



ANNUAL REPORT 2015

SHARE Research Consortium

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WaterAid

share
Sanitation and Hygiene Applied Research for Equity



MITU
Mwanza Intervention Trials Unit

CIDRZ



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Acronyms

ADD	Action on Disability and Development
AfricaSan	Africa Conference on Hygiene and Sanitation
AWW	Africa Water Week
BCD	Behaviour Centred Design
BMGF	Bill and Melinda Gates Foundation
BRAC	Bangladesh Rehabilitation Assistance Committee
CAFOD	Catholic Agency for Overseas Development
CAG	Consortium Advisory Group
CCI	Centre for Community Initiatives
CCODE	Centre for Community Organisation and Development
CEO	Chief Executive Officer
CIDRZ	Centre for Infectious Disease Research in Zambia
CLTS	Community Led Total Sanitation
CP	Clostridium Perfringens
DFID	UK Department for International Development
DHS	Demographic and Health Survey Programme
EC	Escherichia coli
EDD	European Development Days
FC	Faecal coliforms
FS	Faecal streptococci
GLAAS	UN Water's Global Analysis and Assessment of Sanitation and Drinking Water
GLUK	Great Lakes University, Kisumu
GoI	Government of India
HACCP	Hazard Analysis and Critical Control Points
HWWS	Hand Washing With Soap
ICDDR,B	International Centre for Diarrhoeal Disease Research, Bangladesh
IDSC	International Development Select Committee
IIED	International Institute of Environment and Development
IIPH	Indian Institute of Public Health
IIPHG	Indian Institute of Public Health – Gandhinagar
IPC	Infection, Prevention and Control
JMP	Joint Monitoring Programme
LFA	Log Frame Approach
LGA	Local Government Authority
LSHTM	London School of Hygiene and Tropical Medicine
MDG	Millennium Development Goal
M&E	Monitoring and Evaluation
MHM	Menstrual Hygiene Management
MICS	Multiple Indicator Cluster Surveys
MITU	Mwanza Intervention Trials Unit
MNACH	Maternal, Newborn, Adolescent and Child Health

MoDWS	Ministry of Drinking Water and Sanitation
MOEVT	Ministry of Education and Vocational Training
MOHSW	Ministry of Health and Social Welfare
MOU	Memorandum of Understanding
MoWS	Ministry of Water and Sanitation
MSF	Médecins Sans Frontières
NBS	National Bureau of Statistics
NGO	Non-Governmental Organisation
NIMR	National Institute for Medical Research
NNN	Neglected Tropical Diseases Non-Governmental Development Organisations Network
NSC	National Sanitation Campaign
NTD	Neglected Tropical Diseases
OM	Outcome Mapping
OPV	Oral Polio Vaccine
PI	Principal Investigator
PLOS	Public Library of Science
PRL	Policy and Research Landscaping
RCT	Randomised Controlled Trial
RIU	Research into Use
RMNH	Reproductive, Maternal and Newborn Health
RV	Rotavirus
SBA	Swachh Bharat Abhiyan
SDG	Sustainable Development Goal
SDI	Shackdwellers International
SF	SHARE Fellow
SHARE	Sanitation and Hygiene Applied Research for Equity
SPLASH	European Union Water Initiative Research Area Network Sanitation Research Programme
TC	Total coliforms
TV	Trichomonas vaginalis
UCL	University College, London
UN	United Nations
UNC	University of North Carolina
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VfM	Value for Money
VVC	Volvo vaginal candidiasis
WASH	Water, Sanitation and Hygiene
WASHTED	Centre for Water, Sanitation, Health, and Appropriate Technology Development (University of Malawi)
WEDC	Water, Engineering and Development Centre
WESNET	Water and Environment Sector Network
WHO	World Health Organisation

WSSCC	Water Supply and Sanitation Collaborative Council
WSP	World Bank Water and Sanitation Programme
WSUP	Water and Sanitation for the Urban Poor
WTD	World Toilet Day
WWW	World Water Week

1. Programme description

Title of RPC:	Sanitation and Hygiene Applied Research for Equity (SHARE)		
Reference numbers:	PO 4990 & PO 6981		
Duration:	20 January 2010 – 19 January 2018		
Total Budget:	£16,000,000		
Reporting Period:	Outputs	01 July 2014 - 30 June 2015	
	Finances	01 April 2014 - 31 March 2015	

Objective

The SHARE programme is designed to generate, synthesise, and translate applied research related to sanitation and hygiene in low-income settings. Its purpose is to contribute to achieving universal access to effective, sustainable and equitable sanitation and hygiene through the use of better data and evidence-based approaches in order to improve sanitation and hygiene services and behaviour in poor households.

Background

In 2009, DFID commissioned two scoping studies to assess the knowledge gaps, and the demand for long-term research on sanitation, and also on water and sanitation research into use. The key findings were that:

- inadequate and unsafe sanitation remains a major constraint on health and livelihoods, particularly of poor households where women and disadvantaged groups often suffer disproportionately, and is a major constraint on meeting several MDG targets.
- there are significant, but manageable, knowledge gaps in the sanitation sector, particularly on how to improve sanitation and hygiene for poor people.
- by prioritising sanitation research and supporting research into use (RIU), DFID would raise awareness of and action on key issues for this very important sector.

Through a competitive process, DFID awarded combined programme funding to SHARE, costing £10 million over five years with its focus on research to improve sanitation and hygiene and related water aspects. This phase ran from 2010 to 2015.

In late 2014, SHARE was granted a three-year extension, running to January 2018, with a view to maximising the value for money and legacy of Phase I and with a particular focus on four thematic research areas.

Intended outputs

Outputs since SHARE's inception have included, as planned:

- a body of validated high quality policy, technical and institutional knowledge that makes a significant contribution to the understanding of sanitation and hygiene issues in the target regions.
- effective communications and dissemination activities which address a range of priority target audiences and which use innovative and appropriate channels including the media, web-based resources, workshops and meetings to complement written material.

- monitored evidence of uptake of knowledge by developing country policy makers, international organisations and other research institutions.
- strategic strengthening of primary stakeholders' capacity to undertake research on sanitation and hygiene and of capacity in developing countries to engage with the research process at key levels.
- documentation of sanitation and hygiene research findings together with other lessons learned in terms of capacity development etc.

Phase II will continue to deliver outputs within these broad categories. In order to lay the groundwork for sustained impact beyond the lifespan of SHARE, this phase will focus efforts on four global thematic areas with potential for continued RIU and additional research investment. These areas are: WASH and undernutrition; WASH and routine immunisation; WASH and pro-poor urban sanitation; WASH and complementary food hygiene.

Partners and focus countries

Phase I of SHARE had five partners: the London School of Hygiene and Tropical Medicine (LSHTM), International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), International Institute for Environment and Development (IIED)/ Slum and Shack Dwellers International (SDI), and WaterAid. Such a combination provided a unique opportunity to access a wide range of expertise from international scientific researchers, policy researchers, national water programmes, worldwide sanitation and hygiene programmes, and civil societies.

SHARE focused its activities in four countries – India, Bangladesh, Malawi, and Tanzania; working closely with national sector partners to define research priorities, generate rigorous and relevant applied research, and enhance the uptake of new and existing research. SHARE also supported specific research projects in over a dozen other countries including Uganda, Zambia, Zimbabwe, Kenya, Nepal, Ghana, and Kenya.

Phase II focuses on sub-Saharan Africa, building on the foundations laid during Phase I in Tanzania and Malawi, and drawing on new strategic partnerships in Kenya and Zambia. To maximise country ownership of SHARE work and the sustainability of SHARE investments, Phase II has brought on board a further four partners – one from each African country where it will work: the Centre for Infectious Disease Research in Zambia; Great Lakes University Kisumu, Kenya; Mwanza Intervention Trials Unit (associated with NIMR), Tanzania, and the College of Medicine and the Polytechnic of the University of Malawi. This increased diversity provides a range of approaches to developing knowledge, and opportunities to use that knowledge to create sustainable change.

The shift to a solely African-based programme was the result of consultation with DFID, and has provided SHARE with the opportunity to focus on developing WASH research in Malawi and Tanzania. SHARE continues to integrate its capacity development, RIU and monitoring within the research projects, as well as providing a programme of activities as shown in the strategies.

Activities

SHARE's activities include research, capacity development, and translation of research into use (RIU). Activities are grouped into these categories to facilitate resource management and accountability. However, they are part of a single integrated process. SHARE convenes sector partners to identify critical questions holding back progress to improved sanitation and hygiene, synthesises existing knowledge or generates new information to fill those gaps. It works with policy makers, practitioners, and communities to use the information to change policy and practice at different scales. Most of SHARE's individual projects include all of these elements to different degrees, as well as providing opportunities for the development of skills in research and integrated research management.

2. Overview of the year

Progress and achievements

This report refers to the year from August 2014 to July 2015. It has been a period of winding down work under the original five year contract and preparing its legacy, but also of waiting for decisions to be made on a three year extension of SHARE. While maintaining current partnerships and steering projects to a timely conclusion, we were also planning for a new SHARE, designing an extension based on lessons learnt, and investigating which new partners to bring on board. It was not only the result of our experience but also DFID's wish that the extension into Phase II should be different from the original Phase I. Thus we found ourselves discussing the new contract, designing a new consortium, engaging with new partners, and trying to bring the old programme to dock safely and precisely in terms of timing and expenditure. Not the least of our challenges was that for most of this time, while it was 75% sure that SHARE would continue into 2015, we could not take that for granted. We were, as they say, building planes in the air.

Much as we hoped to create a seamless transition from one contract to another, we managed an ending and a beginning as distinct processes, for reasons beyond the control of SHARE and the DFID Research and Evidence Division team. We have aimed to provide our readers with a seamless flow in this report, though where that is less than perfect, we hope they will understand why.

From inception, SHARE has successfully championed neglected research topics within the sector, and is proud to see some early areas of research developing into scaleable and sustainable approaches. Trimming the research scope of SHARE in Phase II to four themes has focused SHARE's budget and efforts, but SHARE must still maintain a broad scope in line with the interdisciplinary nature of the WASH sector. In practice, discipline will come from the timeframe for Phase II, to January 2018, and the extension of the partnership with the same rate of expenditure (£2 million per year).

An important new thread starting in this report is the setting up of systems to enable SHARE's African partners to maximise country ownership and their own and SHARE's sustainability. This responds to lessons learnt from Phase I, the degree of confidence in the process and the intended outcomes that are required for it to 'take' and for any hope of sustainability. SHARE and the partners must be fully on board with the programme and the process, if they are to perform to their own satisfaction and our expectation.

Research

One theme which SHARE has pursued for several years now is the association of violence against women in association with communal sanitation blocks. The subject became a major media issue in India when a number of young women were raped and murdered on the way to defecation sites. SHARE is now moving from exploration to prevention in this field, and a SHARE-supported manual entitled 'Practitioner's Toolkit on Violence, Gender and WASH' launched at a SHARE-convened event at LSHTM in June 2014.

Other gender-related research has covered the effect of psychosocial stress on women who lack sanitation and hygiene in the labour wards in various countries, following the surprise findings from previous SHARE research that poor labour ward hygiene was associated with a substantial excess risk of maternal mortality.

A landmark study of behaviour change was also published last year; it came at the same time as a pair of multimillion dollar randomised trials of sanitation in rural India, which both produced disappointing results because of insufficient changes in behaviour, and showed that substantial, sustainable behaviour change can be achieved, even in rural India, but cannot be taken for granted. The article presenting the results was published in *The Lancet Global Health*, whose publisher selected it from a huge number of rivals for the Elsevier Atlas Award.

Work on cholera continues; two papers accepted for publication include a systematic review on emergency cholera control measures, and an epidemiological study using time series analysis in the City of Uvira in eastern Congo. The former study found that a number of popular interventions were almost entirely lacking in supporting evidence. The latter highlighted the importance of water quantity and hygiene, over and above water quality, as determinants of the incidence of this disease. SHARE-funded research on cholera in emergencies was represented on a WASH Working Group convened by the Global Task Force for Cholera Control. In this, another example of the potential that sanitation and hygiene has in influencing health outcomes, a small team worked to define the priority research and implementation objectives that are needed now. SHARE will continue to follow the group and engage in follow-up activities where possible.

WASH in emergencies is an area that impacts the vulnerable and SHARE has taken a leading role in coordinating the annual Emergency Environmental Health Forum for some years. SHARE's work on cholera will be presented in Kenya in October 2015, together with its work on gender to present the case to the emergency response community for adoption to its agenda. SHARE will be providing logistical, financial and keynote support for the forum.

SHARE also joined by invitation in discussions on the human right to sanitation and hygiene, attending an expert meeting at the Office of the High Commissioner for Human Rights in Geneva in June 2015.

Implementation of sanitation

At the request of the donor agencies involved and the Tanzanian authorities, SHARE has played a leading role in the evaluation of the Tanzanian National Sanitation Campaign. SHARE has now been requested to help with the programme design for the next phase. Donors asking for this include DFID, USAID, the World Bank and also the World Bank's own Water & Sanitation Programme. This has opened up the possibility of making technical support by SHARE available to other countries during the extension period.

Research in Phase II

In Phase II, research will focus on following up key areas that were developed in Phase I. While there have been many other successful areas of interest in the previous five years, the four themes of (i) WASH and undernutrition; (ii) WASH and routine immunisation; (iii) WASH and pro-poor urban sanitation; (iv) WASH and complementary food hygiene, are seen by the partners as significant for their national sector needs. This investment will also increase the value of the work undertaken in Phase I and provide the basis for the legacy of Phase II.

A call for thematic proposals was sent out in February 2015 and an initial selection made. Full protocols are due by 15 August 2015, with the aim of projects starting in the autumn of 2015. This call epitomises SHARE's approach to research and applied research. The proposals are different in quality and content, with some partners requiring more support than others. This is a process that makes the process itself an opportunity for development and learning, and falls directly within the capacity development strategy. The integration of RIU and M&E, together with strong budget scrutiny, make this an ideal example of the way SHARE works, and the value of the expert resources to dedicate to this.

Research into use

Research into use (RIU) continues to be pivotal for SHARE to achieve its outputs and impact on the world's poorest. SHARE has its obligations to DFID and therefore the UK public, but the reason it, and programmes like it, are needed to alleviate poverty, each in their own way, must not be forgotten. The impact that we are striving for can be seen in the RIU report and success stories. A suite of activities includes publications; meetings small and large, local and global; support within the WASH community, especially national researchers and practitioners; active media presence and outreach. Opportunities are used to add value to the portfolio, respond to requests, and to continually develop the RIU strategy. In the past year, the Policy Research Manager and Research Uptake Officer have worked with Phase I projects and PIs to bring their learning to the knowledge of those who most need it. Their decisions can determine how effective SHARE will be in contributing to its logframe outcome. The range of actors that the team has influence with reflects the skills required by these specialists.

Some of the notable research uptake successes since the last report have come from the India country platform, with its research on gender and sanitation; recognition of the importance of the SHARE-funded work on innovative behaviour change, and one of a number of activities in Nepal which, on this occasion, resulted in WaterAid's publication of a policy report on the use of WASH in routine immunisation programmes. This document was then made public and used in Nepal to pilot for the integration of messages around hygiene hand in hand with immunisation.

Three highlights in the reporting period are:

- **India country platform:** Four studies on the effects of poor WASH on women and girls in India, jointly funded with WSSCC, were finalised in this reporting period. Thirteen additional journal papers are either under review or in development. The findings have been disseminated widely, including at a WHO-led global WASH in health care facilities workshop in Geneva, a national workshop in Delhi co-convened with WSSCC, at a WHO/government of Spain summit on maternal health, and at the University of North Carolina (UNC) Water and

Health Conference in October 2014. Following discussion of the findings at these meetings and consultation with policy and practice stakeholders, the WHO South East Asia regional office has requested support to adapt the tools developed in the study on WASH in health facilities for regional use. The Gol's Director of the Ministry of Water and Sanitation (MoWS), has requested ten concise recommendations to feed into the efforts of MoWS and the Ministry of Health and Family Welfare to combat maternal mortality and morbidity. Furthermore, WSSCC has committed to providing additional funding for the development and testing of tools to assess WASH service accessibility, adequacy and acceptability with regard to gender equality. The proposed research will take place in India but is expected to have global relevance and feed into the development of indicators for the proposed WASH Sustainable Development Goal (SDG).

- **Recognised innovation in behaviour change:** In December 2014 the SHARE-funded article *Effect of a behaviour-change intervention on handwashing with soap in India (SuperAmma)*: a cluster-randomised trial, was awarded one of the first Elsevier Atlas Awards, as recognition of the pioneering nature of this research. The aim of the award is to help ensure that innovative scientific research reaches a wider audience than purely that of the scientific community. As such, each article is distilled into an easy-to-understand story by one of Atlas' scientific writers. The paper is one of the first three ever to receive the award.

- **WASH and routine immunisation:** In 2012, a team from WaterAid and LSHTM received co-funding from the SHARE RIU Fund to conduct an exploratory study in Nepal to examine whether these programmes offer a useful entry point for hygiene promotion as part of a comprehensive approach for diarrhoea control. The research was published in the peer-reviewed *Journal of Water, Sanitation and Hygiene for Development* (Velleman, Greenland and Gautam 2012) and a policy report was published by WaterAid, LSHTM and SHARE for wider dissemination and advocacy. The recommendation from this study was that this new approach – of combining hygiene messages with routine immunisation – should be piloted in partnership with the national government and responsible line ministries. Subsequently, WaterAid has taken forward the main recommendation from the study: to establish a pilot project in Nepal for the integration of hygiene promotion in the national routine immunisation programme. For more information see 'Success stories' on page 33.

The impact of SHARE's work on women and girls mentioned before, particularly personal, maternal and family health, has received high profile exposure through the India County Platform's association with WSSCC, and now through WHO's lead on WASH in healthcare facilities, where the work was presented at a workshop in Geneva. Discussions at other events have resulted in WHO South East Asia Regional Office deciding to adapt the tools, and the Gol's Director of the Ministry of Water and Sanitation (MoWS) asking for key recommendations to combat maternal mortality and morbidity.

SHARE's work with practitioners in the sector continues and the impact will be seen throughout this Annual Report. The plight of Nepal remains in the public conscience following the devastating earthquake. Although not a core country of SHARE's, the work that has been funded there, such as that of one of the PhD students, and also the work of WaterAid, have been timely in their availability of up-to-date knowledge and the provision of help and solutions at a time of crises, where informed action will help save lives. SHARE helped by funding an extra print run of the 'compendium of accessible technologies', to send to Nepal as support for the recovery efforts following the earthquake. Prior to the disaster, WaterAid had already

secured considerable interest in the compendium, but this has since become more pressing and pertinent.

The management group felt that this was exactly the sort of thing we should be funding as part of our follow-on activities for research funded in SHARE I. More importantly, it was decided that the compendium would prove very valuable to rebuilding efforts in Nepal, as it offers simple guidance grounded in evidence for how to make the lives of those left with a physical impairment by the earthquake a bit easier. This also highlights one of the oft forgotten areas when securing essential facilities for vulnerable people – that of the injured and disabled.

An illustration of the range of SHARE's publication, and the importance of publication itself, is seen in the Institute of Health Metrics and Evaluation publication a couple of years ago in which they presented new estimates of the Burden of Disease associated globally with inadequate WASH. Their estimate was based on meta-analysis which is suspect but still not published, and is an order of magnitude smaller than the previous figure. Following the paper, SHARE worked with WHO to convene a global group of experts to produce a new estimate by more open, transparent and up-to-date means and the results were published in *Trp Med Int Health* in 2014.

At the start of Phase II, SHARE continued its strategy of presenting and convening at important sector meetings and the result of these interactions can be seen in some of the highlights mentioned here and in more detail in the body of the report. Other meetings convened by or with SHARE continued to increase, as did the proportion of female participants, exceeding 50% for the first time this year.

The revised RIU strategy is presented for Phase II in Annex D of the report. In keeping with the concept note which is at the heart of the second phase, RIU focuses on the involvement of the partners at a national level before, during, and as a part of the legacy of SHARE.

Capacity development

PhDs and Masters

The challenges for SHARE in taking on six PhD students ranged from the pastoral to the financial. The six degrees have certainly cost more than was estimated but reading the statements of the two who completed during the last year (Annex C), it has been worth it for them, for us, and for the communities they will be working in. Each of the students has had very different starting points and experiences, and their rewards are testament to the value of the capacity development programme. One talks about the opportunities, not only for a variety of skills to be learnt and enhanced, but also the difference their studies will make to their effectiveness within the sector and how that will improve the health of people.

One other important aspect has been the opportunity to join a global network of WASH specialists – both practitioners and researchers, as well as developing firm professional friendships with their peers at LSHTM and through the consortium.

Although the inclusion of small grants for Masters projects has been a low key introduction, they have had an impact far greater than their cost, creating tremendous value for money; so much so that they have been included in the Capacity Development Strategy document for Phase II.

Other training has been highly successful, with requests from UNICEF leading the way. They received ten webinars from SHARE for their country staff in the autumn alone.

One aspect of programme support whose importance became more evident recently was the continuity of personnel in developing confidence and experience in country programmes. The use of WaterAid's staff in Phase I core countries was a brilliant idea and should have worked well. There was no fault in the logic of using national staff supported by an international organisation with all of the benefits that ensue. What was not appreciated was that the rapid turnover of staff (often experienced by NGOs) would affect SHARE's work so much.

That said, there were tremendous surprises. The India and Malawi country platforms fully completed their research projects, and in the case of India, exceeded expectations, yet both at one time had been close to collapse, and are witness to the good will and hard work of the teams in country and their SHARE liaison. Lessons learnt are the scale and quality of support required. Only one country per liaison worked well, even if the countries were close there was too much work for one person to cover otherwise. A further point was raised by the team in Malawi WaterAid. Contract management seems to be taxing worldwide, and issues with the appropriateness of contracts prepared by one of the ministries in Malawi caused financial and therefore timing problems.

Management and partners

The management of SHARE has seen some changes in the past year, not only as we started on Phase II but also within the management and core teams. The RIU team saw the most changes, with Oliver Cumming stepping down as the Research Policy Manager and Joanna Esteves Mills being promoted to the position. Alexandra Chitty was successfully recruited to fill the role of Research Uptake Officer that Joanna vacated. The biggest change, however, was the termination of the role of Impact Director when Rick Rheingans stood down at the end of Phase I. The role has been reassessed and the responsibilities have been shared between the other members of the management group. This seems to be working well, and where specific expertise is needed, it will be brought in on an ad hoc basis.

Expenditure has remained on track despite the dip in activities prior to the signing of the Phase II contract. This has been primarily because of early meetings to prepare processes for the inclusion of new partners, and a two day meeting in London to bring potential partners together with the current partnership. It was rewarding to see the partnership develop quickly between the original and new institutions, with potential collaborations blossoming, and then came to fruition in the call for thematic research proposals that took place in February. The strengths that these partners bring will enhance the existing practical people-centred institutions that we currently have working in SHARE. The core countries of Malawi and Tanzania will be served by the University of Malawi College of Medicine and Polytechnic, and the Mwanza Intervention Trials Unit in Tanzania. Additionally the Great Lakes University, Kisumu, Kenya, has been

working with SHARE in Phase I and joins SHARE as an institutional partner. A second institutional partner has been added – the Centre for Infectious Disease Research in Zambia. These two will build on work undertaken in Phase I and expand the reach of SHARE's African research for Phase II.

The challenge of managing the transition focuses more on administration and management in both the local and lead institutions. The need to spend time before contracts can be finalised and funds made available can cause tensions and delays. This will always be the case but it is a continual process to find better ways to progress and SHARE is working through LSHTM to be able to achieve that for the lead institution.

The lessons learnt from working with the country platforms have resulted in the partnership structure seen in Phase II; stronger, more established research institutions albeit with varying degrees of WASH experience but all aspirational. To facilitate the increased amount of work being conducted, particularly in the core countries of Malawi and Tanzania, the governance structure of Phase I has been modified. The introduction of workstreams is new to SHARE but otherwise tried and tested. The reporting stream through project PIs to workstream leaders, and on to the Capacity Director allows for levels of change control that have not been utilised in this way in SHARE before. This process has been designed to build towards a move to less centralised decision-making, and eventually more national autonomy.

Legacy

Our legacy plans are developing across all the areas of SHARE. In management, through a shift of control to develop sustainable research management skills in the two core countries; in RIU, by ensuring the uptake of the SHARE research by policy and practice actors and by catalysing investment in future research to address emerging questions, in capacity development, by ensuring that this is encapsulated in research best practice and in monitoring and evaluation, so that the impact of DFID's investment in SHARE is captured in the years to come.

3. Logframe outputs

This section summarises SHARE's progress during the past year (July 2014 – June 2015) with regard to the logical framework approach (LFA) outputs and indicators. Progress to date is also compared to the final set of SHARE LFA milestones set for the end of 2014. As reported in the 2013 Annual Report, SHARE has met, or in some cases significantly exceeded, all of the end of 2014 milestones in the LFA, prior to the set deadline. Some of the outstanding achievements over the past year include:

- Publication of 20 peer reviewed articles and 60 since SHARE's inception, (compared to a high milestone of 10).
- Development and publication of 17 manuals, policy briefs and reports, with a total of 80 since inception (compared to a high milestone of 10).
- Eleven programmes embodying SHARE research findings in the last year, 25 since inception.

Note: Outputs that were not required for the reporting year have been excluded from the summary. A full record is shown in the logframe at Annex A.

Output One – Research

National and global sector-relevant knowledge synthesised and disseminated to:

- a) Characterise problems
- b) Identify solutions
- c) Demonstrate benefits.

This output captures the production of knowledge materials (including academic publications, manuals and media) which synthesises problems, solutions and benefits of SHARE research. Output One has five indicators, summarised below.

Indicator One: Number of manuals, handbooks and other major resource materials created or rendered accessible.

End of 2014 milestone: 10 manuals, handbooks and resources (high).

Progress by June 2015: 17 reports and manuals (80 since inception), and 31 media outputs (83 since inception).

In the past year, SHARE has produced 16 manuals, handbooks, policy briefs and reports, and 31 media outputs (such as presentations and podcasts). A full list of these outputs is included in Annex B. Some of the most notable media outputs include:

- [Compendium of Accessible WASH Technologies](#)
- [The Policy Brief: Complementary Food Hygiene - An overlooked opportunity in the WASH, nutrition and health sectors](#)

Indicator Two: Development and use of national RIU strategies – Completed and reported in the annual report for 2014.

Indicator Three: Number of knowledge-sharing events, including seminars, technical meetings and conferences organised or supported by SHARE.

End of 2014 milestone: 30 knowledge-sharing events (cumulative) (high).

Progress by June 2015: 52 knowledge-sharing events (16 in the past year).

Under this indicator, SHARE reports on seminars, workshops and country platform meetings but not training events. Since June 2014, SHARE has convened and supported 16 global events. Among the most notable:

- [Launch of the PLOS Medicine paper “From joint thinking to joint action: A call to action on improving water, sanitation and hygiene for maternal and newborn health” at LSHTM in London.](#)
- [The Urban Talks](#) convened by SHARE in Malawi to drive progress and stimulate momentum for improved sanitation and hygiene delivery in the country.

Indicator Four: Number of women participating in those events.

End of 2014 milestone: 50% of participants are women (high).

Progress by June 2015: 52% of participants were women.

Depending on the event and data availability, Indicator Four includes participants as presenters/facilitators or audience members. In large events such as conferences, the gender of the presenter is the focus, whilst in smaller workshops and technical meetings it is the gender of those attending. Overall, 52% of participants at these events were women, exceeding the milestone indicator for end of 2014.

Indicator Five: Number of requests for advice from SHARE generating a response.

End of 2014 milestone: 15 requests for advice (high).

Progress by June 2015: 13 responses to requests for advice.

This indicator includes requests to SHARE members for advice on WASH-related topics. This is not necessarily based on specific SHARE research, but rather the assessment of the broader body of WASH knowledge and implications for particular settings and problems.

During the past year, SHARE has provided 13 responses, and a total of 46 since SHARE inception. A full list of organisations is available in Annex B.

Output Two – Knowledge synthesis

New knowledge generation dissemination (articles, citations, programmes embodying findings, SPLASH). This output focuses on the production and dissemination of research findings for publication as well as their incorporation into programmes and policies.

Indicator One: Publications in peer-reviewed journals arising from SHARE research.

End of 2014 milestone: 20 peer-reviewed publications (high).

Progress by June 2015: 20 articles.

Under this indicator, academic publications with at least one SHARE-funded author and/or those presenting results from SHARE research are reported. Two levels of publications are acknowledged:

- 1) Those where the research was directly funded by SHARE, and
- 2) Those for which SHARE contributed through sharing of information, exchange of ideas, or review.

Since July 2014, SHARE has produced 20 journal publications, including systematic reviews, documentation of new research methods, and the first results of SHARE-funded primary research. A full list of articles is available in Annex B. Some of the most notable include:

- Velleman *et al.* (2014) *From Joint Thinking to Joint Action: A Call to Action on Improving Water, Sanitation, and Hygiene for Maternal and Newborn Health*. *PLoS Med* 11(12).
- Das *et al.* (2015) *Menstrual hygiene practices, WASH access and the risk of urogenital infection in women from Odisha, India*. *Plos ONE*.

Since its inception, SHARE has produced 60 journal articles, exceeding the milestone indicator of 20 by the end of 2014. Among last year's publications, 42% of the authors are female, and 33% of authors who contributed to those publications are from developing country institutions.

Indicator Two: Citations of SHARE publications by other authors.

End of 2014 milestone: Average two per article per annum (high).

Progress by June 2015: 2 citations per publication per year (a total of 669 citations).

Under this indicator, SHARE monitors the citation of current publications, as well as those publications produced in previous years, using Google Scholar. Due to the normal publication cycle, there is a substantial lag between publication and citation in another article. Only those articles that have been published for at least one year were included in the measurement of this indicator.

Indicator Three: Number of programmes embodying research findings established and documented for replication and/or study visits.

End of 2014 milestone: 2 programmes embodying findings (high).

Progress by June 2015: 11 programmes embodying findings (25 since inception).

This includes the number of programmes incorporating SHARE research and synthesis findings into their decision-making, targeting strategies or policy guidelines. These could be by SHARE partners, NGOs, governments, bi-laterals or international organisations. A full list is available in Annex B. Some notable examples are:

- The SHARE funded *Compendium of Accessible WASH Technologies* has been used in the AUSAID-Funded WASH and disabilities project in Malawi for training of Community Health Surveillance Officers who are implementing CLTS.

- Drawing on results from SHARE-funded research on sanitation and psychosocial stress in India, the WSSC funded further research in India to develop and test tools to assess WASH service acceptability, and adequacy with regard to gender equality.

Output Three – Partnerships

Engaging partners around research (SHARE-initiated consultations, country platforms, downloads, technical support for implementing SHARE research, developing skills). This output focuses on SHARE's ability to engage sector partners at the national and global scale, with the intent of better identifying research needs and facilitating the uptake of new and existing research.

Indicator One: Number of consultations initiated by SHARE on the basis of outcome mapping (OM).

End of 2014 milestone: Four consultations (high).

Progress by June 2015: Nine consultations with strategic boundary partners (29 since SHARE's inception).

Under this indicator, SHARE reports on the number of meetings and consultations among SHARE and external partners to expand or continue research and RIU efforts in the WASH sector. This includes consultations to build collaborative efforts that go beyond SHARE's core research and RIU activities. These consultations are in response to priorities identified in the national and global outcome mapping exercises.

In the past year, SHARE initiated seven consultations and collaborations based on the outcome mapping approach. Among the most notable were:

1. The Ministries of Drinking Water & Sanitation and Health & Family Welfare both requested that SHARE provides them with concrete recommendations based on the research funded in India about what actions they need to take to achieve Swachh Bharat Abhiyan (Clean India Mission). These recommendations will feed directly into the official SBA guidelines that are being formulated.
2. SHARE collaborated with the University of Morogoro to prepare a successful bid for the design of Phase II of the National Sanitation and Hygiene Campaign in Tanzania.

Indicator Three: Number of hits and downloads.

End of 2014 milestone: As agreed with DFID, and implemented since the 2012 Annual Report, this indicator assesses the monthly number of visits to the SHARE webpages and the monthly number of subscriptions to the SHARE newsletter, exceeding the high milestones in each.

With this indicator we report the total number of pages viewed. This includes repeated views of a single page. In the past year, the average number of visits to the SHARE web pages was 2,660 per month. As of May 2015, the total number of newsletter subscriptions is 638. As

requested by DFID in 2013, we have also monitored the number of Twitter ‘followers’, which was 1,222 in June 2015. This number almost doubled since last year.

Indicator Four: Number of external requests for SHARE technical support to implement implications of SHARE research.

End of 2014 milestone: Two technical support requests (medium) – the high milestone has been raised from four to seven since the 2013 Annual Report.

Progress by June 2015: Three requests responded to (29 since SHARE’s inception).

Under this indicator, SHARE reports on the requests made to its members for support on SHARE research, training, capacity development, writing and editing. In contrast to Output One, Indicator Five, this indicator focuses on applying and interpreting SHARE research and analysis.

Since June 2013, SHARE has responded to three formal requests for technical support. Since its inception, SHARE has responded to a total of 29 requests for technical support, performing well towards the high indicator target set for 2014. A full list of requests is available in Annex B.

Indicator Five: Number of non-SHARE agencies participating in SHARE research.

End of 2014 milestone: Seven non-SHARE institutions (high).

Progress by June 2015: Six collaborating institutions (103 since inception).

Under this indicator, SHARE reports on the number of organisations and institutions that actively participate in its research, both globally and at country platform level. A full list is shown in Annex B.

Indicator Six: Skills and competencies of key individuals – especially women - responsible for planning, managing, implementing and monitoring WASH programmes developed or upgraded.

End of 2015 milestone: 40 individuals’ skills and competencies upgraded (high).

Progress by June 2015: 211 individuals’ skills and competencies upgraded (491 since inception).

Indicator Six includes individuals who are involved in developing and carrying out WASH activities within their organisations. In the past year, SHARE has provided training to 211 WASH practitioners exceeding the indicator milestone of 40. Approximately 27% of these were women. A full list of training events is provided in Annex B.

Output Four – Strengthening research capacity

Strengthen capacity for research and application (to include proposal quality, PhD students, exchange visits, training courses). This output measures the progress made by SHARE in

generating and reinforcing new skills in the WASH sector to increase sustained opportunities for research, particularly in focus countries.

Indicator One: % of proposals ready for consideration on first submission 100%. Presented in 2014 annual report.
A research theme call is in progress and will be reported in 2016.

Indicator Two: Number of PhD students trained.

End of 2014 milestone: Number of PhD students completed: Two (low).
Progress by 2014: Two of the six PhD students have now completed their viva, with minor corrections.

This indicator refers to the number of PhD students fully or partially funded by SHARE. Since its inception, SHARE has been training six PhD students - all from low income countries, exceeding the 'high' milestone of five. Of these PhD students, two have completed their studies, while an additional two are expected to do their viva in August/September. Additional information on the lessons learnt during the 3.5 years of PhD studies for each of the two students that have completed is available in Annex B (Appendix 1)

Indicator Three: Number of exchange visits organised.

End 2014 milestone: two visits (medium).
Progress by June 2015: 2 exchange visit organised (15 since SHARE's inception).

This indicator refers to visits by one practitioner or researcher to another with the purpose of learning from and possibly replicating their approach. This could include visits of different organisations within the same country or to different countries.

Indicator Four: Number of training courses organised annually (on research methods, management, etc.).

End of 2014 milestone: Four courses (high).
Progress by June 2015: Ten training courses (26 since SHARE's inception).

The full list of training courses is provided in Annex B. The most notable examples are:

- Training on the Behaviour Centred Design (BCD) approach to behaviour change to staff from Action Contre La Faim (ACF) managing WASH country programmes.
- SHARE and UNICEF webinar series on evidence-based WASH policy and practice, for UNICEF staff.

Output Five – Consortium management

Effective consortium management (indicators monitored, value for money, money saved, country platform groups operating, amount of country platform approved proposals, completed

projects). This output assesses the progress in the management of SHARE projects and country platform research groups.

Indicator One: Percentage of indicators assessed and reported annually.

End of 2014 milestone: 75% (medium).

Progress by June 2015: 100%.

This refers to the number of logframe indicators assessed as well as outcome mapping assessment. SHARE monitored 100% of the logframe indicators, including mapping of the boundary partners both globally and in each country platform.

Indicator Two: Value for money: avoiding wasteful expenditure on ineffective hygiene promotion, unused latrines, and superfluous evaluations by following SHARE advice or implementing SHARE findings (measured in £s).

End of 2014 milestone: Total of £2.5 million in savings (medium); £5 million (high).

Progress by June 2015: Over £4.6 million in savings.

This indicator refers to documented examples where SHARE research or synthesis contributed to changes in programme design to encourage more effective strategies. The metric includes all costs avoided as a result of SHARE influence. These include programme costs avoided, health system costs avoided, and other unnecessary costs.

Indicator Three: Monitoring country platforms and evaluation of activities:

a) Number of local research management groups set up:

End of 2014 milestone: 4 (high). Progress by June 2015: 4

b) Value of research proposals submitted for funding and approved:

End of 2014 milestone: £1m (high). Progress by June 2015:

Breakdown by country platform:

India: £ 438,719 (£250,000 leveraged by WSSCC)

Malawi: £175,720

Bangladesh: £375,000 (£125,000 leveraged by WaterAid)

Tanzania: £223,994

c) Percentage of research projects completed on time:

End of 2014 milestone: 75% (medium). Progress by June 2015: 84%.

Bangladesh

Progress for the period June 2014 – May 2015

SHARE Bangladesh country platform operations are carried out through its two lead international representatives: International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) and WaterAid Bangladesh.

Under the Bangladesh platform, four studies were funded; (1) an evaluation of the hand hygiene of commuters in Dhaka; (2) the contamination of boreholes and their distance to pit latrines; (3) a hygiene intervention to prevent contamination of weaning food; (4) risk factor determination of sanitation in tubewell contamination. Projects 1, 3 and 4 have been completed.

The study on “Faecal contamination of commuters’ hands in public places in Dhaka city, Bangladesh” has been completed, and the data have been analysed. A manuscript has been submitted to the Tropical Medicine International Health peer-reviewed journal. The study investigated the levels of faecal contamination found on commuters’ hands in Dhaka, Bangladesh and explored possible associations between season, types of transportation used (e.g., train, bus and launch), and other risk factors. The study found high levels of all bacteria on hands, no differences were found between hands (left or right) or between seasons. The results of the study received attention in newspaper distributed nationwide, and were the findings formed the basis of a hygiene awareness campaign in the toilets of the largest transport hub in Dhaka last calendar year.

The study ‘Pathways of bacterial and chemical pollutions around pit latrine and establishing safe distance of groundwater point at different hydrogeological conditions of Bangladesh’ will continue until December 2015 when the sampling is expected to be completed. The project could not start on time as a result of political unrest in the country. Due to the late start date, not all samples could be collected on time, resulting in a significant underspend, and the request for a no-cost extension which was also mentioned in the last Annual Report. After completion of the sampling, data analysis will be conducted followed by the preparation of a final report and submission to a peer-reviewed journal.

India

Progress for the period June 2014 – May 2015

Following a successful open request for proposals in 2013, and the leveraging of additional funds from the WSSCC, SHARE awarded research grants to four research teams for a total value of £450,000 (£250,000 of which was from SHARE). Each team was led by an Indian organisation working in collaboration with leading international centres of research excellence.

The sub-sections below offer a short summary of the work associated with the India research. More information on the [four WSSCC and SHARE-supported studies](#) and the associated uptake activities can be found in the success stories on Psychosocial Stress and Reproductive, Maternal and Newborn Health (page 37).

Research outputs

The final research outputs were due this reporting period, as SHARE I came to a close. All four research projects delivered their findings on time as per the July 2014 schedule, and all contracted journal papers have Indian first or senior authors. Furthermore, there was a high number of additional high quality outputs. A total of 16 journal papers are currently published, under review or due to be submitted, including in PLOS Medicine. All of the published outputs are on the [SHARE website](#), which will continue to be updated as further outputs emerge.

Uptake

SHARE has successfully engaged a variety of stakeholders in the research findings from the beginning of Phase I, and has continued to do so throughout the current reporting period. The results of the studies were presented at the '[Sanitation and Women in India](#)' workshop co-convened by SHARE and WSSCC in Delhi in 2014. This was the third such national convening event, the other two of which were featured in previous Annual Reports. During this event, government of India officials requested that a list of evidence-based recommendations be formulated and submitted to the Ministry of Drinking Water and Sanitation (MoDWS), and the Ministry of Health and Family Welfare to help them achieve Swachh Bharat Abhiyan (SBA). The results were also presented at a number of national and international fora (refer to the section on research uptake).

Legacy arrangements

In last year's Annual Report, we highlighted that our legacy plans focused on ensuring (1) uptake of the SHARE India RFP research by policy and practice actors; (2) catalysing investment in future research to address emerging questions.

Subsequently, SHARE has leveraged additional funding of US\$50,000 from WSSCC to support work in India on how sanitation related psychosocial stress outcomes among women and girls are not accounted for in global and national monitoring of services. We are working closely with key organisations involved in the global monitoring and evaluation architecture for WASH to ensure that this research is relevant and useful.

SHARE is also responding to a demand at the WHO Regional Office in South Asia to standardise/render replicable the tools developed and used within the India study tasked with assessing WASH in healthcare facilities. We will report on the progress of both of these follow-on activities in the next Annual Report.

Tanzania

Progress for the period June 2014 – May 2015

SHARE has funded six research projects in the Tanzania Country Platform. In the past year, the platform has achieved significant progress with respect to both research and research uptake. An update on each project is presented in the following paragraphs:

1. *Improving maternal health in Zanzibar through improved WASH Services*: The work has been completed, and presented at several international and national meetings and conferences. More details on both the findings, research outputs and uptake can be found on page 33 under 'Success stories'.
2. *Shared sanitation - an improved or unimproved form of sanitation?* Led by Jeroen Ensink, and conducted in collaboration with the Tanzanian NGO MSABI. The research work was completed and the data written up and published in the journal *Environmental Science and Technology* in January 2015. A second publication is under preparation and the work has been presented at the WEDC conference in Hanoi, the Water and Health conference at UNC in October 2014, and the KCL WASH week. The findings of the study confirmed that

pit latrines without a slab are rightly classified as unimproved forms of sanitation, but that at least for Tanzania there is no evidence to classify improved sanitation technologies that are shared by more than one family as unimproved. The study actually found that the more people shared a facility the cleaner it was.

3. *Assessment of quality and use of shared sanitation facilities among households in urban and rural Tanzania*, led by Dr Massa, Ministry of Health and Social Welfare. The project had encountered initial significant delays due to ethical approval reasons. In the year under report, the study was granted ethical clearance and the data collection and analysis of data was completed in March 2015. The first draft of the report was sent out for peer-review and the authors are currently working on incorporating the feedback from the external peer reviewers.
4. *Expanding the Mtumba model: creating a product for scale up*: The Mtumba study had initially been delayed due to ethical approval and transfer of funds. Researchers have begun their work in Geita in May 2014, but encountered further cash flow problems towards the end of 2014 and early 2015. Work is about to be completed and a write-up of the results is planned over the summer of 2015.
5. *Drivers for effective sanitation governance in rural and peri-urban areas around Lake Victoria, Tanzania*: The data collection was completed and the final report approved following peer review. The study registered an increased demand for improved sanitation amongst community members which was shown by: (i) inclusion of communities' interests on sanitation improvement into community-based plans; (ii) establishment of community by-laws for enhancing universal access to improved sanitation; and (iii) strengthening of sanitation committees designated to promote collaboration and resolve differences among sanitation service actors at community level.
6. *Developing sanitation microfinance products in Tanzania*: This work was conducted by Microsave and Trémolet Consulting in collaboration with other local NGOs. Several workshops have been conducted and the research work was completed in April 2015, following which the final report was sent out for external peer review. The revised document was received and approved at the end of May 2015. The work has received extensive national and international attention, and will be presented at World Water Week in Stockholm in September 2015, and hopefully in a piece in *The Guardian* newspaper. A first paper has been accepted for publication in the journal *Waterlines*. Lessons from the action research: i) interest among some financial institutes for venturing into sanitation; ii) in Tanzania, under current market conditions, microfinance for sanitation can take the form of loans for household sanitation, or for sanitation businesses.

Research outputs and uptake

The work under the Tanzania platform has recently been completed, and one paper has been published, one has been accepted, and a further one is in preparation. Final reports have been put online and events are being planned.

Work plan June 2015-January 2016

Projects are nearly completed and final publications are being prepared. Under SHARE II, a national event will be hosted in July 2015 to identify research priorities for the national programme of research. We have identified strong researchers in MITU to help lead the work, and strong collaborative links in NIMR and the MoH. The evaluation of the national programme and design of Phase II will continue and this is presented in more detail on page 33 under the success stories.

Challenges

The experience of previous years of research in Tanzania has taught us that challenges can be expected as a result of delays in ethical approvals and transfer of funds from LSHTM. We intend to plan taking these constraints into consideration, but we can not exclude delays.

Malawi

Progress for the period June 2014 – May 2015

The following projects were planned under the Malawi platform:

1. Private sector participation in sanitation and hygiene services (Centre of Excellence in Water and Sanitation and SMART Centre, Mzuzu University)
2. Hand washing with soap. peoples' perception and mind-set on hand washing (Malawi Polytechnic)
3. Pit emptying and faecal sludge management (Bunda College, Lilongwe University of Agriculture and Natural Resources)
4. Menstrual hygiene management in primary schools; status of menstrual hygiene management in schools; challenges faced and their mitigation measures (Chancellor College, University of Malawi)
5. Challenges and opportunities in solid waste management: The case of Malawian cities (National Commission for Science and Technology)

As per the agreement, all the five studies were supposed to be carried out in nine months. However the projects were delayed and halted because a court injunction was imposed on the Directorate of Sanitation and Hygiene concerning its leadership on SHARE research projects, and further problems and delays were faced because the national coordinator had resigned from his position. With the court injunction imposed on the SHARE project, a new national research coordinator could not be hired and funds could not be released. Projects were eventually run for a shorter duration and planned to finish in December 2014, though again delays were experienced. Data collection has now been completed and final reports are being prepared.

Research outputs and uptake

One way in which SHARE considered disseminating its research findings was to engage the Urban Research Institute to conduct the 'Urban Talk' forum where SHARE researchers present their findings to the public. 'Urban Talks' was held on 26 October 2014 at Cross Roads Hotel in Lilongwe. They take the form of a monthly two-hour live panel discussion on radio. This provides a platform where citizens can freely discuss national issues and demand responsiveness from all the duty bearers and service providers. In addition, 'Urban Talks' is

an avenue where complex issues are broken down into everyday language for public discussion, awareness, and action. The programme features players in the sector, including government officials and service providers on its panel, as well as local citizens.

The SHARE research `Urban Talks' was carried out with the following objectives:

- to disseminate research findings by SHARE institutions and solicit feedback from the public;
- to bring attention to the public of the sanitation and hygiene challenges in both rural and urban areas;
- to collectively reflect on solutions to address sanitation and hygiene challenges;
- to enlist allies in collective action for improved sanitation delivery around the areas of study;
- to influence corrective, responsive and reformative policy orientations around sanitation and hygiene challenges facing rural and urban Malawi.

Apart from unearthing sanitation and hygiene issues, it was anticipated that the SHARE `Urban Talks' would also lead to:

- increased awareness of the public on corrective measures for improved sanitation delivery based on the recommendations of the studies;
- improved understanding and relevant policy responses to sanitation and hygiene challenges;
- articulation of institutional, society and household strategies for tackling sanitation matters;
- improved resource allocation for sanitation and hygiene in the long term.

The `Urban Talks' were attended by a variety of players. Community members from the areas, within Lilongwe city, where some of the studies were conducted, formed the majority of the participants. Other participants included government officials (Ministry of Agriculture, Irrigation and Water Development; Health), members of the press, development partners, WaterAid Staff, local and international NGOs, and representatives from the Water and Environment Sector Network (WESNET) membership. Those researchers who did not carry out their work in Lilongwe City were asked to bring two beneficiaries of their research. The chairperson of the city council health committee also attended.

The panel comprised:

- Mr Humphreys Masuku, Ministry of Health, government of Malawi
- Mr James Mambulu, Water and Sanitation Specialist at DFID
- Mrs Ngabaghila Chatata, National Coordinator of WESNET Malawi
- Mr Wellington Mitole, Urban Programme Manager at WaterAid Malawi
- Mr Ben Cole, WASH Specialist at UNICEF

Workplan June 2015-May 2016

Projects to be completed, main theme work planned and the policy and research landscaping exercise and stakeholder analysis to be completed which will identify national research priorities.

Challenges

Enabling agreements have been signed with the University of Malawi in Blantyre, and we hope to identify a new research coordinator for SHARE II soon, so as to be able to deal with challenges quicker and more efficiently, with fewer countries and increased (RIU and research) support from the management group.

Consortium management

The rate of 84% for research projects completed on time relates only to the country platforms.

For Bangladesh, the situation has not changed since the last Annual Report and the difficulties they face have been addressed elsewhere in the report.

India completed its projects on time, as did Malawi after a very slow start.

Tanzania has remained a problem with no movement on the project with the Ministry of Health and Social Welfare since the last Annual Report. The second project is 85% complete but is waiting on NIMR to be able to finish.

Outputs - Additional information

The logframe for Phase II will be finalised after the report has been received from the external review. A draft can be seen in the M&E strategy, Annex E.

4. Research uptake/engagement with beneficiaries

Research-into-use (RIU) is central to SHARE's theory of change, and RIU activities are clustered into five categories: (i) convening boundary partners/users, (ii) RIU-led research and synthesis, (iii) translation of research for boundary partners/users, (iv) projection of work through online and other means, and (v) support to the national platform processes. RIU activities contribute indirectly to most logframe approach (LFA) output and outcome indicators, and contribute directly to LFA outputs 1-3. Progress on the LFA is described in Section 3, and RIU progress is described in detail in relation to the relevant indicators. All 2014 milestones relating to RIU have been exceeded. Section 3 should be read in conjunction with Section 5 which presents the success stories for SHARE 2015 around a number of key themes.

Three RIU highlights for this reporting period have already been described in the executive summary. As noted in the executive summary, this report covers the transition from Phase I to Phase II. As Phase I research was finalised, SHARE disseminated it at several global events and target audiences were convened around the findings. As part of SHARE's commitment to securing a legacy for its investments, SHARE has continued to carry out uptake activities on Phase I research across the whole reporting period and will continue to do so moving forward. This brief summary of all RIU-related activity is structured around legacy work and new, Phase II-related work.

Convening at evidence and policy symposia

SHARE research and syntheses have been presented at a number of evidence and policy fora, raising the profile of research findings and engaging research, policy and practice audiences. During the first six months of the reporting period, we participated in several global and policy fora to disseminate SHARE I research, and engage stakeholders on the findings (see (a) below). As we entered SHARE II in January 2015 and for the six months since then, we have continued to seize and generate opportunities for communicating SHARE I findings at a global level in what we have called 'legacy activities' (see (b) below). While SHARE II research projects are being defined, we have nonetheless worked with partners to support national research inception events (see (c) below).

(a) Wrapping up: convening under SHARE I (July 2014-January 2015):

The full package of SHARE-funded research on inclusive WASH access in Uganda and Zambia, as well as the action research on participatory improvement of WASH facilities in informal urban settlements in Blantyre, were presented at a Stockholm World Water Week in August 2014, in a session on '[Addressing Equity in the Water, Sanitation and Hygiene Sector](#)' co-convened by SHARE with UNICEF and the Sanitation and Water for All partnership.

In September 2014, SHARE convened a [roundtable](#) in London on WASH and neglected tropical diseases (NTDs), drawing on the SHARE-funded systematic reviews in this area and seeking to significantly progress collaboration, coordination and cooperation between the sectors in the areas of mapping, data collection, monitoring and research. SHARE was then invited to present the outcomes of this roundtable at the annual meeting of the Neglected Tropical Diseases Non-Governmental Development Organisations Network ([NNN](#)) in Paris in

October. For more information on the outcomes of these events see 'Success stories' on page 33.

In October 2014, at the UNC Water and Health Conference, [SHARE convened a side event](#) on sanitation and gender (see RIU first highlight in the executive summary), where SHARE-funded research in India on gender was presented and a core set of actions identified to move the agenda forward. In November 2014, SHARE co-convened with WSSCC a two-day [workshop](#) in Delhi entitled Sanitation and Women in India. This meeting followed on from the inception event held in Delhi in [December 2013](#) and reported on in last year's Annual Report. The PLOS Medicine paper '[From joint thinking to joint action: a call to action on improving WASH for maternal and newborn health](#)' was given a [high profile launch](#) at LSHTM in December 2014, with expert speakers from DFID, WHO, WaterAid and LSHTM. For information on Phase 1 follow-on activity since January 2015 see (b) Legacy below.

SHARE supported Malawi partners in hosting an '[Urban Talks Forum](#)', with participation from the government of Malawi, DFID, UNICEF, WaterAid and the National Civil Society [Water and Environmental Sanitation Network](#) (WESNET) to present the studies funded under the Malawi Country Platform. A dynamic debate on the several Malawi-based SHARE-funded research projects was had by 100 government officials, influencers, practitioners and members of the public and broadcasted live on radio.

(b) Legacy: continuing to disseminate Phase I research beyond 2015

Several opportunities have been generated since the start of Phase II for continued dissemination of the work funded by SHARE on WASH and gender. In February 2015, SHARE co-convened a [WASH Summit](#) with WaterAid India and the Ministry of Drinking Water & Sanitation and Urban Development. In March, the Indian Institute of Public Health (IIPH) presented SHARE-funded 'WASH & CLEAN in the Labour Ward' research findings at the global meeting on WASH in health facilities at the WHO in Geneva. Also in May, at the 4th AfricaSan Conference, SHARE convened a learning event on the linkages between WASH and maternal and newborn health, in partnership with UNICEF, the Water Supply and Sanitation Collaborative Council, WaterAid and the Soapbox Collaborative. Furthermore, side event proposals have been submitted for this year's Stockholm World Water Week, the UNC conference and the Global Maternal and Newborn Health Conference, due to be held in Mexico City in October 2015. For more information on the outcomes of these events see page 33 'Success stories'.

In March 2015, SHARE was invited to participate in a WASH Working Group convened by the Global Task Force for Cholera Control to develop objectives and outputs for priority research and implementation topics. SHARE-funded research on cholera in emergencies was fed in to inform the Working Group's discussion, and follow-up activity is being closely monitored for potential further involvement by SHARE. Furthermore, SHARE is taking a lead role in coordinating the annual Emergency Environmental Health Forum in Kenya in October 2015, as it has done in the [past](#). This will provide the ideal forum to feed in SHARE's work on cholera, but also on other areas, such as gender, to encourage uptake by the emergency response community of practice.

SHARE co-hosted an [international seminar](#) with the DFID-funded VfM-WASH Consortium in May on how sustainability and VfM (value for money) analysis can be used to improve the performance of WASH programmes.

(c) SHARE II: convening stakeholders around forthcoming research

As per the SHARE II RIU strategy and associated planning paper (see Annex D), SHARE has worked with its partners in preparing one national event per focus country to bring together key potential research users (researchers, policy makers, campaigners and practitioners) from the sanitation and associated sectors to present and discuss research proposed as part of SHARE II. These events will strengthen the proposal and, by engaging research users from the very beginning of the research process, will foster greater interest in SHARE's research and should increase the uptake of the findings into policy and practice at the national, district and local levels.

During this reporting period, one such event has taken place. In April, SHARE worked with Kenyan partner the Great Lakes University of Kisumu to hold a national Sanitation Research Symposium in partnership with the government of Kenya and the World Bank's Water and Sanitation Programme. The one-day event, which the government is listing as its principal sanitation research activity for the year, brought together researchers, policy makers, campaigners and practitioners across Kenya's sanitation sector to focus on new challenges for post-2015 and the role of research in tackling these. The proposed SHARE-GLUK research on a WASH intervention in informal urban settlements of Kisumu and their impact on vaccine efficacy and nutritional outcomes in children, was also presented and discussed. The outcomes of the discussion are being fed into GLUK's research protocol.

Direct engagement of boundary partners through collaboration

SHARE has worked directly with key stakeholders to support research uptake. In particular, SHARE delivered an 'Evidence-based WASH policy and practice' lecture series for approximately 100 UNICEF staff via webinar. 98% of participants said that they would recommend the webinar to a colleague, and SHARE has responded to UNICEF's request to run the webinar series again this year. We have worked in partnership with the Water and Sanitation Programme of the World Bank to co-host the above-mentioned Sanitation Research Symposium in Kisumu, Kenya this year. We continue to work with WaterAid, including through participation and support of the [WASH summit](#) led by WaterAid India in early 2015, and a series of brownbag sessions on specific themes or studies to encourage uptake of SHARE findings by policy, advocacy and programmatic staff. These included sessions on improving maternal health through WASH, embedding microfinance into sanitation programmes, and a session on equity and inclusion in WASH provision. We have also engaged directly with DFID, delivering a brownbag session on urban sanitation for their staff, hosting a research sharing session at LSHTM with a senior DFID WASH policy representative, writing a feature on inclusive WASH for DFID's intranet, and ensuring a significant SHARE presence at a DFID stand at [WTD 2014](#). Finally, SHARE continues to work closely with DFID Tanzania and the government of Tanzania on the evaluation of the National Sanitation Campaign. In the reporting period, SHARE staff have been invited by DFID Tanzania to design Phase II of the campaign, which will involve drawing not only on the evaluation findings, but also on the wealth of learning from SHARE research.

Media coverage and online presence

SHARE continues to receive good media coverage. The launch of the PLOS Medicine policy review “From Joint Thinking to Joint Action” was reported by 115 media outlets, including [Reuters](#), [The Guardian](#), [The Washington Post](#) and [India Online](#). [The Telegraph](#) covered the SHARE-funded study on WASH environments of domestic and facility births in Tanzania, and four posters produced by WaterAid Bangladesh on SHARE’s [faecal contamination of commuters’ hands study](#) appeared over the course of a week in [Prothom Alo](#). [The Indian Express](#) reported on one of the SHARE-funded studies on the effects on the psychosocial stress of women by lack of appropriate sanitation.

Another piece of SHARE-funded work that was widely circulated were the results of the sanitation trial in Odisha, following publication in the *Lancet Global Health*. The study failed to find a health benefit following the implementation of onsite sanitation. The study was reported by national and international media, and has contributed largely to sectorial debate on the appropriateness constructing latrines and the need for sanitation marketing, microfinance and other behavioural approaches to promote sanitation uptake.

In addition, we continue to develop and strengthen our online dissemination channels and network. In the reporting period, newsletter subscriptions have increased by 20%, and both open rates and click through rates have increased. Average monthly web visits have increased by a quarter during the reporting period, Twitter feed followers have gone up by 43% and SHARE’s Twitter ‘social authority’ has more than doubled.

5. Outcomes and impacts

The outputs generated by SHARE research and the activities carried out to encourage uptake of these outputs, as well as the capacity building activities, have been reported on in the preceding two sections. In short, these sections have demonstrated how SHARE investments have contributed to the knowledge base and how these contributions have in turn helped inform policy and programming in the WASH sector and beyond. This section looks at how these research outputs, RIU and capacity building activities have contributed to SHARE's envisaged **outcomes**, and how achieving these outcomes have, in turn, **impacted** on sector progress.

Outcomes

SHARE aims through its research, RIU and capacity building activity that 'national and global sector partners change the way they plan, implement or monitor in order to increase: (i) equitable access; (ii) sustainability; and (iii) cost effectiveness of sanitation and hygiene'. The following indicators measure this outcome:

Indicator 1: Evidence of SHARE catalysing change on the four barriers to progress in sanitation and hygiene: a) low priority, b) weak policy and programming, c) inadequate and poorly targeted resourcing, d) poor monitoring for equity and sustainability.

Measured through the percentage of progress markers met by boundary partners/stakeholders (as established in the outcome mapping exercises (see Annex B1)

Since SHARE's inception, its research and practice have influenced national programmes in the four focus countries, achieving the 'love to see' indicator in all them. Despite these achievements, some countries such as Malawi experienced a slow start and would require a stronger commitment in SHARE Phase II. Among the most notable examples of SHARE influencing national programmes are:

- The Principal Secretary for Drinking Water and Sanitation requested a meeting with SHARE, WSSCC and the World Bank and a report covering next steps and action points to incorporate results from SHARE research into policy.
- Since 2013, SHARE in collaboration with the Ministry of Health and Social Welfare (MoHSW), the Ministry of Education and Vocational Training, NIMR and National Bureau of Statistics is conducting a process evaluation of the National Sanitation Campaign, supported by DFID country offices and WSP (World Bank).
- SHARE is also collaborating in the design of Phase II of the National Sanitation and Hygiene Campaign, working in partnership with the Tanzanian government, DFID and the World Bank.

Other boundary partners shared important thoughts on the SHARE consortium. Some examples are:

- 1) DFID is one of the key boundary partners of the SHARE consortium. Since its inception, SHARE has provided DFID UK and in-country offices with rigorous

evidence for decision-making. The 'love to see' indicator was reached both for DFID UK and some of the in-country offices, particularly Tanzania.

- 2) UNICEF has been one of the key boundary partners for SHARE. In 2013, SHARE signed a MOU with UNICEF to develop RIU and capacity building activities globally. As a result UNICEF has met the 'love to see' indicator, providing a series of webinar sessions and training which were based on findings from SHARE research.

For a list of achievements in the four focus countries please see Annex B1 Outcome Mapping

Indicator 2: Concrete examples of change, influenced by SHARE. These are measured through the number of 'success stories' reported on below.

Impacts

By achieving the desired outcomes, SHARE can claim an impact on 'accelerated progress towards universal sanitation and hygiene coverage in sub-Saharan Africa', and the following indicators measure this impact:

Indicator 1: The annual number of people gaining access to improved sanitation in the four focus countries. Milestone (end of 2014): 17 million (H). The results achieved are 17.38 million in the four focus countries.

Indicator 2: The under-five child mortality rate in the four focus countries. Milestone (end of 2014): 2.14 million (H).

This indicator reports the reduction on mortality rates for children under the age of five in the four focus countries using www.childing.org as a data source. According to the most recent report (2013), the mortality rate in the four focus countries is 1,605,000. The breakdown for each country for the year 2013 is as follows:

India: 1,340,000
Bangladesh: 129,000
Malawi: 41,000
Tanzania: 95,000

Success stories

SHARE has produced 12 success stories since the programme's inception. Here we present those project areas which have seen the most developments in the current reporting period. Where elements have been reported in the past, we reference this and provide a brief summary, but more detail on those cases will be available in previous Annual Reports.

Hygiene and routine immunisation

There is increasing evidence that environmental enteric exposures from sanitation and hygiene may contribute to reduce the effectiveness of critical live oral vaccines. This has been demonstrated in the past for typhoid and cholera, and the same may be true for oral polio

vaccine (OPV) and rotavirus (RV). While both of these pathogens can be transmitted through water, it is generally accepted that vaccines are the most effective control strategies. However, poor sanitation and hygiene could greatly reduce the impact of new vaccines such as RV and severely hamper polio elimination efforts. These childhood vaccines are often given at the age when children are being introduced to complementary foods and at risk of exposure to contamination through this or other pathways.

In 2012, a team from WaterAid and LSHTM received co-funding from the SHARE RIU Fund. This was to conduct an exploratory study in Nepal to examine whether these programmes offer a useful entry point for hygiene promotion as part of a comprehensive approach for diarrhoea control. Service provider and recipient perspectives on integration were explored in focus group discussions with female community health volunteers and caregivers of infants in Kaski district, Western Region. Key health, WASH and disease surveillance informants (government, I/NGOs and donors) were interviewed at national, regional and district level. The study found that incorporating hygiene promotion into the immunisation programme was feasible and consistent with the existing recommendations of the National Committee on Immunisation Practice in Nepal. Key informants stated a preference for implementation through routine immunisation, rather than a vaccination campaign approach. The recommendation from this study was that this new approach – of combining hygiene messages with routine immunisation - should be piloted in partnership with the national government and responsible line ministries.

The research was published in the peer-reviewed *Journal of Water, Sanitation and Hygiene for Development* ([Velleman et al, 2012](#)) and a [policy report](#) was published by WaterAid, LSHTM and SHARE for wider dissemination and advocacy. As well as the national engagement described below, WaterAid engaged a range of health or vaccine sector actors at a global level as part of its ongoing policy advocacy work on prioritisation of an integrated approach to child health, as laid out in the WHO and UNICEF Integrated Global Action Plan on Pneumonia and Diarrhoea.

Subsequently, WaterAid has taken forward the main recommendation from the study: to establish a pilot project in Nepal for the integration of hygiene promotion in the national routine immunisation programme. The Ministry of Health and Population – Child Health Division, with technical and financial support from WaterAid UK and WaterAid Nepal, signed a formal Memorandum of Understanding in April 2014 to initiate a pilot project in four selected districts of Nepal. The pilot is funded by WaterAid, private donors and the Ministry of Health and Population – Child Health Division. The approach being piloted includes formative research and a baseline study to identify effective behaviour change levers and, following this, the design of an innovative and creative hygiene promotion intervention package. The pilot will be assessed through a ‘before and after’ evaluation to determine the effect of the intervention on knowledge and behaviour on primary caregivers and operational feasibility. Currently, the MoHP and WaterAid are in the process of initiating the formative research and baseline, while continuing to lay down the basis for eventual national level scaling-up of the proposed approach. It is expected that the pilot will be completed in 2016.

SHARE research in Nepal has demonstrated the potential to integrate sanitation and hygiene messages into vaccination programmes, and, through WaterAid, is helping realise this potential in Nepal. But there still remains a lack of scientific documentation and understanding of the contribution of improved WASH on vaccine efficacy. Demonstrating the connection (and its mechanisms) could facilitate the introduction and prioritisation of WASH behaviour change

into immunisation efforts more widely. This research requires both better understanding of the biological plausibility as well as the practical understanding of how best to incorporate hygiene behaviour change into immunisation programmes.

Given the huge potential for added value identified here, SHARE has highlighted the relationship between WASH and vaccine efficiency as a research priority for its second phase. Through one or more of our partner institutions in Africa, we will fund research that looks at one or more of the following questions:

- identify effective strategies for incorporating WASH behaviour change into vaccination programmes or developing integrated programmes;
- assess the impact of poor sanitation and hygiene on the effectiveness of live oral vaccines for RV and polio. Three types of research would be possible: cross-sectional analysis of stored stool samples, new cross-sectional studies that carefully characterise enteric exposures and the immunological response to RV and OPV vaccines; and controlled intervention studies on the effect of household level WASH improvement on vaccine efficacy;
- focus efforts in Tanzania and Malawi where the RV vaccine is scheduled to be introduced, but where questions remain on its potential effectiveness;
- connect with global leaders, introducing them to enteric vaccines, and bringing established African researchers and institutions together.

SHARE has already awarded a small grant through its RIU Fund to the Zvitambo Institute for Maternal and Child Health Research in Zimbabwe for an exploration of the biological basis for the underperformance of enteric vaccines in Zimbabwean infants. This is a pilot study on the connection between oral vaccine underperformance and environmental enteropathy, using samples from an existing trial. The ambition is that the preliminary data **generated will inform** a larger study on RV vaccine responses within SHINE. Further research proposals in this area are currently being reviewed

Weaning food hygiene on the global agenda

The role of food in the transmission of diarrhoeal disease is an under-researched topic, with the belief still generally held by many that diarrhoea is (exclusively) water-borne, and that water quality improvements are the most effective interventions to control diarrhoea. Professor Cairncross spent much of his career collecting evidence that diarrhoea is mainly transmitted, not by contaminated water, but by other means, with poor hygiene one of the main contributors. One of the obvious means is food; it goes into young children's mouths, and moreover the diarrhoea-causing bacteria can grow on it, turning a tiny spot from a fingertip touch into a massive colony of hundreds of millions of bacteria in the space of a few hours. The bacteria can not do that in water, as water has no food supply. Whereas water quality interventions are easy, food hygiene is complex; there are many different foods, various ways to contaminate or protect them, as well as problems of re-contamination, bacterial re-growth and so on. A technique to apply modern understanding of microbiology to these complex questions was developed in the 1960s by the US National Aeronautics & Space Administration (NASA) with a view to ensuring that none of the astronauts developed food poisoning while in space. The Hazard Analysis for Critical Control Points (HACCP) involves careful scrutiny of the whole

production chain of a given foodstuff, and identification of key points where a particular temperature, pH, humidity etc. is maintained. Professor Cairncross supervised a first study on food hygiene in Mali that proved very successful, with faecal contamination of weaning foods reduced by 99%. SHARE funded, as one of its quick start projects at its inception, a study in Bangladesh which aimed to replicate the Mali study in a different area, and by a SHARE partner (ICDDR,B). The same protocol was adopted and implemented in urban Bangladesh allowing for different local foods, etc. The study found the same results (Islam *et al.* 2013). The work in Bangladesh was followed up by a SHARE-funded PhD student in Nepal - Om Prasad Gautam - who aimed to conduct and test an intervention at district scale. Om found a high uptake of his targeted hygienic behaviours, a 99% reduction in contamination levels, but most importantly managed to keep the cost of actual intervention low (US \$17) per participating mother/child pair. This was in spite of the use of a considerable portfolio of campaign stationery, such as badges, leaflets and bunting to hang along the imaginary divide between the kitchen and the animals' room. Most importantly, even at this larger scale, an impact on diarrhoeal disease could be discerned; however it cannot be published as a firm result as this part of the study was known to be underpowered.

As a personal success story, Om has now successfully defended his PhD and has taken up a position coordinating hygiene at WaterAid-UK, having put food hygiene on the agenda in WaterAid, showing not only that the SHARE-funded work has led to personal development (of which more is presented in the capacity development section of this report), but also how it has impacted the priorities of WaterAid.

Towards the end of SHARE I and continuing under SHARE II, a third study on food hygiene is being funded in the Gambia, where Mr Buba Manjang, a district environmental health officer who is registered for a PhD at the University of Birmingham (co-supervised by SHARE's Jeroen Ensink), is rolling out the approach tested in Nepal at district level using his own staff with the support of the Ministry of Health. The findings of the trial are being watched closely watched by the UNICEF office in Banjul, and they have promised that if the research study is successful they would like to take it to national scale.

WASH, violence and psychosocial stress

Lack of appropriate and hygienic sanitation facilities, at home or in public places, has been proven to impact the health, education and financial security of women and expose them to violence and psycho-social stress. The risks are multiple and cumulative, occurring across the duration of a woman's life. SHARE has made a significant contribution to this relatively unexplored area.

SHARE's 2013-2014 Annual Report highlighted the pioneering role of SHARE-funded research in shedding light on the connection between poor WASH and gender-based violence (GBV), through qualitative studies in [India](#) (Lennon 2011) and [Uganda](#) (Massey 2011). Women from slums in both countries reported feelings of intense shame and stigma around toilet use, and fears of rape and sexual violence when using WASH services, particularly at night. SHARE also reported on its contribution, via its partner WaterAid, to providing guidance for practitioners on best practice for responding to incidents of violence and minimising the risks of GBV in relation to WASH in the ['Practitioner's Toolkit on Violence, Gender and WASH' launched at a SHARE-convened event at LSHTM in June 2014](#). Furthermore, we reported on the [four WSSCC and SHARE-supported studies](#) carried out as part of the SHARE I India Country Platform. Three of these studies looked at the psychosocial stress and sanitation-

related violence experienced by women and girls as a result of poor access to safe and hygienic sanitation facilities, the behaviours and coping strategies that women and girls employ throughout their life course to deal with such circumstances, the adverse health outcomes that may result from individual level stress and hygiene behaviour. Last year's Annual Report also highlighted SHARE's continued engagement with the government of India around this body of research, and noted that research was due to be completed in mid-2014, with a dissemination event and journal publications following shortly thereafter.

During the current reporting period, SHARE has used the research it has funded to continue to emphasise violence and psychosocial stress as an underexplored dimension of health impacts.

Sanitation-related psychosocial stress

The results of the studies in India on psychosocial stress were presented at the '[Sanitation and Women in India](#)' workshop co-convened by SHARE and WSSCC in Delhi in 2014. This was the third meeting in the process, the other two of which were featured in previous Annual Reports. During this event, which was attended by researchers, policymakers and practitioners, government of India officials requested that a list of evidence-based recommendations be formulated and submitted to the Ministry of Drinking Water and Sanitation (MoDWS), and the Ministry of Health and Family Welfare to help them achieve Swachh Bharat Abhiyan (SBA). This was a ringing endorsement of the salience of this body of work and an excellent opportunity to influence national policy and practice.

The findings were also shared at the '[India WASH Summit](#)' held in Delhi in February 2015. Co-convened by SHARE, WaterAid India, the MoDWS, and the Ministry of Urban Development, the summit brought together thought leaders, the private sector, government of India officials and NGOs to discuss ways of making SBA a reality.

In addition to influencing national discussions about WASH, this work has also been showcased internationally. The findings were [presented at the University of North Carolina's Water and Health Conference in October 2014](#), and formed the evidence base for discussions around ensuring a greater gender focus for global WASH monitoring at a meeting held at DFID on the future of the UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) monitoring framework in March 2015.

Following these discussions and consultation with policy and practice stakeholders, US\$50,000 has been leveraged from WSSCC to allow representatives from two of the study teams to develop and test tools to assess WASH service accessibility, adequacy and acceptability with regard to gender equality. The proposed research will take place in India, but will have global relevance and will feed into the development of indicators for the proposed WASH Sustainable Development Goal (SDG). To further discuss how this research may be designed to best ensure relevance to current discussions on the post-2015 monitoring framework, SHARE and WSSCC will be co-convening academics, policymakers and practitioners from key agencies from the international monitoring, WASH and women's rights communities in Geneva in July 2015.

Through this original body of research on sanitation-related psychosocial stress (due to be published in several high-impact journals and already available online as [research summaries](#), [policy briefs](#) and [video reflections](#)), SHARE has helped build the evidence base around the impact of poor WASH on women and girls in India. Our research uptake activities have influenced national policymaking in India and international discussions on post-2015 indicators, which are likely to help improve equality of access to WASH facilities globally.

Violence and WASH

SHARE highlighted the important risks of violence associated with poor WASH in a chapter written for a [follow-up report to the 2011 AfricaSan conference that was published in 2014](#). There has also been continued growing interest in, and demand for, the practitioner's toolkit from a range of key stakeholders. For example, it [was featured by DFID on its 2014 World Toilet Day stand](#), and was the subject of a lunchtime seminar at WaterAid in 2015, and has been used by UNICEF in its WASH programming in South Sudan. According to UNICEF, the toolkit has also fed into the on-going work to update the 'Inter-Agency Standing Committee's Guidelines for Gender-Based Violence Interventions in Humanitarian Settings'.

The toolkit has additionally helped build capacity in the WASH sector. SHARE's partner WaterAid used it as the basis of a capacity development workshop at the 37th WEDC International Conference, and at a [similar workshop in 2015](#) that was attended by participants from a range of organisations including DFID, international medical corps, Care International, MSF and Save the Children. Promisingly, several of the attendees of the later workshop are now collaborating to develop a training course on WASH and GBV for field-level practitioners that will be trialled at the 38th WEDC International Conference.

The toolkit's popularity has been particularly evident in online fora, with it being shared widely on social media sites such as Twitter, featuring in a [guest blog on WASHfund.org](#), and being disseminated through well-attended [webinars in English and French hosted by the Rural Water Supply Network](#), a network of over 6,000 rural water professionals working for government, NGOs, private sector and international organisations in more than 140 countries.

By continuing to support research uptake and capacity development activities around the toolkit during this reporting period, SHARE and its partners are likely to have assisted in reducing WASH-related vulnerabilities to violence worldwide and improving sector performance. The recent translation of several of the toolkit's key components into French will continue to expand the toolkit's reach and influence in the coming months.

WASH and reproductive, maternal, newborn health

Improving reproductive, maternal and newborn health (RMNH) in low income settings requires a greater understanding of water, sanitation and hygiene (WASH) conditions in health facilities and the impact of poor WASH on menstrual hygiene management. During this reporting period, SHARE has remained committed to bridging the knowledge gap between inadequate WASH and RMNH

SHARE's 2013-14 Annual Report reported on its contribution to helping put WASH on the RMNH agenda. In summary, SHARE advanced the knowledge base around MHM, through a [systematic review](#) exploring the health and social effect of MHM (Sumpter and Torondel 2013), and studies in two of SHARE Phase I focus countries, Bangladesh and Malawi. It also documented SHARE's role in bringing together practical experiences on MHM from across the WASH, health, education and gender sectors in a first-of-a-kind manual co-published with WaterAid and UNICEF, the ['Menstrual Hygiene Matters - A Resource for Improving Menstrual Hygiene around the World'](#). Furthermore, a systematic review ([Benova et al. 2014a](#)) and conceptual framework ([Campbell et al. 2014](#)) explored the linkages between WASH and maternal health, and documented the state of the evidence on the impact on maternal mortality. Secondary data analysis highlighted strikingly low levels of WASH coverage in birth

settings in Tanzania ([Benova et al. 2014b](#)). Finally, co-funded operational studies developed a suite of tools to perform a 'situation analysis' and 'needs assessment' of the state of maternity units' WASH and infection prevention and control (IPC) in Tanzania ([Ali et al. 2015](#)), India (WASH & CLEAN), and - through leveraged funding from Soapbox Collaborative - Bangladesh.

During the current reporting period, SHARE has continued to strengthen the knowledge base and has used this to spur a greater focus on this neglected aspect of RMNH by both WASH and RMNH communities in research, policy and practice.

Menstrual hygiene management

The systematic review, which found a plausible health effect from poor MHM despite limited evidence, informed a case-control study in India on the impact of MHM practice on urogenital infections. This study concluded that interventions which ensure women have access to private facilities with water and educate women about safer, low-cost MHM materials could reduce urogenital disease among women. This relationship had never before been explored using both symptoms and laboratory diagnosed health outcomes. Its findings were shared at the 3rd Annual Virtual MHM in WASH in Schools Conference and the [Sanitation and Women in India two-day workshop](#) that SHARE co-convened with WSSCC in Delhi in 2014, and will be presented at the 38th WEDC International Conference in July 2015, and are due to be published in a paper in PLOS One later this year. SHARE has since granted a study extension to investigate the association of MHM practices with *Trichomonas vaginalis* (TV) and *Vulvovaginal candidiasis* (VVC) – another unexplored relationship to date. In addition, the findings informed the 'Developing the MHM Manifesto. Moving forward the Global MHM in WinS Agenda' meeting held in New York in October 2014, and are currently being fed into the design of an LSHTM feasibility and preparatory study for a trial on menstrual hygiene and safe male circumcision promotion in Ugandan schools that had not previously factored WASH into its thinking.

The Malawi study produced insights on the MHM challenges faced by girls in schools. These were shared at an [event](#) co-organised by SHARE with the Urban Research Institute in Lilongwe in November 2014, where the formulation of a national policy on MHM in schools was recommended. The event, broadcast live on Zodiak Radio, was attended by government of Malawi officials, researchers, policy makers, practitioners and members of the public. The study findings were also presented at [several dissemination events across Malawi in January 2015](#), most notably in Lilongwe where the Ministry of Agriculture, Irrigation and Drinking Water stated that the findings would assist in their efforts to ensure that the government meets its target of achieving 'Sanitation for All'. The Bangladesh study carried out by the MSc student and SHARE Research Fellow, Moon Moon Hossain, exploring MHM practices amongst adolescents in northern Bangladesh concluded in October 2014. Its findings were disseminated at the '1st Conference for Young Public Health Professionals in Bangladesh' in 2014. This study paved the way for Moon Moon Hossain to commence a career as a Junior Lecturer at the North South University in Bangladesh.

With SHARE support, WaterAid has continued to develop and share guidance on MHM with practitioners. The MHM manual, supported by over 20 leading WASH agencies, has formed the basis of several capacity development activities including: training events for WaterAid and other NGOs in Nepal and Pakistan, a workshop with Masters students at the University of Leeds, and a lunchtime seminar at WaterAid (February 2015). All events were well attended. A suite of training tools based on the manual has also been developed and tested during these various sessions and in WaterAid's country programmes, and will be published in a new [Training Guide for Practitioners](#) in June/July 2015. This guide will help to substantially extend

the reach of this work, providing a range of plans, handouts, presentations and films that can be used by any facilitator to lead workshops on MHM with development practitioners. The MHM manual was also piloted by WaterAid Bangladesh and has assisted them in integrating MHM in schools into a WASH programme in one small town.

Maternal and newborn health

Responding to the need identified in the systematic review for further rigorous evidence on the association between water and sanitation and maternal/pregnancy-related mortality, three cross-sectional observational secondary data analyses have been carried out, on datasets from Afghanistan (published) and Pakistan and Bangladesh (soon to be published). In part as a result of the SHARE-funded research, greater attention is being given to WASH provision in birth settings by leading academics and practitioners. WASH provision has been proposed as a maternal and newborn signal function, focusing on delivery and postnatal care, to characterise both routine and emergency care in facilities ([Gabrysch et al. 2012](#)).

SHARE's investment has helped demonstrate that there is sufficient evidence of the effect of WASH on maternal and newborn health (MNH) to justify action now by stakeholders from both sectors. Through dissemination events, engagement of key actors and capacity building, SHARE and its partners have supported evidence-based policy and practice in this area. Results of the WASH & CLEAN study in India have been disseminated ([India](#) and [Bangladesh](#)) and [internationally](#) and the [WASH & CLEAN Toolkit was launched](#) in 2014. Learnings have been taken up at state level in Gujarat, resulting in a move to improve WASH and IPC on maternity units and the wider facility context. The government of Gujarat plans to partner with one of the research partners to pilot an intervention of training on WASH via a mobile van. In Zanzibar, following completion of the research, an [interpretation workshop](#) was held with key stakeholders, including the Ministry of Health, where action plans were developed that drew on findings.

SHARE research helped spur global action, too. It informed a call to action paper published in PLOS Medicine ([Velleman et al. 2014](#)) and authored collaboratively by WASH and MNH experts, including SHARE researchers. The call offers tangible recommendations for immediate action. The paper was [launched in London](#) in December 2014 by SHARE, with broad attendance from both sectors and participation from senior DFID and WHO representatives. The paper fed into the 2015 WHO & UNICEF *Water, sanitation and hygiene in health care facilities: status in low- and- middle-income countries and way forward* (WHO 2015) report, which provides strong recommendations for moving forward and has had huge reach globally. Findings from the WASH & CLEAN study have also fed into this global process, including through a presentation by SHARE India country platform partner IIPHG at the WHO-led global WASH in health-care facilities meeting in Geneva in March 2015. Furthermore, SHARE has been involved through a SHARE researcher in the WHO-led development of an action plan to tackle inadequate WASH in health facilities.

SHARE has convened several other global events to disseminate the body of work on WASH and MNH, including at [the University of North Carolina \(UNC\) Water and Health Conference in October 2014](#), the [Wilson Centre in March 2014](#), and at the 4th AfricaSan Conference, where

SHARE held the only session on this topic. SHARE has also led the submission of a side event proposal to the Global MNH Conference in October 2015 in Mexico, and another in the same month at UNC's 2015 Conference. Finally, SHARE has participated in the consultation process for the Zero Draft of the *UN Global Strategy for Maternal, Newborn, Adolescent and Child Health* (MNACH), feeding SHARE findings into the process to encourage a greater focus to the role of WASH in MNACH.

SHARE has also focused resources in capacity development activities with key stakeholders to ensure appropriate understanding and use of the research findings on this topic. WASH and MNH linkages formed a core element of the 'evidence-based policy and practice' webinar series for UNICEF (see p 50), a lunchtime session at WaterAid, and presentations to the DFID health team in London, the South East Asia DFID Research Hub and DFID India.

By funding well-conceived, pioneering research in the area of WASH and RMNH, and leading or supporting research uptake and capacity development activities that assist in the understanding and use of findings by key stakeholders to improve policy and practice in this area, SHARE and its partners continue to contribute to improved RMNH and increased WASH provision both within and beyond the household and with a particular focus on health facilities.

Neglected tropical diseases

SHARE's 2013-2014 Annual Report demonstrated SHARE's continued commitment to building the evidence base on neglected tropical diseases (NTDs), principally through the funding of systematic reviews on [WASH and Trachoma](#) (Stocks *et al.* 2014) and [WASH and Soil-Transmitted Helminth Infection](#) (Strunz *et al.* 2014), and through a presentation at UNC's Water and Health Conference in October 2013.

During the current reporting period, SHARE has continued to strengthen the knowledge base and convene boundary partners to progress collaboration on WASH and NTDs globally.

Building on recent increasing global commitment to further collaboration between the WASH and NTDs sectors (demonstrated through the publication of the two aforementioned systematic reviews, the development and launch of a [Global Trachoma Mapping System](#) which captures WASH data, and the establishment of a [WASH and NTDs e-course](#)), SHARE brought together nearly 40 WASH and NTDs experts from donor organisations, research institutions, and non-governmental organisations for the '[European WASH and NTDs Roundtable](#)' in London (September 2014). This two-day roundtable was a follow-up to the [2012 Seattle Roundtable](#) that had identified four key areas for future collaboration and practical steps that could be taken (Freeman *et al.* 2013). The 'European WASH and NTDs Roundtable' provided an excellent opportunity for key experts from the WASH and NTDs sectors to jointly progress collaboration, coordination, and cooperation in the areas of mapping, data collection, monitoring, and research. Very positively, at the end of the two days, delegates had articulated a clear vision for the next five years and had determined an agreed and actionable work plan for the coming two years.

To progress the work plan identified in London and communicate these to a wider pool of interested stakeholders, the [key outcomes and proposed actions of this roundtable were presented](#) by SHARE's Research Uptake Officer, Alexandra Chitty, at the inaugural meeting of the [NTD Non-Governmental Development Organisations Network's \(NNN\) WASH Working Group](#) in Paris (September 2014). Since then, SHARE has continued to advance inter-sectoral collaboration and the actions identified in London, sitting on the NNN WASH Working Group, and participating in a Delphi process which formulated a set of WASH and NTD monitoring indicators that will be presented alongside the new WHO WASH and NTDs Strategy at Stockholm World Water Week (August 2015). Much of this work, and progress since Seattle, will be captured in a journal paper that is currently being drafted and the publication of which will be supported by SHARE.

SHARE has additionally continued to strengthen the knowledge base around WASH and NTDs by publishing a [third systematic review](#), considering the relationship between WASH and Schistosomiasis (Grimes *et al.* 2014).

By continuing to support research in this area and convene key stakeholders from the WASH and NTDs sectors to think strategically about and commit to further collaboration, SHARE has helped build the evidence base around the impact of WASH on NTDs and has provided opportunities for greater cross-sectoral collaboration. SHARE's activities are also likely to contribute to improving global joint monitoring processes and potentially also NTD outcomes.

Making WASH inclusive

SHARE's 2013-2014 Annual Report highlighted the crucial contribution that findings from the SHARE-funded '[Undoing Inequity](#)' action-research project made to the International Development Select Committee's ([IDSC](#)) [recommendations to DFID on mainstreaming disability in development](#). This project shed light on the barriers that disabled, older and chronically ill people face when accessing WASH, and designed and tested an 'inclusive WASH' approach to address those barriers in several districts in Uganda and Zambia.

During the current reporting period, SHARE has continued to influence policy and practice globally. The IDSC's recommendations have been taken up by DFID, which has recently published a [Disability Framework](#) demonstrating its commitment to mainstreaming disability in its work. Initial findings from the 'Undoing Inequity' project have also been published in two mid-term reviews ([Uganda](#) and [Zambia](#)), and SHARE, through its partner WaterAid, has contributed to providing practical guidance for health workers, community volunteers and WASH practitioners working directly with disabled and older people and their families in rural areas of sub-Saharan Africa. This guidance was recently compiled in a '[Compendium of Accessible WASH Technologies](#)', co-published with WEDC and others, and in a publication entitled '[Frontiers of CLTS: Innovations and Insights](#)'.

The initial findings of the project, documented in two mid-term reviews and an accompanying process review, revealed that the 'inclusive WASH' approach improved vulnerable people's access to WASH in the intervention sites. It also appeared to have conferred the additional benefits of increasing vulnerable people's self-esteem and social inclusion, and to have positively impacted on stigma and discrimination. However, some barriers still remained, with older people continuing to face disproportionate levels of discrimination due to decreased

mobility and ill health. Despite being based on a small sample size, and thus only being able to indicate trends, the findings offer salient insights for policy makers and practitioners wishing to mainstream disability and ensure greater inequity in WASH programmes globally.

Many of the insights from this project have been captured in the *'Frontiers of CLTS: Innovations and Insights'* publication, which features software-related lessons learned from the 'inclusive WASH' approach employed, and in the *'Compendium of Accessible WASH Technologies'*, which specifically responds to calls from practitioners for simple guidelines on how household WASH facilities can be made more accessible. As well as documenting examples of low-cost technologies which families can adapt to suit their specific needs and budgets, the compendium is also [accompanied by online resources](#) – photos and a DVD – that fieldworkers can use when discussing options with communities. The resource is available in English, French and Portuguese to ensure the widest possible uptake.

The Compendium has been well received since its launch on the International Day of Persons with Disabilities, 3 December 2014, with initial responses from the WASH sector being extremely positive. Organisations such as ADD International, CAFOD, Care, IIED, Leonard Cheshire Disability, Plan, the Rural Water and Supply Network, Save the Children, Sightsavers, UNICEF, WASH United, WSP, and WSSCC have received copies, and WaterAid India is currently developing a version specific to the Indian context on the request of the government of India. The compendium has also been in high demand following the earthquakes in Nepal; copies have been distributed to the Global WASH Cluster, with UNICEF being particularly appreciative. WaterAid Nepal will be using the compendium to inform its design of temporary toilets for displaced persons with disabilities, Tearfund staff have taken it with them to Nepal, and WorldVision is using it with HelpAge in Nepal.

During the current reporting period, learning from the project has also been shared at a variety of fora; most notably at the SHARE-convened ['Addressing Equity in the Water, Sanitation and Hygiene Sector'](#) session at Stockholm World Water Week (September 2014) and at a lunchtime capacity development seminar at WaterAid (February 2015). In the coming months, the project's findings will be presented at the EDD15 European Development Days conference (June 2015), at the 38th WEDC International Conference (July 2015), and at a brownbag for DFID's Disability and WASH teams.

Although the *Undoing Inequity* project is very much a learning-by-doing project and there is still a long way to go, it has undoubtedly contributed to a growing global focus on the neglected issue of disability in development.

Behaviour change through behaviour-centred design

SHARE's 2013-2014 Annual Report highlighted the contribution SHARE has made to building the evidence base around hygiene-related behaviour change through the SuperAmma intervention, a communication campaign based on LSHTM's new theoretical approach to behaviour change – Behaviour Centred Design (BCD) – that was implemented in rural villages in India to improve handwashing practices, and its evaluation ([Biran et al., 2014](#)). SHARE also

reported that the BCD approach was being used by various sectors to change a range of behaviours, from handwashing with soap to breast feeding practices.

In brief, the BCD approach is based on the tested assumption that health messages are not the main determinants of behaviour change. Emotional drivers such as disgust, nurture and affiliation are particularly powerful levers which can be utilised to affect behaviour change. This is achieved through a five step process, ABCDE:

- **Assessing** what is known and unknown about the behavioural problem;
- **Building** on this knowledge and defining a precise behaviour change goal through formative research;
- **Creating** an intervention grounded in theory and utilising drivers of behaviour;
- **Delivering** the intervention as intended; and rigorously
- **Evaluating** the intervention to assess the impact and document the implementation process.

During the current reporting period, the BCD has continued to influence policy, practice and research. It has been adopted and replicated in other programmes in Africa and South-East Asia:

1. *Indonesia – BCD for maternal health and infant feeding*

The approach has been adopted to develop a maternal health and infant feeding randomised controlled trial (RCT) seeking to reduce stunting rates nationally. The RCT, funded by the Global Alliance for Improved Nutrition, aims to encourage mothers to exclusively breastfeed for at least the first 6 months, diversify complementary feeding for children under the age of 2, and reduce unhealthy snacking. It also seeks to improve the dietary habits of pregnant women, by encouraging them to eat food rich in iron and proteins at least once a day. The campaign which was delivered in 2013, was based on the motive of affiliation and is being delivered through TV advertisements and community activation. The intervention covered 129,000 women in peri-urban areas of Indonesia. The Campaign has been endorsed by the Indonesian Ministry of Health and will be scaled up in two provinces.

2. *Nigeria – BCD for handwashing with soap*

In 2013, the Global Sanitation Fund provided 700,000 USD to support LSHTM's Hygiene Centre to develop a handwashing with soap (HWWS) campaign, delivered through CLTS channels to seven rural villages in Nigeria. The campaign, which is still under development, is based on the motives of respect and affiliation and was delivered through TV advertisements and community activation. An RCT will assess the intervention.

3. *Zambia – BCD to target diarrhoeal diseases*

The approach was used to develop an intervention targeting four behaviours to prevent and treat diarrhoeal diseases: exclusive breastfeeding, HWWS and ORS and Zinc administration. The intervention, funded by Absolute Return for Kids, was part of a larger programme called Programme for Awareness of Elimination of Diarrhoea that was being implemented in the province of Lusaka. The six-month campaign intervention was conducted from April to September 2014 and was based on the motive of affiliation. Its messages were delivered

through mass media, women's forums in communities, sessions at health clinics and prize draw events.

The SHARE-funded SuperAmma campaign, and the Hygiene Centre's BCD approach more broadly, have also been used as teaching materials, in the following examples:

- 1) October 2014- SHARE organised a WASH training to delegation of UNICEF staff and government officials from Kyrgyzstan.
- 2) Hygiene Behaviour change module, taught annually as part of the LSHTM's MSc in Public Health in Developing Countries offered at LSHTM.
- 3) June 2015-One day training workshop on the Behaviour Centred Design (BCD) approach to behaviour change to staff from Action Contre La Faim (ACF) managing WASH country programmes.

As well as contributing to capacity development, the pioneering research that SHARE funded has been recognised for its potential to significantly impact people's lives around the world and has been awarded one of the first ever Elsevier Atlas Awards.

Programme support in Tanzania

Since its inception SHARE has played a critical role in Tanzania, building a strong relationship with Government ministries (e.g. MOHSW, and the Ministry of Education and Vocational Training-MOEVT) and key sector actors (e.g. DFID Tanzania, World Bank/WSP and UNICEF) to support policy and practice through evidence based research.

SHARE 2013-2014 Annual Report highlighted SHARE collaboration with the MOHSW, the MOEVT, the National Bureau of Statistics (NBS), the National Institute for Medical Research (NIMR), DFID Tanzania and the World Bank/WSP to design and conduct a process evaluation of Phase I of the NSC. The NSC, conducted under the Water Sector Development Programme II, is a concerted effort to increase coverage of improved sanitation facilities and promote hygienic behaviour in rural areas of the country.

The main objective of the SHARE-led process evaluation was to rigorously assess the implementation of the NSC and ascertain whether it is likely to catalyse the expected changes, at both the household and school levels, as well as assessing the enabling environment and the institutional hurdles to improve sanitation and hygiene uptake in the country.

In the past year, SHARE worked with the MOHSW in developing and testing the data collection tools, however, due to delays in releasing funds from ministries to districts, data collection began 7 months later than planned in August 2014 and was completed in December 2014.

From January to April 2015, SHARE Research Fellow, Elisa Roma, worked with the MOHSW and other local partners to clean and prepare the data for analysis and, due to the departure of the principal investigator, Rick Rheingans, in March 2015, SHARE appointed a Research Assistant, Adam Stich, to support with data analysis

It is anticipated that the final report will be published in July 2015, with the results being presented in August 2015 at a SHARE-organised national convening event which will bring together key stakeholders from academia, policy and practice SHARE is additionally planning to produce at least 4 academic publications on the process evaluation which will be co-authored by local partners.

Design of Phase II of the National Sanitation Campaign

In January 2015, SHARE research fellow, Elisa Roma was awarded a grant to contribute to the design of Phase II of the NSC in Tanzania.

Based on the process evaluation of Phase I of the NSC and drawing on existing assessment of programmes in the country, SHARE aims to identify successful causal mechanisms and contextual factors and translate them into learning opportunities, which will then feed into the design of a new national Sanitation and Hygiene Campaign. The team for designing Phase II of the National Sanitation Campaign comprises of international practitioners, LSHTM staff expert in designing behaviour change campaign as well as local academic from the University of Morogoro. We anticipate that Phase II will draw on tried and tested behaviour change campaigns, such as the SHARE-funded SuperAmma campaign and similar interventions influenced by SHARE work and implemented in Zambia, Nigeria and Indonesia.

We aim to design the campaign in consultation with key sector actors and testing and evaluating it before the roll out phase. If successful the campaign has the potential to benefit approximately 35 million people, the total rural population of Tanzania.

SHARE is providing additional cost-sharing through leveraging some of Elisa Roma's time. Discussions undertaken with DFID Tanzania and World Bank/WSP have highlighted the way forward for SHARE II in supporting formative research and design and testing of a behaviour change campaign to be scaled up at national level.

6. Capacity development

In 2014-15, two of SHARE's PhD students successfully passed their thesis defence, while two others will complete their thesis in July/August, thereby finishing within the required four years of study. All students have presented their work at international conferences, and either already have, or are close to, publishing their first international peer-reviewed papers, thereby developing key academic skills.

SHARE has trained over 50 UNICEF country staff, and is working closely with MoHFW staff on the evaluation of the national sanitation programme in Tanzania, while it has provided peer review of protocols to all platform projects supported in Tanzania and Malawi.

SHARE I focused on three objectives for capacity building:

1. **Research capacity:** to increase the capacity of individuals and institutions to carry out rigorous and relevant research on sanitation and hygiene. Significant progress has been made in this reporting period.
2. **Technical capacity:** increase the capacity of individual and institutions to implement and carry out specific programmatic activities.
3. **Evidence-based programming capacity:** increase the capacity of institutions in the sector to assess, interpret, and use evidence for designing programmes or policies.

Research capacity

Students

SHARE has continued to support the six PhD students enrolled at LSHTM. All students have now completed their data collection, while the first two PhD students have successfully defended their theses, and are in the process of finalising the corrections. Om Prasad Gautam was the first one to complete, and has already taken up a senior position with WaterAid-UK as their technical support manager for hygiene, highlighting the vital importance of safe water, sanitation and hygiene in food safety. This promotion is the direct result of the work on food hygiene in Nepal that Om conducted through SHARE. The second student who has completed, Prince Antwi-Agyei, has also seen tangible career developments as a result of his SHARE PhD. He has been recruited to work on the SHARE/LSHTM evaluation of the Tanzania National Sanitation Programme, while he continues preparing his chapters for publication. Two additional students are expected to defend their vivas before September 2015, while the remaining two students that started a little later are expected to complete in early 2016. They will continue to be supported by SHARE until they hand in their work.

The students have been developing the key skills that are important to becoming independent researchers and academics. Three of the students presented their work at the University of North Carolina's water and health conference in 2014, which is a key annual conference for the WASH sector, while a fourth presented his work at the American Society for Tropical Medicine and Hygiene conference in New Orleans. In addition, the students presented their work at LSHTM's research degree poster day, and at regional conferences in Bangladesh, South Africa, Ghana and Kenya. The students have now published five papers in international peer review journals, and altogether have attended over 25 university courses, ranging from extended epidemiology to methods and principles of social research, and over 35 LSHTM staff development and skill-based courses. They have been involved in teaching at LSHTM, and have started to peer review for international journals. Both Prince Antwi-Agyei and Om Prasad Gautam have written short summaries of their experiences and development throughout the PhD process, which are presented in Annex B. The progress and development of the PhD

students, even after their completion, will continue to be monitored under SHARE II, and reported back in the next Annual Report.

Supporting PhD and Masters Students Peri-urban Sanitation and Hygiene Research in Kenya

SHARE is currently funding research on effects of socio-demographic difference on WASH related exposures in peri-urban settings in western Kenya (MR34), and as part of this project a small group of PhD and Masters students with a consistent track record of excellent work and commitment to their studies and research are supported by the capacity development fund. All students have active links to the community and engage in community partnership initiatives (health extension work) as well as involvement in research projects. The proposed capacity activities would include their direct participation in the study as researchers and would lead to learning new research skills and opportunities to interact with senior researchers. For the two PhD students, the data collected will contribute to their dissertations.

The students are listed below:

- **Lily Lukorito** (PhD student). Lily has received her Masters degree from GLUK in Community Health and Development. She has worked extensively in microbiology, including conducting water microbial analysis and assessment of helminth infections as part of a previous large scale WASH trial. She also serves as a Lecturer at GLUK. Her research would focus on the household, community and environmental determinants of soil and kitchen surface contamination. In addition, she would work with collaborators at KEMRI to learn advanced PCR techniques and molecular analysis of enteric pathogens. The proposed work would be part of her doctoral thesis. Her work would contribute to collaborative proposals currently being developed on movement of enteric pathogens across the landscape.
- **Damaris Nelima** (PhD Student). Damaris is a Lecturer at GLUK and the Head of the Nutrition Department. She has training in food science and an MSc in Nutrition. Prior to coming to GLUK she served as a county nutrition officer within the Ministry of Health, organizing nutrition program with mothers. Her work would involve adding anthropometrics and dietary recall for assessing nutritional status. Her primary question would be whether nutritionally vulnerable children are more exposed (looking at vulnerability, rather than inferring causality). She would also examine the behavioural risk factors for complementary food contamination. These would be done in collaboration with the County Department of Health. The proposed work would be part of her doctoral thesis. She will use the results to develop proposals to design and test linked WASH – Nutrition interventions including complementary feeding.
- **Kevin Achola** (PhD student). Kevin is a lecturer and research officer within the Tropical Institute of Community Health and Development at GLUK. He is as a PhD candidate in the environmental health track at GLUK. He has a Masters in Community Health and Development, a BSc in Environmental Health, a diploma in community nursing. Prior to joining GLUK he worked for 10 years at KEMRI serving as a Study Coordinator and Study Nurse. While Kevin is completing a dissertation on a separate topic, his role here would be to develop new techniques in assessing environmental contamination, including flies, animal waste, and soil. The output of his

training will be the development of research proposal. He will use the results of his participation to develop a research proposal on the role of flies and animals in enteric disease transmission.

- **Maximila Ongala** (Masters student). Maximila is holds a Masters degree in community health and nutrition. She is also completing a second masters in health education. She serves as a lecturer at Great Lakes University of Kisumu. She is developing a project to begin as a PhD student. The output of the training would be the development of a PhD proposal
- **Anne Mwendu** (Masters student). Anne is currently conducting her Masters in community nutrition at GLUK and is currently developing her Masters project under the direction of Ms. Nelima and Dr. Mumma. Her focus would be on working with Ms. Nelima on the anthropometric and complementary food contamination assessments. She would use the hands on research experience and interactions with senior investigators to develop designs and proposals for her masters field project. The output of the training would be a Masters thesis project.

The current SHARE funded research, combined with the presence of well prepared junior investigators creates a unique opportunity to contribute to the successful completion of 2 PhDs for African women who are ready to develop as young faculty members within this emerging Kenyan university. It would also provide all three PhD students with the skills, networks, and pilot data for developing their own future research projects in preparation for their post-doctoral careers. There is also an opportunity to develop research skills among the two younger post-graduate degree researchers, both of whom plan to apply for PhD programmes in the future.

SHARE provides this group of students 9,400 GBP which is used to provide targeted resources to enable these students to participate in the study as researchers, rather than just staff. This involves expanding data collection (anthropometrics and dietary recall), taking time for training with more senior researchers, mentored time with senior researchers, and to develop their own independent research questions within the project, and having mentored writing of manuscripts and publications.

Country platforms (Phase I)

The researchers in Malawi and Tanzania were provided with several rounds of specific feedback to develop their research protocols and following the completion of their research in early 2015, external peer review was provided for their final reports. Each report was sent to two external peer-reviewers with expertise in the topic, who reviewed and compiled a list with detailed recommendations and suggestions. Where needed, phone calls were planned to provide further guidance. Following peer review, every PI was expected to provide a report stating how they had addressed the comments raised by the reviewers. The Research Fellowships that were provided in Bangladesh were successful with all four students having successfully completed their MScs. Their work was presented at the 1st Conference for Young Public Health Professionals organised by the American International University in Bangladesh. One of the students is currently a junior lecturer at the North-South University in Bangladesh. Finally SHARE has supported two MSc students from LSHTM, one worked on child stool disposal in Cambodia, while the other worked on food hygiene in Guatemala.

Technical capacity

In the past year, SHARE has continued to provide support to practitioners through training:

- **September 2014** - Training workshop organised by WaterAid at the 37th WEDC International Conference on the Gender, Violence and WASH Practitioner's Toolkit.
- **October 2014** - Training workshop (one week) for UNICEF Kyrgyzstan for public health professionals from the Ministry of Health, national NGOs and international organisations working in Kyrgyzstan on WASH evidence and behaviour change for WASH.
- **October/November 2014** - UNICEF webinar series 'Shaping Policy and Practice: Research into Action'.
- **December 2014** 'Linking Sanitation to Stunting' lecture on Join Lync Meeting attended by Public Health professional from Afghanistan and India.
- **February 2015** - MHM workshop with Masters students at the University of Leeds, and a lunchtime seminar at WaterAid.
- **February 2015** - Undoing Inequity lunchtime capacity building seminar at WaterAid.
- **March 2015** - Training workshop on the Gender, Violence and WASH Practitioner's Toolkit, organised by WaterAid at their London offices, attended by participants from a range of organisations including DFID, international medical corps, Care International, MSF and Save the Children. Attendees are now collaborating to develop a training course on WASH and GBV for field level practitioners that will be trialled at the 38th WEDC International Conference.
- **March 2015** - webinar hosted by the Rural Water Supply Network and organised by WaterAid.
- **June 2015** - Action Contre la Faim, behaviour change workshop in Madrid.

In the past year, SHARE has collaborated with DFID Tanzania, the Ministry of Health and Social Welfare (MoHSW) and the World Bank to conduct the process evaluation of the National Sanitation Campaign in Tanzania. SHARE has together with staff from the MoHSW designed the research instruments, provided advice on sampling and data collection, and general planning, and when the data collection was complete provided help and support with the data cleaning and data analysis. The expectation is that the work will be published as a joint publication under SHARE. More details of this work are provided in Section 5 Success Stories.

Evidence-based programming capacity

In the period from 7 October to 6 November 2014, ten online webinars were held for 43 UNICEF country staff representing as many different country offices, while a one-week WASH training was held in London for eleven UNICEF and MoH officials from Kyrgyzstan. The webinars dealt with evidence of different WASH approaches and interventions, how to work with researchers, how to publish in peer review journals, and how to work with DHS and MICS data. The course proved highly successful and popular with the UNICEF staff. It was oversubscribed and feedback from those who attended was overwhelmingly positive, with 41 out of 43 staff members either agreeing or strongly agreeing that the course had been very useful for their jobs. Due to the success of the course, a second will be held in October 2015.

Further collaboration between UNICEF and SHARE has taken place with three LSHTM students planning to do their research projects with UNICEF staff.

SHARE has also continued to support capacity development within WaterAid, DFID, and WSP as key sector stakeholders. In the past year, SHARE has continued to collaborate with DFID Tanzania, the Ministry of Health and Social Welfare (MoHSW) and the World Bank to conduct the process evaluation of the National Sanitation Campaign in Tanzania. SHARE has, together with staff from the MoHSW, designed the research instruments, provided advice on sampling and data collection, and general planning, and when the data collection was complete provided help and support with the data cleaning and data analysis. The expectation is that the work will be published as a joint publication under SHARE. More details of this work are provided in Section 5 Success Stories.

Phase II

The capacity development strategy for Phase II has been based on the successes of Phase I and continues to develop the theme of person and technical growth in the context of working in the applied research environment. The details of proposed capacity development work under SHARE II are presented in Annex C.

7. Costs, value for money and management

Costs

Expenditure

In addition to the grant from DFID, SHARE has controlled £226,636 of co-funding, which is not included in this report.

Table 1 shows SHARE's expenditure to 19 March 2015 which was the date of the last invoice to DFID before compiling the figures for this report. Invoicing is based on actuals, and shows that spending is on track at the end of 62 months of a 96-month programme. SHARE's expenditure is approximately 1% under target to the date of the last invoice.

Table 1: Total invoicing to DFID

Total Invoicing to DFID					
From:	To:	Phase:	Budget	Invoiced	%
20-Jan-10	19-Mar-15	One/Two	£ 16,000,000	10,201,340	64

To see expenditure shown against the top lines of the budgets for Phases I and II, see Table 4, Annex F (page 152). The main points are summarised below.

Phase I (Table 4, 1a-1d)

- Management costs were reduced by 4% of the total budget over the five years (see VFM Annex G).
- The success of the RIU programme resulted in an increase of expenditure to 20% of the total budget.
- After management costs are taken out, SHARE's expenditure was split fairly evenly between projects (46%) and technical fees (42%).
 - Projects = research and related activities
 - Technical fees = activities carried out by SHARE experts in working with researchers and practitioners on SHARE projects and related activities.

Phase II (Table 4, 2a-2d)

- The research fund has been maintained at a similar level to Phase I.
- Additional research money has been set aside in the national programmes budget.
- Management costs have been reduced to the DFID guideline figure of 10%.
- An external review has been budgeted for, and will take place in the summer of 2015.

Issues and risks

The risk ratings in this section have been calculated using the system shown in last year's Annual Report and is reproduced again in Annex F, Figure F 8.

Phase I

Country platforms

Bangladesh – delays caused by the political unrest of 2013/14 are unlikely to be easily resolved and the project (MR20) is rated 4 for risk.

Action – following the report to the Consortium Advisory Group (CAG) in December 2014, the decision has been made on effort should be concentrated to bring this project to a close in 2015.

Tanzania – it has been difficult to obtain the promised outputs, or good quality outputs for these projects (MR21A-C). Their risk is rated 5.

Action – Further effort will go into communicating with the platform, after which contractual issues will be discussed.

Change – Learning from the Tanzania and Malawi platforms informed the decision to change partners for Phase II.

Other projects

PhDs CB06, CB08. These candidates are based overseas and due to complete early in 2016. Risk is rated 3 due to their isolation from LSHTM and the other students but both are progressing well.

Action – SHARE management will continue its ad hoc as well as planned contact with the candidates.

MR23 – (City-wide sanitation) in the past this project has suffered from delays due to political and local problems in one or more of the four cities of the programme. Due to the locations of the work, there is potential for further delays outside of the PIs control, which gives this a moderate risk (3) for completion within the time.

Action – time extension has been given to the end of 2015.

Phase II

National programmes

The potential risks identified for the country platforms during Phase I led to a change of partners in Malawi and Tanzania to research based institutions with good working history with SHARE partners. However, during the settling period for Phase II, and until research projects have been contracted and work has started, the risk in this area is rated borderline 3-4. This will be reviewed for the CAG meeting at the end of 2015.

Value for money

In past years, SHARE has developed a quantitative analysis of the estimate impact and value for money (VfM) of its activities. The last full report was completed in late 2014. Since it was not included in last year's initial Annual Report, it has been included here at Annex G.

The report develops quantitative estimates of the potential impact of SHARE research and RIU activities on programmes and WASH conditions. These analyses are necessarily speculative. They are designed to estimate the impact of financial, health, and developmental impacts that could be achieved through SHARE's applied research and research into use activities. However, the pathway between carrying out applied research and realising concrete changes in programmes and sanitation and hygiene conditions is a long one. The analyses set out to quantify how specific streams of research could and are expected to be influencing policies and programmes and what impact that is expected to have on conditions. However they are not intended to be direct empirical measures of impacts.

While generating these estimates of future impacts is not precise, it provides useful information by identifying the causal logic of how research is expected to yield impacts and identifying key factors that will influence whether these impacts materialise or not. By identifying these key assumptions and influential variables this type of value for money analysis can be used as a way to develop adaptive strategies that increase the likelihood of changes occurring. In this way it goes from being a measure of VfM to being a tool for increasing impacts and VfM. In this way, the logical outlines of the VfM work continue to lead to adaptive management responses.

Since the initial preparation of this report, SHARE has taken steps to increase the likelihood that the estimated benefits will be realised. The most important part of that has been through the launching of the current extension of SHARE, designed to increase and sustain impacts. The extension was specifically designed to address applied research questions that were expected to catalyse further change, by generating more evidence on the nature of problems and demonstrating the impact of interventions. One example of this continued effort to increase impacts is the continued collaboration among SHARE, DFID Tanzania, and WSP in the design of the next round of the National Sanitation Campaign. This is an opportunity to contribute to bringing global and local evidence of effective sanitation and hygiene into the execution of the national campaign. Of equal importance, extension activities have been developed to catalyse uptake through RIU activities.

Realising the projected impacts is highly dependent upon other actors in the national and global sectors. For example, the estimated impact of improved hand washing behaviour change communication developed through SuperAmma is dependent upon programmes and campaigns incorporating the approach and effectively implementing it. However changes in programme approaches are often slow to materialise and may require the development of new skills and capacity within organisations, as well as changes in institutional culture. While SHARE has some influence over these actors, their decisions are largely outside of SHARE's control. One potential way to accelerate this process would be for funders to incentivise and enable organisations to incorporate new evidence or applied research into their programmes.

Phase II

The development of the national programmes in Phase II has encouraged SHARE to review the processes for capturing data, and to ask whether there is an appropriate but simpler method for calculating VfM. During July/August 2015, the opportunity will be taken to use the expertise of the external evaluation team, to develop a simpler model, particularly one that can be used within the national programmes without recourse to specialised software.

Management

The consortium is run by the management group on a day-to-day basis, and by the executive group for strategic decisions. A part-time administration maintains the financial, procedural and contractual processes, and the advisory group (CAG) provides advice; oversees management, and ensures good practice. As a result of the move away from South Asia, the make-up of the CAG is being changed to reflect that. Potential advisors have been contacted and will be finalised during the summer.

Figure F 9, Annex F shows the management groups with the changes that have been made for Phase II.

Processes and procedures

SHARE's management systems are reviewed periodically and revised according to need. This section provides a summary.

Finance management

SHARE aims to:

- Provide effective and accurate accounting for each individual project as well as for SHARE as a collaborative consortium.
- Provide clear process pathways for all budget related activities
- Monitor expenditure and provide accurate forecasting to DFID and SHARE Management

The objectives are to:

- Update the programme's spreadsheets – on-going.
- Reconcile the grant accounts – monthly.
- Invoice DFID by the specified date – quarterly.
- Prepare summary analyses of consolidated financial data – quarterly.
- Assess the risk on forecast expenditure – quarterly.
- Manage the timeliness of sub-contractor invoicing – quarterly.
- Monitor the accuracy of sub-contractor invoicing – quarterly.
- Assess the risk for over/underspend based on project performance – quarterly.

See Annex F for flow charts of the invoicing (Figure F 5a-d) and forecasting (Figure F 6) procedures.

Contract management

SHARE processes contracts through LSHTM's Research Office which has a policy of continual development to improve the service. The flowchart at Annex F, Figure 7a-e shows how SHARE integrates with this process.

Programme management

The governance structure to 19 January 2015 was as reported in previous Annual Reports. From 20 January 2015, changes were made to reflect the focus of work in the African core countries and through the four research themes (Annex F, Figure F10). The new structure

retains the Management, Executive and Consortium Advisory Groups and their previous terms of reference. This is currently a draft document that will be revised before the CAG meeting at the end of 2015.

It is acknowledged that Phase II will be a period of transition from an LSHTM-driven programme, to an African-steered initiative. To achieve this, the management structure will also need to evolve. The plan for this has already been discussed but will not begin until Year two; this gives the new partners time to acclimatise to SHARE, and establish their research projects and national activities.

To support more devolved budget management, SHARE's activities are represented in Phase II by workstreams. Activities within these will still be project (work package) based, with each PI reporting to the Workstream Leader, who reports to a member of the Management Group (Annex F, Figures F9 and F10). Workstream Leaders are responsible for ensuring that reporting and outputs are delivered on time, and will be responsible for their budgets. Previously this role was held by the Project Managers. Potential problems or changes that are identified will be dealt with by the Workstream Leader or escalated to the Management Group through the Capacity Director, depending on the scale of change required. To coordinate the process, all research Workstream leaders will report to the Capacity Director, who will present a summary report to the Management and Executive Groups, together with any decision requests.

During the process of defining the research objectives and proposals for the research workstreams (WS02 – 05), coordinators either volunteered, or were chosen to guide the process. Once proposals have been finalised, a leader for each workstream will be appointed.

Quarterly reporting will be required for presentation to the Management and Executive Groups. The information will be used for reporting to the CAG and DFID, monitoring progress and identifying potential issues. The governance structure will be reviewed for the CAG meeting which is held at the end of the year.

Issues and risk management

Finance

Inaccurate budgeting on some Phase I projects resulted in over- and underspending.

Change – All project budgets will be reviewed in discussion with the PI before contracting, regardless of value.

Some consultants charge VAT but do not mention this in their budgets.

Change – All sub-contracts now contain a clause to ensure this does not happen.

Contract

Slow contract negotiation, particularly time taken in discussing unfavourable clauses, and requests for new changes with each contract revision. These cause considerable delays and present potential problems for the PI and subsequently SHARE management.

Change – A Contracts Tracker has been in place for some time and is the means by which SHARE monitors progress. The introduction of Enabling Agreements (where possible) have cut down the need for protracted negotiations and greater involvement of SHARE's administration in the contract and budget negotiation have alerted the team to potential difficulties earlier.

Management

Four new African partners have joined SHARE for Phase II. They will take time to settle in and learn how the programme works, and there is only three years in which to complete the programme.

Change – Stronger research institutions have been chosen to push forward the research in country. These are partners who have previously worked with existing SHARE partners and have more robust management structures.

As SHARE moves through Phase II, it is natural that personnel will begin to look for their next project. Changes of personnel at any time can cause tension. Acknowledging the risk at this stage will help produce an open dialogue and provide opportunities for discussion on future work together.

Legacy

Funds have been identified from within SHARE's budget for developing and executing a legacy strategy. RIU activities are already taking place on Phase I work, particularly since SHARE has shifted its focus away from India and Bangladesh. RIU, capacity development, and monitoring for impact will be part of the legacy process. The strategy will be presented in the next Annual Report.

8. SHARE II

Overview

Phase II of the programme, running until January 2018, aims to maximise the value for money and legacy of Phase I, and lay the groundwork for sustained impact by focusing efforts on four global thematic areas with potential for continued research into use and additional research investment. These areas are: WASH and nutrition, urban sanitation, complementary food contamination, and sanitation, hygiene and vaccines. Phase II will focus on Africa, building on the foundations laid during Phase I in Tanzania and Malawi, and drawing on new strategic partnerships in Kenya and Zambia.

Consortium membership – a greater local presence

Phase II brings new partnerships with African research institutions with a view to capacity and legacy building, and sustainability of investments.

The University of Malawi provides research and technology in the sector with collaboration of its College of Medicine and the Polytechnic through the Centre for Water, Sanitation, Health and Appropriate Technology Development (WASHTED). The Mwanza Intervention Trials Unit in Tanzania (MITU) develops and evaluates interventions, and enhances the capacity to carry out and translate such research. The Great Lakes University of Kisumu, Kenya (GLUK), works in the fields of health and development to ensure academic rigour while permitting flexibility and responsiveness required in producing problem solvers and job creators. Lastly, the Centre for Infectious Disease Research, Zambia (CIDRZ) supports the delivery of high quality healthcare services within the public health system, conducts groundbreaking research, and has become a local and international training ground and resource

Four research themes – building on SHARE I and addressing sector priorities

SHARE will focus Phase II research efforts on four main themes. The priorities within these are emerging from consultation with sector stakeholders – to identify where SHARE can produce **relevant** research that adds value – and build on the foundations laid in SHARE I and the strengths of the consortium, ensuring the rigour of the research.

Complementary food contamination (WS4). Poor complementary food hygiene may account for a substantial proportion of diarrhoeal diseases among infants and young children in developing countries. Yet there is a lack of robust evidence on food hygiene in these settings. SHARE I funded three studies in Bangladesh, Nepal and the Gambia that demonstrated that simple, scalable behavioural interventions can significantly reduce exposure to sanitation- and hygiene-related pathogens transmitted through complementary foods.

There are important opportunities to magnify the impact of these findings. First, there is a need to better characterise pathogen transmission through this pathway and how it differs across settings, to better target intervention approaches. Second, there is a need to better understand how this contamination affects child health during this critical point in life: how it contributes to infection from key pathogens and how it influences child nutrition. Lastly, there is a need to develop and test alternative strategies for scaling up.

Sanitation, hygiene and vaccines (WS3). There is growing evidence that environmental

enteric exposures from sanitation and hygiene may contribute to reduced effectiveness of critical live oral vaccines for oral polio vaccine and rotavirus. While both of these pathogens can be transmitted through water, it is generally accepted that vaccines are the most effective control strategies. Yet poor sanitation and hygiene could greatly reduce the impact of new vaccines such as rotavirus and severely hamper polio elimination efforts.

SHARE research in Nepal has demonstrated the potential to integrate sanitation and hygiene messages into vaccination programmes, but there still remains a lack of scientific documentation and understanding of the contribution of improved WASH on vaccine efficacy. Demonstrating the connection (and its mechanisms) could facilitate the introduction and prioritising of WASH behaviour change into immunisation efforts.

WASH and nutrition (WS5). SHARE's systematic review provides initial evidence of the potential contribution of WASH to improved nutrition for children under five. Over the past few years there has been growing research on the impact of community-level WASH on population-level nutrition. However there are critical gaps that constrain the value of this research. For example, how can WASH improvements be mainstreamed and scaled in the context of nutrition or deworming programmes? There are a number of applied research opportunities that could yield substantial VfM: Can WASH interventions targeted at critical time points improve nutritional outcomes? Can WASH interventions, in combination with therapeutic foods, improve outcomes for children with acute malnutrition? Lastly, what is the impact of WASH improvements (especially in schools) on the effectiveness of deworming programmes? We must address whether such interventions can be effective, but also how sanitation hygiene behaviour change efforts can be incorporated into or partnered with nutrition programmes.

Equitable and universal urban sanitation (WS2). The MDG sanitation target of halving the share of the population without access to improved sanitation between 1990 and 2015 is unlikely to be achieved, but there are nevertheless plans to target universal coverage with both improved water and sanitation by 2030 or 2040. It is also being proposed that these targets be achieved equitably. Few cities have economically, technologically, politically or institutionally realistic accounts of how they are going to progress to universal coverage. If targets for universal sanitation provision are to be met, it will be critically important to be realistic about how this is to be achieved. The City Sanitation project has begun addressing this issue within segments of four African cities. Other SHARE partners have addressed these challenges in small and large cities.

Strengthening national sector programmes

While current investments in national sector programmes rely on available research and evidence, they necessarily include a wide range of assumptions that influence whether the programmes will achieve their desired results efficiently in this particular national context. Making valid assumptions requires capacity for interpreting and adapting global research, resources and capacity for adaptive evaluations, and programmatic latitude to adjust strategies to maximise effectiveness.

SHARE has worked in the last few years directly with the Tanzanian national sector programme to support the increased size and effectiveness of national sector programmes, including those supported by DFID and others. Making national sector investments more effective is a clear opportunity to increase the VfM of SHARE, but more importantly increase the VfM of the sector investments themselves. SHARE 2.0 aims to pursue similar collaborations in other focus countries.

Building capacity in Africa

SHARE will focus its capacity development in Tanzania and Malawi, where it already has momentum and the need is substantial. Capacity development needs include the need for expanded capacity in carrying out, interpreting, and adapting applied research by national core partners and sector actors, as well as the need for expanded national research capacity. The latter may include the funding of PhDs and support of post-doctoral research fellows from southern countries through SHARE research. But it goes beyond support for individuals, and requires engaging national research institutions in collaborative research, creating opportunities for the development of young investigators, and working with national universities to train future researchers.

Encouraging research uptake

SHARE aims for its research and synthesis to influence better sector decision-making and increase priority for sanitation and hygiene. The knowledge that is needed by policy makers and practitioners to improve policy and practice will be identified and generated through a process that is as much about 'listening' as 'speaking'. SHARE will 'listen' in order to identify what information would be most influential and useful and how SHARE will 'speak' in a way that is compelling and that enables uptake by our target audiences. By effectively communicating the research generated to key audiences and in a useful and accessible way, SHARE aims to contribute to better performance and accelerated progress. For detailed information on the RIU strategy and plans for Phase II see Annex D

Monitoring and Evaluation

The full Monitoring and Evaluation Strategy for SHARE II is provided in Annex E.

In brief the impacts and outcome indicators will remain the same as for SHARE I although they will take into account all the countries on which SHARE has been investing since its inception.

The full strategy for monitoring the SHARE II outcomes is being developed in collaboration with partner institutions and coordinators in the focus countries. Drawing on the full list of all SHARE projects and investments, we will develop a methodology to calculate the number of people that SHARE investment in has impacted.

Current progress

In March 2015, SHARE called for short (four-page) thematic research proposals to be submitted to the Management Group. By the deadline (7 April), nine proposals were received and reviewed. The submitted proposals will be screened for:

1. **Eligibility:** is the proposal submitted and led by a member of the SHARE consortium? Does the proposal fit into one of the four research themes? Is it a continuation/in line with research conducted under SHARE Phase I?
2. **Quality:** is the proposal likely to result in good quality outputs? Does it have a clear justification? Are the methods and tools appropriate?
3. **Inclusion:** is there an African PI, or co-PI?

4. **Monitoring and Evaluation**

Following the review, two proposals were considered unsuitable as the proposed research was planned outside sub-Saharan Africa and did not include African researchers. One proposal was considered to be on the fringes of two themes and asked to be merged with another research proposal submitted by the same partner. Two proposals were considered too broad or unfocused. Detailed feedback was provided to all proposals, and guidance was provided on the next step, which is that by 15 August, a full study protocol (including budget, time line and deliverables) will need to be submitted to the Management Group, which will then be submitted for external review by two reviewers appropriate to the topic.

The proposals submitted to SHARE include:

1. Creating demand for sanitation (Dr Val Curtis & Dr Roma Chilengi, LSHTM & CIDRZ, Zambia)
2. WASH and food hygiene in Malawi (Dr Tracy Morse, University of Malawi)
3. We still don't know how to reach the urban poor (Erin Flynn & Timeyin Uwejamomere, WaterAid)
4. Designing and testing a cost-effective sanitation and hygiene intervention to improve the health of vulnerable children (<36 months) in slums of Kisumu (Prof Jane Mumma, GLUK, Kenya)
5. WASH, deworming and child development (Prof Saidi Kapiga & Dr Jeroen Ensink, MITU & LSHTM)

By September 2015, based on the peer review and a final internal executive group review, that takes account of balance (partners, budget and themes) across the portfolio, an award decision will be made. The aim is to reach a consensus among the partners; although if no consensus can be found, a majority vote will be sufficient, while the final decision rests with the research director.

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Annex A: SHARE logframe (July 2014 - June 2015)

Legend:

Green= on Track

Yellow= medium progress

Red= off track

Indicators	Logframe milestone for end of 2014		Progress towards the milestone	Total since SHARE inception
IMPACT: Accelerated progress towards universal sanitation and hygiene coverage in sub-Saharan Africa and South Asia				
Indicator 1: The annual number of people gaining access to improved sanitation in the four focus countries	(H) 20 million (M) 17 million (L) 15.5 million		Bangladesh: 2.48 million India: 14.17 million Malawi: 47,000 Tanzania: 0.68 million Total: 17.38 million	
Indicator 2: The child (<5) mortality rate in the four focus countries (# deaths/year) Source childinfo.org	(H) 2.14 million (M) 2.17 million (L) 2.21 million		Total for the four focus countries: 1,605,000	
OUTCOME: National & global sector partners change the way they plan, implement or monitor in order to increase i) equitable access, ii) sustainability, and iii) cost-effectiveness of sanitation and hygiene				
Indicator 1: Evidence of SHARE catalysing change on the four barriers to progress in sanitation & hygiene: a) low priority, b) weak policy and programming, c) inadequate and poorly targeted resourcing, d) Poor monitoring for equity & sustainability. Boundary partners' progress markers met (#%)	End of 2014 milestone: (H) 80% (M) 50% (L) 20%		Percentage of boundary partners reaching highest ('love to see') level with at least one progress marker Tanzania: 100% Bangladesh: 100% India: 100% Malawi: 100%	
Indicator 2: Concrete examples of change, influenced by SHARE (a) that can directly impact safe sanitation & hygiene for # million people (b) # of such 'success stories'.	a) (H) 15 million (M) 7 million (L) 2 million b) (H) 15 (M) 9 (L) 3		a) 29,264,784 people with improved sanitation and hygiene (based on current VFM model) HWWS research: Children with improved hygiene: 2, 859,059	

			<p>People with improved hygiene: 26, 153,716</p> <p>Tanzania NSC: People with improved sanitation: 48,059 (attributable to SHARE) People with improved sanitation: 239,062 (overall benefits)</p> <p>Complementary food hygiene: Children with improved WASH: 203,950 (attributable to SHARE) Children with improved WAS: 411,077 (overall benefits)</p> <p>b) 12 success stories Since SHARE inception the following success stories have been reported</p>	
<p>Indicator 3: Leveraged funds: a) invested by other funders in SHARE's research (£# million) b) invested in sanitation & hygiene projects influenced by SHARE (£# million)</p>	<p>a) (H) £ 5 million (M) £ 3 million (L) £1 million b) (H) £ 30 million (M) £ 15 million (L) £ 5 million</p>		<p>a) £4.1 million in research b) £79 million in WASH investment</p>	
<p>OUTPUT 1 National & global sector-relevant knowledge synthesised and disseminated, to help to a) characterise problems; b) identify solutions; and c) demonstrate benefits</p>				
<p>Indicator 1 :# of manuals, handbooks & other major resource materials created or rendered accessible</p>	<p>(H) 10 items (M) 5 (L) 3</p>		<p>Total published manuals reports, discussion papers and handbooks published since July 2014: 17</p> <p>Total media outputs since July 2014: 31</p>	<p>Published report manuals since SHARE inception: 80</p> <p>Media outputs: 83</p>
<p>Indicator 2: Development and use of national RIU strategies</p>	<p>Legacy arrangements agreed by stakeholders</p>		<p>4</p>	

Indicator 3: # of knowledge sharing events including seminars, technical meetings and conferences organised or supported by SHARE	Total (cumulative) (H) 30 (M) 20 (L) 15		Total knowledge sharing events since July 2014: 16	52
Indicator 4: % female participants at those events	(H) 50% (M) 40%, (L) 30%		Total number of participants: 848 268 were women (52%)*calculated where number of women was available	
Indicator 5: # of requests for advice from SHARE generating response. (per year)	(H)15 (M)10 (L)7		Total requests of advice since July 2014: 13	Since SHARE inception: 46
OUTPUT 2 : New knowledge generated by relevant and rigorous sanitation research which a) characterises problems; b) identifies solutions; and c) demonstrates benefits				
Indicator 1: Publications in peer-reviewed journals arising from SHARE research	(H)20, (M) 10, (L) 5		Total publications since July 2014: 20	Since inception 60
Indicator 2: Citations by other authors of those publications	(H)- Average 2 per article per annum (M) Average 1 per article /yr (L) Average 0.5 per article/yr		Average citations per article per annum since inception: 2 (total citations as of June 2015 = 669)	
Indicator 3: # of programmes embodying research findings established and documented for replication and/or study visits	(H) 4 underway (M) 2, (L) 1		Number of programmes embodying SHARE research findings since July 2014: 11	Since SHARE inception: 25
Indicator 4: Successful completion of SPLASH component funded via SHARE	Policy-relevant appraisal of outputs produced by SHARE by end of 2014		Completed	
OUTPUT 3: Key sector actors engaged around evidence for change				
Indicator 1: # of consultations initiated by SHARE on the basis of outcome mapping	(H) 4 consultations (M) 2, (L) 1		Number of consultations initiated since June 2014: 9	Since SHARE inception: 29

Indicator 2: # of country platforms established and active	Platforms active (H) 4 (M) 3 (L) 2		Total country plan of action: 4	
Indicator 3: # of hits/downloads on SHARE website	Hits/month (H) 1,000 (M) 750 (L) 300 Downloads/mth (H)100, (M) 50 (L)25		Average web page view since June 2014: 2,660 Newsletter subscription: (May 2015): 638 Twitter followers (June 2015): 1,210	
Indicator 4: # of external requests for SHARE technical support to implement implications of SHARE research	By end 2014 (H) 4, (new target 7) (M) 2, (L)1		Total requests since July 2014: 3	Since SHARE inception: 29
Indicator 5: # of cases of non-SHARE agencies participating in SHARE research	By end 2014 (H)7, (M) 5, (L) 2		Total of new non-SHARE agencies involved since 2014: 6	Since SHARE inception: 103
Indicator 6: Skills and competencies of # key individuals responsible for planning, managing, implementing and monitoring WASH programmes – especially women – developed and upgraded.	By end 2014 (H) 40 (M) 20 (L) 10 (> 50% women)		Total since July 2014: (number of women): 211 (57) 27% of women calculated only where female participants could be tracked	Since SHARE inception: 491 (168)
OUTPUT 4: Capacity strengthened to conduct relevant collaborative research and apply the results				
Indicator 1: % of proposals ready for consideration on first submission	By end 2014 (H) 80% (M) 60%, (L) 40%		Total percentage of proposals with no/minor revisions after acceptance for funding: 100%	
Indicator 2: # of PhD students trained	completed by 2014 (H) 5, (M) 3, (L) 2		Total PhD students completed by 2015:	2
Indicator 3: # of exchange visits organised	By end 2014 (H) 4, (M) 2, (L)1		Total number of exchange visits since July 2014: 1	Since SHARE inception 14
Indicator 4: # of training courses organised (on research methods, management, etc.) annually	By end 2014 (H) 4, (M) 2, (L)1		Training courses organised since July 2014: 10	Since SHARE inception 20
OUTPUT 5: Effective management of the consortium, including M & E of impact and value for money				

Indicator 1: Monitoring; % of indicators assessed and reported annually	By end 2014 (H) 100% (M) 75%, (L) 50%		100% of indicators monitored since June 2013.	
Indicator 2: Value for money; wasteful expenditure on: - ineffective hygiene promotion, - unused latrines, and - superfluous evaluations avoided by following SHARE advice or implementing SHARE findings (£)	2014 – saved p.a. (H)- £ 5 million (M)- £ 1 million (L) - £ 500,000		£4.6 million	
Indicator 3: Monitoring country research groups (platforms) and evaluation of activities a) # local research management groups set up b) £ value of research proposals submitted for funding and approved c) % research projects completed on time	By end 2014 a) (H) 4 (M)2, (L)1 b) (H) £1m, (M) £500k (L) £250k c) (H) 100% (M) 75% (L) 50%		a) Research management groups have been set up: 4 b) Total value of research proposal submitted and approved in the Country Platforms: £1,213, 433 India: Total value: £ 438,719 (£250,000 leveraged by WSSCC). Malawi: £175,720 Bangladesh: £ 375,000 (£125,000 leveraged by WaterAid) Tanzania: £223,994 c) Average completed in country platforms: 84% <ul style="list-style-type: none"> • Bangladesh – One (of one) project due to complete Dec 2015 – 50% complete • India – Four projects completed 100% complete • Malawi – Five projects completed by January 2015 - 100% • Tanzania –Three of five projects complete, one 50% complete and now overdue, the second is 85% complete and now overdue 	

Annex B: List of outputs

	OUTPUT 1: National & global sector-relevant knowledge synthesised and disseminated, to help to a) characterise problems; b) identify solutions; and c) demonstrate benefits	
	Indicator 1: # of manuals, handbooks & other major resource materials created or rendered accessible	
	DATE	RESOURCE DETAILS
1.	2015_Apr	<p>PRACTITIONERS RESOURCE: Frontiers of CLTS: Innovations and Insights. Making Sanitation and Hygiene Safer: Reducing Vulnerabilities to Violence. Prepared by Sarah House and Sue Cavill. This issue of Frontiers of CLTS brings together lessons on violence related to sanitation and hygiene and examples of good practice from a range of contexts including urban and humanitarian as well as rural. It interprets these lessons to propose good practice for CLTS practitioners in how they can contribute to reducing vulnerabilities to violence through the ways they work. Available from: http://www.communityledtotalsanitation.org/resource/frontiers-clts-issue-5-making-sanitation-and-hygiene-safer-reducing-vulnerabilities</p>
2.	2015_Mar	<p>REPORT: Improving Maternal and Newborn Health in Zanzibar This report summarises the findings of a needs assessment which examined infection prevention control (IPC), WASH and solid waste disposal services in maternity units in Zanzibar. These findings will be used to inform an improvement plan for quality of care in maternity units in Zanzibar.</p> <p>Available from: /LocalResources/Report__Improving_Maternal_and_Newborn_Health_in_Zanzibar_March_2015.pdf</p>
3.	2015_Feb	<p>REPORT: Embedding Access to Finance in Sanitation Programmes This report was produced by Tremolet Consulting for WaterAid as part of the East Africa Workshop on Sanitation Microfinance that SHARE supported in May 2014. It proposes a step-by-step approach which NGOs or other public actors could take in order to identify what role(s) they can play in increasing access to finance for sanitation.</p> <p>Available from: /LocalResources/Report__Embedding_Access_to_Finance_in_Sanitation_Programmes_Sept_2014.pdf</p>

4.	2015_Feb	<p>POLICY BRIEF: Complementary Food Hygiene - An overlooked opportunity in the WASH, nutrition and health sectors This policy brief outlines SHARE's contribution to narrowing the evidence gap concerning the relationship between food hygiene and child health, indicates opportunities for future research, and offers insights that could influence policy and improve programming in the WASH, nutrition and health sectors globally.</p> <p>Available from: /LocalResources/Policy_Brief__Complementary_Food_Hygiene_Jan_2015.pdf</p>
5.	2015_Jan	<p>BRIEFING NOTE: WASH & CLEAN - A situational analysis on hygiene on maternity wards in India and Bangladesh This note summarises the research findings of a SHARE and WSSCC funded study in India and Bangladesh seeking to develop and pilot a suite of tools for capturing objectively levels of cleanliness and the determinants, processes and outcomes of cleaning on the labour ward. It was presented at the UNC 2014 Water and Health Conference: Where Science Meets Policy and the Sanitation and Women in India: Research Findings conference held in Delhi, India 7-8 November 2014.</p> <p>Available from: /LocalResources/Briefing_Note__WASH_and_CLEAN_LoRes_Jan_2015.pdf</p>
6.	2015_Jan	<p>BRIEFING NOTE: Compendium of Accessible WASH Technologies. Based on the findings of the Undoing Inequity project, this compendium offers evidence-based guidance on how household WASH facilities can be made more accessible. It is intended for use by health workers, community volunteers and WASH practitioners working directly with disabled and older people and their families in rural areas of sub-Saharan Africa.</p> <p>Available from: /LocalResources/Compendium_of_Accessible_WASH_Technologies_Dec_2014.pdf</p>
7.	2015_Jan	<p>REPORT: SanFin-Tz Workshop This report summarises the proceedings of the SanFin-Tz workshop held in Dar Es Salaam, Tanzania on 4th December 2014. The objective of the workshop was to share the preliminary findings from the SHARE-funded sanitation microfinance action-research project commenced in December 2013.</p> <p>Available from: /LocalResources/Workshop_Report__SanFinTz_4_Dec_2014.pdf</p>

8.	2014_Nov	<p>BRIEFING NOTE: Sanitation Vulnerabilities - Women's stresses and struggles for violence-free sanitation</p> <p>This note summarises the research findings of a SHARE and WSSCC funded study in India seeking to identify whether gendered violence is symptomatic of power inequalities in society and whether those inequalities manifest themselves in women's psycho-social stress and translate into women's decisions about where to relieve themselves. It was presented at the UNC 2014 Water and Health Conference: Where Science Meets Policy and the Sanitation and Women in India: Research Findings conference held in Delhi, India 7-8 November 2014. It was presented at the UNC 2014 Water and Health Conference: Where Science Meets Policy and the Sanitation and Women in India: Research Findings conference held in Delhi, India 7-8 November 2014.</p> <p>Available from: /LocalResources/Vulnerabilities.pdf</p>
9.	2014_Nov	<p>BRIEFING NOTE: Social and Psychological Impact of Limited Access to Sanitation</p> <p>This note summarises the research findings of a SHARE and WSSCC funded study in India seeking to explore the links between MHM and reproductive tract infections, and between WASH practices and pregnancy. It was presented at the UNC 2014 Water and Health Conference: Where Science Meets Policy and the Sanitation and Women in India: Research Findings conference held in Delhi, India 7-8 November 2014. It was presented at the UNC 2014 Water and Health Conference: Where Science Meets Policy and the Sanitation and Women in India: Research Findings conference held in Delhi, India 7-8 November 2014.</p> <p>Available from: /LocalResources/Limited_Access.pdf</p>
10.	2014_Nov	<p>BRIEFING NOTE: Coping Strategies to Deal with Inadequate WASH Facilities and Related Health Risks</p> <p>This note summarises the research findings of a SHARE and WSSCC funded study in Vadu, India, seeking to identify coping strategies used by women to deal with inadequate WASH facilities. It specifically focused on the perceived adequacy of WASH-related resources, stress from inadequate resources and access, and the experience, practice and materials used for menstrual hygiene. It was presented at the UNC 2014 Water and Health Conference: Where Science Meets Policy and the Sanitation and Women in India: Research Findings conference held in Delhi, India 7-8 November 2014.</p> <p>Available from: /LocalResources/Coping_Strategies.pdf</p>
11.	2014_Nov	<p>BRIEFING NOTE: WASH & CLEAN - A situational analysis on hygiene on maternity wards in India and Bangladesh</p> <p>This note summarises the research findings of a SHARE and WSSCC funded study in India and Bangladesh seeking to develop and pilot a suite of tools for capturing objectively levels of cleanliness and the determinants, processes and outcomes of cleaning on the labour ward. It was presented at the UNC 2014 Water and Health Conference: Where Science Meets Policy and the Sanitation and Women in India: Research Findings conference held in Delhi, India 7-8 November 2014.</p> <p>Available from: /LocalResources/WASH_and_CLEAN.pdf</p>

12.	2014_Sep	<p>BRIEFING NOTE: European WASH and NTDs Roundtable This note summarises the discussions and outcomes of the SHARE-convened European WASH and NTDs Roundtable that took place in London in September 2014. It outlines conclusions reached on indicators for joint-sectoral collaboration and progress made towards an actionable work plan.</p> <p>Available from: /LocalResources/Briefing_Note__European_Roundtable.pdf</p>
13.	2014-September	<p>REPORT: Sanitation Issues in Namibia This report provides information about the influence of gender and age upon community decision-making within the Shack Dwellers Federation of Namibia (SDFN) and among other residents in poor urban settlements where SDFN is active.</p> <p>Available from: /LocalResources/Research_Report__Namibia_Study_Jan_2013.pdf</p>
14.	2014-August	<p>REPORT: The role of districts in the implementation of Tanzania’s National Sanitation Campaign by Alejandro Jiménez and Fimbo F. Mtango A new SHARE research report provides important insights on how Local Government Authorities in Tanzania could improve the promotion of rural sanitation at the local level.</p> <p>Available from: /LocalResources/Districts_in_the_NSC_Report_Tanzania.pdf</p>
15.	2014-July	<p>RESEARCH REPORT: Disability: Making CLTS Fully Inclusive. By Wilbur, J. and Jones, H. This issue of Frontiers of CLTS focuses on people with disabilities and particular needs for WASH access. To do so the publication draws on results from the SHARE-funded “Undoing Inequity” project in Uganda and Zambia and on other water, sanitation and hygiene (WASH) programmes that aim to be fully inclusive. The study outlines barriers to access and proposes practical actions to ensure that CLTS and related programmes are inclusive and accessible for disabled people.</p> <p>Available from: /LocalResources/Frontiers__making_CLTS_fully_inclusive.pdf</p>
16.	2014-July	<p>RESEARCH REPORT: Identification of funding mechanisms for private sector participation in the provision of rural household sanitation facilities, in Nkhata Bay District (Malawi) by Rochelle Holm, Victor Kasulo, Elijah Wanda This publication features results from the SHARE-funded research project “Private Sector Participation in the Delivery of Sanitation and Hygiene Services in Malawi”, led by the Centre of Excellence in Water and Sanitation at Mzuzu University. The paper provides an overview of the funding mechanisms for private sector participation and provision of rural household sanitation facilities, within Nkhata Bay District, Malawi.</p> <p>Available from: /LocalResources/SSP20_Jul2014.pdf</p>

17.	2014- April	<p>REPORT: A review of sanitation and hygiene in Tanzania Dr Jacqueline Thomas, Dr Niklaus Holbro and Dale Young</p> <p>Tanzania is a focus country for the SHARE research consortium. As part of that work of the SHARE research group in Tanzania we wish to carry out a desk review study. It provides a synopsis of the “state of the field” in Tanzania, and, as such, provides a useful document for helping to refine SHARE’s focus and also influencing the actions of others in the sector.</p> <p>Available from: /LocalResources/Tz lit review Final2.pdf</p>
<p>MEDIA</p> <p><u>Presentations about SHARE work at conferences, events and meetings.</u></p>		
DATE	PRESENTATIONS	
2015_May	<p>PRESENTATION: Om Prasad Gautam, successful SHARE PhD candidate, presented “Three big ideas in handwashing behaviour change: Settings” at the ‘Handwashing Behaviour Change Think Tabk, side event at AfricaSan Conference in Dakar, Senegal.</p>	
2015_May	<p>PRESENTATION: Sustainability and Value For Money in WASH</p> <p>These presentations were given at the 'Sustainability and Value for Money - Using Data to Improve the Performance of WASH Investments' event held at the London School of Hygiene and Tropical Medicine on 11th May 2015. Available from: /LocalResources/Sustainability__VfM.pdf</p>	
2015_May	<p>PRESENTATION: SHARE research was presented to DFID adviser Guy Howard</p> <p>The following presentations were made:</p> <ul style="list-style-type: none"> • Overview of SHARE II and presentation of the four research themes (Sandy Cairncross) • Evaluation of the Tanzanian National Sanitation Programme and evaluation of Phase II (Elisa Roma) • Behaviour change approaches & interventions, including work with Unilever and an adaptation of ChooseSoap/SuperAmma in Nigeria (Robert Aunger and Adam Biran) <p>Other work from LSHTM was also presented:</p> <ul style="list-style-type: none"> • Water supply and cholera work in the DRC (Jeroen Ensink) • A large intervention study in Maputo (Oliver Cumming) 	
2015_April	<p>PRESENTATION: Joanna E. Mills, SHARE RIU Manager and Belen Torondel Lecturer at LSHTM Presented “SuperAmma Handwashing with Soap Campaign” at the Sanitation Research Symposium at Great Lakes University of Kisumu, Kenya</p>	

2015_April	PRESENTATION: Belen Torondel Lecturer at LSHTM presented results from SHARE funded “Systematic Review on Menstrual Hygiene Management” at the Sanitation Research Symposium at Great Lakes University of Kisumu, Kenya
2015_April	RESEARCH POSTER: Undoing Inequity This poster provides a concise overview of the Undoing Inequity project, including background information, the baseline survey results, a summary of the intervention, the mid-term review results and some salient conclusions. Available from: /LocalResources/Research_Posters/Undoing_Inequity.pdf
2015_March	PRESENTATION: Preliminary results of the Process Evaluation of the National Sanitation Campaign Lucas Kwezi, WASH Adviser at DFID Tanzania presented preliminary results of the SHARE process evaluation of the National Sanitation Campaign at the The Sanitation and Hygiene Monitoring Workshop Programme, part of the 15 th Sanitation sub-group meeting, which took place in Upanga, Tanzania.
2015_March	SHARE partner IIPHG, presented results from SHARE research on WASH in Health Facilities at the WHO-led global WASH in health-care facilities meeting in Geneva.
2015_Feb	Oliver Cumming took part at the WaterAid/GoI WASH Summit in Dehli, India. Oliver Cumming presented SHARE funded work: The importance of WASH in improving maternal and neo-natal health- Plenary Session WASH and maternal and neonatal health: What do we know and what should we do? Presented at sub-session WASH in HEALTH
2015_Feb	POSTER: Tarique Huda, SHARE-funded PhD Student, presented the poster: ‘Are improved toilets preventing faecal contamination of the household environment?’ at the LSHTM Annual Research Degrees Poster Day on 4th February 2015
2014_Dec	PRESENTATION: SHARE Research Fellow Moon Moon Hossain presented results from her MSc “Determinants of menstrual hygiene practice among adolescents in Matlab, Chandpur, Bangladesh” at the 1st Conference for Young Public Health Professionals, held in Bangladesh
2014_Nov	POSTER: Tarique Huda, SHARE-funded PhD Student, presented the poster: “Are improved toilets preventing faecal contamination of the household environment?” at the 63rd Annual Meeting of American Society of Tropical Medicine and Hygiene (ASTMH) held November 2-6, 2014 at the Sheraton New Orleans and New Orleans Marriott in New Orleans, Louisiana, USA
2014_Nov	Dr Holm, lecturer at Mzuzu University, presented findings of the SHARE project “Private Sector Participation in the Delivery of Sanitation and Hygiene Services” Water and Environmental Sanitation Network (WES Network) meeting which took place on 17th November 2014 in Lilongwe, Malawi.
2014_Oct	PRESENTATION: Mr. Elijah Wanda, Lecturer in Chemistry at Mzuzu University, presented findings of the SHARE project “Private Sector Participation in the Delivery of Sanitation and Hygiene Services” at the 15th WaterNet Symposium that took place in Lilongwe, 29th-31st October 2014.
2014- Oct	PRESENTATION: Undoing inequity - inclusive WASH programmes that deliver for all

	<p>This presentation features baseline and mid-term review findings from the SHARE-funded 'Undoing Inequity: WASH programmes that deliver for all in Uganda and Zambia' action-research project. This presentation was given by Jane Wilbur and Spera Atuhairwe at the SHARE seminar at World Water Week in Stockholm on 2nd September 2014.</p> <p>Available from: /LocalResources/Undoing_inequity_WaterAid_presentation.ppt</p>
2014_Oct	<p>PRESENTATION: European Roundtable on WASH and NTDs</p> <p>This presentation features the main discussions and outcomes of the SHARE-convened European Roundtable on WASH and NTDs that took place in London (18th-19th September 2014). This presentation was given by Alexandra Chitty, Research Uptake Officer at the SHARE Research Consortium, on 23rd September 2014 at the annual NTD NGDO Network (NNN) meeting in Paris.</p> <p>Available from: /LocalResources/NNN_Presentation_EU_Roundtable.pptx</p>
2014-September	<p>PRESENTATION: Undoing inequity - inclusive WASH programmes that deliver for all</p> <p>This presentation features baseline and mid-term review findings from the SHARE-funded 'Undoing Inequity: WASH programmes that deliver for all in Uganda and Zambia' action-research project. This presentation was given by Jane Wilbur and Spera Atuhairwe at the SHARE seminar at World Water Week in Stockholm on 2nd September 2014.</p> <p>Available from: /LocalResources/Undoing_inequity_WaterAid_presentation.ppt</p>
2014_July	<p>PRESENTATION: Private Sector Participation in the delivery of Sanitation and Hygiene Services. This presentation features some preliminary results from SHARE-funded project 'Private Sector Participation in the delivery of Sanitation and Hygiene Services', implemented by the Centre of Excellence in Water and Sanitation, Mzuzu University, Malawi. This presentation was given by Rochelle Holm at the Social Science Conference at Chancellor College in Zomba on the 26th of June 2014.</p> <p>Available from: /LocalResources/Holm_26June2014.pptx</p>
2014_April	<p>PRESENTATION: The Right to Sanitation - Translating the Right into a reality</p> <p>This is a study looking at the practical implications of the recently declared human right to sanitation, being conducted jointly by SOAS, UK and the International Environmental Law Research Centre, New Delhi.</p> <p>Resource URL : /LocalResources/Presentation_Lovleen_Bhullar.pptx</p>

Videos/ Podcasts

1. **VIDEO: Toilets on Credit:** This video was produced by Tremolet Consulting and summarises the action-research they conducted for SHARE in Tanzania in which financial institutions were trained to provide financial services for sanitation. The video places this research project in the broader context and explains why microfinance should be explored further, and potentially, included in sanitation programmes. <http://youtu.be/tflvCsz9V3w>
2. **PODCAST: PLOS Medicine Paper Launch - From Joint Thinking to Joint Action.** This is a podcast of the PLOS Medicine Paper Launch that took place at LSHTM on 15th December 2014. The event formally launched the “From joint thinking to joint action: A call to action on improving water, sanitation and hygiene for maternal and newborn health” paper calling for greater intersectoral collaboration to improve maternal and newborn health outcomes. www.youtube.com/watch?v=4U0nEMbU-bg
3. **VIDEO: Sanitation and Women in India - Reflections from Delhi** This video features three groups of researchers reflecting upon the 'Sanitation and Women in India' workshop held in Delhi in November 2014. Here, they also summarise their SHARE-WSSCC funded studies, explaining the research questions they investigated and the findings they uncovered. We also hear from a workshop attendee, Sweta Patnaik, Policy Coordinator at WaterAid India. http://youtu.be/hr-l_loXLDU
4. **VIDEO:** The SHARE-funded project Undoing Inequity: Inclusive Water, Sanitation and Hygiene Programmes that Deliver for All produced a video that investigates the cost of inclusive water, sanitation and hygiene service delivery in Uganda. www.sharesearch.org/Resource/Details/undoing_inequity_investigating_cost_of_inclusive_interventions
5. **VIDEO:** Safe food, healthy child: This video is one of the promotional materials used in the SHARE-funded food hygiene intervention trial in Nepal, conducted by Om Prasad Gautam. <https://www.youtube.com/watch?v=4Vt4fRkJ5VE>
6. **VIDEO:** No Relief - Sanitation Vulnerability: This video supports the 2014 SHARE-funded 'Sanitation Vulnerability: Women's Stresses and Struggles for Violence-free Sanitation' study and features women from the slums of Pune, India, talking about their sanitation experiences. www.youtube.com/watch?v=fF8uKPzgmP0&list=UUn_LfEpFspm3G3qElmxzYgA&index=1
7. **WEBINAR:** Disability-making CLTS fully inclusive Recording and resources, conducted by Hazel Jones and Jane Wilbur.
8. **VIDEO:** Professor Cairncross at the STOP Stunting Conference 2014: In this video Professor Sandy Cairncross, SHARE Research Director, shares his thoughts on why reducing stunting is such a priority for South Asia. Professor Cairncross attended the STOP Stunting Conference in New Delhi (November 2014) to deliver a presentation on the links between sanitation and stunting. Resource URL: <http://vimeo.com/111509820>
10. **PODCAST:** Does Improving Sanitation Benefit Health? In this podcast, Oliver Cumming, Lecturer at the London School of Hygiene and Tropical Medicine (LSHTM), discusses whether improving sanitation benefits health and explains how a sanitation campaign in rural India has led to a rethink about future interventions. This podcast was first published on 23/10/14 by LSHTM: www.lshtm.ac.uk/newsevents/multimedia/podcasts/2014/october_2014.htm

Indicator 2: *Development and use of national RIU strategies (Legacy arrangement agreed by stakeholders by 2014)*

Plans in place for completion by December 2014.

Indicator 3: *# of knowledge sharing events including seminars, technical meetings and conferences organised or supported by SHARE*

	DATE	EVENT (LOCATION)	SHARE CONTRIBUTION
1.	May 2015	Sustainability and Value for Money - Using Data to Improve the Performance of WASH Investments	SHARE co-convened the events at the London School of Hygiene and Tropical Medicine together with Tremolet Consulting, Oxford Policy Management, University of Leeds, and Oxfam.
2.	May 2015	SHARE convened a side event on WASH and Maternal Health at the AfricaSan Conference "Making Sanitation for All a Reality in Africa" which took place in Senegal	SHARE convened a side event
3.	April 2015	Sanitation Research Symposium at Great Lakes University of Kisumu, Kenya	SHARE co-convened the event and presented some of SHARE funded research on Handwashing with Soap and Menstrual Hygiene Management.
4.	March 2015	DFID brown bag session on Urban sanitation	SHARE organised the event
5.	February 2015	WaterAid lunchtime seminar series: Embedding microfinance into sanitation programmes	SHARE organised the event
6.	February 2015	WaterAid lunchtime seminar series: Equity & inclusion	SHARE organised the event
7.	January 201	WaterAid lunchtime seminar series: Improving maternal health through improving WASH	SHARE organised the event
8.	Dec 2014	Launch of the PLOS Medicine paper "From joint thinking to joint action: A call to action on improving water, sanitation and hygiene for maternal and newborn health" LSHTM, London	SHARE funded the event
9.	Nov 2014	Conference in New Delhi entitled 'Sanitation and Women in India'.	SHARE convened the event in collaboration with the Water Supply and Sanitation Collaborative Council
10.	Oct 2014	Launch of the 'WASH & CLEAN Toolkit: A Guide to Data Collection & Tools'. Indian Institute of Public Health Gandhinagar, India	The conference, organised by the Indian Institute of Public Health Gandhinagar (IIPHG), served as an official dissemination event for the SHARE/WSSCC-funded WASH & CLEAN study

11.	Oct 2014	The Urban Talks, in Malawi to drive progress and stimulate momentum for improved sanitation and hygiene delivery in Malawi.	SHARE funded the event, attended by the government of Malawi, researchers, policy makers and the public
12.	Oct 2014	SHARE side-event at UNC Conference entitled: 'Sanitation, Gender and Reproductive Health Nexus: new frontiers in sanitation research in South Asia'. This workshop sought to produce tangible, actionable plans for improving how gender issues in using WASH resources are addressed by policy and research systems.	SHARE funded several researchers' attendance at the UNC and convened the side event
13.	Sep 2014	European WASH and NTD roundtable, London	SHARE organised and funded the event.
14.	Sep 2014	Annual Meeting of the NTD NGDO Network, Paris, France	SHARE attended and presented at the meeting
15.	Sep 2014	Addressing Equity in the Water, Sanitation and Hygiene Sector'. Seminar at Stockholm Water Week The seminar tackled the multiple dimensions of equity and will comprise of three presentations led by the International Institute for Environment and Development (IIED), UNICEF and WaterAid.	SHARE convened the event
16.	June 2014	The Annual Meeting for SHARE-funded City Wide Sanitation Project took place in Chinhoyi, Zimbabwe. The meeting was attended by Shack/Slum Dwellers (SDI) Secretariat, SDI affiliates, the International Institute for Environment and Development (IIED), and local government officials from the project's focus cities in Malawi, Tanzania, Zambia and Zimbabwe.	SHARE funded event

Indicator 4: % female participants at those events

EVENT	Participants/or presenters (of which females)
1. Sustainability and Value for Money - Using Data to Improve the Performance of WASH Investments	30
2. DFID brown bag session on Urban sanitation	15
3. WaterAid lunchtime seminar series: Embedding microfinance into sanitation programmes	40
4. WaterAid lunchtime seminar series: Equity & inclusion	40

5. WaterAid lunchtime seminar series: Improving maternal health through improving WASH	40
6. Launch of the PLOS Medicine paper 'From joint thinking to joint action: A call to action on improving water, sanitation and hygiene for maternal and newborn health' LSHTM, London	113 (76)
7. 'Sanitation and Women in India' Conference, Delhi, India	50 (35)
8. Launch of the 'WASH & CLEAN Toolkit: A Guide to Data Collection & Tools'. Indian Institute of Public Health Gandhinagar, India	200
9. The Urban Talks, in Lilongwe, Malawi	90 (45)
10. Sanitation, Gender and Reproductive Health Nexus: new frontiers in sanitation research in South Asia'.	n.a.
11. European WASH and NTD roundtable, London	n.a.
12. Annual Meeting of the NTD NGDO Network, Paris, France	200 (80)
13. "Addressing Equity in the Water, Sanitation and Hygiene Sector'. Seminar at Stockholm Water Week	40 (24)
14. The Annual Meeting for SHARE-funded City Wide Sanitation Project took place in Chinhoyi, Zimbabwe.	n.a.
Total (available) number of participants (of which women)	1,072 (476)
Total % of women	55%
Indicator 5: # of requests for advice from SHARE generating response	
Requesting organisation	SHARE contact/Input
1. Global Task Force on Cholera Control	Jeroen Ensink was invited to New York to attend the WASH and cholera task force.
2. WHO	Sandy Cairncross responded to request on whether there is general consensus that link between WASH and under nutrition is causal.
3. DFID UK	Jeroen Ensink provided answer to DFID question on how long vibrio cholerae can survive in faecal sludge.
4. Fred Hollows Foundation (Virginia Sarah)	Alexandra Chitty, SHARE RIU officer, provided RIU guidance on how research learnings are translated for field implementation, as the Fred Hollows Foundation is currently reviewing its research strategy.

5. DFID UK	Request to Oliver Cumming to provide evidence on existing and future research on WASH and nutrition.
6. UNICEF New York	Request to Oliver Cumming to synthesize the evidence on contribution of interventions beyond the health sector to child survival and development for a PCA with Zulfi Bhutta's new centre for child health in Toronto at SickKids Hospital.
7. UNICEF China	Request to Oliver Cumming for Technical advice on intervention design on Nutrition and WASH in Min County of Gansu province.
8. UNICEF East Asia and Pacific	Request to Oliver Cumming for technical advice on preparing a presentation on WASH and nutrition at the regional parliamentary seminar Promoting child nutrition in Asia hosted by the National Assembly of Lao People's Democratic Republic and co-organized by the Inter-Parliamentary Union (IPU) and the United Nations Children's Fund (UNICEF).
9. UNICEF Ghana	Request to Oliver Cumming on how UNICEF can embed WASH research into routine monitoring systems of the health and education sectors at district level.
10. NRC and UNICEF in Kenya	Request to Sandy Cairncross for findings and lessons learnt from ppt on cholera guidelines used by humanitarian agencies.
11. University of Pennsylvania researcher	Request to Elisa Roma on more information on SHARE research on Menstrual Hygiene Management.
12. UNICEF Mali	Request to Oliver Cumming to review of results from an health impact assessment of CLTS.
13. DFID	Request to Sandy Cairncross for information on the links between WASH and ebola.

OUTPUT 2 New knowledge generated by relevant and rigorous sanitation research which a) characterises problems; b) identifies solutions; and c) demonstrates benefits				
Indicator 1: Publications in peer-reviewed journals arising from SHARE research				
	Publication title and authors (since July 2014)	Total authors	Female authors	Researchers from developing countries
1.	Padhi BK, Baker K, Dutta A, Cumming O, Freeman MC, Satpathy R, Das BS, Panigrahi P (2015) Risk of Adverse Pregnancy Outcomes among Women Practicing Poor Sanitation in Rural India: A Population-Based Prospective Study. <i>Plos Med</i> , DOI:10.1371/journal.pmed.1001851	8	2	5
2.	Exley, J. Liseka, B, Cumming, O and Ensink, J. (2015) The Sanitation Ladder, What Constitutes an Improved Form of Sanitation? <i>Environmental Science and Technology, Environ. Sci. Technol.</i> 2015, 49, 1086–1094.	4	1	1
3.	Das P, Baker K, Dutta A, Swain T, Sahoo S, Das BS, Panda B, Nayak A, Bara M, Bilung B, Mishra PR, Panigrahi P, Cairncross S and Torondel B (2015) Menstrual hygiene practices, WASH access and the risk of urogenital infection in women from Odisha, India. <i>Plos ONE-D-15-02036R2</i>	14	8	11
4.	Steinmann P, Bratschi M, Lele P, Chavan U, Sundaram N, Mitchell G, Weiss M, Juvekar S and Hirve S. (2015) Availability and satisfactoriness of latrines and hand washing stations in health facilities, and role in health seeking behavior of women: evidence from rural Pune district, India" <i>Journal of Water, Sanitation and Hygiene for Development</i> , in press.	8	3	4
5.	Jenkins MW, Cumming, C and Sandy Cairncross, S (2015) Pit Latrine Emptying Behavior and Demand for Sanitation Services in Dar Es Salaam, Tanzania. <i>Int. J. Environ. Res. Public Health</i> 2015, 12, 2588-2611; doi:10.3390/ijerph120302588	3	1	0
6.	Banana E., Chitekwe-Biti B., and Walnycki A. (2015) Co-producing inclusive city-wide sanitation strategies: lessons from Chinhoyi, Zimbabwe. <i>Environment & Urbanization</i> , Vol 27(1): 1–20. DOI: 10.1177/0956247815569683	3	1	2

7.	Hirve S, Lele P, Sundaram N, Chavan U, Weiss M, Steinmann, P and Juvekar S (2015) Psychosocial stress associated with sanitation practices: experiences of women in a rural community in India. <i>Journal of Water, Sanitation and Hygiene for Development</i> , Vol5 (1),115-125	7	3	4
8.	Banana, E, Chikoti, P, Harawa, C., Mcgranahan, G, Mitlin, D., Stephen S., Schermbrucker, N, Shumba F. and Walnycki, A. (2015) Sharing reflections on inclusive sanitation. <i>Environment & Urbanization</i> Vol 27(1): 1–16. DOI: 10.1177/0956247815569702	9	4	5
9.	Campbell OM, Benova L, Gon G, Afsana K, Cumming O. (2015) Getting the basic rights - the role of water, sanitation and hygiene in maternal and reproductive health: a conceptual framework. <i>Trop Med Int Health</i> . Vol. 20(3):252-67. doi: 10.1111/tmi.12439	5	3	0
10.	Cumming O, Elliott M, Overbo A, Bartram J (2014) Does Global Progress on Sanitation Really Lag behind Water? An Analysis of Global Progress on Community- and Household-Level Access to Safe Water and Sanitation. <i>PLoS ONE</i> 9(12): e114699. doi:10.1371/journal.pone.0114699	4	1	0
11.	McGranahan, G (2015), Realizing the right to sanitation in deprived urban communities: meeting the challenges of collective action, coproduction, affordability and housing tenure, <i>World Development</i> (forthcoming).	1	0	0
12.	Velleman Y, Mason E, Graham W, Benova L, Chopra M, Campbell, O, Gordon, B, Wijesekera, S, Hounton, S., Esteves Mills, J., Curtis, V., Afsana, K., Boisson, S, Magoma, M., Cairncross, S and Cumming, O. (2014) From Joint Thinking to Joint Action: A Call to Action on Improving Water, Sanitation, and Hygiene for Maternal and Newborn Health. <i>PLoS Med</i> 11(12): e1001771. doi:10.1371/journal.pmed.1001771	16	9	2
13.	Oona M. R. Campbell (2014) Getting the basics right – the role of water, sanitation and hygiene in maternal and reproductive health; a conceptual framework. <i>Tropical Medicine & International Health</i> . DOI: 10.1111/tmi.12439	1	1	0
14.	Devamani, C., Norman, G. and Schmidt, W-P (2014) A Simple Microbiological Tool to Evaluate the Effect of Environmental Health Interventions on Hand Contamination. <i>Int. J. Environ. Res. Public Health</i> 2014, 11(11), 11846-11859;	3	1	0

15.	Clasen T, Boisson S, Routray P, Torondel B, Bell M, Cumming O, Ensink J, Freeman M, Jenkins M, Odagiri M, Ray S, Sinha A, Suar M and Schmidt W-P (2014) Effectiveness of a rural sanitation programme on diarrhoea, soil-transmitted helminth infection, and child malnutrition in Odisha, India: a cluster-randomised trial. <i>Lancet Glob Health</i> 2014; 2: e645–53	14	5	2
16.	Benova L, Cumming O, Gordon B, Magoma M, Campbell O (2014) Where There Is No Toilet: Water and Sanitation Environments of Domestic and Facility Births in Tanzania. <i>PLoS ONE</i> 9(9): e106738. doi:10.1371/journal.pone.0106738	5	2	1
17.	Holm R, Wanda E., Kasulo V and Gwayi S (2014) Identification of the potential opportunities, barriers, and threats within the sector in taking up sanitation as a business: rural sanitation in Nkhata Bay District (Malawi). <i>Waterlines</i> Vol. 33 No. 3, 269-274	4	1	3
18.	Gulliver F, Jeandron A, Nguyenb VA, Dob HA and Ensink J (2014) Transmission of helminth eggs through hands in a high-risk community. <i>Transactions of the Royal Society of Tropical Medicine and Hygiene</i> . doi:10.1093/trstmh/tru115	5	3	2
19.	Clasen T, Pruss-Ustun A, Mathers C, Cumming O, Cairncross S. and Colford J (2014) Estimating the impact of unsafe water, sanitation and hygiene on the global burden of disease: evolving and alternative methods. <i>Tropical Medicine and International Health</i> , 19, 8 pp 884–893.	6	1	0
20.	Stocks M, Ogden S, Haddad D, Addiss D, McGuire C and Freeman M (2014) Effect of Water, Sanitation, and Hygiene on the Prevention of Trachoma: A Systematic Review and Meta-Analysis. <i>Plos Med</i> . DOI: 10.1371/journal.pmed.1001605	6	3	0
Total		126	53	42

Indicator 2: Citations by other authors of those publications (updated from previous report)

	Authors	Citation Track (includes self-citations)
1	Exley <i>et al.</i> (2015)	0
2	Das <i>et al.</i> (2015)	0
3	Steinmann <i>et al.</i> (2015)	0
4	Jenkins <i>et al.</i> (2015)	0
5	Banana <i>et al.</i> (2015)	0
6	Hirve <i>et al.</i> (2015)	0
7	Banana <i>et al.</i> (2015)	0
8	Campbell <i>et al.</i> (2015)	0
9	Cumming <i>et al.</i> (2014)	5
10	McGranahan, G (2015)	0
11	Velleman <i>et al.</i> (2014)	4
12	Campbell (2014)	2
13	Devamani, C., Norman, G. and Schmidt, W-P (2014)	3
14	Clasen T, Boisson S, Routray P, Torondel B, Bell M, Cumming O, Ensink J, Freeman M, Jenkins M, Odagiri M, Ray S, Sinha A, Suar M and Schmidt W-P (2014)	15
15	Benova L, Cumming O, Gordon B, Magoma M, Campbell O (2014)	2
16	Holm R, Wanda E., Kasulo V and Gwayi S (2014)	0

17	Gulliver F, Jeandron A, Nguyenb VA, Dob HA and Ensink J (2014)	0
18	Clasen T, Pruss-Ustun A, Mathers C, Cumming O, Cairncross S. and Colford J (2014)	5
19	Stocks M, Ogden S, Haddad D, Addiss D, McGuire C and Freeman M (2014)	11
20	Wolf J, Pruss-Ustun A, Cumming O, Bartram J, Bonjour S, Cairncross S, Clasen T, Colford J M Jr, Curtis V, De France J, Fewtrell L, Freeman M, Gordon B, Hunter P, Jeandron A, Johnston RB, Mausezahl D, Mathers C, Neira M and Higgins JPT (2014)	16
21	Pruss-Ustun A, Bartram J, Clasen T, Colford JM Jr, Cumming O, Curtis V, Bonjour S, Dangour A, De FranceJ, Fewtrell L, Freeman M, Gordon B, Hunter PR, Johnston RB, Mathers C, Mausezahl D, Medicott K, Neira M, Stocks M, Wolf J and Cairncross S (2014)	78
22	Freeman M, Stocks M, Cumming O, Jeandron A, Higgins JPT, Wolf J, Pruss-Ustun A, Bonjour S, Hunter PR, Fewtrell L and Curtis V 2014	8
23	Loevinsohn M, Mehta L, Cuming K, Nicol A, Cumming O and Ensink J (2014)	3
24	Jiménez, A, Mtango, F and Cairncross, S (2014)	0
25	Jeandron, A, Ensink, JH, Thamsborg, SM, Dalsgaard, A and Sengupta, ME (2014)	1
26	Strunz EC, Addiss DG, Stocks ME, Ogden S, Utzinger J, and Freeman, MC (2014)	37
27	Heijnen M, Cumming O, Peletz R, Chan GK-S, Brown J, Baker, K and Clasen, T (2014)	9
28	Ghosh, A and Cairncross, S (2014)	4
29	Jenkins MW, Cumming O, Scott B and Cairncross S (2014)	5
30	Biran, A, Schmidt, W-P, Varadharajan, KS, Rajaraman, D, Kumar, R, Greenland, K, Gopalan, B, Aunger, R and Curtis, V (2014)	45
31	Benova, L, Cumming, O and Campbell, O(2014)	9
32	Stocks, M, Ogden, S, Haddad, D, Addiss, DG, McGuire, C and Freeman, M (2014)	11
33	Torondel, B, Opare, D, Brandberg, B, Cobb, E and Cairncross, S (2014)	6
34	Rheingans R, Anderson JD, Rolf Luyendijk R and Oliver Cumming O (2013)	3

35	Wazny K, Zipursky A, Black R, Curtis V, Duggan C, <i>et al.</i> (2013)	14
36	Brown, J, Cairncross, S and Ensink, J (2013)	8
37	Trémolet S (2013)	0
38	Barnard S, Routray P, Majorin F, Peletz R, Boisson S, Sinha A and Clasen T (2013)	16
39	Spears D, Ghosh A and Cumming O (2013)	25
40	Dangour AD, Watson L, Cumming O, Boisson S, Che Y, Velleman Y, Cavill S, Allen E and Uauy R (2013)	48
41	Irish, S, Aiemjoy, K, Torondel, B, Abdelahi, F and Ensink, J (2013)	1
42	Sumpter, C and Torondel, B (2013)	13
43	Islam, MS, Mahmud, ZH, Gope, PS, Zaman, RU, Hossain, Z, Islam, MS, Mondal, D, Sharker, MAY, Islam, K, Jahan, H, Bhuiya, A, Endtz, HP, Cravioto, A, Curtis, V, Touré, O and Cairncross, S (2013)	8
44	Velleman, Y, Greenland, K. and Prasad Gautam, O (2013)	2
45	Greenland, K, Cairncross, S, Cumming, O and Curtis, V (2013)	6
46	Funk, AL, Boisson, S, Clasen, T and Ensink, JH (2013)	1
47	Clasen, T, Boisson, S, Routray, P, Cumming, O, Jenkins, M, Ensink, J, Bell, M, Freeman, M, Peppin, S and Schmidt. W-P (2012)	17

48	Clasen, T, Fabini, D, Boisson, S, Taneja, J, Song, J, Aichinger, E, Bui, A, Dadashi, S, Schmidt, W-P, Burt, Z and Nelson, KL(2012)	21
49	De Barra, M and Curtis, V (2012)	6
50	Brown, J, Cavill, S, Cumming, O and Jeandron, A (2012)	0
51	<u>Touré, O, Coulibaly, S, Arby, A, Maiga, F and Cairncross, S (2013)</u>	7
52	Roma, E, Pearce, J, Brown, C and Islam, S. (2012)	1
53	Baker, S and Ensink, J (2012)	5
54	Watts, C and Cairncross, S (2012)	18
55	Touré, O, Coulibaly, S, Arby, A, Maiga, F andCairncross, S (2011)	5
56	Curtis, V, Schmidt, W-P, Luby, S, Florez, R, Touré, O and Biran, A (2011)	58
57	Burton, M, Cobb, E, Donachie, P, Judah, G, Curtis, Vand Schmidt, W-P (2011)	25
58	Curtis, V, de Barra, Mand Aunger, R (2011)	89
59	Collender, G (2011)	0
Total citations 669, average citation per year = 2		

Indicator 3 : # of programmes embodying research findings established and documented for replication and/or study visits

- The Gain Campaign on exclusive breastfeeding and maternal health conducted in Indonesia by the Hygiene Centre at LSHTM, is based on the BCD approach which stems from the SHARE funded Choose Soap Toolkit.
- The Handwashing with Soap Campaign conducted in Nigeria by Adam Biran, Lecturer at the Hygiene Centre at LSHTM, is based on the BCD approach which stems from the SHARE funded Choose Soap Toolkit.
- The SHARE-funded *Compendium of Accessible WASH Technologies* has been used in the AUSAID-Funded WASH and disabilities project in Malawi for training of Community Health surveillance Officers who are implementing CLTS.
- The SHARE funded *Compendium of Accessible WASH Technologies* was presented at a learning event in Zimbabwe in May 2015 and was identified as the most useful implementation tool by several international NGOs, including World Vision, Wealth Hunger Hilfer, RedCross, Concern.
- The behavioural change Handwashing with soap Campaign targeting HHWS, exclusive breastfeeding and ORS conducted in Zambia by Katherine Greenland from the Hygiene Centre at LSHTM, is based on the BCD approach which stems from the SHARE funded Choose Soap Toolkit.
- The WASH & CLEAN Toolkit has been adapted in Zanzibar as part of a study aiming to: assess the coverage of functional WASH facilities in maternity units across Zanzibar; assess a range of stakeholders' perceptions of cleanness and infection prevention and control (IPC) successes and bottlenecks; and to inform the design of a phased improvement plan in support of improving the quality of care in maternity units.
- Tools contained in the WASH & CLEAN Toolkit have been applied in Zimbabwe as part of an initial IPC needs assessment of several maternity units to be supported by ZimHealth and the Soapbox Collaborative.
- Drawing on result from SHARE-funded research on sanitation and psychosocial stress in India, the WSSC funded further research in India to develop and test tools to assess WASH service acceptability, and adequacy with regard to gender equality.
- The results and outputs (a guideline document) WASH in health facilities study from the Indian platform has been adopted for use in 20 large hospitals and by the government of Gujarat.
- The SHARE funded Practitioners' Toolkit on Violence, Gender and WASH has been feeding into the ongoing work to update the "Inter-Agency Standing committee's Guidelines for Gender-based Violence Interventions in Humanitarian Settings"
- SHARE funded research on integrating sanitation and hygiene messages into vaccination programmes has been taken forward by WaterAID Nepal, who with support from WaterAID UK and the Ministry of Health and Population to conduct formative research in Nepal to integrate WASH and vaccines.

Indicator 4: Successful completion of SPLASH component funded via SHARE (Policy relevant appraisals of outputs by SHARE by end of 2014)

- Participation in 20 international conferences.
- Participation and organisation of 5 workshops.

- Engagement with more than 15 sector actors.

OUTPUT 3

Key sector actors engaged around evidence for change

Indicator 1

of consultations initiated by SHARE on the basis of outcome mapping

1. Findings from the WASH & CLEAN study have also fed into this global process, including through a presentation by SHARE partner IIPHG at the WHO-led global WASH in health-care facilities meeting in Geneva in March 2015.
2. SHARE has been involved in the WHO-led development of an action plan to tackle inadequate WASH in health facilities, feeding results from SHARE-funded research on WASH in health facilities.
3. SHARE has participated in the consultation process for the Zero Draft of the *UN Global Strategy for Maternal, Newborn, Adolescent and Child Health* (MNACH), feeding SHARE findings into the process to encourage a greater focus to the role of WASH in MNACH.
4. The SHARE-funded paper 'Where There Is No Toilet: Water and Sanitation Environments of Domestic and Facility Births in Tanzania' was featured in the Daily Telegraph. The paper's findings were also presented at a session convened by WHO and UNICEF at the 2014 UNC Water and Health Conference, i.e. they contributed to cross-sectoral policy discussions.

Tanzania

5. SHARE collaborated with the University of Morogoro to prepare a bid for the design of Phase II of the National Sanitation and Hygiene Campaign in Tanzania.

India:

6. The Ministries of Drinking Water & Sanitation and Health & Family Welfare both requested that SHARE provides them with concrete recommendations based on the research funded in India about what actions they need to take to achieve Swachh Bharat Abhiyan - we submitted this in collaboration with WSSCC in November and these recommendations will feed directly into the official SBA guidelines that are being formulated.
7. The WASH & CLEAN Toolkit was disseminated at the Sanitation and Women in India' Conference, Delhi, India (Nov 2014). 25 CDs were distributed and many requests made by practitioners/policymakers for accessing the toolkit online.

Malawi:

8. UNICEF Malawi contacted SHARE MHM project in Malawi to request findings from baseline study conducted in the Zomba District to draw lessons for developing a partnership with an NGO in Zomba District on MHM.
9. At the Urban Talks which took place in Lilongwe in October 2014, the Representative of the city council committee of Malawi expressed interest in SHARE-funded research on solid waste management and committed to discuss the results with the committee.

Indicator 2

of country platforms established and active

Plan of actions have been agreed and implemented in the four country platforms

Indicator 3

No. of hits/downloads on SHARE website

PAGE VIEWS – ALL SESSIONS

AR 2014: Average monthly web visits = 2,130

July 2014 –May 2015: Average monthly web visits = 2,660

July 2014: 2,063

August 2014: 2,156

September 2014: 2,697

October 2014: 2,994

November 2014: 3,155

December 2014: 2,704

January 2015: 3,285

February 2015: 2,893

March 2015: 2,482

April 2015: 2,586

May 2015: 2,248

NEWSLETTER SUBSCRIPTIONS (Cumulative)

June (2014): 510

July (2014): 508

August (2014): 515

September (2014): 530

October (2014): 546

November (2014):560

December 2014: 560

January 2015: 591

February 2015: 591

March 2015: 610

April 2015: 610

May 2015:638

TWITTER FOLLOWERS

February (2014): 742

April (2014): 800

May (2014): 815

July (2014): 836 (Social Authority was 15)

December(2014):1011(SA was 30)

March 2015: 1,121 (SA was 35)

May 2015: 1,172 (SA was 34)

June 2015: 1, 210

Indicator 4

of external requests for SHARE technical support to implement implications of SHARE research

Requesting Organisation	SHARE Contact (Date)	Input
UNICEF	Jeroen Ensink (April 2015)	Technical input was provided into a programme that UNICEF is running in Uganda on the evaluation of pit latrine additives
IRES (Headquarters)	Elisa Roma and Belen Torondel (November 2014)	Request to share findings from SHARE Funded research on MHM to implement on their intervention in Namibia as part of the BMGF Grand Challenge
UNICEF Regional Office for South Asia	Oliver Cumming (July 2014)	Re`quest to share the 10 recommendations from SHARE-funded workshop on Sanitation and Women in India'

Indicator 5

of cases of non-SHARE agencies participating in SHARE research (Since June 2013)

1. Texas A&M University
2. BOND
3. Emory University
4. Swiss Tropical Institute
5. Aberdeen University
6. World Toilet Organisation
7. UNICEF
8. BORDA
9. National Bureau of Statistics (Tanzania)
10. Ministry of Health and Social Welfare (MoHSW),(Tanzania)
11. Ministry of Education and Vocational Training (MOEVT), (Tanzania)
12. WSP (Tanzania)
13. DFID (Tanzania)
14. Soapbox Collaborative (Tanzania)
15. Pemba Public Health Laboratory (Tanzania)
16. K-Finance (Tanzania)
17. ECLOF (Tanzania)
18. Tujijenge (Tanzania)

19. YOSEFO (Tanzania)
20. MAMADO (Tanzania)
21. CCI (Tanzania)
22. SEDIT (Tanzania)
23. Habitat for Humanity (Tanzania)
24. Ilala municipal council (Tanzania)
25. Temeke Municipal council (Tanzania)
26. Kinondoni Municipal council (Tanzania)
27. University of Calgary (Tanzania)
28. University of Dar Es Salaam (Tanzania)
29. Centre of Excellence in Water and Sanitation (Mzuzu University), (Malawi)
30. Lilongwe University of Agriculture and Natural Resources, (Malawi)
31. Department of Population Studies of University of Malawi (Malawi)
32. Chancellor College (Malawi)
33. Blantyre City Council (Malawi)
34. Vadu (KEM Hospital Research Centre), (India)
35. Public Health Foundation of India,
36. Society for Promoting Participative Eco-system Management (SOPPECOM), (India)
37. Asian Institute of Public Health (India)
38. BRAC (India and Bangladesh)
39. Ministry of Child and Women's Affairs in Government of Bangladesh (Bangladesh)
40. Village Education Resource Centre (Bangladesh)
41. Plan International (Bangladesh)
42. District of Public Health Office (Bangladesh)
43. Red Cross (Bangladesh)
44. Coppertbelt (Zambia)
45. Water and Sanitation Association Zambia (WASAZA) (Zambia)
46. Nkana Water and Sewerage Company (NWSC) (Zambia)
47. Kitwe City Council (KCC) (Zambia)
48. Chinhoyi Municipality (Zimbabwe)
49. Chinhoyi University of Technology (CUT) (Zimbabwe)
50. Works of Solidarity for Water and against Environmental Harmful Effects (Cameroon)
51. Provincial Health Authority of Albay (Government of Philippines, supported by AusAid)
52. People in Need (Angola)
53. IWA (Mozambique)
54. GAIN (Indonesia)
55. Global Sanitation Fund (Nigeria)
56. UNICEF Kyrgistan

57. WaterAid India
 58. Ministry of Urban Development (India)
 59. Ministry of Drinking Water and Sanitation (India)

Indicator 6

Skills and competencies of # key individuals responsible for planning, managing, implementing and monitoring WASH programmes – especially women – developed and upgraded

Date	Event	Number of participants (of which women)
June 2015	Katie Greenland and Sian White, Environmental Health Group, LSHTM conducted a one day training workshop on the Behaviour Centred Design (BCD) approach to behaviour change to staff from Action Contre La Faim (ACF) managing WASH country programmes	13 (12)
March 2015	Training workshop on the Gender, Violence and WASH Practitioner's Toolkit, organised by WaterAid at their London offices, attended by participants from a range of organisations including DFID, international medical corps, Care International, MSF and Save the Children.	n.a.
March 2015	Webinar hosted by the Rural Water Supply Network and organised by WaterAid on gender and violence toolkit.	n.a.
February 2015	MHM workshop with Masters students at the University of Leeds, organised by WaterAid.	8 (4)
December 2014	`Linking Sanitation to Stunting' lecture will be presented by Prof Sandy Cairncross and Mr Oliver Cumming on Join Lync Meeting attended by professional from Afghanistan and India	60 (n.a.)
October 2014	LSHTM, SHARE, UNICEF Webinar series `Shaping Policy and Practice: Research into Action'	50 (14)
October 2014	SHARE and the London School of Hygiene & Tropical Medicine (LSHTM) was asked by UNICEF Kyrgyzstan to organise and deliver a one-week training course for public health professionals from the Ministry of Health, national NGOs and international organisations working in Kyrgyzstan.	11 (5)
September 2014	Training workshop organised by WaterAid at the 37 th WEDC International Conference on the Gender, Violence and WASH Practitioner's Toolkit.	n.a.
September 2014	MHM manual training events for WaterAid and other NGOs in Nepal.	20 (10)

September 2014	MHM manual training events for WaterAid and other NGOs in Pakistan.	25 (12)
	TOTAL	211 (57)

OUTPUT 4: Capacity strengthened to conduct relevant collaborative research and apply the results
Indicator 1 <i>%of proposals ready for consideration on first submission</i>
CALL C: Total number of proposals accepted for funding 7. Percentage of proposals with minor/no revisions 28.5% (n=2) Bangladesh CP: Total number of proposals accepted for funding 1. Percentage of proposals with minor/no revisions 0. India CP: Total number of proposals accepted for funding 4. Percentage of proposals with minor/no revisions 100% (n=4) Malawi CP: Total number of proposals accepted for funding 4. Percentage of proposals with minor/no revisions 50% (n=2) Tanzania CP: Total number of proposals accepted for funding 7. Percentage of proposals with minor/no revisions 100% (n=4)
Indicator 2 <i># of PhD students trained</i>
<ul style="list-style-type: none"> • Tarique Huda: Role of sanitation in preventing faecal contamination of the domestic environment and protecting health: An observational study • Sheillah Simiyu: Investigating The Relationship Between Residence and Sanitation Quality in the Urban Slums of Kisumu, Kenya • Richard Chunga: Investigating the impact of improving access to sanitation information on the adoption of improved sanitation and latrines that are easier and safer to empty. • Om Prasad Gautam Successfully completed his PhD on Food hygiene intervention to improve food hygiene behaviours, and reduce food contamination in Nepal. • Prince Antwi-Agyei successfully completed his PhD on Wastewater use in urban agriculture in Ghana – Comparison of the relative health risks among private, public and occupational domains. • Parimita Routray: Using Sanitation Marketing and Behaviour Change Communication to increase demand for and use of latrines in rural Orissa, India.
Indicator 3 <i># of exchange visits organised</i>

1. January- April 2015: Elisa Roma and Adam Stich, SHARE Research assistant, visited to Tanzania to manage SHARE evaluation of the National Sanitation Campaign
2. April 2015: Professor Sandy Cairncross visited Brazil, working on some health impact studies of water supply in the semi-arid northeast, which have confirmed the importance of quantity of water for hygiene, over water quality.

Indicator 4:

of training courses organised (on research methods, management, etc.) annually

1. June 2015: training on the Behaviour Centred Design (BCD) approach to behaviour change to staff from Action Contre La Faim (ACF) managing WASH country programmes.
2. March 2015: Training workshop on the Gender, Violence and WASH Practitioner’s Toolkit, organised by WaterAid at their London offices, attended by participants from a range of organisations including DFID, international medical corps, Care International, MSF and Save the Children.
3. March 2015: Webinar hosted by the Rural Water Supply Network and organised by WaterAid on gender and violence toolkit.
4. February 2015: MHM workshop with Masters students at the University of Leeds.
5. December 2014: “Linking Sanitation to Stunting” lecture will be presented by Prof. Sandy Cairncross and Mr. Oliver Cumming on Join Lync Meeting attended by professional from Afghanistan and India
6. October 2014: Training of health professional on WASH in developing countries organised fro UNICEF Kyrgyzstan.
7. October 2014: Evidence based WASH policy and practice. Webinar series for UNICEF.
8. September 2014: Training workshop organised by WaterAid at the 37th WEDC International Conference on the Gender, Violence and WASH Practitioner’s Toolkit.
9. September 2014: MHM manual training events for WaterAid and other NGOs in Nepal.
10. September 2014: MHM manual training events for WaterAid and other NGOs in Pakistan.

OUTPUT 5 Effective management of the consortium, including M & E of impact and value for money

Indicator 1:

Monitoring; % of indicators assessed and reported annually

100%

Indicator 2:

Value for money; wasteful expenditure on: - ineffective hygiene promotion, - unused latrines, and - superfluous evaluations avoided by following SHARE advice or implementing SHARE findings (£)

£4.6 million estimated in December 2013. This figure to be updated in the final report.

<p>Indicator 3: <i>Monitoring country research groups (platforms) and evaluation of activities</i> a) <i>No. of local research management groups set up</i> b) <i>£ value of research proposals submitted for funding and approved</i></p>
<p>a) All research management groups have been set up in Bangladesh, Malawi and Tanzania and in India.</p> <p>b) Total value of research proposal submitted and approved in the CPs: £1,213, 433 India: Total value: £ 438,719 (£250,000 leveraged by WSSCC). Malawi: £175,720 Bangladesh: £ 375,000 (£125,000 leveraged by WaterAid) Tanzania: £223,994</p>

Annex B1: Outcome mapping of SHARE activities

This table provides a final outcome mapping analysis of SHARE activities since its inception.

Table B: Final outcoming mapping analysis of SHARE activities since its inception

SHARE Boundary Partners and Progress Markers		Outputs
Boundary partner		
National Governments # in the target Country Platforms	<p>Outcome Challenge: SHARE intends to see national government and local authorities prioritise Sanitation and Hygiene in their policy agendas.</p> <p>Expect to see</p> <ul style="list-style-type: none"> Discuss and consider implementation of SHARE research findings. 	<p><i>Since its inception, SHARE research and practice has influenced national programmes in the four focus countries, achieving the love to see indicator in all them. Despite these achievements, some countries such as Malawai epxeireinced a slow start and would require a stronger commitment on SHARE phase II.</i></p> <p>Bangladesh:</p>

	<p>Like to see</p> <ul style="list-style-type: none"> • Supports and disseminates SHARE research within country. • Collaborates on the development of new research efforts. • Requests and incorporates SHARE results into programme development and improvement • Disseminates SHARE research to strengthen sector performance <p>Love to see</p> <ul style="list-style-type: none"> • Supports and funds new collaborative research with SHARE. • Incorporates SHARE research into policy. • Adapts interventions and policy approaches based on SHARE research and findings. 	<p>Love to See:</p> <ul style="list-style-type: none"> • In 2013: SHARE CP signed a MOU with the Government of Bangladesh to provide trainers to officials from the Ministry Of Women and Child Affairs in 70 districts of the country. <p>Expect to see</p> <ul style="list-style-type: none"> • SHARE in collaboration with ICDDR, B, the Ministry of Women and Cultural affairs and WaterAid Bangladesh conducted a dissemination seminar on the role of food hygiene in reduction of weaning food contamination in Bangladesh. • Through ICDDR, B SHARE is collaborating with various Government and Non-government organisations in Bangladesh related to Sanitation and Hygiene issues. <p>Tanzania:</p> <p>Love to See</p> <ul style="list-style-type: none"> • Since 2013, SHARE in collaboration with the Ministry of Health and Social Welfare (MoHSW), the Ministry of Education and Vocational Training, NIMR and National Bureau of Statistics is conducting a process evaluation of the National Sanitation Campaign, supported by DFID country and WSP (World Bank). • Sue Cavill and Yael Velleman of WaterAid, a SHARE partner, visited Zanzibar to begin a collaboration between SHARE, the Zanzibar Ministry of Health and Social Welfare (MoHSW), WaterAid, the Soapbox Collaborative and the Pemba Public Health Laboratory to support national improvement of WASH – water, sanitation and hygiene - in maternity units. <p>India:</p> <p>Love to see</p> <ul style="list-style-type: none"> • The Principal Secretary for Drinking Water and Sanitation requested a meeting with SHARE, WSSCC and the World
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		<p>Bank and a report covering next steps and action points to incorporate SHARE results into policy.</p> <p>Expect to see</p> <ul style="list-style-type: none"> • In December 2014, SHARE convened a workshop in partnership with the Government of India, the World Bank Water and Sanitation Programme and WSSCC to launch the SHARE research projects, engage sector actors in the SHARE research and to discuss potential implications for future policy and practice • SHARE supported a nutrition conference in July 2013, hosted by the Delhi School of Economics. Oliver Cumming (LSHTM) gave a key note presentation at the opening session attended by the Minister for Rural Development, Jairan Ramesh. <p>Malawi</p> <p>Love to See:</p> <p>At the Urban Talks which took place in Lilongwe in October 2014, the Representative of the city council committee of Malawi expressed interest in SHARE-funded research on solid waste management and committed to discuss the results with the committee</p> <p>.Expect to see</p> <ul style="list-style-type: none"> • Results from SHARE-funded projects were presented at the Urban Talks in Malawi. The panel comprised of: <ul style="list-style-type: none"> • Mr Humphreys Masuku, Ministry of Health, Government of Malawi • Mr James Mambulu, Water and Sanitation Specialist at DFID • Ms Ngabaghila Chatata, National Coordinator of WESNET Malawi • Mr Wellington Mitole, Urban Programme Manager at WaterAid Malawi • Mr Ben Cole, WASH Specialist at UNICEF
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<p>WaterAid and country programmes</p>	<p>Expect to see</p> <ul style="list-style-type: none"> • Discuss and consider implementation of SHARE research findings. <p>Like to see</p> <ul style="list-style-type: none"> • Supports and disseminates SHARE research within country. • Collaborate on the development of new research efforts. • Requests and incorporates SHARE results into programme development and improvement • Disseminates SHARE research to strengthen sector performance <p>Love to see</p> <ul style="list-style-type: none"> • Support and fund new collaborative research with SHARE. • Incorporates SHARE research into policy. • Adapt interventions and policy approaches based on SHARE research and findings. 	<p><i>WaterAid has been a key partner for SHARE, supporting the consortium on influencing the sector through SHARE findings. WaterAid UK has been the most efficient in its role of influencing and dissemination. A great example is the influencing national policy.</i></p> <p>Love to see</p> <p>A good example refers to the SHARE Inclusive WASH project, whose findings informed the International Development Select Committee's (IDSC) recommendations to DFID on mainstreaming disability in development.</p> <p>Like to see</p> <ul style="list-style-type: none"> • Project paper on inclusive WASH presented by WaterAid Zambia and WaterAid Uganda at WEDC conference in July 2013. • November 2013: WaterAid country programme disseminated a scoping report disseminated via internal webinars on existing successful examples of mainstreaming disability and aging issues in WASH. <p>Love to See</p> <ul style="list-style-type: none"> • The 'Undoing Inequity' project evaluation framework (IFAD / barrier analysis) is used in a mid-term review of WSUP's urban work in Maputo which aims to meet the needs of women (MHM), disabled people and people with HIV and AIDS. • WaterAid Uganda and Zambia have used the "Undoing Inequity" project evaluation framework to inform their programmatic plans and associated budgets for the next three years. • WaterAid Bangladesh is using Choose Soap and SuperAmma campaign to develop their own mass media campaign to promote hand-washing with soap at national level.
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<p>National Research Institutes</p>	<p>Outcome Challenge: SHARE intends to see national research institutes with a better understanding of the aspects which contribute to efficient, effective and sustainable sanitation and hygiene for all. National research institutions treasure SHARE research findings and capacity building</p> <p>Expect to see</p> <ul style="list-style-type: none"> • Provides feedback and advice on SHARE research priorities • Requests SHARE support for research efforts. <p>Like to see</p> <ul style="list-style-type: none"> • Supports and disseminates SHARE research. • Collaborate on the development of new research efforts. <p>Love to see</p> <ul style="list-style-type: none"> • Support, fund, or bid for new research efforts in the field of sanitation and hygiene. 	<p><i>National Research Institutes have collaborated with researchers from LSHTM and other international institutes to a great extent throughout SHARE consortium. Most of them have collaborated in the development of new research efforts and in some cases bidden for new funds for sanitation and hygiene research.</i></p> <p>Like to See</p> <ul style="list-style-type: none"> • Since 2013, The National Institute for Medical Research (NIMR) and the National Bureau of Statistics in Tanzania is actively collaborating to the process evaluation of the National Sanitation campaign. • In India, several national and public health institutes have partnered with international partners to bid for SHARE funded research. Example of these are:
<p>GLOBAL LEVEL BOUNDARY PARTNERS</p>		
<p>DFID</p>	<p>Outcome Challenge: SHARE expects to see DfID's receptivity and awareness to sanitation and health prioritised in its research strategies and business plans. SHARE expects to see DfID funding sanitation and hygiene research emerge from SHARE results.</p> <p>Expect to see</p> <ul style="list-style-type: none"> • DFID UK and Country offices request SHARE support for strengthening investment and business cases. • Sector advisors request SHARE research and synthesis on cross-cutting issues. <p>Like to see</p> <ul style="list-style-type: none"> • Country offices adapt and adopt sanitation and hygiene strategies based on SHARE research (intervention types or targets) • Water, health and education sectors are incorporated into investment prioritization. <p>Love to see</p>	<p>Outputs <i>DFID is one of the key boundary partners of the SHARE consortium. Since its inception, SHARE has provided DIFD UK and in country offices with rigorous evidence for decision making. The "Love to See" indicator was reach both for DFID UK and some of the in country offices, particularly Tanzania. Below is a list of the most important OM results for DFID throughout the SHARE consortium, showing how DFID met the Love to see Indicator.</i></p> <p>Love to see</p> <ul style="list-style-type: none"> • SHARE DFID Evidence paper (May 2013), inform business cases for sanitation and hygiene investments of eight DFID country offices (Nepal, Sierra Leone, DRC, Malawi, Tanzania, Zambia, Zimbabwe and Mozambique).

	<ul style="list-style-type: none"> Country health and education offices support increased investment in sanitation and hygiene Increased investment in high need areas based on SHARE research. Adapt their investment strategies based on SHARE research findings. 	<ul style="list-style-type: none"> 2014 Lynne Featherstone becomes a champion for inclusive WASH, committing to include inclusive WASH in School programme. SHARE Inclusive WASH project findings informed the International Development Select Committee's (IDSC) recommendations to DFID on mainstreaming disability in development. The recommendations drew on all the evidence supplied by project lead WaterAid's January 2014 submission. DFID is due to provide its response to the IDSC. <p>Expect to see</p> <ul style="list-style-type: none"> In 2013, DFID UK contacted WaterAid to ask for guidance on disability in the WASH sector. October 2013 - Lynne Featherstone (Parliamentary Under-Secretary of State for International Development) and Ade Adepitan (MBE, Paralympian and British television presenter) visit the SHARE funded Undoing Inequity project in Uganda.
International funders	<p>Outcome Challenge: SHARE intends to see funds for research and interventions directed to the themes of equity, market, urban and health and hygiene related aspects of sanitation.</p> <p>Expect to see</p> <ul style="list-style-type: none"> Recommend and request SHARE research on key issues. Request SHARE support for research efforts. <p>Like to see</p> <ul style="list-style-type: none"> Support and disseminate SHARE research. Collaborate on the development of new research efforts. <p>Love to see</p> <ul style="list-style-type: none"> Support and fund new collaborative research within SHARE. Collaborate with SHARE to change research direction in the sanitation and hygiene sector. 	<p>Love to See</p> <ul style="list-style-type: none"> AUSAID grants AUS\$ 1 million to LSHTM in collaboration with WaterAid to conduct research on inclusive WASH. In 2013, the WSSC has leveraged funds worth of 200,000 GBP for SHARE research India platform.
UN Agencies	<p>Outcome Challenge: SHARE intends to see the generation of advocacy and policy programmes to promote sanitation and</p>	<p><i>UNICEF has been one of the key boundary partners for SHARE. In 2013, SHARE signed a MOU with UNICEF to develop RIU and</i></p>

	<p>hygiene and the development of a global network to intensify efforts towards the achievement of global sanitation and health for all.</p> <p>Expect to see</p> <ul style="list-style-type: none"> • Recommend and request SHARE research on key issues. • Country offices identify and recommend priority areas for research and investments. <p>Like to see</p> <ul style="list-style-type: none"> • Collaborate on the development of new research efforts. • Revises and adapt guidelines or sanitation and hygiene. <p>Love to see</p> <ul style="list-style-type: none"> • Support and fund new collaborative research with SHARE. • Invest in new interventions based on SHARE research. • Actively disseminate SHARE research results to change programme and policy approaches of others. 	<p><i>capacity building activities globally. As a result UNICEF has met the Love to See Indicator.</i></p> <p>Love to See</p> <ul style="list-style-type: none"> • SHARE provided the Webinar lecture series entitled “Evidence based WASH Policy and Practice” to UNICEF staff (October 2014). This series of webinar draws on SHARE research findings. • October 2014: SHARE provided a one-week training in collaboration with UNICEF Kyrgyzstan. The training material featured lessons learnt from SHARE research. <p>Expect to see</p> <ul style="list-style-type: none"> • UN women invited WaterAid to present on inclusive WASH project. • UNICEF requested SHARE information on WASH and Gender violence Toolkit. <p><i>More recently SHARE has collaborated with WHO to disseminate evidence on WASH and maternal health.</i></p> <p>Expect to see:</p> <ul style="list-style-type: none"> • Findings from the WASH & CLEAN study have also fed into this global process, including through a presentation by SHARE partner IIPHG at the WHO-led global WASH in health-care facilities meeting in Geneva in March 2015. • SHARE has been involved in the WHO-led development of an action plan to tackle inadequate WASH in health facilities, feeding results from SHARE-funded research on WASH in health facilities. <p>Love to See</p> <ul style="list-style-type: none"> • SHARE has participated in the consultation process for the Zero Draft of the <i>UN Global Strategy for Maternal, Newborn, Adolescent and Child Health</i> (MNACH), feeding SHARE findings into the process to encourage a greater focus to the role of WASH in MNACH.
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<p>Academic institutions:</p>	<p>Outcome Challenge: Use evidence from project on building curricula and teaching materials</p> <p>Expect to see Use evidence from project on building curricula and teaching materials.</p> <p>Like to see Collaborate on the development of new research efforts in sanitation and hygiene.</p> <p>Love to see Support, fund, or bid for new research efforts in the field of sanitation and hygiene.</p>	<p>Love to See: Results from SHARE funded research such as the MHM systematic reviews, the Orissa Trial and SuperAmma Campaign are used to build teaching and training materials. Such as for example: Tropical Environmental Health module part of the MSC in Public health in developing countries taught at LSHTM. October 2014. Training of UNICEF staff and Kyrgyzstan government officials</p> <p>Like to See: The University of Morogoro in Tanzania collaborated with LSHTM in preparing a bid for designing Phase II of the National Sanitation Campaign.</p>
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Appendix 1: Students' testimonies

Om Prasad Gautam (supervised by Dr Val Curtis)

I started my PhD journey on 26 September 2011 and successfully completed my PhD in April 2015. I built my research capacity and deepened my knowledge throughout the PhD tenure and I am now able to successfully design, implement and evaluate food hygiene interventions and conduct rigorous research. I have been provided with the opportunity to present and disseminate my work at different international conferences, webinar, workshops and meetings. In addition, SHARE has helped me to set up my blog to disseminate how the food hygiene intervention trial was designed, implemented and evaluated in rural Nepal. During the PhD tenure, I have attended different modules at LSHTM such as extended epidemiology, analysis and design of research studies, statistical methods in epidemiology, tropical environmental health, a stata course and various global health lecture series. As the principal investigator I led the 'food hygiene intervention trial' in rural Nepal through which I gained and demonstrated practical research capacity and experiences. I have been involved in teaching the 'Tropical Environmental Health Course - behaviour centre design for WASH together with our colleague at LSHTM and gained and demonstrated research data analytical skills and as a result I was able to analyse all my PhD research data myself. The PhD has taught me critical skills and I am now looking at evidence in a different way as before the PhD. This is further strengthened by the fact that I have been asked to reviewing journal papers as an independent reviewer for international peer-reviewed journals. Through SHARE I have been able to present my work at different international conferences, including the most recent AfricaSan in Senegal, and I have published my first paper. However most importantly as a result of my work within SHARE and new skills I now have job at WaterAid UK as a 'Technical Support Manager – Hygiene' (global hygiene lead for WA) role that I joined in May 2015

Prince Antwi-Agyei (supervised by Dr Jeroen Ensink)

It was one of my greatest moments when I received an email from Dr Jeroen Ensink confirming my place as one of six students for a PhD scholarship at the London School of Hygiene and Tropical Medicine. I was happy for three reasons – I achieved one of the things I wanted to do within the next three years, the end result of being awarded a PhD degree and the fact that the PhD would be done in one of the best and reputable schools in the world. I enrolled in September 2011 and Dr Jeroen Ensink offered to be my academic supervisor. My relationship with him made me settle quite fast at the school. I also had two main expectations for the PhD program – to broaden my knowledge in WASH and to develop my research and analytical skills in order to help me make a difference in terms of impacting knowledge to others and also improve the health of people.

I must admit that I have really learnt and achieved so much during my three and half year PhD programme at LSHTM. Although, I had extensive experience in the consultancy field, I was limited in doing rigorous research and statistical analysis since most of the projects I undertook had minimal or no such components. Luckily for me, this is one area that I have benefited most during my PhD. The whole experience of developing and designing a research proposal, seeking ethical approval, collecting and analysing data, and making sense of the data have

had significant impact on my professional life. I have developed the skills and expertise and have a great experience of working independently on research projects but also to collaborate effectively with other colleagues. Throughout the PhD program, I had to collaborate with several people either as part of my field work, during data analysis, or when writing manuscripts. Through this, I learnt and developed the skills to manage time, finances and more importantly to manage people, especially those with different cultures (field workers, collaborators, co-authors, supervisors etc.). In addition, I now have several collaborators (both within academic and non-academic institutions) from various countries and some of whom I have already started working with on WASH related projects. One of the key messages I also got during my PhD was how the design and data collection method can influence the reliability of research outcomes. To this end, I have learnt and acquired the requisite skills to design an effective research study, do proper field work, or conduct good data collection and also to undertake a more rigorous statistical analysis devoid of biases. These skills were also developed by applying some of the techniques I learnt in some of the modules at the school including Statistics for Epidemiology and Public Health (STEPH), and Statistical Methods for Epidemiology (SME). These modules and related ones also enabled me to learn and use other statistical and mathematical modelling and data management softwares such as STATA, @risk, NVIVO, endnote and Berkely Madona.

Another key achievement during the PhD is my ability to critically appraise my own work and also those of others (published literature), special thanks to my supervisor and co-authors for coaching me on this. I am also sure that this skill could be one of the reasons why I am currently a reviewer for the journal of water, sanitation and health and also the Journal of Water, Sanitation and Hygiene for Development. I have also improved upon my own academic and scientific writing skills and now able to write with more clarity and simplicity. I have managed to submit several abstracts for international conferences and have at least four manuscripts from the PhD in their final stages for submission to reputable journals. Another research skill that I have acquired is the ability to conduct a more focused and comprehensive literature review using reputable databases such as PubMed. I have also benefited from various skills development program in the school or within the broader university of London including sessions on team building, career planning and introduction to teaching. The session on oral presentation, coupled with my experience in presentation locally and also in international conferences have improved my presentation and oratory skills as well as my ability to present within short time periods. This skill helped me win two awards – one for a poster presentation at a poster session for PhD students at LSHTM, and another award for a verbal presentation at an international conference.

Non-academically, the PhD experience has helped me to be more patient and tolerable with myself and also to others. Again, coming from a background where women are expected to do most of the cooking, I also consider the PhD program as a great experience for me as I have now managed to learn how to prepare some more local dishes to cut down feeding cost. My involvement in extra-curricular activities such as playing soccer with LSHTM team mates and also going on some sight-seeing ventures, both within and outside London was also vital in keeping my momentum and vigour for the PhD. Skills for networking was also another major component I learnt and benefitted from during the PhD. I now have various networks from within the school and also during the various international conferences and workshops I attended. This skill has also helped me meet various pioneers and well known figures in the WASH sector whom I had previously only read about their work.

Overall, the PhD programme was a huge experience and has played a significant role in impacting my life – academically and non-academically, and I am grateful to the DFID SHARE funded project at LSHTM for funding the whole programme.

Annex C: Capacity development strategy

Background

In SHARE Phase I, capacity development activities focused on (a) increasing the capacity of individuals and institutions to carry out rigorous and relevant research on sanitation and hygiene and to implement and carry out specific programmatic activities within the sector; (b) increasing the capacity of institutions in the sector to assess, interpret and use evidence for designing programmes, or policies. In Phase I, SHARE supported six PhD students, more than 25 MSc students, and organised training events. It provided peer review for proposals that researchers submitted to the different funding rounds and national platforms, and offered external peer review to all reports produced under the national platforms, through which skills are developed and tailored to the needs of each proposal writing team. In phase 2 SHARE will continue to build on the two aspects of capacity development set out in the first phase. However, the focus of activities will move away from MSc and PhD students to early and mid career scientists established within national institutes and universities, and staff within national programmes within the two focus countries of Malawi and Tanzania, though activities will also be supported in Kenya and Zambia.

The objectives of the capacity development under SHARE are:

1. To help expand the capacity of **national core partners** and **national sector actors** in carrying out, interpreting, and adapting applied research to the development of national sanitation and hygiene policies and programmes.
2. To expand the national research capacity of research **institutions** and capacity to disseminate and engage with policy and programmatic communities to ensure uptake of findings

This strategy paper outlines specific capacity development objectives for each of the partners in bold above and planned activities for delivering these. It also proposes a monitoring and evaluation system for monitoring these.

1. National core partners. In both Tanzania and Malawi national partners have identified the acute need for expanded capacity in carrying out, interpreting, and adapting applied research to the development of national sanitation and hygiene programmes. These partners include national ministries, DFID staff, and key partners such as WSP and UNICEF. A coordinated capacity development programme will include a combination of: didactic training, participation in national research projects, and collaborative adaptive evaluation efforts. This is likely to be designed as intensive, participatory effort with a limited number of partners in each country.

Activities

a. National sector programmes. One of SHARE's most important potential avenues for

increasing VfM is through increased size and effectiveness of national sector programmes, including those supported by DFID and others. While current investments rely on available research and evidence, they necessarily include a wide range of assumptions that strongly influence whether the programmes will achieve their desired results efficiently in this particular national context. Examples of critical assumptions include whether a particular behaviour change approach is working in a national setting, whether the approach is addressing the most critical exposure pathways, whether the approach is being delivered in a cost-effective manner, and whether the approach is effective in reaching the poor. Doing so requires capacity for interpreting and adapting global research, resources and capacity for adaptive evaluations, and programmatic latitude to adjust strategies to maximise their effectiveness. Currently SHARE is working in Tanzania on request of both DFID and the local ministry together with the National Institute of Medical Research to evaluate the national sanitation programme, and to help develop a new strategy. We aim to provide similar support when and if required will be provided in Malawi, and there are ongoing discussions to support similar work in Nigeria.

b. Trainings/courses. During the first phase of SHARE a web-based seminar series was developed for UNICEF country staff. The seminar series was provided by LSHTM staff and dealt with both the evidence base for WASH, but also more general information on how to develop, conduct and publish WASH research, including a session on ethics and a practical session working with DHS and MICS data. We will run this session again in 2015, and will explore the opportunities to offer these webinars wider and include other organisations. Other trainings or courses will be developed or offered in response to need.

2. National sector actors. In many countries, a wide range of sector actors (eg NGOs, district officials) would benefit from improved capacity to interpret, apply, and adapt research findings to programme development. Building on national research and core partners, a capacity development effort for this audience is likely to combine short face-to-face courses with online training, to reach a wide audience with current evidence. This approach could be scaled to other settings using the developed materials and will be explored during Phase II.

Activities:

a. National research programmes. Within the SHARE budget, money has been set aside for national research. National research priorities in Malawi and Tanzania have not yet been narrowly defined, and meetings with key stake holders, both in the implementation and research sector will be conducted to identify research priorities (See RIU strategy for more detail on stake holder and research landscaping and national conveying events for stakeholders). The selected research partners in Malawi (College of Medicine and The Polytechnic, University of Malawi) and Tanzania (Mwanza International Trial Unit) have a strong record in conducting bio-medical research, though lack a long history in sanitation and hygiene research. In order to build strong and well established centres, researchers and WASH implementers will be brought together in order to facilitate discussion, and to establish research priorities. No formal calls for 'national research' will be set, but research priorities will be developed in joint meetings and round tables, supported and facilitated by the research in

to use team. All proposals developed will be submitted for external peer-review, in order to ensure both relevance and assure good research quality.

3. National research capacity. National research capacity goes beyond training individual PhDs. It requires engaging national research institutions (university and others) in collaborative research, creating opportunities for the development of young investigators, and working with national universities to train future researchers. SHARE will develop these activities as a part of proposed research and capacity development activities.

Activities

a. Global sanitation and hygiene research fellows (SHARE fellows). SHARE research will emphasise opportunities for post-doctoral research fellows from southern countries within planned research initiatives. Fellows will be paired with mentors from SHARE partners, and global research institutions. Additional mentoring and professional development might include rotations, research exchanges, and international workshops will be developed. It is envisioned that all four African research partners (including: Great Lakes University Kisumu, Kenya and the Centre for Infectious Disease Research in Zambia) will identify an early, or middle career researcher to be identified as the SHARE fellow (SF). The intention is to involve them in the research conducted under the themes and to encourage the SF to develop his or her own research agenda. The SF will be actively encouraged to develop and submit other research proposals outside SHARE but within the WASH field. A personal budget of 6,000 GBP, managed through a personal development plan, will be established per SF that can be used for training, attending conferences, or conducting individual WASH research that could serve as a pilot to a larger grant. The SF will be fully funded under SHARE in order to guarantee that they have sufficient time to develop their WASH career.

b. MSc/PhD scholarships Although the focus in SHARE Phase II will be on mid-career scientists, SHARE does acknowledge the need for capacity development at all levels, and therefore also the importance of supporting students with an interest in hygiene and sanitation research. Funding up to £1,000 will remain available for MSc students conducting their work within a SHARE country and on a hygiene or sanitation topic (An estimated one per year per country (12 in total). Funding will be available for 'local' students and funding decisions will be made by the capacity development director and the research director. Students will be provided with support to develop their proposals, analyse the data, and where deemed possible, in the writing up of a paper for peer review. At least one open call for scholarships will be held, although depending on funding availability there may be an additional one. The first call for proposal will be issued in August 2015

c. RIU on selected research SHARE research and national research funds continue to create research findings and outputs. SHARE will continue to provide our partners with support and training to help deliver RIU, and in this way build in country RIU expertise.

Potential indicators and targets for success of capacity development

Maximising SHARE's Value for Money (VfM) for capacity development will require ensuring that outcomes and impacts extend beyond the time of the programme itself. It is useful to think about this legacy at both the national and global levels. At the national, there are four critical elements to sustained impact of sanitation and hygiene applied research:

- Capacity for new rigorous research generated by national institutions and investigators
- Capacity of national programmes to use global evidence and contextual information to develop and evaluate effective programmes
- Connecting national actors to a global community of sanitation and hygiene researchers and practitioners
- Enabling national sector partners to develop and adapt evidence on what works and how

Capacity development activities often overlap with, or coincide with other types of activities such as research, research into use and M&E. This is deliberate as capacity development can only happen if it is part of all activities and does not happen in isolation. For example, part of efforts to increase the uptake of specific research might be to build their capacity to interpret it. The line between briefings promoting the uptake of specific research and trainings to increase capacity for using evidence is technically important, but does not need to be over-emphasised.

Monitoring and evaluation of capacity development

Capacity development will be evaluated at four different levels, with these indicators reflecting both the quantity and quality of the activities:

- Process: Number of activities carried out, papers published, grants submitted etc
- Output: Number of individuals or institutions with the intended capacities and skills following the training (or increased level)
- Outcome: How individuals or institutions use the new skills to carry out relevant activities
- Impact: The consequence of the incorporation of new programmes, processes, procedures and research skills in terms of health, financial or development

Results will be harder to measure further down the chain, especially as capacity development requires time, and several impacts (for example grant submissions and awards) are likely to lie outside the duration of SHARE.

Process

Across the diverse types of activities we can systematically apply standard educational assessment methods to assess quality. This could include the following:

- Whether there are stated appropriate learning objectives, examples include whether there are learning objectives for a training or a course and whether there is an end of activity event for assessing knowledge or capacity
- Whether there is a method for assessing whether recipients accomplish the objectives and the quality of the activity

- Number of papers submitted, accepted, impact factors of peer-reviewed papers and the number of citations
- Gender and equity

Output

- Whether recipients have successfully met the learning objectives at the completion of the activity
- Whether recipients or outside evaluators assess that the training was effective in achieving the objective
- Examples include % of respondents who successfully complete a test, # students completing a course, good rating through student or peer evaluations of a training

Outcomes

- Whether researchers or practitioners incorporate their new research skills into applied research outputs (eg proposals, papers, conference presentations, applied research reports, new research projects, mentoring others)
- Whether practitioners use new technical skills in developing programmes (e.g. developing a MHM training using information received through a training or reference manual)
- Whether practitioners use new skills for interpreting evidence to design new programmes (or design them better) (eg DFID advisors use evidence based techniques to develop business cases or influence programmes)

Impacts

- Improved access to WASH resulting from better programmes (eg number of people with access, costs averted, health improvements)
- Establishment of sustained research programmes (eg long-term funding achieved by southern research partners, monetary value of research)
- Impact on individual's career progress; development of institutional programmes to embed SHARE training for staff; ability of institutions to carry out rigorous research sanitation and hygiene
- Improved access to international funding for research into sanitation and hygiene

Improving the M&E of our capacity activities

1. Ensure that all capacity development activities have clear learning objectives and means of assessing them, and that institutions continue to develop these as they take on their own training.
2. Systematically collect and monitor output level data including evaluations by participants and post-assessments. For most degree students this would be identifying specific milestones (eg completion of thesis, completion of course).
3. Develop targeted evaluations to assess the extent to which practitioners have used skills developed through these activities in their programmes. This could possibly be done in a follow up survey. That survey could also assess additional needs (what else is needed to better incorporate the skills into practice). These will differ and should be designed in collaboration with the developer of the training.

Annex D: Research into use strategy

Introduction

This research into use strategy draws on the strategy for Phase I and on SHARE's practical experience of research into use over the last five years. This strategy sets out how the knowledge that is needed by policy makers and practitioners to improve policy and practice will be identified and generated. This process is as much about 'listening' as 'speaking'. The strategy describes how SHARE will 'listen' in order to identify what information would be most influential and useful and how SHARE will 'speak' in a way that is compelling and that enables uptake by our target audiences. By effectively communicating the research generated to key audiences and in a useful and accessible way, SHARE aims to contribute to better performance and accelerated progress.

The strategy sets out why, how and who SHARE seeks to influence and inform. Section 2 describes how the approach to RIU in SHARE Phase II is informed by the experience of the first five years of the programme. Sections 3 and 4 describe the objectives and principles for SHARE research into use and how these will contribute to the broader purpose and goal of the consortium. Sections 5 and 6 describe the target audiences and how they will be reached and engaged.

Building on lessons

The SHARE approach to research into use for Phase I was informed by the previous experience of SHARE partner collaboration as well as the reviews commissioned by DFID on RPC research into use. These successful collaborations were based on identified common objectives and where the partners brought together differentiated but complimentary capacities and resources. The DFID reviews, in turn, emphasised the need to integrate research and research into use into a broader RIU approach from the design stage, forge links early on between researchers and the policy and decision-makers, and to combine accessible research with the promotion of an enabling environment.

Through this approach, SHARE achieved numerous success stories over the last five years, and these are documented in our Annual Reports. There were also a number of lessons learnt, of which three are key for research into use:

1. **Consulting the sector and beyond** - Ensuring that the research selected emerges from as broad a consultative process as resources will allow and therefore responds to clear demand.
2. **Embedding research into use from the start** - Working closely with core sector partners from the very beginning to ensure that research into use considerations guide the research process, from identification of knowledge gaps through refining research projects to evaluating them and disseminating findings.
3. **Using national expertise on research into use** – Partnering with national research institutions whose networks and research into use approaches can hugely broaden SHARE's national reach and influence, enrich relationships with policy and decision makers, and secure SHARE's legacy in-country.

As SHARE moves into Phase II, it will continue to build on the successes of SHARE partner collaboration, as well as drawing on the lessons learnt in Phase I.

Aims and objectives

The aims and objectives of the SHARE research into use strategy remain the same in Phase II. The aim is that **'SHARE communication of research and synthesis influences better sector decision-making and increased priority for sanitation and hygiene'**.

The four objectives of the research into use strategy are to:

1. Assess demand and opportunity for research into use.
2. Engage and influence sector decision-makers and policy makers, practitioners and researchers.
3. Establish and strengthen relationships for a nationally-led research into use approach.
4. Monitor SHARE influence on policy and practice to refine and strengthen strategies.

The research into use objectives contribute directly to the major outputs and outcomes described in Figure D 1.

All SHARE research and synthesis is conceived to 'influence others' whether this is by characterising problems so that others can address them, identifying solutions so others can incorporate them, or demonstrating benefits so that others can ensure appropriate priority. SHARE research into use will support by linking these research outputs to outcomes through activities that engage and influence key audiences or 'boundary partners'. The research into use function will support in assessing demand and opportunities and identifying the 'right research questions' to address these.

The research into use activities are outlined in more detail in Section 6 and relate to the following four SHARE activity blocks depicted in the figure below: **convening, capacity-building, translation and engagement, and monitoring.**

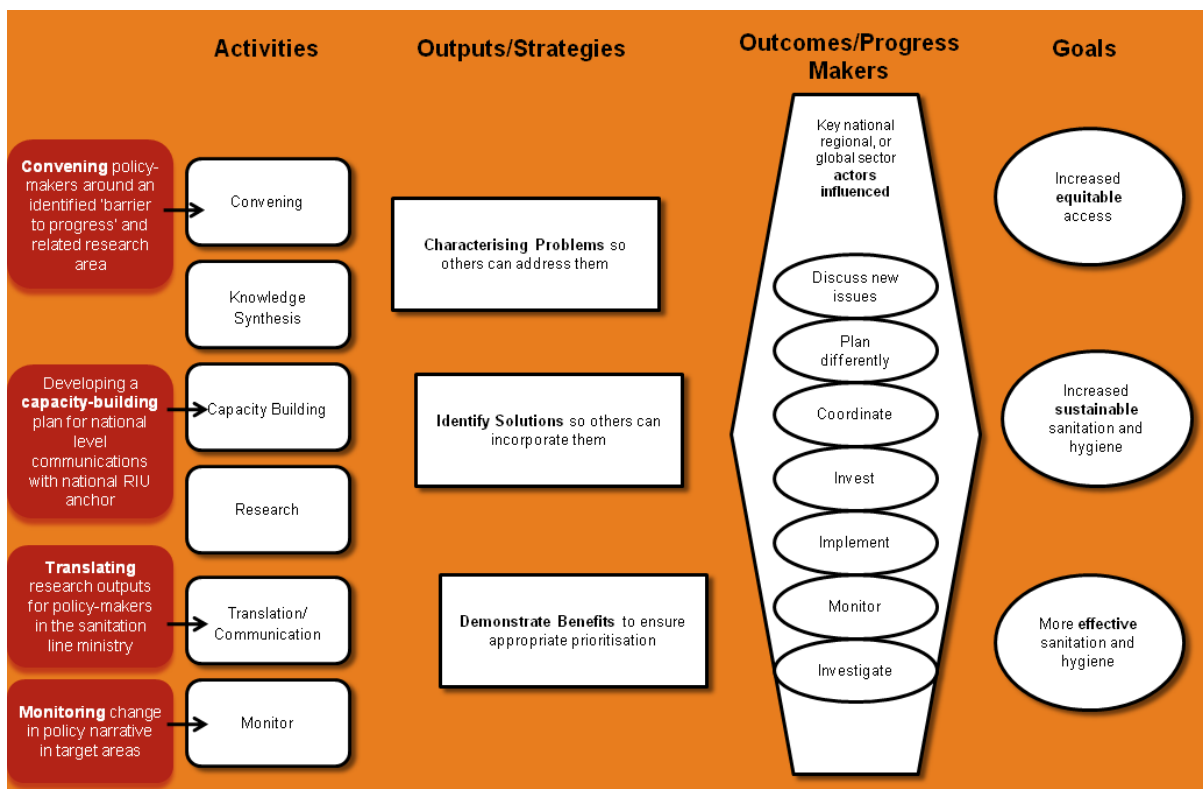


Figure D 1: Major outcomes and outputs with SHARE RIU activity blocks

The SHARE approach

SHARE uses ten framing principles to maximise research into use. In Phase II, these will continue to enable a focused and pragmatic approach that matches demand and opportunity with a supply of appropriate and accessible knowledge that can drive better decision-making:

1. **The right actor** – targeting those with power and influence.
2. **The right level** – targeting knowledge at the appropriate level.
3. **The right time** – matching research with opportunities for use.
4. **The right approach** – versioning research outputs for uptake by users.
5. **Demand-led, evidence-based change** – combining a traditional 'knowledge-led' model with a 'problem-led' model to address both the 'push' and 'pull' constraints in policy and practice uptake.
6. **Researchers as influential communicators** – building direct engagement between researchers and relevant audiences by supporting researchers to build dialogue around their research at all stages in the research cycle.
7. **Opportunistic and responsive** – building strong relationships and maintaining dialogue with key sector actors in order that SHARE can respond quickly to short-term opportunities that arise where research can make a difference.
8. **Innovative media for communicating research** – employing a user-led approach to the resources and materials produced, using audio and film as effective media for engaging key audiences where appropriate. The SHARE website will be upgraded and continue to serve as a platform for these resources.
9. **Utilising and extending the existing reach of SHARE partners** – SHARE brings together a diverse group of organisations, all with significant research track records in

influencing policy and practice. The knowledge generated by SHARE research will continue to help strengthen the research into use and advocacy agendas of the individual SHARE members and partners.¹

10. **Moving beyond the sector** – Sanitation and hygiene cut across different sectors and area foundation for so much else. As it has done in Phase I, SHARE will pro-actively look to the health sector in Phase II to communicate the importance of sanitation in terms of its own progress. This means working across ministries, agencies, departments and teams at different levels.

Targeted areas of change

What decisions does SHARE seek to influence and inform?

Better performance is defined by SHARE as:

1. **Increased equitable access to sanitation and hygiene**
2. **Increased sustainability of sanitation and hygiene**
3. **Increased effectiveness of sanitation and hygiene**

SHARE seeks to contribute to better performance through influencing the decisions of key sector actors. These actions will be monitored as ‘progress markers’ and SHARE research into use will seek to influence target audiences to achieve these shifts in policy and practice. The outcome mapping of who needs to do what to secure better sector performance will be elaborated for each individual research project under the four global themes.

Who does SHARE seek to influence and why?

The primary target audience for SHARE RIU efforts are **national governments** in countries with low levels of sanitation coverage. As well as the line ministry for sanitation, in some countries there will also be other ministries that have a significant role in the sanitation sector such as the ministry for health or education. Beyond national government, local government and municipal authorities will be key target groups. They regulate their own areas and any new models and designs will need to be incorporated into the regulations if they are to go to scale. Municipal authorities may be important contributors of resources, such as finance and/or space for toilet provision.

Around national government, various **national sector actors** wield varying degrees of influence over national policy and prevailing practice. These include bi-lateral donor agencies, multi-lateral organisations, international financing institutions, international and national civil society and academia. These actors vary across national sectors but include UNICEF, the World Bank Water and Sanitation Programme (WSP) and DFID country offices. Local government and municipal authorities are important. Also important at the local level are community groups and other civil society agencies. Their familiarity with effective models for improvements is key to scaling up local activities and building a political momentum for sanitation. It is also important that knowledge is communicated so that poor people have direct access to the information they need to change policy and practice.

¹ SDI and WaterAid are engaged in national sector dialogue in over 25 developing countries across sub-Saharan Africa and South Asia.

SHARE's global RIU strategy targets **international sector actors** who have influence over national level progress in developing countries with low levels of sanitation coverage. Global RIU activities will enhance and support national RIU strategies where organisations and agencies operate at both these levels. SHARE partners are already engaged in many relevant international processes and SHARE will seek to strengthen and leverage this existing access and influence² rather than setting up alternative channels.

At the **regional level**, SHARE will engage external platforms and processes where these bring the opportunity to increase SHARE's reach and impact national policy in off-track countries. One example of a regional platform that will be targeted includes the Africa Ministerial Conference on Sanitation (AfricaSan) and the Africa Water Week (AWW).

The specific groups to be targeted by SHARE research into use at the three levels are listed below. SHARE research into use will target these audiences using appropriate channels and forms of communication to engage them. Efforts will be made to translate synthesis and research outputs to maximise the likelihood of uptake among these audiences.

At the national level in the focus countries, SHARE will target:

- Sanitation and hygiene line ministries³ and municipal authorities
- Secondary ministries – such as health or education
- DFID water and sanitation advisors – including infrastructure, health and education professionals
- Key development partners/bi-lateral donors – sector coordination mechanism
- Multi-lateral agencies active in the sector – especially UNICEF and WSP
- National civil society actors and platforms
- Academic institutions and networks
- Where appropriate, the formal and informal private sector.⁴

At the regional level in sub-Saharan Africa, SHARE will target:

- DFID regional structures – particularly the South Asia Research Hub, Africa and Asia Regional Advisors
- Regional sanitation conference AfricaSan
- Research platforms
- National opportunities in other countries in sub-Saharan Africa where SHARE partners are present

At the global level, SHARE will target actors and processes relevant to national progress:

- High volume bi-lateral aid donors for the sector
- Key UN bodies – WHO, UNICEF, WSSCC, UN-Water, WSP

² For example, WaterAid has a seat on the Sanitation and Water for All Secretariat as a 'sector partner' alongside representative bi-lateral donors, developing country governments, multi-lateral agencies and civil society.

³ See national RIU strategies for line ministries and institutional arrangements.

⁴ The criteria for engaging the private sector are where credible opportunities arise for solutions to poor people's lack of access to services. An example of where this has already happened is the work done with the Tata Group around developing low-cost on-site sanitation products for the Indian market. Historically, LSHTM has a long track record of successful collaboration with the three principle soap manufacturers: UNILEVER, GlaxoSmithKline and Proctor and Gamble.

- Development Banks – World Bank, African Development Bank and Asian Development Bank
- Philanthropic Foundations – especially the Bill and Melinda Gates Foundation
- International civil society platforms – End Water Poverty (EWP), FreshWaterAction Network (FAN) and the Partnership for Maternal Newborn and Child Health (PMNCH); Scaling up Nutrition Movement
- Key civil society organisations – IRC, Tearfund, Save the Children, Oxfam, ACF
- International research funders – especially the Wellcome Trust
- International research institutes – WEDC, Cranfield University, Leeds University, Liverpool School of Tropical Medicine, University of East Anglia, Water Research Commission in South Africa, Robens Centre at Surrey University; Water Institute at The University of North Carolina at Chapel Hill
- Relevant International Conferences: Stockholm Water Week, WEDC Conference, IRC Symposia, UNC Water Institute Water and Health Conference, AFRICASAN, UNICEF International Conference Against Child Undernutrition
- The Research for Development website – www.research4development.info/

SHARE research into use activities

The following section describes some of the activities that will be undertaken under each of the four research into use objectives.

The emphasis of research into use activities will vary across focus countries reflecting the external environment and in line with the national RIU strategies. At a global level, research into use activities will narrow in focus over the three years as SHARE synthesis and research is produced targeting more specific ‘barriers to progress’ with clearer policy and practice audiences.

Assess demand and opportunity for research into use

SHARE seeks to generate research that is both rigorous and relevant. The research into use function plays a role in ‘scanning’ the sector to identify ‘barriers to progress’ through multi-stakeholder engagement and policy dialogue. SHARE will assess the demand for research and opportunities for use on an ongoing basis. These activities will be undertaken jointly by researchers and communication staff and include:

- Consultation and scanning
- Generating demand among users
- Dialogue activities with policy groups
- Building dialogue between researchers and target audiences.

Influence and inform sector decision and policy makers, and practitioners

SHARE has identified target audiences for the research and synthesis generated and a range of activities will be undertaken to influence these actors and inform better decisions. These areas are described broadly as convening, translating, responding and projecting:

- **Convene** target users for uptake

Target audiences will be convened in various ways to maximise the likelihood of engagement and uptake. From informal policy briefings, to academic seminars, to

conference presentations and workshops, SHARE will take a demand-led approach to engaging key audiences around our evidence for change. SHARE will capitalise on external processes and events as identified in the global and national calendars that will be developed during the first six months of year one and then on an annual basis.

- **Translation** of SHARE synthesis and research for target audiences

This will be done jointly with researchers. Major synthesis or research outputs will require translation into multiple versions for different audiences, from papers in peer-reviewed journals to concise policy briefings and toolkits for practitioners.

- **Rapid response** to policy opportunity

SHARE's approach is 'opportunistic and responsive'. Where opportunities are presented for quick returns through rapid uptake of synthesis or research, SHARE will respond tactically. Some of these opportunities can be identified in advance as 'likely' and planned for accordingly such as national budgeting and planning cycles or international events. Others will not be anticipated – such as an unplanned change in government or a natural disaster that gives rise to a large burden of disease relating to sanitation or hygiene⁵. SHARE will respond, according to the demand and internal resource constraints, with verbal and written briefings, face-to-face meetings, or teleconferences/video conferences.

- **SHARE projection – website based research into use**

The SHARE website will be upgraded for Phase II and will serve as a platform for SHARE activities and as a principal point of projection where all users can access information on SHARE activities.

Strengthen national research into use

Support will be given to establish and strengthen the national research into use led by our African partners. This will involve supporting the development and implementation of the research into use component of each research project.

Effective internal research into use activities are essential in building and strengthening relationships between researchers from across the different partners. Regular updates featuring research news from across the consortium, as well as wider developments and opportunities within the sector, will be sent to all SHARE partners. The website will be a key platform to facilitate the exchange of information across the consortium.

Research into use three-year plan

SHARE's overarching aim is to contribute to realising universal and sustainable access to safe sanitation and hygiene and, through this, to improve the health outcomes of those living in low income settings. SHARE's approach centres on improving sector performance through influencing policy and practice with rigorous and relevant research and synthesis.

SHARE is just starting an exciting three year extension. Phase II of the programme, running until 2018, aims to maximise the value for money and legacy of Phase I (2010-15) and lay the groundwork for sustained impact by focusing efforts on four global thematic areas with potential for continued research into use (RIU) and additional research investment. These

⁵ An example is the advice provided by Prof Sandy Cairncross to the government of Pakistan recently on the prevention of cholera in extreme flooding.

areas are: nutrition, pro-poor sanitation in urban areas, weaning foods, and vaccines. Phase II will focus on sub-Saharan Africa, building on the foundations laid during Phase I in Tanzania and Malawi and drawing on new strategic partnerships in Kenya and Zambia.

RIU is central to SHARE's approach. All SHARE research and synthesis is conceived to 'influence others', whether this is by characterising problems so that others can address them, identifying solutions so others can incorporate them, or demonstrating benefits so that others can ensure appropriate prioritisation.

It's important to ensure that RIU remains at the heart of research and synthesis plans in the next phase of SHARE. The Phase II Research into Use Strategy is designed to ensure this. This planning paper aims to set down what this strategy will look like in operational terms, year by year (2015-18).

RIU in Year 1 (2015)

As part of its mandate to ensure the uptake of new and existing evidence into policy, SHARE engages research users in the research process from its early stages. With this in mind, the RIU aim for this first year is two-fold: (a) to support research teams to ensure that SHARE-funded research *responds* to demand at the national level in our focus countries and has international relevance; (b) to support in **generating** demand for SHARE-research that responds to clearly defined sector need. This will involve the following steps (as per Figure 1):

- 1. Policy and research landscaping and stakeholder analysis** - SHARE aims to provide relevant and rigorous research that improves policy and practice. The policy and research landscaping (PRL) and stakeholder analysis focuses on this question of **relevance**. It aims to ensure that SHARE's research does not duplicate existing research initiatives and responds to national priorities and demands for research. By carrying out a PRL exercise, each research team will identify (or document) national research priorities and demands, and current research gaps, with the support of the SHARE Research Uptake Officer (RUO). Through the stakeholder analysis, the research team will identify (or document) key stakeholders working in this field. In parallel, the SHARE Policy Research Manager will carry out a similar exercise at the global level. This body of work will help ensure that SHARE's research is embedded within the national context, and provides knowledge that is influential and useful to sector actors at both global and national levels.
- 2. National and global events convening key stakeholders** – Following completion of the PRL and stakeholder analysis, a national event will be held by SHARE partners, to bring together key stakeholders identified to discuss the proposed SHARE-funded research in Tanzania, Malawi and Kenya. Global events, focused on the four SHARE priority themes (nutrition, complementary food hygiene, vaccines and pro-poor urban sanitation) will also be held. These will be organised by the SHARE RIU team. Together, these events will strengthen the research proposal(s) and, by engaging research users at both the national and global levels from the very beginning of the research process, will foster greater interest in SHARE's research and should increase the uptake of the findings into policy and practice at the global, national, district and local levels.

- 3. Maintaining core RIU functions** – The SHARE RIU team will use its website (which will be upgraded), newsletter and online platforms (Twitter, SlideShare etc...) to document this consultative process and continue to disseminate emerging research findings and track RIU from Phase I. SHARE partners will be invited/expected to contribute to updates on Phase II projects. Briefings/workshops with key stakeholders will continue to take place, and national and global opportunities for dissemination of Phase I research and introduction of Phase II work will be used to their full potential.

The activities carried out in Year 1 will be documented in a pathfinder report, produced by the SHARE RIU team.

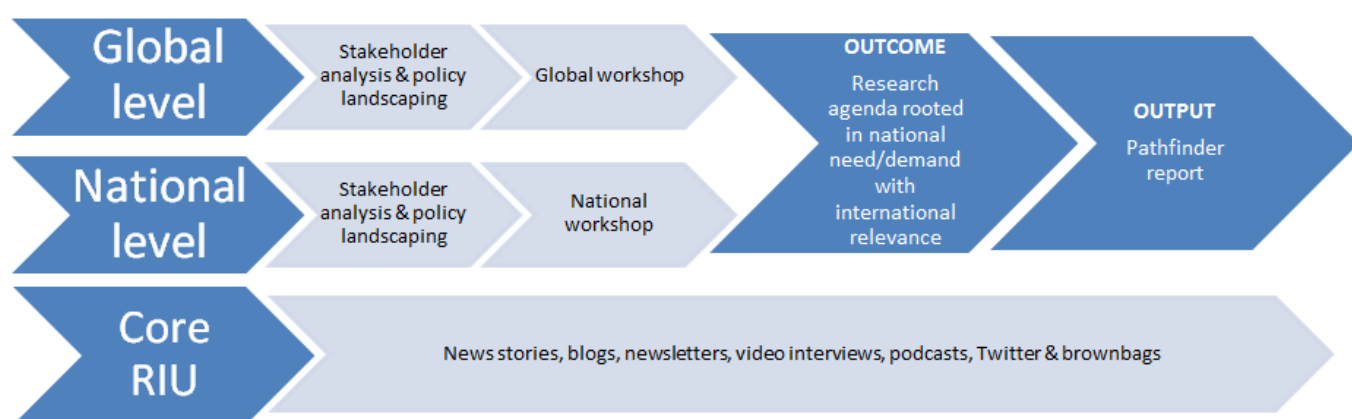


Figure D 2: SHARE RIU in Year 1

RIU in Year 2 (2016)

The second year will build on the solid foundations for ensuring RIU created in Year 1. The RIU aims for Year 1(ensuring SHARE-funded research is responsive to demand and also generating demand) will carry over. In Year 2, with the research projects now approved and underway, these efforts will become more targeted and will involve the following steps:

- 4. Outcome mapping exercise** – Once the research protocols have been approved and the projects are set to begin, an ‘outcome mapping’ exercise will be carried out by research teams with support from SHARE’s RUO and Monitoring and Evaluation Officer. This exercise will map prospective research users, identify specific change objectives for each, and list specific RIU activities that enable/encourage the realisation of these change objectives.
- 5. RIU activities emerging from the outcome mapping exercise** – These might include: update reports or blogs on research progress, tailored translation of preliminary findings, presentation of the research at national meetings, and/or involvement in national sector processes where appropriate. These activities will be led by the research teams, with support from the SHARE RUO.

RIU in Year 3 (2017)

The final year should see the emergence of research findings from each of the funded projects. This is therefore a crucial year for RIU. The following activities are planned:

- 6. On-going RIU activities emerging from outcome mapping (see 5).**
- 7. Translation** – based on the intended research users, tailored communication of the findings (using appropriate media) will be produced by research teams with support from the SHARE RUO.
- 8. Final national event** – a final national event will be organised by the research teams with support from the SHARE RUO to disseminate findings and continue to engage research users around their implications for policy and practice.
- 9. Final global thematic event** – a final global event based on SHARE's four research priority areas will be held by the SHARE RIU team with support from the relevant research teams, to disseminate findings and continue to engage research users around their implications for policy and practice.

Annex E: Monitoring and evaluation strategy

Introduction

This annex illustrates the monitoring and evaluation (M&E) framework and strategy for Phase II of the SHARE consortium. Phase II, running until January 2018, aims to maximise the value for money and legacy of Phase I and lay the groundwork for sustained impacts by focusing on four global thematic research areas, capacity building of southern researchers and research uptake both in country and globally.

SHARE’s M&E approach is grounded in its Theory of Change (Figure 1) and underlying strategy. SHARE activities include convening, synthesising existing knowledge, generating new knowledge through research, translating research into use and, building capacity. These activities focus around three critical knowledge gaps relating to: 1) characterising problems 2) identifying solutions 3) demonstrating benefits.

Activities are targeted at ‘boundary partners’, actors who can directly influence policy and practice at local, national or global levels. Changes in the practices of boundary partners can increase the effectiveness, equity and sustainable of sanitation and hygiene efforts.

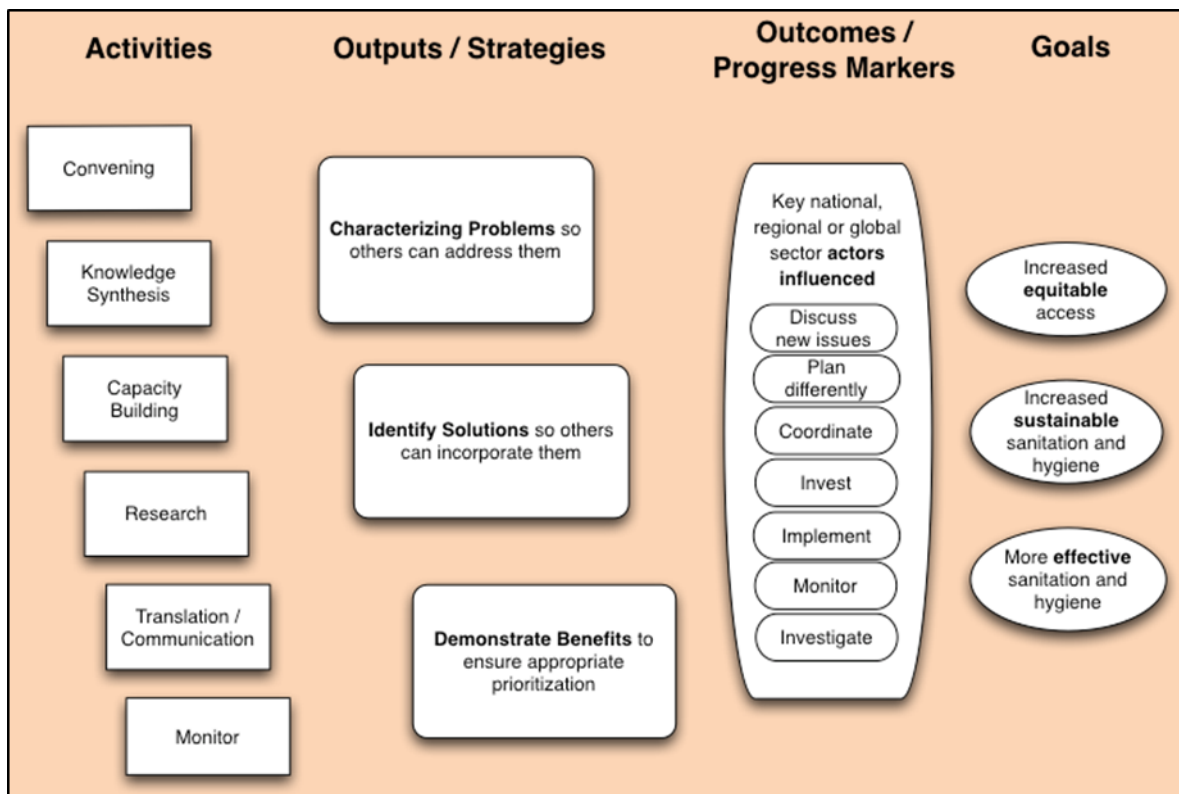


Figure E 3: SHARE Theory of Change

For each of the building blocks of the SHARE programme (research, research into use, capacity building and consortium management), the M&E strategy will ensure that valid,

reliable and useful measures of performance are developed and used to support organisations' and stakeholders' learning, management of strategy, improvement of programmes, mitigation of risk and reporting of performance.

The continuous M&E process aims to:

- Improve SHARE performance by feeding learning into the project cycle;
- Help SHARE meet its reporting requirements;
- Supply information for a final programme evaluation strategy;
- Learn and support boundary partners' needs over time.

SHARE's monitoring system is based on two methodologies, the logical framework approach (LFA) (DFID 2006; 2010) and the outcome mapping methodology, both discussed in the following sections.

The logical framework approach

For Phase II, a revised logical framework is proposed to monitor overall progress and performance, towards the achievement of the outcomes, impacts and outputs, illustrated in Table E 4, as well as to capture the legacy of Phase I.

Table E 2: SHARE II objective tree

Impact	Accelerate progress towards universal safe sanitation and hygiene coverage in Sub-Saharan Africa
Outcome	The number of sanitation and hygiene interventions promoting equitable access, sustainability and cost effectiveness are increased.
Outputs	<p>Output 1: Cutting edge research New knowledge generated by relevant and rigorous sanitation research which a) characterises problems; b) identifies solutions; and c) demonstrates benefits</p> <p>Output 2: Research into use National & global sector-relevant knowledge synthesised and disseminated, to help to a) characterise problems; b) identify solutions; and c) demonstrate benefits</p> <p>Output 3: Research capacity Capacity strengthened to conduct relevant collaborative research and apply the results</p>

	<p>Output 4: National programmes Key sector actors engaged around evidence for change.</p> <p>(This includes only the national programmes in Tanzania and Malawi as well as the legacy of SHARE I programme in India and Bangladesh.)</p>
	<p>Output 5: Effective consortium management Effective management of the consortium, including M & E of impact and value for money</p>

The logical framework for SHARE Phase II draws on output indicators from the previous phase, whilst presenting additional outputs reflecting change in the consortium's focus. The logframe for SHARE II is presented below.

Table E 3: Logical framework for SHARE Phase II

PROJECT TITLE								
IMPACT	Impact Indicator 1		Baseline (2014)	Milestone 1 (May 2016)	Milestone 2 (June 2017)	Target (Jan 2018)		
Accelerated progress towards universal sanitation and hygiene coverage in sub-Saharan Africa and South Asia NB: Impact numbers are to be further refined	The annual number of people gaining access to improved sanitation in the two all SHARE focus countries.	Planned	15million	H (16 mil) M (15.5 mil) L (15 mil)	H (20mil) M (18 mil) L (16 mil)	H (30mil) M (25 mil) L (22 mil)		
		Achieved	?					
			Source					
		UNICEF/WHO Joint Monitoring Programme and official country data ; www.wssinfo.org						
		Impact Indicator 2		Baseline	Milestone 1	Milestone 2	Target (date)	
		The child (<5) mortality rate in the two all SHARE focus countries (# deaths/year)	Planned	1, 819,000			H (860,000) M(1,720,000) L(1,819,000)	
Achieved								
	Source							
		www.childmortality.org						

OUTCOME	Outcome Indicator 1		Baseline	Milestone 1	Milestone 2	Target (date)	Assumptions
National & global sector partners change the way they plan, implement or monitor in order to increase i) equitable access, ii) sustainability, and	Evidence of SHARE catalysing change on the four barriers to progress in sanitation & hygiene: a) low priority, b) weak policy and programming,	Planned		H(50%) M(20%) L (10%)	H(80%) M(50%) L (20%)	H(100%) M(80%) L (50%)	<ul style="list-style-type: none"> SHARE produces useful and scalable research. SHARE
		Achieved					
			Source				

iii) cost-effectiveness of sanitation and hygiene	c) inadequate and poorly targeted resourcing, Boundary partners' progress markers met (#%)	SHARE M&E of Outcome Mapping and RIU activities, interviews with key boundary partners,				provides appropriate support to programmes and capacities in countries. Sectoral progress is not undermined by unforeseen circumstances in focus countries. Political will continues to support sanitation and hygiene in the agenda.	
	Outcome Indicator 2		Baseline	Milestone 1	Milestone 2		Target (date)
	Concrete examples of change, influenced by SHARE (a) that can directly impact safe sanitation & hygiene for # million people (b) # of such 'success stories'	Planned		H(4) M(2) L(1)	H(6) M(4) L(2)		H (8) M(6) L(4)
		Achieved					
		Source					
INPUTS (£)	DFID (£)		Govt (£)	Other (£)	Total (£)	DFID SHARE (%)	
INPUTS (HR)	DFID (FTEs)						

OUTPUT 1	Output Indicator 1.1		Baseline	Milestone 1	Milestone 2	Target (July 2018)	Assumptions	
Cutting edge research New knowledge generated by relevant and rigorous sanitation research which a) characterises problems; b) identifies solutions; and c) demonstrates benefits	Publications in peer-reviewed journals arising from SHARE research, number of female authors and number of authors from developing countries	Planned		H (5) M(3) L (1)	H (10) M(5) L (3)	H (20) M(10) L (5)	Publications are read by practitioners.	
		Achieved						
		Source						
		SHARE M&E and reporting from PI and researchers						
	Output Indicator 1.2		Baseline	Milestone 1	Milestone 2	Target (date)		

	Citations by other authors of those publications	Planned				H(Average 2 per article per year) M 1 per article/ year (average) L 0.5 per article per year		
		Achieved						
		Source						
		SHARE M&E of publications and citations using Google scholar.						
IMPACT WEIGHTING (%)	Output Indicator 1.3		Baseline	Milestone 1	Milestone 2	Target (date)		
35%	SPLASH indicator - I suggest this indicator to be removed and SHARE contribution to SPLASH monitored under contribution to sector. Agreed with MG group to remove indicator during meeting 01/06/2015	Planned						
		Achieved						
		Source					RISK RATING	
INPUTS (£)	DFID (£)		Govt (£)	Other (£)	Total (£)	DFID SHARE (%)		
INPUTS (HR)	DFID (FTEs)							

OUTPUT 2	Output Indicator 2.1		Baseline	Milestone 1	Milestone 2	Target (date)	Assumptions
Research into use National & global sector-relevant knowledge synthesised and disseminated, to help to a) characterise problems; b) identify solutions; and c) demonstrate benefits	Number of programmes embodying SHARE research & findings Proposed: "Cumulative number of instances when SHARE research has generated opportunities for discussion with national	Planned		H (2) M (1) L (0)	H (4) M (2) L (1)	H (6) M (4) L (2)	National institutions have the capacity and the support to prepare reports and manuals.
		Achieved					
		Source					
		SHARE M&E of RIU activities					

(beyond SHARE focus countries) and international institutions on how to better reflect SHARE's priority research themes in the policies of these institutions (government; agencies; academic institutions; NGOs and CSOs)."					
Output Indicator 2.2		Baseline	Milestone 1	Milestone 2	Target (date)
Cumulative number of manuals, handbooks & other major resource materials created or rendered accessible, through presentations and other media. Proposed indicator: Cumulative number of manuals, handbooks & other major resource materials created or rendered accessible, through presentations and other media	Planned		H (4) M (2) L (1)	H (7) M (4) L (2)	H (15) M (7) L (4)
	Achieved				
	Source				
SHARE M&E of RIU activities, SHARE website, reporting from researchers					
Output Indicator 2.3		Baseline	Milestone 1	Milestone 2	Target
New proposed indicator "Cumulative number of programmes embodying SHARE research and findings, beyond the SHARE focus countries"	Planned		H (2) M (1) L (0)	H (4) M (2) L (1)	H (6) M (4) L (2)
	Achieved				
Output Indicator 2.4		Baseline	Milestone 1	Milestone 2	Target (date)
Cumulative # no of knowledge sharing events including seminars, technical meetings and conferences organised or supported by	Planned		H (8) M (5) L (2)	H (11) M (8) L (5)	H (20) M (11) L (8)

	SHARE maintaining around 50% female participation.							
	Output Indicator 2.5		Baseline	Milestone 1	Milestone 2	Target (date)		
	# of requests for advice from SHARE generating response. Proposed: # of external requests made to SHARE members for support on SHARE research, training, capacity building, writing and editing, including advice request on WASH related topic.	Planned						
		Achieved						
		Source						
		SHARE M&E of requests from SHARE partners, Principal Investigators and researchers						
IMPACT WEIGHTING (%)	Output Indicator 2.5		Baseline	Milestone 1	Milestone 2	Target (date)		
30%	a) # website hits (page views) (unique users?) b) # monthly subscriptions to SHARE newsletter c) # Twitter followers d) #reports, manuals, publications downloaded from SHARE website	Planned						
		Achieved						
		Source						RISK RATING
		SHARE RIU officer analytics reports						
INPUTS (£)	DFID (£)		Govt (£)	Other (£)	Total (£)	DFID SHARE (%)		
INPUTS (HR)	DFID (FTEs)							

OUTPUT 3	Output Indicator 3.1		Baseline	Milestone 1	Milestone 2	Target (date)	Assumptions
Research capacity Capacity strengthened to conduct relevant collaborative research and apply the results	# of training courses organised and/ or offered (on research methods, management, etc.) annually. This includes personal development of SHARE	Planned		H(6), M(4), L (2)	H(8), M(6), L (4)	H(10), M(8), L (6)	
		Achieved					

	research fellow in focus countries	Source					
		M&E of capacity building activities					
	Output Indicator 3.2		Baseline	Milestone 1	Milestone 2	Target (date)	
	# participants providing feedback showing substantive evidence of use of SHARE evidence and /or training (cumulative)	Planned		H(2), M(1), L (0)	H(4), M(2), L (0)	H(6), M(4), L (2)	
		Achieved					
		Source					
		Interview with trainees					
IMPACT WEIGHTING (%)	Output Indicator 3.3		Baseline	Milestone 1	Milestone 2	Target (date)	
10%	# Research fellows from institutions in the focus countries following career development plans and achieving set targets	Planned		H(1), M(0), L(0)	H(2), M(1), L (0)	H(4), M(2), L(1)	
		Achieved					
		Source					RISK RATING
		SHARE M&E reports from Country platform leaders					
INPUTS (£)	DFID (£)		Govt (£)	Other (£)	Total (£)	DFID SHARE (%)	
INPUTS (HR)	DFID (FTEs)						

OUTPUT 4	Output Indicator 4.1		Baseline	Milestone 1	Milestone 2	Target (date)	Assumptions
National Programmes	# (?) prioritised research themes integrated into country programme work We propose a new indicator to capture the sustainability of the national programmes. This reads: "Cumulative number of instances when SHARE research has generated opportunities for discussion with national	Planned		H (2), M(1), L(0)	H (4), M(2), L(1)	H (6), M(4), L(2)	
Key sector actors engaged around evidence for change This indicator reports only SHARE focus countries: Tanzania, Malawi, Bangladesh and India.		Achieved					
		Source					
		SHARE M&E of RIU activities, reports from Country Platform leaders					

	institutions in SHARE's focus countries on how to better reflect SHARE's priority research themes in the policies of these national institutions (government; agencies; academic institutions; NGOs and CSOs).					
	Output Indicator 4.2		Baseline	Milestone 1	Milestone 2	Target (date)
	# sector programmes using results or evidence from SHARE research	Planned		H (2), M(1), L(0)	H (3), M(2), L(1)	H (4), M(3), L(2)
		Achieved				
		Source				
		SHARE M&E of RIU activities, reports from Country Platform leaders				
	Output Indicator 4.3		Baseline	Milestone 1	Milestone 2	Target (date)
	Sustainability & legacy indicator? WE PROPOSE TO REMOVE THIS INDICATOR AS SUSTAINABILITY IS CAPTURED THROUGH THE 4.1 and 4.2	Planned				
		Achieved				
		Source				
IMPACT WEIGHTING (%)	Output Indicator 4.4		Baseline	Milestone 1	Milestone 2	Target (date)
30%	leveraged research (but this repeats outcome indicator so delete?)	Planned				
	I think this indicator is useful. We used to have leveraged research under the VfM indicator in the previous logframe but it doesn't not appear here anymore	Achieved				
		Source				
INPUTS (£)	DFID (£)		Govt (£)	Other (£)	Total (£)	DFID SHARE (%)

INPUTS (HR)	DFID (FTEs)					
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OUTPUT 5	Output Indicator 5.1		Baseline	Milestone 1	Milestone 2	Target (date)	Assumptions		
Effective consortium management Effective management of the consortium, including M & E of impact and value for money	Monitoring; % of indicators assessed and reported annually	Planned		H (50%) M (30%) L (10%)	H (80%) M (50%) L (30%)	H (100%) M (80%) L (50%)			
		Achieved							
		Source							
		M&E reports, country partners interviews, SHARE MG meetings							
	Output Indicator 5.2	VfM indicator - to be agreed following evaluation	Planned						
			Achieved						
			Source						
	Output Indicator 5.3	% country management reports meeting criteria/ standard required. We propose this indicator to be: " % of workstreams reporting and submitting output invoices "	Planned		H (60%) M (40%) L (20%)	H (80%) M (60%) L (40%)		H (100%) M (80%) L (60%)	
			Achieved						
			Source						
			M&E of management and financial reports						
IMPACT WEIGHTING (%)	Output Indicator 5.4		Baseline	Milestone 1	Milestone 2	Target (date)			
10%	% partners activities/engagement (not sure what this one was about) We propose to remove indicators as engagement	Planned							
		Achieved							
		Source							
							RISK RATING		

	with partners is reported within Outputs 2 and 5					
INPUTS (£)	DFID (£)		Govt (£)	Other (£)	Total (£)	DFID SHARE (%)
INPUTS (HR)	DFID (FTEs)					

Data collection plan

A data collection plan and methodology has been developed to ensure that the output indicators are rigorously and timely collected. Table 2 illustrates the data collection plan for the SHARE II logframe.

Table E 4: Data collection plan, SHARE II logframe

	Data Collection Method	Information Source	Timeline
OUTPUT 1: Research			
Output Indicator 1.1 Publications in peer-reviewed journals arising from SHARE research, number of female authors and number of authors from developing countries	Review of literature	Peer-reviewed publications	Ongoing
	Analysis of impact factors	Google scholars	Ongoing
Output Indicator 1.2 Citations by other authors of those publications	Citation analysis	Number of citations	Yearly
OUTPUT 2: Research Into Use			
Output Indicator 2.2 Cumulative number of instances when SHARE research has generated opportunities for discussion with national (beyond SHARE focus countries) and international institutions on how to better reflect SHARE's priority research themes in the policies of these institutions (government; agencies; academic institutions; NGOs and CSOs)."	Outcome Mapping Methodology	Interviews with key boundary partners	Quarterly
Output Indicator 2.2 Cumulative number of manuals, handbooks & other major resource materials created or rendered accessible, through presentations and other media	RIU reports from SHARE website.	SHARE website. Report from presenters at events and conferences.	Ongoing
Output Indicator 2.3 "Cumulative number of programmes embodying SHARE research and findings, beyond the SHARE focus countries"	Outcome Mapping in collaboration with RIU officer and Manager.	Interviews with key boundary partners. Follow up of SHARE training events.	Ongoing
Output Indicator 2.4 Cumulative # no of knowledge sharing events including	Consultation between event organisers and M&E officer.	Event's report from organisers, based on templates	On event occasion

seminars, technical meetings and conferences organised or supported by SHARE maintaining around 50% female participation.		prepared by M&E officer.	
Output Indicator 2.5 #-of external requests made to SHARE members for support on SHARE research, training, capacity building, writing and editing, including advice request on WASH related topic.	M&E log of external requests to SHARE	Reporting from SHARE members to M&E officer	Ongoing
Output Indicator 2.6 a) # website hits (page views) b) # monthly subscriptions to SHARE newsletter c) # Twitter followers d) # reports, manuals, publications downloaded from SHARE website	Media reports from RIU officer.	Google analytics, SHARE website.	Quarterly
OUTPUT 3: Capacity building			
Output Indicator 3.1 # of training courses organised and/ or offered (on research methods, management, etc.) annually. This includes personal development of SHARE research fellow in focus countries	M&E of events, interview with training organisers.	Reports from training organisers	When needed
Output Indicator 3.2 # participants providing feedback showing substantive evidence of use of SHARE evidence and /or training	M&E form distributed to training participants. (baseline and follow up after 6 months)	Questionnaire from training participants	When needed
Output Indicator 3.3 # Research fellows from institutions in the focus countries following career development plans and achieving set targets	Follow up of Research Fellow career development plan. Report from Capacity building manager	Interviews with research Fellow	Quarterly
OUTPUT 4: National Programmes			
Output Indicator 4.1 Cumulative number of instances when SHARE research has generated opportunities for discussion with national institutions in SHARE's focus countries on how to better reflect SHARE's priority research themes	Outcome mapping methodology	Interviews with boundary partners. Report from RIU officer.	Quarterly

in the policies of these national institutions (government; agencies; academic institutions; NGOs and CSOs).			
Output Indicator 4.2 # sector programmes using results or evidence from SHARE research	Follow up from M&E officer with programmes' manager.	WASH newsletters and blogs. Report from RIU officer.	Quarterly
Output Indicator 4.3 Leveraged research	Follow up from M&E officer with project manager.	Financial reports	Quarterly
OUTPUT 5: Effective Consortium Management			
Output Indicator 5.1 Monitoring; % of indicators assessed and reported annually	M&E officer logs	Logframe	Annually
Output Indicator 5.2 VfM indicator - to be agreed following evaluation	TBC		
Output Indicator 5.3 % of work streams reporting, and submitting output invoices"	M&E of SHARE financial reports	SHARE financial reports	Annually

Outcome mapping

The uptake of SHARE research is an important objective for the consortium, thus we will adopt measures to ensure that the use of the research both globally and in the national programmes is appropriately monitored and documented. The M&E officer will work with the SHARE RIU team and researchers in SHARE countries, using the outcome mapping approach to maximise how we report uptake of SHARE research.

Outcome mapping (OM) is a participatory and learning-oriented methodology, conceptualised by the International Development Research Centre (IDRC), which aims 'to assess the contributions made by a programme to the achievement of outcomes' (Earl *et al.* 2001). Outcomes are defined as change in the behaviour, relationships and activities of the people, groups and organisations with whom the programme works directly (*boundary partners*). As illustrated in Figure 2, outcome mapping defines three distinct but interrelated sets of activities and changes and offers tools to monitor each one. In addition to monitoring changes in boundary partners, OM assesses the programme's strategies and organisational practices to enhance understanding of how the programme has contributed to change.

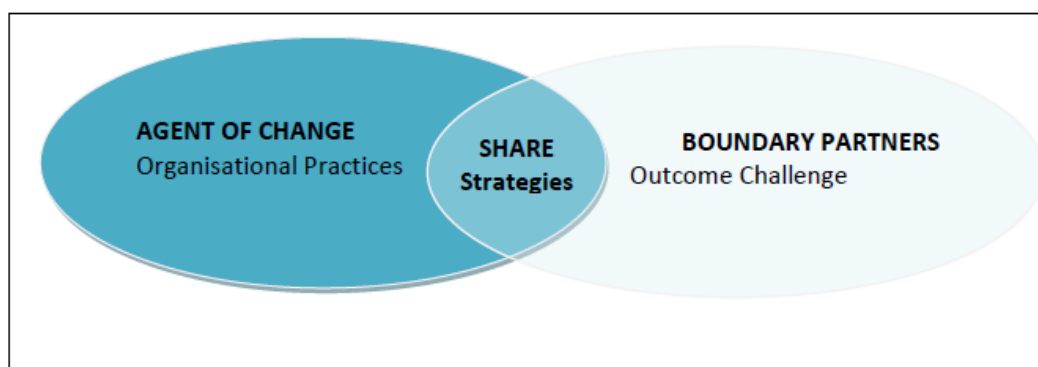


Figure E 4: SHARE outcome mapping spheres

SHARE boundary partners

Outcome Mapping defines *boundary partners* as those individuals, groups or organisations with whom SHARE interacts and whom it influences directly and helps to improve. SHARE influences boundary partners by providing access to new resources, capacities and opportunities for research. A single boundary partner may be represented by multiple individuals, groups, or organisations, if a similar change is sought by all. The boundary partners for Phase II of SHARE will remain the same as those identified in SHARE I. Furthermore, the research teams in SHARE II in collaboration with the M&E officer and the RIU officer, will tailor these to each individual research project. A provisional list of SHARE boundary partners is provided in Table E 6.

Table E 5: SHARE boundary partners

Boundary partners	Description
<i>National governments and local municipal authorities in target countries</i>	<ul style="list-style-type: none"> Sanitation and hygiene ministries and municipal authorities. Other ministries that have a significant role in the sanitation sector such as ministry for health or education.
National level	
<i>Non-governmental Sector</i>	Key non-governmental sector actors working at national level and contributing to national programmes
<i>National research Institutes</i>	This will include four African institutes partnering with SHARE for Phase II, as well as other research institutes
<i>DFID and other donors</i>	Water and sanitation country advisors – including infrastructure, health and education, nutrition professionals.
<i>International funders, philanthropic organisations</i>	Bill and Melinda Gates Foundation (BMGF) Wellcome Trust Unilever

Global level	<i>UN Agencies</i>	UNICEF World Health Organisation (WHO) Water and Sanitation Programme (WSP)
	<i>International Programmes, Task forces</i>	Joint Monitoring Programme (JMP)
	<i>International organisations</i>	WaterAid, PLAN international, Save the Children, Red Cross etc.

Outcome challenges and progress markers

For each of the identified boundary partners, an **outcome challenge** statement is developed, in line with SHARE research uptake strategy. Outcome challenges are developed to capture the partners' behavioural change and how they relate to each other if the programme has achieved its potential for change.

Furthermore, for each outcome challenge set by SHARE, progress markers will be developed. These progress by degrees with the lowest level of desired change being represented by a) **expect to see** (no more than four are recommended), followed by **like to see** (no more than eight are recommended) and **love to see** (no more than three are indicated). Table E 7 provides a provisional list of progress markers for each of the identified outcome challenges.

Table E 6: Progress markers for boundary partners

SHARE Boundary partners and progress markers	
Boundary partner	Outcome challenge
National governments and local municipal authorities in target countries	SHARE intends to see national programmes prioritise Sanitation and Hygiene in their policy agendas.
	<p>Progress Markers</p> <p>Expect to see</p> <ol style="list-style-type: none"> 1. Discuss and consider implementation of SHARE research findings. <p>Like to see</p> <ol style="list-style-type: none"> 2. Supports and disseminates SHARE research within country. 3. Collaborate on the development of new research efforts. 4. Requests and incorporates SHARE results into programme development and improvement 5. Disseminates SHARE research to strengthen sector performance <p>Love to see</p> <ol style="list-style-type: none"> 6. Support and fund new collaborative research with SHARE. 7. Incorporates SHARE research into policy. 8. Adapt interventions and policy approaches based on SHARE research and findings.
National Research Institutes	SHARE intends to see national research institutes with a better understanding of the aspects which contribute to efficient, effective and sustainable sanitation and hygiene for all. National research institutions treasure SHARE research findings and capacity building

	<p>Expect to see</p> <ol style="list-style-type: none"> 1. Provides feedback and advice on SHARE research priorities 2. Requests SHARE support for research efforts. <p>Like to see</p> <ol style="list-style-type: none"> 3. Supports and disseminates SHARE research. 4. Collaborate on the development of new research efforts. <p>Love to see</p> <ol style="list-style-type: none"> 5. Support, fund, or bid for new research efforts in the field of sanitation and hygiene.
DFID and other donors	<p>SHARE intends to see donors prioritising SHARE research themes in their research strategies and business plans. SHARE expects to see donors funding sanitation and hygiene research emerge from SHARE results.</p> <p>Expect to see</p> <ol style="list-style-type: none"> 1. Recommend and request SHARE research on development issues. 2. Country offices request SHARE support for strengthening investment and business cases. 3. Sector advisors request SHARE research and synthesis on cross-cutting issues. <p>Like to see</p> <ol style="list-style-type: none"> 4. Support SHARE research to strengthen their own investments. 5. Increased investment in high need areas based on SHARE research <p>Love to see</p> <ol style="list-style-type: none"> 6. Change targeting approaches and investment areas based on SHARE research and findings. 7. Change monitoring approaches to improve safe sanitation and hygiene coverage for the poor and marginalized, based on SHARE research and synthesis.
International funders and philanthropic organisations	<p>SHARE intends to see funds for research and interventions directed to the themes of equity, market, urban, health and hygiene related aspects of sanitation.</p> <p>Expect to see</p> <ol style="list-style-type: none"> 1. Recommend and request SHARE research on key issues. 2. Request SHARE support for research efforts. <p>Like to see</p> <ol style="list-style-type: none"> 3. Support and disseminate SHARE research. 4. Collaborate on the development of new research efforts. <p>Love to see</p> <ol style="list-style-type: none"> 5. Support and fund new collaborative research within SHARE. 6. Collaborate with SHARE to change research direction in the sanitation and hygiene sector.
UN agencies	<p>SHARE intends to see the generation of advocacy and policy programmes to promote sanitation and hygiene and the development of a global network to intensify efforts towards the achievement of global sanitation and health for all.</p> <p>Expect to see</p> <ol style="list-style-type: none"> 1. Recommend and request SHARE research on key issues. 2. Country offices identify and recommend priority areas for research and investments. <p>Like to see</p> <ol style="list-style-type: none"> 1. Collaborate on the development of new research efforts. 2. Revise and adapt guidelines or sanitation and hygiene. <p>Love to see</p> <ol style="list-style-type: none"> 3. Support and fund new collaborative research with SHARE. 4. Invest in new interventions based on SHARE research. 5. Actively disseminate SHARE research results to change programme and policy approaches of others.
International programmes, task forces	<p>SHARE intends to work closely with international programmes and task forces to influence and inform their decision making and monitoring processes.</p>

	<p>Expect to see</p> <ol style="list-style-type: none"> 1. Recommend and request SHARE research on key issues. <p>Like to see</p> <ol style="list-style-type: none"> 2. Incorporate SHARE research and synthesis into policy efforts. 3. Support and disseminate SHARE research. 4. Collaborate on the development of new research efforts. 5. Fund collaborative research with SHARE. <p>Love to see</p> <ol style="list-style-type: none"> 6. Change global monitoring approaches to improve safe sanitation and hygiene coverage for poor and marginalized, based on SHARE research and synthesis.
International organisations	<p>SHARE intends to develop strong sustainable partnerships with international organisations and country offices to facilitate accountability and sustainability of sanitation and health implementation.</p> <p>Expect to see</p> <ol style="list-style-type: none"> 1. Request SHARE research and synthesis results. <p>Like to see</p> <ol style="list-style-type: none"> 2. Discuss implications of SHARE research results on programme delivery. 3. Develop and support collaborative research efforts to strengthen programmes and monitoring 4. Disseminate SHARE research to strengthen sector performance. <p>Love to see</p> <ol style="list-style-type: none"> 5. Incorporate SHARE funding into programme and policy proposals to enhance performance. 6. Incorporate SHARE interventions and policy approaches in programmes.

Source: Table adapted from Earl *et al.* 2011

Monitoring of outcome mapping

To identify SHARE monitoring priorities a monitoring plan is provided which takes into consideration time, human and financial resources (see Table 5).

To track progress over time an *Outcome Journal* is prepared by the M&E officer in collaboration with the RIU officer for each boundary partner that SHARE has identified as a priority. The Outcome Journal is characterised by the progress markers established in the previous section, a description of the level of change as low, medium, high and place to record who among the boundary partners exhibit the change.

Further details include information on the reasons for the change, the people and circumstances that contributed to the change, a record of unexpected and unanticipated change and the people and circumstances that contributed to the change and lessons for the programme. Values for High (H), Low (L) and Medium (M) ratings should be determined so that outcomes are measured consistently. When a finite group of boundary partners exist then a rating scheme based on percentages (high= 80-100%, medium 50-79 and low=0-49%) can be created. Data collection methods should be decided among the following options:

- Regular face to face meetings with the principal investigators of projects.
- Electronic data sheets to be completed by boundary partners and principal investigators.

- Interviews and/or focus groups with boundary partners conducted by the M&E officer.

Table E 7: Outcome mapping monitoring plan

SHARE OUTCOME MAPPING MONITORING PLAN							
<i>Monitoring Priority</i>	<i>Who will use information</i>	<i>Purpose of the information</i>	<i>When is the information needed</i>	<i>Who will collect the information?</i>	<i>How often will it be collected?</i>	<i>How will it be collect?</i>	<i>Monitoring tool</i>
Boundary partners achievement of outcome	<ul style="list-style-type: none"> • M&E officer • RIU officer • Research Managers • SHARE CEO • DfiD 	Assess the progress towards progress markers	Periodically	<ul style="list-style-type: none"> • Project principal investigators • M&E officer • Research into Use officer 	Quarterly	<ul style="list-style-type: none"> • Self assessment by boundary partners. • RIU from principal investigators • Interviews by M&E officer • Interviews by communication officers 	Outcome Journal
SHARE Strategy	<ul style="list-style-type: none"> • Boundary partners • Research Managers • SHARE CEO • CAG • DfiD 	Asses whether SHARE strategies are encouraging the predicted change	Periodically	M&E officer with cooperation from: <ul style="list-style-type: none"> • Project principal investigators • SHARE staff members. 	Periodically (every 6 months)	<ul style="list-style-type: none"> • Informal meetings with SHARE staff. • Electronic sheet to fill out by staff when changes in boundary partners are recorded. • Face to face interviews • Recorded interviews with boundary partners by M&E officer. 	Strategy journal

Source: Table adapted from Earl *et al.* 2011

Meeting boundary partners' needs

Outcome mapping is based on the premise that the programme has to be prepared to change to meet its boundary partners' needs. Thus, a Strategy Journal is compiled by the M&E team, in collaboration with the management team, annually to record data on the strategies employed to encourage such change. The generic format includes the inputs (resources allocated), the activities undertaken, a judgement on their effectiveness, the output and any required follow up. This information allows understanding as to whether the programme is making contributions to achievement of outcomes. Data collection answers the following questions:

1. What is SHARE doing well and what should SHARE continue doing?
2. What is SHARE trying to improve?
3. What strategies or practices does SHARE need to add?
4. What strategies/practices does SHARE need to change or adapt?
5. How should SHARE respond to boundary partners' change in behaviour?

SHARE OUTCOME MAPPING SHEETS

SHARE II PROGRAMME FRAMEWORK	
Vision	
Mission	
Boundary Partner 1:	Outcome Challenge 1
Boundary Partner 2	Outcome Challenge 2
Boundary Partner 3	Outcome Challenge 3
Boundary Partner 4	Outcome Challenge 4
Boundary Partner 5	Outcome Challenge 5
Boundary Partner 6	Outcome Challenge 6

SHARE II Boundary Partners and Progress Markers	
Boundary partner 1	Outcome Challenge 1
	Progress Markers: Expect to see Like to see Love to see
Boundary partner 2	Outcome Challenge 2
	Progress Markers: Expect to see Like to see Love to see
Boundary partner 3	Outcome Challenge 3
	Expect to see Like to see Love to see
Boundary partner 4	Outcome Challenge 4
	Expect to see Like to see Love to see

SHARE OUTCOME MAPPING MONITORING PLAN							
<i>Monitoring Priority</i>	<i>Who will use information</i>	<i>Purpose of the information</i>	<i>When is the information needed</i>	<i>Who will collect the information?</i>	<i>How often will it be collected?</i>	<i>How will it be collect?</i>	<i>Monitoring tool</i>
Boundary partners achievement of outcome							Outcome Journal
SHARE strategy							Strategy journal
Organisational practices							Performance journal

SHARE OUTCOME JOURNAL		
Work Dating from/to		
M&E contributor		
Outcome challenge		
Low= Medium= High=		
		WHO?
EXPECT TO SEE		
Low/Medium/ High		
LIKE TO SEE		
Low/Medium/ High		
LOVE TO SEE		
Low/Medium/ High		
Description of change		
Contributing factors and actors		
Source of evidence		
Unexpected changes (included description, contributing factors and sources of evidence)		
Lessons/Required programme change/reactions		

SHARE STRATEGY JOURNAL
Work from/to:
Contributors to monitoring update:
Strategy to be monitored:
Description of activities (What did you do? With whom? When?)
Effectiveness (How did you influence Change in boundary partners)
Programme follow-up and required changes
Data of next monitoring meeting

DATA COLLECTION SHEET

Name of project:	
Start of project:	
Name of project in charge:	
Period of reporting:	

1. Please describe activities undertaken and progress made towards achieving the objectives in the past three months

--

2. Please describe new insights, key findings/results that might have been provided in the last three months

--

3. Please describe (if any) deviations from the original work plan/objectives etc. What kind of action was undertaken and how might this impact on the timely delivery of the project outputs

--

4. Please let us know if you foresee any problems/issues in the next three months which might result in a delay of the delivery of the project output. If any are foreseen please let us know if and what SHARE can do to help.

--

5. Have you disseminated any results/findings etc, and if so how have you acknowledge SHARE?

--

PROJECT LIST FOR PRINCIPAL INVESTIGATORS		Yes	No	Please provide more details here:
YOUR RESEARCH				
Are you partnering with non-consortium organisations on this research work?	From developed countries			
	From SHARE focus countries			
	From other developing countries			
OUTCOMES				
				<i>Please give an estimate of people expected to benefit:</i>
Will your research directly increase the number of people with access to sanitation (i.e. are you implementing a project)?	In SHARE focus countries			
	In other developing countries			
				<i>Please give an estimate of people expected to benefit:</i>
Will your research indirectly increase the number of people with access to sanitation?	In SHARE focus countries			
	In other developing countries			
				<i>Please give an estimate of people expected to benefit:</i>
Will your research directly increase the number of people covered by hygiene promotion activities?	In SHARE focus countries			
	In other developing countries			
				<i>Please give an estimate of people expected to benefit:</i>
Will your research indirectly increase the number of people covered by hygiene promotion activities?	From SHARE focus countries			
	From other developing countries			
				<i>Please give amount leveraged (GB£):</i>
Have you leveraged co-funding for your research?				
Can you estimate the value for money				
OUTPUTS				
Will your research produce:	Manual			
	Handbook			
	Peer reviewed papers			
	Other (please name)			
Will your research produce a working model for service delivery?				

Are national stakeholders engaged/consulted in your research?				
DISSEMINATION				
Does your research involve an exchange visit?				
Does your research design include training course?				
Have you plans for host knowledge sharing events (including seminars, technical meetings and conferences)?				
Will you feature your research on the SHARE website?				

Annex F: Financial and management documents

Table F 8: Statement of expenditure showing percentage of invoicing against top level budget lines

Budget for Period: 20 January 2010 - 19 January 2015									Invoiced 20 Jan 2010 - 19 Mar 2015		
1a			1b			1c			1d		
Phase 1	Proposed Budget	%	Sep-10	Contract Budget	%	Jan-14	Revised Budget	%	Phase 1	Total Invoiced to 19 Mar 15	%
Research Projects	3,840,000	38%	Expenses & Post-Inception Costs	9,613,791	96%	Research Projects	3,872,577	39%	All Projects	4,578,937	46%
			Fees (Inception)	386,209	4%				Technical Fees	4,182,413	42%
Partners' Projects	1,269,836	13%				Partners' Projects	1,232,878	12%			
Capacity Building	1,375,949	14%				Capacity	1,236,622	12%			
Research into Use (Communications)	1,722,488	17%				Research into Use	2,048,703	20%			
Management	1,791,727	18%				Management incl	1,976,357	20%	Management incl	1,389,072	14%
						Travel, Equip, Misc			Travel, Equip, Misc		
Totals	10,000,000	100%		10,000,000	100%		10,367,137	104%		10,150,422	102%
							(367,137)			(150,422)	
Budget for Period: 20 January 2015 - 19 January 2018									Invoiced 20 Jan 2015 - 19 Mar 2015		
2a			2b			2c			2d		
Phase 2	Proposal Budget	%		Contract Budget	%		Working Budget	%	Phase 2	Total Invoiced to 19 Mar 15	%
Research Projects	2,000,000	33%	Projects & Expenses	4,315,156	72%	Research Projects	2,187,700	36%	Research Projects		0.0%
National Research Programme (NRP)	1,575,000	26%	Personnel	1,684,844	28%	NRP: Technical Fees	168,580	3%	NRP: Technical Fees		0.0%
						NRP: Projects	1,358,900	22%	NRP: Projects		0.0%
Capacity Development (CD)	999,500	17%				CD: Technical Fees	372,252	6%	CD: Technical Fees	11,711	0.2%
						CD: Projects	417,720	7%	CD: Projects		0.0%
Research into Use (RIU)	825,500	14%				RIU: Technical Fees	579,920	10%	RIU: Technical Fees	13,294	0.2%
						RIU: Projects	246,739	4%	RIU: Projects		0.0%
Management (MN)	600,000	10%				MN: Personnel	564,092	9%	MN: Personnel	10,881	0.2%
						MN: Expenses	35,845	1%	MN: Expenses	15,034	0.3%
						External Review	120,000	2%	External Review		0.0%
Totals	6,000,000	100%		6,000,000	100%		6,051,748	100%		50,919	0.8%
			Contracts Total	16,000,000		Working Budget	16,418,885		Total	10,201,341	

KEY
 SPB – SHARE Project Budget Monitoring system (Excel)
 IDC – Indirect Costs
 ROO – Research Operations Office
 ROM – Research Operations Manager
 CEO – Chief Executive Officer

Figure 5a – Invoicing Process

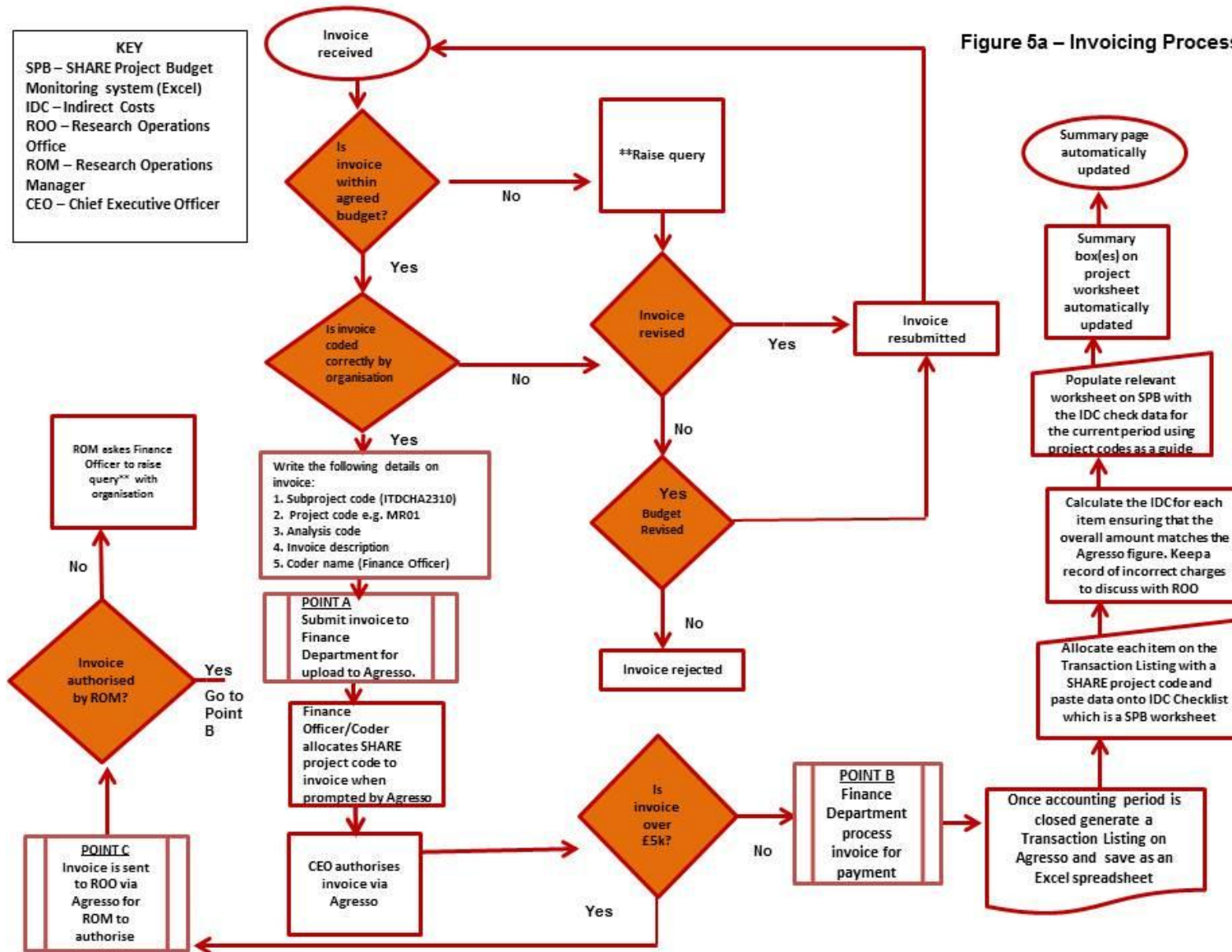


Figure F 5: Invoicing processes

Figure 5b – External Process – Point A

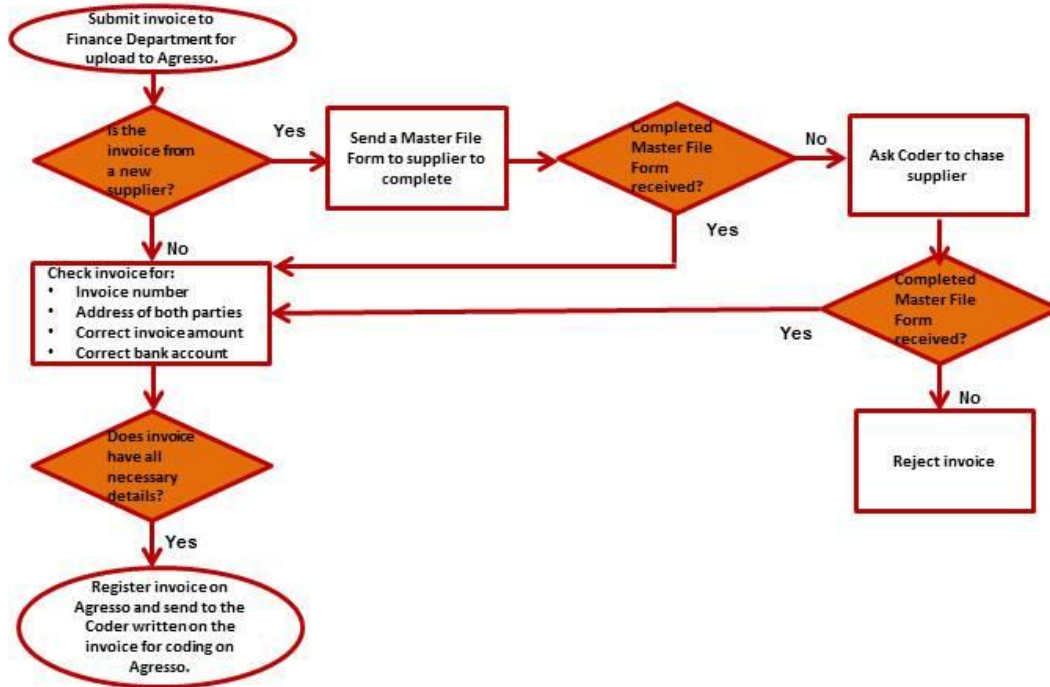


Figure 5c – External Process – Point B

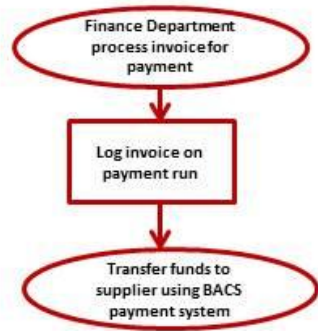


Figure 5d – External Process – Point C

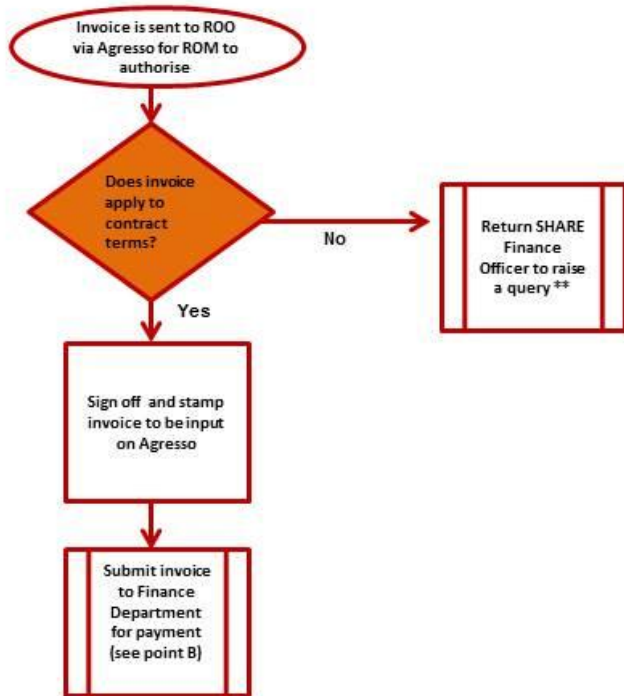


Figure 6 Forecasting Process

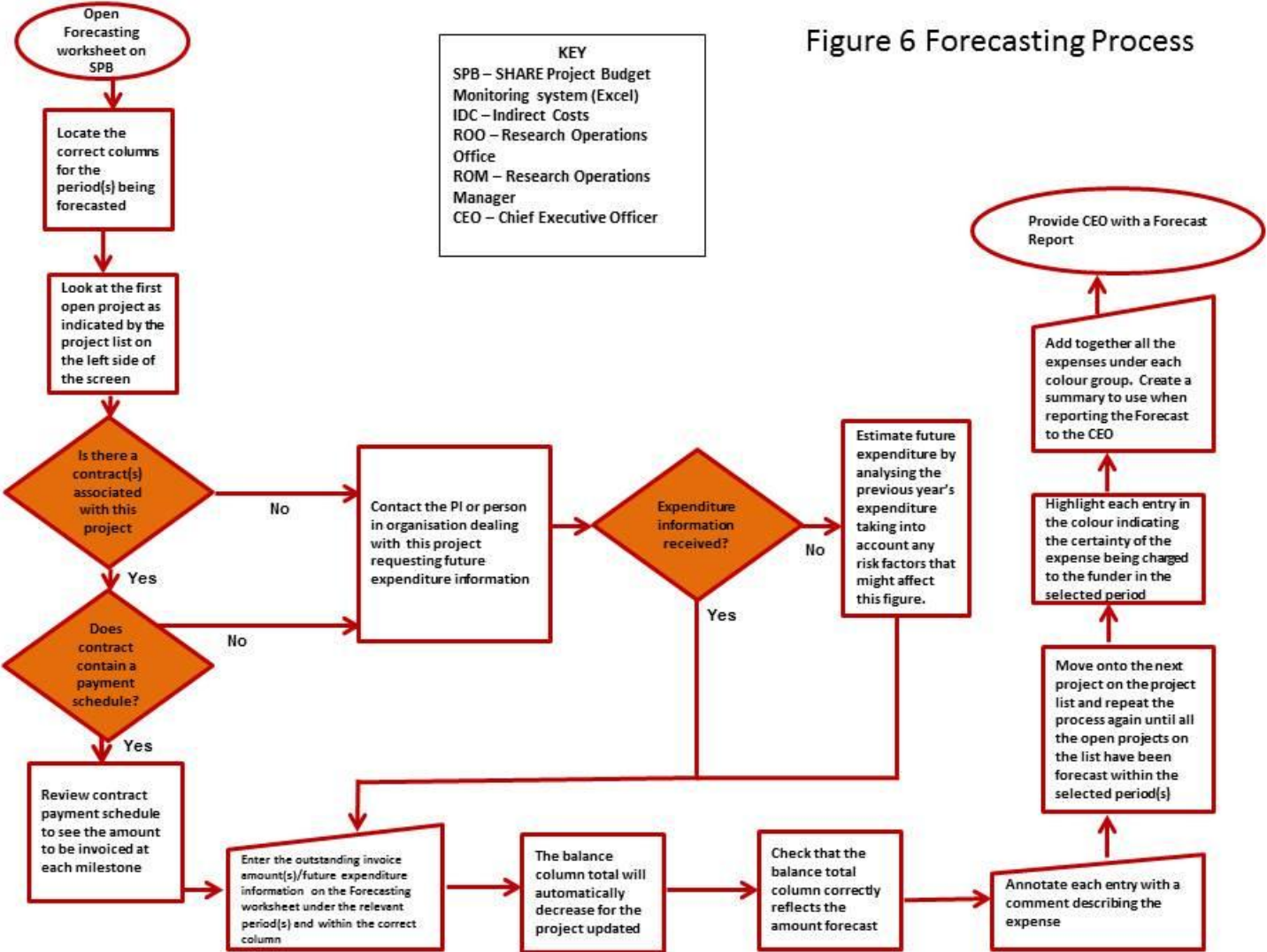


Figure F 6: Forecasting processes

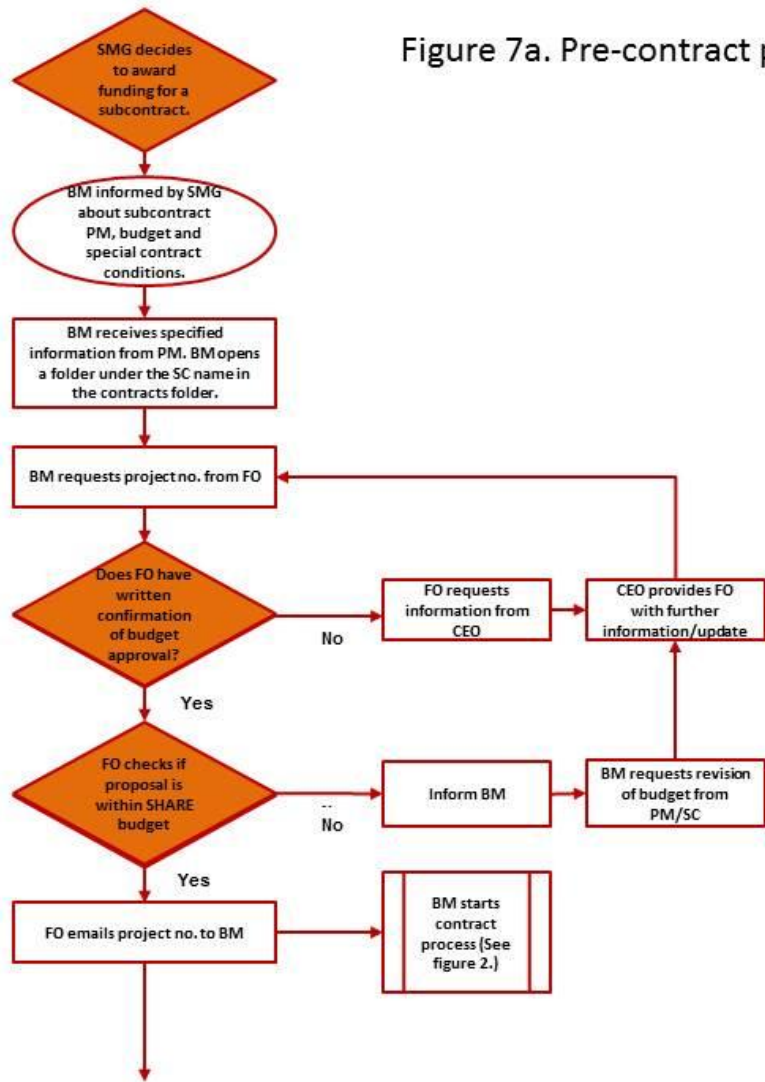


Figure 7a. Pre-contract process

KEY	
BM	– Business Manager
FO	– Finance Officer
PM	– Project Manager
SC	– Sub-Contractor
SMG	– SHARE Management Group
SPB	– SHARE Project Budget monitoring documents
ROCO	– Research Operations Contracts Office
ROM	– Research Operations Manager
PE	– Part executed
FE	– Fully executed
TOR	– Terms of Reference

Figure F 7: Contract processes

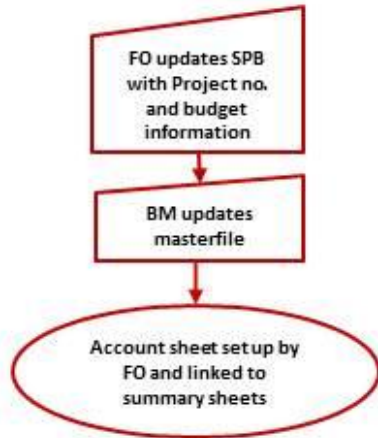
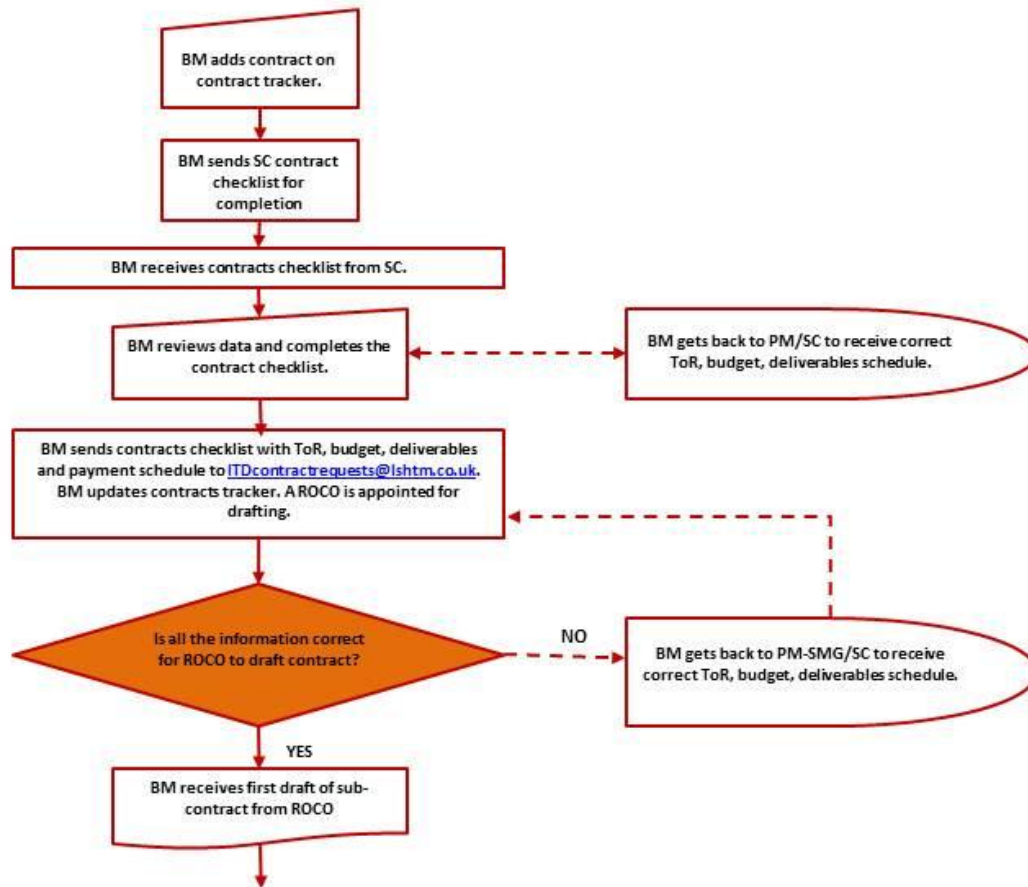
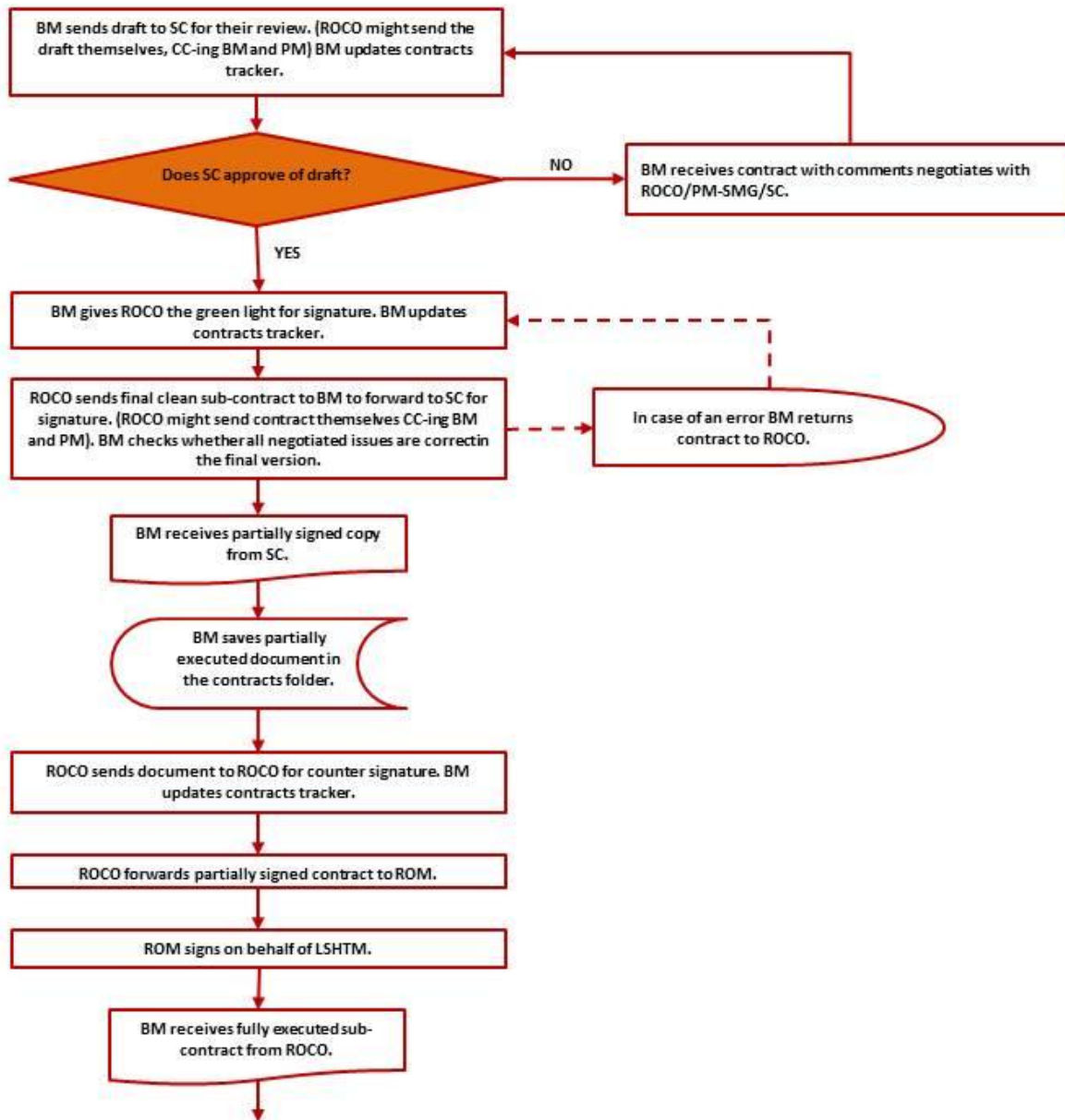


Figure 7b. Contract process





BM stores fully signed contract in contract folder.



BM updates contract tracker.

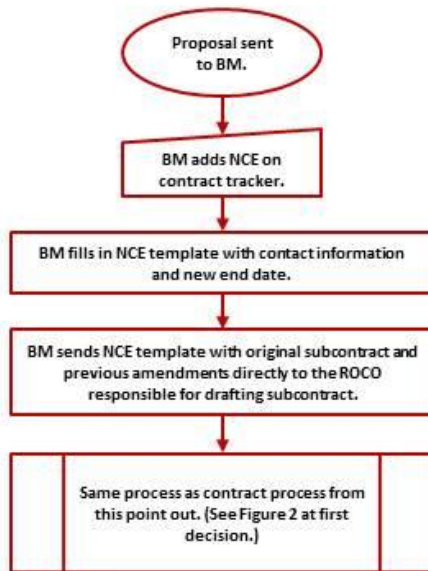


Figure 7c. Post-contract process
No-cost Extension

Figure 7d. Post-contract process
Cost Extension

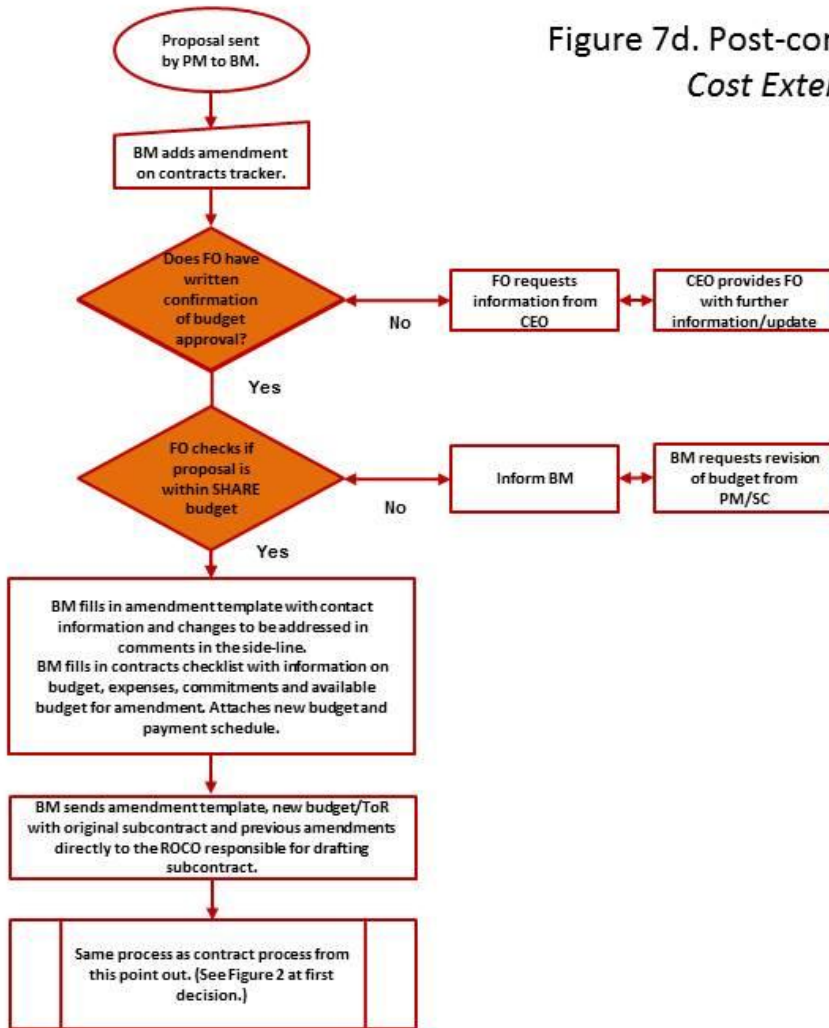
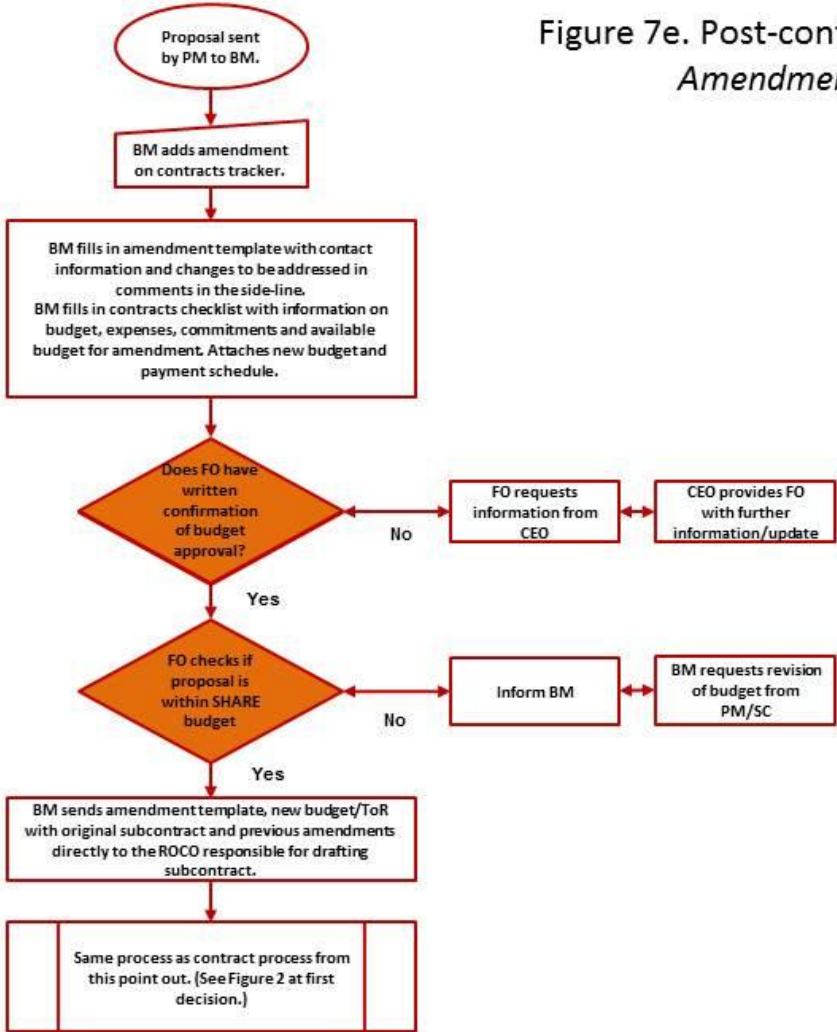


Figure 7e. Post-contract process
Amendment



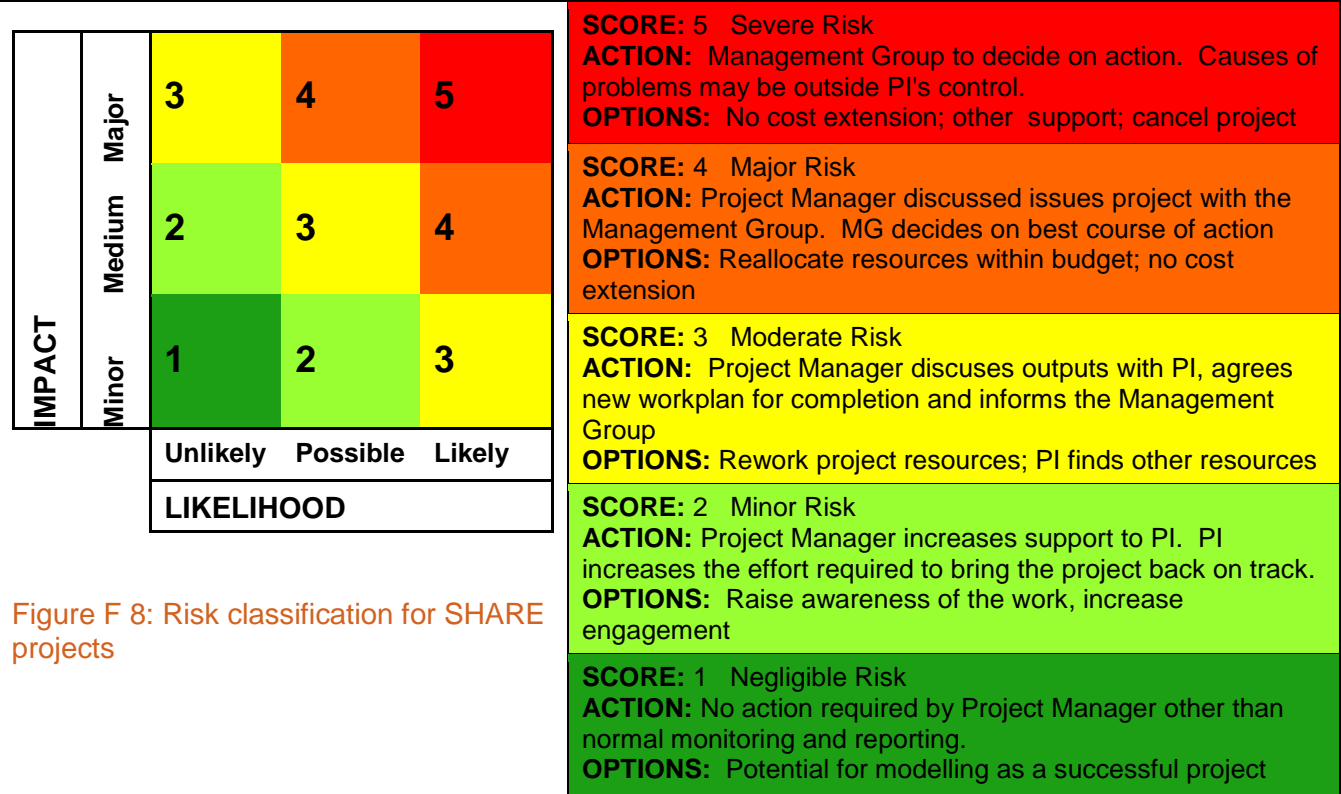


Figure F 8: Risk classification for SHARE projects

Group	Role	Phase One	Phase Two	Time
Management	CEO	Eileen Chappell	Eileen Chappell	P/T
	Research Director	Sandy Cairncross	Sandy Cairncross	P/T
	Impact Director	Richard Rheingans	No post	P/T
	Capacity Director	Jeroen Ensink	Jeroen Ensink	P/T
	Policy Research Manager	Oliver Cumming/ Joanna Esteves Mills	Joanna Esteves Mills	F/T
Executive	Management Group	As above	As above	
	<u>Partners</u>	<u>Representatives</u>	<u>Representatives</u>	
	ICDDR,B	Sirajul Islam	Sirajul Islam	
	IIED/SDI	Gordon McGranahan	Anna Walnycki	
	WaterAid	Erik Harvey	Erik Harvey	
	CIDRZ		Roma Chilengi	
	GLUK		Jane Mumma	
	MITU		Saidi Kapiga	
University of Malawi		Moffat Nyirenda		
Core Team	Monitoring & Evaluation Officer		Elisa Roma	P/T
	Research Uptake Officer		Alexandra Chitty	F/T
Administration	Administrator	Vacancy/Temp	Vacancy/Temp	F/T
	Contracts Officer (CO)	Michael Lawrence	Vacancy/Temp	P/T
	Financer Officer (FO)	Chantelle Thomas	Chantelle Thomas	P/T
Advisory		Albert Wright (Chair)	Anna Nileswhar	
		Anna Nileswhar	Pete kolsky	
		Barbara Evans	Barbara Evans	
		Meera Mehta	Hildegarda Kiwasila	
		Pete Kolsky	Lisete Burgers (TBC)	
		Therese Dooley		

Figure F 9: SHARE management personnel Phases I and II

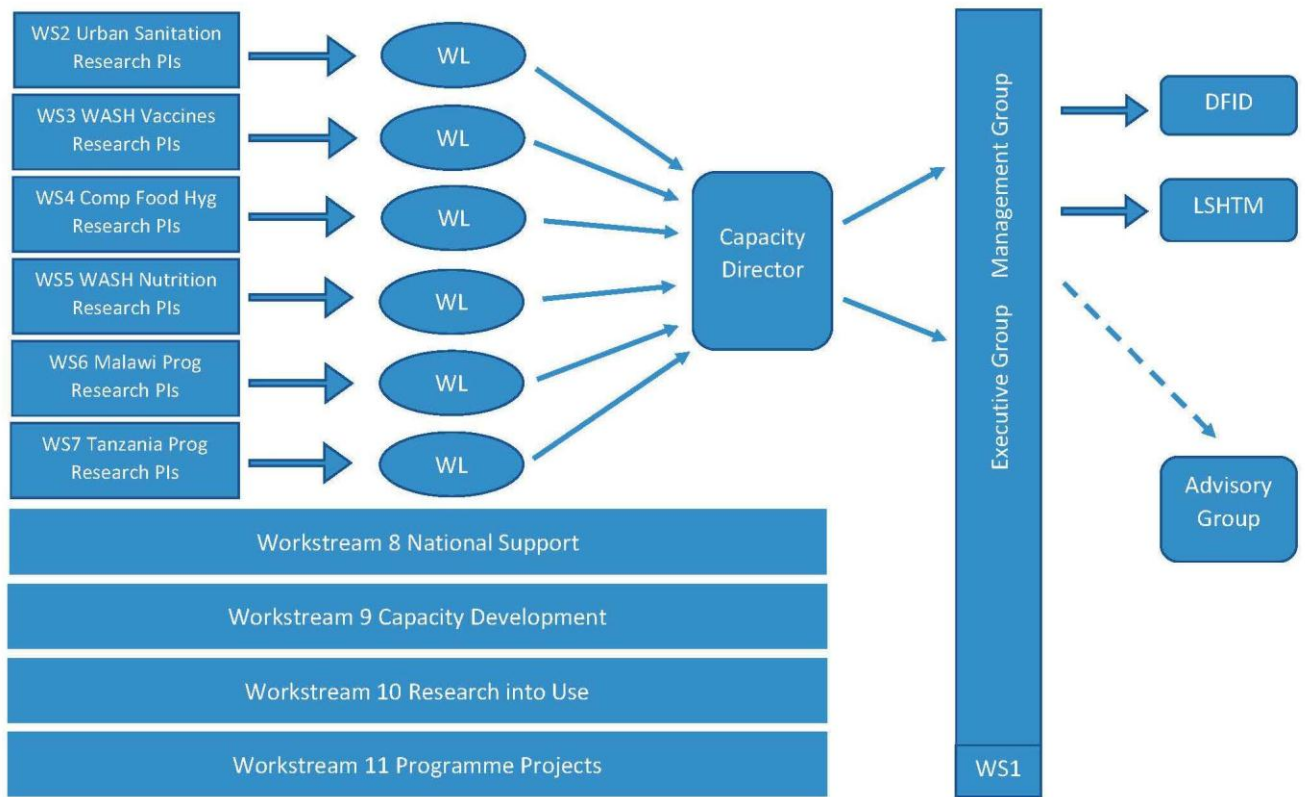


Figure F 10: Phase II draft governance structure



RESEARCH REPORT

City Wide Sanitation Project

12 month Report

May 2014 - May 2015

Diana Mitlin, Gordon McGranahan and Anna
Walnycki (IIED)

Noah Schermbrucker (SDI)

LONDON
SCHOOL of
HYGIENE
& TROPICAL
MEDICINE



icddr, b

iiED



WaterAid

share
Sanitation and Hygiene Applied Research for Equity

Background

Project purpose: This project will develop and test an approach to pro-poor city-wide sanitation strategies that can be adopted and driven by federations and networks of community organizations and residents' associations, and supported by public authorities and private providers. This action research will provide a platform for scalability, adaptation and replication across the Global South. It will also be undertaken and documented in such a way that findings will be relevant for those pursuing somewhat different approaches to sanitary improvement, but facing similar obstacles.

Project partners: The project is realised through a partnership between six organizations, the International Institute for Environment and Development (IIED), the secretariat of Shack/Slum Dwellers International (SDI), and four affiliates of SDI (in Malawi, Tanzania, Zambia and Zimbabwe). IIED is a policy and applied research organization focusing on issues of environment and development in the global South based in London. SDI is a network of affiliated federations of the homeless and landless living in towns and cities of the global South; membership of federation is particularly strong among those living in informal settlements. The federations themselves have a membership of women's led savings schemes based at the neighbourhood level. In each country these federations are supported by a local NGO. The four SDI affiliates involved in this SHARE project are:

Malawi: Malawi Homeless People's Federation and the Centre for Community Organization and Development

Tanzania: Tanzania Federation of the Urban Poor and the Centre for Community Initiatives

Zambia: The Zambia Homeless and Poor People's Federation and People's Process on Housing and Poverty

Zimbabwe: The Zimbabwe Homeless People's Federation and Dialogue on Shelter

Project approach: Work is taking place in four cities: Blantyre (Malawi), Dar es Salaam (Tanzania), Kitwe (Zambia) and Chinhoyi (Zimbabwe). These cities were selected by the SDI affiliates following a discussion with national federations. The three-year project itself is to be realised in three phases, each approximately 15 months in length (as there are overlaps between these phases). The first phase involves the mapping and elaboration of sanitation problems in each of the four cities. This includes: a summary of existing documentation; community-led profiling of the sanitation problems in informal settlements, the enumeration of households facing sanitation difficulties and mapping of the existing services; a participative engagement with other stakeholders and particularly the city authorities. Relationships with the city are often long standing with a history of co-operation and partnership across the scope of pro-poor slum upgrading and urban development activities. Often MoUs are in place between affiliates, the federation and local authorities. The second phase involves the development of several sanitation precedents in each city designed to be relevant to addressing sanitation needs within settlements across the city. As circumstances in different settlements differ, the selected precedents will be relevant to a variety of situations. The third phase involves the planning of a city wide approach to improving sanitation based on the work undertaken in the first two phases and the relations that have been built, strengthened and enhanced with the relevant government agencies, utilities and other stakeholders. The project includes funds for other SDI affiliates to contribute specific work that adds value to the development of city-wide sanitation strategies.

Project cost and timing: The three-year project began in January 2012 with a budget of £1.1 million. It has an extension from December 2014 to September 2015

Progress and achievements

This report covers the period June 2014 to June 2015.

Precedents: introduction and general issues. Delays in the realization of precedents meant that many continued from year two of the project period into this year third year. These precedent-setting sanitation projects responded to the work in year one which included: data collection and analysis, partnerships built and insights gained through the situational analyses. As noted last year, the intention was that all would be completed by the end of April 2014 but delays have been encountered primarily due to the local government processes. These have been caused both by political process related to national elections (Malawi, Zimbabwe) and planning procedures. The context is summarised in table 1, and table 2 reports on the numbers involved in data collection in the first three years of the project.

Table 1: The sanitation situation

	Population of the city	Number of informal settlements	% living in informal settlements	% of city popn. with no or inadequate sanitation
Blantyre	Est. 850,000	21 recognized by the local council	75%	67%
Chinhoyi⁽¹⁾	79,368	16	44%	35%
Dar es Salaam	4,364,541	297	75%	60%
Kitwe	522,092	48	32%	38%

NOTE: ⁽¹⁾ For Chinhoyi, these are previously formally planned low-income settlements rather than informal settlements.

Table 2: The grassroots organizing process

	Federation savers	Settlements where federation is active	Federation members participating in city events related to sanitation	People participating in data collection about sanitation
Blantyre⁽¹⁾	608	42	30	50
Chinhoyi	2,300	5	92	300
Dar es Salaam	4,300	62	75	80
Kitwe	1,200	38	200+	50

NOTE: ⁽¹⁾ The Malawi figure for participation in data collection includes university students. Others are community residents who are not federation members.

The precedents represent a variety of approaches including individual, shared, communal and public toilets (see below for country summaries and the table). Communities have thought through issues of affordability, replication and management in their choices - considering strategies that have the potential to reach citywide scale. While some precedents have built on existing programmes within project partners' portfolios, others have tackled new ground and considered communal and public options to address the sheer scale of sanitation need. One of the emerging internal learnings for SDI affiliates has been the limitations of demand-led approaches for individual toilets. On many occasions these are investments by landlords in toilet provision for themselves and tenants living within their plot. Such provision is shared sanitation rather than individual sanitation as typically between three and ten households use the facility. However, this model also has a number of shortcomings that have been identified and assessed this year. These and other challenges are elaborated below. Tables 3 and 4 report on those reached to date.

Table 3: Communal Toilet Blocks ⁶

Location	Total	Number in Markets	Users per day ⁷
Blantyre (primarily market-based)	5	5	150 (uses per day)
Chinhoyi (primarily residential)	1	1	500
Dar			
Kitwe			

Table 4 Number of households and people reached to date not including communal blocks

Location		Sewerage	Pour flash	Ecosan	Gulper
Dar	Households ⁸	50	1,170	67	1,260
Dar	People	250	4,095	1,096	6,300

¹ In Dar and Kitwe no communal blocks were constructed. The reasons behind this are described in the narrative report.

⁷ Users reported are in addition to households in other tables

⁸ *Dar:* Number of households has been calculated by adding all households who received toilets and the number of all users. This information was collected during identification of beneficiaries and also during routine M&E data collection. The numbers have included both completed toilets and those still under construction.

Blantyre	Toilets			783	
Blantyre	Households ⁹			2,349	
Blantyre	People			14,094	
Kitwe	Toilets		12	63	
Kitwe	Households ¹⁰			126	
Kitwe	People		144	763	
Chinhoyi	Households ¹¹	10		95	
Chinhoyi	People	50		475	

Partner meetings. The SDI affiliates, SDI Secretariat, IIED and local government officials from the project countries have met once during the last year. This meeting took place in Dar es Salaam in March 2015 to support local affiliates in their activities and share learning, opportunities and challenges around the citywide project. Note that we had a meeting in June 2014 in Chinhoyi, Zimbabwe which is not covered in this report as it was reported last year.

Precedents: Blantyre, Malawi. In Blantyre, Malawi the federation have initiated 3 precedents only two of which have been realised. First funds have been used to augment an existing programme of eco-san toilet construction in informal areas across the city (partly funded by the African Development Bank (AfDB)). Eco-san toilets do not require water supply, avoid groundwater contamination and manure can be sold to generate income or used for urban agriculture. In total, financed primarily through AfDB capital, 783 eco-san toilets have been constructed in Blantyre assisting 14,094 people. The second precedent is the construction of five public toilets for which the Blantyre City Council has allocated land. The facilities are located near busy markets and comprise of 10 rooms. They are run as an enterprise with funds recovered the costs of capital investment. Construction was scheduled to begin in July 2014 but was only finally begun in March 2015. Five toilets have been completed at market places in the settlements of Ndirande (2), Manase, Nancholi, and Likotima. On Friday 22nd May, 2015, the Ndirande toilets were opened by councillor Cecilia Zeka Phiri (see blog on www.sdinet.org, 25 May 2015). The third precedent was to involve the construction of a DEWATS system in an informal area. This drew on a similar system installed in a formal development in Blantyre that was developed by a sister agency to CCODE. Unfortunately the Federation was unable to identify a suitable site with land available for the treatment pond. Discussions with the council are ongoing.

Through the precedent projects 43 builders and 12 female contractors from the federation have been trained. A further 10 federation members have been trained to collect loan repayments related to sanitation investments.

⁹ *Blantyre:* One toilet shared by 3 households and 6 people in each household.

¹⁰ *Kitwe:* At minimum 2 households with an average family size of 6 use the toilets. Both landlords and tenants use toilets.

¹¹ *Chinhoyi:* Households are multiplied by 5 to calculate the number of people. Please see previous table for numbers serviced through communal toilets

Precedents: Dar es Salaam, Tanzania. In Dar es Salaam, three precedents have been undertaken. The first precedent is the construction of shared compound toilets. To date 49 toilets have been constructed in 3 settlements (Keko Machungwa, Karakata and Vingunguti) benefiting 5,191 people. Toilet finance is disbursed as a loan and repayment rates have been 100% to date. This ensures that finance is revolved over time and additional toilets can be constructed. The second precedent involves federation members using a Gulper Pump to empty inaccessible pit latrines, a service for which federation teams charge a small amount. The sludge is then emptied into local authority settling ponds – a deal that exemplifies the federations improving relationship with municipality. One Gulper team was in operation by June 2014, and three new groups were being trained. Teams now have permits and licenses and are operating. The emptying fee is 15,000 to 30,000 TSh. An estimated 6,300 people have benefited from improved facilities due to Gulper emptying. Third, the Tanzanian federation has installed a DEWATS system in the Vingunguti informal settlement. By the end of April 22 houses with 50 households and more than 250 people had benefited through connection.

Capacity building through shared learning was used to support the precedents and involved the practical training of 55 technicians. Municipal forums established during the course of this project (and catalysed by the idea of sanitation forums) are providing a place through which stronger collaborative actions between the Federation and local government can be explored. Forums with Temeke, Ilala and Kinondoni municipality are now taking place. Relations with the utility (DAWASA/DAWASCO) have enabled both the simplified sewerage and gulper teams to deposit waste in ponds.

Precedents: Kitwe, Zambia. Kitwe has been the most challenging of the four cities. Despite considerable efforts to engage with the African Development Bank-financed Nkana water project it has not been possible to move forward. The Federation has supported their local members to build 63 eco-san toilets in Kawama and Mulenga compounds. Shared septic tanks (for between 2 and 5 households) were planned but not taken forward as those members ready to build have not been located close to each other. Twelve individual septic tanks have been constructed. The Kitwe federation has struggled to secure permission from the city council to build and manage communal facilities in Mulenga compound despite the fact the council has two vacant plots demarcated for public toilet construction that are currently being used as dumping sites, and the ablution block has been designed. The Federation has started working with market traders in their efforts to increase pressure on the city council. Difficulties have been exacerbated by reshuffles within council staff and bureaucratic procedures. The Kitwe federation has faced significant challenges since the local utility, Nkana Water & Sanitation, had pledged to provide 1500 free toilets (later reduced to 1000 due to an increase in costs) (through an African Development Bank loan) in the informal areas where they wished to extend toilet loans. While the federation tried to develop a partnership with Nkana to jointly deliver the project this has not proven to be feasible because despite the stated interest of the utility they have not been willing to negotiate and sign an agreement. Some activities such as training were shared but the utility was not willing to deepen this relationship.

The Zambian affiliate has launched a sanitation forum in Lusaka to build up a momentum for greater central government investment in sanitation.

Due to the delays and difficulties, the Zambian alliance is currently conducting a review of their work in Kitwe with the Copperbelt University.

Precedents: Chinhoyi, Zimbabwe. In Chinhoyi, Zimbabwe three precedents were undertaken and are in various stages of completion. Individual flush toilets have been connected to the existing sewage network in Mpata with 10 toilets being built to date. Expensive formal connection charges are proving to be a challenge and are currently being negotiated with the Kitwe City Council. In Gadzema, a settlement located close to Chinhoyi's city centre, the federation is rebuilding and managing a dilapidated council facility. Council provided skilled labour and community members providing unskilled labor. The designs have individualized cubicles maintained and managed by the 60 families using them. Four families share one toilet. Council will only be responsible for the maintaining the municipal sewer line and major repair work. In Shackleton, an old mining town located 15km from Chinhoyi, which has no water connection; the federation is rolling out eco-san toilets with 37 having been completed, reaching 475 people.

The June 2014 meeting in Chinhoyi provided an opportunity to engage the council. The idea of DEWATS is being considered for other areas in Zimbabwe (specifically Epworth) as a result of learning emerging from this project.

In the period following the SHARE meeting, discussions with the municipality have advanced considerable. Chinhoyi Municipality is now constructing school toilets – parents charged 15 cents a month. The programme has just started with only two blocks having been built at a single school but if scaled up and all the possible monies were collected it would equal \$8,000 a month. In practice only \$2-3000 a month is collected but already the difference is evident. The council is also in the process of renovating public toilets, and it about to begin discussions with the Zimbabwe Alliance to establish a sanitation fund. These discussions are on-going.

Non-SHARE country SDI precedents. SDI secretariat's staff member, Noah Schermbrucker, continues to work on this project. He is also involved in supporting other activities in SDI (i.e. his work on SHARE is part-time). He has interacted regularly with the responsible staff members in the SDI affiliates to help them complete their work. He has also worked with other staff in the secretariat to identify useful support contributions from other SDI affiliates.

During this last year, the two precedents in South Africa and Namibia have continued their work. In Namibia, the funds have supported toilets in Tsandi where the community has been constructing new sewer lines that are linked to the existing network; the activities both provided sanitation and trained community members to extend this work. Support has also been provided in Gobabis where there is a need to upgrade sanitation facilities in an informal settlement with 1,000 households and a communal block in need of renovation. A DVD is being prepared. In South Africa, the work has focused on 40 families in Mid-Rand, a settlement in Nelson Mandela Bay Metro (Port Elizabeth). The discussions have centred on the best strategy to address

sanitation needs and after having ignored residents' sanitation needs, the municipality is now willing to negotiate with the community following considerable mobilization at the local level; a first substantive meeting took place two weeks ago. This work is very significant as it spreads the work of the South African Alliance in informal settlement upgrading away from Cape Town and Johannesburg to a new urban centre. Documentation for South Africa is almost finalized and is awaiting the outcome of present negotiations.

SHARE related documentation. The work of SPARC and the NSDF and Mahila Milan in sanitation has been brought together in an extensive publication which is now ready to be printed, and which was summarized in the recent issue of *Environment and Urbanization*.

Gordon McGranahan published an article in *World Development* (68: 252-253). Realizing the Right to Sanitation in Deprived Urban Communities: Meeting the Challenges of Collective Action, Coproduction, Affordability, and Housing Tenure.

The recent issue of *Environment and Urbanization* focused on sanitation. In addition to the article from Sheela Patel, there were two further articles drawing directly on this work.

Banana, Evans, Beth Chitekwe-Biti and Anna Walnycki (2015) Co-producing inclusive city-wide sanitation strategies: lessons from Chinhoyi, Zimbabwe

Banana, Evans, Patrick Chikoti, Chisomo Harawa, Gordon McGranahan, Diana Mitlin, Stella Stephen, Noah Schermbrucker, Farirai Shumba, Anna Walnycki (2015) Sharing reflections on inclusive sanitation

Diana was also involved in drafting the editorial for this special issue which draws on the experience with this project.

By the end of April, the editorial had been downloaded 6,888 times, with the paper on Chinhoyi having been downloaded 84 times and the paper on inclusive cities having been downloaded 191 times.

SHARE meetings and affiliate and non-affiliate engagements

Diana Mitlin presented at the Royal Geographic Society annual conference with Beth Chitekwe-Biti and the Zimbabwe Federation on skype 28th August 2014. This presentation formed the basis of the journal paper in *Environment and Urbanization*.

SHARE work was also presented at World Water Week with the national leader of the Malawi Federation of the Rural and Urban Poor, Mphatso Njunga, as well as the Director of Health and Social Services in the city of Blantyre, Emmanuel Kanjunjunju, and the Policy and Advocacy Manager for the Centre for Community Organisation and Development (CCODE), Mercy Kamwanja. Discussions were captured in the blog: Achieving universal sanitation: Sharing the experience of the SDI affiliate in Blantyre, Malawi (<http://www.iied.org/achieving-universal-sanitation-sharing-experience-sdi-affiliate-blantyre-malawi>).

Representatives from Centre for Community Initiative and the Tanzania Urban Poor Federation in Dar es Salaam came to London to present the work that they have undertaken in Dar at a meeting on sanitation with WSUP at DFID. They also presented at a public event at the DPU at UCL, and at a lunch time session at the LSHTM.
(<http://www.bartlett.ucl.ac.uk/dpu/events/pro-poor-city-wide-sanitation-dar-es-salaam>)

Challenges and disappointments

Many of the challenges and disappointments identified last year remain.

The challenge of going to scale: Last year we noted that affiliates have been using this process to deepen their understanding of the social, political and technical challenges to developing pro-poor basic service provision at scale - specifically city-wide solutions to sanitation.

This year we recognised that the planning and construction of precedents have provided an opportunity for project partners to deepen engagements with local authorities, however this has yet to lead to substantial financial or policy support. In addition bureaucratic “red tape” has stalled a number of precedents – especially in regards to federations applying to rehabilitate and manage council facilities in Zimbabwe and Zambia. We now have progress in Zimbabwe with the construction of the toilet block, and similar progress in Malawi. Equally eco-sanitation units have been constructed in all four cities. Despite these institutional challenges the four project partners continue to plan for and construct sanitation precedents, and to discuss strategies to achieve scale in each of the four locations. In Blantyre, a participatory budget plus closer working relations with MPs (who have constituency funds) are good options. In Chinhoyi, the municipality is now willing to discuss setting up a municipal fund for sanitation and they have learnt from federation strategies to raise money for school toilets. In Dar es Salaam, there have also been verbal commitments from municipalities in very public events (although securing the funds is trickier) and a real commitment to meet in sanitation fora. In Kitwe, there has been little substantive progress.

The need to achieve a genuinely co-productive relationships: There has been relatively little substantive coproduction to date. In general local authorities have simply responded to the work of SDI alliances without making efforts of their own. It is evident that there is still some way to go in catalysing coproduction of sanitation. However, in three of the four cases, local authorities have deepened their relation with the urban poor and informal settlement residents, have collaborated in multiple activities including data collection, project approvals and resource sharing, and are willing to continue discussions.

Lack of land: The lack of land on which to construct toilets is evident. This has prevented the exploration with decentralized waste water treatment in Blantyre, prevented community toilets in Dar es Salaam and prevented the expansion of facilities in Gazema (Chinhoyi). The lack of land has shaped the sorts of precedents that have been developed.

Pushing rhetorical commitment towards policy change: As we noted last year, “Affiliates are keen to see government commitment shift from rhetorical pledges to policy change, specifically by the incorporation of low cost solutions into planning policy as recognised sanitation alternatives”. While the precedents have demonstrated new technologies, finance options and institutional alignments they have not yet led to specific policy changes. Undoubtedly this will take time as their practical benefits and limitations are demonstrated and local authorities are lobbied through year 3 citywide activities. In addition one must consider the scale of precedents to date, many of which are only now gathering momentum to encompass larger numbers (e.g. the proposed scaling up of simplified sewerage system in Vingunguti, Dar-es-Salaam to 1,000 households).

The Zimbabwean affiliate is working to encourage the local government in Chinhoyi to recognise the role that ecosan toilets can play in some instances and communities where there is limited or no access to water. Currently the local government frames ecosan toilets as a temporary solution to sanitation.

Developing sustainable management systems for communal sanitation blocks: There are ongoing discussions amongst the affiliates about the viability of individual vs collective solutions for scale: specifically how practical and affordable are individual solutions and how communities can develop collective management strategies for communal toilets. Strategies for collective management must take into account who will be responsible for maintenance and cleaning, when communal toilet blocks are used by federation and non-federation members. Experiences across the network have been shared including the experience with community blocks in Mumbai and Kampala, the existing experiences with public toilets in Blantyre and the block in Mbare (Harare, Zimbabwe).

How to provide access to sanitation for communities of renters: Shared toilets within plots that are predominately tenants may present challenges if they result in rent increases. These are difficult for the lowest income households to afford. Second, there will also be some landlords unwilling to make these investments, hence this strategy will never provide for all within the area. Throughout last year this has been a very active discussion topic within SDI with blog posts (<http://www.sdinet.org/blog/2014/04/23/new-options-needed-improved-access-sanitation-afri/> and <http://www.sdinet.org/blog/2013/10/11/landlords-tenants-relationship-improving-sanitatio/>). This discussion continues.

Unforeseen increases in costs: Affiliates have worked hard to reduce the price of toilets, however this is very difficult. Increasing costs of cement and some other construction materials have similarly meant that the estimated costs of toilets has gone up significantly for some communities. There is a big gap between the costs of toilets and affordability in some cases. This is a focussed concentration for learning in the final months of the project. We are intending to publish a paper that specifically engages with the problems of affordability and sanitation finance.

Local political instability: This has been less of a problem this year.

Need for broader understanding of low-cost technical solutions and innovations. Affiliates are still keen to participate in further exchanges and to understanding more about the sanitation technologies that are available, and what they can offer to the community. We are planning an exchange with a team from the Orangi Pilot Project coming to Dar es Salaam in the next few months.

Logframe outputs

With respect to this project the following outputs have been achieved.

Output	General progress to date	Progress against logframe milestones
1. Situational (contextual) analysis and research reports	Target for 1.5 years. Overview of situation analysis published with sanitation mapping paper.	<p>Overview not published as individual reports plus project summaries of situational analysis were all produced in full.</p> <p>Mapping paper presented at RGS-IBG conference and published in special issue of <i>Environment and Urbanisation</i>.</p> <p>Obstacle analysis presented at ICUH</p> <p>One paper published in <i>Environment and Urbanization</i>. The challenges paper published in <i>World Development</i></p>
2. Design, assessment and ranking of precedent solutions	Precedents completed; 1000 hhs reached in each city.	See tables 3 and 4.
	Precedent reports completed	An assessment framework was agreed at the end of year one. This has been used to carry out reporting on the precedents. Reporting has been completed and was presented in Dar es Salaam (March 2015).

3. Conceptualization of city-wide strategies	At least one MOU per city (with either council or utilities) (by end of year two)	<p>MALAWI:</p> <ul style="list-style-type: none"> - 2011- MOU between CCODE/federation and BCC on working together in the areas of sanitation and housing. - An agreement between CCODE/Federation and BCC on setting up an Informal Settlement Unit (ISU). <p>ZIMBABWE:</p> <ul style="list-style-type: none"> - Oct. 2012, MOU between Chinhoyi city authorities, ZHPF and Dialogue on Shelter to address the water and sanitation challenges in the City. <p>TANZANIA:</p> <ul style="list-style-type: none"> - No MoU has been signed but discussion meetings at ward level are well progressing in all three municipalities and now federation are working jointly with ward officials to developing ward sanitation strategies and eventually municipal strategy and establishment of ward sanitation fund. It is envisaged that the establishment of the ward sanitation funds would lead to the development of MoUs. <p>ZAMBIA:</p> <ul style="list-style-type: none"> - 2010- KCC signed one MOU with Federation on housing project - 2013- MOU between NWSC and Federation (still not signed)
	Research reports on city wide planning	Not yet begun but data from Zimbabwe will provide the basis to begin this.
4. Audience specific communication	Dissemination plans extended to all SHARE focus countries and to other South Asian and sub-Saharan African countries.	Dissemination plans ongoing and have been discussed several times with SHARE staff at the LSHTM.

		<p>Videos: completed for Malawi and Tanzania, under preparation for Zimbabwe and Namibia</p> <p>Presentations: ICUH (Manchester March 2014), WWW (Stockholm August 2014), RGS-IBG (London August 2014), DfID (March 2015) UCL (March 2015), Faecal Sludge Management (application underway 2015)</p> <p>Additional working papers: Uganda (completed), India (due to be published), South Africa (to come)</p>
	<p>Web reports on all research reports available end of yr 1.5. Policy summaries available for overviews. Newspaper articles in all four cities. At least 10-15 downloads per month.</p>	<p>Situational analysis disseminated through the web.</p>

Outputs: Additional Information

Audience-specific communications achieved (production and dissemination)

Originally intended reports	Actual and revised intentions
Four situational analysis (includes details of sanitation deficiencies in informal settlements) reports plus an overview report	Four situational analysis reports (includes details of sanitation deficiencies in informal settlements) completed as full working papers. Overview dropped as full reports published as NGO authored papers (the original intention was that these would be internal reports only)
An overview paper on “obstacles” that have prevented sanitation from being addressed at scale (literature review to be included) (1 report)	Report published as SHARE working paper (by Gordon McGranahan), and used to develop two journal articles – one <i>World Development</i> article published and another which is now being prepared.
Assessment framework for precedents	Completed last year by team members, being used internally for precedent analysis

Sanitation mapping paper	Presented at RGS-IBG by Beth Chitekwe Biti and Zimbabwe SDI alliance, and published as journal article in special issue of E&U in April 2015 (see above)
Four city studies of precedents plus overview report (5 reports – 4 internal and 1 external)	Precedent reports by affiliates completed, Single overview report in progress (Noah Schermbrucker and Anna Walnycki, SHARE working paper)
Four city-wide scaling up strategies plus overview study (5 reports)	Single overview report in progress (Noah Schermbrucker and Anna Walnycki, SHARE working paper)
A paper showing the implications of these models for equity (gender, people with disabilities, age)	Paper on inclusion published in E&U special issue (see above)
Assessment of city-wide strategies (sustainable, affordable) being implemented – four city wide assessments plus overview (5 reports)	Integrated into citywide scaling up studies above
Policy briefs on the above – key issues to be determined	Four project briefs on the situational analysis completed to date. One over-arching brief on the project has also been prepared and this is available on the SHARE website. Three policy briefs to be prepared on: overview of citywide strategies (Noah/Anna), overview of precedents (Noah/Anna), and equity implications (Diana)
Potentially documents from SDI countries (India, South Africa)	Uganda – completed India - completed One further working paper drawing on current work in South Africa is underway
Participation in the following international conference: World Water Week in Stockholm (2011), World Urban Forum (2012), Africa Water Week (2013) and World Bank Urban Research Conference (2013)	Participation in the following international conferences: World Water Week in Stockholm (2011); International Conference on Urban Health (2014); World Urban Forum (2014) Participation in World Water Week in Stockholm (2011 and 2014); RGS-IBG (2014) Abstract currently being considered: Faecal Sludge Management Conference (2015)
Production of DVD's – at least one for each city	Malawi completed Zimbabwe being completed Tanzania completed
Training/teaching module for university students (relevant to all four locations): case studies with technical and financial details,	No progress on training model. SDI sanitation guidelines under development – see below

book lists and key documents, survey and mapping data	
Website prepared material (photos, short text) – each affiliate to prepare material twice (eight reports), other SDI countries (two reports), and IIED (two reports) i.e. anticipated new material every four months	<p>Blogs to date: SHARE/IIED (Gordon): sanitation marketing, SHARE/SDI (four situation analysis, cross posting) (15 May 2014) SHARE/IIED (Diana): Blog on participation of SDI Malawi in WWW 2014 (27 Oct 2014) SHARE/IIED Blog linked to first World Development Article (4 March 2015) Open Democracy (Gordon): Article on the Right to Sanitation linked to World Development Article</p> <p>SDI Tanzania (situation analysis): 7 March 2013 SDI Tanzania (landlord and tenants): 11 October 2013 SDI Zambia (situation analysis): 24 Oct 2013 SDI (new sanitation options needed): 23 April 2014 SDI (Malawi) Launch of public toilets in Blantyre, May 2015</p>
Practice brief for community-led sanitation to be developed by communities after they consolidate their experience with relevant professionals	Sanitation guidelines for SDI under development – as set out above
A selection of the reports will be reworked and submitted to relevant peer reviewed journals; estimated number of journal articles is approximately 5. These may be done independently or as a special issue of IIED’s <i>Environment and Urbanization</i> journal or another relevant journal. The journal papers will be authored by IIED and SDI researchers in the four countries	<p>Obstacles paper by Gordon McGranahan – two - one published and one due to be submitted – as outlined above</p> <p>Mapping and co-production paper - published in E&U</p> <p>Community toilets paper – published as working paper</p> <p>Equity paper – published in E&U</p> <p>Two further working papers summarising the overall results currently being completed (see above)</p>

Work Plan and Timetable

Workplan presented in the 2014 Annual Report.

Monitoring and Evaluation

M&E FOR CITY WIDE PROJECT

<p>Step 1: Measuring and evaluating changes in relationships with local authorities and with other government agencies.</p>
<p>Indicator 1.1: Relationship between local partners, city councils and Federation have improved</p>
<p><i>MOV: # of MOUs agreements between city councils and affiliates</i></p> <p>Malawi:</p> <ul style="list-style-type: none"> - 2011: MOU between Alliance and Blantyre City Council (BCC) - Agreement between Alliance and BCC on setting up an Informal Settlement Unit (ISU). <p>Zambia:</p> <ul style="list-style-type: none"> - 2010: KCC signed one MOU with Federation on housing project - 2013: MOU between NWSC and Federation (still not signed) <p>Zimbabwe:</p> <ul style="list-style-type: none"> - Oct. 2012, MOU signed between Chinhoyi city authorities, ZHPF and Dialogue on Shelter to address the water and sanitation challenges in the City. <p>Tanzania:</p> <ul style="list-style-type: none"> - No MoU has been signed but discussion meetings at ward level are well progressing in all three municipalities and now Federation are working jointly with ward officials to develop ward sanitation strategies and eventually municipal strategy and establishment of ward sanitation fund. -
<p>Indicator 1.2: Saving schemes are successfully implemented</p>
<p><i>MOV: # of savers at city level</i></p> <p>Malawi: 51 savings groups in Blantyre City which translate to a total of 765 individual members (18 savings group with 270 members since SHARE project)</p> <p>Zambia: 1,298 savers (298 since SHARE)</p>

Zimbabwe: 3000 Savers (350 since SHARE)

Tanzania: Federation membership has increased from 3000 to 4918 since the start of SHARE.

Indicator 1.3: Negotiation process between Federation and local authorities is improved

MOV:

of people who participates into Federation

meetings from local authorities

of people who participates into meetings from Federation

MOV: 1) *# of people who participates into Federation;* 2) *# meetings from local authorities;* 3) *# of people who participates into meetings from Federation*

Malawi:

2012

- a) April: introductory meeting with BCC senior management: 10 participants
- b) July: Stakeholders meeting involving all leaders from informal settlements in the City: 27 participants
- c) Nov 12: Quarterly meeting (Q1): 12 participants

2013

- d) January: Pre and Budget meeting: 23 participants
- e) March: Quarterly meeting (Q2): 17 participants
- f) August: Meeting with planning department: 8 participants
- g) August: Meeting with Health Department regarding management of waste: 8 participants
- h) August: Meeting with Engineering Department: 5 participants

2014

- a) June 18, 2014: Meeting with BCC director of health to formalise public toilets land issue
- b) July 04, 2014: Meeting with senior management at BCC on the possible market places to construct the toilets and agree on how the management of the toilets will be like-(4 officials)
- c) July 17, 2014: Site visit to the two proposed market places-(3 officials).

Zambia:

2012

- a) November: Meeting with KCC: 5 members from ZHPPF
- b) November: Meeting with KCC to form technical group: 2 senior members from KCC and 5 members from ZHPPF.

2013

- c) April: Meeting with KCC to discuss city wide strategy: 7 senior members from KCC and 3 members from ZHPPF
- d) May: Planning meeting to devise implementation of SHARE project: 9 members from KCC and 9 members of ZHPPF (5 from Kitwe, 3 from Lusaka, 1 from Kalulushi).
- e) June-September: at least 1 planning and negotiating meeting with 3 Nkana Water and Sewerage (NWSC) officials, and 1 from Kitwe City Council (KCC)
- f) September: 2 NWSC officials and 1 KCC official attended SHARE meeting hosted by Kitwe Federation about 50 federation members participated in SHARE meeting
- g) October: mobilization meetings for marketing precedents

2014

- h) January: strategic planning meeting for 2014 activities

- i) February: meeting with department of Community, Health and Social Services and Ward Councillor on land negotiation for constructing toilet
- j) March: meeting with toilet beneficiaries on loan system
- k) April: exchange between Lusaka and Kitwe mobilization and construction teams

2015:

- l) 6 follow up meetings from January – May 2015 with director of community health and environmental services; senior community development officer; director of city planning on scaling up sanitation and public toilet construction
- m) 3 monitoring meetings with public health officer, ward councillor and senior community development officer to inspect ecosan toilets in Mulenga
- n) 22 April 2015: meeting with town clerk, director of public health, director of engineering services, and director of development planning to discuss regret letter over public toilet construction

Zimbabwe:

2012

- a) 10 meetings in 2012 (each meeting attended by a minimum of 5 Federation members)

2013

- b) 7 progress monitoring meetings (each meeting attended by a minimum of 5 Federation members)

2014

- c) January: Review meeting of year 2 activities (5 Federation members)
- d) February: Progress meeting on precedent implementation (5 Federation members)
- e) April: Exchange programme with Kadoma City on Chinhoyi partnership on water and sanitation (20 Federation members)
- f) May: Meeting to complete the Monitoring and Evaluation Framework (8 Federation members and 3 community representatives)
- g) May: Brainstorming on communal toilet precedent in Gadzema (3 Federation members and 30 Gadzema residents)
- h) Meeting with SDI team following SHARE meeting in June 2014. Director of Health and newly appointed Town Clerk present. Presentation of SHARE work.

Tanzania:

2015

- a) 5th March 2015 Meeting Kipawa Ward Development Committee (WADC) (Ilala Municipality) to discussion about developing ward sanitation strategy – 8 ward officers, 5 municipal officials attended
 - b) 6 March Meeting with Vingunguti WADC (Ilala Municipality) to provide feedback of situational analysis updates 5 federation members attended and 3 senior ward officials attended
 - c) 18 March Meeting with Vingunguti Ward Development Committee to develop ward sanitation plans 3 senior ward officials
 - d) 20 March Meeting with tandale Ward Development Committee (Kinondoni Municipality) for developing ward sanitation plans 3 senior ward officials and 3 federation members attended.
- 26 March meeting with SHARE team during the research workshop in Dar es Salaam. Commitment made to give financial support to the extension of the decentralized waste water treatment model
- e) 2 April 2015 Meeting with Kipawa WADC to develop ward sanitation plans and formation of ward technical committee for establishment of ward sanitation fund – 3 senior ward officials attended

f) 9 April Meeting with Miburani Ward Development committee for developing ward sanitation plans councillor, 4 senior municipal officials and 3 ward officers attended
g) 21 May 2015 –Technical committee meeting at Kipawa ward to discuss the structure of the ward sanitation fund which will be sent to the municipal council – 5 ward officials attended to the municipal council

Step 2: Monitoring and evaluation of specific project activities: Situational analysis and precedents settings.

Indicator 2.1: Key sector actors are aware of the information contained in the Situational Analysis

MOV: # of people attending launch events of situation analysis documents

Malawi: 10 meetings conducted in various settlements of the city and 1 overall meeting conducted at the BCC. A total of 500 people attended the meetings

2 Meetings conducted where different stakeholders in the WASH sector were present and shared their experiences and ideas. Organisations like Water for people, Hygiene Village Project, Water and Environment Sanitation (WES) Network, ADB were present

Tanzania: 4 meetings organised to share the results of the situational analysis with Ilala, Kinondoni, and Temeke Municipality

MOV: # of web downloads from SHARE and SDI sites

Malawi :9 project related papers downloaded from the sites

MOV: # of local authorities and other organisations members engaged

Malawi: 5 organisations (Blantyre City Council, Blantyre Water Board , Nancholi Community Organization, Water Users Association Network, Water and Environment Sanitation (WES) Network).

This year the following actors were engaged:Water for people, Hygiene Village Project, Blantyre City Council, Blantyre Water Board, Nancholi Community Organization, Water Users Association Network, Water and Environment Sanitation (WES) Network

Zambia: 9 organisations (KCC (Various department health, settlements), Copperbelt Federation, PPHPZ, Ward Development Committee, BICHOD, ZHPPF, BORDA, NWSC, WASAZA).

This year the Copperbelt University, School of Built Environment has entered negotiations to partner with the federation. MoU being drafted to formalize relationship

Zimbabwe: 2 organisations Chinhoyi Municipality; Chinhoyi University of Technology (CUT). This year the WASH sub sector – Government structure in managing WASH activities- was engaged.

Tanzania: Ilala, Temeke and Kinondoni Municipalities, DAWASA, DAWASCO and Ardhi University.

MOV: Media response to situation analysis inside and outside country

Malawi : 2 media tours to settlements implementing the project and 4 newspaper feature in the daily papers

This year there has been 1 media tour to settlements implementing the project and 1 newspaper feature in the daily papers

Indicator 2.2: The sanitary improvements of the technologies implemented

MOV: City Wide sanitation Assessment framework developed by IIED/SDI

Malawi:

The identified technology ie. ecosan has helped to improve the sanitation situation of households as well as being sustainable. This particular technology has a bathroom, a hand washing facility and a soak-a-way pit for waste water and urine. It has also helped to solve some of the challenges in pit latrines including contamination of ground water, and lack of sustainable ways in getting rid of sludge

Zambia:

Given the unplanned nature of informal settlements which hinders the provision of expensive sewer lines, the ecosan provides a cheap hygienically safe on site treatment sanitation facility which does not pollute underground water, unlike the predominant pit latrines. The ecosan models in Kitwe have been modified with a male urinal to avoid backsplash, which had been a concern which had been raised from previous users.

Zimbabwe:

The ecosan technology is indeed an improvement from the current and previous sanitation systems, easy to build and can be managed locally and cheaply. The pit toilets which were previously used were collapsing and becoming full quickly, competing for space within the plot. There were also high incidences of diarrhoeal diseases within the areas and that has since dropped after the implementation of the precedents

Tanzania:

All technologies used including the simplified sewerage, pour flush, ecosan and the gulper are by far an improvement over the traditional pit latrines where residents were experiencing many challenges; construction and emptying costs were high, they were frequently flooded, collapsing, unhygienic, poorly constructed, had no privacy and difficult to maintain cleanliness and residents mostly used risky, unhealthy and sometimes expensive local methods for emptying and there were many cases of accidents associated with latrine collapsing. With the precedents technologies the situation has reversed. Use of gulper technology for pit emptying is minimizing uses of unhygienic and risky pit emptying methods which are practiced by residents in informal settlements. Gulper is now becoming popular and many people are using it. After the implementation of precedents, no cases of cholera and diarrhoea outbreak have been reported in project

Indicator 2.3: The affordability challenge

Malawi:

All the technologies are affordable and can be replicated even to the poorest in the communities. However, there are other households who do not earn enough to afford these technologies. Thus, as a solution we encourage communities to look for some of the locally available materials on their own thereby reducing their loans.

Zambia:

The total BOQ for the toilet is K1, 700/\$266, however beneficiaries make their own bricks, and provide for stones and cement, thus the loaned amount is about K1, 200/\$188. From the Kitwe Profile, 77% of slum dwellers use pit latrines which cost about K50/\$8 to dig a pit, and families normally use sacks, scrap timber or iron sheets to secure privacy. As for septic tanks, the conventional price is about K5, 000/\$780. Overall, the ecosan is more sustainable from a cost perspective. Currently the ecosan beneficiaries pay between K50 to \$8 to K70/\$11 per month for the loan repayment. Low income households earn an average of K200/\$31, and can afford to pay K10/\$1.60. The recovery cost will be K50/\$ to K70/\$11 per month for a 2 year period.

Zimbabwe:

The precedent is relatively affordable compared to other improved sanitation currently on the approved list in Zimbabwe but still unaffordable especially taking into account the livelihood means of some of the residents in need. Communal toilets would spread the costs but face the challenge of attitudes and culture. Communities are trying to lower costs by contributing locally available materials reducing the average loan from USD428 to USD150.

Tanzania:

The precedents are relatively affordable to the majority of residents even the most poor. A loan for toilet improvement ranges between Tsh 290,000 – Tsh 1030,000 (\$162 - \$623) and is repaid for 12 – 24 months depending on the size of the loan.

For simplified sewerage, investment cost is low and as well the corresponding costs of operation and maintenance is also low. A user fee of Tsh 2500 (\$1.36) per month per toilet is charged by the utility regardless of the number of households sharing a toilet.

For the Gulper – emptying costs per trip range between Tsh 15,000 – Tsh 35,000 depending on the distance to waste ponds. This is cheaper compared to the costs of a vacuum truck which is between Tsh 60,000 – 150,000 or above (it also cannot access most of the houses in informal settlements), and/or manual emptying which costs at least Tsh 50,000 shillings – Tsh 300,000 if include costs of reconstructing latrine. During construction of the facilities, beneficiaries have the option to contribute construction materials and unskilled labour to make the toilets more affordable. Cost sharing on materials is also a part of reducing the cost of a toilet as well us of federation technicians – this helps to reduce costs as they are locally available, don't need transport and provide the opportunity to work with beneficiaries to minimize the labour fee.

However, for the poorest households such prices could be still be unaffordable but fortunately such households are very few in communities where the precedents were implemented. During the course of implementation of precedents only one family at Keko machungwa was identified to be most poor

and the Technician team communicated with the Mtaa leadership and together they were able to fundraise and construct a toilet for the household.

Indicator 2.4: The collective action challenge

Malawi

The other identified precedent is that of community public toilets. There is a challenge with this precedent as management of the facility is not properly defined. As a solution to this challenge, the communities have agreed that the facilities will be public private entities.

Zambia:

The federation has mobilized their communities to share knowledge on alternative sanitation models, and to ultimately step up to the challenge to address the sanitation challenges they face. In order for the precedent to be sustainable beyond the project completion, the federation has mobilized communities around the essence of savings “saving for a purpose”, as change within the communities starts with the communities doing something themselves. In terms of mobilization, the federation has positioned women in the communities to take a more leading role in discussing and coming up with practical solutions to the issues which affect them (such as sanitation). The mobilization strategy has been to do a stakeholder mapping and hold meetings around sanitation with the identified community stakeholders. Additionally, local-local exchanges have also brought communities closer together to share ideas on how to resolve sanitation challenges, and the initiative to save and explore ecosan toilets has been embraced. The precedent has been extended to non-federation members in the respective communities owing to the reality that sanitation challenges affect the entire community regardless of affiliation. The sanitation units reach out to community members engaged with during the stakeholder mapping.

Zimbabwe:

Creation of community local authority negotiating forums

Establishment of networks working around addressing water, sanitation and hygiene challenges people working as a community irregardless of their political backgrounds

Improved relations between the residents and LA especially in Gadzema and Shackleton where there was unresolved tenure issues

Tanzania:

The development of the project was built on the concept of collective action. The situation analysis highlighted a number of community actions which was then used as a foundation for the precedent setting projects. These actions included engagement of all communities in the settlement profile, enumerations and mapping. Moreover in most areas, the community Federation had already initiated community driven projects such as solid waste management, hygiene promotion and toilet improvements. In all these projects, all communities in those settlements worked together to address the sanitation challenges. Federation technicians’ teams work together with sub-ward leaders and settlement health teams to monitor behaviours of the residents and ensure that they become more responsible to improving their sanitation facilities. The teams together identify those with no toilets or with very poor toilets and give them advice to improve their facilities or using social sanctions to influence them to improve their sanitary facilities. Additionally provision of Jenga loans considered

all community members regardless their membership to federation. Furthermore, during construction of simplified sewerage project community negotiated with land lords to get land for laying pipes. In addition a community operation and maintenance committee has been formed to take care of the infrastructure operation and maintenance.

Indicator 2.5: The co-production challenge

Malawi

The major challenge in this area is that the BCC and communities do not work together in delivery of services. The situation analysis has shown that the BCC is centralised and it only involves its citizens as passive recipient of services. The Federation is still lobbying the council to open up and start taking communities as active participants when implementing projects that are directly affecting the people.

Zambia:

In principle, the local authorities (Kitwe City Council and Nkana Water) have acknowledged the ecosan as an alternative sanitation model and have allowed the federation to roll it out. A series of meetings were held with the local authorities, and federation artisans were engaged to train and build demonstration models to communities. The trainings were held at the federation housing site, and the communities would use the site as a reference point for learning. However, the federation still needs to intensify their negotiations with the local authorities to mainstream it in policy and invest more in sanitation for slum dwellers.

Both Nkana Water and Kitwe City Council have expressed willingness to support the Federation through consultations over the design and construction of the toilets. Both officials attended trainings conducted at the federation housing site in readiness to roll out the toilet under the Nkana Water Supply and Sanitation Project, where the federation artisans were engaged to construct the demonstrations. What therefore needs to be amplified is to fundamentally agree on the modalities of rolling out which the federation has been negotiating to be done on a revolving fund basis as opposed to issuing the toilets for free. The co-production challenge can be overcome through forming ISNs in all of the informal settlements in the city. The ISNs will make it easier for settlement wide mobilization and social cohesion in order for communities to play their part in addressing sanitation (through savings etc), and also to collectively pressure local authorities to invest more and implement pro-poor policy.

Zimbabwe:

Improved local authority appreciation of sanitation challenges and their commitment to take action provision of transport to facilitate community to community learning

Technical expertise in form of water designs to facilitate the installation of infrastructure in Brundish – Federation housing project

Relaxation of regulations and some payments (inspector stage fee of 160USD) in the construction of toilets in Mpata

Council allows the occupation of settlements before reticulation/sewer connections, people to use on-site sanitation before connection.

Willingness of council to invest in studying alternative sanitation (precedents) as evidenced by the establishment of a functional Project Steering Team (PST).

Participation and presentation of project during other LA exchanges to Chinhoyi very positive and has actually resulted in the implementation of larger projects in other areas taking a serious policy direction

Tanzania:

Slight improvement in the involvement of local government at settlement, ward and Municipality levels has been realised. The data generated on the sanitation mapping was of great interest particularly for the settlement and ward level. The Municipal officials provided positive recommendations towards the development of precedent setting and have been available to provide technical and advisory support. The project is currently developing relationships with the National Government especially in linking it with existing ongoing national program such as sanitation campaign etc. LGAs in DSM have shown a positive response to the project specially by replicating similar training on toilet construction to some other settlements. A Sanitation Urban Forum has been established which involves community, government and other key actors to (Chaired by utility and federation is the secretariat). It is envisaged that this forums will provide a gateway to interface with LGAs and utility and thereby able to influence policy changes.

The local government authorities in Dar-es-Salaam have shown a positive inclination to the project specially by replicating similar training on toilet construction to some other settlements. Negotiations are currently underway to streamline the training in other settlements. Municipalities have been involved in terms of provision of technical staff and assistance. Provision of land for public toilets has been a challenge as most Municipalities and ward levels lack land on the settlements. Financial support from the Municipalities has been difficulty to mobilise so far.

Utility approved design for simplified sewerage, supervised construction of simplified sewerage and provided permits to use their ponds for both simplified sewerage and gulper, as well as utility (DAWASA/DAWASCO) also financed construction of man hole for simplified sewerage (\$2500) and provided permits for desludging sewerage into ponds, for both simplified sewerage and gulper; and have provided their technicians to work together with community technicians during construction of simplified sewerage at Vingunguti. Currently federation is working in close collaboration with ward offices to develop sanitation plans and establishment of sanitation fund, the local authority has shown positive response toward the establishment of the sanitation fund and ward executive officers have agreed to invite stakeholders to contribute to the fund once it is established. The precedence setting project had an element of creation of Municipal urban poverty forums with initial emphasis on sanitations. It is envisaged that these forums will provide a gateway to interface with Municipal officials and thereby able to influence policy changes. Strengthening relationship with government and establishing forums which involve community, government and other actors to share learning and fundraise

Indicator 2.6: Post-precedents ideas dissemination

Malawi

- Sharing the DVD with other stakeholders working in the WASH sector
- To continue with community meetings to raise the awareness of community members

- To conduct sector stakeholders meetings
- To distribute the identified precedent information through leaflets and brochures

Zambia:

- To establish a sanitation forum comprised of all stakeholders in the water and sanitation sector to meet quarterly to address water and sanitation in informal settlements
- To circulate quarterly newsletter to stakeholders
- Produce a water and sanitation catalogue highlighting details of all stakeholders, such as, projects they are currently undertaking, areas of operations, to avoid duplication of efforts

Zimbabwe:

- circulation of DVD (in progress)
- engaging with CUT on how the precedents can be developed further
- wider consultation with communities in Chinhoyi

Step 3: Evaluation of the impacts of SDI research. This evaluation will take place at key events where the city wide project's results will be disseminated. The M&E officer will interview key actors to gauge what the perceived benefits of the SDI models are and whether they would apply it to their country

Indicator 3.1: Research impact and uptake

MOV: # of people reporting they have been influenced by the study

Malawi: 23,000 people living in the informal settlements of the city.

Zambia: Talks with Copperbelt University underway to create synergies in sanitation provision in the city, and other urban planning dynamics

Zimbabwe: Chinhoyi Municipality have acted upon the profile findings and engaged the communities of Rujeko and Rusununguko to assist with water installation. Chinhoyi University of Technology (CUT) has partnered with the federation to carry out scientific studies on the manure from ecosan toilets. The studies will determine the safety of the manure.

Council and the development committee in Shackleton have accepted the rehabilitation of communal toilets as an affordable way to provide sanitation in Shackleton. Currently discussions are in progress to look at practical ways the existing communal toilets in Shackleton can be rehabilitated/redesigned to be able to provide decent sanitation

Tanzania: Ardhi university bring their students to work with federation technicians DWASCO (utility) and have provided technicians to work with federation technicians during construction of simplified sewerage this is an indication that they have been impressed. During SHARE workshop, LGA pledged to mobilise finance for extension of simplified sewerage though more advocacy and lobbying is needed. LGA replicated training of toilet technicians in different wards.

Indicator 3.2: Evidence of practical use of research results

MOV: Adopted legislation in project cities

Malawi

City council accepting the construction of Ecosan toilets in the cities
BWB commencing the connection of water to homes in the informal settlements

Zambia:

NWSC engaged Kitwe federation artisans in constructing ecosan toilets in the Nkana Water Supply and Sanitation project (a government project)

Zimbabwe:

Partnership arrangements between council and communities of Rujecko and Rusunguko settlements
Rehabilitation of all public toilets by council in Chinhoyi. The profile flagged the poor state of public toilets and council moved in by repairing them. There is still a challenge around cleaning and maintenance though.

Tanzania:

Development of ward sanitation plans in all wards where precedents have been implemented and discussions about establishment of a sanitation fund which are now in progress is a positive indication on possible policy on financing household sanitation

MOV: Behavioural changes of practices in the ground**Malawi:**

People are adopting the Ecosan technology and this shows the willingness of people to invest in sustainable sanitation facilities.

Zambia:

A steady number of residents especially in Mulenga compound have decommissioned their pit latrines and have begun using the ecosan toilets

Zimbabwe:

The planned construction/rehabilitation of communal toilets in Shackleton.

The involvement of Alaska community to also construct public/communal toilets.
Construction of toilets at a creche in Alaska after the profiling exercise revealed that the creche was endangering the health of children. Gungano forwarded a loan to construct two toilet blocks for the children.

Tanzania:

LGA are promoting use of the gulper for pit emptying in informal settlements. Use of the gulper for pit emptying is being promoted and use of local pit emptying methods has been minimised in project areas. More awareness and understanding has been created in project areas about the importance of improved sanitation. Now people come to demand loans for sanitation improvement and others have only requested expertise. There are improved relationships between land lords and tenants with regard to sanitation improvement



Annex G: SHARE Value for money analysis

RESEARCH REPORT

SHARE Value for money analysis

Updating quantitative estimates of value
for money from sanitation and hygiene
applied research

Richard Rheingans

SHARE Impact Director

LONDON
SCHOOL of
HYGIENE
& TROPICAL
MEDICINE



icddr,b

iied



WaterAid

share
Sanitation and Hygiene Applied Research for Equity

Background and overview

This document was initially prepared as a part of the 2014 SHARE Annual Report, however it was not initially included with the primary submission in July 2014 because it was not yet ready. It is being included in this year's report in a lightly edited version. These edits were done to improve readability and clarity and for the benefit of those who were unable to review the earlier version.

The analyses presented here are necessarily speculative. They are designed to estimate the impact of financial, health, and developmental impacts that could be achieved through SHARE's applied research and research into use (RIU) activities. The pathway between carrying out applied research and realising concrete changes in programmes and sanitation and hygiene conditions is a long one. The analyses set out to quantify how specific streams of research could and are expected to be influencing policies and programmes, and what impact that is expected to have on conditions. However they are not intended to be direct empirical measures of impacts.

While generating these estimates of future impacts is not precise, it provides useful information by identifying the causal logic of how research is expected to yield impacts and identifying key factors that will influence whether these impacts materialize or not. By identifying these key assumptions and influential variables this type of Value for Money analysis can be used as a way to develop adaptive strategies that increase the likelihood of changes occurring. In this way it goes from being a measure of VfM to being a tool for increasing impacts and VfM.

Since the initial preparation of this report, SHARE has taken steps to increase the likelihood that the estimated benefits will be realised. The most important part of that has been through the launching of the current extension of SHARE, designed to increase and sustain impacts. The extension was specifically designed to address applied research questions that were expected to catalyse further change, by generating more evidence on the nature of problems and demonstrating the impact of interventions. Of equal importance, extension activities have been developed to catalyse uptake through RIU activities. One example of this continued effort to increase impacts is the continued collaboration among SHARE, DFID Tanzania, and WSP in the design of the next round of the National Sanitation Campaign. This is an opportunity to contribute to bringing global and local evidence of effective sanitation and hygiene into the execution of the national campaign.

Realising the impacts projected in this report is highly dependent upon other actors in the national and global sectors. For example, the estimated impact of improved hand washing behaviour change communication developed through SuperAmma is dependent upon programmes and campaigns incorporating the approach and effectively implementing it. However changes in programme approaches are often slow to materialise and may require development of new skills and capacity within organisations, as well as changes in institutional culture. While SHARE has some influence over these actors, their decisions are largely outside of

SHARE's control. One potential way to accelerate this process would be for funders to incentivise and enable organisations to incorporate new evidence or applied research into their programmes.

Introduction

The current work describes SHARE's efforts to develop quantitative estimates of the impact of its research on health and economic outcomes in a value for money analysis. Most other quantitative VfM analyses focus on projects or programmes that directly invest in a particular sector. These analyses are typically based on existing cost-benefit analysis models, or are carried out by creating such models. One of the challenges for SHARE's case is that it is not a direct investment programme or policy initiative. As such, quantitative VfM requires an impact model that accounts for the effect of programme information and applied research on sector performance (eg changes in practice or investment). The second challenge in SHARE's case is that there are no readily available impact models that can be used as in some of the other cases.

The purpose of this report is to update previous estimates of the current and future value for money of SHARE's research and research into use efforts in several areas. The report builds on analyses presented in the 2012-2013 SHARE Annual Report. As with last year's report, the purpose is to identify modifiable factors that can maximise value for money going forward, in addition to estimating the value.

Methodological overview

The model (Figure 9) assumes that costs are invested in SHARE research and research into use activities; that these result in changes in programmes and policies; that these in turn change performance in terms of coverage, cost and effectiveness; that these can be quantitatively translated into economic and health metrics; and finally summary measures such as benefit:cost ratio and cost-effectiveness ratio can be used to assess the return on the research and RIU investment.

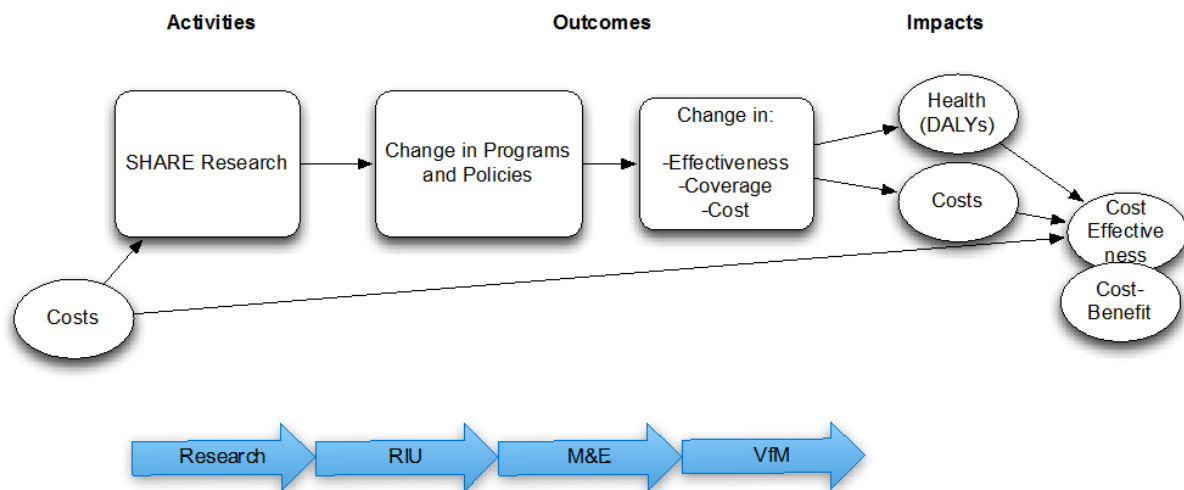


Figure G 11: SHARE's value for money conceptual framework

Each application is slightly different based on the specific research and application, however they have several common features.

Intervention effectiveness

Estimates of intervention effectiveness focus on diarrhoeal disease reduction in children under five years of age. Many of the interventions are likely to have benefits beyond this, including reductions in respiratory illness from improved handwashing, reduced undernutrition, and reduced soil transmitted helminths. However quantitative estimates of effectiveness are less available for these endpoints. We used the pooled estimates of effectiveness for water quality, sanitation and hygiene from the DFID Evidence Paper as the basis for our estimates. However there is substantial uncertainty, as actual effectiveness may change across settings.

For some interventions, such as complementary food hygiene, there are no available estimates of effectiveness in reducing diarrheal disease. In these cases we directly address this in the more detailed sensitivity analysis.

Health impact

The primary health impact we consider is diarrhoeal morbidity and mortality in children under 5 years. For each application we use national mortality estimates from Liu and colleagues (Liu *et al.* 2012). These updated estimates are lower than those used in SHARE's earlier VfM analyses. Other SHARE research (Rheingans, Anderson *et al.* 2014) demonstrates that diarrhoeal

mortality associated with inadequate sanitation and hygiene is likely to be heterogeneous within any country, due to differences in exposure, nutritional status, and access to basic medical care (including ORS). If interventions are targeted at high burden and high vulnerability populations, then the potential impact is greater. If they fail to reach the more vulnerable, then the impact may be less. It is difficult to empirically assess this, and as a result it is addressed in the sensitivity analysis.

Costs

In these analyses we focus on the costs associated with diarrhoeal cases, considering both costs borne by the healthcare system and those incurred by the family. Estimates are based on published national estimates of treatment costs from Atherly and colleagues (Atherly *et al.* 2012) which are based on WHO CHOICE methods and regional estimates based on a multi-country analysis for Africa (Rheingans *et al.* 2012a) and Asia (Rheingans *et al.* 2012b). We do not attempt to put a value on the life of a person who dies of diarrhoea.

Attribution

One of the challenges of estimating the VfM for applied research and RIU activities is assess what portion of change can be attributed to the specific activity, compared to that of others. Attribution is central to defining the counterfactual for these analyses. That is, what would have happened in the absence of the activity? For example, for many of the SHARE activities analysed here, SHARE's work builds on a long history of work conducted by other institutions as well as SHARE researchers. In some of these cases, SHARE's activities may have been essential in triggering a particular change, in spite of the fact that SHARE's investment is a small fraction of the total effort. In such a case where a SHARE activity pushes the collective effort across a threshold, what portion of the change should it be credited with?

In spite of this uncertainty, it is essential to quantify this contribution. To do so, we use the following principles. First, we only estimate the benefit and claim it as a SHARE impact if it can be documented that SHARE contributed to the programmed change in a concrete way. Second, the magnitude of the attribution should be based on the extent to which SHARE contributed to the specific change. For example in the case of the Evidence Paper, SHARE's contribution was only one part of synthesizing the evidence base for the impact of sanitation and hygiene. In contrast, in the case of weaning food hygiene, SHARE has been central to researching the problem and translating the results into changes in practice and it is appropriate to estimate a higher contribution. One important corollary to this is that if SHARE engages in specific RIU activities that would not likely have occurred otherwise, any resulting research uptake could be substantially attributed to SHARE. Third, given the fundamental uncertainty in these estimates, analyses must explicitly explore the influence of the attribution assumption on estimated impacts and this uncertainty should be reflected in uncertainty bounds around the estimated impact.

Uncertainty

There are varying degrees of uncertainty within each stage of the causal chain laid out in Figure 1. These range from uncertainty in the degree of change in programmes, the effect on household sanitation and hygiene, and the effect on health and economic outcomes. If each of these uncertainties were multiplied together, the resulting range of uncertainty would be too wide even to contemplate. We therefore used Monte Carlo analysis to quantify the effect on impacts. Each input variable is characterized by a probability distribution representing the range of likely outcomes. In the simulation procedure, a single value is drawn from the probability distribution of each input variable, and forecast values are calculated for key outcomes. The procedure is repeated (10,000 iterations in this case) and the resulting outcome calculations are used to develop an output distribution. This output distribution represents the expected range of potential outcomes, given the assumed input distributions and the selected structure of the model. Uncertainty limits are estimated based on the 10th and 90th percentile of the output distributions.

Additional sensitivity analyses are conducted to identify the key input variables that explain variability in the outcome. These include one-way sensitivity analyses where a single input variable is varied and two-way analyses where two input variables are varied simultaneously.

Value for Money: Improved Hand Washing Behaviour Change

Background

In the 2012-2013 SHARE Annual Report we examined a series of potential value for money analyses related to the SHARE funded project Choose Soap. The initial SHARE investment built on years of research by the LSHTM Hygiene Centre and others. The initial project helped leverage funding from the Wellcome Trust for a randomized trial of the SuperAmma approach. SHARE has followed up with additional RIU grants to increase the uptake of the approach.

As pointed out in the 'Success Stories' section of this year's report, results from the study have been published and show a substantial *and sustained* change in hand washing behaviour (Biran *et al.* 2014). In addition there has been progress on scaling up the approach in South Asia and more recently in Africa (through a WSSCC programme in Nigeria and possibly in Zambia). The findings have also been incorporated into Unilever's contribution to the annual Global Hand Washing Day.

The purpose of the current analysis is to estimate the value for money of the scaling up of this approach in countries where it has already begun to different degrees (India, Bangladesh, Nigeria and Zambia).

Methods

The current model builds on that presented in last year's report, however makes several important changes. First, this analysis uses current estimates of hand washing behaviour as the comparator {Freeman *et al.* 2014}. Second, we have updated mortality estimates based on Liu *et al.* {Liu *et al.* 2012}. This study captures current CHERG estimates and reflects recent improvements in diarrhoeal mortality. Lastly, we use published estimates of behaviour change and sustainability over time from the recently published studies {Biran *et al.* 2014}.

As with all of the VfM studies, ascribing attribution is difficult in this case. The original SHARE funded work built on the experience of researchers and practitioners inside and outside of SHARE and it is hard to distinguish these lines of influence. It is also difficult to determine the counterfactual of what would have happened without SHARE's efforts. For this analysis we use a conservative calculation of 10% attribution as a best estimate and consider a range of values as well.

The main outcomes for the analysis include the number of people with improved hygiene, the estimated diarrhoeal deaths averted, and costs averted. Estimates are based on a 5-year time horizon and assume that programmes will continue to reach new audiences over time. Based on evidence from the SuperAmma trial (Biran *et al.* 2014) we assumed a 37% uptake of behaviour change in the first year, 30% in the second year, and a linear decline in subsequent years. Although the lessons of Choose Soap and SuperAmma are being incorporated into national campaigns, there is uncertainty as to what fraction of households will be reached over time. For this analysis we assume that exposure to the intervention will increase linearly over time, eventually reaching 25% coverage (with an uncertainty range of 10-40%).

Given that the cost of delivering the intervention may differ across settings, we used a threshold analysis to identify the cost per household below which the intervention would result in a cost-effectiveness ratio of less than £100/DALY.

Results

The table below shows the project value related to SHARE's Choose Soap research and RIU activities. The main outcomes are children and people with improved handwashing behaviours, estimated diarrhoeal deaths averted, and costs averted. The results reflect the value of partially scaling up the behaviour change approach in four countries where this process has already begun to varying degrees (India, Bangladesh, Nigeria and Zambia). The table shows the overall benefits to which SHARE's work contributes, as well as an estimated fraction attributable to SHARE. Central estimates and uncertainty ranges are reported.

Table G 9: Potential benefits of SHARE improved hand washing with soap research and RIU (2014-2019)

Potential Benefits of SHARE Improved Hand Washing with Soap Research and RIU (2014-2019)		
Overall Benefits	Central Estimate	Uncertainty Range
<i>Children with improved hygiene</i>		
India	20,776,474	13,896,591 - 27,719,051
Bangladesh	2,612,805	1,752,234 - 3,484,639
Nigeria	4,742,964	3,167,629 - 6,348,163
Zambia	410,709	273,563 - 549,462
Total	28,542,952	21,349,035 - 35,668,534
<i>People with improved hygiene</i>		
India	206,530,807	138,140,578 - 275,544,244
Bangladesh	25,792,038	17,296,996 - 34,398,259
Nigeria	27,046,878	18,063,490 - 36,200,570
Zambia	2,245,635	1,495,762 - 3,004,295
Total	261,615,358	191,358,041 - 332,055,369
<i>Diarrhoeal Deaths Averted</i>		
India	16,346	10,804 - 21,841
Bangladesh	631	419 - 849
Nigeria	7,438	4,935 - 9,986
Zambia	437	288 - 589
Total	24,852	18,754 - 30,940
<i>Costs Averted</i>		
India	£8,417,567	5,488,912 - 11,407,872
Bangladesh	£434,508	286,953 - 589,630
Nigeria	£4,246,608	2,787,460 - 5,734,420
Zambia	£207,237	136,214 - 281,308
Total	£13,305,919	9,974,811 - 16,709,773
Estimated Attributable Benefits		
<i>Children with improved hygiene</i>	2,859,059	1,176,479 - 4,652,145
<i>People with improved hygiene</i>	26,153,716	10,682,498 - 42,768,412
<i>Diarrhoeal Deaths Averted</i>	2,489	1,024 - 4,031
<i>Costs Averted</i>	£1,332,832	546,547 - 2,157,360
Breakeven Intervention Cost		
India	£1.71	1.55 - 1.87
Bangladesh	£0.55	0.42 - 0.60
Nigeria	£5.98	5.44 - 6.55
Zambia	£4.15	3.77 - 4.54

There are several important patterns when comparing countries. India’s large population makes it the dominant source of potential benefits, especially in terms of number of individuals with improved behaviours. However Nigeria and Zambia have higher rates of child diarrhoeal mortality resulting in a disproportionate health benefit in these countries given their population. Bangladesh has the lowest diarrheal mortality rate and the lowest health benefit per unit population.

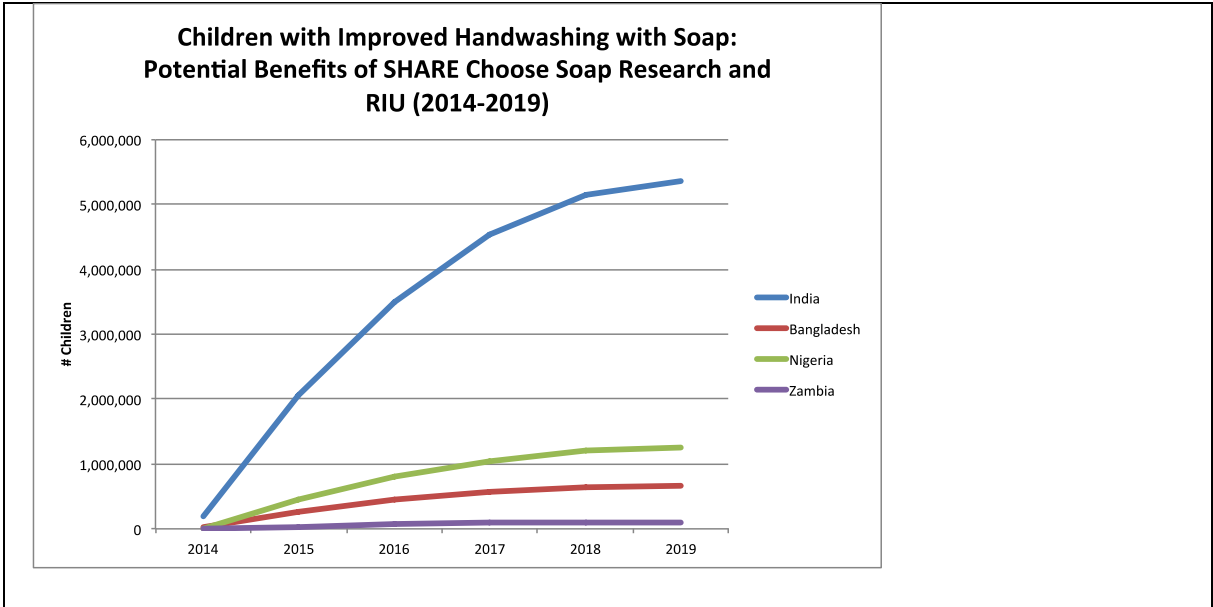


Figure G 12: Children with improved handwashing with soap

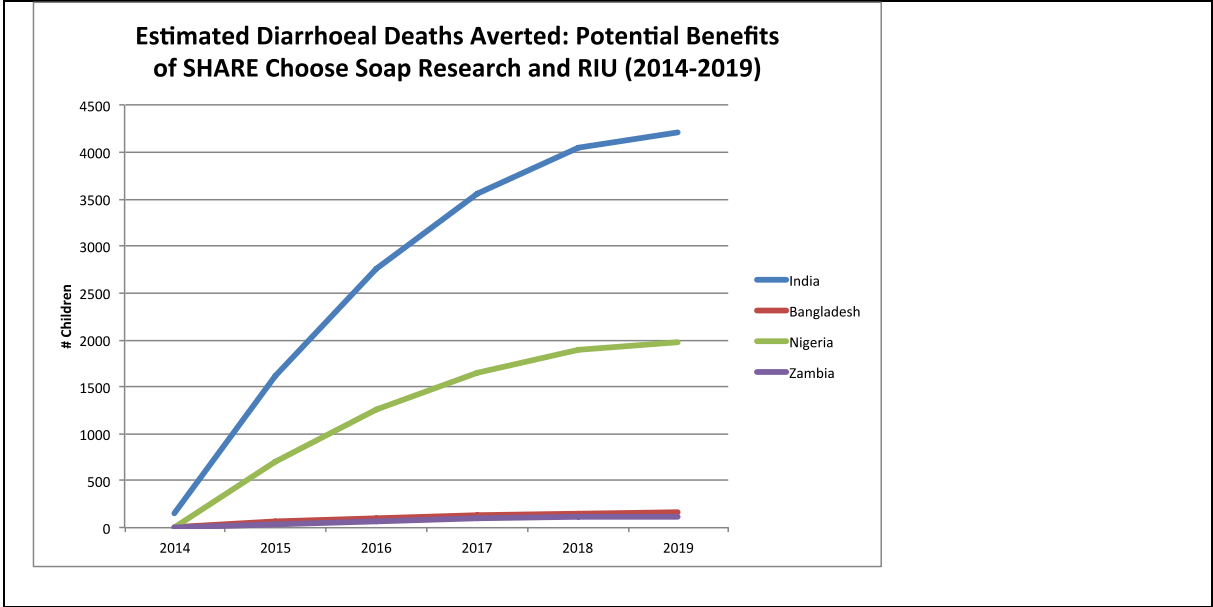


Figure G 13: Estimated diarrhoeal deaths averted

As a part of this analysis we conducted a sensitivity analysis to identify which variables have the greatest impact on uncertainty regarding the attributable expected health benefits (diarrhoeal deaths averted). The results are shown in the tornado diagram below. The most important variable is proportion of attribution. This is followed by the fraction of households that are reached in India and Nigeria.

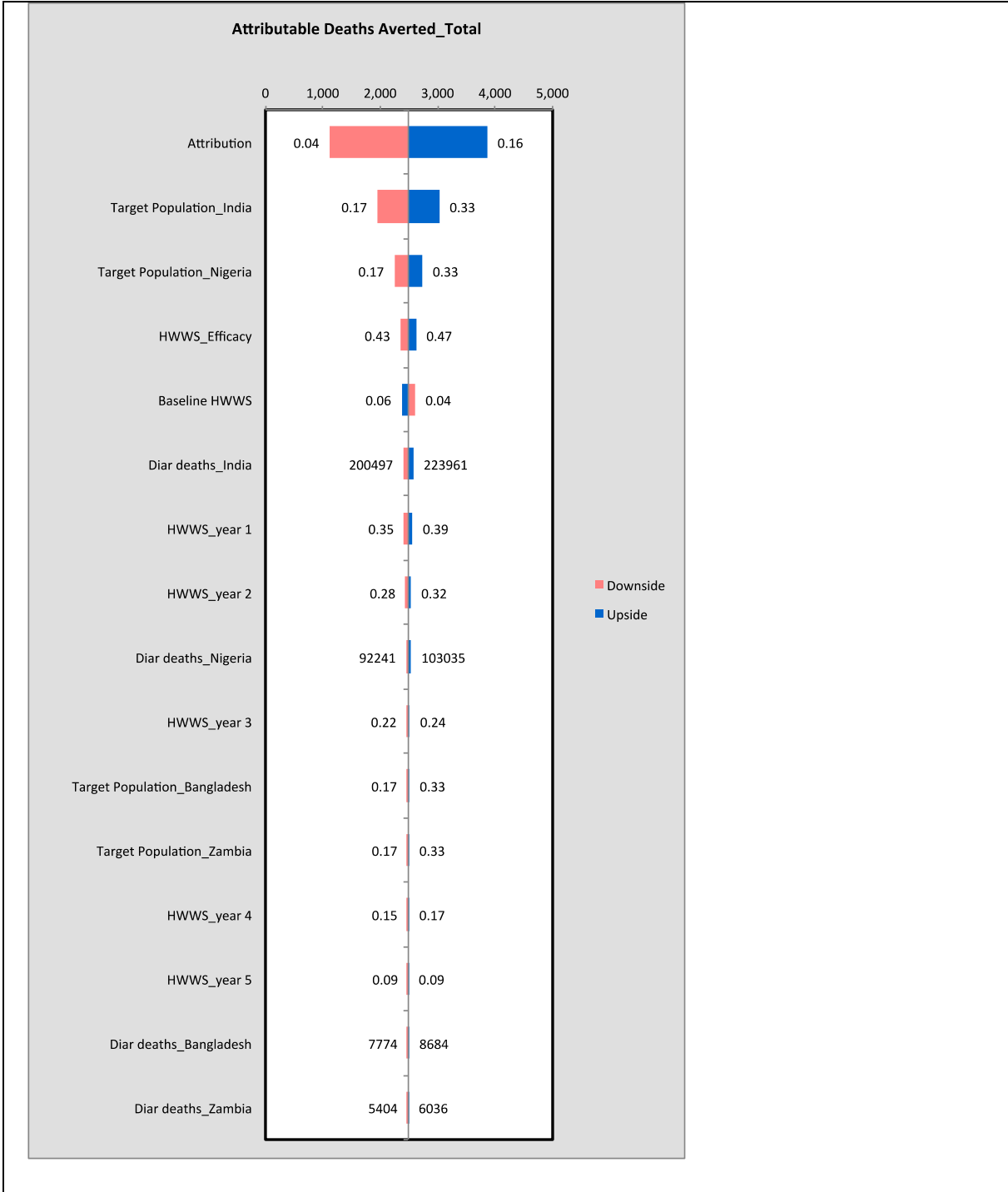


Figure G 14: Attributable deaths averted

The results table above also shows the breakeven cost for intervention delivery. This is the cost per household below which the intervention would yield a cost-effectiveness ratio of less than £100/DALY. This values range from than £0.55 in Bangladesh to than £5.98 in Nigeria. This difference is primarily due to the substantially higher diarrhoeal mortality rate in Nigeria. The figure below shows how cost per household influences the cost-effectiveness ratio across a broader range.

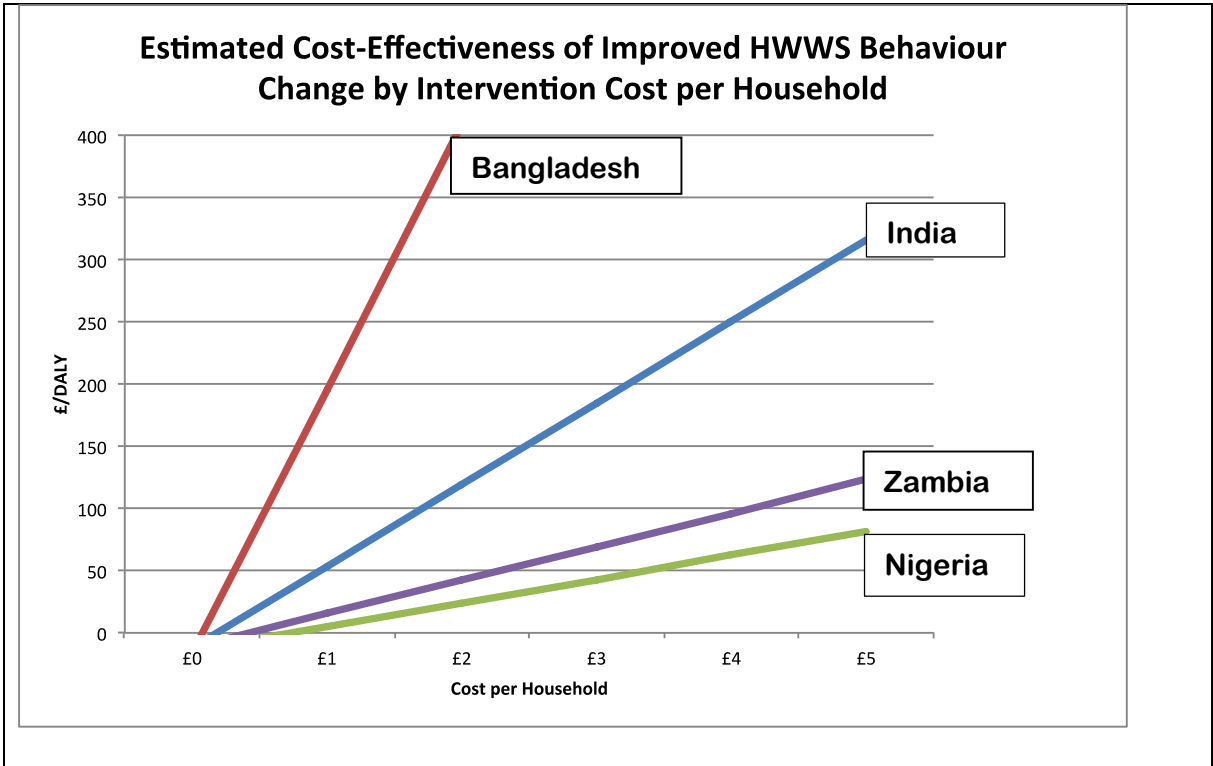


Figure G 15: Estimated cost-effectiveness of improved HWWS behaviour

Implications

- The current analysis does not include several important health and economic benefits. Among the outcomes included are: reduced respiratory illness and mortality, improved nutrition due to reduced diarrhoeal disease, and reduced diarrhoeal illness and mortality among individuals over 5 years of age. This omission would make the current analysis an underestimate of benefits, all else being equal.
- In the sensitivity analysis uptake in countries like Nigeria and India with large populations and high mortality are the key determinants of expected health benefits (along with SHARE’s proportion of attribution). While these are all unknown and speculative variables, it is important to point out that they are also directly a function of SHARE’s on-going RIU efforts. The value of SHARE’s research investment in this area

remains highly dependent upon the on-going ability to get those results incorporated into large scale programs, such as is occurring in Nigeria.

- The analysis suggests that the value for money from this research and RIU is dependent upon the underlying diarrhoeal mortality rates. These large between country differences are likely to be repeated within countries as well. As a result, the value of the research and related RIU would likely be greatest within sub-national regions or among vulnerable populations that have higher than average diarrhoeal mortality risks.

Value for Money: Complementary food

Background

Extent of the problem

Over the past years SHARE has developed a series of projects to demonstrate contamination of children's complementary or weaning food due to poor sanitation and hygiene. This has included work to document the contamination and show the effectiveness of a HACCP approach {Islam *et al.* 2013}. Last year's reported highlighted the potential impact of the work carried out by ICDDR, B and WaterAid Bangladesh to promote the uptake of lessons on complementary food hygiene.

More recently, there have important additional activities including exciting research by SHARE PhD student Om Prasad Gautam in Nepal and the launch of collaborative study of complementary food hygiene in The Gambia in collaboration with the Ministry of Health. In both of these cases, there are strong signals that complementary food hygiene interventions will be incorporated into large-scale nutrition programs. In addition, the SHARE collaboration with DFID Tanzania around the National Sanitation Campaign has created an interest in incorporating food hygiene into complementary feeding programs by DFID, Ministry of Health and Social Welfare, and others.

In light of the large potential impact, SHARE has highlighted this as an important area of work for the potential extension.

The purpose of this analysis is to update last year's analysis of the VfM of complementary feeding hygiene in Bangladesh to estimate the expected value of expanding to The Gambia, Nepal, Tanzania, We also examine a more optimistic scenario where there is partial uptake throughout sub-Saharan Africa. In all of these cases, there is still uncertainty about the scope of programmatic uptake, the degree of change in caretaker behaviours, and the potential effect on health and nutrition. However estimating the potential value of benefits provides important information in planning research and RIU activities.

Methods

The current model builds on the analysis presented in the 2012-13 SHARE Annual Report. Here, we summarize the key elements and changes that have been made.

New global estimates of diarrhoeal mortality (CHERG) have been incorporated into the model. This is an important change, because for Bangladesh that projected reduction in mortality represents approximately 60% of the previous estimate - from 20,155 (Black *et al.* 2010) to 8,229 (Liu *et al.* 2012). Subsequent estimates have lowered estimates for some countries even further.

The most significant change is that the model has been expanded to include scenarios for The Gambia, Nepal, Tanzania, and the remainder of sub-Saharan Africa. Population, diarrhoeal mortality and cost information are from the same sources as for Bangladesh.

Another important change is that for this analysis we have developed a projection of potential impacts through 2019. This is important given that no changes are yet to have occurred for most of these countries, so current accrued estimates would underestimate expected impacts. Estimating future impacts requires further assumptions regarding the likely uptake of the intervention in each country and region over time. For this analysis we assumed that impact of the percentage of mothers of children 6-23 months would increase over time. We also assumed a higher level of uptake in Bangladesh (where substantial progress has already been made) compared to the other three countries. The assumed level of mothers reached was lower still (10%) for the sub-Saharan Africa scenario. We also use different levels of uncertainty regarding uptake in each setting. This is designed to reflect the higher level of confidence that scalable programmes will be implemented in each setting. Uncertainty is assumed to be lowest in Bangladesh and highest in the sub-Saharan Africa regional scenario. It is assumed to be intermediate for the Nepal, The Gambia and Tanzania. The actual values are shown in Table X.

In other analyses we examine the health and economic impact attributable to SHARE. In last year's analysis we assumed 90% attribution to SHARE, but have scaled that back to a more conservative 50% in this analysis. For the other settings this is highly speculative and depends on the actual efforts directed towards these targets through RIU. We use a default of 25% attribution. Like many of the variables, the values of attribution are actually changeable and will be influenced by SHARE programme decisions.

Results

The expected benefits of SHARE's research and RIU on complementary food hygiene are summarized in the table below. This includes total benefits and estimated attributable benefits. Three types of benefits are considered – number of children with improved WASH, diarrhoeal deaths averted, and costs averted. Estimated outcomes are presented through 2014 and projected to 2019.

Table G 10: Potential benefits of SHARE complementary food hygiene research and RIU

Potential Benefits of SHARE Complementary Food Hygiene Research and RIU				
Overall Benefits				
	Through 2014		Through 2019	
	Central Estimate	Uncertainty Range	Central Estimate	Uncertainty Range
<i>Children with improved WASH</i>				
Bangladesh	411,077	215,520-633,540	4,316,311	2,262,960-6,652,166
The Gambia			38,853	16,166-64,094
Nepal			284,347	115,847-474,767
Tanzania			720,837	139,520-1,361,967
Sub-Saharan Africa			6,073,851	1,162,692-11,466,964
Total			11,434,199	5,768,543-18,050,490
<i>Diarrhoeal Death Averted</i>				
Bangladesh	133	65-213	1,400	679-2,235
The Gambia			37	15-63
Nepal			147	57-253
Tanzania			577	106-1,113
Sub-Saharan Africa			10,544	1,917-20,411
Total			12,714	3,863-23,149
<i>Cost Savings</i>				
Bangladesh	116,585	52,802-194,507	£1,224,146	554,423-2,042,327
The Gambia			£11,964	4,369-21,045
Nepal			£60,651	10,840-120,319
Tanzania			£301,207	53,440-598,378
Sub-Saharan Africa			£2,518,834	429,396-4,986,665
Total			£4,116,802	1,649,265-7,198,187
Estimated Attributable Benefits				
	Through 2014		Through 2019	
	Central Estimate	Uncertainty Range	Central Estimate	Uncertainty Range
<i>Children with improved WASH</i>				
Bangladesh	203,950	97,527-330,069	1,277,311	614,937-2,075,969
The Gambia			11,721	4,514-20,097
Nepal			84,722	32,526-145,570
Tanzania			214,492	38,958-418,274
Sub-Saharan Africa			1,810,618	334,300-3,543,446
Total			2,122,015	613,198-3,913,043
<i>Diarrhoeal Death Averted</i>				
Bangladesh	67	30-111	420	189-705
The Gambia			11	4-20
Nepal			43	16-77
Tanzania			171	30-341
Sub-Saharan Africa			3,131	551-6,192
Total			3,773	1,125-7,053
<i>Cost Savings</i>				
Bangladesh	57,271	23,402-99,450	601,350	245,725-1,044,227
The Gambia			3,576	1,189-6,528
Nepal			17,884	2,983-36,270
Tanzania			89,139	14,750-181,299
Sub-Saharan Africa			741,253	126,267-1,486,822
Total			1,479,196	633,166-2,518,183

The figures below show the expected number of children with improved WASH and diarrhoeal deaths averted over time and by setting. For both outcomes, annual outcomes are low to begin with and increase over time. This increase is based on the assumed continued effort to incorporate appropriate complementary food interventions into programmes at scale. Success in doing that is also likely to be dependent upon additional evidence of the importance of complementary food contamination in different contexts and the development of effective and scalable behaviour change approaches.

The graphs below and table above also show the different level of potential benefits among settings. First, whilst Bangladesh has the largest number of expected beneficiaries for any country, the level of health benefit is somewhat less pronounced. That is the result of a substantially lower diarrhoeal mortality rate there, compared to the other countries. Second, the relatively small population in The Gambia results in lower potential benefits than the other countries (although its diarrhoeal mortality rate is higher than any of the other individual countries listed).

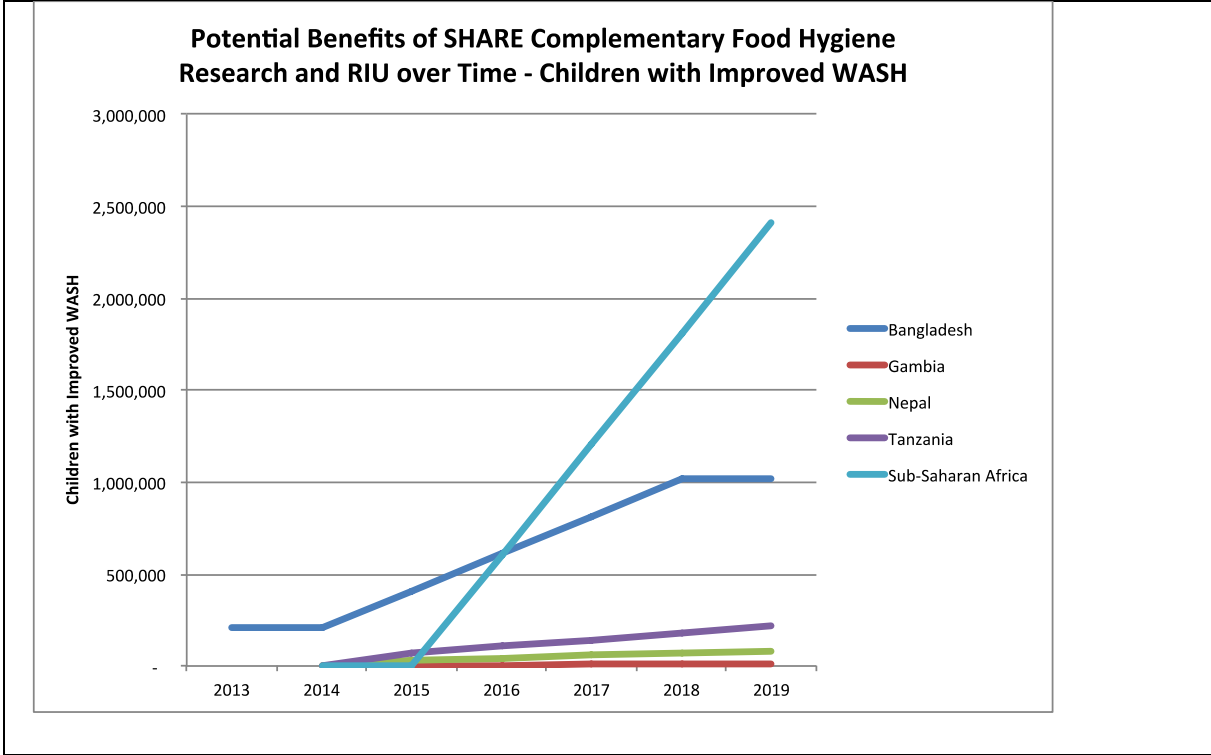


Figure G 16: Potential benefits of SHARE complementary food hygiene research and RIU over time - children with improved WASH

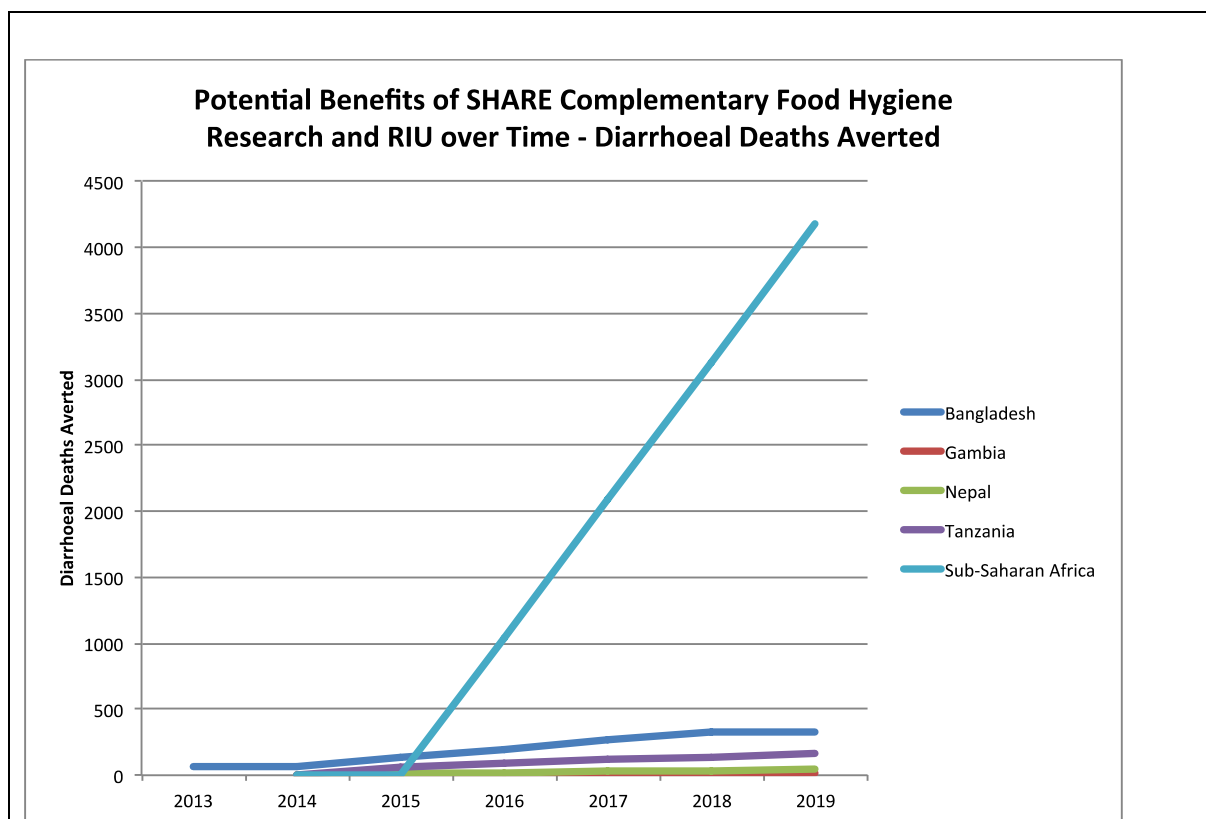
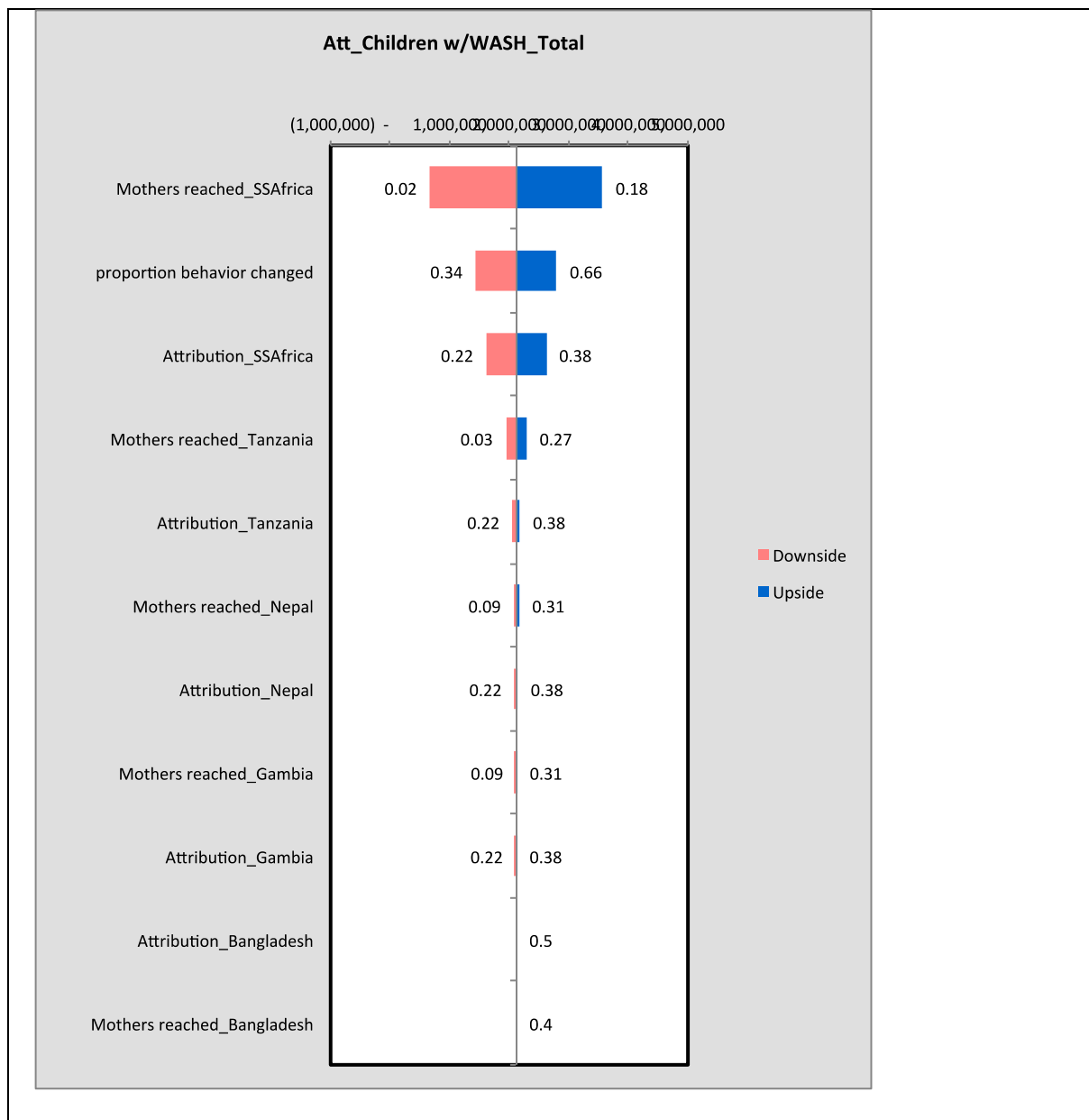


Figure G 17: Potential benefits of SHARE complementary food hygiene research and RIU over time – diarrhoeal deaths averted

We conducted a sensitivity analysis to assess which variables have the greatest impact on the potential impacts of SHARE’s work in this area. Two tornado diagrams are shown below, one for the variables influencing the number of children with improved WASH and another for the potential diarrhoeal deaths averted. In both cases, it is the attributable benefits rather than the total. In the figure, the effect of different uncertain variables on the outcome is shown. Variables with a wider bar are more influential.

The most influential variables affecting the number of children benefiting from improved WASH is the extent of programmatic uptake at a regional level. This is consistent with the overall estimates of benefits above, which suggests that this is a major opportunity for scaling up the information that is developed.

In terms of the potential health impact of the research and RIU on this issue, there are programmatic, behavioural and basic exposure variables that influence the potential diarrhoeal deaths averted. These include the extent of programmatic uptake at a regional level (Mothers reached), the level of behaviour change, the efficacy of the behaviour change in reducing food exposures, and the fraction of diarrhoea attributable to this pathway.

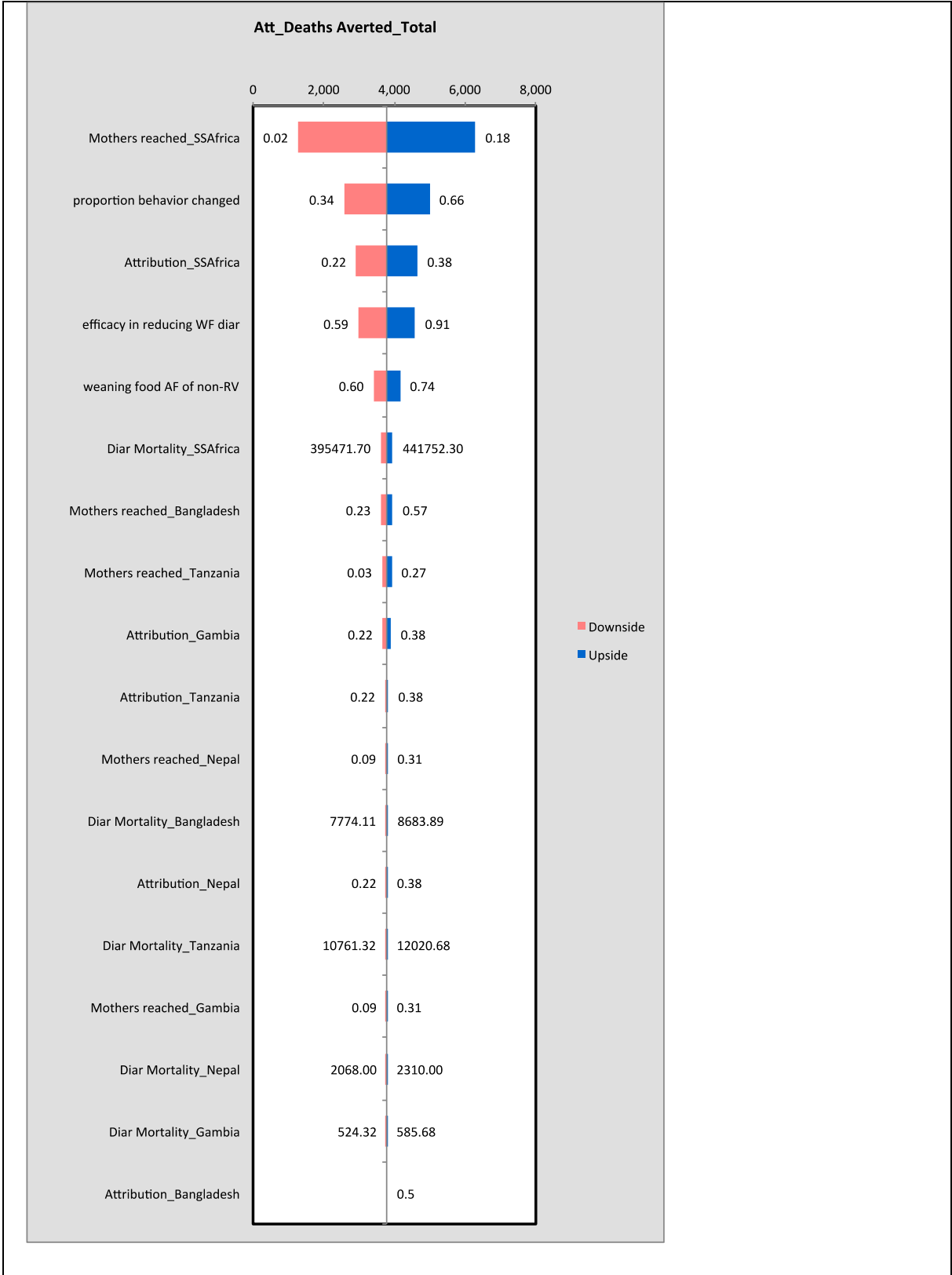


The two tornado diagrams on these pages show the variables with more or less influence on:

(a) the number of children with access to WASH, and

(b) potential diarrhoeal deaths averted.

Variables with a wider bar are more influential.



Implications

For all of the scenarios examined, there is still substantial uncertainty about the scope of programmatic uptake, the degree of change in caretaker behaviours, and the potential effect on health and nutrition. This is least true for Bangladesh where efforts are already underway, but not yet fully achieved. For The Gambia, Nepal and Tanzania, there are clear programmatic opportunities, but they have not yet been fully developed. The final analysis for sub-Saharan Africa is intended to be instructive of what could happen, rather than what will happen. However estimating the potential value of benefits provides important information in planning,

- In this analysis the strength of the intervention effect influences the value of SHARE's activities in two ways. First, the greater the effect the more infections that are prevented. Secondly, it is also assumed that greater demonstrated effectiveness at scale would result in greater uptake. In the current analysis we have assumed this correlation. The latter suggests that more evidence of effectiveness at scale promotes uptake by creating a consistent body of evidence that the approach is effective. Within the proposed extension, there is a potential opportunity to do this through multi-site studies. Showing an effect on nutritional outcomes could be even more influential in increased uptake by programmes with a nutrition (rather than diarrhoeal disease) objective.
- While SHARE and other research have shown substantial contamination of complementary foods, other studies have suggested that it may not be a critical pathway for enteric exposures for young children. This uncertainty regarding the fraction of childhood diarrhoea due to this pathway may constrain the willingness of complementary feeding or other programmes to prioritize this type of behaviour change. Better documentation of the exposures (or identification of where they are likely to be greatest) could increase programmatic uptake.
- The current analysis focuses on the potential impact of SHARE complementary feeding research and RIU efforts, focusing on the diarrhoeal disease impacts. The analysis does not capture any of the potential impacts on nutritional outcomes. These could include short-term stunting with its associated effects on mortality from other infectious diseases (Checkley *et al.* 2008; Black *et al.* 2008), nor long-term effects including cognitive function and chronic diseases (Guerrant, 2013). As a result, the current analysis may represent an underestimate, but additional evidence of effectiveness of improved complementary food hygiene against under-nutrition would be needed to determine that.
- The current analysis assumes that there is a fixed, but unknown, proportion of childhood diarrhoea due to complementary food contamination. However it is likely that the proportion is actually variable across contexts and that the actual pathways may differ by setting. For example in rural Bangladesh household ponds may be an important source of contamination through utensils, while in rural Tanzania domestic animals may play a key role. Identifying how specific pathways contribute in different contexts may be a critical element of improving effectiveness.
- The three key uncertainties in this analysis – programmatic uptake, level of behaviour change, and effectiveness in reducing diarrhoea are likely very much linked and

dependent upon behaviour intervention design and delivery. Often times, more effective behaviour changes are more costly to do and deliver, resulting in reduced programmatic uptake and behavioural uptake by caregivers. Conversely more scalable approaches may be less effective. This suggests that the design of complementary food behaviour change approaches will need to carefully and deliberately balance these factors to optimize scalability and effectiveness.

Value for Money: WASH and Vaccines

Background

New vaccines against rotavirus gastroenteritis have been developed and are being introduced in many low income countries as a part of the support by GAVI (Global Alliance for Vaccines and Immunization) for routine childhood immunization. In the context of the recent GAVI replenishment, DFID has committed approximately £ 1 billion for introduction of rotavirus vaccines.

There is evidence that RV vaccine efficacy varies across settings, with lower efficacy in countries with high levels of poverty and child mortality (Madhi *et al.* 2010). One of the potential mechanisms for this difference is that enteric infections (alone or in combination with under-nutrition) may prevent colonization and the development of a full immune response from the vaccine. This is consistent with evidence for other live oral vaccines (John *et al.* 1976; Simanjuntak *et al.* 1991; Suharyono *et al.* 1992).

Using data from multiple country trials, Fischer-Walker (2011) compared the efficacy of RV vaccine based on child mortality levels and found that efficacy was higher in low-mortality settings. Their main results are shown in the figure below. However a similar analysis can be used showing vaccine efficacy in relation to sanitation coverage. Using data from JMP, there is a strong trend for lower efficacy in countries with lower sanitation coverage.

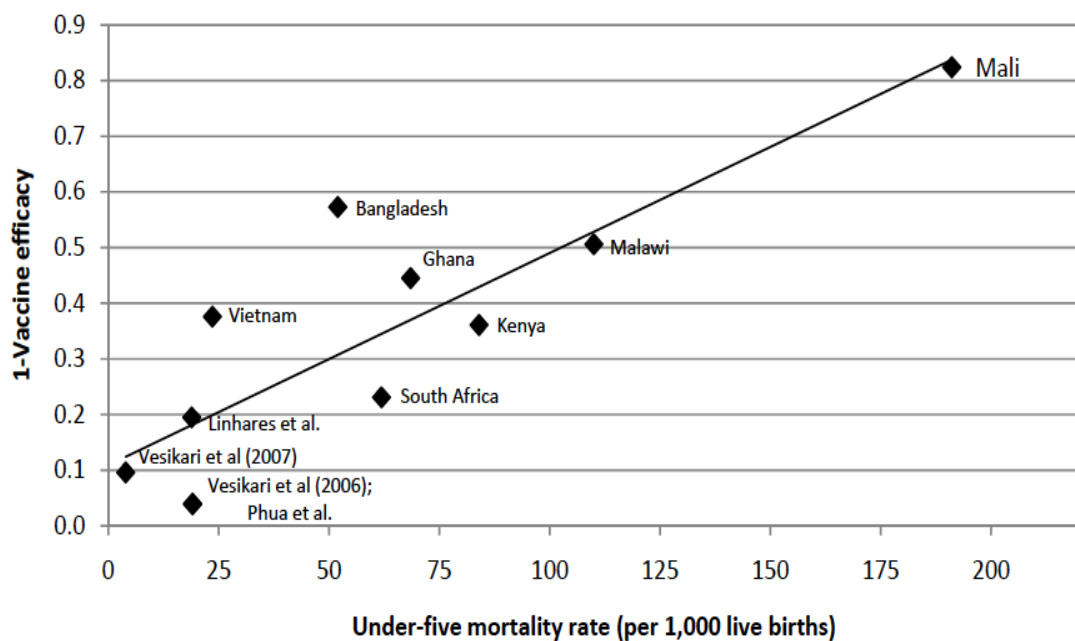
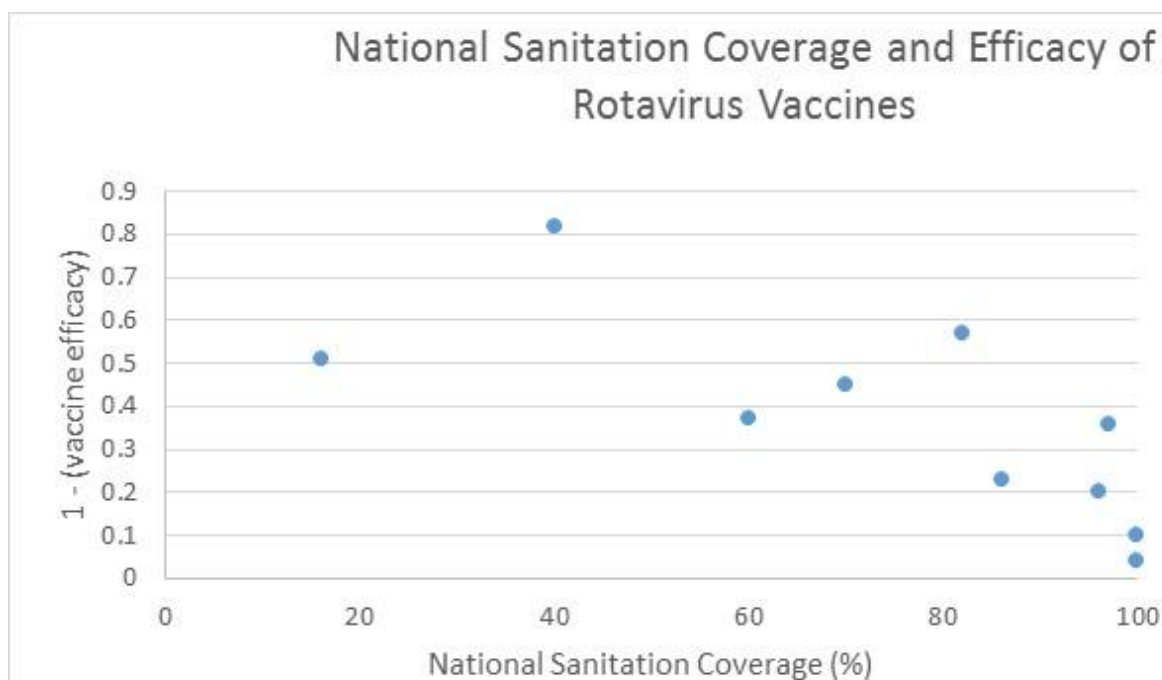


Figure 4 Country level* vaccine efficacy against severe rotavirus diarrhea incidence and 2009 under five mortality * Country level data used when possible. Linhares et al, Vesikari et al (2006 & 2007) and Phua et al do not provide country level data. For these papers we present overall vaccine efficacy and median under 5 mortality rate for countries included in analysis.

Fischer-Walker *et al.* (2011)



This presents an important biological question of whether and how enteric infections and poor sanitation and hygiene contribute to lower efficacy of RV vaccine in high mortality settings. Over the last two years SHARE has engaged in a series of activities to assess the feasibility and policy environment for incorporating a WASH behavioural intervention into routine immunization programmes to enhance the impact on diarrhoeal disease prevention.

This issue has been identified as a research theme within a potential SHARE extension. There are currently several on-going efforts to identify the specific biological mechanisms for such an effect. While these are not extensive, it does suggest that SHARE's niche is in: 1) understanding how the effect varies with different levels of sanitation and hygiene, and 2) identifying effective behaviour change interventions that can be scaled in the context of routine immunization programmes.

The purpose of this analysis is to assess the potential value of SHARE research and RIU to identify effective and scalable WASH interventions to improve enteric vaccine effectiveness in high mortality settings.

Methods

This analysis builds on existing published models of the effectiveness and cost effectiveness of rotavirus vaccination (Atherly *et al.* 2012; Rheingans *et al.* 2012; Rheingans *et al.* 2014). These estimates have been adjusted to reflect the current Global Burden of Disease estimates of diarrhoeal mortality and the CHERG estimates of the proportion attributable to RV (Liu *et al.* 2012).

For this analysis we consider a hypothetical WASH intervention that would target children less than 6 months of age, before the RV vaccine course is fully administered. Given that complementary foods are often introduced at 2-3 months of age, this would likely be a central element.

The model considers several key sources of uncertainty, including intervention effectiveness in improving vaccine efficacy, the level of programmatic uptake (% of EPI programmes using it), and the level of behaviour change when implemented at scale.

For this analysis we focus on GAVI eligible countries in Africa given that these account for the highest RV mortality rates. The maximum potential gains from improved WASH behaviours is based on the gap between demonstrated efficacy in these regions and that in higher income regions such as Latin America (where vaccine efficacy was approximately 85% against severe RV diarrhoea. For each country, efficacy in the absence of the behaviour change intervention was estimated based on a presumed linear relationship between sanitation coverage and efficacy shown in the figure below. We assumed that effective WASH behaviour change in the period prior to vaccination would result in a 35% reduction in the gap between estimated

vaccine efficacy and optimal efficacy (based on Latin America) (Fischer Walker et al, 2011). We also considered a range of 0-70% reduction in the gap.

We also introduced variables to capture the programmatic uncertainties. First, we assumed that 40% of routine immunization programmes would introduce a complementary food hygiene intervention (with a range of 0-80%). We assumed that the fraction of programmes introducing it would be correlated with the results on the strength of evidence for the behavioural intervention (correlation coefficient of 0.6). This just suggests that stronger evidence of an improved vaccine efficacy with improved WASH will lead to greater uptake. It is also likely that uptake would be greater in countries with poorer sanitation and hygiene conditions, however this was not accounted for in the analysis. Lastly, we assumed that 40% of caregivers targeted by the intervention would introduce the behaviours (with a range of 20-60%).

The main reported outcomes are the number of children benefit over a 5-year period, the number of additional deaths prevented, and the percentage increase in the impact of the currently planned RV investment.

We have not calculated a cost effectiveness ratio related to such research and resulting intervention because this impact of increased vaccine effectiveness is just one of the potential benefits of such an intervention. A full analysis would need to capture the effect on reduced diarrhoeal disease, improved nutrition, and the enhanced vaccine effectiveness.

Results

Using the base case assumptions outlined above, we estimate that research and RIU efforts could result in over 15,000 additional rotavirus deaths prevented through vaccination over the period 2016-2020 in sub-Saharan Africa alone. This represents a 5% increase in the benefits of RV vaccination during this period. Using the base case assumptions, the potential benefit also varies by country. At a country level, the potential benefit ranges from a 2% to 13% increase in prevented RV deaths. Countries with poor sanitation and high RV mortality are likely to benefit the most. Using the base case assumptions this would also result in improved sanitation and hygiene for approximately 18 million children over the 5-year period.

Summary of potential value for money of SHARE research and RIU on WASH and vaccines		
	Central Estimate	Uncertainty Range (10-90%)
Number of children with improved WASH conditions (million)	18.8	2.8 - 39.3
Potential additional rotavirus deaths prevented	180,050	1,370 - 42,800
Percentage increase in the benefits of RV vaccination	5%	0-13%

The estimated potential gains over time are shown in the figure below. The increase over time is primarily due to the assumption that uptake of RV vaccine increases gradually. However there would also presumably be a lag for research and RIU to occur.

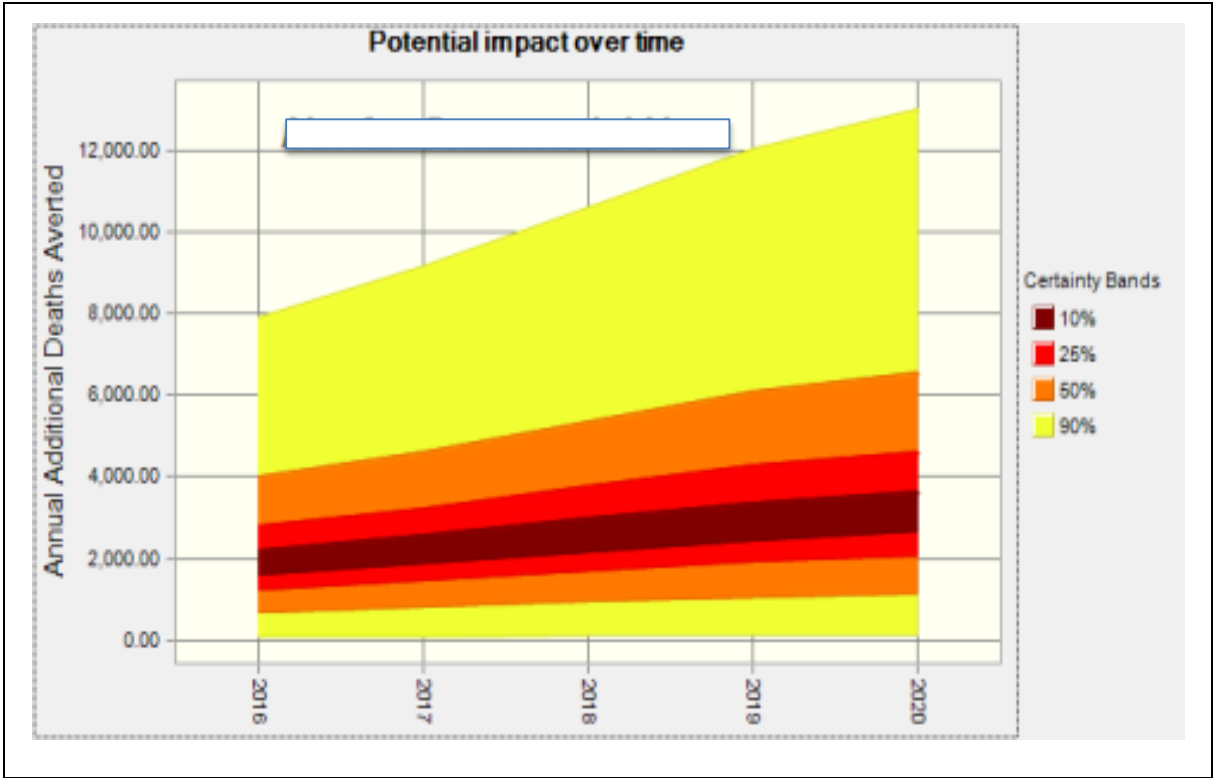


Figure G 18: Benefit over time (with uncertainty)

Two primary factors influence the value of this research and RIU investment, the level of the detected effect of improved WASH on efficacy and the level of programmatic and behavioural uptake.

The first of these is shown in the figure below. The increased effect of the intervention is a product of the unknown and heterogeneous role of sanitation and hygiene in reducing RV vaccine effectiveness, and the ability to develop an effective and scalable behaviour change intervention. In the figure these are combined. The base case assumption is that such an intervention could reduce 35% of the gap in vaccine efficacy among those who adopt it. If that is increased to 70%, then it could result in over 31,000 deaths averted and a 9% increase in vaccination benefit. However, if there were no effect of improved sanitation and hygiene, there would be no benefit.

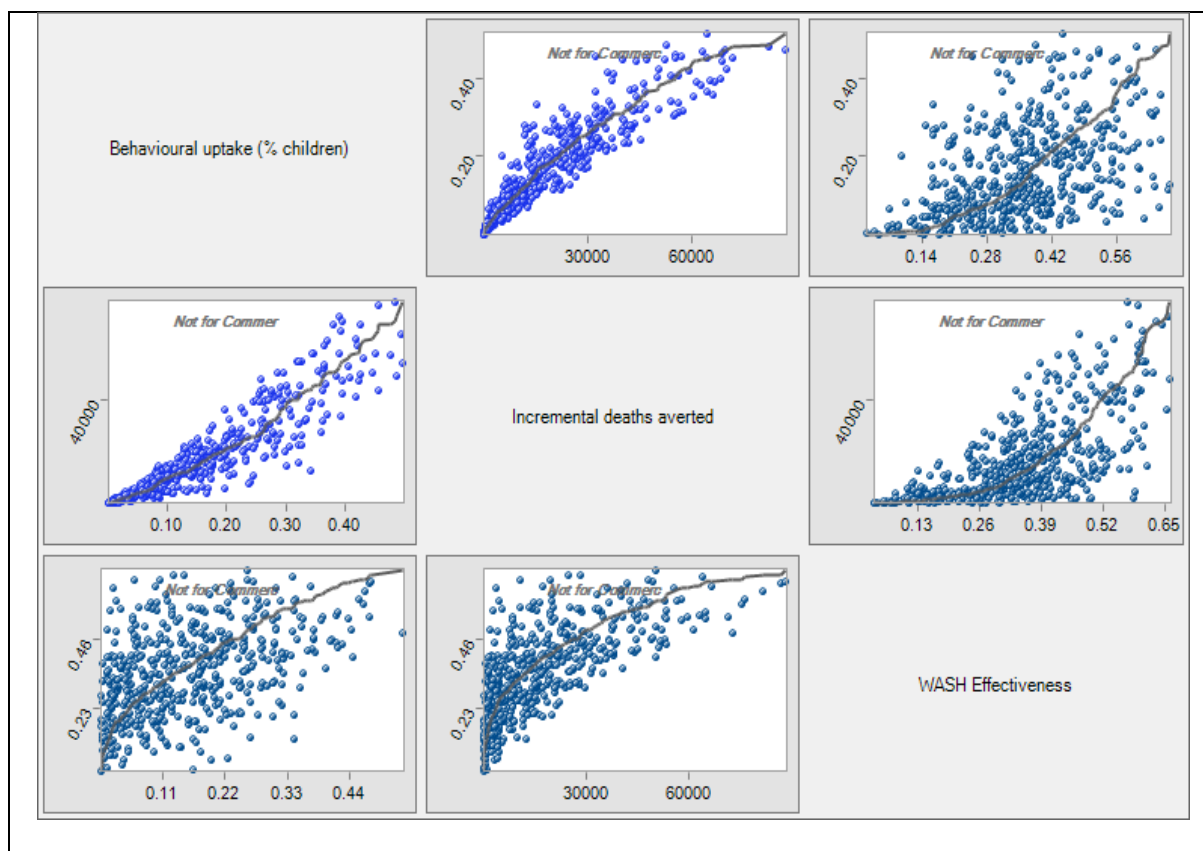


Figure G 19: Potential benefits of combining improved WASH with routine rotavirus vaccination, based on the level of WASH effectiveness and behavioural uptake; Estimates for 2016-2020 in sub-Saharan Africa (all countries)

Each of the graphs in this figure is a two-way scatter. Each shows a relationship between two of the three variables. With three variables, there are six combinations of 2-way comparisons (including reversed versions). The axis label for each vertical axis is found in that row (to the left or right) and the label for the horizontal axis is found in that column (above or below).

The figure also shows the effect of behavioural uptake on the value of research and RIU efforts. Here behavioural uptake is the combination of RIU and behaviour change, and represents the percentage of children with improved WASH in this age window. Increased uptake can substantially increase the value of such a research and RIU effort. In this analysis this is influenced by effectiveness of the intervention that is assumed to affect uptake and the benefit per child. However it is also a function of RIU efforts and the scalability and adoptability of the tested intervention.

Implications

- Intervention targeting. The potential gains from incorporating a WASH intervention depend on the extent to which vaccine efficacy is limited by interference from enteric pathogens. Targeting such a behavioural intervention to such areas would increase the

impact. Presumably the evidence should be carried out in contexts with high potential environmental interference.

- WASH interventions are unlikely to reduce transmission of rotavirus directly due to its low infectious dose. However if those interventions can increase the efficacy of current vaccines, it could prevent an additional 10% of RV deaths, compared to vaccine alone.
- Two key determinants of impact are the extent of programmatic uptake and the resulting level of behaviour change. This suggests that in order to achieve this impact, the designed and tested intervention needs to be feasible, scalable and adoptable. Developing an RIU strategy that incorporates these issues from the outset would be critical.
- The current country-level analysis suggests that such an intervention could be very poor, with the greatest gains in countries that have lower expected vaccine efficacy. This effect would likely be magnified, with the greatest potential gains in areas and groups with the lowest sanitation and hygiene coverage and the greatest risks.
- This analysis is highly speculative and uncertain. It is based on an undefined intervention, for which we have limited evidence of the likely effect on vaccine efficacy. It is possible that research would show no potential effect, in which case the benefits would be zero and would incur the cost of research. However the analysis suggests there is great upside potential. It is possible that a relatively small research investment, combined with research efforts of others could substantially increase the impact of a very large investment by the global community, including DFID.

This analysis does not attempt to assess the benefit attributable to SHARE's future efforts. Presumably a number of research, policy, and practice partners would need to be engaged to achieve these benefits. Within the broader research landscape, SHARE's particular niche may be to demonstrate a scalable intervention can increase vaccine efficacy.

Overall, these represent potential gains. For them to be realized, SHARE research would need to contribute to understanding the role of inadequate sanitation and hygiene in reduced vaccine efficacy, developing effective and scalable behaviour change interventions that target those with the greatest need, and incorporating these interventions into routine immunization programmes through RIU efforts.

Value for Money: Tanzania National Sanitation Campaign / Mtumba

Background

In last year's SHARE Annual Report we examined the potential impact of the development and promotion of the Mtumba sanitation approach. That analysis suggested that the impact of that approach depended directly on its relative effectiveness compared to alternatives. During the last year SHARE's Tanzania platform has supported an evaluation of the approach in urban areas, but there remains limited data on its effectiveness in generating sanitation improvements compared to alternative approaches. Additionally, the National Sanitation Campaign appears to be deemphasising different 'branded' approaches, preferring instead to group them all as CLTS with sanitation marketing. Instead there is an interest in understanding how specific aspects of the different approaches influence effectiveness. As a result, it remains uncertain as to the specific impact of the Mtumba approach *per se*.

At the same time, the past year has marked an important step in increasing the potential ability of SHARE to contribute to improvements in the National Sanitation Campaign. In August of 2013, SHARE joined the Ministry of Health and Social Welfare, DFID Tanzania, WSP in a Memorandum of Understanding to carry out a process evaluation of the National Sanitation Campaign. The scope of this evaluation goes beyond normal process evaluation and is designed to assess the effectiveness of the campaign in achieving results in terms of improved sanitation. The objective of the evaluation is to identify critical information on how and where the campaign is progressing and to identify opportunities for improvement. As a part of the agreed protocol, the collaboration provides training to MoHSW staff and includes an opportunity for and a commitment from the MoHSW to incorporate the findings into programmatic changes. After initial delays in data collection, the evaluation is currently underway.

For this analysis we assess the combined expected impact of SHARE's work (through WaterAid) on Mtumba and the continued broader collaboration on the NSC.

Looking forward, the national partners have also begun discussions with SHARE on the sanitation and hygiene components of the next Water Sector Development Programme. Whilst discussions are still in an early stage, we also consider the potential benefits of an on-going collaboration to use better evidence to bring improved sanitation to urban and rural populations in Tanzania.

Methods

The approach used for this analysis builds on the analysis presented in last year's SHARE Annual Report. For input data, one important change is that we used updated global estimates of diarrhoeal mortality (Liu *et al.* 2012}. We also use estimates from the recent series of analyses conducted by SHARE researchers at LSHTM, WHO, and elsewhere to assess the fraction of

diarrhoeal mortality due to inadequate sanitation and hygiene (Freeman *et al.* 2014; Pruss-Ustun *et al.* 2014).

A second change is that the current model examines the potential impact over the next five years. Presumably, improvements in program performance will continue even after SHARE activities are complete. The initial unofficial estimates are that the next round of the NSC will target approximately 3 million households with improved sanitation, bringing urban and rural coverage to 75%. This is in addition to the 600,000 households targeted during the current phase.

In order to estimate the value of the collaborative efforts, we need to estimate how they will increase the effectiveness of sanitation uptake at the household level. We use that incremental uptake (and the assumptions outlined in last year's Annual Report) to estimate the health and economic benefits of the combined research, evaluation and RIU efforts. We specifically assume a 20% increase in effectiveness (% increase in household uptake) over the five-year period. Overtime, this increase might increase, so we assume it starts at 10% and increases linearly over time. In each time period, we assume that the increase in uptake is highly uncertain. For each period we assume a symmetrical triangular distribution with a low estimate of zero improvement.

It is important to note that this assumption regarding improvement in uptake is different than what was used to assess the value of SHARE work on Mtumba in last year's Annual Report. That analysis assumed that we did not know whether Mtumba was actually more or less effective than the current approach. The previous analysis also included substantial uncertainty regarding whether the approach would be taken up at the local level implementers. This analysis is fundamentally different. It assumes an on-going evaluation process where national decision makers and implementers have access to data on enabling environment, implementation characteristics, community conditions, behavioural determinants, and household level uptake from a rigorous national sample. The assumption is that such data make it more likely that the resulting changes that are made will result in improvements in uptake. Similarly, it assumes an integrated and collaborative evaluation and RIU process where national decision makers are more likely to use the results that have been generated.

This analysis also estimates SHARE contribution to this effort. We arbitrarily assume that the attribution is distributed equally among MoHSW, DFID Tanzania, and SHARE. In reality, it is likely that without any one of the institution's contributions, the benefits might not be achieved.

Results

The main outcomes for this analysis are the number of people with improved sanitation, the estimated childhood diarrhoeal deaths averted, and the expected cost savings. The total value of improvements for the collaboration is estimated through 2014 and through the expected end of the next round of the NSC. These are shown in the table below.

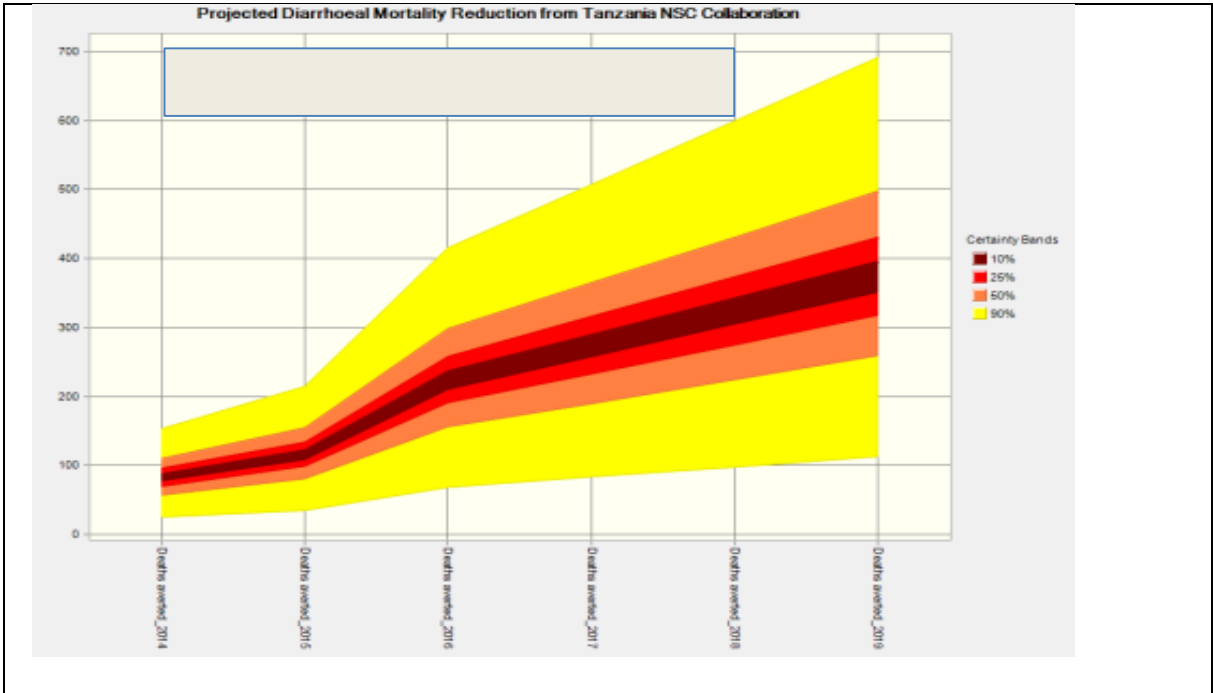
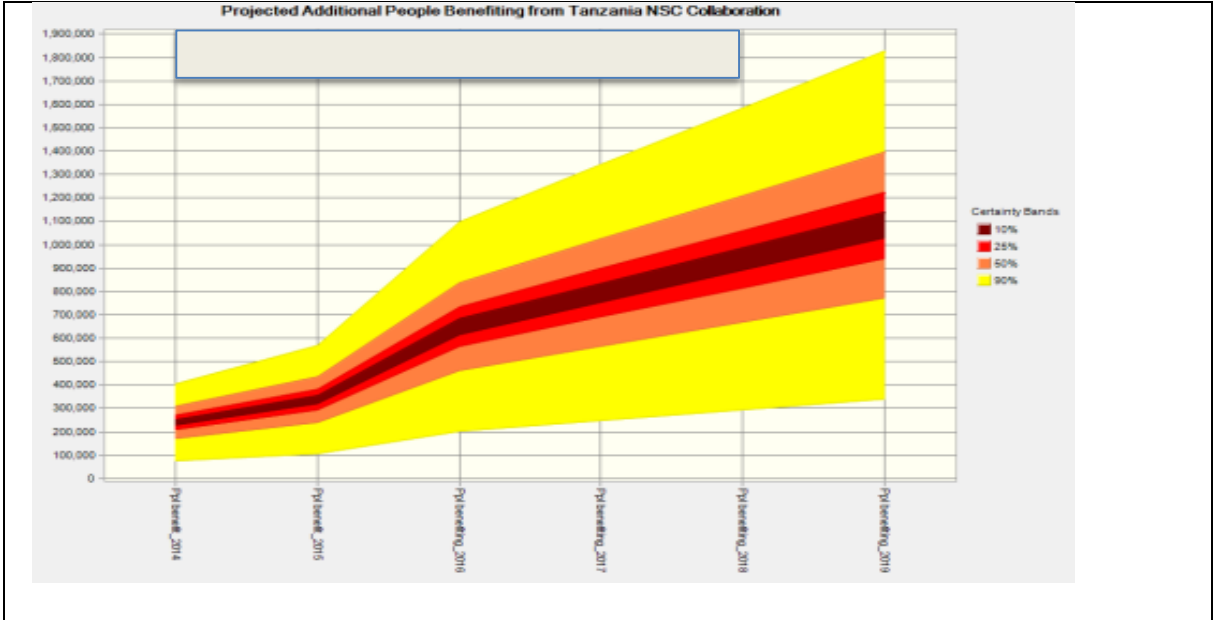
The table also shows the estimated attributable value for each outcome.

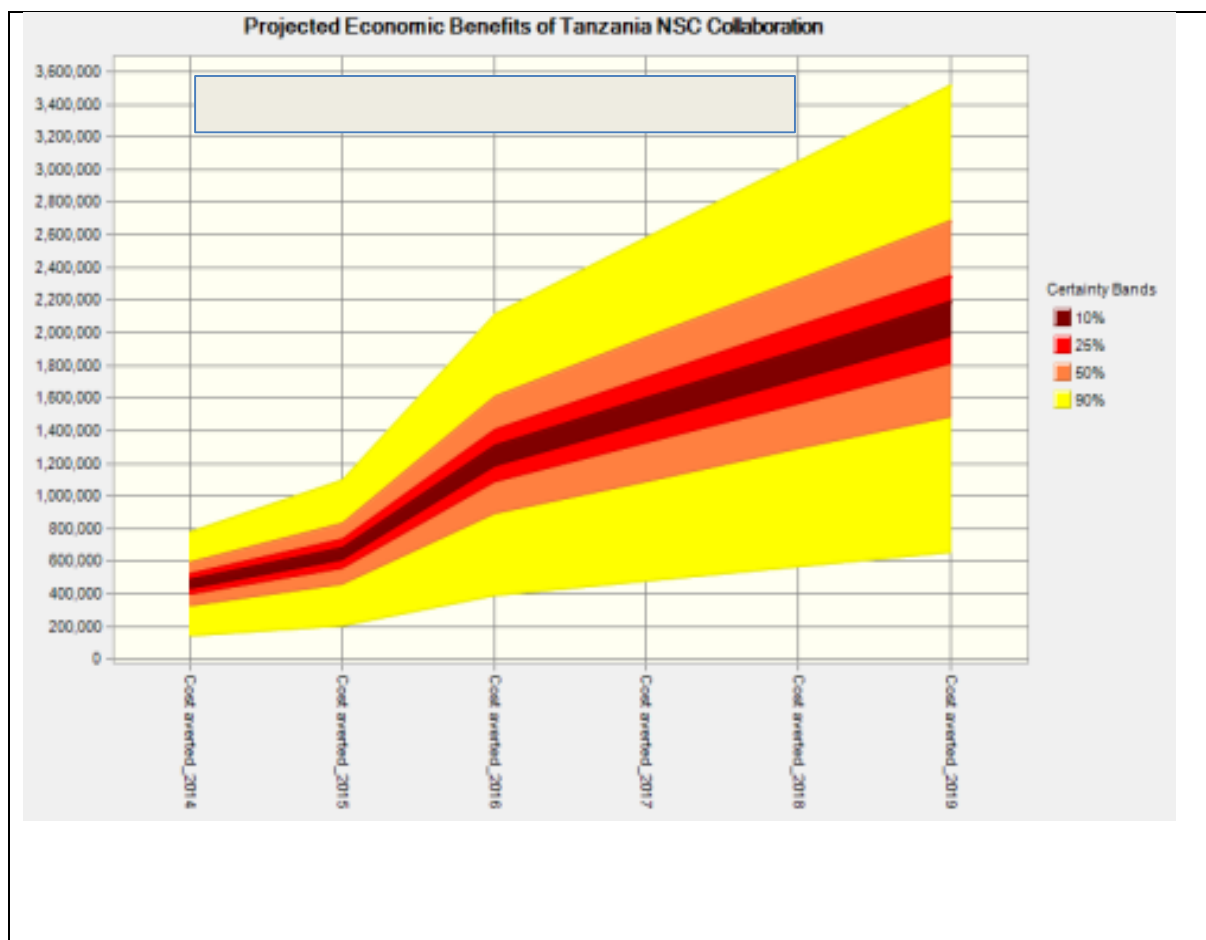
Table G 11: Summary of potential VfM of SHARE Tanzania and Mtumba collaboration

Summary of potential value for money of SHARE Tanzania NSC and Mtumba collaboration		
	Central Estimate	Uncertainty Range (10-90%)
Overall benefits		
People with improved sanitation (through 2014)	239,062	107,103 - 374,682
People with improved sanitation (through 2019)	4,016,249	1,799,325 - 6,294,657
Deaths averted (through 2014)	85	36 - 138
Deaths averted (through 2019)	1,435	604 - 2311
Costs averted (through 2014)	£459,834	£206,011 - £720,697
Costs averted (through 2019)	£7,755,516	£3,460,985 - £12,107,716
Attributable benefits		
People with improved sanitation (through 2014)	48,059	19,907 - 78,307
People with improved sanitation (through 2019)	801,983	331,933 - 1,307,165
Deaths averted (through 2014)	17	7 - 28
Deaths averted (through 2019)	285	119 - 463
Costs averted (through 2014)	£92,328	£41,053 - £143,358
Costs averted (through 2019)	£1,545,044	£692,197 - £2,421,543

For all outcomes the annual estimated benefits increase over time due to progress scaling the NSC itself and the assumed improvements in the approach over time. The latter is based on the assumption that the collaboration will continue and learning will occur over time, resulting in greater cumulative changes.

Figure 11a shows the expected increase in the number of beneficiaries with improved sanitation. The different bands in the figure represent different confidence levels. In addition to increasing over time, the uncertainty bands also become wider. A similar pattern is shown in Figure 11b, for estimated health benefits (additional deaths averted), and Figure 11c shows the expected cost savings.





Figures G 20a, b, c: Projected economic benefits of Tanzania NSC collaboration

For all of the projections the most influential variable is the improvement in sanitation uptake. Over the entire period we assume that there is a 20% increase in uptake, with that factor going from 10-30% over time. This is highly uncertain and depends on a number of factors including, current inefficiencies, our ability to collect rigorous and appropriate data, and the extent to which the results will be taken up. It also assumes that the partnership will develop along these lines. Importantly these estimates do not capture the potential value of expanding this partnership to other aspects of the next round of the Water Sector Development Programme or incorporating other elements like nutrition into the collaboration.

Implications

- Both the short-term and long-term economic cost savings suggest that the partnership is likely to provide a high Benefit:Cost Ratio (over 4) given the relatively modest investment to date.

- One of the challenges with delivering changes in VfM from research activities is ensuring that the results are incorporated into practice. In this case, the path from research to results is shortened by creating a partnership with institutions implementing a national programme targeting millions of households. The uptake process is also incorporated into a clear communication and decision-making process.
- Achieving these projected benefits remains uncertain and depends on how the partnership is taken forward.
- The current analysis only examines the potential impact only in Tanzania. There may be additional opportunities to expand this to other settings.
- It would be very helpful to monitor and measure these projected changes over time to determine whether and why these results are achieved or not.

Abbreviations

CHERG	Child Health Epidemiology Referene Group, a Unicef/WHO advisory committee
DALY	Disability-Adjusted Life Years, a measure of burden of disease.
DFID	UK Department for International Development
GAVI	Global Alliance for Vaccine Initiatives
HACCP	Hazard Analysis Critical Control Point
ICDDR,B	International Centre for Diarrhoeal Disease Research, Bangladesh
JMP	Unicef/WHO Joint Monitoring Programme for Water & Sanitation
LSHTM	London School of Hygiene & Tropical Medicine
M & E	Monitoring and Evaluation
MoHSW	Ministry of Health and Social Welfare
NSC	National Sanitation Campaign
ORS	Orall Rehydration Solution
RIU	Research into Use
RV	rotavirus
VfM	Value for Money
WASH	Water, Sanitation & Hygiene
WHO	World Health Organisation

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Annex H: Workplan and timetable

Activity	2015	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	2016
	-2016													-2018
Workstream 01 - CONSORTIUM MANAGEMENT														
Management Meetings														
Executive Meetings														
DFID Advisor Meetings plus other meetings as requested														
Consortium Advisory Group Meetings														
Partnership Meetings														
Annual Report														
Invoices submitted to DFID														
Review Draft Governance Structure														
Reassess risk rating for national programmes														
Present Legacy Strategy in 2016 Annual Report														
Workstream 02 - URBAN SANITATION														
Submission of research project protocols														
Issue Task Orders														
Research project(s) underway														
Choose Workstream Leader														
Workstream 03 - WASH & VACCINES														
Submission of research project protocols														
Issue Task Orders														
Research project(s) underway														
Choose Workstream Leader														
Workstream 04 - COMPLEMENTARY FOOD HYGIENE														
Submission of research project protocols														
Issue Task Orders														
Research project(s) underway														
Choose Workstream Leader														
Workstream 05 - WASH & NUTRITION														
Submission of research project protocols														
Issue Task Orders														
Research project(s) underway														
Choose Workstream Leader														
Workstream 06 - MALAWI PROGRAMME														
Workshop to identify research priorities														
National coordinator in post														
Governance structure and workplan agreed														
Workstream 07 - TANZANIA PROGRAMME														
Workshop to identify research priorities														
National coordinator in post														
Governance structure and workplan agreed														
Workstream 09 - CAPACITY DEVELOPMENT														
PhD Students CB06-CB09 due to complete														
Completion of current projects														
Workstream 10 - RESEARCH INTO USE														
Policy and research landscaping exercises & stakeholder analyses														
RIU planning with the research workstreams														
Inception workshop in Tanzania														
Inception workshop in Malawi														
Monitoring of gender in WASH workshop (legacy)														
Stockholm World Water Week sessions														
Website redesign completed														
LSHTM Annual Symposium session on behaviour change														
6th Emergency Environmental Health Forum														
Global MNH Conference session on WASH and MNH (tbc)														
UNC Water&Health Conf. session (tbc)&individual partner presentations														
Outcome mapping completed for each research project														
Global thematic inception convening events (x4)														
WHO/SHARE workshop on WASH in health facilities monitoring tools														
Pathfinder report completed														
Workstream 11 - PROGRAMME PROJECTS														
External/Annual Review														
OTHER														
MR21 - Expanding the Mtumba Model - Project write up														
MR23 - City Wide Sanitation - Project completion														

