) where a more flexible registration process may be required.

Like LMMS, RedRose can be designed to be intentionally rigid but this also posed some challenges. RedRose allows you to restrict items which can be exchanged but shampoo was not originally an item made available, resulting in some card holders bartering to exchange two soap tokens for shampoo. This was not an issue with the technology, but rather an oversight of products included in the list. This was only picked up in focus groups and it would be useful to secure a feedback channel to ensure Oxfam is providing items needed by the community.

A key learning here is that there is often expectation that there is one single tool for multiple applications and contexts, whereas the focus needs to shift to considering a set of specialized functions which can be matched to the context of the need. With realization of the growing number of discrete tasks and contexts, more work is needed on the integration of different tools and data sets so these functionalities and ultimately the data can be pieced together, allowing for an inter-operable and much broader toolkit.

**Connectivity and infrastructure**

There have been problems with internet connectivity, which have posed challenges for data back-up at field offices and in upgrading to new versions of software. SHINE focal points had challenges with offline data capture when using previous versions of LMMS, but the experience with the upgraded LORA version of LMMS is much improved, so now internet connection does not affect data collection, which can be conducted offline. There have been challenges where data from roaming servers have not been merged or backed up to the cloud, leaving a risk of data loss with data sitting on one computer. The reality of Internet reliability presents a question for truly 'agile' testing of software, which is based on assumptions of identifying problems or improvements and responding quickly with upgrades and fixes but depends on good connectivity for version control and troubleshooting.

Poor Internet connectivity can put a halt to programme activities if a programme has been designed with limited alternatives. It can also have unexpected knock-on effects. In Iraq, for example, a remotely located field staff member urgently needed the Internet password to be updated, so an IT staff member had to travel into the field, putting themselves at potential risk – almost negating the potential security benefits ICTs can offer in limited-access contexts.

As well as internet connection, some field offices face infrastructure challenges, such as reliable electricity for servers. In Mali this has been mitigated by the introduction of solar panels, and in other places paper back-ups have been essential to ensure there is an alternative option. There has been a challenge with a manual process involving hand writing names on to vouchers despite existence of electronic lists, which could be simplified with digital data entry – even with a straightforward mail merge. The requirements to procure a special printer and ink cartridges to print the official LMMS cards means some creativity has been required to print paper cards, but ultimately this has not affected the performance of the process. The majority of tools need to work with no internet connection, and country teams have high demand for equipment to be procured on standby until it is required to avoid long waiting times.

**Staffing and cross-functional working**

As with many programmes depending on a wide range of staff being trained in specific toolsets, turnover has been a challenge for SHINE as skills have been lost and training has needed to be repeated. This not only represents a loss of technical skill, but also the knowledge of processes and troubleshooting that ensures technology matches existing process. All countries expressed a need for more frequent refresher training, indicating a lack of confidence among staff and partners.

In some instances, when logistics and finance staff were not involved early in the introduction of ICTs, the digital process has not been accepted internally for financial reconciliation. This has resulted in duplicate systems, with concurrent paper-based audits. This was mitigated in DRC where vouchers were fully managed by finance teams and treated like cash as they used RedRose to conduct financial checks. But it was noted that tools need to be integrated in a 'compliance framework and approvals system'. Reporting can often be exacerbated by different donor requirements, highlighting the need for upfront conversations about minimum standards for audit and finance purposes to meet the wants of different actors. Furthermore, when traders in Iraq using RedRose downgraded the quality of items from the first to the second distribution, this highlighted the need for ongoing physical quality checks carried out by logistics teams. Some locations have recommended logistics should check in and out devices and chargers, which have in the past gone missing and needed to be replaced. When designing a 'dream team' in the learning event, SHINE staff pointed to the need to collaborate across departments, especially developing ways of working alongside logistics and finance. They also recognized the need for database or data management experts, given the quantity of data that needs to be cleaned, stored and intuitively indexed to ensure we make the most of the information we hold.

A particular theme is the need to avoid a perceived ‘double burden’ where ICTs set out to offer a particular benefit, but end up taking more time or requiring a separate system to run in parallel, or costing more than original processes. This points to a need to map out these systems and processes, involving stakeholders early in design phases. A further challenge around the relevance and use of data is explored in Section 4.2.3

### 4.1.3 Value of the network

SHINE was designed to be a network to foster strong ownership and commitment by country focal points and to facilitate learning based on experiences across the five countries. This was in recognition of the fundamental role that enthusiasm and energy on the part of country teams plays in the sustainable design and deployment of ICTs. Global coordinators ensured there were regular opportunities for collaboration and learning.

The January 2016 learning event held in Addis Ababa was particularly pivotal in demonstrating the value of the network. The event brought together 15 Oxfam staff from three countries and a good example of cross-pollination learning was when DRC subsequently learned from Iraq’s experience experimenting with RedRose and took lessons back to introduce the tool in their own context.

SHINE countries have flagged that few programmes bring several countries together for learning in the way that SHINE has, and they have benefited from webinars and opportunities to ask other colleagues for advice and adapt good practice. This has been convened by the central team and has been valuable not only for internal Oxfam knowledge-sharing at critical junctures, but has also delivered in line with SHINE’s outcome 5 as opportunities have been unlocked to learn and share with other agencies. As SHINE officially ends, it would be intuitive to open up the network to other Oxfam humanitarian programmes already actively using ICTs to extend the reach and contributions. Assuming a network of staff using ICTs in humanitarian work maintains relevance and grows beyond the five countries, it will be useful to link up with dedicated learning or knowledge-management support staff to ensure learning is proactively utilized and acted on more holistically across Oxfam and the humanitarian space. Furthermore, the SHINE network is a model which should be considered for replication in other areas, as it has proven to be a supportive space which offers staff experimenting with ICTs an opportunity to develop confidence and not only rely on central advisers, but connect with those who have similar experiences.

### 4.1.4 Team make-up, operational environment and ways of working

A significant learning area has been around the individual staff members at Oxfam nominated to be the SHINE focal points and the operational environment in-country. The set-up of staff to support ICT activities in each SHINE country has involved two contacts, which in some places changed over time because of turnover or changes in priorities. These involve some combination of more traditional ‘support’ roles from IS or MEAL with some ‘programme’ staff more directly involved in delivery as humanitarian coordinators (see Table 2).

Champions who are interested, enthusiastic and willing to take on ICTs, have been crucial to success and this has occurred when focal points or support staff have some pre-existing knowledge in ICTs, but it was not necessary for everyone involved to be full experts. In some contexts, MEAL is an intuitive place for ICT to be managed, as it is a common starting point to enable monitoring activities given the high emphasis on data handling. As focus shifts from data capture and monitoring to delivery, however, there is a need to ensure MEAL staff do not automatically become responsible for ICTs. Where appropriate, ICT should be viewed as a programme delivery mechanism and owned by programme teams. As suggested in the interim evaluation: ‘The most effective programme champions are those with the capacity and authority

to influence wider programme teams to adopt and use technology systemically.' Involvement of ITOs has enabled technical troubleshooting from the outset and demonstrated the importance of involving IS staff from the inception, although it is not possible for them to work in isolation. It is the combination of technical experts from IS or MEAL in collaboration with programme experts that has proven to be the most effective set-up.

**Table 2: Country Focal Points – two per country**

| Country | Focal Point Set-up |
|---|---|
| Ethiopia | MEAL and EFSVL |
| DRC | EFSVL and MEAL |
| Mali | ITO and MEAL (originally EFSVL) |
| Indonesia | Humanitarian Project Manager and ITO |
| Iraq | MEAL and Cash coordinator |

The initial design of SHINE agreed a percentage of time for focal points to cover the capacity required to dedicate to the project. A minimum percentage was always maintained, but many focal points suggested that the ICT coordinator for SHINE activities could be a role in and of itself. Some countries, such as Ethiopia, recognized through SHINE the growing demand for ICT work and proactively hired an ICT officer who was in place for a few months in 2016. In Iraq a programme support team led the roll out of SHINE technologies, but this function was not sustained and in their absence there is concern that MEAL functions will become overwhelmed. The allocated percentage of time for SHINE focal points will no longer be covered as SHINE closes, hinting at an important motivation for not funding a full role. If SHINE had hired a full-time, new coordinator in each country, the coordinators might not have pulled in the combination of different expertise proven to be so valuable and the entire role would likely cease to exist when SHINE ended. One benefit of the design decision to cover a limited percentage of an existing role is that the focal points will now remain in post and continue to share knowledge through their substantive roles.

The dependency of knowledge resting with a few individuals has been flagged as a risk, meaning it is important that multiple staff are confident in the operation of the tools and how they are applied. Moreover, the indications that core humanitarian operations will increasingly rely on ICT, mean that these skills need to take root in a multitude of roles and ways of working. Although humanitarian staff do not all need to be experts in ICT, it is increasingly important for all technical teams to have some basic knowledge and skills in ICTs. Not only do field staff need to feel confident as the use of ICTs grows, but managers need to build capacity and understanding of the value of ICTs to ensure appropriate investments are made.

Buy-in and visibility at the country level has varied between SHINE countries. One way of ensuring high awareness at management level was demonstrated in Iraq, where, despite the budget being held globally, the team formally requested activity sign-off from the Country Director. This helped to open the operational environment with processes such as procurement and facilitated links with other functions. Decisions on programme design were ultimately devolved to country teams and focal points with guidance and support from central ICT advisers. In the most part, this ensured contextually appropriate and effective decision making, given the proximity of focal points to programme realities. At the same time, this set-up factored in efficiency gains as the central team took on the weight of researching tools and carrying out negotiations with tools providers, which was done once instead of five times. The network is made up of highly motivated and enthusiastic focal points, which has proven not only to be an important factor in selecting countries willing to try new approaches, but also ultimately ensuring appropriate applications and wide-ranging learning.

# 4.2 RELEVANCE

## 4.2.1 Community perceptions and engagement of partners

Introducing ICTs often presents benefits for INGOs, but it is crucial to explore the relevance and appropriateness for communities themselves. Given the nature of focus group discussions where the majority of these insights were sourced, many of the insights in this section are somewhat micro-level anecdotes, but they offer unique views into how ICTs have been perceived.

Two powerful examples came out from focus groups, centred on security of transactions and assurance of entitlement. In both instances, it is when community members are holding something tangible, like a card, as opposed to observing an enumerator using some form of ICT. Women in Iraq previously experienced mobility constraints travelling to market when carrying cash for fear of petty theft, so men would do the shopping. Following the introduction of RedRose, women reported feeling safer and more able to travel to market. This not only allowed them to 'shop at their own convenience' with no set distribution point or time, but also 'empowered them with dignity'. In Ethiopia, a focus group discussion uncovered perceived benefits of owning an LMMS card as it connected to an affirmation of entitlement suggesting 'it is a confirmation that we will get our payments'. Furthermore, they suggested the photographs meant that should they lose the card they know it will be returned to them, with some reporting of use of the card for other identity purposes. In most contexts, people reported that phones were commonly available in households and it was recognizable that data were being captured in mobile data collection activities.

Acceptance has not been widespread, however, with some people in Mali raising concerns about security. They were worried that phones used for data collection were tracking their location and expressed discomfort about having their photos taken on religious grounds. Some communities in DRC also did not want their photos taken, and wherever this was the case an alternative registration was offered excluding photos. In some cases, phone cameras were taped over when they were not being used for photography as a pre-emptive measure to reassure people. In Indonesia, some community members referred to phones as 'machines' suggesting that they had not been seen before and felt enumerators were perhaps testing them or playing games with less human interaction. In Mali, KoBoToolbox was trialled for qualitative data capture in focus group discussions, but this proved difficult to keep up with the speed of interactions and was perceived as too impersonal. General good practice suggests mobile capture is not suitable for long discussions for this very purpose. In Indonesia, before the ID card was introduced, some suggested someone could collect items on their behalf, which was more convenient for them, but now the ID card means it is only the individual in the photograph or stored on the database who could collect. While some tools, such as LMMS, offer the functionality to have a 'proxy' attached to an ID card's digital records, the reality of compliance processes means this may be an increasingly important area to consider.

The global learning event in 2017 prompted an important discussion on how people like to be able to physically see what they are entitled to or how many days they have worked in a cash-for-work project, for example. It is important these data are visible to card holders themselves, and not just tracked by scanning the barcode and behind the scenes systems for NGOs. Connected to cash-for-work in Ethiopia, for example, a physical hole-punch was used on the cards to represent hours worked and another idea from elsewhere was colour-coding cards according to different groups to replicate the physical standing in line where people can transparently see how entitlements in the community are organized or the criteria on which the decision is based. In Iraq, a slip of paper was distributed alongside the cards to explain the items people could receive, including oil and sugar, and what the value of the card was. This slip also explained the expiry of the cards as although it is good practice to collect cards once a

programme is finished, internally displaced people are often mobile and may not come into contact with NGOs in a predictable manner. Community sensitization and development of trust is therefore important when introducing ICTs to communities. It is crucial that the context is considered, including communities' existing familiarity with technology, and it is recognized when it is *not* suitable to introduce ICTs, so alternative options can be offered.

### 4.2.2 Gender and inclusivity

One of the questions set out by this learning report asks about the role of gender and the empowerment of women, which proved challenging to answer in relation to the application of ICTs as most people referred to this as a bigger picture question or programming issue. One interviewee suggested, 'I don't know if it's fair to put gender issues down to ICTs. Rather we need to push to programme and MEAL teams to look at this holistically.' Most countries suggested the benefits of sex-disaggregated digital data to ensure representative samples, and how it is normal practice to employ an equal balance of male and female enumerators even if in some contexts, like DRC and Mali, this can be a challenge as some married women cannot go into the field.

A challenge to inclusivity which – although unproven – may be exacerbated by ICTs concerns the skills required to collect data on a mobile phone. In some contexts, like Ethiopia, mobile data collection activities have required teachers to be hired who come from a more educated background, which may skew conversations with different groups in the community, especially from marginalized populations. In some contexts, surveys are written in multiple languages, including English, adding a further skill set required by data collectors and the risk of insights being lost in translation. Most often this is a human rather than technology problem, as most data-collection tools make it easy to translate questions and answers. In Iraq, a particular lesson was the introduction of a multi-language set-up in English and Arabic in Mobenzi part-way through, which resulted in the need to recode the whole survey. It would have been more effective it this had been set up from the outset.

### 4.2.3 Engagement of partners

Few of the SHINE countries worked directly with partners in the application of ICTs, except Indonesia, who mentioned that their partner saw ICT training as a skill Oxfam was offering, and represented something they could 'add to their profile'. Indonesia trained seven partners and Ethiopia included partners in capacity-building activities, as well as engaging with local INGOs, but hardware and licence fees were not procured for their use. In DRC there was mention of restriction in the possibilities for interagency working because of data sharing and referral concerns.

SHINE was designed to test possibilities for ICTs at Oxfam, but given partnerships are a core way of working, there are some questions about how we can consider ICTs more widely and holistically in the future. Sustainable models are crucial for partners considering how they will cover costs of ICTs. Moving forward, there will be a need for clarity around how data flows between different entities, which is likely to require robust data sharing agreements to ensure the right partners are given the right access to different data.

### 4.2.4 Relevance of selected tools and approach for the context

Criteria were established in the design phase of SHINE to ensure the right countries took up the programme[9] – not only to show breadth in geography and type of humanitarian response, but to ensure there was enthusiasm and capacity from country teams to order to explore contexts in which applications would make sense. A theme in learning across SHINE is that the programme allowed for 'testing things we would otherwise not have been able to try'. There was much excitement that the donor had foresight and confidence to invest in a three-year programme to focus on learning about what makes tools work in different contexts.

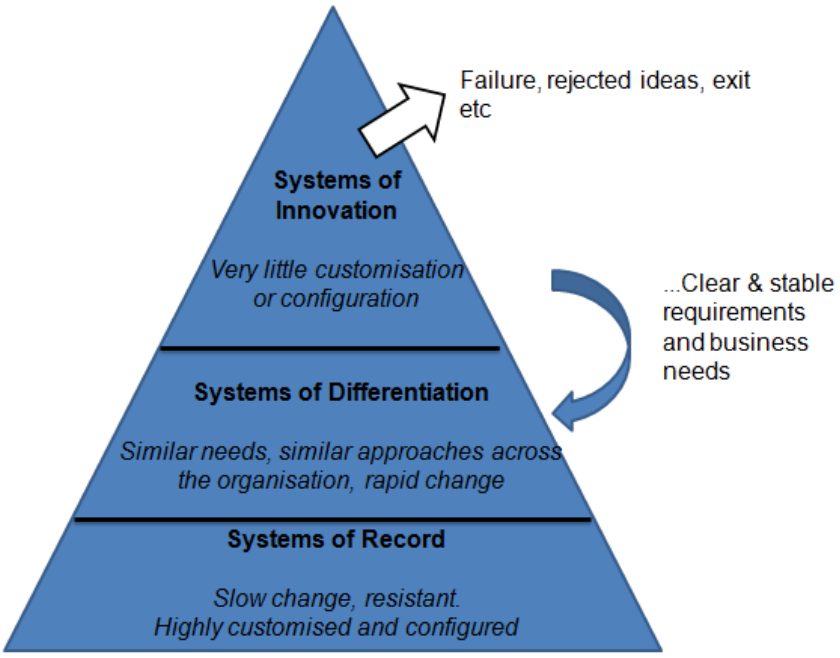
Oxfam's recommended approach centres on 'buy not build' in recognition that bespoke tools can be expensive to develop and challenging to maintain, making it more effective to buy off the shelf. In one context prior to SHINE, there was some development of bespoke tools and in fact part of the criteria for the SHINE country selection was some interest in how these bespoke solutions were performing to put assumptions to the test. A training opportunity by the ICT in Programme team connected to SHINE uncovered that these tools were reportedly slow and costly to develop and not currently in application. Following some influencing, the tools of choice shifted to recommended solutions and this bespoke development ceased, which further demonstrates the value of the network and adds weight to the principle of 'buy not build' as a default option where functionality exists in off the shelf solutions.

Many SHINE stakeholders who call for streamlined tools felt there are 'too many tools we have to try and learn'. The learning event in March 2017 revealed some confusion about what different tools offered. This resulted in learning about the importance of weighing up benefits and being cognisant of the context. While low-cost tools may be more affordable in some contexts, the technical skills that need to be in place often shift the choice towards more user-friendly tools. Therefore the majority of Oxfam programmes should adopt recommended tools to benefit from centralized expertise and proven models. An exception to this is when working in consortia, when tools supporting ways of working may override internal selection.

Slow-onset humanitarian response may allow time for specialist procurement; however rapid-onset emergencies prioritize fast and flexible set up. The team in Mali suggested 'we can't do [ICTs] in emergencies as it needs time'. Innovation spaces need to be opened up to develop new approaches, but tried and tested models are in high demand for humanitarian responders with limited time to adapt.

This is why there is a move towards streamlined tools with more consolidated learning and support models at Oxfam. Figure 2 demonstrates Oxfam's strategy to work through systems of innovation to support definition of clear and stable requirements to meet similar needs and approaches. This is in keeping with the vision of a modular set of specialized functions which can be matched to the context of the need.

**Figure 2: Oxfam IS process of innovating with technology and streamlining tools**



A good example of this in SHINE was the emergence of a requirement to process electronic cash and vouchers. Some tools considered included sQuid,[10] which offers a range of electronic money services and digital transactions; WFP's SCOPE: a 'digital platform for beneficiary and transfer management'[11] and credit card or mobile money providers. Local and global solutions were reviewed based on requirements, but these were not deemed to be appropriate because of issues such as liquidity, usability, connectivity, trust, cost and functionality, which opened the opportunity to trial RedRose.

A key priority area is looking at interoperability and integration of tools so data sets can be stored in accessible locations with comparable analysis drawn between them. This will allow different tools to enhance parts of a bigger puzzle and allow country teams to focus on finding functionality to match their context or problem, rather than needing to compromise in the quest for one tool to meet the majority of overall needs. Allowing data to flow more freely would allow, for example, data about someone to be registered in LMMS to be linked to a PDM evaluating their experience, building a much more solid evidence base. This is in line with the need for prioritization of responsible data, as solid systems for data handling will allow more support and prearranged solutions for safe data storage, solid role-based administration to set permissions for who can access what, right through to reminders to dispose of data when it is no longer needed.

### 4.2.5 Analysis and use of data

While it is commonly assumed that ICTs make it easy to collect increasingly more data as staff can complete processes more quickly and make more time available, it was not conclusive in this learning review whether the quantity of data increased as a result of the adoption of ICTs. It did appear that assumptions are being made about the extent to which ICTs in isolation could enhance analytical capability. One participant in the learning review suggested that beyond basic checks, 'ICTs do nothing about poor quality data'. Furthermore, 'we do too many surveys with an impression everything else that follows is easy. We underestimate the work that goes into processing data.'

Some SHINE countries have drawn on in-app analysis where some tools come ready with cross tabulation and graphs are generated automatically. In Iraq, this was so successful there was no need to write a report as it was possible to go through the raw data easily. Others have introduced analysis software such as SPHINX, SPSS and Qlick Sense, but the high skill requirements and costs of using these tools mean a common default is to use Excel. While it is true that ICT tools can conduct basic accuracy checks, analysis and generate graphs, a significant learning is that it is crucial to understand this is not a replacement for MEAL or research expertise and rigor. Furthermore, ICTs can offer a crucial check to help NGOs ensure they are actually using data they collect in line with responsible data principles of data minimization and reduction of survey fatigue/burden on communities represented through data.

## 4.3 EFFICIENCY

### 4.3.1 Support models

A huge factor in success has been the upfront resourcing and recommendation of tools by the central ICT in Programme team. One of the most tangible benefits of the network is that concerns about expensive set-up costs have largely been dispelled because the tools have been researched and invested in centrally; making opportunities for their use more readily available, and implications from learning affecting the global picture make the investment reap benefits. It would be very challenging to build in such investment into programme budgets without proven models and detailed costing, but SHINE was able to unlock a starting point to experiment and allow decisions to be made to inform future fundraising and applications.

Focal points reported the support to be timely and responsive, drawing on resources across the team, including humanitarian ICT advisers, MEAL ICT advisers, information management specialists and humanitarian roving support. The support from the Programme Cycle Management specialist proved invaluable in ensuring capture of learning, up-to-date reporting and budget management. While training staff is critical, the troubleshooting expected of them should be minimized through off-the-shelf and user-friendly solutions.

Feedback on SHINE training was very positive, but there is a high recognition of the need for refresher training, especially when there is staff turnover and the need to include survey design, delivery (to include processes such as consent) and data analysis. Emphasis was placed on the need to 'plan to scale' and recognition of the need to support more ICT applications locally without having to escalate to HQ.

# 4.4 SUSTAINABILITY

## 4.4.1 Contribution to learning

Outcome 5 was specifically designed in acknowledgement that SHINE was just as much about the actual value on selected programmes as it was about building a picture of good practice to enable collaboration and sharing within the humanitarian space. Some specific opportunities allowed for the learning from SHINE to be shared, including a report for the Disasters Emergencies Committee, MERL Tech London, and the Humanitarian Innovation Conference in Oxford (presentation with Internews on Responsible Data.) SHINE also has a dedicated page on Oxfam's Policy and Practice website.[12] On one occasion, someone from DFID Ethiopia was looking to explore options for technology-enabled monitoring and found SHINE through an Internet search. From there they were able to make connections with the Ethiopia country team and learn from ongoing SHINE activities.

Internally, a webinar series covering the interim evaluation and a deep-dive on electronic vouchers has been well attended by staff across Oxfam and should be extended externally. Links have been made with the WASH capacity-building project in Ethiopia as part of the HPA that Oxfam has in place with Sida, where a webinar provided space to share learning and inspire new ideas. Many focal points reported knock-on effects on other programmes and approaches: for example, a training in DRC was opened up to SWIFT staff and resulted in the whole consortium taking up SurveyCTO; and a livelihood programme about honey value chains in Ethiopia was inspired by uses of mobile data collection in SHINE. A multitude of approaches from webinars, training, workshops, word-of-mouth and case studies have effectively contributed to learning through inspiration and building staff confidence without needing to start from scratch or be a full technical expert.

## 4.4.2 Options for next steps

As SHINE comes to a close, there are a number of choices for existing scale-up, handover and transition. In some respects, SHINE has served a purpose. SHINE was designed and rolled out as a global programme, which had the benefits of global vision and resources being made available in a context where it was hard to sell a pilot. At the same time, it always set out to complement existing programmes by design as a learning exercise with an explicit aim to hand activities over to be fully embedded and owned within country contexts.

Because budgets have been centralized, there was less oversight locally on costs. Now there is a high demand from country teams for packages of pro-forma budgets which can be customized and handed to project managers to write into bigger pieces of work. There is now an ongoing

need for the setting out of roles and responsibilities concerning day-to-day activities such as management of licences and refresher training.

Despite the transition involved with the closing of SHINE funds, there remains a strong demand for the network to maintain a learning and convening role for staff to support one another – and new countries – in the uptake of ICTs. Some SHINE focal points made suggestions about developing a logo with some branded stickers/T-shirts, which would help to keep the network alive and expressed a need to identify a space (such as a list serve or intranet group) for focal points to extend the conversation and liaise with new countries to swap tools, funding opportunities and tips on programme design.

There is a high level of confidence that all SHINE countries will continue to routinely consider ICTs and use existing approaches. They are also in a better position to be early adopters or try new tools. All have conceived ideas to develop future innovations where it is possible for future global initiatives to consider more thematic areas where ICTs may play a role. Any funding should adopt a tighter, more focused thematic approach to learn from the ambitious beginnings of SHINE. In particular, there are emergent areas and high demand in cash transfer programming in open-loop contexts and GIS mapping, as well as automated internet-of-things-style technologies, such as monitoring water trucking. Oxfam is increasingly experiencing the need for technology not to replace, but to complement, face-to-face engagement with communities where feasible. This is to develop more meaningful relationships and trust, as well as to counter the un-level playing field that relying on technology alone can result in.

# 5 CONCLUSIONS AND RECOMMENDATIONS

## CONCLUSIONS

**Project successes**

- Significant progress has been made in achieving the outcomes in SHINE, where ICTs have proven to save time, promote accuracy and ensure responsive use of data across multiple humanitarian processes.
- Human process has been proven to be just as – if not more – important than ICTs themselves. While ICTs can enable time savings, efficiency and accuracy in data, to be effective they need to align with quality programmes, effective design and skilled staff to ensure rigorous use and application of data.
- The most significant progress has been around outcomes 1 and 3, where mobile data collection has been the most popular and successfully administered functionality. Time saving was the most commonly reported benefit, for example by introducing Mobenzi in Indonesia, time taken for collecting data was halved compared with the paper process. Registration processes connected to outcome 2 have been used to authenticate individuals, reduce fraud and offer metrics to enhance responsive decision making. Outcome 2 has encompassed the most innovative approaches through mechanisms for delivery including electronic vouchers and interactive voice response. A significant benefit has been security and breaking down of mobility restrictions. There is huge potential for ICT to play a role in information sharing in line with principles of 'communications as aid'[13] and there is growing interest at Oxfam to develop design and good practice further.
- ICTs have a crucial role to play in accountability activities, but some assumptions in the early design under outcome 4 about access and use of technology underestimated barriers of basic phone connectivity and the literacy of affected communities. Activities around accountability have the need to be creative and respond to contextual nuances to ensure inclusivity, for example by prioritizing unstructured verbal communication, working with village local authorities and enhancing face-to-face processes (not only relying on remote communication).

**Lessons learned**

- It is crucial to recognize the need for sensitization and development of trust with communities and that ICTs are not appropriate in some contexts because of community perceptions. Connectivity still poses a significant challenge for the adoption of ICTs and there remains high demand for solutions which can work at least partially offline.
- Tools have been researched and invested in centrally and as SHINE has encouraged experimentation, learning and decisions have informed future applications. There is often an expectation that there is a single tool for multiple applications and contexts, but the reality is there is no one-size-fits-all. Focus needs to shift to considering a set of specialized functions which can be matched to the context or need. With realization of the growing number of discrete tasks, more work is needed on integration of different tools and interoperability of data sets so these functionalities and ultimately the data can be pieced together, allowing for an interoperable and much broader toolkit as data sets are stored in accessible locations with comparable analysis drawn between them.

- Too many assumptions are made about the extent to which ICTs in isolation could enhance analytical capability; it is crucial to understand that data processing tools are not a replacement for MEAL or research expertise and rigor.
- It is the combination of technical experts from IS or MEAL in collaboration with programme experts that has proven to be the most effective team set-up. It is important that ICT does not automatically fall into the MEAL remit and is owned in programme teams when their use is connected to programme delivery. The SHINE network set-up is a model which should be considered for replication in other areas, as it has proven to be a supportive space which offers staff confidence and inspiration. Systems and processes need to be mapped early to ensure that multiple stakeholders are involved early to involve similar processes running concurrently in different systems.
- The approach of supporting a percentage of focal points from support and technical functions has been critical for success and enabled knowledge and skills to be maintained beyond the SHINE lifecycle.
- A multitude of approaches, from webinars, training, workshops, word-of-mouth and case studies have effectively contributed to learning through inspiration and building staff confidence without needing to start from scratch or be a full technical expert.
- There is a high level of confidence that all SHINE countries will continue to routinely consider ICTs and utilize existing approaches.

# RECOMMENDATIONS

- In the event that a new country office is interested in ICTs, some key considerations to budget for are hardware, licences and training. Support from a combination of programme and technical support staff should be ensured; the staff involved and percentage of time will be dependent on the context. A starting point for Oxfam staff should be to consider utilization of recommended and standard tools for common functions, including Mobenzi, SurveyCTO and LMMS. The influence of limited Internet connectivity must be factored into the design as well as plans for sustainability and ongoing country-level ownership.
- Given the need to invest up-front in ICTs, standard models involving ICTs that can be costed should be prepared in advance to allow country teams to customize pro-forma budgets and insert ICTs into funding applications.
- All humanitarian field staff, programme managers and technical teams need to be equipped with basic knowledge and skills to use ICTs, as it increasingly becomes a crucial component of humanitarian delivery. That is not to say that every team member needs specialist expertise, but at least needs to realize the potential and be able to draw on findings as relevant to their work. Any future application of ICTs needs to be supported with dedicated programme and technical support staff time, accompanied by capacity building and an increasing focus on database skills and data quality.
- It is important to make spaces to trial new tools. However, for large organizations planning for support and data interoperability, there is an important tipping point to streamline and select tools for standard processes. Despite the existence of some free tools, the training and capacity requirements present a high barrier to entry for their application in most contexts unless technical skills are in place and knowledge does not reside with few experts. At Oxfam, new applications of previously tested models should start with recommended solutions by default, such as those in the Mobile Survey Toolkit, unless there is a viable exception, for example when working in consortia and tools supporting ways of working may override internal selection.
- More attention is needed for coordination and involvement of partners to ensure that the uptake of ICTs is sustainable and can promote collaboration.
- Responsible data principles will continue to be a primary consideration guiding the uptake of good practice design in the adoption of ICTs.

- There is high value in initiatives that prioritize learning across multiple contexts to build a picture of good practice in the adoption of ICTs. It is evident there is a need for global convening, organizing and circulation of learning, so measures such as communications opportunities need to be put in place for networks of staff using ICTs to thrive. Communities of practice take a great deal of work to keep alive and moderate, so SHINE focal points will need to be proactive in opening spaces for learning which work for them.
- There is demand to seek funding to continue the network and introduce similar models, particularly around tighter, more focused thematic approaches. In particular, there are emerging areas and high demand in cash transfer programming in open-loop contexts and GIS mapping, as well as automated internet-of-things-style technologies, such as monitoring water trucking. ICT-enabled accountability mechanisms are a further area of great potential.

# APPENDIX 1: LIST OF CONTRIBUTORS

| Name | Country | Role |
|---|---|---|
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| Oumou Kane | Mali | ITO |
| Seikou Doumbia | Mali | MEAL Coordinator |
| Philip Gunta | Ethiopia | MEAL Coordinator |
| Hamdi Aden | Ethiopia | Livestock Specialist |
| Abreham Fisseha | Ethiopia | Programme Quality Adviser |
| Boris Vitlacil | Ethiopia | Emergency Response Coordinator - Siti Zone |
| Lishan Tsehey | Ethiopia | EFSVL Coordinator |
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| Arafo Mahamed | Ethiopia | Enumerator |
| Abdi Hasan | Ethiopia | Enumerator |
| Aden Awale | Ethiopia | Enumerator |

# NOTES

1 Criteria included a range of contexts both in relation to the scale, phase and type of emergency, but also in terms of connectivity, language and existing familiarity with ICTs. In order to foster strong ownership and commitment to sustainable design, we have considered enthusiasm and energy on the part of country teams as fundamental to ensuring successful deployments of ICTs. Where possible, we have sought to explore synergies with other projects and between different sectors in addition to opportunities to influence key actors, such as national governments and bodies. As ICTs are only ever enablers to support programmes in achieving their aims, identifying suitable existing projects where ICTs have potential to add value is fundamental.

2 DFID PPA report 2015/16

3 http://policy-practice.oxfam.org.uk/publications/mobile-survey-toolkit-617456

4 http://www.alnap.org/resource/5253

5 See note 3

6 http://321online.org/about/

7 Final proposal to Sida

8 http://policy-practice.oxfam.org.uk/publications/humanitarian-informal-feedback-project-zaatari-refugee-camp-jordan-evaluation-r-620164

9 See note 1

10 https://www.squidcard.com/

11 http://documents.wfp.org/stellent/groups/public/documents/resources/wfp280596.pdf

12 http://policy-practice.oxfam.org.uk/our-work/humanitarian/shine

13 http://www.alnap.org/resource/10213

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