

Change Monitoring System 2 (CMS 2)

Performance and Cost Effectiveness Review of EEP/Shiree's CMS 2 in Bangladesh

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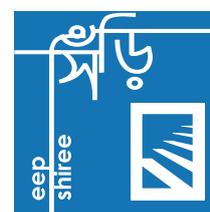
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Contents

<i>List of Diagrams, Graphs, Tables and Boxes</i>	iii
<i>Acknowledgements</i>	iv
<i>Acronyms</i>	v
1. Executive Summary.....	1
2. Introduction	5
3. Brief Overview of EEP/Shiree’s Change Monitoring System.....	7
4. History of ‘Graduation’, CMS 2 and Rationale for its Development.....	8
6. Findings, Conclusions and Lessons Learned (<i>Review Objectives 1 and 2, 4</i>)	14
Criteria 1: Usefulness	14
Conclusions on Usefulness.....	14
Detailed Findings.....	17
Criteria 2: Cost Effectiveness	26
Conclusions on Cost Effectiveness.....	26
Detailed Findings.....	26
Criteria 3: Sustainability.....	28
Conclusions on Sustainability.....	28
Detailed Findings.....	28
Lessons Learned/Key Risks in Developing Similar Systems for Future Extreme Poverty Programmes	33
7. Recommendations (<i>Review Objectives 3</i>).....	37
Revision of the Questionnaire	37
Ongoing use of the CMS 2/LMS instrument	37
Future of the CMS 2 database and dashboard	38
ANNEXES	39
ANNEX I: The Review’s Terms of Reference	39
ANNEX II: List of Documents reviewed and analysed.....	55
ANNEX III: List of People Met as part of Review	56
ANNEX IV: Key Informant Interview and Focus Group Discussion questions.....	57
ANNEX V: Development and Maintenance Cost.....	61
ANNEX VI: Analysis of accuracy, appropriateness of CMS 2 questions and usefulness of data in programme management decision.....	65

List of Diagrams, Graphs, Tables and Boxes

Diagram 1: Development of the Change Monitoring System 2

Box 1: EEP/Shiree's Multidimensional Graduation Index

Graph 1: Monthly CMS 2 Responses from all PNGOs between January 2013 and April 2015 and introduction of the Graduation Monitoring Tool (GMS)

Graph 2: Time spent by beneficiaries participating in CMS 2 each month (including waiting time)

Graph 3: Average duration of CMS 2 surveys (cumulative) between January 2013 and April 2015

Graph 4: Starting times of CMS 2 surveys

Table 1: Summary of investment and monthly recurrent (running) costs for CMS 2.

Graph 5: Use of the Visualisation Dashboard by PNGO staff

Table 2: Compiled Experiences (both positive and negative) of NGO partners and beneficiaries with the CMS 2/LMS system

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Acronyms

BHH	Beneficiary Household
CMS	Change Monitoring System
DFID	UK Department for International Development
DSK	Dushtha Shasthya Kindra
EEP	Economic Empowerment of the Poorest
GoB	Government of Bangladesh
HRA	Head of Research and Advocacy (EEP)
IGA	Income generating Activities
LMS	Livestock Monitoring System
OMT	Operational Management Team
PAB	Practical Action Bangladesh
PNGO	Partner Non Governmental Organisations
SDC	Swiss Development Co-operation
Shiree	Stimulating Household Improvements Resulting in Economic Empowerment
ToR	Terms of Reference

1. Executive Summary

The Review of EEP/Shiree's¹ Change Monitoring System 2 (CMS 2) was conducted following a recommendation made during the 2014 Annual Review of EEP and took place between April–September 2015.

CMS 2 is a pilot, ten minute, monthly census survey of EEP/Shiree Partner Non-Governmental Organisations' (PNGO) target beneficiary households. It is smartphone-based, implemented by PNGO field officers, and monitors the situation and progress (or lack thereof) achieved by Beneficiary Households (BHHs) on their development trajectory out of Extreme Poverty. The Review's **objectives**² were:

1. To understand whether CMS 2 provides a useful, cost-effective service and are sustainable in their current form;
2. To capture lessons learned during the development and piloting of CMS 2, which can be shared with other projects or donors wishing to follow a similar approach;
3. To provide recommendations on what (if any) further investment or development in the systems should seek to do, and if, or how, the tools might be integrated into future Extreme Poverty programmes;
4. To highlight any key risks that need to be considered should similar systems be developed by other parties.

This report summarises the Review's key findings, conclusions and broader lessons learned about CMS 2. The report also highlights key risks to consider during designing, piloting, rolling out and implementation/use of similar monitoring systems and utilising the resulting data they provide. It subsequently makes recommendations for the remainder of EEP/Shiree, which is due to close in March 2016.

The report should inform potential future Extreme Poverty, livelihoods and sustainable graduation programmes and be of interest to those involved in real time data collection for monitoring and evaluation in development programmes.

The Conclusions on Usefulness, Cost Effectiveness and Sustainability of the Review on CMS2 are:³

Usefulness

- The CMS 2 was valued by all stakeholders both conceptually and technologically and there is some evidence that conventional PNGO monitoring was enhanced, for example, through defining what to monitor and providing focus to regular monitoring visits. There is

¹ EEP/Shiree will be used interchangeably throughout this document

² The original ToR for this Review included an assessment of the Livestock Monitoring System, with the same objectives as listed here for CMS 2. As the Review progressed, given the differing objectives of the pilot LMS, the limited data available (e.g. no data on response rates, no similar visualisation dashboard as CMS 2), and the resultant heavy emphasis during the Review on CMS 2 data collection, it was decided that any key findings, conclusions and lessons learned related to LMS should be reported as footnotes, rather than in the main body of this report.

³ These are synthesised conclusions which are often interlinked (i.e. those under usefulness also have a bearing and influence on both cost effectiveness and sustainability). The conclusions are detailed further below and are based on the Review's findings.

also evidence that suggests there were more effective responses to struggling BHHs by field officers.

- Whilst CMS 2 helped monitor change at BHH level and PNGO's own monitoring activities in the field, it is less certain whether the data resulting from the implementation was used to help reduce extreme poverty to an extent or at a scale that justified the heavy investment of human and financial resources.
- The fact that some PNGOs have adapted the tool to meet their own needs suggest there was merit in the CMS 2 concept. However, despite numerous adaptations/revisions the tool in its current form takes a 'lowest common denominator approach' reflecting minimum basic information needs applicable to all PNGOs rather than being PNGO/intervention specific. Whilst this was understandable in the context of the budget and capacity available at the time of its development, this limits perceived usefulness of the CMS 2 in its current form and thus its sustainability.
- CMS 2 implementation increased beneficiary awareness of their socio-economic situation and confidence/empowerment to some extent, but whether this awareness was a sustainable behavioural change remains to be seen. Increasing awareness and, in turn, confidence and empowerment, was an unintended consequence of implementing the monitoring tool.
- Practical issues related to data collection undermined CMS 2 potential as it led to data quality issues. There was a flawed assumption that the survey could be implemented with sufficient accuracy within existing incentive structures, workloads and resources for all PNGOs. While training was provided to build capacity, these factors were under-considered, as were how these issues were likely to vary across PNGOs and over time. It may also mean that it was not the design of the CMS 2 which was flawed, but that the design of specific PNGO interventions was not compatible with the information needs of CMS 2, which the poor quality data simply highlighted.
- As a result, the CMS 2 system was neither census nor real-time in the strictest sense of these terms, and this led to issues in terms of data quality. While no monitoring tool could reach 100% of beneficiaries, the lack of supervision of CMS 2, time pressures during the data collection process and weak verification of data reduced data accuracy and trustworthiness. Even though CMS 2 was intended to be a snapshot, rather than rigorously or scientifically accurate, the insufficient data quality led to perceived untrustworthiness amongst stakeholders in the resulting data itself, and reduces its value as a dataset.
- The CMS 2 survey questionnaire content was relevant to the basic information needs of EEP/Shiree, PNGOs and beneficiaries but concept operationalization resulted in unreliable and sub-optimal questions. The Review team recognises that in order to innovate, some level of experimentation is required, and this poses a risk of failure. However, the Review believes that the questions were not sufficiently innovative and instead raised issues of data validity/reliability.
- More serious than data quality issues was the basis in which the data was subsequently analysed to identify wider trends emerging through the visualisation dashboard. The dashboard did not differentiate between BHHs measured on a cross-sectional or longitudinal basis. From a statistical point of view, comparing differences which mix survey types (cross sectional/longitudinal) between different months is problematic, especially if trying to identify trends. The dashboard did not make this distinction, so analysis of trends are likely to have been misguided, which limits the academic usability of the data.
- The CMS 2 was predominantly "supply-driven" by EEP/Shiree and data that the systems produced was utilised primarily for identifying where additional PNGO action was required for struggling BHHs and to target additional support (financial/non-financial). At a broader programme wide level, data was regarded as valuable primarily for accountability and advocacy purposes rather than identifying trends, correlations etc. across similar regions, contexts, intervention types and applying learning.

- The design of the tool (survey content) and lack of capacity in verifying, analysing and utilising data for evidenced based decision-making across a range of interventions or PNGOs resulted in missed opportunities in understanding further extreme poverty dynamics and negated the usefulness of the tool in the long term.

Cost Effectiveness

- Development of CMS 2 was a more technically, operationally, and behaviourally complex challenge than anticipated. It required major behavioural change as it aimed to promote innovation rather than traditional ways of monitoring). These challenges resulted in an iterative design and implementation process which undermined cost effectiveness. Likewise, the changing focus of the wider EEP/Shiree programme by the donor over time (for instance, increasing focus on graduation thresholds), meant that the concept had to evolve, which incurred extra cost.
- The CMS 2 survey methodology was a relatively cheap (considering its scale) and quick way (using mobile technology) to gather information on BHH status.
- CMS-2 was costly in terms of human resources and time. Most NGOs would not continue the survey in the absence of the EEP/Shiree in its current form but some PNGOs have adapted the concept behind CMS for their own purposes.
- Selection of systems' developers and close collaboration with systems' users is critical, and while the partnership in this respect between EEP/Shiree and the developer was collaborative, certain constraints (time, finance, capacity) became issues downstream. The potential for this risk to occur was under considered in CMS 2 design and development.

Sustainability

- CMS 2 improved working processes (monitoring, reporting, field support to BHHs provided) within EEP/Shiree itself and PNGOs, particularly in terms of prioritising monitoring activity and closing feedback loops between management and field staff.
- Data from CMS 2, while used strategically at field level to monitor BHH's pathways out of Extreme Poverty, was under-utilised at a programme wide level, beyond upward accountability (reporting), and particularly in making strategic decisions across multiple PNGO interventions where lessons were commonly applicable. A more bottom up approach and a monitoring tool which recognised programme and PNGO differences may have increased ownership and helped fulfil the CMS 2 potential. The limited extent of analysis and follow up studies to find out why an issue arose across many projects in different contexts was a missed opportunity in research terms by both PNGOs and EEP staff, but understandable given resource constraints, re-focusing EEP/Shiree programme priorities, perceived untrustworthiness in the data and senior management changes.

The report details makes considered **recommendations** on the future of the CMS 2 tools and data produced for the remaining period of EEP/Shiree operations. In summary, the Review team recommends that:

1. There is no further revising and testing of the CMS 2/LMS questionnaires over the remaining lifecycle of the project.
2. In terms of ongoing use of the CMS/LMS tools, we present three possible options, namely (a) Ensure that CMS 2 and the dashboard is available for those that want to use it; (b) Phase out CMS/LMS systems freeing up time and making small savings/dispose of assets prior to EEP/Shiree closing or (c) Converting the existing tools into freely available 'apps'. We analyse all three options and find that the first two options are the most suitable at this point of the programme, based on the findings/conclusions of the Review.

3. On the future of the CMS 2 database and dashboard, the review team considered the possible further interrogation of the dataset, and suggest the following options (whilst being mindful of data quality issues): (a) Handover the CMS 2 database and dashboard at completion of the project in a similar manner to the other databases, but highlighting significant data quality and comparability caveats if further analysis of the data is to be undertaken (b) Remove the CMS 2 database and dashboard once they have run their course.

2. Introduction

The Economic Empowerment of the Poorest in Bangladesh Programme (EEP/Shiree) is an £83 million Dept. for International Development in the UK (DFID), the Swiss Development Cooperation (SDC)⁴ and Government of Bangladesh (GoB) challenge fund with a central objective of extreme poverty elimination. EEP/Shiree funds projects designed by national and international NGOs following a rigorous selection process by an independent assessment panel. A central objective of these initiatives is elimination of extreme poverty within target beneficiary households (BHHs). PNGO projects include providing households with assets such as livestock, working capital or equipment to start or grow small businesses. Also provided are: nutrition supplements and counselling, hygiene education, sanitation infrastructures, business and new skills development training, and market linkage.

This support is further complemented by research, strategic communication and advocacy to change the way in which extreme poverty and the needs of the extreme poor are viewed and addressed by development partners - the GoB, donors, civil society NGOs and the public. In its lifetime, huge gains have been made in supporting over one million Bangladeshis on their pathway out of extreme poverty.⁵ It is estimated that to eradicate poverty by the fiftieth anniversary of Bangladesh's independence in 2022, a further one million families will need to be assisted each year.⁶

Started in 2008, in 2013 the programme was extended to March 2016. The Programme is sponsored by Government of Bangladesh through its Rural Development and Cooperatives Division (RDCD) under the Ministry of Local Government. The programme is managed by a consortium of Ecorys UK, PMTC-Bangladesh, the Centre for Development Studies at the University of Bath, the British Council and Unnayan Shamannay, with support from the University of Cambridge.

As part of the DFID exit strategy, DFID, EEP/Shiree and the Management Agency (led by Ecorys UK) wish to understand more about the Change Monitoring System (CMS 2) in order to inform decision-making on (a) the future of the tool within the lifetime of EEP/Shiree and (b) to provide insight for future Extreme Poverty programmes. Political unrest/hartals at the beginning of the year contributed to delays in implementing the Review, which took place a number of months later than originally envisaged to ensure the Review team could visit project sites outside Dhaka and to meet with PNGO beneficiaries and staff.

CMS 2, developed by EEP/Shiree with its technology partner mPower is a pilot, ten minute, monthly census survey administered at the household level by EEP/Shiree's partner NGO field staff. It is a smartphone-based management information tool which monitors the self reported progress (or lack thereof) achieved by BHHs in improving their economic and social status and implemented by PNGO field officers. It also allows NGOs to track the frequency with which field staff visits each BHH. The intention was to allow NGOs frequently capture dynamic, real time information about the experiences of thousands of beneficiaries to help guide project

⁴ Swiss Development Cooperation

⁵ EEP/Shiree Annual Report 2014

⁶ Figures reported in Manifesto for the Extreme Poor – A cause to bring Bangladesh together (EEP, 2011)

implementation and address problems/sudden shocks preventing them from leaving extreme poverty status (or causing them to fall back into extreme poverty), as they arise. The collected CMS 2 data is then visualised via a dashboard, the aim of which was to enable analysis of spatial, temporal and socio-demographic trends which offer insights into the dynamics of extreme poverty based on households' self-assessment of change.⁷

Initial supervision was undertaken during the roll-out phase, comprehensive training and testing was provided by the developer and by EEP/Shiree programme staff with PNGO staff and field officers. Ongoing refresher training and feedback and supervision were also provided by shire staff. The Review builds upon and summarises salient points from the CMS 2 Process Review conducted in November 2014, which outlines the development history of CMS 2 and the Graduation Monitoring System (GMS) and identifies some of the lessons learned. The key addition to this Review was the opportunity to meet with PNGO beneficiaries, and frontline and senior management/M&E staff, which will contribute to a holistic understanding of the experiences of beneficiaries who regularly answered the monthly survey questions, implementers (frontline staff who administered survey) and how/to what extent the resulting data was used operationally and strategically by both EEP/Shiree and PNGO M&E staff and managers.

The CMS 2 tool is reviewed against the criteria listed in Objective 1 and 2 of the ToRs above, (i.e. usefulness, cost effectiveness and current sustainability). Clearly, many of the findings have implications across multiple criteria (i.e. the more stakeholders value and find the systems useful, the greater the likelihood of sustainability; the less effective the survey questions, the more costly it was and is to make revisions and the less likely the systems will be valued as useful/sustainable). However, in order to ensure all Review objectives are met and to structure the findings logically, this was deemed the most suitable format.

⁷ The LMS utilises the same hardware and a similar approach to data collection and reporting. The tool was developed as a method of monitoring the health of livestock transfers made to households, and to help to understand and investigate common causes for livestock death. The system now also links para-veterinary services to central NGO veterinary support to provide some value to the beneficiary through the provision of advisory services. To date, the tool is under pilot with one partner NGO, MJSKS.

3. Brief Overview of EEP/Shiree's Change Monitoring System

The CMS 2 is just one element of part of the overall five element CMS suite of monitoring tools utilised by EEP/Shiree in order to track project progress and programme impact. The overall system includes:

CMS1: The Household Profile

PURPOSE: To provide the baseline from which to monitor change over time. To provide a detailed assessment of the status of all EEP/Shiree beneficiary households before significant project interventions have taken place.

CMS 2: The Monthly Real-time Snapshot

PURPOSE: To enable an assessment of changes at the beneficiary household level (both project and non-project events) on a real time, census basis.

CMS 3: Socio- Economic and Anthropometric Surveys

PURPOSE: To provide in depth socio economic and nutritional data allowing an assessment of longer term change and the impact of project interventions.

CMS 4: Participatory Review and Project Analysis

PURPOSE: To allow Innovation Fund beneficiary groups and implementing NGOs to assess the probable causes of changes in their socio economic condition to influence programme management. To feed quarterly narrative reports tracking project achievement and contributing to eventual scale up decisions.

CMS 5: Tracking Studies

PURPOSE: To provide qualitative longitudinal tracking studies documenting the dynamics of extreme poverty as it is experienced and changes in the lives of beneficiaries as a result of interventions.

The Livestock Monitoring System (LMS)

PURPOSE: The LMS is a monitoring system being taken to a second pilot through the MJSKS Scale Fund Round 3 (Scale up) project which has a livestock transfer focus. The LMS allows regular remote monitoring of the welfare of cows transferred to beneficiaries and more timely identification of required veterinary support.

Other systems developed over the programme lifetime include the **Graduation Monitoring System (GMS)**, the **Nutrition Monitoring System (NMS)**. The GMS was a means of verifying which BHHs had graduated from extreme poverty and which required additional support.

The focus of this report is on the CMS 2 system predominantly but aspects of LMS were also examined to understand whether beneficiaries derived direct benefits through participating in

it regularly and whether the system helped to meet programme objectives. Relevant findings are included as footnotes throughout the report where relevant.

4. History of ‘Graduation’, CMS 2 and Rationale for its Development

EEP/Shiree is frequently described as a sustainable ‘graduation’ programme which focuses on extreme poverty. **However, it is very important to recognise, in the context of this review, that ‘graduation’ was never part of the original objectives of EEP/Shiree, and only later was articulated and targets related to graduation set.** Graduation programmes aim to lift the extreme poor above a defined threshold line into the classification of ‘poverty’ or above. Sustainable graduation programmes strive to ensure the extreme poor do not fall below the pre-defined extreme poverty threshold after support has been provided.

In EEP/Shiree’s case, the *modus operandus* was the design of interventions which gave PNGO support to extremely poor BHHs, including advice, training, and the transfer of an income generating asset to BHHs. If correctly capitalised on, this support and IGA transfer could transform the livelihood situation of the extreme poor. However, as Box 1 details, the concept of graduation became a goal of the programme after the start of EEP/Shiree (and also CMS 2 design and scale up).

Box 1: EEP/Shiree’s Multidimensional Graduation Index

As noted above, EEP/Shiree now takes a multi-dimensional approach to helping beneficiaries sustainably “graduate” out of extreme poverty. A specific graduation target was first introduced after the commencement of the EEP/Shiree programme, there being no specific definition of graduation of graduation target in the original logframe. Hence it was necessary to first establish what ‘graduation’ means for extreme poor people in Bangladesh and then to design interventions helping them achieve graduation within the limited funds and timeframe available. The programme graduation concept has been developed over time through analyses of quantitative and qualitative data with the most recent iteration relying on a multi-dimensional checklist across a range of key socio economic indicators. The headline Shiree graduation statistic is measured via the CMS 3 survey, an annual panel survey using a statistically significant sample of beneficiaries to measure change across a number of criteria. The graduation line constitutes an index of multi-dimensional indicators (e.g. income, food security, health, etc.) from which a household is deemed ‘graduated’ if it meets a set number (which differs according to rural and urban settings). The results from the panel surveys show a huge increase in graduation rates across the programme, with differing rates for different projects.

EEP/Shiree features specific characteristics such as rapid change, diversity (in terms of causes of extreme poverty; a wide range of project/programmes in different locations supported through the challenge fund modality and, furthermore, myriad types of IGA being supported); their scale, and their resource constraints. Such features are considered to distinguish EEP/Shiree from other Bangladeshi poverty reduction programmes and as such are seen to require unique ways to monitor and evaluate progress.

Clearly if the designers and proponents of the CMS 2 had known how the programme would develop, the design of the CMS 2 and how it developed would have been quite different. In the context of increased focus on Value for Money of EEP/Shiree, it later became important

also to be able to ascertain the exact level of financial and other support required to raise a BHH above the threshold line out of extreme poverty, but to also be aware once the BHH had passed that line, in order to re-direct resources to other struggling or additional BHHs.

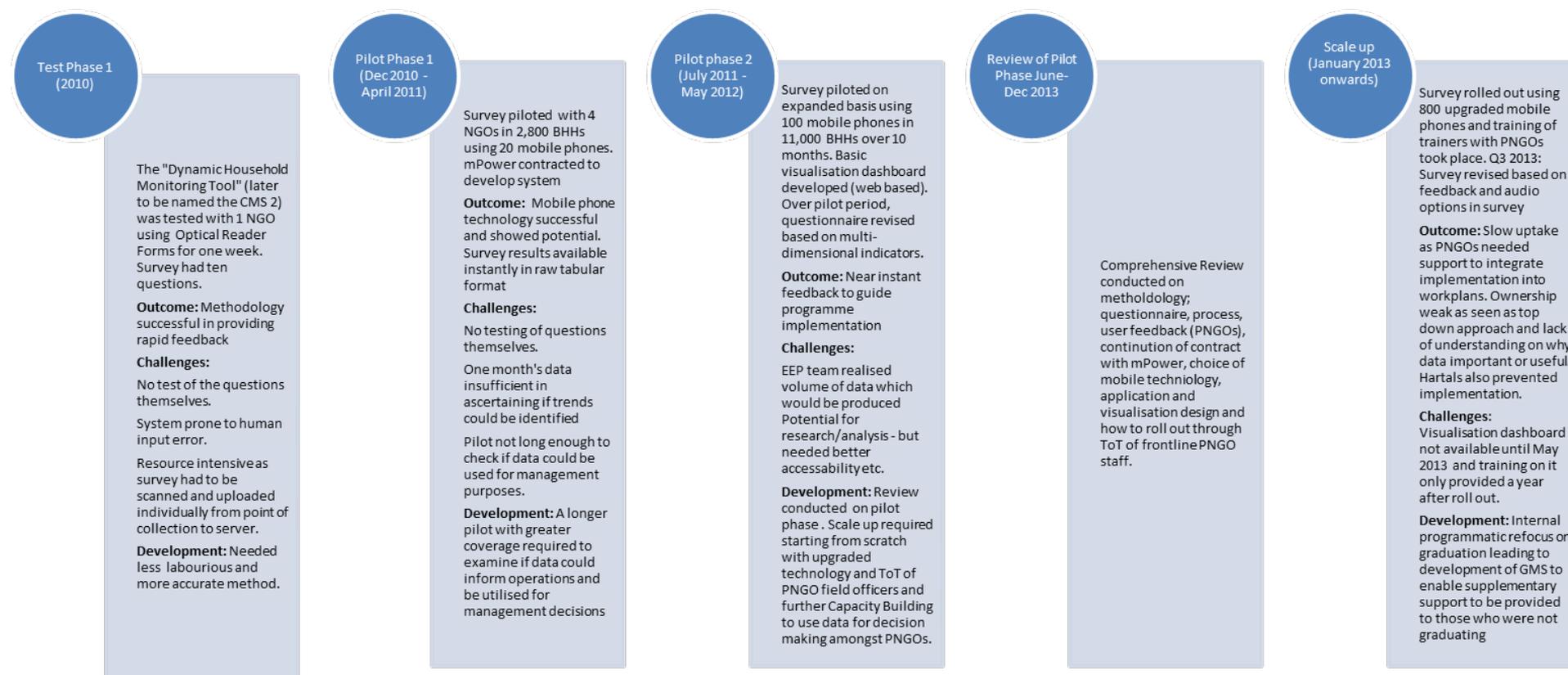
The Change Management System (CMS) EEP/Shiree employs was not designed from the outset as a complete monitoring and evaluation package for EEP/Shiree, nor was the concept of graduation embedded from the outset. Its development was iterative and reflected the fluid evolution of the EEP/Shiree Programme as a whole. Individual CMS elements were developed often independently and not necessarily in sequence. Indeed, even the terminology ‘CMS 2’ was applied many months after its pilot phase – and was influenced by pre-existing tools such as the ‘Dynamic Household Situation Survey’. While the evolutionary nature of the programme required dynamism in its management, it also presented some major challenges which the report identifies and analyses further below.

CMS 2 has been credited as a system which provides real time and census based data that shows changes in all BHHs’ socio-economic situations rapidly to ensure additional support could be provided within the lifetime of the programme. The impact data that was garnered through the CMS 3 was increasingly viewed as too infrequently implemented (annually) to enable adaptive management; furthermore, as CMS 3 is a sample survey, it could not provide information at an individual BHH level across the whole programme. There was also excitement about the relatively new concept of embedding ICT within the development process, not simply as an add-on, but as an integral part of monitoring and operational management.

While the idea of utilising mobile phone technology to conduct surveys on this basis was not unique at the time of its development by EEP/Shiree, the ambition of the monitoring tool and systems, particularly in terms of the scale of data collection should not be underestimated. The relatively unreliable network service across the five regions of Bangladesh in which EEP/Shiree’s PNGO’s operate was a major obstacle at the early stages and continued during implementation, particularly in the CHT area. Furthermore, there was no previous experience to draw from within Bangladesh and, in this sense, the idea and technology were pioneering.

Perhaps even more original, within the context of Bangladesh, was the conceptual idea of using monitoring data to inform operational and strategic decisions. The CMS 2 was tested, piloted and rolled out at a time when PNGOs were simultaneously committing to measuring outcomes rather than activities, which itself was a significant cultural and behavioural change (many of whom were implementing a much more traditional form of M&E). The tool aimed to close the feedback loop between beneficiary; frontline staff; and senior management and as such, held much potential aligning management information systems with the need to focus on outcomes and not purely for reporting purposes. This understandably required much effort on the part of the developers and management team to obtain PNGO buy-in. The various stages of CMS 2 development and roll out and CMS’s introduction in summarised form can be seen in the diagram below. Only the key aspects are included in this diagram.

Diagram 1: Development of the Change Monitoring System 2



In terms of the Review, records of design meetings which categorically identified formal, agreed objectives of the CMS 2 system were not available; therefore, the team identified the following formal objectives (by which to assess the system against) based on our document review and discussion with the developers, EEP/Management and other key stakeholders:

The CMS 2 system should:

1. Track on a frequent, rapid basis **changes in the socio-economic status of beneficiaries at household level** who are participating in an EEP support programme;
2. The data collected should be **real time and census based**;
3. The resulting data should **allow adaptive management during the lifetime of the programme**.

Further, the IDS bulletin (2015) stated that CMS-2 allows: *“EEP/Shiree and its partners the unique ability to track the change of household conditions every month, across NGOs and contexts and enable the identification of households that are failing to prosper or may have encountered a sudden shock.”*⁸

Given the conceptual and technological originality of the EEP/Shiree programme and its M&E system and tools in Bangladesh at the time of development, it is important that efforts made during the development of the tools are not judged by current technology available, or as if there was unrealistic levels of foresight of how EEP/Shiree itself would develop. There were flaws in the data collection design, process and data utilisation as discussed below, but this could never have been fully predicted or factored into the systems’ design to mitigate them as risks. Instead the Review Team took a process-orientated standpoint during analysis of key findings/conclusions in order to fulfil the Review’s ToR, its key objectives and specific Review questions, as outlined below.

⁸ Colin Risner and Vishal Gadhavi, Using Real-time Monitoring to Enhance Graduation from Extreme Poverty in Bangladesh, IDS Bulletin Volume 46 Number 2 March 2015

5. Purpose of the Review and Review Methodology

The Review's **objectives**, as per the final Terms of Reference were:

1.	To understand whether CMS 2 and LMS provide a useful, cost-effective service and are sustainable in their current form;
2.	To capture lessons learned during the development and piloting of CMS 2 and LMS, which can be shared with other projects or donors wishing to follow a similar approach;
3.	To provide recommendations on what (if any) further investment or development in the systems should seek to do, and if, or how, the tools might be integrated into future Extreme Poverty programmes;
4.	To highlight any key risks that need to be considered should similar systems be developed by other parties.

The Review had a number of **key questions** to answer, as per the ToR, including:

RQ1: What are the patterns of usage of the CMS 2 and LMS, and do the benefits from use of the systems justify the investment (including development) and running costs?

RQ2: Do the current questions collect appropriate and accurate qualitative and quantitative data on key indicators and does this contribute to an effective understanding of factors influencing extreme poverty in Bangladesh?

RQ3: What are the experiences (both positive and negative) of NGO partners and beneficiaries with the systems?

RQ4: Do the systems improve conventional project beneficiary monitoring processes in place with partner NGOs, and has this had an impact on reducing extreme poverty?

RQ5: What were the key challenges experienced during development and pilot of the system, and how have these challenges been overcome?

As the Review developed, other sub questions emerged related to the above such as: whether the technology could help in tracking other aspects such as nutrition monitoring, the added value of real time, census based data, and the complementarity of CMS 2 with PNGO's existing monitoring systems.

The Review team, in answering the above questions undertook an extensive document review, including analysis of set up and maintenance costs of the overall CMS suite, CMS 2 and LMS. This was instrumental in designing data collection approaches and tools (see Annex IV). The team then conducted a twelve day field mission to Bangladesh which included field visits to Scale Fund PNGO (CARE, PAB, MJSKS, DSK) in both rural and urban project locations (Rangpur, Kurigram, and Kamrangir Char in Dhaka). The team observed data

collection by field officers of both the LMS and CMS 2 survey. Other data collection methods included Focus Group Discussions (FGDs) with PNGO beneficiaries, field officers and senior managers/M&E staff and Key Informant Interviews (KIIs) with EEP Programme Managers, HRA, OMT, mPower and Finance Team staff. A compiled table of views on CMS 2 (and to a lesser extent LMS) is contained in Table 2 below (page 33).

Further KIIs with EEP Research partners and stakeholders who were early drivers of the use of CMS 2 were conducted in UK and virtually (Skype) and the current CMS 2 Questionnaire was analysed in terms of the questions' relevance, accurateness and appropriateness in order to contribute to answering RQ 2.

Data collected as part of the FGDs and KIIs were subjected to content analysis in which thematic patterns between stakeholders opinions were drawn out, areas of agreement and disagreement highlighted and comparisons made. Trend analysis was used to examine data collection processes (e.g. survey time/duration/survey upload time).

Limitations

Due to limited time, beneficiary groups were selected purposively for field visits, which may have led to selection bias, although efforts were made to ensure that both rural and urban beneficiaries were included and that all senior managers and M&E staff of all Scale Fund PNGOs has an opportunity to participate in the Review.

The Review focuses pre-dominantly on the input side of the CMS 2 system (design of data collection tools and processes) rather than the output side (analysis of data generated through visualisation dashboard). While PNGOs staff were questioned about their use of the data produced from the system to determine its value, usefulness and sustainability, a full analysis/observation of the dashboard itself was not part of this Review. This was deemed appropriate given (a) the input side challenges, which resulted in less than optimal validity and generally insufficient data quality to fulfil the tool's objectives and (b) the fact that such an analysis would require distinguishing between the 'old' households (the existing beneficiaries already targets of the PNGO intervention) and 'new' households (additional beneficiaries added to the PNGO intervention target group) measured inconsistently across multiple months. The dashboard does not automatically do this and it would have been beyond the time constraints of this Review.

Other factors which limited the Review's methodology was the reliance on translation services during field work which may have led to some loss of understanding between lead reviewer and beneficiaries; efforts to mitigate this risk were taken through advance preparation between the lead reviewer and native Bangla translator before departing for the field. In addition, the FGDs requiring translation were carefully planned around semi-structured questions which are included in Annex IV which ensured a high degree of consistency across FGDs.

FGDs were conducted (on the whole) in the absence of field officers responsible for beneficiary communities and field officer's managers to lower the likelihood of potential bias in responses.

6. Findings, Conclusions and Lessons Learned (*Review Objectives 1 and 2, 4*)

Criteria 1: Usefulness

As the Terms of Reference (ToR) for this Review highlighted, the use of CMS 2 has been primarily driven by EEP/Shiree, partly as a need to change PNGOs way of monitoring beneficiaries, to gain buy-in and to increase usage of this new technology given its originality and potential for adaptive management. The ToR's furthermore state that for the systems to be effective, they should **show demand from PNGOs and beneficiaries because they value participating in the surveys.**⁹

'Value' is quite a wide ranging term but in this context, the Review team took it to mean, for beneficiaries, that they felt their specific challenges were being heard *and* addressed by the PNGO thus gaining benefit from participation. For PNGO/EEP staff and senior managers 'value' was defined as the systems being appreciated for the data it produced, which in turn guided improved, strategic responses **at both individual BHH level and, across entire programmes/similar intervention types**, where applicable lessons learned could be applied. Such strategic use of CMS 2 data (independently or used in combination with other data sources) for evidence based decision-making at both levels would show CMS 2 to be valuable to stakeholders, and enhancing understanding of extreme poverty dynamics in Bangladesh.

In this regard, as an indication of its usefulness, the appropriateness and effectiveness of both the survey as a data collection methodology and its content (interview questions) were assessed. By assessing these aspects, the Review team were able to verify whether CMS 2 data was collected in an effective and ethical manner and provided evidence of sufficient quality to enable such strategic and evidence-based decision making.

The following section summarises the conclusions on Usefulness and then presents detailed findings related to these conclusions for further information. The findings are divided into two sections:– A) *Value of and demand for CMS2/LMS by stakeholders* and B) *Appropriateness and Effectiveness of Survey Methodology and Accuracy and Appropriateness of Survey Questions*. Many of the findings also have implications in terms of the other two Review criteria, and this is drawn out where relevant. Table 2 at the end of this section (p.33) of conclusions and key findings compiles stakeholder views on the tool.

Conclusions on Usefulness

C1: The CMS 2 was valued by all stakeholders both conceptually and technologically and led to improved PNGO responses at individual BHH level. Beneficiaries and field officers regarded the individual interaction as important, but it should be noted that the surveys were conducted as part of what should have been the normal course of field officer visits (i.e. should have happened irrespective of CMS 2 implementation). However, survey implementation meant that, for the first time, PNGOs could track and monitor these visits, thus adding value in terms of programme oversight and increasing importance of monitoring.

⁹ The Review Team, during data collection, assessed whether the LMS provided useful information back to the beneficiary, in terms of diagnostic support for livestock health issues, and support the beneficiary to keep records by reminding when vaccinations were due.

While the tools helped monitor change at BHH level and PNGO's own monitoring activities in the field, it is less certain to what extent the data, resulting from the tool's implementation, was used to help reduce extreme poverty to an extent and at a scale (beyond individual BHHs) that justified the heavy investment of resources, both human and financial, as part of CMS 2 implementation.¹⁰

C2: PNGOs monitoring processes improved; further, the fact they have adapted the tool to meet their own needs suggest there was merit in the CMS 2 concept. PNGOs are interested in the type of data the systems can produce if properly implemented according to their specific data needs. However, despite numerous adaptations/revisions the tool in its current form takes a 'lowest common denominator approach' reflecting minimum basic information needs applicable to all PNGOs rather than being PNGO/intervention specific. This limited the tool's perceived usefulness thus its current sustainability. In the longer term additional modules (like LMS, or on gender, empowerment etc.) could be added to meet specific sub-project needs, but using a similar platform and some of the same improved monitoring skills in PNGOs.

C3: CMS 2 implementation increased beneficiary confidence/empowerment to some extent, an unintended by-product of the survey. Through FGDs, many beneficiaries mentioned regularity of the survey resulted in greater awareness of their situation and knowledge on how to change their circumstances. Increasing awareness and, in turn, confidence and empowerment, was an unintended consequence of implementing the monitoring tool. Achieving and measuring such outcomes are often neglected in favour of striving for and capturing data on more easy-to-measure result areas. It would be worth further investigation into the extent BHHs would have reflected on their status if it had not been for the CMS 2 survey or if they will continue to do so once EEP/Shiree support ends. Increased beneficiary reflection as a result of the regular encouragement of field officers, promoted through the implementation of particular monitoring tools, would be an interesting additional result achieved by the EEP/Shiree programme and its PNGOs if this reflection was deemed sustainable behaviour change and independent of PNGO visits.

C4: Practical issues related to design of and implementation of data collection undermined CMS 2 potential as it led to data quality issues. There was essentially a flawed belief that the survey could be implemented with sufficient accuracy within existing PNGO incentive structures, workloads and resources. While training was held to build capacity, these factors were either under-considered or under reported, as were how these issues most likely varied across PNGOs and over time. From an operational perspective, EEP/Shiree was not definitively able to show the monthly status of *all* BHHs in real-time (which was one of the reasons for such a large data collection exercise). The main reasons for this were the challenges of practical implementation of the tool by PNGOs, including the high target numbers of BHHs some individual field officers were required to visit. This suggests that the underlying belief that CMS 2 could be implemented as part of normal field officer visits was

¹⁰ While the objectives were different, the benefits of LMS were more visible and appreciated by those beneficiaries who participated in both CMS 2 and LMS. MJSKS female beneficiaries very much valued the support provided through LMS, perhaps because the survey requires the field officer to physically examine the animal and this provides reassurance to BHHs, as well as improving their perception of their status in the community. The record keeping nature of the LMS also helps BHHs to plan and monitor the welfare of their animal.

not entirely accurate. One could also argue that it was not the design of the CMS 2 itself which was flawed, but that design of specific PNGO interventions was not compatible with the information needs of CMS 2 and/or its implementation methods.

C5: Lack of supervision of CMS 2 and time pressures on the data collection process and verification of data reduced data accuracy and perceived trustworthiness. Even though CMS 2 was intended to be a snapshot, rather than rigorously or scientifically accurate, the insufficient data quality led to perceived untrustworthiness amongst stakeholders in the resulting data itself. A fundamental factor which was significantly under-considered were the incentives and disincentives that existed for field officers responsible for data collection: the field officers conducting the CMS 2 survey had responsibilities for providing support to BHHs, and in effect, supporting their graduation from extreme poverty. Given the competing demands on their time, it is perhaps not surprising that the majority of surveys were significantly shorter than expected; we are not confident this yields quality data, and expect this to add to the proportion of problematic data identified. This problem was further compounded by insufficient supervisory checks, and an inability to correct flawed data. The findings suggest the assumption that bad data would represent an insignificant proportion of the database was unrealistic.

C6: The choice of survey methodology and its frequency of implementation may not have been the most suitable for an extreme poverty programme. Beyond ethical potential pitfalls such as ensuring informed consent, right to of participants withdraw and safeguarding anonymity/confidentiality, some of the survey questions were inappropriate for an extreme poverty programme – particularly if using resulting data to identify trends based on beneficiaries self reported status (e.g. health).

C7: The CMS 2 survey questionnaire content was relevant to EEP/Shiree, PNGOs and beneficiaries, but concept operationalization resulted in unreliable and sub-optimal questions. As the Process review notes, the survey application is only as good as the questionnaire created for it. The Review team further recognises that in order to develop innovation some level of experimentation is required, and thus a risk of failure. However, there was a lack of purpose and clarity as to how the information would inform operational decisions or strategic planning, resulting in overly-frequent repetition of questions and contributing to survey fatigue. In many cases, answer options do not provide a clear measure of what is happening – for instance, without know what income source was responsible for the change, it is of limited use practically, and also highlights the limits of what a field officer can ascertain in a ten minute survey based on what beneficiaries inform him of.

C8: More serious than data quality issues was the basis in which the data was subsequently supposed to be analysed through the visualisation dashboard to identify wider trends on extreme poverty dynamics. CMS 2 data includes households measured from previous months as well as “new” households each month – so it measures a mixture of ‘within household differences’ (panel data) as well as ‘between household differences’ (Cross sectional). From a data analysis point of view, this is a very important distinction as comparing the differences between two successive months is very problematic because one would need to differentiate between households measured on both occasions and “new” households on both occasions. The fact that the survey data as visualised in the dashboard represented (without disaggregation) both ‘old’ BHHs who has been surveyed over multiple months and ‘new’ BHHs joining the survey, meant that the data analysis methodology undermined

attempts to identify statistically significant or accurate trends applicable across different contexts and interventions. No disaggregation of these types of BHHs was done, and as a result, identifying trends was not valid from a research methods point of view, even with such a large dataset. This presents an ongoing limitation for the use of the CMS 2 dataset from a research perspective.

C9: The data that the system produced was utilised primarily for identifying where additional PNGO action was required (for struggling BHHs) and for accountability and advocacy purposes. As Management Information Systems supporting EEP/Shiree and PNGO monitoring at an individual BHH basis, they were valued tools, providing an oversight function and evidence of activities being conducted. However, data was inadequate to meet some of the formal objectives of the tool including claims for it as a tool to accurately understand the underlying dynamics of long term trends in Extreme Poverty were overstated. The data that was produced could not take the weight of analysis that these objectives would require, nor was there adequate capacity, appetite or trust in the data to do so.

C10: The absence of analysis and follow up studies to find out why an issue arose across many projects in different contexts was a missed opportunity by both PNGOs and EEP staff, but understandable given resource constraints and perceived untrustworthiness in the data. The current survey does not ask why a particular situation has occurred and it has been largely up to PNGO field officers to investigate and record the reasons why BHHs may struggle. This clearly presents a management challenge, as it will require further investigation by the PNGO before any decision, especially broader decisions applicable on a wider scale, which would potentially affect a greater number of similarly struggling BHHs, is taken. If this investigation is not done, it presents a bigger issue for using the data on a larger scale, i.e. across EEP/Shiree. Without understanding why a situation arose, it is unclear how the CMS 2 data can contribute to understanding the dynamics of extreme poverty. One usually needs qualitative data, in combination to quantitative data, to answer the “why questions”. This is one of the reasons monitoring and evaluation needs to be linked and designed together in order to ensure that there is a formal plan in place to investigate why questions and to ensure the data collection of monitoring systems is aligned to the needs of future evaluation, without becoming over-burdensome.

Detailed Findings

A: Value of and Demand for CMS2 by stakeholders

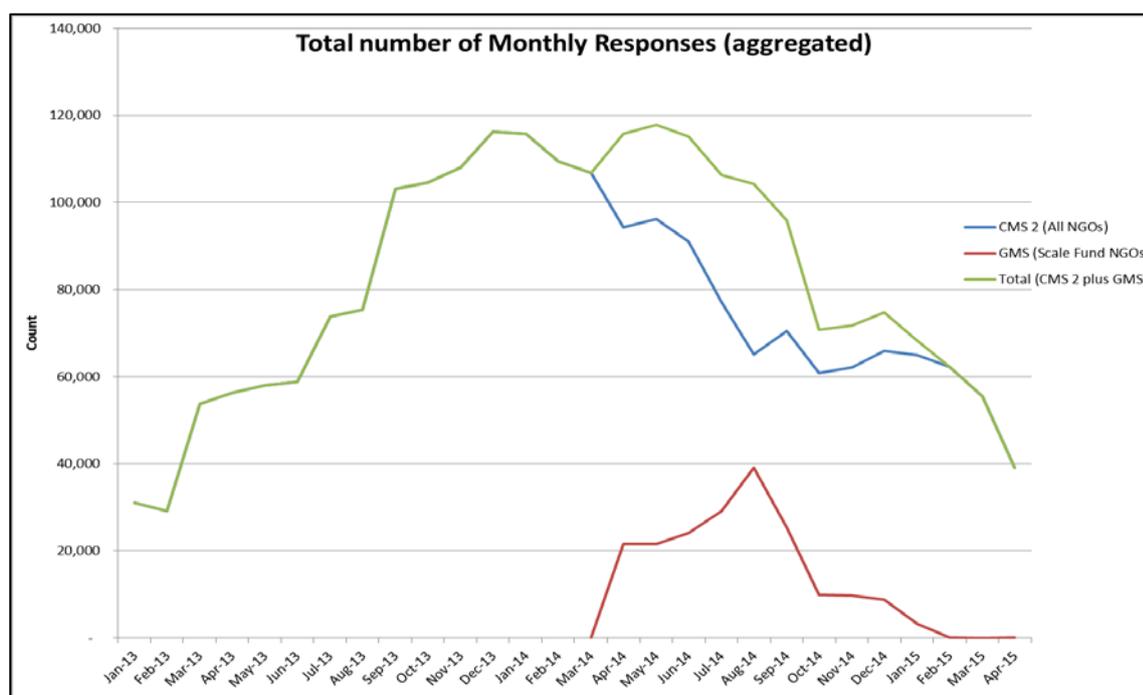
F1: The CMS 2 was valued both from a conceptual and technological point of view of beneficiaries and field officers. The Review team heard many stories of how the field officer responded to challenges experienced at the BHH level. While longer term, often systemic issues preventing graduation out of extreme poverty required longer term approaches, it was indeed possible through the tools’ implementation for PNGO and EEP staff to identify struggling BHHs and further investigate and monitor these BHHs as needed. EEP programme management highlighted how the tool was valuable in identifying a range of successful and struggling BHHs to visit on monitoring visits.

There was, at least initially, pride and excitement amongst field officer and beneficiaries in utilising what was seen as an innovative mobile technology. The Review team collected a wide range of views on CMS 2 from Scale Fund PNGO’s beneficiaries, frontline staff

implementing the survey and senior M&E staff and management. The main views expressed are summarised in Table 2 and key findings and views detailed further below.

F2: In terms of demand, a significant amount of EEP/Shiree time and effort was required to encourage PNGOs to adopt and implement the CMS 2 instrument. Graph 1 examines monthly responses between January 2013 (when CMS 2 was rolled out across most BHHs) and April 2015: an incremental but steady rise in total PNGO monthly CMS 2 responses received by the server and uploaded to the visualisation dashboard can be seen. FGD’s confirmed an EEP/Shiree ‘top down’ approach to promoting its use, which is somewhat understandable given it was a new tool. Initial reluctance can also be explained by PNGOs being more comfortable using traditional, paper-based monitoring tools and an initial lack of understanding about the potential usefulness of the data as both a Management Information System and for increasing knowledge on Extreme Poverty dynamics. The introduction of the Graduation Monitoring System, as a result of programmatic refocusing on providing additional support to non-graduates or struggling BHHs, can also be seen in the graph.

Graph 1: Monthly CMS 2 Responses from all PNGOs between January 2013 and April 2015 and introduction of the Graduation Monitoring Tool (GMS)



F3: From January 2014, there was a decline in total monthly CMS 2 responses from all PNGOs. As shown in Graph 1, the primary reason for the decline was due to a strategic decision within EEP/Shiree, at the request of donors, to identify struggling BHHs/non-graduates and target supplementary support to them. This led to the development of the Graduation Monitoring System (GMS), which was a once-off instrument designed to achieve what CMS 2 was unable to do (and, undeniably, never intended to do: assess BHHs status against a defined threshold which would categorise BHHs in terms of their progress out of extreme poverty). This decision was endorsed in a 2013 Contract Amendment, so was

understandably never envisaged during its design. Once a household had graduated, it was no longer mandatory for BHHs to be surveyed as part of CMS 2. This may partially explain the decline in CMS 2 surveys once GMS started. Tellingly, after GMS was completed in August 2014, there was no massive re-adoption of CMS 2 for those who had **not** graduated. For these struggling BHHs, CMS 2 implementation was mandatory but PNGOs discontinued using the tool, suggesting low bottom-up demand from these stakeholders.

F4: Other factors which contributed to the gradual decline in CMS 2 responses included the political situation and the gradual close out of EEP/Shiree. The political blockade in 2015 undoubtedly affected field officers' visiting BHHs. KIIs and FGDs also suggest that as EEP/Shiree winds down in its last year, many NGOs are prioritising implementation of activities which will contribute to achievement of results rather than conducting time consuming CMS 2 monitoring. Furthermore many senior PNGO staff reported that their key M&E staff are departing their roles as the programme finishes. The departure of the EEP CEO who was key proponent and early driver of CMS 2 may also have had the effect of de-prioritising the implementation of the tool. Another possible causal factor may have been the unavoidable delays in completing this Review of CMS 2, which in turn delayed making a decision on the future of the tool and created uncertainty about its continuance.

B. Appropriateness and Effectiveness of Survey Methodology and Questions

The usefulness (and resulting value and demand for) any data collection system is contingent on the quality of actual information it gathers and the reliability, validity and credibility of methods used by which information is collected. The findings of the Review on these issues are presented in two sections: 1) *Appropriateness and Effectiveness of Survey Methodology* which examines whether the survey methodology was appropriate, ethical and effective in the context of a sustainable graduation, poverty reduction programme and 2) *Accuracy and Appropriateness of Survey Questions in collecting useful information* which looks in depth at the content of the questions themselves.

The data collected as part of CMS 2 system had two primary purposes: a) to provide useful management information to EEP/Shiree and PNGOs on daily operational and broader programme wide and strategic decision-making; b) to feed the data into the research on extreme poverty dynamics and provide a source of evidence for advocacy activities. Therefore, the systems must collect accurate information that can be used to inform management decisions; likewise, accurate and appropriate quality data are required for wider research use.

1. Survey Methodology

- Measuring BHH Status and associated ethical issues

F5: The collection of CMS 2 data contributed to ensuring field officers gave individual attention to beneficiaries when going about their normal duties/visits, which in turn encouraged BHHs to regularly consider their economic/financial status, and their progress in graduating out of extreme poverty. This seems to have increased BHH confidence in some cases, another unintended consequence of implementing what was predominantly a management information tool. However, some beneficiaries also reported that they would not continue to monitor their economic/financial situation in the absence of the PNGO's visits – suggesting there may be a sustainability/dependency issue.

F6: Problematic issues may have arisen in terms of ensuring informed consent and protecting BHH's right to withdraw. As CMS 2 aims to collect census data, it is implicit that all BHHs participate in the CMS 2 survey. BHHs are included in the EEP/Shiree programme in a staggered manner and, as a result, may be less likely to be asked if they are willing to participate in the survey if they joined the programme before or after CMS 2 was introduced. Furthermore, guidelines do not clarify if withdrawal from the survey affects rights and entitlements as beneficiaries, although this would clearly not be the position of EEP/Shiree. Given they are receiving IGA/support from the PNGO doing the survey, and that field staff delivering support are also requesting their participation, beneficiaries may feel coerced rather than willing participants.

F7: The frequency of CMS 2 survey implementation may have jeopardised the safeguarding anonymity/confidentiality of responses. The same field officer conducts the interview each month and there is anonymity in terms of unique BHH numbering when the survey is automatically uploaded to a central server. However, given the frequency with which the field officer conducts the survey, this increases risk in terms of over-familiarity of field officer and beneficiary/community and the risk that neighbours may overhear the responses provided (during observation of data collection the mobile phone based nature of the survey attracted a lot of attention: if this occurred frequently it might undermine the confidentiality of respondent answers). It is unclear from operational guidelines for field officers and PNGO staff as to how EEP/Shiree and its PNGOs ensure these critical elements are carried out/safeguarded as new participants enter the programme and as new field officers (who may have missed initial training), are supervised on these aspects. It should be noted that there is privacy protection in place for data collected and uploaded to the visualisation dashboard – individual BHH data can only be seen by PNGOs and EEP/Shiree.

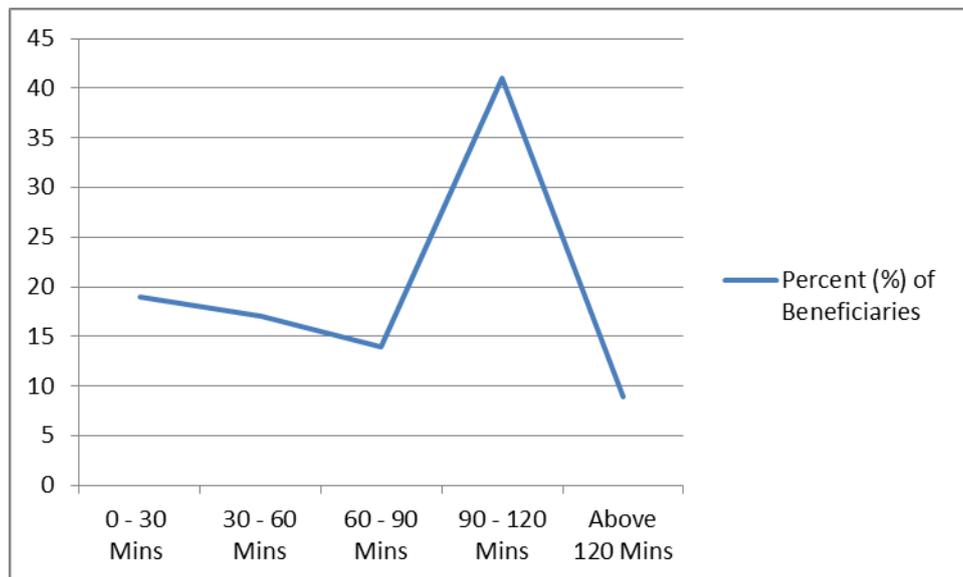
While training provided to field officers may have covered these aspects, given the unsupervised nature of data collection there are limited ways of knowing if these risks arose during CMS 2 or LMS implementation.

- Data Collection Process and Quality Assurance

F8: Practical data collection process issues often undermined the perceived value of participating in/conducting the CMS2 survey. There was widespread consensus that the tool was implemented too frequently and the survey, when implemented correctly, was too

lengthy with too many answer options (up to ten) for some questions. Field officers had to repeat all questions (some of which were not applicable) each month with the same BHH contributing to survey fatigue. Perhaps the most significant burden was on beneficiaries, some of whom lost a day of income in order to participate, through waiting at home for the field officer. Of those beneficiaries the Review team met, the time the survey took to participate ranged very significantly as can be seen in the graph below:

Graph 2: Time spent by beneficiaries participating in CMS 2 each month (including waiting time)



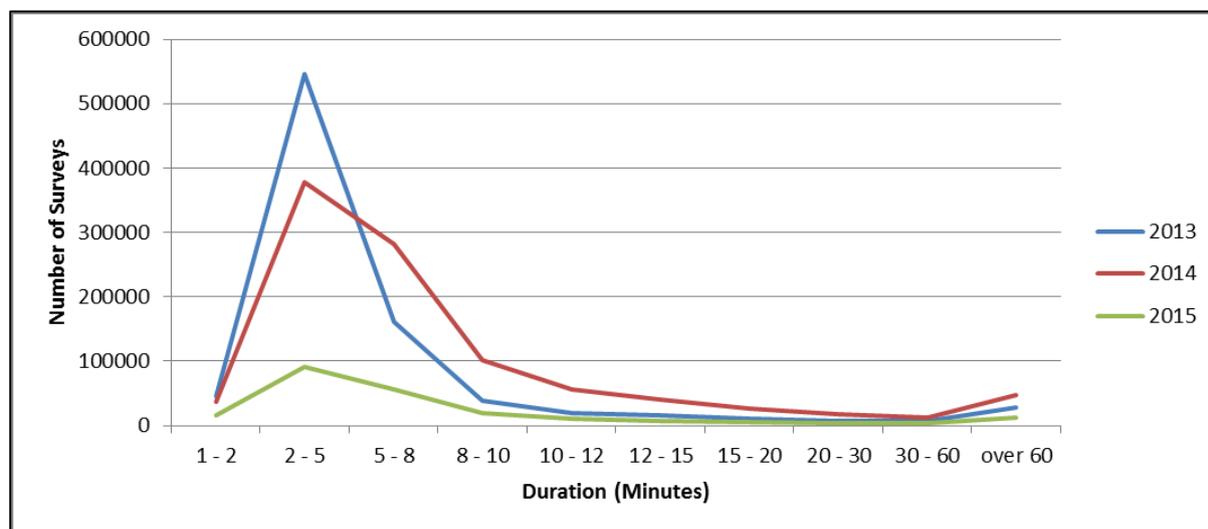
For over 40 per cent of beneficiaries, surveys took over 90 minutes to complete. It is possible that for these surveys the Field Officer was discussing issues raised further with the beneficiary or group (where CMS 2 was carried out in groups). The survey duration pattern (graph 3) broadly supports the pattern seen in the chart above, and reinforces the need for consideration of the opportunity cost of significant time spent waiting for (on average) a 3 minute survey versus loss of a day's wage.

F9: Very short survey durations suggest that data collected was less accurate and/or trustworthy than expected. The survey was designed to be a non-intrusive ten minute snapshot; however data from the CMS 2 database suggest that the majority of the surveys lasted between two and five minutes. There was universal consensus from all stakeholders that even when the survey was at its shortest, the field officer was experienced (and knew BHH well, which would quicken up the process due to familiarity with questions), that two to five minutes was insufficient to collect meaningful, accurate data. When looked at on an annual basis, survey duration gradually increased, most likely due to increased field officer diligence immediately after training/refresher workshops, and the addition of extra questions over time. However, there were over 80,000 surveys between January 2013-April 2015 which lasted above sixty minutes (4 per cent of total responses over same period).¹¹ This doubled from 2013 to 2014, and is on track in 2015 to be the same as 2014: the implication is that a

¹¹ This data is based on the start time and end time of the survey, both of which are captured by the mobile phone, and uploaded to the server.

significant amount of beneficiary and field officer time was used, which went against the intention of the system.

Graph 3: Average duration of CMS 2 surveys (cumulative) between January 2013 and April 2015



F10: CMS 2 response rate data (Graph 1) casts doubt on the idea that CMS 2 was a fully census-based survey capturing ‘real time’ information. For field officers, depending on project locations (rural/urban etc.), targets ranged widely between 150 to 600 BHHs to visit each month (although 600 BHHs was something of an outlier). Field officers reported to the Review team that when they did not achieve their individual target number of BHH surveys in one month, they would follow up with these ‘missed BHHs’ the following month and these surveys would then be uploaded to the dashboard. Implementation of CMS 2 was based on the assumption that the survey could be undertaken as part of regular visits of PNGO field officers. This assumption was not true for all PNGOs. Therefore, for some PNGO’s, the intervention design was not always conducive to CMS 2 implementation. During FGDs, approximately half of senior Scale Fund PNGO managers indicated that the survey implementation accounts for between 40-60 per cent of frontline staff time, a major resource commitment.

For example, EEP/Shiree has to date provided assistance to approximately 309,509 BHHs. Not all BHHs were enrolled in the programme at the same time or for the same duration. Of the peak 116,000 CMS 2 responses received in December 2013, 107,939 responses were from Scale Fund (SF) Partners.¹² However, the overall target response for December 2013 for SF BHHs was approximately 151,000 BHH CMS 2 responses. This implies that about 71 per cent of the total enrolled BHHs completed CMS 2 survey in December 2013, when CMS 2 was being conducted on a census basis. Furthermore,

EEP/Shiree did not expect 100 per cent census data, nor arguably can any existing monitoring tool capture fully real time information perfectly. However, the Review team assessed whether this indeed had an impact on whether these discrepancies in the data collection process

¹² Innovation Fund HHs were few as they do not contribute to graduation reporting – nor are they eligible for supplementary support as the grants provided under this modality are considered a testing ground for new models which could be scaled up.

resulted in potentially misleading data and to what extent this matters when the dataset is particularly large.

F11: Lack of separation between those responsible for BHH sustainable progression out of extreme poverty and those in charge of monthly data collection capturing their status). As highlighted above, due to budget constraints it was not possible to hire potentially more objective external enumerators to gather this monthly data. The incentive and disincentives that existed for field officers seems to have been under-considered and too much value was placed in relying on training to ensure honest and professional conduct and mitigate potential biases. Likewise the argument that potential field officer biases do not matter in such a large data set as long as bias do not suddenly change goes against the primary intention of the tool to help identify and respond to individual struggling BHHs. If field officers were under pressure to meet targets and help graduate a certain number of BHHs, these conditions could have incentivised both unintentional and intentional bias towards more positive reporting.

F12: The majority of surveys were completed during working hours but there were a high proportion which were started and completed late at night or early in the morning (as can be seen in graph 4 below.)¹³ We were concerned by the high numbers of surveys conducted outside working hours, which suggests they were not done in the presence of the beneficiary. Given that 88% of all surveys conducted last between 2 and 12 minutes, we can be reasonably confident that 88% of the surveys in each category were started and completed within the time range bounded by that category¹⁴. A randomly selected case study of one user supported the finding that there was a degree of data fraud: in 100% of surveys examined in the “Late” category, the field officer was starting, completing, and uploading surveys late in the evening (n=83 surveys), which accounted for 11% of the total surveys submitted by that individual.¹⁵ Whilst this was perhaps not so significant to undermine the entire dataset, it is impossible within the scope of this Review to individually examine each survey response submitted to the server to measure overall data fraud in such a large dataset; however it does reinforce the point that (a) ownership of the data collection process and verification of CMS 2 was severely lacking and (b) problematic data can easily be hidden in big data sets such as this. There is also evidence (not presented here), derived from the GPS mapping data, to suggest that some surveys were conducted at a great distance from project target areas, and therefore not in the presence of the beneficiary. The problems with network coverage go some way to explaining these more problematic findings¹⁶ in data collection but do not entirely explain their occurrence.

¹³ The timestamp used here was the time the data were received by the server, and not the time on the mobile phone which could be set incorrectly.

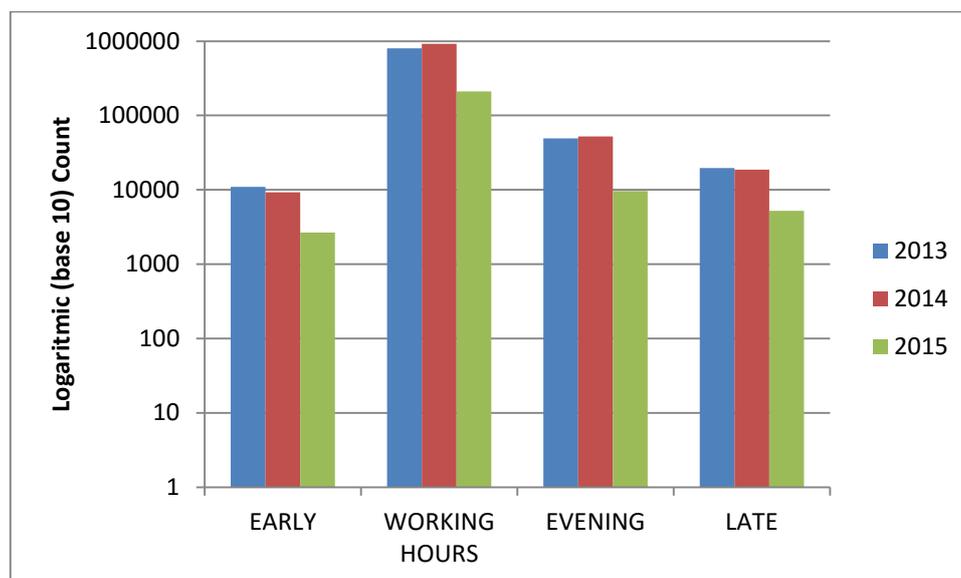
¹⁴ 67% of all surveys are completed in 5 minutes or less. Assuming an equal spread of survey durations across the four time categories, for one individual surveyor we would expect 56 surveys started and finished in the “Late” category to be of a duration less of 5 minutes or less: the observed figure is 58 surveys, suggesting a degree of confidence in this assumption.

¹⁵ To ensure that we could be sure that surveys were conducted after hours, we physically checked the survey start time, end time, and time received by the server for all records meeting the “Late” category for that individual. Benefit of the doubt was given to cases where large differences between mobile time and server time existed, and treated as an oversight by the individual to update the mobile time following a reset.

¹⁶ It is possible that surveys are sent once the field officer has mobile phone signal or once they return from the field at the end of the day. This does not overcome the issue of why some surveys only last two minutes, and were started, completed, and received during non-working hours, even in cases where AM/PM confusion was taken into account.

Graph 4: Starting times of CMS 2 surveys

[Notes: Early=0600-0800; Working hours=0800-1700; Evening=1700-2100; Late=2100-0600]



F13: CMS 2 data verification is only conducted on a small sample of overall data collected. PNGOs reported that they have little time to back check data and are unable to make changes subsequent to data once uploaded. Due to the time pressures involved in gathering real-time data collection, the surveys are automatically uploaded to the server and almost immediately available on the visualisation dashboard. There were times when PNGO staff identified errors but since they could not remove or correct them, the incentive to trust or use the data was reduced. As a real time ‘quick and dirty’ snapshot of BHH status, the tool was never intended to be as detailed or as rigorous as other sample based tools. However, it is arguable that the data as a result was less trustworthy for strategic programme wide decisions and research, even within such a large dataset, and thus resulted in PNGOs not relying on it to the extent envisaged but instead utilising it for advocacy purposes, and to demonstrate that they were active in the field.

F14: There were strong indications of a high degree of survey fatigue amongst both PNGO field officer and beneficiaries. Anecdotal evidence furthermore suggests that, perhaps due to other duties, commitments or general fatigue, beneficiaries requested that other BHH members or neighbours answer the survey on their behalf. This undoubtedly lowered the quality of the data collected and undermined the reliability of the survey data for those supposed to use it on a daily management basis.

2. Accuracy and appropriateness of survey questions in collecting useful information for above stated purposes (i.e. operational and strategic management; research, advocacy)

The survey in its current form has 34 questions, of which 25 are related to BHHs status on nutrition, BHH and community level events, socio-economic status, food security, WATSAN, health and education, safety nets and empowerment. The remaining nine questions relate to basic BHH profiling. The survey captures predominantly qualitative information, based on beneficiaries’ perceptions of their current status against indicators related to each of these

topics. Annex VI summarises in detail the accuracy and appropriateness of the survey content. Below, some of the key findings are extracted and explained further.

F15: Overall, the topic areas themselves are generally of relevance to monitoring a sustainable graduation poverty reduction programme such as EEP/Shiree. The qualitative, perception-based data has the potential to complement other tools within the overall CMS system, if triangulated appropriately. This has not been done, largely due to resource constraints. Beyond analysis, there are nonetheless many ways in which this instrument has particular limitations in the context of a poverty reduction programme like EEP/Shiree, which are outlined in Annex VI, broken down by section of the current CMS 2 survey. Some of the most important issues are highlighted in findings below.

F16: Analysis of the content of the CMS 2 questions reveals that there are problems concerning frequency, reliability, incompleteness and suggestive or leading phrasing. These issues impacted severely on data meaningfulness and usefulness, at least as a stand-alone tool. For instance, the question ‘What has been happening to household income from all sources over the previous month?’ has five answer options including: Increasing a lot, Increasing a little, Stayed the same, Decreased a little and Decreased a lot. The operational guidelines state ‘Before asking this question, make clear to the respondent that you do not want to know total income.’ However, the answer options do not provide a clear measure of what is happening – without know what income source was responsible for the change, it is of limited use practically, and also highlights the limits of what a field officer can ascertain in a ten minute survey based on what beneficiaries inform him of. Additionally, it is difficult to report what is happening overall if the beneficiary reports one source of income decreased a lot while another increased a lot. It is furthermore likely that repetition of some questions on a monthly basis is unnecessary (e.g. pregnancy). Feedback from the field suggest that stakeholders were aware of these limitations to a certain degree, and as a result did not rely solely on CMS 2 to base decisions – but compared findings with other sources of evidence.

F17: In the context of a poverty reduction programme, to some extent the survey content was not appropriate to ask beneficiaries to self-report on. Whilst beneficiaries are the best judges of their own situation, given the fact that they were receiving support through the field officer/interviewer, it is likely their responses were shaped by what they expected would result in continuing or additional assistance and based on their opinions of the quality of support already provided. This bias is particularly likely to be encountered on questions related to happiness, confidence and health. The Review found that BHHs have multiple reasons for inaccurately reporting their situation. Some beneficiaries reported they did not want community members and neighbours to know their status, which they feared would be revealed through participation in the survey and would lead to community conflict. Furthermore, some field officers reported that, particularly in the case of urban beneficiaries, solutions for many issues they raised were resolved through Community Based Organisations and development associations rather than on an individual basis – and many of the longer terms issues such as divorce stigmatisation, social exclusion, dowry disputes, women’s empowerment etc. require community level rather than NGO responses.

Criteria 2: Cost Effectiveness

Conclusions on Cost Effectiveness

C1: Development of the CMS 2 was a more technically, operationally and behaviourally complex challenge than anticipated which resulted in a process and design which undermined cost effectiveness. Whilst there was a commendable effort to develop the system under a very limited budget, the lack of experience in IT project management in both EEP/Shiree and the system developer led to an iterative process where mistakes were made that ultimately resulted in the developer bearing large costs, and caused delays in the development of the dashboard. Likewise, the changing focus of the wider EEP/Shiree programme by the donor over time (for instance, increasing focus on graduation thresholds), meant that the concept had to evolve, which incurred extra cost. Furthermore, without a budget for building in training for EEP management staff to make minor technical adjustments and to analyse the resulting data, this led to more costs and a reduced return on investments.

C2 The CMS 2 survey methodology was a relatively cheap (considering its scale) and quick way (using mobile technology) to gather information on BHH status but there were hidden costs which should have been considered Despite the fact that the survey became more expensive as response figures declined, the mobile survey implemented by field officers was a cost effective way of generating large amounts of data quickly. However, there were hidden costs which should be considered (such as human resources and time commitment etc.) Most NGOs would not continue the survey in the absence of the EEP/Shiree in its current form but some PGNOs have adapted the concept behind CMS for their own purposes.

Detailed Findings

CMS 2 was the first of its kind to be set up in Bangladesh; there are no similar tools to compare costs with. A summary of EEP/Shiree investment (set up) and operating costs for CMS 2 (to April 2015) can be seen in Table 3 below. CMS 2's development and implementation, at 24,421,090 BDT (or £198,849 GBP), is comparable in terms of costs with the CMS 3 panel survey, which had direct costs of 28,150,823 BDT (or £229,179 GBP).¹⁷ Unlike CMS 2, CMS 3 includes all cost for external enumerators. CMS3 has also been running for a longer timeframe: it is therefore important not to read too much into this comparison. Annex V details development and running costs in more depth, but below are key findings of the Review.

¹⁷ Total LMS costs to date have been 548,600 BDT or £4,466. Further breakdown of CMS 2 and LMS costs can be found in Annex V.

Table 1: Summary of investment and monthly recurrent (running) costs for CMS 2.

	Item Name	Cost in BDT
A. Investment costs to date		
1	Server and other network items cost	785,000
2	Mobile Set cost	12,228,027
3	SIM cost (Robi,Grameenphone and Teletalk)	207,082
4	Software Development by Mpower	5,428,261
B. Total Recurrent monthly costs to April 2015		
5	Monthly Mobile bill	5,772,720
Total: BDT Twenty Four million four hundred twenty one thousand ninety only		24,421,090

F1: The developers significantly scaled down their original budget in order to meet EEP/Shiree M&E budget constraints. There is evidence that suggests this reduced the flexibility to adapt the tool and database system after its design and roll out nationally, and affected the level of internal capacity building support mPower could provide to EEP staff to enable them to make changes and utilise further the data that the system produced.

F2: Analysis of the implementation costs of CMS 2 survey per BHH reveals it is on average approximately 3 BDT, which is relatively cheap for a survey of this kind. This is more than three times as expensive as a bulk (100,000+) SMS service available in Bangladesh. Given the relative sizes of the data bundle between CMS 2 data (including photographs) and an SMS, this would still seem to be good value. Ongoing operating costs include the monthly mobile phone charges which to date have cost 5,772,720 BDT or (£47,779 GBP). The average monthly cost is 207,891 BDT (or £1,704 GBP)

F3: Overall PNGO resource and other costs incurred through implementation should be considered as part of overall costs for CMS2. While beyond the scope of this review to assess precisely what those costs were, an Oxfam report in 2011 looked at M&E staff costs for six Scale Fund Partner NGOs as a result of implementing CMS 2.¹⁸ Each Partner NGO estimated it needed between 6-9 staff to implement the tool. A total of 49 staff salaries were assessed using salary information for 2010/2011 supplied by Dushtha Shasthya Kindra (DSK) and Practical Action Bangladesh (PAB) including a mixture of grades, from documentation officers to manager/coordinators. Total staff cost was just under 1.5 million BDT (or £12,219) per month but there was huge variation between PNGOs depending on types of staff provided, size of programme etc.

F4: As total monthly CMS2 response numbers decreased (due to reasons as outlined above), costs per BHH accordingly increased. The distinguishing aspect of the tool is that it is census based, thus, as survey responses declined, it accordingly became more expensive to operate as the same costs were being spent with less return. The data was also becoming less meaningful in terms of identifying extreme poverty trends and correlations, thus impacting on demand and in turn, sustainability of the tool beyond EEP/Shiree's lifetime.

¹⁸ Tom Barrett, 'EEP/Shiree CMS Monthly Snapshot: The potential for handset technologies – An Independent Assessment' (July 2011).

Criteria 3: Sustainability

A key goal of the systems was to provide real time information that NGOs can use to make decisions. Despite the challenges outlined in conducting surveys across all enrolled BHHs each month, (and leaving aside the data quality issues presented above), the Review team investigated how well the systems complemented existing monitoring processes and how PNGOs acted upon information provided through the CMS 2 systems. This included looking at what decisions had been made as a result of this evidence and the impact of such decisions in order to understand if the conceptual idea behind the systems improved conventional monitoring processes and promoted responsive management. Such achievements could be considered as indicators of greater sustainability of both the CMS 2 tool in its current form and behavioural/cultural changes in monitoring.

Conclusions on Sustainability

C1: CMS 2 improved working processes (monitoring, reporting, field support to BHHs provided) within EEP itself and PNGOs, particularly in terms of prioritising monitoring activity and closing feedback loops between management and field staff. In addition, interest in eliminating extreme poverty and the advocacy power of EEP/Shiree increased. It remains to be seen if these improvements are sustainable in the long term after EEP/Shiree ends.

C2: Data from CMS 2 was under-utilised, beyond upward accountability (reporting), particularly in making strategic decisions and for research into extreme poverty. This was as a result of low interest/ownership from outset, a general sense that the data did not lend itself easily to further analysis, the sense that the data was less trustworthy and/or lack of capacity.

C3: A more bottom up approach and a monitoring tool which recognised programme and PNGO differences may have increased ownership and helped fulfil the CMS 2 potential. PNGOs were institutionally and programmatically very different, and had a diverse range in terms of focus, beneficiaries and operational locations. Further, there were massive differences in terms of capacity both with regards to human and technical capacity. It may be the case that such a tailored participatory approach which reflected individual PNGO needs would have been too costly, and that, in general, development budgets on this type of fluid, and dynamic programme do not cater for implementation of this type of tool on a sustainable basis.

All of these issues led to an undermining of confidence in the tool, negating its usefulness and sustainability independent of the EEP programme.

Detailed Findings

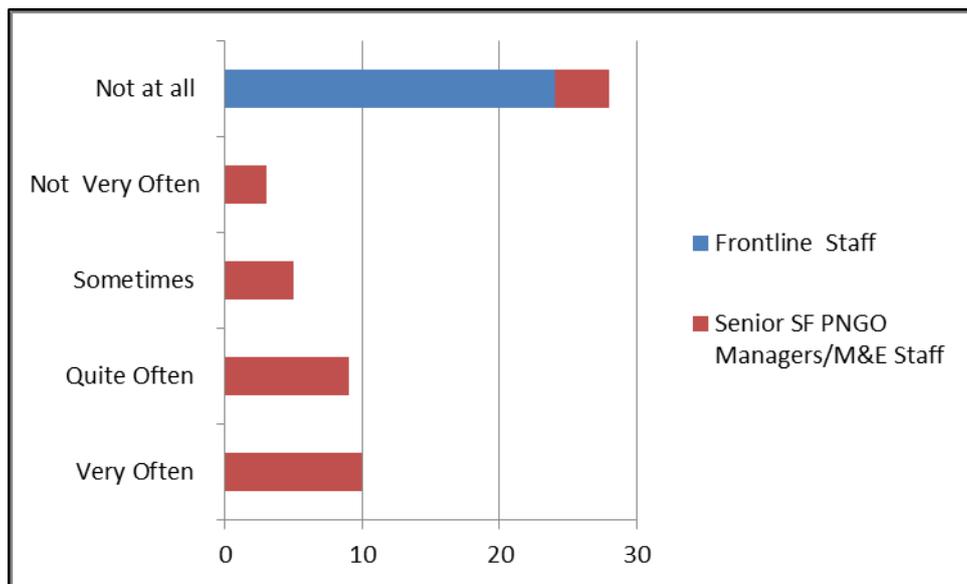
F1: Senior managers reported CMS 2 resulted in a prioritisation of monitoring data and helped close the distance that often exists between field officers and management. In this sense it contributed to an improved feedback loop essential to adaptive management, in which monitoring data was prioritised. However, senior PNGO managers also reported that the CMS 2 and LMS do not capture all the data they require for effective programme oversight and management. While the information it produces was 'nice to know', one PNGO senior staff member reported that it was 'not essential to know.'

F2: The data and innovative technology increased interest and, to some extent, understanding of extreme poverty in Bangladesh: it improved working processes, but

the degree in which the data helped improve graduation results so that it justified the heavy investment of resources, both human and financial, as part of CMS 2 implementation is less certain. PNGO staff frequency in utilising the visualisation dashboard is quite high, as can be seen in graph 5 below, but it is uncertain how the data was analysed and used to inform decision making at a project wide level, beyond micro changes in individual struggling BHHs.

Graph 5: Use of the Visualisation Dashboard by PNGO staff

[Notes: Not at all = never; Not very often = approximately once every two months; Sometimes = 1-2 times per month; Quite Often = approximately once per week; Very Often = more that two times per week]



F3: The ways both PNGOs and EEP staff use the dashboard reveal that for both PNGOs and EEP, the system was an accountability and advocacy instrument demonstrating evidence of activity in the field to visitors and government. EEP staff reported utilising the visualisation dashboard in two primary ways – i) to highlight to PNGOs struggling BHHs and unusual trends/correlations in the data for further investigation; and ii) in advance of monitoring visits to identify sites where BHHs may be struggling which could then be included as visit sites in addition to PNGO suggestions. Through the CMS 2 dashboard, the PNGOs demonstrated to EEP programme managers that activities were being carried out, and showed to Government officials that interventions were effective.

F4: It is evident from feedback that the appetite and/or capacity to analyse the data in CMS 2 is relatively small. There was limited human resource capacity to analyse the data either in EEP or PNGOs and this negated its value as a management and decision making tool. Compounding matters were the unreliability and incompleteness of the data collected and more technological design challenges which undermined its potential for analysis. Stakeholders may have been hesitant about using the data on a more strategic programme wide basis (which requires more rigorous data which could bear the weight of intended analysis) and instead opted to utilise the data for advocacy purposes which may not have necessitated the same level of analysis nor subjected it to in depth scrutiny.

F5: As noted above under usefulness findings, there were data collection issues which even in such a big data set may not have been fully 'ironed out' and may have affected the accuracy, reliability and validity of data as presented on the dashboard. It is important to exercise caution when presenting and using big data in the way used by EEP: such visualisations of big data do not necessarily indicate trends at an aggregate level, and there is a clear risk of misinterpretation, which can lead to incorrect decision making unless the reasons why a particular situation has arisen are understood- it would not be challenging to collect that kind of information from short surveys.

F6: Experience implementing CMS 2 has resulted in adaptation by PNGOs and others of technological approaches/ processes to suit specific purposes. Oxfam, Save the Children, Practical Action Bangladesh and Concern Worldwide are all utilising mobile phone based technology in Bangladesh in other programmes working for public social good. Concern reported that they collect data through mobile phone technology on a biannual basis in order 'to avoid measuring changes at the cost of making changes.' Likewise, mPower have also built on their experience on CMS 2, which was the first time they had scaled up such technology on a national basis. Their 'poverty tracker' tool aims to collect similar information to CMS 2 but also intends to track financial metrics through upgraded technology. Other former Young Professional staff of EEP have drawn on their experience and have modified a CMS 2-like approach/technology to monitoring health programmes aimed at eradicating Ebola virus disease in Liberia. It is worth further investigation on the experiences in using a CMS 2 like tool in the context of an outbreak such as Ebola – as opposed to tracking gradual BHH changes of the extreme poor. In the former, the change being monitored is much more certain – i.e. has Ebola been eradicated from a certain area? In the latter, the progression out of extreme poverty is much more complex and often is influenced by a number of socio economic factors.

Table 2: Compiled Experiences (both positive and negative) of NGO partners and beneficiaries with the CMS 2/LMS system (as expressed during FGDs)

	Beneficiaries	PNGO field officers	PNGO M&E senior staff and management
Positive Aspects	<ul style="list-style-type: none"> ✓ CMS 2 survey accurately captures their situation (regularity). Some thought their situation changed more often than monthly, they thought survey was sufficiently frequent to capture changes. ✓ Majority value the one to one interaction with designated field officer and are 'very willing' to share personal information with field officer ✓ Majority believe they have benefited from participation in both CMS 2/LMS. Majority are satisfied with the response field officers provided to their problems raised as part of participating in CMS 2/LMS ✓ The CMS 2 encourages beneficiaries to consider income and expenditure on a regular basis 	<ul style="list-style-type: none"> ✓ Proud to be using mobile phone technology, although did become outdated rapidly and led to data entry errors (e.g. software application freezing, buttons on handsets too small) ✓ CMS 2 ensures BHH given individual attention each month (as part of normal field officer duties) ✓ Close monitoring at a micro level which helps target support better and identify struggling BHHs ✓ Some field officers reported that beneficiary confidence increased as a result of the survey and considering their status regularly. ✓ Field officers were able to provide information and advice on nutrition, social services available to beneficiaries, and access to medical care and advice on animal care (LMS) 	<ul style="list-style-type: none"> ✓ Use of technology as part of monitoring welcomed. ✓ Brings field officer and management closer and better communication/closing of the feedback loop as a result of CMS 2 monitoring process ✓ Close monitoring at a micro level which helps target support better and identify struggling BHHs ✓ Qualitative information can be used to provide further explanation to quantitative data but most of the time, further investigation of reasons for lack of progress towards sustainable graduation required further information beyond what CMS 2 captured.

<p>Negative aspects</p>	<ul style="list-style-type: none"> ✗ Almost half of beneficiaries met believe that the time taken to conduct the CMS 2 has decreased the amount of available time the field officer has to provide practical support ✗ Survey length is too long and has too many answer options for some questions which lead to a large degree of survey fatigue ✗ Participation requires varying degree of beneficiary time meaning less time for other earning activities/loss of income 	<ul style="list-style-type: none"> ✗ Wide range of BHH targets per field officer (between 180-600 BHHs per month) depending on size of PGNO, capacity, project locations (rural/urban etc.). Most field officers felt survey implementation increases their workload 'a little'. ✗ Survey length is too long and has too many answer options for some questions which lead to a large degree of survey fatigue. Suggested that frequency and length of survey could be revised to a quarterly basis and key issues such as (assets, human capital, income and savings could be collected and PNGOs would then select other optional modules as relevant) ✗ Field officers had little opportunity to make suggestions on changing survey (content/process) 	<ul style="list-style-type: none"> ✗ Considered CMS-2 costly in terms of finances, human resources and time. Most would not continue the survey in the absence of the EEP/Shiree in its current form but some PGNOs have adapted the concept behind CMS for their own purposes ✗ Turnover of PNGO staff means often there are less trained staff conducting the survey, despite training and refresher sessions
<p>Negative aspects (continued)</p>	<ul style="list-style-type: none"> ✗ Beneficiaries felt that CMS 2 survey missing questions on dowries, women's empowerment, eviction and security issues ✗ CMS 2 was less valued than LMS by those that did participate in both surveys. Cattle of huge relevance whereas CMS 2 questions on the abstract concept of BHH less immediately relevant to beneficiaries ✗ Longer term beneficiary problems/community issues (dowry, women's empowerment, divorce) not resolved by field officer (but survey may raise expectations beyond field officer's power) ✗ Beneficiaries reluctant to share true situation as worried neighbours would find out/overhear etc. 	<ul style="list-style-type: none"> ✗ Some questions, such as those on income, expenditure and savings, did not capture absolute level of BHH financial status. If one earning activity increased BHH income but another suffered a setback, difficult to judge overall status without quantitative range/values. ✗ Field officers unable to see overall data related to BHHs as no access to visualisation dashboard ✗ Some field officers unhappy that responsibilities for mobile phones being lost/damaged had been passed to them by PNGO, particular as the technology became outdated and more prone to damage/normal deterioration ✗ Beneficiaries sometimes hide assets or sell them (to gain short term benefits) and thus difficult to get accurate BHH status 	<ul style="list-style-type: none"> ✗ Many senior staff not in their role during development/pilot of tool at outset, which reduced their sense of ownership ✗ Some felt that the tool lacked the ability to track seasonal variation, type of IGA provided (this filtering ability added to visualisation tool later) and geographical differences between projects (urban/rural etc.). Difficult in this sense to identify what a trend was - or if decrease in BHH income was a natural and expected trajectory of a BHH given the type of IGA, season, location etc. ✗ Senior staff and M&E managers did not utilise the data in the way or to the extent originally envisaged - especially in terms of trends/correlations. ✗ Quite a few practical issues related to lack of network coverage and server capacity which affected survey response. ✗ CMS 2 indicators complementary to existing PNGO monitoring systems and data collected but unable to replace them entirely. Felt that while data is 'nice to know, not essential to know.'

Lessons Learned/Key Risks in Developing Similar Systems for Future Extreme Poverty Programmes

The lessons learned presented below should all be taken as potential key risks to consider if similar tools are created for future extreme poverty programmes.

Design and continuous development of tools

LL 1: Sequencing in design and development of tools. Prior to selecting the type of technology and data collection process to be adopted, the information required for different types of decision-making need to be identified, following which the survey questionnaire (should survey methodology be decided as best) should be developed and tested. Limited changes should be introduced after roll out of the tool and internal in house capacity should be available to make minor technical changes if necessary to save time and reduce costs. On this point, off the shelf software solutions that fulfil 80 per cent of requirements may be more favourable than bespoke customisation which fulfils 100 per cent of requirements, as they are likely to be cheaper (and of much better quality than at the time of CMS 2 development) and are more user-friendly for the non-expert.

LL 2: Selection of systems' developers and close collaboration with systems' users is critical: When CMS 2 was being designed, there was limited capability to develop the use of mobile tools in Bangladesh. This situation led to challenges that posed significant problems during development and beyond. The Review team recognises that there is much interest in mobile technology in the development sector; the diverse market and potentially lucrative income streams make it an attractive proposition for new entrants. We would however, caution against using inexperienced companies to develop such solutions. Furthermore, it is clear that such developments benefit from closer collaboration, and a rigorously structured development process: whilst it is rare to "get it right first time", closer collaboration, and better understanding of scope may help to avoid unnecessary costs.

LL 3: An optimal database design at outset saves resources in the long term: Dynamic programmes require the development of adaptable databases. The original CMS 2 design prepared consisted of flat tables that stored the data as single rows: This structure is suitable to small databases (e.g. mobile phone address books) where analytical capability (via queries) is not envisaged; it is not an appropriate structure for a system that seeks to mine data (where a relational database is more appropriate). Revising incorrect structures requires developers to create alternative solutions that incur extra time and cost.

LL 4: Importance of accurate assessment of data load: the Review team was informed that the specifications of the hardware purchased were insufficient for the requirements of the system; and an upgrade was needed after six months to boost the capacity. However, capacity constraints still exist. Field officers reported that they tended to conduct CMS 2 surveys in the last week of the month to minimise conflict with other essential duties. They reported that on occasions, they are unable to submit the data at the first attempt as the server was unable to receive the data, suggesting (amongst other possibilities such as network issues) it was unable to cope with the load of many concurrent upload requests. Such issues can easily be avoided in IT projects, through using a thorough pre-design phase that identifies exactly what a system should and should not do, including setting performance requirements: this should be done during a defined "Requirements" phase of the Software Development Life Cycle (SDLC). This challenge has not been overcome, but may have been eased by the reduced demand for the tool.

LL 5: Flexibility in methodological design Poverty elimination programmes are long term endeavours and the change of direction in the development agenda amongst donors often results in refocusing of programme strategy and even its direction. The data that the tools

collect needs to be fully thought through at outset. The purpose of data collection should be clear, as it affects what types of data and the frequency at which they should be collected. Identifying and prioritising information to be collected requires extensive consultation on what type of data is (a) required for programme operational decisions and (b) required for programme strategic decisions and (c) required for longer term analysis/research of extreme poverty should be conducted and user feedback embedded to continuously confirm if the tools are meeting expectations.

Furthermore, there needs to be prioritisation of 'essential to know' over 'nice to know' information. It is likely that a one size fits all survey will not satisfy all needs, or collect all data required especially throughout the entire programme lifetime. This is especially true in the context of a challenge fund programme that has many types of PNGOs and related programmes in differing contexts, with varying capacities. In light of this, further consideration should be given to designing a core set of survey questions which all partners fulfil and then specific add on modules of questions relevant to their own particular programme type which consider frequency of the question and how the data will be utilised

LL 6: Technology development budgets need to factor in lifecycle replacement and require a high degree of flexibility. The Review team was told on numerous occasions that the CMS 2 platform was now running on outdated technology. This challenge was recognised at an early stage: the original Nokia handsets used during the pilot were not seen as being fit for purpose, and were replaced by new Smartphones which had recently come available for a competitive price and offered greater functionality. However, these handsets are now aging, but have not yet been replaced. Some field officers reported issues with the handsets, such as poor performance (such as worn out keys), small key and screen size, and short battery life, but are continuing with these issues as best they can. The Review team observed that handset performance issues did add to the survey time significantly.

Given the long term nature of programmes of this kind, technology budgets should be as flexible as possible and factor in upgrading of hardware through natural deterioration (wear and tear) and plan adequately for taking it to scale. Technology offerings have moved on at pace, and tapped into new markets. It is likely that Hardware as a Service (HaaS) and Software as a Service (SaaS) are now available in many countries, with off the shelf solutions that can be adapted by internal teams for reduced costs. These cost-effective methods (similar to leasing) transfer the maintenance risks to a third party, and can be a way to ensure that technology is kept up to date for a reduced financial outlay. It is likely that this may also be an option for handsets in countries where phones are provided as part of a contract, rather than on a SIM only basis. Frequent replacement of hardware is inevitable given the pace of mobile development, but can present a significant and unexpected cost that should be carefully considered during budgeting.

Data Collection – Design of Implementation Processes

LL 7: Recognising trade offs and minimising impact. There is an unavoidable trade off between collecting high quality, objective and thoroughly verified data and programme budgets, resources and capacity. These need to be fully recognised as weaknesses within all data collection systems and processes, and efforts (beyond training) need to be taken to reduce and mitigate the risks this presents. There is a risk that monitoring becomes more important than implementation. It is clear that completing a monthly survey places a significant burden on the extreme poor; potential income losses (such as losing a day's labour to attend) and how this can be avoided should be considered in the design of surveys. Survey fatigue has been identified as an issue for CMS 2, and it is expected that

this will be the case for similar projects. This could be overcome by accepting the trade-offs between enumerators' other responsibilities, and the need for real time data; this may also have some effect on reducing problematic data.

Data for data sake is not helpful - it must be acted on. Getting timely and accurate data is essential, and for this to be a success requires ownership at multiple levels, including from beneficiaries. This was demonstrated by LMS (where the tool actively helped in stock management), and to a lesser extent in CMS 2 (where confidence and self-reflection were observed). The benefits should be clearly identified in the design stages, and constantly revised – this may help to improve ownership. Sharing data with beneficiaries to illustrate change should be considered.

LL 8: Resource and hidden costs should be considered. Delivering a survey regularly at scale requires significant investment in time from both PNGOs and beneficiaries. In the case of the NGO this led to trade-off with other activities, and put pressure on field officers to deliver challenging targets. Additionally, there is a risk that less time was spent on other project activities than was needed. For beneficiaries there was an additional hidden cost, that of losing income in order to participate. Clearly these are significant costs that should be considered when developing similar tools. Overcoming them may require additional staff (perhaps dedicated enumerators), and perhaps clearer benefits to beneficiaries. This is more preferable than compensation for loss of income, which presents another risk to data quality and sustainability.

LL 9: Valuing qualitative and quantitative data on its own merits and linking it up for analysis/triangulation appropriately. While the CMS3 survey collected more detailed quantitative information, there would be value in collecting seasonal qualitative data through a CMS 2 like system which could assess BHHs more rapidly. This would help give better insights into extreme poverty dynamics. Furthermore, measuring increased confidence and empowerment, as CMS2 unexpectedly did, should not be underestimated in terms of overall contribution to eliminating extreme poverty.

LL 10: Monitoring and evaluation need to be considered linked activities. Monitoring systems gather mainly quantitative data, which can tell you what is happening (as was largely the case from CMS 2), but not why things happen the way they do (e.g. why things are different than we expected, or why data from community A is different than that from community B). One usually needs qualitative data, in combination to quantitative data, to answer the “why questions.” Qualitative data is hard to summarise and, typically, leads to other questions, prompting additional efforts to collect yet more data. Eventually the monitoring system becomes expensive and cumbersome, and the data are much more difficult to collect and interpret (for example, the collection of solid qualitative data requires more skilled and experienced survey teams, and there are real questions whether the data collected by different teams or at different times is comparable). If left unchecked, a monitoring system can become unworkable, delivering data which is hard to understand and untrusted. The solution to monitoring system limitations is not to build-up the monitoring system in an attempt to answer the “why” questions (although some why questions can be included at a modest cost); rather, one needs to use evaluation to answer the “why questions” by documenting the critical questions arising from the monitoring data, periodically assessing what would be required to answer each question, and arriving at a listing of critical questions that could feasibly be answered through an evaluation. This does not seem to have been considered sufficiently in CMS 2 implementation.

Demand Driven Ownership and Data Use

LL 11: Building ownership and sustainability of the systems: While there were extensive consultations between the developer, EEP/Shiree and PNGOs on the questionnaire and data collection approach, it was a significant challenge to explain why the data was useful to inform evidence based decision making. There was recognition that rolling out the system to all BHHs and PNGOs required starting from scratch but the developer, due to budget constraints, did not conduct user feedback with PNGOs on a quarterly basis as they suggested originally. Survey implementation can be heavily dependent on field officers time, effort and sustained interest; therefore more consideration of incentive structures and PNGOs resource requirements prior to scale up should be considered. This mirrors findings in the Process Review (2014) which found that the assumption all field officers visited BHHs once per month was false. Once EEP identified issues with the tool or its implementation, these were shared with implementing partners and field staff. Regular refresher trainings were provided, as well as lesson learning sessions to highlight and discuss problematic data, short survey times, and seek solutions for how it could be avoided. Nevertheless, our analysis shows that problematic data and very short survey times continue to be a challenge; it is likely that this will always be the case when there are competing priorities for PNGO field officer time.

LL 12: The existence of a data source is not a guarantee of its quality or usefulness, and there should be some guiding vision over how that data will be verified and utilised. One of the aspirations from CMS 2 was that it might allow research into the dynamics of extreme poverty. For numerous reasons, this has not happened. CMS 2 tried to provide accurate insights at a household level to help identify failing households, and provide bigger picture, aggregated data for research. It is however, difficult to reconcile these two objectives: the belief that problematic data will be “ironed out” in bigger data leads to its implicit acceptance. This is however, very much at odds with the goal of identifying and supporting individual failing households which require diligent, accurate appraisals. A key additional risk in using big data in this manner was raised by Boyd and Crawford: “Too often, Big Data enables the practice of apophenia: seeing patterns where none actually exist, simply because enormous quantities of data can offer connections that radiate in all directions. In one notable example, David Leinweber demonstrated that data mining techniques could show a strong but spurious correlation between the changes in the S&P 500 stock index and butter production in Bangladesh (2007).” Using data in such ways requires time, customised analytical tools, personnel with excellent analytical skills, and careful planning of the data collection process to enable disaggregation of panel data from cross-sectional data: this may be a challenge for development project budgets.

LL 13: Adaptation of tools by PNGOs is positive but costs could be incurred through duplication of effort. While the Review team heard how PNGOs have adapted the idea and technology of CMS 2 to suit their own needs and purposes, it should be noted that there could be additional costs for donors if each PNGO independently creates their own tool to monitor through mobile technology.

7. Recommendations *(Review Objectives 3)*

Revision of the Questionnaire

EEP/Shiree is due to close in March 2016, with Grant Agreements with Partners closing by December 2015. There are constraints on front line NGO staff to focus on sustainability of field activities, and to complete a project and Supplementary Support activity, which presents a trade off with monitoring. Additionally, the Review team were told that the current survey does not capture all information required by each NGO; it is difficult to see how revising a “one size fits all” survey will provide that information. Given this, and the challenges posed in developing the CMS 2 instrument in a dynamic programme, we would not recommend revising and testing the CMS 2 questionnaire over the remaining lifecycle of the project – this is unlikely to deliver much value to EEP/Shiree, its partners, or successive programmes. The same would apply to LMS 2.

Ongoing use of the CMS 2/LMS instrument

Whilst all partner NGOs agree the tool does not capture all their requirements, some partners did recognise some benefits and were continuing to use the system for the short term. We see four options, all of which would need partner consultation:

- 1. Ensure that CMS 2 and the dashboard is available for those that want to use it.** EEP/Shiree could then conduct asset reclamation and disposal/ redistribution exercise. Additionally, there would be savings generated through cancellation of redundant SIM contracts, which would further reduce the cost per survey. We would recommend that in-house support be used where possible to overcome server issues, rather than extending external MoUs (possibly at a cost).
- 2. Phase out CMS 2/LMS systems.** This option would allow EEP/Shiree to make greater savings and dispose of assets prior to March 2016, and free up time within the MIS team to focus on other work. It is notable that PNGOs did not express any desire to continue using the CMS 2 system or its data after close of the EEP/Shiree programme.
- 3. Convert the existing tools into “Apps.”** This option would allow an unsupported smartphone application to be available to anyone. This option would incur new development costs, and ongoing maintenance costs in order to ensure compatibility with updated smartphone platforms. We do not believe this to be a cost-effective solution; invariably the application would need to evolve to suit future programming needs, and it is difficult to see who could oversee this during the remainder of EEP/Shiree. It is important to note that there are intellectual property rights issues with mPower that would also need to be resolved.
- 4. Conduct an appraisal of technology tools to develop a donor ICT strategy for Bangladesh.** There is significant interest in the technology; similar *de novo* systems repeated across several projects funded by DFID represents a significant duplication of costs and increases DFID investment in a dynamic sector. We would recommend that a detailed study of available (including free) technology such as online survey tools be examined, to inspect how this could be adapted for use by PNGOs and donors. We believe that this is out of scope of the remit of EEP.

Future of the CMS 2 database and dashboard

Much has been said about the quality and value of the CMS 2 data. It would be a very time-consuming and subjective task to measure the degree of problematic data across the entire database; but given our analysis we suspect that a significant amount of the data may be of questionable quality, as is evident from the survey duration time. Its value to researchers, who would be unfamiliar with the challenges posed, needs to be called into question. At present, there is no demand for a CMS 2 based report, and nor has there been much internal or external appetite to analyse the data.

Whilst this is true, given the resources and effort that has been put into CMS 2/LMS, further consideration needs to be given to what should be done with existing data, independent of what decision is made on the future of the database. One potentially viable suggestion, in the remaining lifetime of EEP/Shiree, is for EEP/Shiree staff or external consultants to examine the existing data (whilst being mindful of its data quality issues), and assessing if it would be possible to conduct predictive modelling analysis on remaining BHHs to estimate as accurately as possible the numbers who will graduate after the programme ends and as a result of support provided.

The Review team furthermore sees two options for the future of the CMS database and dashboard:

1. Handover the CMS 2 database and dashboard at completion of the project in a similar manner to the other databases. We would suggest that if this option is chosen, that appropriate caveats be made clear before access is permitted to highlight that this was an innovative system, piloted at scale, and that the quality of the data cannot be guaranteed. Further, a caveat that disaggregation of the data would be required before any further analysis is undertaken to differentiate between beneficiary households measured on a panel and a cross-sectional basis.

2. Remove the CMS 2 database and dashboard once they have run their course. Whilst this potentially risks losing a large dataset permanently, it removes the risk of reputational damage to EEP, its partners and donors through poor quality data being used for research. According to the MoU signed with mPower, ownership of the data rests with EEP/Shiree; this is therefore a decision that EEP/Shiree could take. As the source code for the visualisation is the IP of mPower, there are opportunities for value to continue to be gained from the programme's investment via mPower adapting this code for its other social developments.

APPENDICES

Appendix I: The Review's Terms of Reference

Review Framework: Performance and Cost-Effectiveness of EEP's pilot Change Monitoring System 2 (CMS2) and Livestock Monitoring System (LMS)

Table of Contents

Background	40
Development History	41
Survey structure	41
Purpose of Review	42
Audience and Intended Use	44
Key Questions	44
Design and Methodology	46
Existing Data	46
Data Collection	46
Deliverables	47
Reporting Guidelines	47
Duration and Timing	48
Team Composition and requirements	49
Management and Logistics	49
Annex 1 - Getting to Answers Matrix	50
Annex 2 – Explanation of Getting to Answers (G2A)	52
Annex 3 – Estimated Budget	54

Background

This document provides the framework (terms of reference) for a review of EEP's mobile phone based monitoring systems.

EEP/Shiree¹⁹ is a DFID and SDC funded £83m Challenge fund aimed at graduating 1 million Bangladeshis from extreme poverty over an 8 year period (2008-2015). The Change Monitoring System (CMS) is the programme's five element integrated Monitoring and Evaluation System. CMS 2, developed by EEP/Shiree with its technology partner [mPower](#) is a pilot, ten minute, monthly census survey administered at the household level by EEP/Shiree's partner NGO field staff. It is a smart phone-based management information tool which monitors progress achieved by Beneficiary Households (BHHs). It also allows NGOs to track the frequency with which field staff visit each BHH.

The survey allows investigation of changes in the lives of beneficiaries. NGOs can capture dynamic, real time, information about the experiences of thousands of beneficiaries to help guide project implementation and address problems as they arise. The collected data are then visualised via a dashboard, the aim of which was to enable analysis of spatial, temporal and socio-demographic trends which offer insights into the dynamics of extreme poverty based on households' self-assessment of change. The surveying is done by NGO field staff with no supervision from EEP/Shiree staff. Additions and modifications to the technology platform have led to development of the Livestock Monitoring System (LMS) and Graduation Monitoring System (GMS).

The System consists of the following tools and processes:

843 'Samsung Galaxy Y' smart phones equipped with Android operating system, internet connectivity and GPS capabilities. Field staff access a pre-loaded application to conduct the CMS 2 questionnaire.

Data including survey results, photos, audio and GPS coordinates are sent upon survey completion to the EEP/Shiree server (or saved for transmission at a later time).

Data are automatically aggregated at EEP/Shiree and cross tabulated with our [CMS 1 baseline survey](#). Results are uploaded in real-time to an online visualisation dashboard.

Users (NGOs, academics, the development community or public) are able to access the visualisation (with varying levels of privacy controls). Users can make use of this information to support their own agenda, for example NGO project staff can use up-to-date information to guide evidence-based management decisions.

Further information regarding the programme can be found at the website www.shiree.org and a full description of all the CMS is available under the extreme poverty tab at this site.

¹⁹ The official title of the programme is Economic Empowerment of the Poorest (EEP). Shiree, the Bangla word for steps, is the name adopted by the programme to summarise the basic approach – assisting people to take steps out of extreme poverty.

Development History

CMS2 is now a full scale pilot project that has been developed in several phases, and rolled out to all households. The initial pilot phase, during July 2010, utilised optical reader technology and involved over 1000 households from both Scale and Innovation Fund NGOs. Following this initial pilot phase it was decided to transition the tool to a mobile phone platform allowing rapid data collection with automatic uploading to the EEP/Shiree server and simultaneous “real time” production of usable databases available to both shiree and partner NGOs. A first pilot using the mobile phone technology was undertaken with 25 handsets and about 3000 beneficiaries during Jan/Feb 2011. Following feedback on all aspects of the pilot (survey instrument, technology and process aspects) a second expanded pilot used 100 handsets and an amended questionnaire was undertaken during June/July/August 2011. This second pilot gathered data from over 11,000 beneficiary households across all shiree Scale Fund and Innovation Rounds 1 and 2 partners. Evidence from this second pilot showed that the potential of CMS2 went beyond that of a monitoring tool to a core management information resource for both NGOs and EEP/Shiree. This was based on 3 essential aspects of the system:

It is a census not a sample survey (i.e. ALL households are covered);

Monthly data collection provides immediately usable management information;

It is a rapid snapshot (less than 10 minutes per respondent) taken by NGO field staff during their normal round of household visits, and cannot substitute for other CMS instruments²⁰.

To test and capitalise on the potential of this tool, whilst being cognisant that it had never been tried before, it was decided (in 2012) to scale up the pilot use of the system to all households. This involved further technical development of the system, additional procurement, as well as training of NGO field staff on data collection.

The LMS was developed in parallel to CMS2, and utilises the same hardware and a similar approach to data collection and reporting. The tool was developed as a method of monitoring the health of livestock transfers made to households, and to help to understand and investigate common causes for livestock death. The system now also links para-veterinary services to central NGO veterinary support to provide some value to the beneficiary through the provision of advisory services. To date, the tool is under pilot with one partner NGO, MJSKS.

Survey structure

The CMS2 questionnaire went through several iterations based on feedback from NGOs and some stakeholders as the pilots progressed. Aside from basic household information (unique ID number, sex of respondent, profiling information for the nutrition component, etc.) the [current survey](#) now captures household perspective data on the following 7 indicator themes:

Household and community level events

²⁰ CMS 2 cannot be a substitute for the detailed, in depth (about 45 mins per household), investigation carried out with a sample of households in CMS3, or by CMS5 which tracks the life histories of a small sample of beneficiaries.

Socio-economic status

Nutrition and food security

Water and sanitation

Health and education

Social safety nets

Expectations and Empowerment

The current survey contains 25 questions to the beneficiary in these areas; a further two questions are a subjective assessment by the field officer on the relative overall status of the household. The survey has been modified several times since the decision to scale up the pilot was taken: refresher sessions have been needed with partner NGOs to explain the changes, and to encourage use.

The LMS survey was revised following feedback from an earlier pilot (LMS 1) with Netz and MJSKS. The tool is now in its second generation, (LMS 2) which was developed to test the feasibility of providing value-add services to beneficiary farmers through para-vets. The system contains 4 modules:

Registration: this module captures unique information about individual animals to enable their health to be tracked;

Follow-up: this module captures information about the animal from follow up visits, such as pregnancy status, health, etc.;

Treatment: this module collects data from the field and transmits this to a central veterinarian, who is able to provide treatment advice by return;

Incident: the incident module collects information on key incidents (e.g. stock death) and attributes a cause; the data can be used in wider analysis by NGOs and other interested parties, and can help to fine-tune service delivery.

Purpose of Review

This review was commissioned as Recommendation 3 of the 2014 Annual Review of EEP. EEP/Shiree is due to close in March 2016; as part of the exit strategy, DFID and the Management Agency wish to understand more about CMS 2 and LMS in order to inform decision making on the future of these tools. The review will focus specifically on CMS 2; where relevant, comment on LMS will also be provided to deliver the review objectives.

The review will deliver the following key objectives:

To understand whether CMS2 and LMS provide a useful cost-effective service and are sustainable in their current form;

To capture lessons learned during the development and piloting of CMS 2 and LMS, which can be shared with other projects or donors wishing to follow a similar approach;

To provide recommendations on what (if any) further investment or development in the systems should seek to do, and if, or how, the tools might be integrated into future Extreme Poverty programmes;

To highlight any key risks that need to be considered should similar systems be developed by other parties.

The review will build upon and summarise salient points from the CMS2 process review prepared in November 2014 by Vishal Gadhavi, and which outlines the development history of CMS 2 and some of the lessons learned. The review will gather additional information from the field and other sources to provide better data on user experience and meet the objectives of the review.

Audience and Intended Use

The primary audience for the review includes: (i) Department for International Development (DFID), and (ii) the EEP/Shiree Management agency.

The secondary audience for the review includes other actors such as the Government of Bangladesh, other donors, and public actors. An abridged version of the review report may be produced for these actors at the request of the donor.

Key Questions

The review will seek to answer the following questions in detail:

Question 1:

What are the patterns of usage of the CMS 2 and LMS, and do the benefits from use of the systems justify the investment (including development) and running costs?

Explanation:

Use of CMS 2 has been primarily driven by EEP, partly as a need to change the NGOs way of monitoring beneficiaries, and to increase usage of this new technology. This question will analyse operational cost data and usage by NGO partners, and look to answer whether the costs of developing and running the system are outweighed by the benefits to the NGO users in terms of the management information provided. This question will help to contribute to objective 1: to be an effective tool beyond the life of EEP, the systems must be shown to be demand driven, i.e. the NGOs and beneficiaries should derive value from the survey. Additionally, this question will provide insight into on-going per household running costs, and provide information on development costs for design of similar tools.

Question 2:

Do the current questions collect appropriate and accurate qualitative and quantitative data on key indicators and does this contribute to an effective understanding of factors influencing extreme poverty in Bangladesh?

Explanation:

This question will contribute to all four objectives. In order to provide useful information to NGOs, the systems must collect accurate information that can be used to inform management decisions; likewise, accurate, quality and appropriate data are required for wider research use. Additionally, LMS should provide useful information back to the beneficiary, in terms of diagnostic support for livestock health issues. Answering this question will include examining the accuracy and quality of data gathered through analytical observations in the field, to help shape recommendations for changes in survey methodology. Additionally, this question will seek to provide an assessment of the effectiveness of the survey questions in gathering useful information for real time monitoring of extreme poverty. In answering this question, the review will compare and contrast the CMS2 questions and survey methodology with the CMS 3 annual survey (that is used to report on EEP progress against indicators), and seek comment from external experts not directly associated with the development of the systems, including comments on supervised and unsupervised field data collection systems.

Question 3:

What are the experiences (both positive and negative) of NGO partners and beneficiaries with the systems?

Explanation:

The survey was designed to be a non-intrusive regular survey that could be completed in 10 minutes and should provide useful management information; additionally, LMS was designed to provide useful information to the beneficiary to assist in stock management. This question will comment on the extent to which this has been achieved, and will examine challenges faced by NGOs and beneficiaries participating in the surveys, including the feasibility of collecting useful data in a short survey. Additionally, this question will look to investigate what lessons can be learned that may help to inform future decision making on survey frequency, geographic coverage, future investment, etc.

Question 4:

Do the systems improve conventional project beneficiary monitoring processes in place with partner NGOs, and has this had an impact on reducing extreme poverty?

Explanation:

One of the key goals of the systems was to provide real time information that NGOs can use to make decisions. This question will investigate how effective this has been, through investigating responses and decisions made by NGOs to information and data provided, and at the impact of these decisions. It will also look to assess how valuable real time information is to NGOs, given their time and resource constraints, and provide comment on what operational behaviour changes may be required to maintain and improve system use.

Question 5:

What were the key challenges experienced during development and pilot of the system, and how have these challenges been overcome?

Explanation:

The CMS 2 and LMS are innovative solutions to address a complex and widespread problem of extreme poverty, and such a solution had not been tested in Bangladesh. This question will look to add to the challenges faced in development, test, and scale out of the software systems, (as identified in the CMS2 process review) through adding lessons learned from the field. The review will provide commentary on how these challenges were overcome.

The scope of the review is limited to answering the questions above. Due to geographic and time constraints it will only be possible to get feedback from a limited range of beneficiaries, which may lead to a minor risk of selection bias.

Design and Methodology

The Review will be a mixture of desk-based work, supported by field work to triangulate findings and continue gathering data. It is expected that the majority of the work can be conducted remotely. The review team will keep in close contact with the Ecorys EEP Project Director for guidance, to provide updates on progress, and secure feedback on data collection instruments.

Stage 1: Preparation and planning by the review team

Stage 2: Initial review of documents by the review team

Stage 3: Preparation of data collection instruments

Stage 4: Fieldwork

Stage 5: Initial debriefing (a short presentation to EEP and DFID on preliminary findings)

Stage 6: Data analysis and report writing

Stage 7: Report finalisation and dissemination to EEP and DFID

Existing Data

The review team will use multiple sources of data as information for this review. This will include, but is not limited to, the following data sources, all of which will be provided by the EEP team:

CMS 2 Dashboard and database (full access)

The paper on CMS 2 published in the IDS bulletin (Risner and Gadhavi authors)

CMS 2 Process Report and annexes (prepared by V. Gadhavi)

CMS 3 and Graduation Reports, and survey instruments, methodology

EEP Annual and quarterly reports

NGO reports

CMS 2 Design documents

Costs of system development and management

MoUs with the system developer

The EEP team will provide any further information to the review team that is pertinent to this review.

Data Collection

Data collection in the field will be through a mixture of Focus Group Discussions with field workers and beneficiaries from a selected group of NGOs. Additionally, there will be Key Informant Interviews held with key stakeholders and experts, including the following:

Project Managers from selected NGOs

EEP Operations team (COO and Programme Managers)

EEP Senior MIS Manager (Juffry Abdul Jabber)

Former EEP M&E YP, Vishal Gadhavi (nb. now at ITAD, UK)

EEP finance team (CFO and team)

mPower (Rubiyat Khan and others)

Prof. Mascie-Taylor, University of Cambridge

Dr Joe Devine, Prof. Geof Wood, University of Bath

An independent observer with questionnaire design experience (Arif Naveed)

Further interviews can also be conducted at the reviewer's or DFID request, including DFID and other stakeholders, e.g. GoB representatives (if relevant). This may have an impact to cost, and will be agreed with DFID in advance.

Deliverables

The output of this review will consist of a report (as described below) with annexes that provide supporting information and evidence. The report will provide detailed answers to the review questions, and provide recommendations for future actions.

Reporting Guidelines

The draft and final report should be written in English to internationally accepted standards following appropriate report-writing conventions. The review will use the following structure for the draft and final report:

Table of Contents

Table of Figures and/or Tables

Preface or Foreword

Acronyms and Glossary

Executive Summary

Introduction

Background information

History of CMS 2 and LMS

Rationale for the development

Purpose of the Review

Review Methodology

Findings & Conclusions

Recommendations

Lessons Learnt

ANNEXES

Annex I. The Review Terms of Reference

Annex II. List of documents review and analysed

Annex III. List of people met

Annex IV. Key Informant Interview and FGD questions

Annex V. Development and maintenance costs

Other relevant annexes

Duration and Timing

The review will take place during the first six months of 2015, with submission of the final report by 30th June 2015. The exact timing will be agreed between the review team and EEP, and is subject to the availability of all KIIs. Any deviation from this timeline must be notified to the EEP Project Director (Justin Ormand) as soon as possible. The expected man-day requirement for each stage is set out as below:

	Lead Reviewer	Field Researcher	SME
Stage 1: Preparation and planning by the review team	1		
Stage 2: Initial review of documents by the review team	3	1	1
Stage 3: Preparation of data collection instruments	1	2	
Stage 4: Fieldwork	6	6	
Stage 5: Initial debriefing (a short presentation to EEP and DFID on preliminary findings)	0		
Stage 6: Data analysis and report writing	7	3	1
Stage 7: Report finalisation and dissemination to EEP and DFID	1		
Total	19	12	2

Team Composition and requirements

The review team will consist of 3 people, a Lead Reviewer, a Field Researcher, with minor input from one other expert.

The **Lead Reviewer** will have a good understanding of monitoring principles and processes, and will be accountable for delivery. The Lead Reviewer will be responsible for review of the documents, creation of data collection instruments, data analysis and report preparation. An estimated total of 19 days are required to complete this review. The Lead Reviewer will be an international consultant, and have experience of leading reviews, with expertise in survey design and management. The reviewer should be conversant with issues affecting Extreme Poverty, and should have an understanding of, or access to expertise on the use of ICT technology for development. The Lead Reviewer will be an Ecorys employee, and will have unlimited access to EEP knowledge capital.

The **Field Researcher** will be a native Bangla speaker, with fluency in English to provide translation services: this individual will not have any former experience with CMS 2 or LMS to avoid any prejudice during translation. The Field Researcher will have previous experience in holding focus group discussions, and will assist in the preparation and translation of data collection instruments, including questionnaire design. The Field Researcher will be responsible for capturing data, and providing basic (frequency) data analysis of quantitative data gathered from the field. An estimated total of 12 days are required.

The **Subject Matter Expert (SME)** will be an external professional hired to review the CMS 2 questionnaire remotely and will contribute to question 2 only. The outputs from this work will not include providing recommendations for how questions could be revised: this work would follow once a decision on the future of the systems has been agreed with DFID.

Management and Logistics

Support for logistics will be provided by the EEP team: this will include arrangement of all accommodation, internal transport, and subsistence allowance provision during the field visits. The EEP team will assist the review team in setting up FGDs and KIIs in Bangladesh; the Lead Reviewer will be responsible for setting up all meetings outside Bangladesh.

EEP will provide all relevant documentation to the review team in advance of the review.

Annex 1 - Getting to Answers Matrix

The Getting to Answers Matrix is a systematic approach to answering review questions. It will include the type of answer/ evidence (comparative, descriptive, etc.); method(s) (qualitative, quantitative, etc.) and source(s) of data collection; sampling/selection; and data analysis method for each evaluation question.

Evaluation question	Type of answer/evidence	Data Collection		Sampling/selection	Data analysis methods
		Methods	Source		
1. What are the patterns of usage of the CMS 2 and LMS, and do the benefits from use of the systems justify the investment and running costs?	Comparative Descriptive	Interviews Focus Group Discussions/ Group Interviews Document review Database mining	EEP staff NGO staff Project beneficiaries EEP documents EEP publications CMS 2 database and dashboard	Purposive/ Convenience sampling	Content analysis Compare/ Contrast Frequency distributions
2. Do the current questions collect appropriate and accurate qualitative and quantitative data on key indicators? How effectively do these questions contribute to the understanding of factors influencing extreme poverty in Bangladesh?	Descriptive	Interviews Focus Group Discussions/ Group Interviews Document review Database mining Observation	EEP and NGO staff Project beneficiaries EEP documents EEP publications External SMEs	Purposive/ Convenience sampling	Content analysis Compare/ contrast Trend analysis Frequency distributions

Evaluation question	Type of answer/evidence	Data Collection		Sampling/selection	Data analysis methods
		Methods	Source		
3. What are the experiences (both positive and negative) of NGO partners and beneficiaries with the systems?	Descriptive	Interviews Focus Group Discussions/ Group Interviews Observation	NGO staff Project beneficiaries	Purposive/ Convenience sampling	Content pattern analysis Compare/ contrast Frequency distributions
4. Do the systems improve conventional project beneficiary monitoring processes in place with partner NGOs, and has this had an impact on reducing extreme poverty?	Comparative	Interviews Focus Group Discussions/ Group Interviews Document review Database mining Observation	NGO staff EEP staff	Purposive/ Convenience sampling	Compare/ contrast Content pattern analysis Frequency distributions
5. What were the key challenges experienced during development and pilot of the system, and how have these challenges been overcome?	Descriptive	Interviews Focus Group Discussions/ Group Interviews Document review Database mining	EEP staff Development partner (mPower) External commentators NGO staff	Purposive/ Convenience sampling	Compare/ contrast Content pattern analysis

Annex 2 – Explanation of Getting to Answers (G2A)

Data Collection Methods

The data collection method is the way in which data is obtained from data sources. Depending on the kind of data needed to answer the evaluation questions, the Reviewer will collect primary and/or secondary data.

Primary data collection methods include the following:

Interviews—key informant (individual) and group; structured, semi-structured, unstructured

Focus group: held with a group of individuals possessing a common interest, and facilitated by a moderator in order to gain specific information. Focus groups differ from group interviews; FGD participants do not know each other and are asked to provide feedback about specific issues, whilst in a group the people in the group may or may not know each other, and the conversation can be less structured.

Observation: an unobtrusive method for gathering information on operational issues. Observations approaches can be structured, to examine processes at particular times, or unstructured, taking a more casual, “look-and-see” approach to understanding.

Secondary data collection methods include the following:

Document review: this is a review and analysis of existing program records and other information collected.

Database mining (existing databases): data processing using data search capabilities and algorithms to discover patterns and correlations in large pre-existing databases; to investigate patterns and interpretation of large data.

Sampling/Selection Approach

Probability samples are representative of the population being sampled. *Non-probability samples* are not representative (and therefore less rigorous), and are required here due to time and geographic constraints. The two types of sampling to be used are:

Purposive sampling: Under this method, the researcher determines a specific group to be sampled and tries to gather data from as many members of that population as possible. A sub-type of purposive sampling is called “snowball sampling,” in which the researcher asks individuals interviewed to refer him/her to other individuals in the same population.

Convenience: Using this method, the researcher interviews whoever is available from the target population.

Data Analysis Methods

Quantitative data analysis methods to be used include:

Frequency distributions: looking at the number of times a given quantity occurs in a set of data. Typically used to analyse survey data, or structured interviews with pre-set questions and responses.

Qualitative data analysis methods include:

Content pattern analysis: “Look at documents, text, or speech to see what themes emerge, and investigating how themes relate to each other.

Compare/contrast: examines the similarities or differences of datasets or responses: in effect, a method to distinguish responses by comparing differences.

Trend analysis: analysis of changes over time.

Annex 3 – Estimated Budget

Item	Rate	Quantity	Total
Fees			
Lead Reviewer (LR)	£560	19	£10,640
Field Researcher (FR)	£180	12	£2,160
SME	£560	2	£1,120
Total Fees	-	33	£13,920
Reimbursable Costs			
Mobilisation Flight	1	1000	£1,000
LR per diems	10	80	£800
FR per diems	6	35	£210
Total Reimbursable			£2,010
Grand TOTAL	-	-	£15,930

It is expected that the Lead Reviewer will spend approximately 10 days in country, to include fieldwork, meetings, and working on the draft findings.

Appendix II: List of Documents reviewed and analysed

1. CMS 2 Dashboard and database (full access)
2. Colin Risner and Vishal Gadhavi, Using Real-time Monitoring to Enhance Graduation from Extreme Poverty in Bangladesh, IDS Bulletin Volume 46 Number 2, March 2015
3. 'Digital Monitoring Tools in EEP/Shiree – Process Review of CMS2 and GMS', Vishal Gadhavi, EEP 2014.
4. Understanding and Monitoring Sustainable graduation within the Shiree portfolio, EEP/Shiree 2012
5. Manifesto for the Extreme Poor – A cause to bring Bangladesh together (EEP, 2011)
6. CMS 3 and Graduation Reports, and survey instruments, methodology
7. EEP Annual and Quarterly Reports
8. NGO reports – CARE, PAB, MJSKS, DSK
9. CMS 2 Design documents
10. Costs of system development and management
11. MoUs with the system developer

Appendix III: List of People Met as part of Review

PNGOs and beneficiaries

Beneficiaries of CARE, PAB, MJSKS, PAB

Field officers of CARE, PAB, MJSKS, PAB

Senior managers and M&E Staff of all Scale Fund PNGOs

Internal EEP/Shiree

Eamonn Taylor, Chief Executive Officer (CEO)

Najir Ahmed Khan, Chief Operating Officer (COO)

Anwar Chowdhury, Deputy Team Leader and Chief Financial Officer (CFO)

Zulfiqar Ali, Head of Advocacy and Research

EEP/Shiree Programme Managers including Delwar Hossain, Masud Rana, Abdus Salam, Sutapa Paul, Saidur Rahman, Manotosh Kumar Madhu

Abdul Jabber Jufry, Senior Manager M&E and MIS

Masud Islam

Mirza Laila Ferdous, Senior Accounts Manager

Helen Kujur, Finance Manager

Research/Consortium Partners

Prof. Geof Wood, Emeritus Professor Dept. of Social and Policy Sciences, University of Bath

Dr. Joe Devine head of Dept. Social and Policy Sciences, University of Bath

Professor Nicholas Mascie-Taylor, Department of Archaeology and Anthropology, University of Cambridge

External stakeholders

Colin Risner, former EEP CEO

Vishal Gadhavi, former YP, EEP

Christopher Maclay, former YP, EEP

Rubayat Khan, Arif Saeen Arif, Rifat Hasan, mPower

Appendix IV: Key Informant Interview and Focus Group Discussion questions

	Group	Tool	Question
1.1	Beneficiaries	CMS	Does the survey accurately capture your current situation and any shocks? [Provide range of possible answers: Very accurately, Quite Accurately, Somewhat Accurately, Not very accurately, Very inaccurately.]
1.2	Beneficiaries	CMS	Does your situation change often? [Provide a range of possible answers: Daily/Weekly/Monthly.]
1.3	Beneficiaries	CMS	How have shocks that you have reported been responded to by the NGO assisting you? [Provide a range of qualitative answers: Very Well, Quite Well, No response by NGO, Not Very Well, Very Badly.]
1.4	Beneficiaries	CMS	If the PNGO field officer did respond, how quickly did the response take? Provide range of possible answers]
1.5	Beneficiaries	CMS	Do you feel that the time taken for the survey affects the amount of time the NGO worker has to provide support to you? [Provide a range of answers: [Decreases the time the NGO worker has to support me, Makes no difference to the time the NGO worker has to support me, Increases the time the NGO worker has to support me, Don't Know]
1.6	Beneficiaries	CMS	Have you gained any benefits from participating in the CMS 2 survey? [Provide a range of answers: Yes, No, Don't know]
1.7	Beneficiaries	CMS	Is a monthly survey appropriate to capture changes in your life? Provide a range of answers including: [Yes, No, Don't know][Follow ups to probe seasonal variation such as monga]
1.8	Beneficiaries	CMS	What other ways could the NGO providing you with assistance monitor your situation?
1.9	Beneficiaries	CMS	Are there any negative effects you have felt from participating in the survey? [Provide a range of possible answers Yes, No, Don't Know]
1.10	Beneficiaries	CMS	Does the survey accurately capture issues/ topics that you would like to report to the NGO?
1.11	Beneficiaries	CMS	Are there any changes you would like to be made to the survey? [Follow up to probe the use of voice recording in the survey]
1.12	Beneficiaries	CMS	How do you feel sharing personal information with the NGO field officer? (Vote on range of options - very comfortable, quite comfortable, somewhat comfortable, not very comfortable, very uncomfortable]

2.1	Beneficiaries	LMS	Have you received any veterinary support through the system? [Provide range of possible options: Yes, No, Not Applicable]
2.2	Beneficiaries	LMS	How effective has this been? Provide range of possible options: Very Effective, Quite Effective, Somewhat Effective, Not very effective, Very Ineffective. Follow up on response time, quality of advice, did it solve problem etc.
2.3	Beneficiaries	LMS	Does the LMS survey affect how you manage your animals? [Looking for increasing in tending time, greater respect, etc.]
2.4	Beneficiaries	LMS	If you have participated in both CMS 2 and LMS, which do you think is of more value to you?
3.1	NGO Field Staff	CMS	Is CMS 2 better than your current BHH monitoring system [Provide range of answers: Much better, A little better, Neither better nor worse, A little worse, Much worse. Follow up with exploring why]
3.2	NGO Field Staff	CMS	What impact does CMS2 have on your workload? Provide range of possible answers: Increases my workload significantly, Increases my workload a little, No difference on my workload, Reduces my workload a little, Reduces my workload significantly]
3.3	NGO Field Staff	CMS	Now that the system has been running for some time, does it capture useful information? Provide range of possible answers: Very useful, Quite useful, Somewhat useful, Not very useful, Very unuseful]
3.4	NGO Field Staff	CMS	When conducting the CMS2, have you ever realised a household is failing to improve, despite the support being given? Provide range of possible answers : Yes, No, Don't Know. Follow up question: What actions do you take if you answered Yes?]
3.5	NGO Field Staff	CMS	How much value has the CMS2 system has in your work? (A lot of value, a little value, some value, not much value, no value at all. Follow up with asking for examples of how it is used.
3.6	NGO Field Staff	CMS	What problems, if any, have you faced in using it?
3.7	NGO Field Staff	CMS	Do you feel it necessary to use CMS2 to identify a crisis in the households you target? Provide possible answers Yes, No, Don't know]
3.8	NGO Field Staff	CMS	What improvements do you think are needed?
3.9	NGO Field Staff	CMS	Have you had opportunities to suggest possible changes to the survey itself? Provide range of possible answers: Yes, No, Don't Know. Follow up to ask: Has this changed your level of interest in using the tool?]
3.10	NGO Field Staff	CMS	How often do you use the online data visualisation dashboard? For what main purposes? [Provide range of possible answers: Very often, Quite Often, Sometimes, Not very often, Not at all]
3.11	NGO Field Staff	CMS	Do you find the dashboard gives useful information? [Provide range of possible answers: Very useful, Quite useful, Somewhat useful, Not very useful, Very unuseful]
4.1	EEP Programme Staff	CMS	Was the data captured by CMS 2 and LMS useful to you in your work?

4.2	EEP Programme Staff	CMS	Do you feel the system accurately captures indicators important to measuring extreme poverty reduction and graduation from extreme poverty?
4.3	EEP Programme Staff	CMS	Was data captured in real time? (i.e. were there any delays that impacted on your use of data?)
4.4	EEP Programme Staff	CMS	Provide examples of where the data was used for decision making purposes on particular projects and for EEP as a whole.
4.5	EEP Programme Staff	CMS	Was data of sufficiently high quality to be able to make decisions based on it?
4.6	EEP Programme Staff	CMS	What changes could be made to increase the quality of the data the tool gathers?
4.7	EEP Programme Staff	CMS	How well does CMS2 add value to the overall integrated five element monitoring system of EEP?
5.1	NGO Managers	CMS	How do you use the system to report MIS decision making?
5.2	NGO Managers	CMS	Do you use the data in your internal or external reports? How?
5.3	NGO Managers	CMS	How often do you look at the CMS 2 dashboard? Does it help you in analysing your programme achievements/ underperformance and that of others?
5.4	NGO Managers	CMS	Does the CMS2 add value to your current monitoring systems? How have you used it to target support over and above your normal systems?
5.5	NGO Managers	CMS	Does the system add any significant overhead costs to your budget?
5.6	NGO Managers	CMS	If, when analysing the CMS2 data, you realise a project is struggling, what actions do you take?
5.7	NGO Managers	CMS	How could the system be improved?
5.8	NGO Managers	CMS	What has gone well and not so well with the rollout?
5.9	NGO Managers	CMS	Do you feel the development and piloting of CMS 2 has been an inclusive process?
5.10	NGO Managers	CMS	What changes could be made to increase the quality of the data the tool gathers?
5.11	NGO Managers	CMS	Would CMS 2 be a tool you would like to continue using after EEP ends?
5.12	NGO Managers	CMS	Do you feel the system accurately captures indicators important to measuring wellbeing and social mobilisation?
5.13	NGO Managers	CMS	How well has the EEP/mPower team incorporated your feedback?
5.14	NGO Managers	CMS	Do you believe that your organisation feels a degree of ownership of CMS 2? Can you influence changes in its design, implementation?
5.15	NGO Managers	CMS	Which system is better? CMS 2 or GMS?
6.1	mPower	CMS	How do you think the system should be developed in the future?

6.2	mPower	CMS	What were the innovative features of the CMS2 at the time of its development?
6.3	mPower	CMS	What were the key issues (essential features, key challenges in designing such a tool?)
6.4	mPower	CMS	How were these challenges overcome?
6.5	mPower	CMS	What are the key lessons that have been learned from the CMS 2 experience? How will you incorporate these in other projects?
6.6	mPower	CMS	What do you think are the biggest shortcomings with the tool currently? Are you
6.7	mPower	CMS	What were the reasons for restructuring the database (database normalisation) as per the revised MOU? This looks at the issue of flat tables, etc.
6.8	mPower	CMS	Why was the build of the original database not done as per the original design? i.e. with an ability to import and export data, and the arrangement of data tables, 1 row per BHH
6.9	mPower	CMS	Given that the CMS 2 visualisation is under joint ownership, how do you think that it could be better used?
6.10	mPower	CMS	What monthly support is provided by mPower, and how has this been paid for? Need to identify what payments they get)
6.11	mPower	CMS	How often has this support been required?
6.12	mPower	CMS	I hear that mPower is developing a "Poverty Tracker". Can you tell me a little more about what that is looking to do, and how it builds on the CMS 2 experience? This one may be sensitive- if they ask how you know, state that you are aware that EEP was forwarded an invite from a partner NGO to a workshop on this, and asked mPower not to conduct the workshop and mPower agreed.
6.13	mPower	LMS	What were the reasons behind developing the LMS?
6.14	mPower	LMS	What were the challenges in designing the system
6.15	mPower	LMS	what experience has there been during the pilots of the LMS?
6.16	mPower	LMS	What benefits have been received by beneficiaries through participation in LMS?

Appendix V: Development and Maintenance Cost

Summary of Total cost for CMS2		
Serial	Item Name	Cost in BDT
1	Server and other network items cost	785,000
2	Mobile Set cost	12,228,027
3	SIM cost (Robi, Grameenphone and Teletalk)	207,082
4	Software Development by Mpower	5,428,261
5	Monthly Mobile bill	5,772,720
Total: BDT Twenty Four million four hundred twenty one thousand ninety only		24,421,090

CMS2 equipment cost				
Figures in BDT				
Serial	Item	Description	Unit	Price
1	Server	Dell Poweredge T620 server P/N:CXVCN S/N:HCY4F2S	1	313,000
2	Network Attached Storage (NAS)	Q-NAP NAS TS 459 Pro+ 4 BAY TOWER / 8TB HDD (2TB x 4)/ Intel Atom D525 1.80GHz CPU, TGB RAM/ NAS DRIVE SN: QI 14105243	1	138,000
3	Online UPS	AEC STAR T3100 6KVA ONLINE UPS B30I A0853D0F	1	270,000
4	Router	CISCO C1921 modular Router	1	56,000
4	Switch	CISCO SD216T 16 PORT 10/100 SWITCH S/N PSJ 150700NV	1	8,000
Total: BDT Seven Lac Eighty five thousand only				785,000

Mobile Handset Purchase Information

			Description	Price in BDT	Vendor	Number
12/28/2010	0179455	DFID:EEP (1005)	Nokia mobil set for CMS-2	9359 · HSBC EEP Taka Project A/C 141,700	Excel Telecom (Pvt.) Ltd.	25
04/28/2011	0179570	DFID:EEP (1005)	77 NOKIA 2700c Mobile set for CMS-2	9359 · HSBC EEP Taka Project A/C 435,050	Excel Telecom (Pvt.) Ltd.	77
06/20/2012	0737260	DFID:EEP (1005)	5 pcs of handset- Samsung Model	9359 · HSBC EEP Taka Project A/C 67,450	Transcom Electronics	5
			Purchased by Crown Agent	10,666,055		838
			Purchased by Crown Agent	917,772		144
Total Procurement Cost of Mobile Procurement				12,228,027		1,089

Total SIM Procurement Cost(In BDT)	207,082
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NGO payable Monthly Mobile SIM payment details		
		Cost in BDT
Expenditure till Sepember 2014 for scale Fund NGOs	CMS 2 Mobile Internet expenditure upto Sep'14 - Scale Fund	3,763,129
Expenditure till Sepember 2014 for Innovation Fund NGOs	CMS 2 Mobile Internet expenditure upto Sep'14 - Innovation Fund	546,777
Oct'14	Monthly bill for Robi Axiata Ltd SIM	54,395
Oct'14	Monthly bill for GrameenPhone Ltd SIM	174,210
Nov'14	Monthly bill for Robi Axiata Ltd SIM	50,284
Nov'14	Monthly bill for GrameenPhone Ltd SIM	172,730
Dec'14	Monthly bill for GrameenPhone Ltd SIM	171,350
Dec'14	Monthly bill for Robi Axiata Ltd SIM	47,121
Jan'15	Monthly bill forGrameenPhone Ltd SIM	165,600
Jan'15	Monthly bill for Robi Axiata Ltd SIM	47,121
Feb'15	Monthly bill for GrameenPhone Ltd SIM	164,220
Feb'15	Monthly bill for Robi Axiata Ltd SIM	47,121
Mar'15	Monthly bill for GrameenPhone Ltd SIM	160,770
Mar'15	Monthly bill for Robi Axiata Ltd SIM	47,121
Apr'15	Monthly bill for GrameenPhone Ltd SIM	160,770
Total Cost of CMS 2 mobile internet bill up to date		5,772,720

LMS Budget with MPower

Description	Total contract budget (BDT)	Shiree Portion	Actual payment against bill	Actual payment against bill	Actual exp up to May'15
Total	1,371,500.00	685,750.00	342,875.00	205,725.00	548,600.00

Summary of Survey expenditure up to May 2015 directly paid by EEP/Shiree

Serial	Item Name	Cost
1	CMS3 Survey (including Endline Survey)	24,145,490
2	Nutrition Survey	4,005,333
Total: BDT twenty eight million one hundred fifty thousand eight hundred and twenty three only.		28,150,823

Total Summary of CMS2, LMS and CMS3 Survey expenditure paid directly by EEP/Shiree

Serial	Item Name	Amount in BDT
1	CMS 2 Cost	24,421,090
2	LMS Cost	548,600
3	CMS3 Survey expenditure	28,150,823
Total: BDT Fifty three million one hundred twenty thousand five hundred and thirteen only.		53,120,513

Appendix VI: Analysis of accuracy, appropriateness of CMS 2 questions and usefulness of data in programme management decision

Technical Issue	Survey Topic	Survey Question #	Comment on accuracy, appropriateness of question and usefulness of data in programme management decisions
Frequency	Pregnancy, lactation, Water sources; Education; Safety Nets	10; 24; 28-31	<ul style="list-style-type: none"> • Pregnancy, lactation, education and safety nets all appropriate questions but collecting monthly overly-frequent. • Operational guidelines observes water sources unlikely to change monthly but continues to be collected to understand seasonal trends in extreme poverty - but not data that helps day to day management
Reliability/ Construct Validity	Occurrence of Good/Bad/Important events, Health	11-12; 27	<ul style="list-style-type: none"> • Understanding of 'good' 'bad' and 'important' events are likely to vary amongst beneficiaries. Multiple answer options are provided as examples related to economic and demographic community situation, living conditions and social events - the logic of which is uncertain and which undermines reliability (i.e. question not clear in terms of measuring the subject being assessed). • Well documented that the level of awareness about health increases the self-reported morbidity rather than actual health conditions - the use of a Likert scale requires careful framing and phrasing by interviewer and understanding by respondent. It is also problematic to collect health status of BHH members through a single question.
Incompleteness	Socio Economic ; Nutrition Food and Safety	14,15,16; 20-23	<ul style="list-style-type: none"> • Appropriate topics to base questions on but without absolute information it is unclear how data is meaningful in programme management - what decisions can be made about a BHH which adds sources of income but total BHH income is declining? The question fails to answer which income/expenditure source is contributing to change in the BHH and thus limits its usefulness to decide a response action. • Uncertain what the answer ranges on income and expenditure questions actually mean operationally. For instance if BHH income 'increased a little' from the previous month, but is still far from graduation line, the response required from field officer is uncertain. • Without asking further questions on per capita consumption and quantity of food rather than frequency of consumption the data collected is of limited meaningfulness to base decisions on response actions required.
Suggestive/ Leading questions	Occurrence of Good/Bad/Important events; Nutrition Food and Safety; Happiness/Confidence	11,12; 20-23; 31-32	<ul style="list-style-type: none"> • Capturing qualitative information such as good/bad/important events and on happiness/confidence is more vulnerable to biased responses and is especially complicated in the context of a poverty reduction programme - respondents are more likely to reflect on their perception of quality of support provided - the observations made on the Likert scale utilised under health apply here also.