



ANNUAL REPORT 2014

SHARE Research Consortium

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Acronyms

3ie	International Initiative for Impact Evaluation
AFD	Agence Française de Développement
CAG	Consortium Advisory Group
BCD	Behaviour Centred Design
CCI	Centre for Community Initiatives
CCP	Critical Control Points
CEO	Chief Executive Officer
DFID	UK Department for International Development
GBV	Gender-based Violence
HACCP	Hazard Analysis and Critical Control Points
HWWS	Handwashing with soap
ICDDR,B	International Centre for Diarrhoeal Disease Research, Bangladesh
IDSC	International Development Select Committee
IIED	International Institute of Environment and Development
JMP	Joint Monitoring Programme
LFA	Log Frame Approach
LSHTM	London School of Hygiene and Tropical Medicine
MDG	Millennium Development Goal
M&E	Monitoring and Evaluation
MHM	Menstrual Hygiene Management
MOU	Memorandum of Understanding
NGO	Non-Governmental Organisation
NIMR	National Institute for Medical Research
OM	Outcome Mapping
PI	Principal Investigator
PMNCH	Partnership for Maternal, Newborn & Child Health
POU	Point of Use
PUSS	Parliamentary Under-Secretary of State
RCT	Randomised Controlled Trial
RED	Research and Evidence Division
RIU	Research into Use
RWSN	Rural Water Supply Network
SDI	Shack/Slum Dwellers International
SIT	Sanitation Investment Tracker
SHARE	Sanitation and Hygiene Applied Research for Equity
SUN	Scaling Up Nutrition
UN	United Nations
UNC	University of North Carolina
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VAW	Violence Against Women
VfM	Value for Money
WASH	Water, Sanitation and Hygiene
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
WWW	World Water Week

1. Programme description

SHARE is a research consortium led by the London School of Hygiene and Tropical Medicine (LSHTM) and includes the International Centre for Diarrhoeal Disease Control Bangladesh (ICDDR,B), the International Institute for Environment and Development (IIED) with Shack/Slum Dwellers International (SDI), and WaterAid. The consortium is unique in its combination of internationally recognised expertise, scientific research institutions, policy research and implementation, through national water, sanitation and hygiene (WASH) programmes, which engage communities in local decision making affecting sanitation and hygiene.

Since January 2010, SHARE partners have developed research and synthesis on sanitation and hygiene that have contributed to changes in policy and practice at the national and global level. These changes have influenced sector investments, intervention approaches, and applied research by others, and have resulted in health, economic and development benefits.

SHARE's activities are part of an integrated process by which research is transformed into influence and change. SHARE convenes sector partners and beneficiaries to identify critical questions or knowledge gaps that hold back progress to improved sanitation and hygiene, it then 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 the projects in its portfolio include all of these elements to different degrees.

SHARE's pioneering approach to sanitation and hygiene research continues to be highly successful and is on target in delivering evidence that improves sanitation/hygiene access for people in low income settings.

SHARE has received a grant from the Department of International Development (DFID) of £10 million over five years. The consortium works through four key budget areas; research, research into use (RIU), capacity building and consortium management. SHARE's total expenditure from inception to 31 March 2014 is £8,085,295, which includes management costs (£959,074), specialist technical and research support (£3,104,136) and projects (£4,022,085). SHARE is currently due to end in January 2015.

2. Overview of the year

2.1 Progress and achievements

As SHARE assesses its progress over the past four years, its development can be plotted several ways; through the key funding areas of research, RIU and capacity building (inception and Call A); the four 'pillars' or knowledge areas of health, equity and gender, urban sanitation, and sanitation markets (Call B); the collaborative thematic projects of Call C, and the country platforms, where all of the above has been taken and developed through national sector priorities in a collaborative environment.

As the strategic themes have developed, SHARE's research and applied research have continued to champion neglected areas within the sector, taking on responsibility for connecting individuals and institutions across boundaries, and working towards sustainable and integrated approaches driven by the needs of the poor and disadvantaged. This report will show the progress that has been made within this framework, and the challenges faced in working towards an increase in knowledge and sustainable improvement in WASH, and the development of stable platforms within Bangladesh, India, Malawi and Tanzania to continue this progress.

2.2 Research

In 2010, SHARE's portfolio of research was based on a broad policy of seeking ideas from three sources; the partners, each with their different approaches to sanitation, hygiene and behaviour change; the country platforms with their national priorities, and from the sector at large. This was implemented through quick-start projects, collaborative research calls and research programmes in the four focus countries, together with RIU-led research and synthesis.

During the past year, five of the eight research projects from Call C were completed and the remaining projects are on track. One of these is a collaboration with the University of Copenhagen on a laboratory method for counting ascaris eggs on hands. This project has already delivered on its terms of reference, and through savings, has been able to expand its scope and within the coming months will be producing far more data than was originally anticipated. As well as value for money, Call C has produced projects such as *'Undoing Inequity: WASH programmes that deliver for all in Uganda and Zambia'* This important but, until recently, neglected area of research aims to address the problem of inequity by providing the evidence for cost-effective and inclusive sanitation and hygiene solutions that are incorporated into policy and practice, rather than going down the more expensive route of modifying existing facilities. The social, economic and personal importance of this work has been acknowledged by Lynne Featherstone MP, who has become a champion of inclusive WASH.

The country platforms have all experienced successes since they took form in 2011 but have also shown their vulnerability to changes in their management environment. This has had a key effect on the speed with which the research has got underway. All four focus countries

are now conducting collaborative research projects rooted in national priorities. Of note is the fact that three of the four countries (India, Tanzania and Malawi) have identified Gender and WASH, and WASH and Maternal Health as strategic areas for research. While the Bangladesh platform has acknowledged gender and equality as important issues, for them the issue of contaminated water was key. Their large project identifying the safe distance that pit latrines can be sited from tubewells in different geologies, has been collecting data from the monitoring wells since January 2014, after a year made particularly difficult by the national government elections.

SHARE's support of gender and equity issues through the country platforms, research, applied research and RIU-led research, has contributed greatly to the body of knowledge that is being built up on gender and equity. Some of the success stories are highlighted in Section 5.3 and each of the partners has been instrumental in advancing knowledge through this work collectively and individually. As the knowledge base grows, SHARE's RIU programme is gaining pace and momentum, and the collaboration of SHARE and its partners, is gaining acceptance nationally in the four focus countries, as well as internationally.

SHARE's involvement with behaviour change began with Choose Soap, a quick start project based on years of previous research, and developed it through the competitive calls. SHARE has continued to contribute to the development of this radical approach to hand washing with the SuperAmma campaign. Understanding which behaviour change levers work, such as disgust, nurture and affiliation, has enabled us to develop the Behaviour Centred Design (BCD) approach for interventions. It is a powerful, theory-based approach, and the campaign has elicited strong emotional responses from people of many nationalities and cultures who have seen it. This feedback is a moving testament to the ability of this approach to change perceived norms and sustain new behaviours.

SHARE's work on weaning food hygiene has continued and through partnerships is widening its geographical focus. The scalability of the approach is an area for development and could have significant impact because of the prevalence of pathogen transmission through food, particularly to the young and vulnerable. Under-nutrition has also been seen as an important research area on which SHARE is focusing. As with many areas that are on the periphery of a sector, there is still little evidence of its efficacy. Evidence is therefore key to linking the knowledge to the efficacy of medical interventions. SHARE-funded research is working to bridge this knowledge gap and has already achieved much through the Cochrane Review that was launched in September 2013.

The on-going work on the multi-donor-funded Odisha Sanitation RCT addresses issues on a number of fronts and a report and discussion piece can be found in Sections 5 and Annex E. It has shown the complexity of the sanitation issue and has enabled the team to learn more about the 'how' of interventions. The trial has produced a great deal of data, one significant finding also relates to SHARE's gender-based priorities, showing the importance of sanitation facilities in addressing the issue of violence against women, with the fact that 98% of women used their sanitation facilities compared to only 21% for men and children. This data contributes to the potential benefits of sanitation being explored under the gender and violence stream of SHARE.

SHARE's approach of using rigorous research methods together with an heuristic approach to problem-solving are creating an informative and productive presence in the WASH and health sectors. As the data from SHARE's research continues to be analysed, the impact will be felt long after SHARE's programme ends.

2.3 Capacity building

In the past year, the SHARE consortium has carried out a range of capacity building activities:

- i) **Research capacity:** Increase the capacity of individuals and institutions to carry out rigorous and relevant research on sanitation and hygiene.

SHARE has continued to support the six PhD students that enrolled at LSHTM at the start of SHARE. With the exception of one, all have now completed their data collection, and are analysing their data and in the process of writing-up. They have presented their results at international conferences and three students have already published their first papers in international peer reviewed journals.

Researchers in the Malawi and Tanzania platform groups were provided with several rounds of specific feedback and advice on how to improve their protocols. Furthermore, SHARE has awarded four research fellowships in Bangladesh, through an open call to support MSc students conducting research in the field of sanitation and hygiene. All four research fellows have begun their data collection and are due to complete their projects by the end of 2014. Finally, SHARE has supported four MSc students from LSHTM. Of these, one student has recently published her MSc results in a peer-reviewed journal.

- ii) **Technical capacity:** Increase the capacity of individuals and institutions to implement specific programmatic activities.

In the past year, SHARE has provided support to practitioners involved in training specific programme methods and techniques, such as the Sanitation Mapper, Scientific writing and Menstrual Hygiene Management.

- iii) **Evidence-based programming capacity:** Increase the capacity of global and national institutions in the sector to assess, interpret and use evidence for designing programmes or policies.

In the past year, SHARE has begun collaboration with DFID Tanzania, the Ministry of Health and Social Welfare and the World Bank to conduct a process evaluation of the National Sanitation Campaign in Tanzania. SHARE support includes the design of research instruments, advice on sampling and data collection, and general planning.

Further details on SHARE capacity building activities are presented in Sections 6 and 8.2.

2.4 Research into use

Research into use (RIU) is central to the SHARE theory of change, and RIU activities are clustered into five categories: convening boundary partners/users, RIU-led research and synthesis, translation of research for boundary partners/users, projection of work by online

and other means, and 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 5.3, which presents the success stories for SHARE 2014 around a number of key themes.

Three highlights in the reporting period are:

1. The development, publication and launch in June of a practitioner's toolkit that synthesises through extensive agency and expert consultation, existing experience and best practice on WASH and gender-based violence (House *et al.* 2014). There has been significant interest in the toolkit from key boundary partners, and in particular DFID. Parliamentary Under-Secretary of State, Lynne Featherstone MP provided the foreword, senior DFID officials participated actively in its launch, and continued engagement with DFID headquarters and country offices has created demand for the toolkit at a programmatic level.
2. Uptake in Nepal of the feasibility study on integrating hygiene interventions into the national immunisation programme co-funded by the SHARE RIU fund and WaterAid (Annual Report 2013, Section 6.3.6). The study led to a Memorandum of Understanding with the Nepali Ministry of Health and Population, Child Health and Planning divisions for piloting this approach.
3. The 'Undoing Inequity' project, towards more inclusive WASH service provision, has provided a tangible contribution to the increased focus on and commitment to disability issues in development by the UK government. In particular, the project findings informed the International Development Select Committee's (IDSC) recent recommendations to DFID on mainstreaming disability in development.

In the last Annual Report (2013), three priorities were identified and are reported against here: RIU-led research and synthesis pieces, convening through global evidence and policy symposia and direct engagement of boundary partners through collaboration.

RIU-led research and synthesis

Through the RIU Fund, SHARE has been able to contribute to the scientific literature in this area and respond to current policy and programmatic demand for evidence. In the reporting period this has led to a number of systematic reviews that have synthesised the best available evidence relating to a number of current policy questions. These include: a Cochrane Review on WASH and nutrition (Dangour *et al.* 2013), a series of systematic reviews on WASH and neglected tropical diseases, published in PLoS Medicine (Stocks *et al.*, 2014; Strunz *et al.* 2014), a systematic review comparing the health effects of shared and individual household sanitation (Heijnen *et al.* 2014), a systematic review for WASH and maternal mortality (Campbell *et al.* 2014) and a systematic review on WASH and cholera (Taylor *et al.* 2014). In the area of WASH and cholera, a guideline document is under development, based on consultation with WASH cluster agencies. Lastly, SHARE supported a team at LSHTM to conduct secondary analysis on WASH and maternal health, including the systematic review referred to above. Two additional papers have been submitted to

journals for publication: one which describes the multiple mechanisms linking poor WASH to maternal health (Campbell *et al.*), and a second the estimates WASH coverage in domestic and facility birth settings in four countries (Benova *et al.*). Linked to this, SHARE has supported the development of a policy review article for PLoS Medicine on the importance of WASH in addressing maternal and newborn health challenges with authors from a number of leading research institutes and international agencies (e.g. Unicef, WHO, UNFPA, PMNCH) which is currently under review and will be launched later this year at an event co-convened by SHARE, PLoS Medicine and the other supporting agencies.

Convening at global evidence and policy symposia

SHARE research and synthesis have been presented at a number of evidence and policy symposia, raising the profile of research findings and engaging research, policy and practice audiences. At the Stockholm World Water Week, SHARE convened sessions with the World Bank and the Government of India. At the University of North Carolina (UNC) Water and Health conference, held in October 2013, SHARE research was presented on weaning foods (Islam), shared sanitation (Clasen), latrine hygiene (Ensink and Jenkins) and neglected tropical diseases (Freeman), and a research roundtable on the WASH and nutrition research agenda was chaired by SHARE (Cumming). At the Brisbane International WASH Conference, SHARE research was presented on maternal health (Velleman) and menstrual hygiene management (Mahon), and practitioner training sessions were provided on both menstrual hygiene management and inclusive WASH. In June 2013, SHARE gave a closed-door briefing for UK Parliamentarians on the Cochrane Nutrition Review, in advance of the *Nutrition for Growth* summit. The Cochrane Review was given an international launch at LSHTM in September 2013 with speakers from DFID, WaterAid and LSHTM, and a recording of the event was made publicly available. SHARE investigators also participated at an international conference on WASH and nutrition convened by the Delhi School of Economics (see Section 2.5 on the India country platform for more details), where both the recent Cochrane Review and preliminary findings from the Orissa trial were presented. SHARE also supported WaterAid on the organisation and reporting on a parliamentary roundtable on integration in October 2013 that included parliamentarians, DFID, the Department of Health, PMNCH and others. One last example is SHARE's participation in a recent (April 2014) international workshop convened by WHO and the Government of Spain on WASH in health facilities where SHARE research on maternal health linkages (Campbell *et al.* 2014; Benova *et al.* 2014) was presented as well as research undertaken by the country platform in India into WASH in health facilities (Malavankar).

Direct engagement of boundary partners through collaboration

SHARE has worked directly with a number of boundary partners to support research uptake. In particular, and as planned, we have worked with WaterAid to support uptake of research findings within and across WaterAid. This includes holding brownbag sessions on specific themes or studies such as nutrition or weaning foods, and holding a broader one-day seminar on SHARE research that provided an opportunity for discussion and planning around research uptake. Following this, SHARE has worked with WaterAid's Programme Support Unit to deliver an RIU workshop for the East Africa region in Uganda that was attended by staff from various WaterAid country offices, to build awareness and capacity around RIU and to look specifically at how certain SHARE research findings can be

incorporated into WaterAid planning. SHARE has also worked with the World Bank Water and Sanitation Programme (WSP) on a number of areas, including an evaluation of the National Sanitation Campaign in Tanzania, where WSP hosted SHARE researchers, and a large conference in Delhi India (see India Country Platform, Section 2.5) on WASH and gender with Unicef. Following the agreement of an RIU partnership in September 2013, SHARE has designed an 'Evidence Based WASH Policy and Practice' lecture series that will be delivered between August and October 2014 via webinar for approximately 100 Unicef staff. Participants will be assessed and a certificate of completion awarded to those who have successfully completed all components and demonstrated their ability to apply the study materials. Lastly, SHARE continues to support engagement and uptake of SHARE research among DFID staff centrally and at the national level.

In the reporting period, SHARE was invited by DFID Tanzania staff to support the Government of Tanzania to conduct an evaluation of the National Sanitation Campaign mentioned above. In January 2014, SHARE also organised a visit by DFID Health Advisors to the Orissa study site as a part of the DFID regional health advisors' retreat, and Dr Belen Torondel (LSHTM) presented findings at the meetings. We have also delivered a series of brownbag seminars at the DFID headquarters on WASH & VAW, WASH & nutrition, sanitation microfinance, and WASH & maternal health, with support from the DFID WASH and RED Teams.

In addition to these areas, the last year has also seen good media coverage of SHARE research by the [Hindu newspaper](#) on the SHARE-supported study showing a strong association between open defecation and childhood stunting in India, [the Huffington Post's](#) piece on the SHARE-funded inclusive WASH project and its impact on DFID's prioritisation of disability, and, more recently, coverage by the [BBC](#) and the [Guardian](#) of gender-based violence associated with WASH, which cites the body of work that SHARE has contributed to this area. In addition, we continue to develop and strengthen our online dissemination channels and network. In the reporting period, newsletter subscriptions and twitter feed followers have both increased by over a third, which is three times more than the revised target set in last year's report (Section 3.3.3). Furthermore, there has been an average of 690 unique users of the SHARE website each month this year, which represents an increase from 2013.

2.5 Country Platforms

Bangladesh

Progress for the period (June 2013 – May 2014)

SHARE Bangladesh country platform operations are carried out through its two lead international consortium representatives: International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), and WaterAid Bangladesh. ICDDR,B has been conducting three applied research projects in collaboration with WaterAid Bangladesh. The projects cover the safe distance of pit latrines from nearby tubewells; a hygiene intervention to prevent weaning food contamination, and a study of the contamination of commuters' hands in Dhaka city. Of these, the two projects on weaning foods and commuters' hands have been completed. Results from the study on the contamination of commuters' hands are awaiting publication and dissemination. WaterAid Bangladesh (WAB) has responsibility

for translating and disseminating the research findings and facilitating research into use. WAB also organises workshops, seminars and has responsibility for preparing implementation planning.

The main RIU activities and projects are as follows:

- Dissemination of SHARE results (roundtable/stakeholders' capacity building training/ media engagements)
- Research briefs, IEC promotion, publication
- Media campaign (RDC/TVC/documentary/talk show/creative promotion)
- Dissemination of hygiene assessment
- Publication of national hygiene assessment
- PSA and animation on hygiene promotion
- Journalist training and roundtable
- Fellowship to Master level thesis
- Workshop on methodology development for national WASH accounts

Activities yet to be completed

Activities	Yet to be done
Dissemination of SHARE study result	Media fellowship is to be offered
Research briefs, IEC promotional, publication	<ul style="list-style-type: none"> • Upon finalisation of publishable content from ICDDR,B on <i>Commuters' hands contamination in Dhaka City</i>, dissemination will be carried out • Another publication/IEC material will be produced on completion of the safe distance of pit latrine research • One roundtable and one TV talk show are to be done on the Bangladesh national hygiene baseline
PSA animation on hygiene promotion	Production of a PSA animation similar to www.choosesoap.org
Masters research fellowship programme	Further instalment and final reports are to be prepared
Workshop on methodology development for national WASH accounts	One workshop with major stakeholders for methodology development

WaterAid has recently hired a member of staff to replace the SHARE communications person who left. Their time, which is 0.25 FTE will be used until the conclusion of the grant to deliver the work in the table above. A financial projection for outstanding activities in the Bangladesh platform will be undertaken at the beginning of July and communicated to LSHTM shortly afterwards. Upon conclusion of the SHARE grant period a narrative will be provided as well as the final financial report which is likely to show an underspend on the total RIU budget.

India**Progress for the period (June 2013 – May 2014)**

Following a successful request for proposals (RFP on 'The effects of poor sanitation on women and girls in India'

(www.shareresearch.org/NewsAndEvents/Detail/SHARE_WSSCC_joint_RFP_women_and_sanitation_India) in 2013, and the leveraging of additional funds from the Water Supply and Sanitation Collaborative Council (WSSCC), SHARE was able to award research grants to four research teams for a total value of £450,000 (£250,00 SHARE and £200,000 WSSCC). A delivery schedule was agreed (see below) with all payments linked to these stated milestones:

- Contract signature
- Sub-contracts issued, protocol approved by national and international IRBs
- Data collection completed
- Analysis completed and manuscripts submitted to peer-reviewed journals.

All four research projects are on-track to deliver their findings in July 2014 with each team having completed their data collection activities. We anticipate a minimum of six peer-reviewed journal papers, each with an Indian first or senior author. Summaries of each research project have been prepared, disseminated and made publicly available on the SHARE website.

In December 2014, SHARE convened a workshop in partnership with the Government of India, the World Bank Water and Sanitation Programme and WSSCC to formally launch the SHARE research projects, engage sector actors in the SHARE research as well as other related research initiatives, and to discuss potential implications for future policy and practice. A full meeting report is available with copies of the presentations at www.shareresearch.org/NewsAndEvents/Detail/India_workshop_December_2013.

Following the meeting, the Principal Secretary for Drinking Water and Sanitation requested a follow-up meeting with SHARE, WSSCC and the World Bank and a report covering next steps and action points. In addition to this meeting, SHARE supported a nutrition conference in July 2013, hosted by the Delhi School of Economics, and as well as contributing to various sessions, Oliver Cumming (LSHTM) gave a key note presentation at the opening session attended by the Minister for Rural Development, Jairan Ramesh.

In addition to activities in India, SHARE has supported activities at an international level. This includes convening a session at the Stockholm World Water Week in August 2013 with the Government of India and the World Bank India team entitled 'Making evidence count in the WASH sector – towards a better use of evidence in decision-making'. The Indian principal investigator for the WASH & CLEAN study funded by SHARE and led by Public Health Foundation India (PHFI) and Aberdeen University, Prof. Dileep Malavankar, made a presentation at an international meeting convened by the Government of Spain and WHO to define targets and indicators for WASH in health facilities.

Research outputs and uptake

The final research outputs (publications) from the India country platform supported research are not due until July 2014 but all four studies are on track and preliminary results have been shared by three of the four studies ahead of schedule. The research outputs planned for the reporting period – final protocols, national and international ethical approval and finalised data collection instruments (post-piloting) – have been delivered by all four teams ahead of the scheduled delivery date (January 2014).

In addition to the platform-funded work, SHARE has produced two journal papers in the last year responding to country platform identified priorities:

- Spears D, Ghosh A & O Cumming (2013). *Open Defecation and Childhood Stunting in India: An Ecological Analysis of New Data from 112 Districts*. PLoS One.
- Ghosh A & S Cairncross (2013). *The uneven progress of sanitation in India*. Journal of WASH and Development.

Although the research findings from the country platform RFP have not been published yet, SHARE has successfully engaged a range of stakeholders in the research, raising awareness of the rationale and objectives for the RFP and generating demand in advance of the publication of findings. The Government of India (Ministry of Drinking Water and Sanitation) has requested to be kept informed of progress and we have agreed to jointly convene a workshop with the government and other partners to launch and discuss the research findings in November 2014. In addition to this, there will be other uptake activities implemented, including preparation and dissemination of policy briefings, as well as other workshops and meetings with boundary partners. Early examples of uptake include: a request by the Indian Minister for Rural Development for a personal briefing on the SHARE-funded Orissa trial following a presentation at a conference in July 2013; and, a request for a technical briefing note on performance indicators for menstrual hygiene management by the Principal Secretary for Drinking Water and Sanitation.

Legacy agreements and work plan June 2014 – January 2015

The workplan objectives for the period are:

- Completion of all studies (July)
- Submission of at least four manuscripts for publication in peer-reviewed journals (August)
- Execution of individual study uptake plans (November)
- Convening boundary partners at international, national, and state events (December)

Our legacy plans focus 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.

Challenges

The major challenge that has faced the country platform in India was WaterAid India stepping down as the coordinating organisation for the platform at a critical point in the platform process. As reported in the previous Annual Report, we initiated an alternative management model which has proved successful. However, two challenges arose: (1) as a result of these changes delays encountered in the first quarter of 2013 have resulted in a tight timeframe for delivery of the RFP research; additionally (2) the leveraging of additional resources from WSSCC necessitates additional administration and oversight. Although at the beginning of the reporting period both of these challenges were identified, we have successfully delivered on all milestones for the RFP and, in collaboration with WSSCC, have been able to streamline decision-making and contract management.

Tanzania

Progress for the period (June 2013-May 2014)

SHARE funds seven 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 research protocol was submitted to the Zanzibar Medical Research Ethical Committee (ZAMREC) at the end of February 2014. A final version that addressed the reviewers' comments was approved in April 2014. Field visits from the co-investigators Giorgia Gon and Dr Wood from LSHTM and the SoapBox collaborative took place at the end of April 2014. The visit comprised of a number of activities including an inception meeting; meetings with the adaption group on the assessment tool and the Deputy Minister of Health of Zanzibar; piloting the facility questionnaire; visits to health facilities in Pemba; stakeholder analysis; training enumerators and supervisors, and preparation of the logistics and budget for the facility questionnaire roll out (for more information see the list of outputs in Annex B). Data collection started in May 2014.

The following projects were funded as a result of submissions to the RFP:

2. *Shared sanitation - an improved or unimproved form of sanitation?*

Data collection for the shared sanitation study is completed and data are being analysed. A paper discussing the study's results has been accepted for the WEDC conference, which will be held in September 2014 in Hanoi, while a first draft for a peer-reviewed journal is currently being prepared.

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 has encountered significant delays due to ethical approval reasons.

4. *Expanding the Mtumba model: creating a product for scale up*

The Mtumba study has been delayed due to ethical approval and transfer of funds. Researchers began their work in Geita in May 2014.

5. *Drivers for effective sanitation governance in rural and peri-urban areas around Lake Victoria, Tanzania*

Although the inception of this study was delayed for over nine months whilst the researchers waited for ethical clearance from the National Institute of Medical Research, the research protocol was approved in March 2014. Consultation with actors from local government institutions, non-governmental organisations, the private sector in three local government authorities was completed and primary data collection started in April 2014.

6. *Developing sanitation microfinance products in Tanzania*

Microsave has organised two training workshops with local micro-finance institutions and NGOs. During the first workshop held in Tanzania at the end of January, three institutions were selected to develop sanitation financing products as a part of this action research project. These were Tujijenge and ECLOF, both microfinance institutions, and CCI, an urban partner of WaterAid Tanzania. The progress of these institutions is reported in Table 1 below.

Table 1: Progress by institution

Institution	Progress to date
Tujijenge	During the training, the participants conducted a needs assessment for Tujijenge. The findings assisted Tujijenge to develop a concept to provide loans to sanitation business enterprises with support from MicroSave. Progress is now awaiting the CEO's review and decision.
ECLOF Tanzania	MicroSave supported ECLOF to conduct small scale needs assessment in the first week of March 2014 in Arusha. This resulted in the development of product concepts to finance toilet construction and bio gas construction. The management is in the process of reviewing the concept note.
CCI	CCI conducted a small scale needs assessment research and review of the Jenga Fund toilet loans in March 2014. They are currently writing up their findings and MicroSave will be supporting them offsite in product concept development.

In addition, a second workshop was organised by Trémolet Consulting in response to a request by WaterAid East Africa region. The workshop, entitled 'Embedding microfinance into sanitation programmes', took place in Dar es Salaam on 16 and 17 May 2014 and was co-funded by SHARE and WaterAid. On the first day, the workshop gathered representatives from financial institutions operating in the region as well as NGOs, international organisations with experience in sanitation microfinance and key staff of WaterAid East Africa region (Ethiopia, Rwanda, Tanzania and Uganda). The second day consisted of a closed-door session for WaterAid staff in order to identify effective ways for the international NGO to embed microfinance into its sanitation programmes. This was also the opportunity for WaterAid to reflect collectively on its current experience with microfinance in Tanzania, which is its most significant one in the region.

Research outputs and uptake

Due to delays in starting the different projects, mainly as a result of the prolonged ethics and research clearance processes, no research outputs have been produced as yet. Two SHARE Platform meetings are planned for July and November 2014, when the principal investigators will share their results.

Work plan June 2014 – January 2015

Projects to be completed by 30th November 2014.

Challenges

This past year research in Tanzania has encountered challenges due to delays in ethical approvals and transfer of funds from LSHTM. As of June 2014, only one project is still awaiting ethical approval, whilst all the other ones are progressing according to the timeline.

Malawi

Progress for the period (June 2013-May 2014)

The following projects are taking place in Malawi:

- Centre of Excellence in Water and Sanitation and SMART Centre, Mzuzu University Private sector participation in sanitation and hygiene service delivery: on-going
- Chancellor College, University of Malawi menstrual hygiene management in schools: on-going
- Bunda College, Lilongwe University of Agriculture and Natural Resources (LUANAR) pit emptying and faecal sludge management: just starting.

Research outputs and uptake

On 31 January 2014, the Water and Environmental Sanitation Network (WESNET) held an annual learning forum on water and sanitation in Malawi in Lilongwe. At the forum, SHARE research projects conducted by Mzuzu University and Chancellor College were presented.

In addition, in January 2014, Mzuzu University held an initial stakeholders' review meeting in Nkhata Bay and a follow-up stakeholder review meeting on 2 June. The meetings had the purpose of:

- Presenting project findings to stakeholders
- Reviewing project documents for required additions or corrections
- Discussing research findings.

WaterAid are working with CCODE on a plan for an 'urban talk' on SHARE research – this is a meeting that will also be broadcasted on Zodiac Radio with a dedicated phone-line for remote participation – this will be the principal research uptake activity.

Proposed outline of the event:

- Opening remarks by Mr McLawrence Mpsa, Director of Sanitation and Hygiene, Ministry of Irrigation and Water Development
- Presentation and reflections from Mzuzu University Centre of Excellence in Water and Sanitation on SHARE-funded work on Private sector participation in sanitation and hygiene service delivery
- Presentation and reflections from Chancellor College in Blantyre on SHARE-funded work on Menstrual hygiene management in schools
- Presentation and reflections from Bunda College in Lilongwe on SHARE-funded work on Pit emptying and faecal sludge management
- Presentations from UNICEF research teams
- Audience Q&A session with researchers and beneficiaries
- Panel insights
- Mr McLawrence Mpsa, Director of Sanitation and Hygiene, Ministry of Irrigation and Water Development
- James Mambulu, Water and Sanitation Specialist, DFID
- Mercy Masoo, Country Representative, WaterAid Malawi
- Open discussion with audience, panel, researchers (30 minutes).

Work plan June 2014-January 2015

Projects and RIU are due to be completed by 30th November 2014.

Challenges

The following challenges have been encountered in the past year:

- IIED lead for the Malawi SHARE country platform resigned as the SHARE research coordinator for Malawi due to his move from IIED. In the interim, WaterAid provided support through Dr Sue Cavill who took on the role alongside her work with the Tanzania platform.
- There have been delays in getting the second round of research approved, in producing protocols, in recruitment of a new SHARE coordinator, and in the transfer of funds. One reason for the delays was a pending injunction against the Ministry of Water.

The situation has recently improved and contracts are now being received from the Ministry. Experiences such as these have provided excellent lessons and are being used to guide the next phase of work with the platforms.

3. Logframe outputs

This section summarises SHARE's progress during the past year (June 2013 – May 2014) with regard to the LFA outputs and indicators. Progress to date is also compared to the next set of SHARE LFA milestones set for the end of 2014. It is important to note that at the time of writing this report, six months remain before these milestones are due. However, SHARE has met or, in some cases, significantly exceeded all of the 2014 milestones in the LFA. Some of the outstanding achievements over the past year include:

- Publication of 21 peer reviewed articles and 40 since SHARE's inception, (compared to a high milestone of 10)
- Development and publication of 24 manuals, handbooks and reports, with a total of 63 since inception (compared to a high milestone of 10). This includes the gender and violence toolkit, which received international attention from organisations in the WASH sector
- Training of 90 key individuals in the WASH sector in the past year, of which 46% are women. This also includes the SHARE sponsored research fellowships in Bangladesh.

3.1 Output One

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 includes five separate indicators, summarised below.

3.1.1 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 2014: 24 reports and manuals, and 27 media outputs.

In the past year, SHARE has produced 24 manuals, handbooks, policy briefs and reports and 27 media outputs (such as presentations and podcasts). A full list of these outputs is included in Annex B. Some of the most notable among these include:

- 'Violence, gender and WASH: a practitioners' toolkit - *Making water, sanitation and hygiene safer through improved programming*', prepared by Sarah House, Suzanne Ferron, Marni Sommer and Sue Cavill, which was presented at DFID UK during World Toilet Day
- The four situational analysis reports from the city-wide sanitation project, which provide a detailed analysis of water and sanitation provision in the four cities of Blantyre (Malawi), Chenhoyi (Zimbabwe), Dar es Salaam (Tanzania) and Kitwe (Zambia).

- User guide and summary of the sanitation investment tracker (SIT) by SHARE researchers Sophie Tremolet, and Marie-Alix Prat. SIT is an application that can track investment expenditure in sanitation at household level.

3.1.2 Indicator Two: Development and use of national RIU strategies.

End of 2014 milestone: Legacy arrangements agreed by stakeholders

The national RIU strategies were developed, and published in the 2013 Annual Report (Annex H: Framework for Sustaining National Platforms). The framework facilitates planning for long-term needs and the activities that SHARE will continue to carry out to support sector partners.

Figure 5 in Section 9: *The Way Forward* shows the process for developing and agreeing the legacy arrangements for the national sector programmes by the end of 2014. RIU is an integral part of the processes identified as workstreams 6 and 7.

3.1.3 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 2014: 36 knowledge-sharing events (9 in the past year).

Under this indicator, SHARE reports on seminars, workshops and country platform meetings but not training events. Since June 2013, SHARE has convened and supported nine global events, five of which took place in the country platforms or other low-income countries.

3.1.4 Indicator Four: Number of women participating in those events.

End of 2014 milestone: 50% of participants are women (high). Progress by June 2014: 57% 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 the gender of those attending is the focus. Overall, 57 % of participants at these events were women, exceeding the milestone indicator for end of 2014.

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

End of 2014 milestone: 15 requests for advice (high). Progress by June 2014: 16 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 16 responses, and a total of 32 since SHARE inception. These include requests from organisations such as UNICEF, WSP/World Bank,

Save the Children, Bill and Melinda Gates Foundation, and the Director of Drinking Water and Sanitation in the Government of India. A full list of organisations is available in Annex B.

3.2 Output Two

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.

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

End of 2014 milestone: 20 peer-reviewed publications (high). Progress by June 2014: 21 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 less directly through sharing of information, exchange of ideas, or review.

Since June 2013, SHARE has produced 21 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:

- Dangour AD, Watson L, Cumming O, Boisson S, Che Y, Velleman Y, Cavill S, Allen E and Uauy R (2013) Interventions to improve water quality and supply, sanitation and hygiene practices, and their effects on the nutritional status of children. *Cochrane Database of Systematic Reviews*, Issue 8. Art. No.: CD009382. DOI: 10.1002/14651858.CD009382.pub2.
- Benova, L. Cumming, O. and Campbell, O. (2014). Systematic review and meta-analysis: association between water and sanitation environment and maternal mortality. *Tropical Medicine and International Health*, Volume 19, Issue 4, April 2014, 368-387.
- Stocks, M., Ogden, S., Haddad, D., Addiss, D.G., McGuire, C. and Freeman, M. (2014). Effect of Water, Sanitation, and Hygiene on the Prevention of Trachoma: A Systematic Review and Meta-Analysis. *PloS Med* 11(2): e1001605. DOI:10.1371/journal.pmed.1001605.
- Biran, A., Schmidt, W-P., Varadharajan, K.S., Rajaraman, D., Kumar, R., Greenland, K., Gopalan, B., Anger, R. and Curtis, V. (2014). Effect of a behaviour-change intervention on handwashing with soap in India (SuperAmma): a cluster-randomised trial. *Lancet Global Health*, 2: 145-154.

Since its inception, SHARE has produced 40 journal articles, exceeding the milestone indicator of 20 by the end of 2014. Although there is no specific indicator for tracking the gender of authors of SHARE publications, the importance of assessing the presence of female authors and researchers in the WASH sector has been recognised. Among last

year's publications, 41% of the authors are female, and 13% of authors who contributed to those publications are from developing country institutions.

3.2.2 Indicator Two: Citations of SHARE publications by other authors.

End of 2014 milestone: Average two per article per annum (high). Progress by June 2014: 2 citations per publication per year (a total of 261 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.

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

End of 2014 milestone: Two programmes embodying findings (high). Progress by June 2014: 9 programmes embodying findings.

This indicator 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. Since June 2013, SHARE research findings have been embodied in nine programmes and strategies. A full list is available in Annex B. Some notable examples are:

- SHARE-funded Choose Soap and SuperAmma projects have been planned for incorporation by WaterAid Bangladesh into the development of a national mass-media campaign to promote hand washing with soap.
- USAID announced that the impact of WASH will be incorporated in their maternal health strategy, based on the systematic review by Benova *et al.* (2014). The announcement was provided by Merri Weinger, environmental health team leader of the Maternal Child Health Division of USAID's Bureau for Global Health, during the *Water, Sanitation, and Hygiene Programmes as a Strategy to Advance Maternal Health*, held to commemorate International Women's Day.

3.2.4 Indicator Four: Successful completion of SPLASH component funded via SHARE.

End of 2014 Milestone: Policy relevant appraisal outputs produced by SHARE (high). Progress by June 2014: Completed.

The SPLASH programme comprises of five research projects, led by national and international partners. These are listed below:

MAFADY: *Maîtrise de la filière assainissement dans un écosystème côtier à Douala et les quartiers populaires de Yaoundé au Cameroun.* The goal of this research project is to determine actions to be undertaken by the various actors to improve sanitation and hygiene in coastal areas and slum districts of big cities with tropical humid climate. The project is implemented in formal settlements as well as in slum districts of Douala and Yaoundé.

FaME: *Faecal Management Enterprise: Providing sanitation solutions through value chain management of faecal sludge.* The purpose of the FaME project is to create scalable, reuse-oriented faecal sludge (FS) value chains that capture and create value from FS end-products, using approaches that provide both incentives and cash flow to help drive and finance robust sanitation schemes. The research is focused on three countries: Senegal, Ghana and Uganda.

U-ACT: *Economic constraints and demand-led solutions for sustainable sanitation services in poor urban settlements.* The project, implemented in Kampala, Uganda, explores the key economic constraints and social and technological preferences of the poor that lead to a persistent lack of private investment in sanitation facilities in poor urban settlements in sub-Saharan Africa. The project aims to design innovative and demand-based sanitation services and financing options to sustainably improve the sanitation uptake.

CLASS-A: *Sustainable and resilient sanitation service chains in Maputo province, Mozambique –action research and piloting for benefit of the urban poor.* The project focuses on reducing the vulnerability of urban populations from sanitation-related hazards through the development and application of risk-based systems analysis. It also aims to identify resilient sanitation technologies and develop and apply strategies for their implementation and develop communications and mechanisms for stakeholder interaction to promote effective multi-stakeholder collaboration.

3K-SAN: *Catalysing self-sustaining sanitation chains in informal settlements.* The project aims to identify and evaluate strategies for catalysing self-sustaining sanitation chains in low-income informal settlements in three African cities: Kisumu (Kenya), Kampala (Uganda) and Kigali (Rwanda). The project maps and analyses sanitation-related financial flows, stakeholder roles, regulatory frameworks and communication pathways in low-income settlements in the case study cities, in order to identify factors constraining and facilitating sustainable sanitation. Particular reference is given to vulnerable groups and land tenure issues. Identification of commonalities and differences between these areas will be used to develop broader best practice guidelines, for comparable interventions in similar settlements throughout sub-Saharan Africa.

Following an appraisal of SPLASH programme activities, the programme has produced:

- Participation in 20 international conferences.
- Participation in the organisation of five workshops.
- Engagement with more than 15 sector actors.

A full list of outputs is provided in Annex B.

3.3 Output Three

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 to better identify research needs and to facilitate the uptake of new and existing research.

3.3.1 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 2014: eight consultations with strategic boundary partners (20 since SHARE 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:

- SHARE collaboration with the Ministry of Health and Social Welfare, the Ministry of Education and Vocational Training, NIMR and National Bureau of Statistics to coordinate its process evaluation of the National Sanitation Campaign, supported by DFID Tanzania and WSP (World Bank).
- The SHARE 'Undoing inequity: WASH projects that deliver for all' programme led by WaterAid and WEDC has helped inform the International Development Select Committee's (IDSC) recent recommendations to the UK Government on Disability and Development.
- SHARE convened a workshop with the Government of India, WSP and WSSCC to address current research on women and girls in relation to sanitation and hygiene challenges linked to health and well-being.

3.3.2 Indicator Two: Number of country platforms established and active.

End of 2014 milestone: Four country platforms with active strategies (high). All country platforms have been established and are active.

3.3.3 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 webpage 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 2,964 per month. As of June 2014, the total number of newsletter subscriptions is 510. As requested by DFID in 2013, we have also monitored the number of Twitter 'followers', which was 815 in May 2014.

3.3.4 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 2014: five requests responded to.

Under this indicator, SHARE reports on the requests made to its members for support on SHARE research, training, capacity building, 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 five formal requests for technical support. These include requests from DFID country programmes (Malawi, Tanzania, India) and international organisations. A full list of requests is available in Annex B. Since its inception, SHARE has responded to a total of 27 requests for technical support, performing well towards the high indicator target set for 2014.

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

End of 2014 milestone: Seven non-SHARE institutions (high). Progress by June 2014: 52 collaborating institutions.

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.

In the past year, more than 50 external international and national agencies and government departments have been involved in SHARE research. Global research institutes and universities in country platform countries are also actively participating in SHARE research.

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

End of 2015 milestone: 40 individuals' skills and competencies upgraded (high). Progress by June 2014: 90 individuals' skills and competencies upgraded.

Indicator six includes individuals who are involved in developing and carrying out WASH activities within their organisation. In the past year, SHARE has provided training to 90 WASH practitioners exceeding the indicator milestone of 40. Approximately 50% of these were women. A full list of training events is provided in Annex B.

Among the most notable are:

- Training of trainers based on SHARE MHM handbook, at WASH conference in Brisbane, conducted by Therese Mahon and Sue Cavill.
- SHARE research fellowship programme in Bangladesh, which allowed WASH practitioners to conduct research in the sector. Of these four fellows, one is female
- Training on Sanitation Mapper provided to WaterAid Tanzania and Malawi.

3.4 Output Four

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.

3.4.1 Indicator One: Percentage of proposals ready for consideration on first submission.

End of 2014 Milestone: 80% of proposals (high). Progress by June 2014: 100% ready for submission.

Under this indicator, SHARE reports on the percentage of proposals in both Call C and country platforms that were accepted for consideration by the review panel without substantial revision.

3.4.2 Indicator Two: Number of PhD students trained.

End of 2014 milestone: Number of PhD students completed: 2 (Low). Progress by 2014: two PhD students likely to complete.

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 developing countries, exceeding the 'high' milestone of five. Of these PhD students, two are very likely to complete their thesis by December 2014. Additional information on each student and their research is available in Section 8.2.1.

3.4.3 Indicator Three: Number of exchange visits organised.

End 2014 milestone: two visits (medium). Progress by June 2014: three exchange visits organised (13 since SHARE 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. Since June 2013, SHARE has arranged three exchange visits. These include:

- September-October 2013: Rick Rheingans and Elisa Roma visit to Tanzania to manage SHARE evaluation of the National Sanitation Campaign, working with the Ministry of Health and Social Welfare, DFID Tanzania and the World Bank WSP. SHARE staff were based at WSP offices in Dar es Salaam.
- September 2013: Noah Schermbrucker from SDI Secretariat made an exchange visit to Malawi, collected documentation on a DEWATS system being finalised by the SDI affiliate in Lilongwe, and shared this information with the other affiliates involved in the SHARE city-wide project.

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

End of 2014 milestone: Four courses (high). Progress by June 2014: five training courses (16 since SHARE inception).

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

- March 2014: training of trainers on Menstrual Hygiene Management at the WASH conference in Brisbane (Australia) organised by WaterAid.
- February 2014: Representatives of eight microfinance institutions and NGOs with microfinance experience received intensive two-week training in market research for sanitation, hosted by WaterAid Tanzania.
- Sanitation Mapper training conducted to WaterAid Tanzania (June 2013) and Malawi (November 2013).

3.5 Output Five

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.

3.5.1 Indicator One: Percentage of indicators assessed and reported annually.

End of 2014 milestone: 75% (medium). Progress by June 2014: 88%

This refers to the number of logframe indicators assessed as well as outcome mapping assessment. SHARE monitored 88% of the logframe indicators, including mapping of the boundary partners both globally and in each country platform, exceeding the 'medium' indicator milestone of 75%.

3.5.2 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 2014: Over £4 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.

3.5.3 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 2014: four.

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

End of 2014 milestone: £1m (high). Progress by June 2014: £1,213,433.

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: 50% (low). Progress by June 2014: 31%.

4. Outputs: additional information

In the 2013 Annual Report several outputs were identified that, although they were not a part of the official LFA, supplemented the information and brought SHARE in line with DFID's evolving monitoring programme. These have since been incorporated within SHARE's logframe.

Output Two, Indicator One, tracks the number of SHARE peer-reviewed publications. In addition to tracking the quantity of these publications, SHARE is equally concerned with quality in regard to its aims and objectives. As a result, two additional measures of publication performance have been added: the percentage of female authors and the percentage of developing country authors.

Output Three, Indicator One, was initially intended to focus on consultations with strategic partners in the WASH sector. It is now also used to track the number of consultations initiated by SHARE to engage non-WASH sector partners in SHARE research and synthesis.

5. Impacts and outcomes

5.1 Impacts

Accelerated progress towards universal sanitation and hygiene coverage in sub-Saharan Africa and South Asia.

5.1.1 Indicator One: The annual number of people gaining access to improved sanitation in the four focus countries.

This is the first year in which data are available from the Joint Monitoring Programme which permit a comparison of the average annual rate of extension of sanitation coverage in individual countries before and after the Inception of SHARE (see Table 2). Admittedly the data are only for the first two years, and there are anomalies for some of the smaller countries but it is noteworthy that an increase was observed in all four focus countries. It would be unwise to attribute the entire increase to the influence of SHARE, but it is likely that SHARE played a role in it.

The total of 17.4 million is close to the middle target in the original logframe.

Table 2: JMP data showing changes in sanitation coverage to 2012

	Annual average increase in population served (,000)		
	1990-2010	2010-2012	Increase in rate
	Baseline		(%)
Bangladesh	2,110	2,488	18
India	12,954	14,172	9
Malawi	31	47	52
Tanzania	135	680	403
Total	15,231	17,387	14

5.1.2 Indicator Two: The child (<5 years) mortality rate in the four focus countries (# deaths/year).

It is still too early to consider this indicator.

5.2 Outcomes

SHARE's outcomes focus on the ability to catalyse change in programmes and policies among other sector actors (boundary partners). Within the logframe there are three outcome indicators:

5.2.1 Indicator One: Evidence of SHARE catalysing change on the four barriers to progress in sanitation and hygiene, measured through the percentage of boundary partners' progress met.

End of 2014 milestone: 80% (high).

In order to assess our progress quantitatively we calculate the percentage of boundary partners for which we reach the 'love to see' level in each of the country platforms.

Based on the current assessment approach, we have reached the highest ('love to see') level for 50% of our national boundary partners.

5.2.2 Indicator Two: Concrete examples of change, influenced by SHARE, measured by:

- a) the number of such 'success stories' and
- b) the number of people with improved sanitation and hygiene.

End of 2014 milestone: Fifteen success stories and 15 million additional people with improved sanitation and hygiene (high); Progress by June 2014: ten success stories. The coverage figures for 2014 have not yet been published by the JMP, so the assessment of this indicator is not yet possible.

Section 5.3 below describes the success stories where SHARE research, synthesis and RIU activities are catalysing change in programmes and policies in the WASH sector and beyond.

5.2.3 Indicator Three: Leveraged funds, measured by:

- a) resources invested by other funders in SHARE's research (£s) and;
- b) investments in sanitation & hygiene projects influenced by SHARE (£s).

End of 2014 milestone: £5 million in SHARE's research and £30 million in projects influenced by SHARE (high). Progress by June 2013: £4.1 million in SHARE's research and £79 million in projects influenced by SHARE. Reported in the 2013 Annual Report.

SHARE has leveraged over £4 million in additional research investments, including £3.5 million from the Bill and Melinda Gates Foundation and 3ie for the Orissa RCT, and £200,000 from the Water Supply & Sanitation Collaborative Council (WSSCC) for the India country platform research call.

5.3 Outcomes: success stories

5.3.1 Equity

Despite being a universal human right, water and sanitation access continues to be denied to thousands of disabled people, older people and many people living with a chronic illness. Environmental, attitudinal and institutional barriers often leave these vulnerable groups with no choice but to defecate in the open, subjecting themselves to the associated health and safety risks and social stigma.

While the issue of disability in WASH - and in development in general - has long been neglected, it is increasingly recognised to be a crucial aspect in achieving equality of access. Post-2015 indicators for WASH, which aim for universal access by 2030, will only be met if these marginalised groups are reached.

However, little is known today about the impact of unsafe water, sanitation and hygiene (WASH) access on the lives of these people and their families, about how to overcome the barriers to access that they face, or the benefits that they could reap from improved access to safe WASH.

In recognition of the importance of equitable access and providing for the most marginalised in society and the need to build a stronger evidence base to support this, SHARE is providing funding for a study led by WaterAid, WEDC and LCD under Call C. *'Undoing Inequity: WASH programmes that deliver for all in Uganda and Zambia'* is contributing to a sparse evidence base on the impact of WASH poverty, barriers to WASH access, and the effect of improved access on the lives of disabled people and their families, encouraging more informed policy and practice in this area. The project operates in Amuria and Katakwi districts in Uganda, and the Mwanza West ward in Zambia. The premise is that ensuring accessible WASH services is not about expensive, retro-fitted technologies but about engaging the whole community in a process to identify cost-effective and inclusive solutions.

Through engagement with key boundary partners from the early stages of research design to data collection, analysis and dissemination, this project is doing a great deal to inform and influence policy and practice.

Thanks in part to the continued engagement with the Parliamentary Under-Secretary of State (PUSS) for International Development, Lynne Featherstone MP, on disability issues in development, she has become a champion for inclusive WASH. The PUSS visited the *'Undoing Inequity'* project in Uganda in October 2013, accompanied by British Paralympian and TV presenter Ade Adepitan MBE. She used this visit, along with key messages from the project's baseline findings, in her December 2013 announcement of DFID's commitment to include inclusive WASH in its schools' programme.

The project findings also informed the International Development Select Committee's (IDSC) recent recommendations to DFID on mainstreaming disability in development. The recommendations drew on all the evidence supplied by project lead WaterAid's January 2014 submission. These include developing a disability strategy with clear targets and timescales, and making disability programming a contractual requirement in funding to multilaterals. The fact that the SHARE-funded project was able to inform these

recommendations is testament to the added value that it provides. DFID is due to provide its response to the IDSC on 10 June.

Many of these recommendations are not new concepts to DFID, which has started to take a leading role in mainstreaming disability in development. The project team has been engaging closely with DFID's WASH team in this process. It has fed into an internal DFID document on approaches to disability within WASH, and is using the project's mid-term data collection tools to feed into DFID's initiative to include disability in their data collection under the DFID WASH results contract.

The tools developed by the project have also been taken up by a number of other key sector actors. WaterAid Uganda and Zambia have used the barrier analysis tool to inform their programmatic plans and associated budgets for the next three years. This tool has also been used by Water and Sanitation for the Urban Poor (WSUP) in Maputo to inform the evaluation methodology of their projects, which seek to meet the WASH needs of women, disabled people and people with HIV and AIDS. In addition, it was used a key input into a training session by the Rural Water Supply Network (RWSN) on equity and inclusion in WASH, which was attended by 56 people worldwide.

The project has also helped leverage other research in this relatively neglected area. The end-line tools developed by the project are being used in the AU\$ 1 million AUSAID-funded study by LSHTM on inclusive WASH in Malawi.

Table 3: RIU activities relevant to inclusive WASH

Date	Beneficiary organisation(s)	Country(ies)	Details
Jul/Aug 2012	National and regional stakeholders (government, partners and DPOs)	Zambia and Uganda	Participatory barrier analysis workshops led by WEDC
Aug 2013	National and regional stakeholders (government, partners and DPOs)	Zambia and Uganda	Workshops to update on research and consider steps forward
May 2013	BOND Disability and Development Group	UK	Meeting led by WaterAid, UCL and Handicap International on sharing practical experiences of conducting disability research
May 2013	School of Oriental and African Studies	UK	Workshop on the right to sanitation, drawing on project findings
July 2013	WEDC Conference	Global	Project paper on inclusive WASH presented by WaterAid Zambia and WaterAid Uganda
November 2013	Rural Water Supply Network (RWSN)	Global	Scoping report disseminated via the RWSN on existing successful examples of mainstreaming disability and aging issues in WASH
Oct 2013	DFID	UK	Parliamentary Under Secretary of State for International Development Lynne Featherstone MP visited the project in Uganda accompanied by British Paralympian and TV presenter Ade Adepitan MBE
Nov 2013	WaterAid country programmes	Global	Scoping report disseminated via internal webinars on existing successful examples of mainstreaming disability and aging issues in WASH
Sep 2013	Water Supply and Sanitation Collaborative Council (WSSCC)	WSSCC West Africa	Training on inclusive WASH for the West Africa
March 2014	DFID	UK	Feeding into an internal DFID document on approaches to disability within WASH. Continuing dialogue with DFID on this.

5.3.2 Behaviour change

Though handwashing with soap is one of the most cost-effective means of ending preventable child deaths (Cairncross and Valdemanis, 2006), a recent study shows that it is practised by less than one in five people in the countries that need it most (Freeman *et al.*, 2014). Whilst most people know of the health benefits of handwashing, few people actually do it.

SHARE's support to behaviour change in handwashing with soap developed from LSHTM's work which began in 2007 in response to a request from Hindustan Unilever PLC, the Environmental Health Group at LSHTM carried out research into handwashing with soap (HWWS) behaviour change in India. A cluster-randomised controlled trial was conducted in ten Indian villages to evaluate the impact on handwashing practices of an existing intervention (designed to promote a commercial soap brand) delivered to 18,000 Indian villages. The intervention was based on the conventional hygiene education approach of raising awareness of germs and the role of soap in preventing disease and was successfully implemented in each village. The results supported the initial assumption that interventions based on germ-awareness fail to elicit behaviour change.

Choose Soap

This provided a foundation for the development of a new innovative approach to HWWS behaviour change and a rigorous evaluation of its effectiveness. SHARE funded the development of the 'Choose Soap' toolkit (www.choosesoap.org) aimed at promoting HWWS in households in low-income settings. The toolkit drew on ideas and best practices from different fields including hygiene and health promotion, behavioural sciences and social marketing.

In 2011, the Wellcome Trust provided £249,660 to fund a cluster-randomised controlled trial in Andhra Pradesh to assess the effectiveness of an intervention to improve handwashing behaviours. The intervention was based on the SHARE 'Choose Soap' toolkit which was then adapted to the rural Indian context of Andhra Pradesh by a local creative agency. The trial proved to be successful in changing handwashing behaviour in seven intervention villages. In particular, for targeted handwashing occasions (i.e. after contact with faeces or before eating), handwashing rates increased to 19% from a baseline of 1% (indicating no pre-existing 'culture' of handwashing existed in this population).

Very recent results suggest that handwashing rates have been sustained six months following the intervention as well. These findings were reported in *Lancet Global Health* in March 2014.

SuperAmma campaign

Following the success of 'Choose Soap', SHARE and the Wellcome Trust funded a new promotion intervention in the seven control villages from the original trial. The study set out to test whether a radical new approach to behaviour developed at LSHTM, Behaviour Centred Design (BCD), could change handwashing practices in rural Indian villages sustainably and scalably.

Behaviour Centred Design (BCD) represents a powerful new theory-based approach to identification of the levers of behaviour change and which works with creative agencies to bring them to life. For handwashing in rural Andhra Pradesh, the levers included disgust, nurture and affiliation. The SuperAmma campaign employed a dirty character called Laddhu Lingham who entertained and disgusted children with his offer of sweets made with dirty hands, and a cartoon film about a beautiful aspirational mother (SuperAmma) who nurtured her son. This moved viewers to tears (see the videos and materials at www.superamma.org). The campaign was designed to be delivered by two extension workers over two days in each village, so as to be scalable across rural India.

A trial of the campaign showed that handwashing with soap rose to 37%, six times higher than in control villages, and was still over 30% in intervention villages a year later (Biran *et al.*, 2014). A process evaluation showed major changes in perceived norms about handwashing. SuperAmma was featured as a success story in USAID's recent ministerial event in Washington on ending preventable child and maternal deaths. It is currently being replicated in Nigeria at national scale by WSSCC.

The BCD approach is also being used in food hygiene, sanitation uptake, trachoma and nutrition programming and by Industry, for example in Lifebuoy's efforts to get a billion people to wash their hands.

Next steps

In Zambia it is planned to create a BehaviourLab which will design, test and roll out the next generation of behaviour change programmes, via what we call 'intelligent interventions'. Innovations will include developing outreach activities that can carry multiple messages (for example on WASH and nutrition together), developing supportive technologies such as handwash stations and marketable sanitation solutions [4] and enhancing the behaviour change toolkit of frontline health workers with technological aids and engaging content. This will help health workers to use modern techniques to become valued agents of behaviour change in their communities, with potentially global repercussions.

References

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5.3.3 Gender and WASH

Lack of appropriate and hygienic sanitation facilities, at home or in public places, has proven to impact the health, education and financial security of women and expose them to violence and psycho-social stress. Recognising the importance of mainstreaming gender issues in WASH activities, the SHARE consortium has contributed significantly to the research and practice in these areas, both globally and in each of its four focus countries.

Menstrual hygiene management (MHM)

Since its inception, the SHARE consortium has been committed to addressing knowledge gaps related to menstrual hygiene management (MHM) and contributed to raising awareness on the issue worldwide. It has collaborated with national and international organisations, such as the Asian Institute of Public Health, Research and Development, Emory University, the University of Florida, the Water Supply and Sanitation Collaborative Council (WSSCC), KEM Hospital Research Centre, Vadu Rural Health Programme and the Swiss Tropical and Public Health Institute. SHARE research and research into use on MHM is helping to pave the way for a better understanding of the real needs of women and providing opportunities to discuss and design appropriate MHM strategies.

In 2013, SHARE supported a systematic review (Sumpter and Torondel, 2013), published in PlosOne, exploring the health and social effects of MHM. The systematic review concluded that MHM presents a significant challenge to women in low income settings and highlighted evidence that educational interventions may improve practices and reduce restrictions. While the study did not find substantial evidence of an association between poor MHM practices and health outcomes, it was nonetheless deemed plausible that MHM can affect the reproductive tract. More research is needed to understand the specific infections, the strength of effect, and the route of transmission.

One of SHARE's main contributions to raising awareness on MHM is the practitioner's manual on MHM produced in 2013 by WaterAid (*Menstrual Hygiene Management – What works? Synthesising existing knowledge to develop guidelines and an outline forum for practitioners*). The resource book provides guidance for practitioners on MHM and comprises a toolkit and examples of good menstrual hygiene practices in several contexts, including schools, the workplace and in emergencies. The MHM resource was piloted in Bangladesh. The preliminary results of the pilot were presented in November 2013 at the second Annual Virtual conference on MHM in WinS organised by UNICEF and the Mailman School of Public Health of Columbia University.

www.unicef.org/wash/schools/files/MHM_Booklet_Final_HR.pdf

Menstrual Hygiene Management has also been identified as a research priority in three of SHARE'S four focus countries. In India, SHARE supports three studies aimed at understanding menstrual hygiene behaviour and practices amongst women of reproductive age. The first, led by LSHTM and the University of Florida, focuses on unpacking the level of knowledge about menstruation amongst adolescent girls, teachers and parents in Bihar. A second project, conducted in Odisha and led by Asian Institute of Public Health and Emory University, aims at exploring the impact of WASH conditions on hygiene and sanitation practices among Indian girls and women and how these impact on their mental, physical and reproductive health. A third project, conducted in rural Pune District and led by KEM Hospital Research Centre, Vadu Rural Health Programme and Swiss Tropical and Public Health

Institute, focuses on exploring women's perceptions of WASH-related resources, stress from inadequate resources and access, and the experience, practice and materials for menstrual hygiene.

In Bangladesh, MHM has been chosen as a research topic by Moon Moon Hossain, who is a SHARE-funded research fellow. Her work is exploring MHM practices amongst women in rural villages of north Bangladesh. In Malawi, another SHARE focus country, Chancellor College is leading a study exploring the status of MHM and the challenges faced by girls in primary and secondary schools, to devise appropriate interventions to address their needs.

This varied package of research has already started to impact research agendas, policy and practice. The systematic review's identification of serious knowledge gaps on the links between WASH, MHM and well-being played an instrumental role in determining the investment dedicated to MHM by SHARE and partners. As for the MHM practitioner's manual, since its launch in 2013 at a high-profile LSHTM event convened by SHARE and WaterAid, called 'Making Connections', it has provided the basis for several training workshops conducted by WaterAid. These include the training of trainers in MHM in emergencies at RedR and the training of trainers in the WASH sector at the recent WASH conference in Brisbane. It is also currently being piloted by WaterAid Bangladesh. In addition, the continued engagement of national stakeholders in India has already led to plans for future partnership with the government and other key actors in taking forward and further developing the findings.

Gender-based violence and WASH

SHARE research on WASH and gender is committed to understand the impacts of inadequate or inaccessible sanitation and water facilities on women's safety, privacy and dignity. Findings from a SHARE-supported study in Uganda, reports that women experience feelings of intense shame and stigma around toilet use, and that their journey to the toilets during darkness poses a risk to their safety. These results were reiterated by another study, conducted in Delhi, which reports women's fear of rape and sexual violence when using WASH services. In India, SHARE is also supporting further research to explore the psycho-social stress resulting from violence experienced by women using inappropriate sanitation. This research is part of a collaboration between the Society for Promoting Participative Ecosystem Management, Texas A&M University and WSSCC.

To better understand the implications of WASH and gender vulnerability, SHARE partner WaterAid has produced a useful resource entitled 'A Practitioner's Toolkit on Violence, Gender and WASH', (www.odihpn.org/humanitarian-exchange-magazine/issue-60/violence-gender-and-wash-a-practitioners-toolkit-making-water-sanitation-and-hygiene-safer-through-improved-programming) which explores the issues surrounding gender-based violence and WASH provision. The toolkit presents best practice for responding to incidents of violence and how to minimise risks of gender-based violence in relation to WASH. The toolkit was presented to DFID UK during World Toilet Day and was launched at LSHTM in June 2014. The toolkit has received a great deal of attention from the WASH sectors. Examples of organisations and networks reporting on the toolkit are WSSCC, IRC, CARE, ReliefWeb, Community Led Total Sanitation, SIWI, SNV, Soul Beat Africa, Engineers Without Borders, SHARE, Smart Development Stories and WaterAid.

WASH and maternal health

Improving maternal health in low income settings requires a greater understanding of water and sanitation conditions in health facilities. SHARE has committed to bridge the knowledge gap between inadequate WASH and maternal mortality. SHARE research on WASH and maternal health is spread through three of our focus countries (India, Tanzania and Bangladesh) and includes several academic institutions and international organisations. Among these are the Indian Institute of Public Health, University of Aberdeen, Zanzibar Ministry of Health (MoH), the Soapbox Collaborative and the Pemba Public Health Laboratory and WaterAid.

SHARE has supported research exploring WASH conditions and impacts on maternal health in Tanzania, India and Bangladesh. The first study, an in-depth needs assessment and consultation conducted in Zanzibar, aims to explore WASH conditions in health and labour ward facilities, the potential risks these pose to maternal health, as well as the quality of healthcare services and service use by future mothers, and potential ways of addressing WASH needs in healthcare facilities. The project, a collaboration between WaterAid, the Zanzibar Ministry of Health (MoH), Pemba Public Health Laboratory, the Soapbox Collaborative and the University of Aberdeen, aims to provide recommendations to decision makers on the provision of appropriate WASH services to mitigate maternal and new born health risks in health facilities. A second study, conducted in India, aims to develop objective tools to measure levels of cleanliness in the labour ward and their determinants. This research is also being conducted in Bangladesh, with leveraged funds from the CLEAN project.

SHARE supported a systematic review on the impacts of WASH on maternal health (Benova *et al.*, 2014), which provided evidence of association between poor WASH conditions at home and/or at the health facilities and maternal mortality. The review has been presented at high profile events in 2014, among which the Maternal Health Initiative of the Woodrow Wilson International Centre for Scholars in Washington DC and at the Ministry of Health, Equality and Social services in Madrid. The systematic review has encouraged further research in the field of WASH and maternal health, which influences policies and practices.

RIU activities for this work included a presentation at the Global Task Force on Maternal Health Conference in Arusha in 2013, and webinars were held for UNICEF and WaterAid staff. In March 2014, it was presented at a brownbag meeting in DFID.

5.3.4 Urban sanitation

The scale of sanitation needs in sub-Saharan Africa is widely recognised. Most of the continent is not on track to meet the Millennium Development Goal (MDG) target for sanitation and in urban areas the majority of households do not have access to safe sanitation. SHARE is investing in research on a variety of themes with the ultimate goal of promoting sustainable sanitation in urban environments. Among the most ambitious of its projects is city-wide sanitation, led by SHARE partners IIED and SDI. The five-year project investigates the failures of conventional approaches to urban sanitation in four cities across sub-Saharan Africa: Chinhoyi (Zimbabwe), Kitwe (Zambia), Blantyre (Malawi), Dar es Salaam (Tanzania) and aims at building city wide interventions through action research.

SDI, together with affiliates working in each city, has developed a bottom-up approach, through which the residents of informal settlements engage with their local authority to identify new ways forward to plan and manage sanitation. In developing this approach, they have addressed four challenges faced by community-led approaches to sanitary improvement:

- 1) getting local residents to coordinate and combine their demands for sanitary improvement;
- 2) finding and implementing improvements that are affordable and acceptable to both the local authorities and the residents;
- 3) getting local authorities to work with residents and their organisations to co-produce the needed improvements;
- 4) ensuring that other poverty-related problems, such as insecure tenure, do not undermine improvement efforts.

Since its inception, the city-wide project has achieved the following outputs:

- 1) Publication of four Situational Analyses which include profiling and mapping of informal areas and identification of barriers and problems for sanitation.
- 2) Publication of four policy briefs on the use of community mapping, in the cities of Dar es Salaam, Kitwe, Blantyre and Chinhoyi.
- 3) Increased number of savers in each of the areas/communities where the research has taken place.

For more information on the city-wide project, see the City-wide Sanitation Report in Annex D.

A further area of research in urban areas relates to faecal sludge management. In the Malawi country platform, SHARE is supporting a project entitled 'Evaluate and recommend for appropriate and cost effective technologies for collection, treatment, transportation and use of faecal waste in Malawi'. The study, led by the Centre for Excellence in Water and Sanitation by the University of Mzuzu, aims to explore and identify appropriate toilet technologies that will facilitate sustained use of the facilities in peri urban areas in Blantyre and Lilongwe, as well as understanding the risks associated with the collection, treatment, transportation and re-use of faecal waste. Furthermore, the research aims to explore the potential role for private public partnerships in faecal sludge management and to recommend appropriate management and financing models.

Finally, a further contribution to research and practice in the urban sanitation, is SHARE's funding of the Sanitation Mapper project, a participatory decision-support and monitoring technology which maps sanitation facilities and their status in low- and middle-income countries to inform local planning at district and sub-district levels. The tool, developed by WaterAid, provides both area-based mapping, for variables such as improved sanitation coverage at the village level, and point-based mapping, for identifying the distribution and status of shared latrines in urban areas. The Sanitation Mapper has been used by other research programmes, such as the Bill and Melinda Gates Foundation Total Sanitation Project, and organisations, such as BRAC and the Centre for Community Initiatives in Tanzania. For more information on the Sanitation Mapper, please see Section 8.

5.3.5 Finance and markets

Increased financial investment is indispensable for meaningfully addressing the sanitation crisis. It is needed for capital investment and to cover recurrent operational and maintenance costs, without which reaching the 2.5 billion people still without access to an improved form of sanitation will be impossible.

Broadly speaking, current policies place the financial burden of installing and maintaining household sanitation facilities on households themselves. Therefore, an understanding of markets and economic drivers is vital to discussions of sanitation coverage and demand in resource-constrained settings. However, typical sanitation support programmes focus on software support but offer no or limited support for access to finance.

There are reasons to believe that limited access to credit is a key constraint preventing households from investing in improved sanitation. In a randomised controlled experiment conducted in the context of a WSP-run project in Indonesia, Paul Gertler of Berkeley Business School and colleagues concluded that “the main obstacle to constructing a toilet reported by households was the cost. Credit constraints likely limited households’ ability to build a toilet”. Identifying ways for households to cover such costs is therefore of paramount importance. However, while microfinance is commonly used in several areas of development, knowledge about how this tool might be effectively used in the sanitation sector is limited.

Since its inception in 2010, SHARE has been developing the evidence base in this important area for sanitation sector financing. SHARE has worked in three main areas: mapping current knowledge on the demand and supply for sanitation microfinance services; evaluating existing experiences; and extracting practical lessons through an ‘action research’ experimental project.

While a lack of disaggregated data from microfinance institutions and insufficient documentation of existing cases have made it difficult to analyse the existing demand and supply for sanitation microfinance, the mapping exercise conducted through SHARE showed considerable interest among many actors in learning about how to apply microfinance to sanitation provision, or, in the case of microfinance institutions, about how to expand their business into the sanitation sector. Case studies on existing experiences with sanitation microfinance have enabled the extraction of valuable lessons. In India, where there is a growing market for sanitation microfinance, there are success stories to draw from, such as the Guardian project. Operating since 2011 as the first water and sanitation- focused MFI, it has a 100% repayment rate and is growing fast, with 20,000 loans disbursed over three years. In Tanzania, the market is still in its infancy, and a key constraint was found to be knowledge of, and a fear of the financial risk associated with, the sanitation market among MFIs.

Key SHARE partners, including Tremolet Consulting, WaterAid Tanzania and Microsave are conducting a pilot project for sanitation microfinance as a result of this package of work, with SHARE funding. Through continued engagement with MFIs on the one hand and NGOs focused on sanitation delivery on the other, and including regular workshops and a week-long market research training event, the project has triggered interest and built national capacity in this area. Eight organisations have participated in the training, and three of them are now receiving technical support from Kenyan partner organisation MicroSave to trial

sanitation microfinance products. In addition, to ensure the sustained impact of these investments and allow the capture and dissemination of lessons learnt, a Sanitation Finance Working Group has been created that meets regularly.

This package of research has also spurred increased collaboration among organisations working with or interested in engaging with microfinance for sanitation. SHARE-funded Trémolet Consulting and WaterAid jointly held a workshop in East Africa to which they invited representatives from the World Bank’s Water and Sanitation Programme, MicroSave, Water for People, Water.org, and FINISH, to promote sanitation microfinance in the region.

Table 4: List of RIU activities

Date	Type of meeting	Country(ies)	Details
17/12	RIU presentation at WaterAid	UK	Presentation at WaterAid on findings from the SHARE research activity on microfinance for sanitation and potential roles of public funders to stimulate and develop this market
Nov '13	RIU presentation at DFID	UK, Scotland	Presentation at DFID on findings from the SHARE research activity on microfinance for sanitation and potential roles of public funders to stimulate and develop this market
Dec '13	Action research inception workshop	Tanzania	Convening MFIs, sanitation NGOs, national government and influential national actors including WSP, DFID to discuss the potential for microfinance in sanitation service delivery, harness interest in a pilot project.
Jan '14	Sanitation market research training	Tanzania	Training provided by MicroSave to eight organisations on market research for sanitation-related products
March '14	Agence Francaise de Développement (AFD) presentation	France	Presentation at AFD on findings from SHARE research activity on microfinance for sanitation and potential roles of public funders to stimulate and develop this market
May '14	Sanitation Financing Working Group meeting	Tanzania	Second meeting convening key sector actors around the progress so far.

5.3.6 Weaning food and nutrition

Weaning food

Diarrhoeal disease is the second leading cause of death for children under the age of five globally (1), and kills more young children than AIDS, malaria and measles combined (2). It also causes malnutrition (3), which accounts for almost a quarter of the global disease burden for children under the age of five (Black *et al.*, 2008) and takes a heavy toll on the health, livelihoods and physical and intellectual development of those children who do not die of it.

Contaminated weaning foods account for a substantial proportion of diarrhoeal diseases among infants and young children in developing countries, up to 70% of diarrhoeal episodes among young children in developing countries due to pathogens transmitted through food. While it is important to an infant's development to supplement breast milk with appropriate solid foods from six months, unhygienic preparation of weaning foods often exposes infants in low income settings to pathogens of faecal origin. The level of contamination in these foods can be higher than in drinking water in low income settings (5) and there is evidence to suggest that the incidence of diarrhoeal disease is higher in children after weaning is initiated (8).

In recognition of the importance of food hygiene in the prevention and control of faecally-transmitted disease, and the need to build a stronger evidence base to support this, SHARE has provided funding for four studies in this area; in Mali, Bangladesh, Nepal and The Gambia.

Based on the results obtained in the HACCP study in Mali, SHARE funded a small intervention study to investigate whether hygiene promotion is effective in reducing weaning food contamination in Bangladesh, in partnership with ICDDR,B. In the study a total of 60 households in rural Matlab, Bangladesh, were selected (30 control and 30 treatment). Two types of weaning foods were collected from all the households and analysed for microbial contamination just after cooking and before the child was fed. Following HACCP procedures, critical control points (CCP) were determined. Mothers in the study households were trained to achieve and monitor the CCPs for a period of four weeks. Results showed that the hygiene intervention substantially reduced the faecal coliforms present in the food. SHARE research in Bangladesh identified the importance of complementary foods as an exposure pathway for sanitation and hygiene-related pathogens. It also demonstrated that simple behavioural interventions can significantly reduce this exposure.

The following outputs were produced from SHARE research in Mali and Bangladesh:

Touré, O., Coulibaly, S., Arby, A., Maiga, F. & Cairncross, S. (2012) Piloting an intervention to improve microbiological food safety in peri-urban Mali. *International Journal of Hygiene and Environmental Health*.

Touré, O., Coulibaly, S., Arby, A., Maiga, F. & Cairncross, S. (2011) Improving microbiological food safety in peri-urban Mali; an experimental study. *Food Control*, Vol.22 (10):1565–1572.

Islam, M S., Mahmud, Z. H., Gope, P. S., Zaman, R. U., Hossain, Z., Islam, M. S., Mondal, D, Sharker, M. A. Y., Islam, K., Jahan, H., Bhuiya, A., Endtz, H. P., Cravioto, A., Curtis, V., Touré, O., Cairncross, S. (2013). Hygiene intervention reduces contamination of weaning food in Bangladesh. *Tropical Medicine International Health*.

These findings spurred follow-up research in Nepal and The Gambia. In Nepal, SHARE funded the design, delivery and evaluation of a behaviour-change intervention on the food hygiene behaviours of mothers that was scalable and measured the level of contamination in food eaten by children as well as diarrhoeal diseases among young children. The intervention, conducted by SHARE-funded PhD student Om Prasad-Gautam, consisted of a motivational package targeting five key food hygiene behaviours practiced by mothers, using emotional drivers rather than cognitive appeals, to be delivered at the community and household level. The results substantiated the findings in Mali and Bangladesh. They suggested that it is possible to substantially reduce the risk of contaminated weaning foods through scalable community-level interventions that target a limited number of key behaviours and motivate mothers to adopt these using emotional drivers and change in physical settings.

In The Gambia, SHARE has funded a cluster RCT investigating the effectiveness of behavioural change interventions in improving mothers weaning food preparation and handling practices in rural Gambia. The aim of the RCT is to evaluate the effectiveness of an intervention in a rural setting in The Gambia. The primary outcome measure will be the proportion of the six key corrective measures observed during home visits at six months post intervention; i) Hand washing with clean water and soap before food preparation; ii) Hand washing with clean water and soap during cooking; iii) Hand washing with clean water and soap before feeding; iv) Washing serving dishes and utensils before serving food if dried on contaminated surfaces; and v) Reheating weaning food after storage before first, and second feeding. The work is expected to start in the late summer/early autumn of 2014 for 6 months and offers a unique opportunity to build on the lessons learnt from the food hygiene work conducted in Mali, Bangladesh and Nepal, and the behaviour change approaches trialled in India, but as of yet untested in Africa.

Undernutrition

The World Health Organisation (WHO) estimates that 50% of malnutrition is associated with repeated diarrhoea or intestinal worm infections as a result of unsafe water, inadequate sanitation or insufficient hygiene (WHO, 2008). These associations are striking:

- Diarrhoea, largely caused by a lack of water, sanitation and hygiene, is a leading cause of death in children under-five globally (Liu *et al.*, 2012), and its constant presence in low-income settings may contribute significantly to undernutrition.

- Parasitic infections, such as soil-transmitted helminths (worms), caused by a lack of sanitation and hygiene, infect around 2 billion people globally (Brooker *et al.*, 2006), while an estimated 4.5 billion people are at risk of infection (Ziegelbauer *et al.*, 2012). Such infections can lead to anaemia and reduced physical and cognitive development.

Until recently, there has been very little evidence to determine the magnitude of the effect of WASH on undernutrition, due to the relatively low priority given to WASH in medical research. However, in recent years, there has been increasing recognition of the need for better evidence in this area in light of a suggestive causal link.

To address this knowledge gap, and support evidence-based dialogue on this issue, SHARE has funded several research activities focused on strengthening the evidence linking WASH and undernutrition.

In 2011, SHARE funded a Cochrane Review on the effects of WASH on childhood undernutrition, which was accepted for publication in 2013 (Dangour *et al.*, 2013). The Cochrane Review was launched at LSHTM in November 2013. Lead author, Dr Alan Dangour, Senior Nutrition Lecturer at LSHTM, presented the findings, followed by comments from a distinguished panel including Ms Anna Taylor, Senior Nutrition Advisor at the UK Department for International Development (DFID), Mr Girish Menon, Director of International Programmes and Deputy Chief Executive at WaterAid and Professor Sandy Cairncross OBE of LSHTM. Furthermore, the study has attracted much interest in the scientific community as well as in the media, including stories in the BBC and in the Independent.

The evidence that emerged from the Cochrane review has been incorporated in a lecture series that SHARE has developed for UNICEF staff that will take place between August and October 2014.

5.3.7 Translating evidence into programme change and practice

In the 2013 Annual Report, SHARE identified some critical areas of intervention for which adaptive strategies were developed. One particular area of intervention included strengthening SHARE efforts on building national and agency capacity to interpret and use research and programme evidence.

In July 2013, SHARE was commissioned by the Tanzanian Ministry of Health and Social Welfare (MoHSW), The World Bank/WSP and DFID Tanzania to design and support a process evaluation of the National Sanitation Campaign. This information is essential to making timely adjustments in implementation in order to maximise impacts. The Tanzanian National Sanitation Campaign (NSC), launched in June 2012, is a national effort to stimulate demand for sanitation and improve supply through a combination of Community Led Total Sanitation (CLTS) and Sanitation Marketing. The NSC is coordinated by the Ministry of Health and Social Welfare and involves NGOs, the private sector and other government ministries. The main objective of SHARE-funded process evaluation is to rigorously assess the implementation of the National Sanitation Campaign and whether this is likely to catalyse the expected changes, at both household and school level. Furthermore, the evaluation aims to assess the enabling environment and the level of unit costs spent in the NSC to identify potential strategies or steps that have been done or could be done to increase the efficiency of the campaign. The evaluation will be characterised by three main components:

- a) a household survey
- b) a school WASH survey, and
- c) an evaluation of the enabling environment and of the costs necessary to achieve expected results.

The household component questions explore household demographics and respondent's characteristics, sanitation and hygiene facilities and behaviours, exposure to sanitation messages and social communication, sanitation observations (toilet type and condition), and sanitation behavioural determinants. These questions will be addressed through a cross-sectional survey of households in areas targeted by the NSC. A total of 154 clusters across the 14 regions will be covered with 20 households in each cluster (based on the NSB enumeration areas). The results will also be compared to other statistical comparators, including the NSC baseline, DHS surveys and the 2012 census. Descriptive analysis will be done for all variables, including means, proportions and standard errors. These will be calculated for the target area as a whole and by region. For gauge key outcomes these will be compared to both baseline and programme targets. In addition to these predetermined analyses the data will permit an exploration of whether the basic relationships among programme activities, determinants and behavioural outcomes are influenced by the household and community context.

The evaluation of the school WASH component of the NSC is based on a combination of policy/process review and the assessment of the conditions and activities in a simple random sample of 35 schools. The data to be collected include: environmental conditions (latrine facilities, latrine condition, facilities for hand washing with soap, materials for post-defecation cleaning); school enabling conditions (budget, school health clubs, monitoring and accountability, roles and responsibilities, and water availability); and campaign related activities (community mobilisation, latrine construction, and teacher training). Data will be collected through interviews with head teachers and through the direct inspection of facilities.

Finally, in order to evaluate the enabling environment and the costs of the campaign, institutional arrangements and activities characterising roles, activities and relationships among different institutions will be documented. This will be carried out through the review of programme documents and discussions with key informants. The second step is to understand potential barriers, dependencies, and delays that have occurred within this context. This will also be conducted through the review of programme documents and discussions with key informants. The results of this evaluation will be shared among key stakeholders through workshops, reports and key documents. More information concerning the progress of the evaluation is provided in Section 9.

Two discussion documents on the Health Impacts of Sanitation and Water, Sanitation and the Hygiene Burden of Disease are included in Annexes E and F respectively.

6. Capacity building

SHARE carries out a range of capacity building activities, which are designed to address three main objectives:

1. **Research capacity:** Increase the capacity of individuals and institutions to carry out rigorous and relevant research on sanitation and hygiene.
2. **Technical capacity:** Increase the capacity of individuals and institutions to implement specific programmatic activities (e.g. assess need using geographic mapping tools, implement menstrual hygiene management programmes).
3. **Evidence-based programming capacity:** Increase the capacity of institutions in the sector to assess, interpret and use evidence for designing programmes or policies

Since its inception, the SHARE consortium has engaged in a number of activities to reach these objectives. The following subsections provide an overview of the capacity building activities conducted in the past year, whilst monitoring and evaluation of these activities is described in Section 8.2.

6.1 Research capacity

SHARE has funded six PhD students from low-income countries conducting research in the field of sanitation and hygiene. These are:

- 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: Food hygiene intervention to improve food hygiene behaviours and reduce food contamination in Nepal.
- Prince Antwi-Agyei: 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.

SHARE, in collaboration with WaterAid Bangladesh, has also been providing technical research skills for researchers based in low-income countries awarding four research fellowships to allow successful candidates to conduct research on sanitation and hygiene. More information about the progress of Ph.D students and research fellows is provided in Section 8.2: Monitoring capacity building.

Also, in the past year SHARE has supported MSc students in conducting research in the field of sanitation and hygiene. All of these MSc students are female. Please see the logframe for more information on the MSc students.

6.2 Technical capacity

In the past year, SHARE has provided five training events in collaboration with WaterAid, RWS, and Tremolet Consulting on specific programme techniques. These are the following:

1. **March 2014:** Training of trainers on Menstrual Hygiene Management at WASH conference in Brisbane (Australia) organised by WaterAid.
2. **February 2014:** Representatives of eight microfinance institutions and NGOs with microfinance experience received an intensive two-week training by Tremolet Consulting in market research for sanitation, hosted by WaterAid Tanzania.
3. **November 2013:** Sanitation Mapper training conducted for WaterAid Malawi.
4. **September 2013:** Three-day training course for WASH professionals entitled 'Writing for WASH' with WaterAid/RWS. Dar es Salaam, Tanzania.
5. **June 2013:** Sanitation Mapper training conducted for WaterAid Tanzania.

Furthermore, SHARE has contributed to the availability of sound technical advice on sanitation and hygiene. SHARE Research Director, Professor Sandy Cairncross, has recently completed the third edition of his text book *Environmental Health Engineering in the Tropics*, co-authored with Sir Richard Feacham, which is due to be published by Earthscan in 2015.

6.3 Evidence-based programming capacity

Capacity building activities often overlap with or coincide with other types of activities such as research into use and research. 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.

Since June 2013, SHARE has been involved in collaborative activities to support the evaluation of the National Sanitation Campaign in Tanzania. The campaign, launched in June 2012, is coordinated by the Ministry of Health and Social Welfare (MoHSW) and involves NGOs, the private sector and other government ministries. To ensure the effectiveness of the campaign, the MoHSW and DFID Tanzania have commissioned an evaluation of its mid-term outputs and progress to feed into planned future activities. The evaluation is designed and coordinated by Dr Rick Rheinghans and Dr Elisa Roma from SHARE. More information on the NSC evaluation and its progress are provided in Section 8.2: Monitoring capacity building.

7. Costs, value for money and management

As SHARE enters the final six months of its contract, the financial and management strategy it has adopted will be put to the test. Savings continue to be sought as indicated in the 2013 Annual Report through the supplier framework agreements (SFA) used by LSHTM, and by the monthly monitoring of SHARE's activities. Expenditure forecasts are returned by partners quarterly which, together with on-going project updates, provide a good overview of current progress and trends for the near future. These reviews enable areas of over/under spend to be managed on an on-going basis, allowing the management group to make minor adjustments to budgets.

It is natural that a programme of five years duration will experience staff turnover, particularly in the last year. SHARE has seen some within the country platforms and the effect of this is discussed in lessons learned below. There have also been changes within LSHTM among the core team but excellent replacements have been found. Recruitment costs have been more than outweighed by the savings gained where there have been short breaks between staff.

The 2013 Annual Report predicted a rise in research outputs during the October to December quarter, with the rest of the year remaining steady. Total expenditure to March 2014 was expected to be £8,267,277. The political situation in Bangladesh; the uncertainty about SHARE's future (see Section 9: The Way Forward) and staff turnover (including the country platforms) have caused some delays. As a result, the expected acceleration in activities did not take place but progress has continued to be steady. Total invoicing to 31 March 2014 was £8,085,295 and was 2% under the forecast amount.

Lessons learned

In addition to the regular monitoring of SHARE through its management procedures, there is also the process of recording lessons learned for future management. Events are recorded in the lessons log and a lessons report will be presented at the end of SHARE. To date three main areas have been identified: (i) staffing; (ii) project budgeting; and (iii) project monitoring, and an example is given of each. As lessons are intended not only for SHARE, they are presented in the form of a statement of the issue, followed by the suggested change. The aim is to show the expected improvement relating to the identified risk.

(i)

Staffing

Progress within the country platforms has rested on the shoulders of the individuals who have led the process and within each country. The high level of input required has been noted elsewhere in this report and their commitment to the process has been essential for success. However, this also creates a vulnerability within the system. One person leaving can result in a loss of focus and momentum which can cause delays or cancellation of projects.

Change

Maintain a stable and sustainable core of SHARE supported staff in country. They may be seconded from an established organisation with a long term strategy of research in the water, sanitation or health sector. There needs to be a high calibre leader within that

institution who can provide a small but dedicated support team. Long term in-country support should be provided by an international researcher to assist with capacity building. Other skills can be bought or brought in as required.

Aims

- To provide local (national) confidence in the process and ensure longevity for funders' investments.
- To build a sustainable legacy of skill and experience ensuring that funders' investments in the sector are not wasted once the investment programme ends.

(ii) Project budgeting
SHARE has instigated 114 individual pieces of work costing from £500 to £1,100,000. All principal investigators submit a budget and these vary in quality and accuracy. Although they are checked before a project is awarded, potential issues may not be picked up; e.g. work might be budgeted for one country, but take place in another where the costs are higher.

Change

The person checking budgets discusses them with the principal investigators (or designated person) before signing off. A short checklist is prepared to guide the discussion.

Aim

- To control potential overspend.

(iii) Project Monitoring

Maintaining a log of activities and signing off outputs ensures that projects are carried out to an appropriate quality, to the agreed terms of reference and delivered within the stated time. The information is used to update the logframe but being retrospective, it does not record the effect of potential future issues which are still latent. LSHTM needs this information to provide DFID with an accurate forecast of expenditure for the year ahead, it also enables the management group to revise its plans and take action as necessary.

Currently information is gleaned from many sources, including through the SHARE Finance Officer, and reported at management and executive group meetings.

Change

Rather than recording issues only in the notes and minutes of meetings, appropriate information will be recorded in an issue register. Outstanding issues will be followed up regularly and preferably by phone or Skype, before the quarterly DFID forecast is required. This will also provide a more regular management dialogue with principal investigators.

Aim

- To control potential underspend through better forward planning

7.1 Financial management

SHARE's present contract with DFID is due to end on 19 January 2015. Expenditure is currently on track and savings on the management budget that were identified in 2013, have held good for the current reporting year.

SHARE's financial structure has been managed through five theme budgets: consortium management, partner programmes, capacity strengthening, research into use (uptake) and the largest of all - research. This mechanism works well for management purposes but as the consortium's programme has developed, its processes have needed to provide flexibility to cope with projects that fit across work areas. To enable this to happen, projects are assigned a unique code, which can be allocated to one or more budgets. The same mechanism is used where external resources are involved and helps by identifying financial linkages for audit and reporting. An example of this is the funding leveraged from the Water Supply and Sanitation Collaborative Council for the research call administered by the SHARE India country platform.

The main research project budget of approximately £5m, has funded three calls for proposals that were administered centrally (A, B and C); research calls for the four country platforms, three quick start projects, plus a unique portfolio of more strategic, as well as opportunistic projects, totaling 114. Whilst the average cost of a project is £47,000, many cost considerably less. Three large areas of expenditure are the country platforms (£1,263,576); six PhD students (£816,209) and MR23, the city-wide Sanitation project (£1,100,000), which together account for 50% of the research budget.

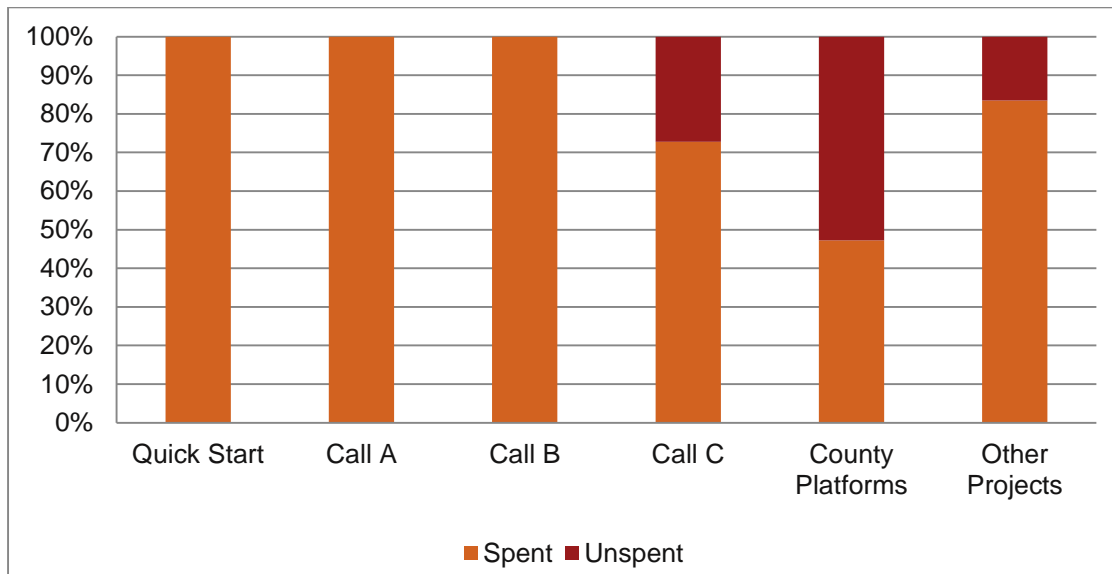
The tables and charts below represent activity across the project budgets, showing the number and value of those outstanding. Projects are shown as open if all outputs have been received but the final invoice is outstanding, or there is a query on it. The figures include activity to 31 May 2014 and include work completed since the last invoice to DFID on 31 March 2014.

Table 5 below shows the total number and value of SHARE projects, with the number left to complete in each fund. Beside these figures are the values in GBP.

Table 5: Number and value of SHARE projects

Project fund	Nr	Value	Finish		Open	Unspent	Cancell- ed
			-ed	Spent			
Quick start	3	£322,857	3	£322,857	0	£0	0
Call A	14	£197,580	12	£197,580	0	£0	2
Call B	9	£282,580	9	£282,580	0	£0	0
Call C	8	£298,194	5	£217,066	3	£81,128	0
County platforms	18	£1,263,576	1	£596,587	17	£666,989	0
Other projects	62	£2,982,571	40	£2,490,149	16	£492,422	6
Total	114	£5,347,358	70	£4,106,819	36	£1,240,539	8

Figure 1: Percentage of funding that has been committed to projects but not yet invoiced to LSHTM at 31 May 2014



The risk categorisation shown in Figure 2 is used to assess the level of financial exposure that SHARE has at any point in time.

Figure 2 RAG risk classification for SHARE projects

IMPACT	Minor	LIKELIHOOD			
		Unlikely	Possible	Likely	
Major	Major	3	4	5	SCORE: 5 Severe Risk ACTION: Management Group to decide on action. Causes of problems may be outside PI's control. OPTIONS: No cost extension; other support; cancel project
	Medium	2	3	4	SCORE: 4 Major Risk ACTION: Project Manager discussed issues project with the Management Group. MG decides on best course of action OPTIONS: Reallocate resources within budget; no cost extension
	Minor	1	2	3	SCORE: 3 Moderate Risk ACTION: Project Manager discusses outputs with PI, agrees new workplan for completion and informs the Management Group OPTIONS: Rework project resources; PI finds other resources
					SCORE: 2 Minor Risk ACTION: Project Manager increases support to PI. PI increases the effort required to bring the project back on track. OPTIONS: Raise awareness of the work, increase engagement
					SCORE: 1 Negligible Risk ACTION: No action required by Project Manager other than normal monitoring and reporting. OPTIONS: Potential for modelling as a successful project

SHARE’s financial exposure has been calculated on the 36 open projects shown in Table 5 and is displayed in Figure 2. With six months to go to the end of SHARE’s contract, this assessment is being used to discuss the actions needed (see Figure 2) to increase the likelihood of a project completing on time, or to take appropriate action. In the case of four of the PhD students who are unlikely to complete on time, our commitment to them must hold good beyond the end of the current contract and therefore discussions will take place for a mechanism to do so.

Figure 3: Value in GBP of funding committed to projects

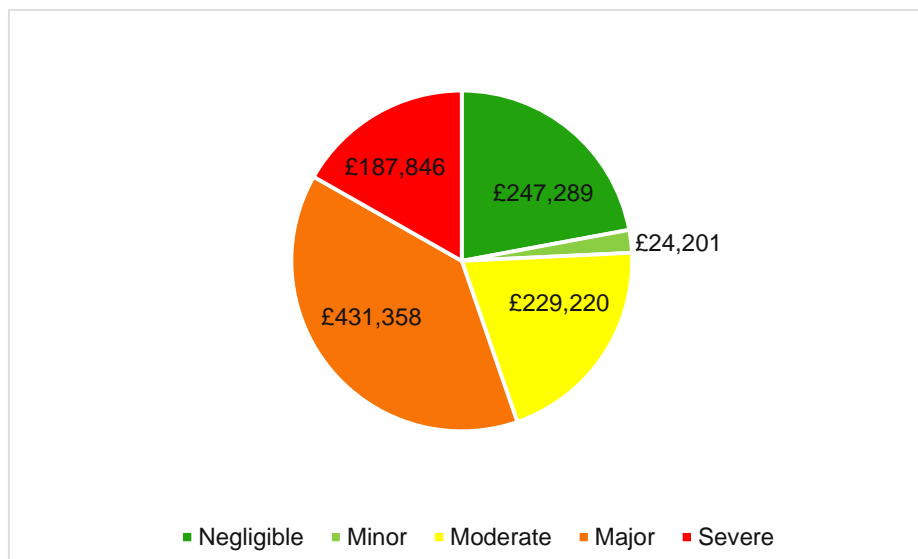
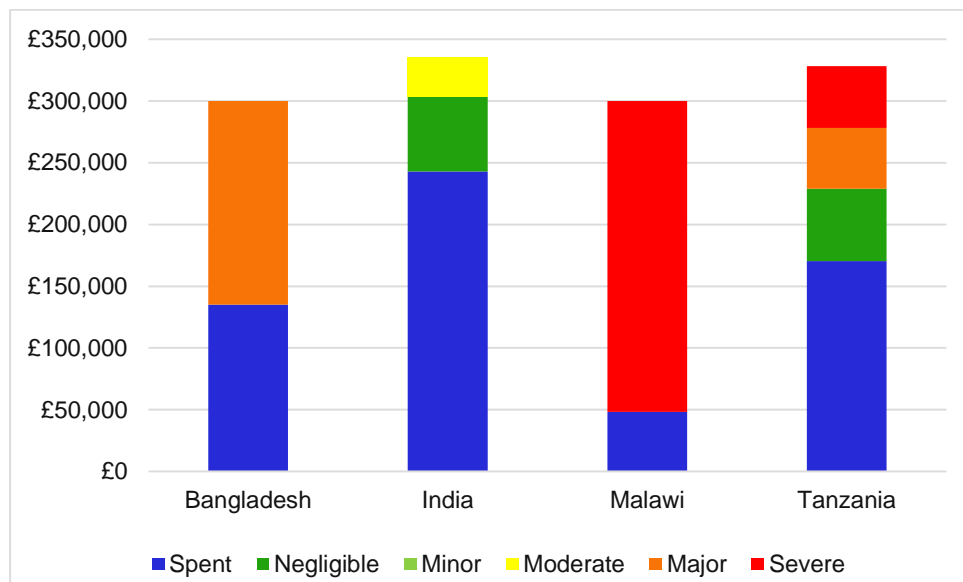


Figure 3 above shows the value in GBP of funding that has been committed to projects but not yet invoiced to LSHTM at 31 May 2014, categorised by risk.

Many of the currently outstanding projects will complete on time. Of the 55% of open contracts that fall into risk categories 4 and 5, 83% relate to the country platforms, particularly Malawi and Bangladesh, though there is some risk within Tanzania as well, and the rest is accounted for by four PhD students.

Figure 4 Financial risk exposure for the four country platforms at 31 May 2014



Considerable variation can be seen in performance between the different platforms. Some of the key issues have been political (Bangladesh), rapid turnover of the research group coordinator position (Malawi) and delays in contract approvals (Malawi and Tanzania).

Bangladesh

Contracting and invoicing have proceeded smoothly but the political situation of the past year has created delays in field work. A no cost extension has been agreed to enable the study to continue but there is a risk that the work will not be completed by 19 January 2015.

India

Projects within the Indian platform have performed well despite the added complication of joint funding with WSSCC. Invoicing and administration have well controlled processes. A no cost extension has been granted to MR19C to allow for an opportunity to work with state level government in November 2014 but the research outputs (two journal papers) will still be delivered according to the agreed schedule (September 2014) and all work will be invoiced by the end of September 2014.

Malawi

Difficulties with staff turnover and contract delays and the process of protocol review resulted in the programme stalling for some time. While the contracting process has gained momentum it has proved cumbersome. Nevertheless, some projects have made progress,

though there is some concern as to whether all of them will be completed by November 2014.

Tanzania

National progress has been variable, but the country liaison has worked hard with the platform and some projects have progressed. Work is just beginning on two projects and they have been categorised high risk because of the time element. Invoicing from the country has been patchy and sometimes incorrect.

Other projects

The increased participation of consortium personnel with the city-wide sanitation project (MR23) was flagged last year as increasing the value being added to the project. The situations in Zimbabwe and Malawi were continually monitored and some delays have resulted in a no cost extension being given. The project is now due to end in January 2015 and the schedule looks good to achieve that, as such it has been given a risk rating of 3.

Problems encountered by some of the PhD students have been discussed in the capacity building section (Section 6.1). As a result, four students have been given a top risk rating of 5 as it is not possible for them to finish their projects within the contract period of SHARE.

7.2 Value for money

In acknowledging that it takes a long time to see the benefits of research, the process of monitoring value for money (VfM) will also be considered within SHARE's legacy planning. In light of this and the extensive documentation of the work in the previous Annual Report, the VfM estimates will not be updated until January 2015, at the end of the five-year programme. With only six months left to the current end of SHARE, there is very little leeway within the element of cost, though there is still some e.g. Section 2.2 Call C: with the opportunity created for increasing the knowledge gained from the project on counting ascaris eggs. However, it is likely that the benefits of SHARE's work will increase over time, as more agencies implement changes, and the 'costs averted' that were reported to the CAG in December will, if anything, increase.

7.3 Management

Management meetings, held monthly, are the main mechanism for making day-to-day decisions in SHARE. As the consortium has grown in complexity over the past year, an additional system of short weekly meetings has been set up to enable the management group to keep ahead of developments and to progress SHARE's large portfolio of activities. This has facilitated a quicker turnaround in decision-making and enabled rapid response to urgent or time sensitive issues.

Executive group meetings, which include all the partners, are usually held every two months, though this will vary depending on matters arising within the consortium. The advisory group meets in person once a year in December, and once via teleconference, usually in May.

The meeting for May 2014 has been postponed pending information concerning the possible extension of SHARE's contract with DFID.

7.4 Partnerships

Partner representatives and colleagues took part in three face-to-face meetings during the year. The first was in December 2013 and took place alongside the consortium advisory group meeting. The second and third were called to facilitate discussions around the contents of the concept note that was submitted to DFID as part of the process to discuss a possible extension to SHARE's work. The reason for additional meetings with everyone together in London was to enable those who regularly attend through conference calls to benefit from full engagement at this important time. While telephone and Skype meetings are adequate for general work, the sound quality and stability of the systems are not always good and can isolate those participating remotely. The partners also took part in four other executive group meetings during the year.

8. Monitoring and evaluation (M&E)

8.1 Monitoring and evaluation of the City Sanitation Project

SHARE, in collaboration with IIED, has developed a monitoring and evaluation framework for each of the cities taking part in the city-wide project, one of the biggest SHARE projects in terms of investment. The following section presents the latest monitoring data collected in collaboration with the SDI Secretariat.

<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>MOV: No. of MOUs agreements between city councils and affiliates</p> <p>Malawi:</p> <ul style="list-style-type: none"> Draft MOU at an advanced stage. The agreement is not specifically on ISU. The MOU touches on all the areas where the Council and the Federation are working together <p>Tanzania:</p> <ul style="list-style-type: none"> No MOU signed yet but there is an agreement with local leaders at mtaa and ward level who are supporting the mobilization of sanitation demand by community members as well as acting as guarantors in loan provision. <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 (not yet 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>Indicator 1.2: Saving schemes are successfully implemented</p>
<p>MOV: No. of savers at city level</p> <p>Malawi: 42 savings groups in Blantyre City which translate to a total of 608 individual members (15 savings group with 225 members since SHARE project)</p> <p>Tanzania: Dar es Salaam- 3,500 savers (1000 since SHARE inception)</p> <p>Zambia: A total of 38 saving schemes in Kitwe, 2 schemes formed as a result of SHARE in Kamatipa informal settlement – 1,200 (200 savers since SHARE)</p> <p>Zimbabwe: Chinhoyi – 3000 Savers (350 since SHARE)</p>
<p>Indicator 1.3: Negotiation process between Federation and local authorities is improved</p> <p>MOV:</p> <p><i>No. of people who participate in the Federation</i></p> <p><i>No. of people who participate in Federation meetings</i></p>
<p>MOV: 1)No. of people who participate in Federation; 2) No. of meetings of local authorities; 3) No. of people who participate in Federation meetings</p> <p>Malawi:</p> <p>2012</p> <p>a) April: introductory meeting with BCC senior management: 10 participants</p> <p>b) July: Stakeholders meeting involving all leaders from informal settlements in the city: 27</p>

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

- i) January: Participatory budget meeting: 27 participants

Tanzania:

2011:

- a) November: Meeting at Ilala Municipal council: 4 local authority members; 10 Federation members

2012:

- b) January: Meeting at Kinondoni Municipal council: 8 Federation members
- c) February: Meeting at Ilala Municipal council: 6 Federation members
- d) February: Meeting at Temeke Municipal council: 5 Federation members

2013

- a) March: Meeting at Ilala Municipal country: 7 Federation members
- b) August Meeting at Temeke Municipal council: 5 Federation members

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

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)

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: No. 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

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

Production of the following documents (a) landlord and tenants relationship on sanitation- the case of Keko Machungwa settlement. This is also available on SHARE and SDI website; and b) reaching out wider stakeholders on sanitation improvement.

MOV: No. of web downloads from SHARE and SDI sites

Malawi: 9 project related papers downloaded from the sites

MOV: No. 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).

Tanzania: 3 Municipalities: Ilala, Temeke and Kinondoni Municipal council. These include local leaders, health, community development and urban planning departments in each municipality.

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

Zimbabwe: 2 organisations Chinhoyi Municipality; Chinhoyi University of Technology (CUT).

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.

Tanzania: 2 representatives of media took part at the Temeke Municipal Council meeting as well as the presentation of the situation analysis at the community level - Vingunguti settlement.

Indicator 2.2: The sanitary improvements of the technologies implemented

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

Malawi

The identified technology has helped to improve the sanitation situation of households on top of 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.

Tanzania

Pour flush and ECOSAN technologies both are both more feasible in low income communities. In particular, the pour flush system is more cost effective, hygienic and user friendly as compared to the existing pit latrines, which are poorly constructed, difficult to maintain and very costly.

ECOSAN can address issues of space and pit emptying in informal settlements.

Zambia

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

Zimbabwe

The selected technology, Ecological Sanitation, is 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 getting full quickly, competing for space within the plot.

Indicator 2.3: The affordability challenge

Malawi

All the technologies are affordable and can be replicated even to those who are 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.

Tanzania

- Toilet beneficiaries participate in construction work, saving labour fee which could be paid to other people to do the work.
- Landlords contribute some of the construction materials they have and this helps to minimise the amount of loan they would require for toilet construction.
- Getting more households sharing the same facility which minimises facility cost per household,
- Use federation technicians as well as technology used trapezoidal blocks in pour flush toilets which do not require mortar hence reduce the cost of cement.
- Currently the typical loan provided for toilets ranges from Tzs 442,000 (US\$ 270) to Tzs 1019,000 (US\$ 623)-(only one person who has taken such maximum loan) with monthly payment of Tzs 22,000 (US\$ 13.44) – Tzs 60,000 (US\$ 36.67) paid between 12 to 18 months.

Zambia

The precedent has been made relatively affordable by engaging beneficiaries of the toilets to contribute certain building materials, so as to lower the amount of their loans. The flexible loan system itself makes it affordable for households to invest in improved sanitation. However, the precedent may not necessarily reach out to the poorest of the poor because this cluster of residents live way below the poverty datum line and cannot afford to meet basic needs, thus making it difficult to invest in improved sanitation even if they are willing.

Zimbabwe

The first precedent, ecological sanitation, is relatively affordable compared to other improved sanitation systems, but it still unaffordable especially taking into account the livelihood of some of the residents of Shackelton. The second precedent, the Communal toilet block, in Gadzema would spread the costs but face challenge of attitudes and culture. To try and solve this challenge, the community is actively engaging their local authority to contribute towards the toilet construction. The discussion around the communal toilet has also forced the local authority to reconsider more seriously their settlement upgrading plans and also tenure issues of the sitting tenants. The last precedent is the individual water borne connection and the Community is trying to lower costs by contributing locally available materials reducing the average loan from 428 to 150 USD.

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.

Tanzania:

- Engagement of all communities in settlement profiling, enumeration 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.
- Federation technicians' teams work together with sub-ward leaders and settlement health teams to monitor residents' behaviours 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.

- Toilets are shared at smaller scale, this increase a degree of trust and communication amongst the users hence, it is easier to manage and maintain the facilities as well to monitor users and apply social sanctions to those who are irresponsible.
- The loans provided are for both federation and non-federation members.

Zambia

As a federation led project, it is relatively easy for them to fully understand the importance of improved sanitation. Even those who cannot afford new toilets, have been encouraged to treat their pit latrines with enzymes. However, the challenge lies in expanding the frontiers of the federation process to non-federation members to buy into improved sanitation and uniting with the larger community to create a loud voice to even compel the government to equally invest more in improved sanitation in informal settlements.

To date, it has been difficult to win over support from local authorities to provide land to construct community managed toilets for the benefit of most residents as opposed to individual solutions. The federation however has remained vigilant in negotiating with local authorities.

Zimbabwe

- creation of community local authority negotiating forums
- establishment of networks working around addressing water, sanitation and hygiene challenges
- people working as a community in spite of their political backgrounds
- improved relations between the residents and the local Authority, particularly in Gadzema and Shackleton where there was unresolved tenure issues (this has happened)
- community and local authority engaging in reducing the procedures and approval fees required for toilet construction
- addressing of tenure issues in Gadzema and Shackleton
- engagement of council around slum upgrading plans on Gadzema

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

Tanzania

The local government authorities in Dar-es-Salaam have shown a positive inclination to the project and they have been replicating similar training on toilet construction to other settlements. Negotiations are currently underway to streamline the training in other settlements. Nonetheless, financial support from municipalities has been difficult to obtain and their involvement remains mostly in terms provision of technical staff and assistance. More advocacy for sanitation is required to change the current situation.

The provision of land for public toilets has been a challenge, as most municipalities lack land on the settlements. However, one municipality in Dodoma has provided a 3,200 sqm of land for federation to do solid waste recycling, though this is not a part of SHARE.

Advocacy meetings have been initiated in three municipality of Dar es Salaam. In one of the meeting in Temeke Municipal, it has been agree to collaborate to engage politician – councillors by inviting federation to do a presentation in full council meeting to influence them and seek their commitment to support improvement of sanitation. At the lower level of settlement and wards, the initiatives are also going on to engage local leaders. In doing so to date (June, 2014) 15 meetings were held with Ward Development Council as a part of the advocacy work.

Zambia:

Toilet beneficiaries to jointly manufacture burnt bricks in order to reduce the costs. However, the political governance system in the country has made it difficult to get local authorities to contribute to the project, for instance, there has been frequent reshuffling of local authority officials.

Zimbabwe

Improved local authority appreciation of sanitation challenges and their commitment to take action.

For example:

- 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 onsite 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 Local Authority exchanges to Chinhoyi very positive and has actually resulted in the implementation of larger projects in other areas taking a serious policy direction.

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

Tanzania

- Production of a 10-15min DVD by the end of July 2014.
- Conducting sanitation forum.
- Engaging the media.
- Involvement in different exhibitions which the federation have been involved in through the support of municipalities- (Temeke and Dodoma)
- Documenting lesson learned/case studies.

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

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: Kitwe City Council and NWSC use mapping and enumeration for scaling up water and sanitation in Kitwe.

Indicator 3.2: Evidence of practical use of research results

MOV: Adopted legislation in project cities

Malawi

City council accepted 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

Development agreement to allow the use of alternative sanitation infrastructure (ecosan)
Currently, Municipality of Chinhoyi is discussing possible policy inclusion of onsite sanitation systems.

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

The acceptance of especially non-federation members to buy into obtaining a loan to build an ecosan toilet

Zimbabwe

-The city wide mobilization to construct improved sanitation in Shackleton with council involvement. -
The requisite buy-in by the residents and the enhanced understanding of lease tenure arrangements, as evidenced by the willingness to invest in sanitation.

8.2 Monitoring of capacity building

This sub-section reports the results from monitoring of capacity building activities supported by SHARE that SHARE has conducted in the past year. In monitoring SHARE capacity building activities, we have used the following assessment framework, as presented in Table 6 below.

Table 6: Assessment framework for monitoring capacity building

Indicators	
Output	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Whether researchers or practitioners incorporate their new research skills into applied research outputs (e.g. proposals, papers, conference presentations, applied research reports, new research projects). • 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) (e.g. DFID advisors use evidence based techniques to develop business cases or influence programmes).
Impacts	<ul style="list-style-type: none"> • Improved access to WASH resulting from better programmes (e.g. number of people with access, costs averted, health improvements). • Establishment of sustained research programmes (e.g. long-term funding achieved by southern research partners, monetary value of research).

8.2.1 Development of research capacities

In the past year SHARE has supported the development of capacities of researchers in the WASH sector, with particular focus on participants from low income countries.

SHARE Research Fellows

A successful example of SHARE commitment to develop low-income countries' research capacities is the Research Fellowship programme in collaboration with WaterAid Bangladesh. The Fellowship has provided four excellent candidates (three males and one female) the opportunities to further pursue studies in WASH. The four candidates were interviewed to monitor their progress in their research and evaluate how this can contribute to increase sector capacities in the country (see also Table 7 below).

Moon-Moon Hossain, SHARE research fellow from the Department of Public Health, North South University, is undertaking research on menstrual hygiene practices of adolescents in north Bangladesh. Her research is progressing according to plans, with data collection plan for completion in June 2014. Moon-Moon reported that the fellowship has provided her with a wonderful opportunity to pursue research on an impelling issue for women in her country and she plans to continue researching on MHM by enrolling onto a PhD programme.

Saleh Ahmed, SHARE research fellow from the Department of Population Sciences, Dhaka University, is conducting research on hygiene practice in facility-based institutions in three critical locations of Bangladesh. Saleh is collecting data from three locations, which will be

completed by the end of June 2014. Saleh has previously worked on hygiene issue at USAID in Bangladesh and hopes that his research can inform USAID policies and practices. Furthermore, he is planning to continue his studies in public health by enrolling onto an MPH programme.

Tapos Chakraborty, SHARE research fellow from the Department of Environmental Science and Technology, Jessore Science and Technology University is conducting research and assessment of sanitation practices/technologies among residents of hazard-prone, hard-to-reach, coastal areas in Bangladesh.

Ali Ahmed, SHARE research fellow at the Department of Anthropology of Shahajalal University of Science and Technology, is conducting research in assessing people's perceptions, sanitation practices and hygiene of the poor migrants in urban areas, a study on Pathantula area in Sylhet city. Ali plans to collect data between June and September 2014 in various slums of Sylhet city. Upon completion of his Masters, Ali plans to continue working in the WASH sector as a practitioner.

Table 7: Research Fellowship Programme candidates: outputs, outcomes and impacts

Candidate	Outputs	Outcome	Impacts
Moon-Moon Hossain	Data collection started.	Publication planned for end of MSc	Students aims to continue research in sanitation and hygiene by pursuing a PhD
Saleh Ahmed	Data collection started	Publication planned for end of MSc	Student aims to pursue an MPH to continue research in sanitation and hygiene
Tapos Chakraborty	Data collection started	Publication planned for end of MSc	Student aims to pursue an MSc to continue research on impact and adaptation to natural disaster
Ali Ahmed	Data collection June-September	Publication planned for end of MSc	Continue working in the WASH sector as a practitioner

PhD students

In the past year, SHARE PhD students were involved in the collection of data at their respective field sites. Four students – Om Prasad Guatam, PrinceAntwi-Agyei, Richard Chunga and Tarique Huda – have completed data collection and are working on data analysis as well as drafting their first thesis chapters. Parimita Routray, who started later, is expected to complete data collection in early July. Sheilah Simiyu, who in 2013 enrolled for a PhD at the University of Stellenbosch in South Africa, is currently in Kisumu for data collection and is expected to complete it by December 2014. Prince Antwi-Agyei and Om Prasad are expected to submit their theses towards the end of 2014, whilst Tarique Huda

and Richard Chunga are planning to submit their theses by Spring 2015. The delays are due to students' personal reasons.

In the past year, the PhD capacity building has focused more on the transferable skills that form an integral part of the PhD process. The transferable skills programme at the London School Hygiene and Tropical Medicine is open for PhD students to attend and includes courses such as: time and research management, teaching at university level, scientific writing and presenting of scientific work. On average, each PhD student has attended at least four of these courses. Each PhD student at the LSHTM is further entitled to attend a maximum of four academic modules, and all students have chosen to do so, the most popular course being Extended Epidemiology and Statistics for Public Health, which was attended by all students. Two students chose to attend courses outside LSHTM: Richard Chunga attended, a two-day training course on quantitative data analysis at the University of Leeds, and Prince Antwi-Agyei attended a two-week training course on risk modelling at the Royal Veterinary College in London.

All students have now already presented some of their research at either local or internal conferences. Sheilah Simiyu and Prince Antwi-Agyei attended the SNOWS conference for junior researchers, where Prince was awarded third prize for his paper and presentation. Om Prasad presented his research at the WEDC conference in 2013 in Nakuru, Kenya. He also has a blog that has proven very popular and has given his first lecture at the LSHTM on food hygiene promotion during the tropical and environmental health course at LSHTM. All four students currently in London have submitted an abstract to the University of North Carolina Conference on Water & Health, which is one of the key conferences in the WASH field. Sheilah Simiyu has recently submitted her first paper; Om Prasad has co-authored a paper in the Journal of Water, Sanitation and Hygiene for Development, and Parimita Routray has co-authored three papers, two of which are in PLOS One, a high impact open access journal.

Although none of the students will finish within three years, which is unusual anyway, all students are making good progress, and are expected to complete their thesis work successfully.

8.2.2 Technical capacity

In the past year SHARE has supported training courses on specific programme techniques, such as Menstrual Hygiene Management, Sanitation Mapping and Writing for the WASH sector. This section presents an evaluation of two of these activities: Sanitation Mapping and Writing for WASH.

Sanitation Mapper

The training on the Sanitation Mapper tool, conceptualised by WaterAid UK, has been conducted in five WaterAid Country Programmes for a total of 61 practitioners. The Bangladesh, Ethiopia and Malawi officers are incorporating and using the Sanitation Mapper in their programmatic activities. Further training is planned in six more WaterAid country programmes (Burkina Faso, Ghana, Liberia, Mali, Niger and Nigeria).

Furthermore, WaterAid UK has provided support to several organisations in adopting the Sanitation Mapper in their programmes. These include: BRAC (Bangladesh), Centre for Community Initiatives (Tanzania), District Public Health Office (Bangladesh), ICDDR (Bangladesh), IWA (Mozambique), People in Need (Angola), Plan International (Bangladesh), Provincial Health Authority of Albay (Government of Philippines, supported by AusAid), Red Cross (Bangladesh), University of Calgary (Tanzania), Works of Solidarity for Water and against Environmental Harmful Effects (Cameroon) and the World Toilet Organisation.

Since June 2013 there have been 596 unique visitors to www.waterpointmapper.org/Sanitation.aspx, with a total of 107 downloads.

In terms of impacts, two main programmes have used and adapted the Sanitation Mapper to conduct their research activities. These are:

- The Gates-funded Sustainable Total Sanitation project in Nigeria, which has adapted the Sanitation Mapper for monitoring CLTS activities. The data is being collected in April 2014 and the mapper will be used for analysis of data across 800 rural communities.
- IWA funded sanitation risk assessment project is using another customised version (in Portuguese) of the Sanitation Mapper for measuring risk. The project is currently being implemented across four barrios in Maputo.

Writing for WASH

The SHARE consortium, in collaboration with WaterAid Tanzania and the Rural Water Supply Network (RWSN), has organised a three-day day training on writing for WASH. The training was attended by 17 people, seven of whom were from WaterAid with the remainder from NGOs, CSOs and the private sector. This section presents the results of the evaluation of the training conducted by RWSN (13 participants) and a subsequent interview was conducted by SHARE with four participants a few months after the training occurred. In the RSWN evaluation, the majority of respondents reported that they had learnt something new and useful, mostly related to improving the structure and organisation of their publications and to understanding their audience. The overall scoring provided by the trainees who completed the evaluation form (13/17) was 95%. In the follow up interviews, conducted by SHARE, respondents said they had employed their skills to write reports and case studies for WASH practitioners (3 out of 4 respondents), as well policy briefs for government ministries (2 out of 4 respondents), and blog/website content and press releases (2 out of 4 respondents).

8.2.3 Evidence-based programming capacity

This sub-section reports on the progress of SHARE-funded evaluation of the National Sanitation Campaign in Tanzania.

In August and September 2013, Dr Rick Rheingans and Dr Elisa Roma, spent two months in Dar es Salaam to work with the Ministry of Health and Social Welfare (MoHSW), National Institute of Medical Research (NIMR) and the Ministry of Education and Vocational Training (MoEVT) in order to prepare the questionnaire for data collection and to define the sampling in collaboration with the National Bureau of Statistics (NBS). An ethical approval form was submitted to NIMR in January 2014 and approved in June 2014. The piloting of the

questionnaires using Android phones followed by data collection is planned to start in July 2014.

8.3 Outcome mapping and stakeholder engagement

In the past year SHARE has achieved substantial progress in engaging key sector actors both at country platform and at global level. The following paragraphs outline some of the main achievements as monitoring through outcome mapping.

In each country platform the SHARE Consortium aims to engage national government and local authorities so that they prioritise sanitation and hygiene in their policy agendas. The 'love to see' progress marker indicators for the country platforms aim to engage national stakeholders to achieve the following objectives:

1. Support and fund new collaborative research through/with SHARE.
2. Incorporate SHARE research findings into policy.
3. Adapt interventions and policies based on SHARE research findings.

In the past year, SHARE has met 'love to see' progress markers in three of the four country platforms. Among the most notable achievements are:

Bangladesh

- WaterAid Bangladesh is using the ChooseSoap and SuperAmma campaigns to develop their own mass media campaign to promote hand-washing with soap at national level.

Tanzania

- 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).
- WaterAid is collaborating with the Zanzibar Ministry of Health and Social Welfare (MoHSW), WaterAid Tanzania, the Soapbox Collaborative and the Pemba Public Health Laboratory to conduct research that informs improvements of WASH in maternity units.

India

- The Minister for Rural Development requested a meeting with SHARE to discuss the findings from the Orissa trial, the Principal Secretary for Drinking Water and Sanitation requested a technical note on monitoring MHM and participated in a session at Stockholm Water Week on evidence and practice convened and co-financed by SHARE and WSSCC. With WSSCC and the World Bank, SHARE also convened a two-day conference on WASH and gender that resulted in a report covering next steps and action points to incorporate SHARE results into policy.

Global

At global level, SHARE engagement with key sector actors has reached great results. Some examples worthy of mention are:

- Lynne Featherstone (Parliamentary Under-Secretary of State for International Development) becomes a champion for inclusive WASH, committing to include inclusive WASH in School programmes.
- Findings of SHARE-funded *Undoing Inequity* project informed the International Development Select Committee's (IDSC) recent 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.
- SHARE will provide a lecture series entitled "Evidence based WASH Policy and Practice" to UNICEF staff (from August 2014). This series of webinars draws on SHARE research findings.

The PUSS referred to the toolkit in her speech at the PSVI side event: "We have also been working with WaterAid, through the SHARE Research Consortium, to produce a toolkit for water, sanitation and hygiene practitioners to reduce the risks to women and girls of harassment and vulnerability to sexual attack when collecting water, using public toilets or when they are forced to defaecate in the open (often in the dark) because there is no household latrine. The recent horrifying gang rapes and hanging of the two girls in Uttar Pradesh are a brutal reminder of just how vital safe toilets are for young women in particular. Finding ways of protecting vulnerable young girls and women is an ongoing priority for DFID as witnessed by our commitment (and tireless efforts by my team) to end Female Genital Mutilation and Cutting (FGM/C). I'm delighted to say that we are in the process of setting up an FGM/C research programme which will enable us to generate a clear and coherent body of primary research on FGM/C."

More information on the achievements made by engaging key sector actors is provided in Annex C.

9. The Way Forward

SHARE, through its partners, has contributed to changes in policy and practice at a national and global level. As we approach the end of SHARE's five year term, it is important to identify ways of maximising value for money through this period and beyond, and creating a long term impact and legacy.

Having begun by building on existing work through three quick start projects, SHARE then successfully impacted policy change through characterising the impacts of sanitation and hygiene on a range of health outcomes, and finally, demonstrated potential value for money through expanded and improved national sector investments by DFID, other bi-laterals and others.

To maximise SHARE's VfM, the outcomes and impacts of its strategy must extend beyond the time of the programme itself. In 2013, SHARE was asked by DFID to submit a concept note highlighting the benefits to the sector of a potential three year extension to the programme. The following is a summary of that note. It looks forward from January 2015 to show the potential for increasing SHARE's impact, and the commitment to sustainability and VfM through its activities, particularly through the development of its research themes and country programmes.

9.1 Strategies for maximising future sustainability and value for money

At the national level, there are four critical elements to sustained impact of sanitation and hygiene applied research:

- Capacity for a new generation of high quality researchers
- Capacity to use global evidence and tools to develop and evaluate effective programmes
- Linking national actors to a global sector communities
- Enable tailoring to national settings of what works and how.

At a global level, the focus on changing how global partners engage with and conduct sanitation and hygiene research, includes:

- The exploration of under-researched impacts and exposure pathways
- The application of new methods to the study of sanitation and hygiene
- Engaging other health development sectors to conduct, support, and use sanitation and hygiene-related research
- Developing successful young and mid-career investigators at southern institutions.

SHARE has developed insights about the nature of the impact of sanitation and an approach to increasing that impact. The VfM of existing SHARE efforts would be greatly increased by developing and adapting the interventions, and pushing research through the research into use pipeline.

SHARE's approach to initiating research was first through a broad strategy of gathering ideas from across the sector and developing them. From this, four key themes have been identified. Through these unifying elements SHARE will incorporate the elements of research, research into use, capacity building and the national sector programmes.

The four themes and key points are:

Complementary food contamination:

- need for better characterisation of pathogen transmission
- better targeted intervention approaches
- better understanding of child health at this critical point and how contamination affects that
- need to develop and test other strategies for scaling complementary food hygiene.

Sanitation, hygiene and vaccines:

- need for scientific documentation and understanding of the contribution of improved WASH on vaccine efficacy
- demonstration of the connection (and its mechanisms)
- how to facilitate the introduction and prioritisation of WASH behaviour change into immunisation efforts.

WASH and nutrition:

- Can WASH interventions targeted at critical time points improve nutritional outcomes?
- Can WASH interventions improve outcomes for children with acute malnutrition?
- What is the impact of WASH improvements on the effectiveness of deworming programmes?

Equitable and universal urban sanitation:

- The benefits of urban sanitation are greatest if they reach the poor
- This reduces exposures for the most nutritionally vulnerable children
- However effectively reaching the poor requires critical assessment of the structural barriers.

Potential activities

The proposed research combines rigorous assessments of mechanisms and benefits, as well as applied work on how to create effective behaviour change and scalable interventions.

1. *Complementary food contamination.*

- Apply new methods to better understand exposure pathways, nutritional impacts, and the role of animals
- Create linkages between ICDDR,B and other southern research institutions
- Work directly with existing nutrition and complementary food programmes to develop

practical and scalable approaches to addressing the exposures.

2. WASH and nutrition

- Studies in Tanzania and Malawi to assess the effectiveness of targeted WASH interventions to improve the effectiveness of nutrition interventions.
- Incorporate nutritional outcomes in other potential research efforts
- Collaborate closely with national nutrition programmes to identify and test scalable strategies and SUN (Scaling Up Nutrition)

3. Sanitation, hygiene and vaccines

- 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 rotavirus and polio.
- Focus efforts in Tanzania and Malawi where rotavirus vaccine is scheduled to be introduced but questions remain on its potential effectiveness
- Connect established African researchers and institutions with global leaders in the enteric vaccines

4. Equitable and universal urban sanitation

- Collaborative work with IIED, SDI and WaterAid focusing on one or more cities in Africa
- Expansion of work funded under Call C and PhD thesis to assess disparities in sanitation-related exposures and outcomes in informal urban communities in Kenya

In learning from past experiences, these four areas can incorporate innovations and adaptations to SHARE's previous approaches. While they are proposed as crosscutting themes, these do not reflect the full range of WASH issues around which applied research is needed. Some of the other research issues that remain important for SHARE are inclusive sanitation, WASH and maternal health, gender-based violence and sanitation, and menstrual hygiene management; we will continue to raise their policy profile.

• Capacity building

There are four groups of stakeholders for whom SHARE could maximise its impact and these would be focused on specific national contexts (e.g. Tanzania and Malawi) where SHARE has momentum and the need is substantial. Work in these settings could provide proof of concept for effective approaches elsewhere. Potential capacity building needs include:

- National core partners - 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. A capacity development programme would include a combination of training, project participation and collaborative evaluation, and designed in a number of ways. If effective, the approach could be replicated in other national settings
- National sector actors – improving capacity to interpret, apply, and adapt research findings to programme development. Capacity development for this audience could 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 materials

developed.

- National research capacity – 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 could develop these activities as a part of the other proposed research and capacity building activities.
- Global sanitation and hygiene research fellows – providing opportunities for post-doctoral research fellows from southern countries. Fellows would be paired with mentors from SHARE partners and global research institutions. Additional mentoring and professional development might include rotations, research exchanges, and international workshops.
- **National RIU and sector programmes**
In some of SHARE's core countries, limited WASH research capacity and difficulty with contracting have slowed down the process of developing research programmes, in others, selected research may not have clearly fed into specific programmatic needs or decisions. SHARE has recently been developing a new type of collaboration with sector partners in Tanzania and to an extent in Malawi. The new collaborations focus on the development of collaborative applied research and evaluation around national sector programmes, in particular those of DFID. This updated model would include more sustained participation with sector partners. Collaborative activities could both enhance the VfM of the sector investment and enhance the capacity for sustained applied research generation and uptake.

8.3 Finances to January 2015 and beyond

Planning during Autumn 2013 took into account two scenarios (i) that SHARE would end as contracted and consideration had to be made to account for those projects at risk of not completing within the timeframe, (ii) that SHARE might receive a contract extension, building on the current programme.

- i) To prepare for this scenario, expenditure was slowed down while an investigation was conducted on where savings could be made to fund a no-cost extension. Critical projects were identified and DFID were notified that a sum of £500,000 would be set aside within the SHARE budget to cover the possible request for a no cost extension if the proposed continuation was not possible.
- ii) The alternative plan was for an acceleration of activities, building during the second half of 2014, in order to maximise a possible three-year extension starting in January 2015. This included partnership meetings around the four themes described above (see Figure 5) and exploratory talks within Tanzania and Malawi around partnerships and collaborative strategies.

At this point it is not certain what will be the outcome of the recently submitted business case to the PUSS. Whilst SHARE is looking forward, it must prepare for both eventualities and ensure that neither plan jeopardises the future.

Figure 5 Part of the thematic plan preparing for a possible SHARE extension

PROCESS FOR DEFINING AND DEVELOPING THEMATIC WORKSTREAMS FOR PHASE TWO

On 11 June 2014 the EG/partner meeting agreed to convene working groups to develop the strategic themes for Phase 2, and set out a process, which is shown below. Stage 1 has started. The process will end at different times for each workstream but not before the extension contract has been signed.

Capacity building and RIU must be included within workstreams from inception. The process will be reviewed and updated following each MG and EG/partners meeting. Progress will be monitored through feedback.

STAGE ONE: Establish thematic working groups	Notes	Action by	Feedback / Completion by date	Result/Output
1. Define thematic workstreams	Agreed to set up theme based teams to take forward areas of the revised Concept Note (see Result>). Individuals may be in more than one team. It is expected at this stage that capacity building and RIU will be addressed within each team and that individuals may be asked to attend from outside the team as required.	MG, EG and partners	Recorded in notes of the meeting of 11 Jun 14	WS2 – Equitable and universal urban sanitation WS3 – Sanitation, hygiene and vaccines WS4 – Complementary food contamination WS5 – WASH and nutrition WS6 – National sector programme: Malawi WS7 – National sector programme: Tanzania Additional workstreams can be added
2. Choose workstream conveners	Volunteers to coordinate the initial discussions were identified at the EG/partners meeting	All attending	Recorded in notes of the meeting of 11 Jun 14	WS2 – Gordon McGranahan WS3 – Oliver Cumming WS4 – Sandy Cairncross WS5 – Jeroen Ensink WS6 – Jeroen Ensink WS7 – Jeroen Ensink
3. Convene initial workstream meetings	Meetings to take place as soon as possible.	Workstream conveners	Agree first meeting date and notify MG by 1 Jul 14	Meeting schedules notified to MG who will update Phase 2 schedule

4. Feedback	Initial meetings to discuss process, substance and prepare a draft plan for achieving Stage 2, plus action points	Workstream conveners	Send notes to MG. Accept plans to end Stg 2 Due by 22 Jul 14	Workstream team notes received by MG and distributed to all partners. Plans to end Stage 2 updated
5. Define terms of reference for workstream team	Discuss progress after initial meetings and review process if necessary	MG with conveners	Tors to be circulated to partners. Due 12 Aug 14	Draft terms of reference
6. Produce schedule of workstream meetings	Meeting dates agreed at least up to the end of stage 2	Conveners	Lists sent to MG for circulation, due 12 Aug 14	Workstream meeting schedules. MG to circulate combined schedule.
STAGE TWO: Widen resource net	Notes	Action By	Feedback Completion by Date	Result/Output
7. Identify potential internal and external participants	Identify new contacts and explore ideas within the workstream team OR Take no action if other participants are considered unnecessary.	Conveners and MG	List of potential contacts circulated to partners. Due by 29 Aug 14	MG to circulate combined list for comment
8. Feedback	Review comments re contacts. Consider the management as well as outputs. Draft plan for Stage 3.	Conveners/partners with MG	Revised participants list and draft plans accepted by MG. Due 5Sep 14	MG to circulate revised participants list and combined workstreams schedule
9. Potential participants contacted	Initial discussions with prospective participants	MG and/or conveners as agreed by MG.	Report to MG and EG at next scheduled meetings	Report to be circulated to partners and added to lessons register

STAGE THREE: Define and cost workstreams	Notes	Action By	Feedback Completion by Date	Result/Output
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10. Identify workstream leaders	Discuss with conveners/ interested parties. Draft plans for Stage 4.	MG in consultation with conveners and others	MG report to EG Due 01 Oct 14	Process for conveners to hand over to workstream leaders (or MG)
11. Write terms of reference for the workstreams	Prepare draft strategic plan to achieve theme objectives by end Phase 2. Integrate into Phase 2 strategic plan.	MG and workstream leaders	TORs received 21 Oct 14 and presented to EG/partners	Tors generally available (may include circulation to AN/DFID)
12. Cost workstreams	Draft budget prepared for workstreams	EC and workstream leaders	Discuss and agree at MG 19 Nov 14	Draft top level workstream budgets
STAGE FOUR: Define process for allocation of work packages	Notes	Action By	Feedback Completion by date	Result/Output
13. Workstreams to be split into work packages	Prepare draft workstream plans Identify work packages (if possible)	WS leaders with MG	Drafts due 2 Dec 14 Feedback to MG 3 Dec 14	Draft work packages available (NB: WS plans to be risk assessed)
14. Define process for allocating work packages	Initial decision on using open calls, invitations to tender or request proposals as appropriate for each WP	WS leaders with MG	Process due 10 Dec 14 Feedback to EG before CAG on 17 Dec 14	Strategic and draft operational plan for Workstreams. Updated Phase 2 plan.
END OF PROCESS				

ANNEX A: SHARE logframe

SHARE LOGFRAME (June 2013- May 2014)

Legend:

Green= on Track

Yellow= medium progress

Red= off track

Indicators	Logframe Milestone for end of 2014		Progress towards the Milestone (Total from Milestone 1- June 2013)	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)	(H) 2.14 million (M) 2.17 million (L) 2.21 million		N/A	
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: Average: 75%	
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		a) b) 10 success stories	

	(L) 3			
Indicator 3: Leveraged funds: a) invested by other funders in SHARE's research (£# million) b) invested in sanitation & hygiene projects influenced by SHARE (£# million)	a) (H) £ 5 million (M) £ 3 million (L) £1 million b) (H) £ 30 million (M) £ 15 million (L) £ 5 million		a) £4.1 million in research b) £79 million in WASH investment	
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	(H) 10 items (M) 5 (L) 3		Total Published Manuals reports, discussion papers and handbooks published since June 2013: 24 Total Media Outputs since June 2013: 27	Published report manuals since SHARE inception: 63 Media outputs: 52
Indicator 2: Development and use of national RIU strategies	Legacy arrangements agreed by stakeholders		4	
Indicator 3: # no 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 June 2013: 9	36
Indicator 4: % female participants at those events	(H) 50% (M) 40%, (L) 30%		Total number of participants: 379 of which 216 were women (57%)	
Indicator 5: # of requests for advice from SHARE generating response. (per year)	(H)15 (M)10 (L)7		Total requests of advice since June 2013: 16	Since SHARE inception: 33
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,		Total publications since June 2013: 21	Since inception 40

	(L) 5			
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	
Indicator 3: No. of programmes embodying research findings established and documented for replication and/or study visits	(H) 4 under way (M) 2, (L) 1		Number of programmes embodying SHARE research findings since June 2013: 9	Since SHARE inception: 14
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 2013: 8	Since SHARE inception: 20
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 Monthly Web visits (June 2013-May 2014): 01/07/2013 to 30/09/2013: 5,313 01/10/2013 to 30/12/2013:8,212 01/01/2013 to 28/03/2014: 7,403 01/04/2014 to 31/06/2014: 4,632 Average per month: 2,130 Total newsletters subscription (cumulative): 486 Twitter followers: 815	

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 June 2013: 5	Since SHARE inception: 26
Indicator 5: # of cases of non-SHARE agencies participating in SHARE research	By end 2014 (H)7, (M) 5, (L) 2		Total Non-SHARE Agencies involved since 2013: 52	97
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 June 2013: (number of women): 90 (42)	Since SHARE inception: 280 (111)
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 2014: 2	
Indicator 3: # of exchange visits organised	By end 2014 (H) 4, (M) 2, (L)1		Total number of exchange visits since June 2013: 3	Since SHARE inception 13
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 June 2013: 5	Since SHARE inception 16
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%		88% of indicators monitored since June 2013.	
Indicator 2: Value for money; wasteful expenditure on: - ineffective hygiene promotion, - unused latrines, and - superfluous evaluations	2014 – saved p.a. (H)- £ 5 million (M)- £ 1 million (L) - £ 500,000		£4.6 million	

<p>avoided by following SHARE advice or implementing SHARE findings (£)</p>				
<p>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</p>	<p>By end 2014 a) (H) 4 (M)2, (L)1 b) (H) £1m, (M) £500k (L) £250k c) (H) 100% (M) 75% (L) 50%</p>		<p>a) Research management groups have been set up: 4 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 c) Average completed in country platforms: 31% <ul style="list-style-type: none"> • Bangladesh – One (of one) project due to complete Jan 2015 – 50% complete • India – Two (of four) projects completed, two on track to complete at the end of their contracts, of which one is 50% complete and the other is 78% complete • Malawi – (Three) Due to complete end Nov 2014 – none completed so far • Tanzania – Due to complete end Nov 2014 – one (of five) completed so far, two projects are 50% complete and two are 35% complete </p>	

ANNEX B: List of outputs

PROGRESS 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
2014-April	RESEARCH REPORT: Malawi Situational Analysis- City Wide Sanitation Project Available from: www.shareresearch.org/LocalResources/SHAREResearchReport_Malawi_final_2002.pdf
2014-April	RESEARCH REPORT: Tanzania Situational Analysis- City Wide Sanitation Project Available from: www.shareresearch.org/LocalResources/SHAREResearchReport_Tanzania_final_2002.pdf
2014-April	REPORT: The effectiveness and outcomes of approaches to functionality of drinking water and sanitation schemes This report discusses factors affecting functionality of community managed drinking water and sanitation schemes and highlights HELVETAS Swiss Intercooperation Nepal's approaches and their effectiveness in maintaining the functionality. The paper was authored by Yogesh Pant, Helvetas Nepal's Governance and Advocacy Coordinator at WARM-P, following his attendance at a writing course funded by SHARE. Available from: www.shareresearch.org/LocalResources/water_infrastructure_series_2013_final_.pdf
2014-March	REPORT: Zambia Situational Analysis- City Wide Sanitation Project Available from: www.shareresearch.org/LocalResources/ZAMBIA_SITUATIONAL_ANALYSIS_FINAL_1.pdf
2014-March	REPORT: Zimbabwe Situational Analysis- City Wide Sanitation Project Rapidly growing urban populations and informal settlements coupled with inadequate sanitation provision create a concerning picture in the majority of major cities in developing countries. The SHARE-funded City-Wide Sanitation Programme seeks to address this. One of the first steps was the analysis of the current situation in the four cities under study - Blantyre in Malawi, Chenhoyi in Zimbabwe and Dar es Salaam in Tanzania and Kitwe in Zambia. This report seeks to give an overview of the current situation in Chinhoyi with regards water and sanitation provision. Available from: www.shareresearch.org/LocalResources/SHAREResearchReport_Zimbabwe_REV.pdf

2014-Feb.	<p>ARTICLE: Violence, gender and WASH: a practitioners' toolkit Making water, sanitation and hygiene safer through improved programming by Sarah House, Suzanne Ferron, Marni Sommer and Sue Cavill in Humanitaria Exchange Magazine, Overseas Development Institute.</p> <p>In order to better understand and respond to issues related to violence, including gender-based violence (GBV), WaterAid, through the SHARE Consortium has undertaken research to document the connections between violence and WASH, and develop practical guidance on what the sector can do better. The result is a WASH practitioners' toolkit aimed at building the capacity of those working in a range of humanitarian and development contexts.</p> <p>www.odihpn.org/humanitarian-exchange-magazine/issue-60/violence-gender-and-wash-a-practitioners-toolkit-making-water-sanitation-and-hygiene-safer-through-improved-programming</p>
Jan. 2014	<p>BRIEFING NOTE: Undoing Inequity: WASH programmes that deliver for all in Uganda and Zambia ByJane Wilbur www.shareresearch.org/LocalResources/Wilbur_UI_Brisbane_WASH_Poster.pdf</p>
Jan. 2014	<p>POLICY BRIEF: Water and sanitation action research in the City of Dar es Salaam: Community mapping towards inclusive development www.shareresearch.org/LocalResources/Dar_es_Salaam_Tanzania_POLICY_BRIEF.pdf</p>
Jan. 2014	<p>POLICY BRIEF: Water and sanitation action research in the City of Blantyre: Community mapping towards inclusive development www.shareresearch.org/LocalResources/Blantyre_Malawi_POLICY_BRIEF.pdf</p>
Jan. 2014	<p>POLICY BRIEF: Water and Sanitation Action Research in the City of Kitwe: Community mapping towards inclusive development. www.shareresearch.org/LocalResources/Kitwe_Zambia_POLICY_BRIEF.pdf</p>
Jan. 2014	<p>POLICY BRIEF: Water and Sanitation Action Research in the City of Chinhoyi: Community mapping towards inclusive development. www.shareresearch.org/LocalResources/Chinhoyi_Zimbabwe_POLICY_BRIEF.pdf</p>

Jan. 2014	<p>REPORT: WaterAid's submission into the International Development Select Committee's inquiry on disability and development. Drawing on the learnings from its SHARE-funded Undoing Inequity Project, WaterAid has submitted a stand-alone submission on disability and WASH to the IDSC, which uses knowledge on developing and delivering 'inclusive WASH' that meets the needs of everyone throughout their life. The submission explains the barriers that disabled people face in relation to WASH, how these can be addressed and recommendations for DFID.</p> <p>/LocalResources/WaterAid response to IDC Inquiry on Disability and Development Dec 2013.pdf</p>
2013- Nov	<p>REPORT: Mainstreaming Disability and Ageing in Water Sanitation and Hygiene Programmes</p> <p>This report presents an overview of the extent to which disability and ageing is mainstreamed in WASH programmes. Drawing on experiences from WASH organisations around the world, it is evident that disability and ageing have received increased attention in the WASH sector over the last decade, but there is still a long way to go to achieve genuine mainstreaming. The current picture is of a 'continuum' of progress towards mainstreaming. This continuum provides a framework for WASH implementers to analyse their own equity and inclusion activities. With further refinement, it could also provide a practical tool for use by implementers in reviewing progress, and planning next steps in mainstreaming disability and ageing within their organisation and programmes. The thought provoking report provides a starting point and structure for discussion of ways forward.</p> <p>www.shareresearch.org/Resource/Details/mainstreaming_disability_ageing_wash</p>
Nov 2013	<p>REPORT: Mapping Sanitation Solutions</p> <p>This report presents an overview of existing sanitation marketing approaches in Asia, Africa, Latin America and South East Asia, conducted searching for existing reports, working papers, fact sheets, handbooks, and website material from relevant NGOs, International Organisations, Private Sector Business and Research Institutes, as well as interviews with relevant sector actors. Among the approaches identified, those presenting an established sanitation business or demand creation model and that have reached significant impacts are discussed in the report.</p> <p>http://worldtoiletday.org/wp-content/uploads/WTB-2013-Sanitation-Solutions.pdf</p>
2013- Nov	<p>REPORT: Sanitation and Hygiene in Africa: Where do We Stand? Analysis from the AfricaSan Conference, Kigali, Rwanda. Edited by Piers Cross and Yolande Coombes.</p> <p>SHARE researchers contributed to the following chapters: Chapter 3: Health impacts of sanitation and hygiene (Sandy Cairncross, Oliver Cumming, Lisa Schechtman, Yael Velleman and Hugh Waddington). Chapter 5: Equity and inclusion in sanitation and hygiene in Africa (Archana Patkar and Louisa Gosling)</p> <p>www.iwaponline.com/wio/2013/wio2013RF9781780405421.pdf</p>

2013- Nov	<p>REPORT: Evaluating the effectiveness of public finance for household sanitation in Bihar, India</p> <p>WaterAid has initiated a study to evaluate the effectiveness of public financing for sustainable household sanitation in the rural areas of the state of Bihar (India). This study is part of a broader research initiative that includes case studies of urban sanitation in Dar es Salaam (Tanzania) and rural sanitation in Thailand. www.shareresearch.org/Resource/Details/public_finance_effectiveness_households_india</p>
2013- Nov	<p>REPORT: Evaluating the effectiveness of public finance for household sanitation in Dar es Salaam, Tanzania</p> <p>Research project to evaluate the effectiveness of public financing for sustainable household sanitation in Dar-es-Salaam. This project is part of a broader research initiative that includes case studies on rural sanitation in the state of Bihar, India, and Thailand. www.shareresearch.org/Resource/Details/public_finance_effectiveness_households_tanzania</p>
2013- Nov	<p>REPORT: Evaluating the effectiveness of public finance for household sanitation in rural Thailand</p> <p>This report is a case study investigating microfinance in India. The research investigates how household financing for sanitation can be mobilised via microfinance institutions and commercial banks in order to accelerate sustainable access to sanitation facilities and/or services. This, and another two case studies on microfinance in India and Tanzania, accompany the 'Small-scale finance for water and sanitation' report, jointly published by and EUWI. www.shareresearch.org/Resource/Details/public_finance_effectiveness_households_thailand</p>
2013- Nov	<p>REPORT: Evaluating the effectiveness of public finance for household sanitation - a synthesis of three case studies</p> <p>Synthesis of three studies to evaluate the effectiveness of public financing for sustainable household sanitation in the rural areas of the state of Bihar (India), Dar es Salaam (Tanzania) and rural Thailand. www.shareresearch.org/Resource/Details/evaluating_the_potential_of_microfinance_for_sanitation_synthesis</p>
2013- Nov	<p>REPORT: Mapping Sanitation Solutions.</p> <p>A report landscaping existing marketing sanitation solutions which are either brought to scale or have a successful demand generation approach. The report was prepared by SHARE researchers (Elisa Roma and Val Curtis) In collaboration with Unilever. http://worldtoiletday.org/wp-content/uploads/WTB-2013-Sanitation-Solutions.pdf</p>
2013- Oct	<p>REPORT: The important relationship between landlords and tenants in improving sanitation - the case of Keko Machungwa</p> <p>The relationship between landlords and tenants was highlighted by Keko Machungwa (Dar es Salaam, Tanzania) community members as a critical challenge in improving sanitation standards. The Tanzania Urban Poor Federation and Centre for Community Initiatives have been exploring ways of improving the relationship between landlords and tenants in Tanzania, with a view to improving sanitation in informal settlements. This report discusses an example of these initiatives, in Keko Machungwa settlement, Dar es Salaam. www.shareresearch.org/Resource/Details/keko_machungwa_landlords_tenants</p>

2013 – Jun	<p>USER GUIDE: Sanitation Investment Tracker mobile app (SIT)</p> <p>This note provides practical guidance on how to use SIT, the Sanitation Investment Tracker. SIT is a suite of applications powered by Akvo FLOW to track investment and associated expenditure in sanitation at household level.</p> <p>http://www.sharereseach.org/Resource/Details/sit_user_guide</p>
2013 – Jun	<p>SUMMARY: An introduction to the Sanitation Investment Tracker (SIT mobile app note 1)</p> <p>The Sanitation Investment Tracker (SIT) is a suite of applications that can be used to track investment (and associated expenditure) in sanitation at household level. This note introduces SIT, why it was developed, what it does, how it works, who can benefit from it and how.</p> <p>www.sharereseach.org/Resource/Details/sit_note_1</p>
2013 - Jun	<p>SUMMARY: Sanitation app developments (SIT mobile app note 2)</p> <p>Mobile phone and web-based ICT applications are increasingly being developed to support the development of WASH services. While there has not yet been much innovation in the sanitation sector, a lot can be learned and transferred from recent developments in the water sector. This note gives an overview of the types of apps (mainly prototypes) that have been developed so far in the sanitation sector and identifies the need for further development of ICT tools. It accompanies the SHARE-funded Sanitation Investment Tracker (SIT) app.</p> <p>www.sharereseach.org/Resource/Details/sit_note_2</p>
<p>MEDIA</p> <p><u>Presentations about SHARE work at conferences, events and meetings.</u></p>	
DATE	PRESENTATIONS
March 2014	<ul style="list-style-type: none"> • IIED, SHARE partner, presents the results of City Wide Sanitation Project at 11th International Conference on Urban Health at the University of Manchester. • Val Curtis presented results of SHARE funded research SuperAmmu, at DFID Human Development Department. • Lenka Benova takes part in the roundtable on “Water, Sanitation, and Hygiene Programs as a Strategy to Advance Maternal Health” at the Maternal Health Initiative of the Woodrow Wilson International Centre for Scholars in Washington, DC. • Yael Velleman, WaterAid Senior Policy Analyst, presented SHARE research on WASH and maternal health, detailing the results of the systematic review done by Benova et al., at the Ministry of Health, Social Services and Equality in Madrid, Spain.
February 2014	<ul style="list-style-type: none"> • SHARE PhD student Om Prasad Gautam presented the poster “Food hygiene intervention to improve food hygiene behaviours, reduce food contamination and diarrhoeal diseases burden in Nepal” which won a special prize at LSHTM for 'best poster

	demonstrating innovation and creativity'.
December 2013	<ul style="list-style-type: none"> • Lovleen Bhullar, presented results of SHARE funded research “The Right to Sanitation: Translating the Right into a reality” at the International Sanitation and Gender Workshop in New Delhi, India. http://www.sharesearch.org/Resource/Details/right_to_sanitation_lovleen_bhullar_presentation • SHARE Research Director Sandy Cairncross addressed the meeting on impact evaluation in the water, sanitation and hygiene sector, by videoconferencing. Réunion du Comité Scientifique do psEau (AFD Head Office, Paris).
November 2013	<ul style="list-style-type: none"> • Sarah House, Dr Sue Cavill, Suzanne Ferron & Dr Marni Sommer presented <i>Violence, Gender and WASH: A Practitioner’s Toolkit. Making water, sanitation and hygiene safer through improved programming and services</i> at DFID UK. http://www.sharesearch.org/Resource/Details/violence_gender_wash_dfid_presentation • Sophie Tremolet, SHARE consultant, presented <i>The role of microfinance to support access to sanitation</i> to DFID UK. • Val Curtis presented ChooseSoap and SuperAmma results at the SanCoP (Sanitation Community of Practice) workshop at first Early Career Researchers in Water, Sanitation and Hygiene Conference (ECRWASH13) in Cranfield University • Val Curtis spoke at the inauguration of World Toilet Day at United Nations HQ, New York. • Oliver Cumming and Alan Dangour presented on the Cochrane Review presentation to World Bank Nutrition Division for South Asia. • Oliver Cumming & Joanna Esteves Mills presented Cochrane Review results and discussed implications for Oxfam programmes.
October 2013	<ul style="list-style-type: none"> • Belen Torondel, LSHTM Research Fellow, presented results of the Orissa Trial to Indian Minister of Rural Development (Jairan Ramesh • Sheillah Simiyu, SHARE PhD student, presented “Understanding Slum Dynamics and their influence on Sanitation Sustainability” at the conference Social Science for Development at the University of Stellenbosch, South Africa. • UNC conference on Water and Health: <ul style="list-style-type: none"> • Jeroen Ensink presented SHARE research on latrines. • Sirajul Islam presented SHARE research on weaning food contamination • Tom Clasen presented SHARE/UNICEF research on shared sanitation • Matt Freeman presented SHARE work on NTDs • Oliver Cumming convened a side event on WASH & nutrition.
September 2013	<ul style="list-style-type: none"> • Rick Rheingans and Elisa Roma attended the 5th Sanitation Sub-group Meeting, at the World Bank, Dar Es Salaam, where Rick Rheingans presented the Protocol for the Process Evaluation of SHARE National Sanitation Campaign Evaluation. • 09/2013 Sandy Cairncross and Jeroen Ensink chaired the session “Sanitation in the post-2015 landscape” at the 8th European congress on Tropical Medicine and International Health in Copenhagen.

August 2013	<ul style="list-style-type: none"> Sandy Cairncross attended Inter agency meeting in London on Emergency Water Sanitation and Hygiene Promotion. Inter-agency meeting between HIF (Humanitarian Innovation Fund) and TWG (Technology Working Group) 		
July 2013	<ul style="list-style-type: none"> Om Prasad Guatam presented the paper: Food hygiene practices of mothers and level of contamination in child's food in Nepal: a formative research at 36th WEDC Conference "Delivering Water, Sanitation and Hygiene Services in Uncertain Environment" in Nakuru, Kenya. Child height and stunting: Early-life disease, water quality, and sanitation conference, Delhi, India organised by the Centre for Development Economics at the Delhi School of Economics and R.I.C.E., with the support of the Ministry of Drinking Water and Sanitation and the Water and Sanitation Program - South Asia <ul style="list-style-type: none"> Oliver Cumming gave keynote presentation at Child height and stunting: Early-life disease, water quality, and sanitation, a conference. Belen Torondel presented overview of the sanitation RCT in Orissa. 		
<p>Videos 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</p>			
<p>Indicator 2: Development and use of national RIU strategies (Legacy arrangement agreed by stakeholders by 2014)</p>			
<p>Plans in place for completion by December 2014. (See Section 9 The Way Forward)</p>			
<p>Indicator 3: # no of knowledge sharing events including seminars, technical meetings and conferences organised or supported by SHARE</p>			
	DATE	EVENT (LOCATION)	SHARE CONTRIBUTION
1	June 2014	Launch of the <i>Practitioner's Toolkit on Violence, Gender and WASH</i> and a discussion on the impact of inadequate access to WASH on safety and the role of the WASH practitioner at the, London School of Hygiene & Tropical Medicine.	SHARE funded the event.

2	May 2014	<p>Screening of 'Menstrual Man' Directed by Amit Virmani at LSHTM, a documentary on the Indian Sanitary Pad Revolutionary, Arunachalam Muruganantham.</p> <p>Presentation of SHARE funded systematic literature review of the health and social effects of menstrual hygiene management.</p>	<p>SHARE together with MARCH (Maternal, Adolescent, Reproductive and Child Health) & STEP-UP (Strengthening Evidence for Programming Unintended Pregnancy) co-funded the event,</p> <p>Belen Torondel presented SHARE funded systematic literature review of the health and social effects of menstrual hygiene management</p>
3	April 2014	Inception Meeting: Improving maternal and newborn health through improved water, sanitation and hygiene in healthcare facilities in Zanzibar.	Inception meeting to discuss project and more broadly research in WASH and maternal health.
4	Dec 2013	International Sanitation and Gender Workshop, Delhi, India, 9-10th December.	<p>Workshop convened by SHARE with Government of India, WSP and WSSCC to address current research on women and girls and sanitation and hygiene challenges linked to health and well-being:</p> <ul style="list-style-type: none"> • 1 day research and evidence roundtable • 1 day policy roundtable to discuss gender implications for WASH planning. Policy and monitoring in India <p>Oliver Cumming, Belen Torondel and Jo Esteves-Mills attended and facilitated the workshop.</p>
5	Nov 2013	Cochrane review launch on WASH and Childhood undernutrition, at London School of Hygiene and Tropical Medicine.	<p>SHARE organised the event: "The effect of interventions to improve water quality and supply, provide sanitation and promote handwashing with soap on physical growth in children" to launch the Cochrane review on WASH and Childhood undernutrition</p> <p>www.shareresearch.org/NewsAndEvents/Detail/Cochrane_Review_WASH_Undernutrition_Launch.</p>
6	Oct 2013	SACOSAN Conference Nepal, Kathmandu	A 'Hygiene' side event was organised on the second day, facilitated by WaterAid Nepal Country Representative Mr Ashutosh Tiwari. During the side event a paper on 'Food Hygiene' was presented by Om Prasad Gautam, a SHARE-funded PhD student at LSHTM.

7	Sept 2013	Stockholm Water Week – side event WASH & Stunting in India.	SHARE convened a side event with Government of India and WSP on the evidence for sanitation and stunting. Oliver Cumming presented the Cochrane Review and the Joint Secretary for Water & Sanitation spoke
8	Sept 2013	SHARE City Wide project Annual Meeting Kitwe, Zambia.	Diana Mitlin, Martin Mulenga and Gordon McGranahan (IIED), and Noah Schermbrucker (SDI secretariat) as well as members of the SDI Federation and NGOs in the four countries took part.
9	July 2013	SHARE side event on urbanisation and planning at the 36 th WEDC Conference “Delivering Water, Sanitation and Hygiene Services in Uncertain Environment” in Nakuru, Kenya.	Elisa Roma presented the City Wide Sanitation Project. Lauren de Mello, SHARE funded MSc Student, presented a poster on SHARE hygienic sanitation work.
Indicator 4: % female participants at those events			
EVENT			Participants/or presenters (of which females)
1. Launch of the Practitioner’s Toolkit on Violence, Gender and WASH at LSHTM			86(63)
2. Screening of ‘Menstrual Man’ Directed by Amit Virmani at LSHTM, a documentary and presentation of SHARE funded systematic literature review of the health and social effects of menstrual hygiene management			32 (2)
3. Inception Meeting: Improving maternal and newborn health through improved water, sanitation and hygiene in healthcare facilities in Zanzibar			14 (8)
4. International Sanitation and Gender Workshop, Delhi, India, 9-10th December.			78(51)
5. Cochrane review launch on WASH and Childhood undernutrition, London School of Hygiene and Tropical Medicine			100 (57)
6. SACOSAN Conference, Kathmandu, Nepal (presenters)			1 (0)
7. Stockholm Water Week – side event WASH and Stunting in India (presenters)			4 (0)
8. SHARE City Wide project Annual Meeting,Kitwe, Zambia			42(33)
9. SHARE side event at WEDC Conference in Nakuru, Kenya whose theme was “Delivering Water, Sanitation and Hygiene Services in Uncertain Environment” (presenters)			22 (2)

Total (available) number of participants (of which women)	379 (216)
Total % of women	57%
Indicator 5: # of requests for advice from SHARE generating response	
Requesting organisation	SHARE contact/Input
1. WaterCan	Request to Lenka Benova for information on SHARE-funded research on Maternal Health conditions in Tanzania
2. Save The Children, Pakistan	Request to Sandy Cairncross and EHG group to provide technical support and advice to generate the evidence base around a plan for diarrhoea prevention and control in Pakistan
3. SNOW Consortium	Joanna Esteves-Mills was requested to provide insight on Research into Use at SNOW annual meeting
4. Oxfam WASH Cluster	Request for Sandy Cairncross to organise Emergencies Environmental Health Forum in late 2014, preferably in Africa.
5. Bill and Melinda Gates Foundation	Extended telephone interview by secretariat of advisory committee on Burden of Disease, set up by Gates Foundation, chaired by Peter Piot.
6. WASH cluster of humanitarian relief agencies	Request for Sandy Cairncross to present a systematic review of cholera control measures at their meeting in Oslo, April 2-3, and to compile best practice.
7. Action Against Hunger	Oliver Cumming, SHARE policy and research manager provides information on the link between diarrhoea and acute under-nutrition
8. UNICEF India	Oliver Cumming, SHARE policy and research manager provides advice on a WASH/nutrition literature review
9. Deloitte (US)	Sandy Cairncross (SHARE Research Director) provides advice on knowledge gaps in the water and sanitation sector for a literature review
10. WSP, World Bank Latin American Unit	Sandy Cairncross (SHARE Research Director) provides advice on a strategy to eliminate cholera from Haiti and the Dominican Republic
11. Mott MacDonald (UK)	Sandy Cairncross (SHARE Research Director) provides information what and how is being undertaken in microfinance of water and sanitation and the lessons that can be learnt for how to make these successful in the future in Africa (Uganda, Rwanda, Ghana and Malawi).

12. University of Southampton 13. (National Institute for Health Research)	Sandy Cairncross provides comments on a Research Brief on hand hygiene – its health benefits – and also about the how; how to make hygiene promotion cost-effective, how to make it viral and persuade the hand hygiene industry to fund it, while keeping it aimed at the public health agenda.
14. IDRC (international Development Research Centre) Canada	Joanna Estevez-Mills and Elisa Roma Provision of information on M&E and RIU strategies in SHARE consortium
15. International Development committee	SHARE-funded WaterAid/WEDC programme on inclusive WASH informs International Development Select Committee's recommendations to the UK government on disability and development
16. Director of Drinking Water and Sanitation for the Government of India	Oliver Cumming provided guidance on monitoring indicators for MHM to be used in India's sanitation programme.

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 June 2013)	Total authors	Female authors	Researchers from developing countries
1	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) Assessing the impact of drinking water and sanitation on diarrhoeal disease in low- and middle-income settings: systematic review and meta-regression. <i>Tropical Medicine and International Health</i> , doi:10.1111/tmi.12331.	21	8	0
2	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) Burden of disease from inadequate water, sanitation and hygiene in low- and middle-income settings: a retrospective analysis of data from 145 countries. <i>Tropical Medicine and International Health</i> , doi:10.1111/tmi.12329.	21	8	0

3	Freeman MC, Stocks M, Cumming O, Jeandron A, Higgins JPT, Wolf J, Pruss-Ustun A, Bonjour S, Hunter PR, Fewtrell L and Curtis V (2014).Hygiene and health: systematic review of handwashing practices worldwide and update of health effects.Tropical Medicine and International Health,doi:10.1111/tmi.12339.	11	7	0
4	Loevinsohn M, Mehta L, Cuming K, Nicol A, Cumming O and Ensink J (2014) The cost of a knowledge silo: a systematic re-review of water, sanitation and hygiene interventions.Health Policy Planning, doi: 10.1093/heapol/czu039	6	2	0
5	Jiménez, A, Mtango, F and Cairncross, S (2014) What role for local government in sanitation promotion? Lessons from Tanzania. Water Policy, in Press, Available online 19 May 2014	3	0	1
6	Jeandron, A, Ensink, JH, Thamsborg, SM, Dalsgaard, A and Sengupta, ME (2014)A Quantitative Assessment Method for Ascaris Eggs on Hands. PLoS ONE, 9(5): e96731. Doi:10.1371/journal.pone.0096731	5	2	0
7	Strunz EC, Addiss DG, Stocks ME, Ogden S, Utzinger J, and Freeman, M.C. (2014) Water, Sanitation, Hygiene, and Soil-Transmitted Helminth Infection: A Systematic Review and Meta-Analysis. PloS Med 11(3): e1001620. Doi:10.1371/journal.pmed.1001620	6	2	0
8	Heijnen M, Cumming O, Peletz R, Chan GK-S, Brown J, Baker, K. and Clasen, T. (2014) Shared Sanitation versus Individual Household Latrines: A Systematic Review of Health Outcomes. PloS ONE 9(4): e93300. Doi:10.1371/journal.pone.0093300	7	4	0
9	Ghosh, A., Cairncross, S. (2014) Review paper: the uneven progress of sanitation in India. Journal of Water, Sanitation and Hygiene for Development, 4(1): 15-22	2	0	1
10	Jenkins M.W., Cumming O., Scott, B. & Cairncross, S. (2014) Beyond 'improved' towards 'safe and sustainable' urban sanitation: Assessing the design, management, and functionality of sanitation in poor communities of Dar Es Salaam, Tanzania. Journal of Water, Sanitation and Hygiene forDevelopment, 4(1): 131-141.	4	2	0
11	Biran, A., Schmidt, W-P., Varadharajan, K.S., Rajaraman, D., Kumar, R., Greenland, K., Gopalan, B., Aunger,R. and Curtis, V. (2014). Effect of a behaviour-change intervention on handwashing with soap in India (SuperAmma): a cluster-randomised trial. Lancet Global Health, 2: 145-154	9	3	4
12	Benova, L. Cumming, O. and Campbell, O. (2014). Systematic review and meta-analysis: association between water and sanitation environment and maternal mortality. Tropical Medicine and Environmental Health,00:00 pp 1365-3156.	3	2	0

13	Stocks, M., Ogden, S., Haddad, D., Addiss, D.G., 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> 11(2): e1001605. Doi:10.1371/journal.pmed.1001605	6	3	0
14	Torondel, B., Opere, D., Brandberg, B., Cobb, E. and Cairncross, S. (2014). Efficacy of Moringa oleifera leaf powder as a hand- washing product: a crossover controlled study among healthy volunteers. <i>BMC Complementary and Alternative Medicine</i> , 14:57. Doi:10.1186/1472-6882-14-57	5	2	1
15	Rheingans R, Anderson JD, Rolf Luyendijk R and Cumming O (2014) Measuring disparities in sanitation access: does the measurement matter? <i>Tropical Medicine and International Health</i> , 19 (1), 2-13, doi:10.1111/tmi.12220	4	0	0
16	Barnard S, Routray P, Majorin F, Peletz R, Boisson S, Sinha A & Clasen T (2013) Impact of Indian Total Sanitation Campaign on Latrine Coverage and Use: A Cross-Sectional Study in Orissa Three Years following Programme Implementation. <i>PlosOne</i> , 8(8): e71438. Doi:10.1371/journal.pone.0071438	7	6	0
17	Trémolet S (2013) Sanitation economics: understanding why sanitation markets fail and how they can improve. <i>Waterlines</i> , 32(4), 273-285, 10.3362/1756-3488.2013.029.	1	1	0
18	Wazny K, Zipursky A, Black R, Curtis V, Duggan C, Guerrant R, Levine M, Petri, WA Jr., Santosham M, Scharf R, Sherman PM, Simpson E, Young M and Bhutta Z A (2013) Setting Research Priorities to Reduce Mortality and Morbidity of Childhood Diarrhoeal Disease in the Next 15 Years. <i>PLoS Med</i> 10(5): e1001446. Doi:10.1371/journal.pmed.1001446	14	3	1
19	Brown J, Cairncross S & Ensink J (2013) Water, sanitation, hygiene and enteric infections in children. <i>Archives of Disease in Childhood</i> , 2013, 1–6. Doi:10.1136/archdischild-2011-301528	3	0	0
20	Spears D, Ghosh A and Cumming O (2013) Open Defecation and Childhood Stunting in India: An Ecological Analysis of New Data from 112 Districts. <i>PLoS ONE</i> 8(9): e73784. Doi:10.1371/journal.pone.0073784	3	1	2
21	Dangour AD, Watson L, Cumming O, Boisson S, Che Y, Velleman Y, Cavill S, Allen E and Uauy R (2013) Interventions to improve water quality and supply, sanitation and hygiene practices, and their effects on the nutritional status of children. <i>Cochrane Database of Systematic Reviews</i> , Issue 8. Art. No.: CD009382. DOI: 10.1002/14651858.CD009382.pub2.	9	6	2
Total		91	37	12

Indicator 2: Citations by other authors of those publications (updated from previous report)		
	Authors	Citation Track (includes self-citations)
1.	Wolf et al. 2014	1
2.	Pruss-Ustun et al. 2014	0
3.	Freeman et al. 2014	1
4.	Loevinsohn et al. 2014	0
5.	Jiménez, A, Mtango, F and Cairncross, S (2014)	0
6.	Jeandron, A, Ensink, JH, Thamsborg, SM, Dalsgaard, A and Sengupta, ME (2014)	0
7.	Strunz EC, Addiss DG, Stocks ME, Ogden S, Utzinger J, and Freeman, MC (2014)	1
8.	Heijnen M, Cumming O, Peletz R, Chan GK-S, Brown J, Baker, K and Clasen, T (2014)	0
9.	Ghosh, A and Cairncross, S (2014)	0
10.	Jenkins MW, Cumming O, Scott B and Cairncross S (2014)	0
11.	Biran, A, Schmidt, W-P, Varadharajan, KS, Rajaraman, D, Kumar, R, Greenland, K, Gopalan, B, Aunger, R and Curtis, V (2014)	3
12.	Benova, L, Cumming, O and Campbell, O(2014)	2
13.	Stocks, M, Ogden, S, Haddad, D, Addiss, DG, McGuire, C and Freeman, M (2014)	2
14.	Torondel, B, Opare, D, Brandberg, B, Cobb, E and Cairncross, S (2014)	0
15.	Rheingans R, Anderson JD, Rolf Luyendijk R and Oliver Cumming O (2013)	2
16.	Wazny K, Zipursky A, Black R, Curtis V, Duggan C, et al. (2013)	9
17.	Brown, J, Cairncross, S and Ensink, J (2013)	4
18.	Trémolet S (2013)	0

19.	Barnard S, Routray P, Majorin F, Peletz R, Boisson S, Sinha A and Clasen T (2013)	3
20.	Spears D, Ghosh A and Cumming O (2013)	1
21.	Dangour AD, Watson L, Cumming O, Boisson S, Che Y, Velleman Y, Cavill S, Allen E and Uauy R (2013)	15
22.	Irish, S, Aiemjoy, K, Torondel, B, Abdelahi, F and Ensink, J (2013)	0
23.	Sumpter, C and Torondel, B (2013)	3
24.	Islam, MS, Mahmud, ZH, Gope, PS, Zaman, RU, Hossain, Z, Islam, MS, Mondal, D, Sharkar, MAY, Islam, K, Jahan, H, Bhuiya, A, Endtz, HP, Cravioto, A, Curtis, V, Touré, O and Cairncross, S (2013)	4
25.	Velleman, Y, Greenland, K. and Prasad Gautam, O (2013)	0
26.	Greenland, K, Cairncross, S, Cumming, O and Curtis, V (2013)	0
27.	Funk, AL, Boisson, S, Clasen, T and Ensink, JH (2013)	0
28.	Clasen, T, Boisson, S, Routray, P, Cumming, O, Jenkins, M, Ensink, J, Bell, M, Freeman, M, Peppin, S and Schmidt. W-P (2012)	7
29.	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)	9
30.	De Barra, M and Curtis, V (2012)	1
31.	Brown, J, Cavill, S, Cumming, O and Jeandron, A (2012)	0
32.	Touré, O , Coulibaly, S , Arby, A , Maiga, F and Cairncross, S (2013)	5
33.	Roma, E, Pearce, J, Brown, C and Islam, S. (2012)	1
34.	Baker, S and Ensink, J (2012)	3
35.	Watts, C and Cairncross, S (2012)	9
36.	Touré, O , Coulibaly, S , Arby, A , Maiga, F and Cairncross, S (2011)	5
37.	Curtis, V, Schmidt, W-P, Luby, S, Florez, R, Touré, O and Biran, A (2011)	58
38.	Burton, M, Cobb, E, Donachie, P, Judah, G, Curtis, Vand Schmidt, W-P (2011)	25

39.	Curtis, V, de Barra, Mand Aunger, R (2011)	89
40.	Collender, G (2011)	0
Indicator 3 : No. of programmes embodying research findings established and documented for replication and/or study visits		
<ol style="list-style-type: none"> 1. Gates-funded Sustainable Total Sanitation project has a customised version of the Sanitation Mapper for measuring CLTS. The data is being collected in April 2014 and the mapper will be used for analysis of data across 800 communities in rural Nigeria during the project. 2. IWA funded sanitation risk assessment (SPLASH project) is using another customised version (in Portuguese) of the Sanitation Mapper for measuring risk. The project is currently implemented across 4 barrios in Maputo. 3. SHARE project "Undoing inequity: WASH projects that deliver for all" led by WaterAid and WEDC is influencing CLTS programme and practice. 4. BOND disability research sub-group is embodying findings from SHARE project "Undoing inequity: WASH projects that deliver for all" programme led by WaterAid and WEDC. 5. WaterAid Bangladesh are using Choose Soap and Super Amma to develop their own mass media campaign to promote HWWS in Bangladesh. 6. Menstrual Hygiene Management Guidelines for Practitioners (WaterAid) is being piloted in Bangladesh. 7. February 2014: USAID included the impact of WASH on its maternal health strategy. 8. January 2014: WaterAid Uganda made budgetary plans to incorporate inclusive WASH in their next 3-year programme. 9. December 2013: AUSAID grants 1mil AUS\$ to LSHTM in collaboration with WaterAid to conduct research on inclusive WASH. 		
Indicator 4: Successful completion of SPLASH component funded via SHARE (Policy relevant appraisals of outputs by SHARE by end of 2014)		
<ul style="list-style-type: none"> • Participation into 20 international conferences. • Participation and organisation to 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***Tanzania:**

1. 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).
2. 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.

India:

3. SHARE convened a workshop with Government of India, WSP and WSSCC to address current research on women and girls and sanitation and hygiene challenges linked to health and well-being.

Malawi:

4. SHARE platform coordinator met with UNICEF on potential for collaboration. Through that meeting UNICEF has assisted in reviewing the research protocols and promised to assist in the dissemination of the results of the findings of the research.

Bangladesh:

5. 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.
6. Through ICDDR, B SHARE is collaborating with various Government and Non-government organizations in Bangladesh related to Sanitation and Hygiene issues.

Global:

7. Zambia: Nkana Water and Sewerage Company (NWSC) as well as the Kitwe City Council have engaged with Zambian SDI affiliates, and attended the meeting.
8. The SHARE-funded "Undoing inequity: WASH projects that deliver for all" programme led by WaterAid and WEDC has helped inform the International Development Select Committee's (IDSC) recent recommendations to the UK government on Disability and Development.

Indicator 2*# of country platforms established and active*

Plan of actions have been agreed and implemented in the four country platforms (ref: Section 2.5)

Indicator 3*No. of hits/downloads on SHARE website*PAGE VIEWS – ALL SESSIONS

June (2013): 7,129

July (2013): 2,360

August (2013): 1,626

September (2013): 1,327

October (2013): 2,262

November (2013): 3,284

December (2013): 2,666

January (2014): 2,165

February (2014): 2,653

March (2014): 2,585

April (2014): 2,275

May (2014): 2,879

June (2014): 2,357

NEWSLETTER SUBSCRIPTIONS (Cumulative)

June (2013): 368

July (2013): 376

August (2013): 371

September (2013): 371

October (2013): 371

November (2013): 365

December (2013): 365

January (2014): 3622

February (2014): 355

March (2014): 444

April (2014): 476

May (2014): 486

June (2014): 510

TWITTER FOLLOWERS

February (2014): 742

April (2014): 800

May (2014): 815

Indicator 4 <i># of external requests for SHARE technical support to implement implications of SHARE research</i>		
Requesting Organisation	SHARE Contact (Date)	Input
Save the Children Pakistan	EHG group/SHARE team	Request of technical support with designing and implementing research on diarrhoeal disease control, conduct independent monitoring and quality assurance of programme implementation.
UNICEF	Sandy Cairncross (March 2014)	Request of information on WASH and Gender violence
LSHTM	Oliver Cumming	SHARE Cochrane review findings have been incorporated in the LSHTM public access training module on nutrition
DFID country Tanzania	Rick Rheingans, Sue Cavill and Elisa Roma	Support in the process evaluation of Tanzania National Sanitation Campaign.
DFID India and the South Asia Research Hub	Oliver Cumming & Joanna Estevez- Mills	Update and overview of SHARE research for WASH, Health and Research cadres
Indicator 5 <i># of cases of non-SHARE agencies participating in SHARE research (Since June 2013)</i>		
<ol style="list-style-type: none"> 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. Tujjenge (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. Centre of Excellence in Water and Sanitation (Mzuzu University), (Malawi)
29. Lilongwe University of Agriculture and Natural Resources, (Malawi)
30. Department of Population Studies of University of Malawi (Malawi)
31. Chancellor College (Malawi)
32. Blantyre City Council (Malawi)
33. Vadu (KEM Hospital Research Centre), (India)
34. Public Health Foundation of India,
35. Society for Promoting Participative Eco-system Management (SOPPECOM), (India)
36. Asian Institute of Public Health (India)
37. BRAC (India and Bangladesh)
38. Ministry of Child and Women's Affairs in Government of Bangladesh (Bangladesh)
39. Village Education Resource Centre (Bangladesh)
40. Plan International (Bangladesh)
41. District of Public Health Office (Bangladesh)
42. Red Cross (Bangladesh)
43. Coppertbelt (Zambia)
44. Water and Sanitation Association Zambia (WASAZA) (Zambia)
45. Nkana Water and Sewerage Company (NWSC) (Zambia)
46. Kitwe City Council (KCC) (Zambia)
47. Chinhoyi Municipality (Zimbabwe)
48. Chinhoyi University of Technology (CUT) (Zimbabwe)
49. Works of Solidarity for Water and against Environmental Harmful Effects (Cameroon)
50. Provincial Health Authority of Albay (Government of Philippines, supported by AusAid)
51. People in Need (Angola)
52. IWA (Mozambique)

Indicator 6 <i>Skills and competencies of # key individuals responsible for planning, managing, implementing and monitoring WASH programmes – especially women – developed and upgraded</i>		
Date	Event	Number of participants (of which women)
April 2014	MSc Students at LSHTM who conducted/are conducting research projects on WASH	6(6)
March 2014	Training of Trainers on Menstrual Hygiene Management Handbook at WASH Conference in Brisbane, conducted by Therese Mahon and Sue Cavill.	28 (18)
February 2014	Representatives of eight microfinance institutions and NGOs with microfinance experiences received intensive two-week training in market research for sanitation as part of SHARE funded Microfinance in sanitation project. The training was hosted by WaterAid Tanzania.	14 (10)
Feb 2014	Four Bangladeshi MSc students obtained the SHARE research Fellowship to continue their research in sanitation and hygiene.	4 (1)
Nov 2013	Sanitation Mapper training conducted to WaterAid Malawi	9 (0)
Sep 2013	Writing for WASH Course, organised by SHARE/RWS Tanzania (10-12 th September 2013)	17 (4)
June 2013	Sanitation Mapper training conducted to WaterAid Tanzania	12(3)
	TOTAL	90(42)

<p>OUTPUT 4: Capacity strengthened to conduct relevant collaborative research and apply the results</p>
<p>Indicator 1 <i>%of proposals ready for consideration on first submission</i></p>
<p>CALL C: Total number of proposals accepted for funding 7. Percentage of proposals with minor/no revisions 28.5% (n=2)</p> <p>Bangladesh CP: Total number of proposals accepted for funding 1. Percentage of proposals with minor/no revisions 0.</p> <p>India CP: Total number of proposals accepted for funding 4. Percentage of proposals with minor/no revisions 100% (n=4)</p> <p>Malawi CP: Total number of proposals accepted for funding 4. Percentage of proposals with minor/no revisions 50% (n=2)</p> <p>Tanzania CP: Total number of proposals accepted for funding 7. Percentage of proposals with minor/no revisions 100% (n=4)</p>
<p>Indicator 2 <i># of PhD students trained</i></p>
<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: Food hygiene intervention to improve food hygiene behaviours, and reduce food contamination in Nepal. • Prince Antwi-Agyei: 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. <p>MSc Students</p> <ul style="list-style-type: none"> • Lauren Browne: Faecal contamination of home-prepared infant feeding bottles collected from urban health clinic attendees in Guatemala • Mollie Miller-Petrie: Infant and young child faeces management and disposal practices and potential enabling products for their hygienic handling in Cambodia • Sian White (MSc Public Health in Developing Countries): Mapping Hygiene Behaviour and Manners: An Ethnographic Case Study in Nepal. • Francesca Gulliver (MSc Medical Parasitology): Use of night-soil in agriculture and the presence of soil transmitted helminths ova on farmer's hands in Ha Nam province, Vietnam. • Tessa Jean-Pierre (MSc Public Health in Developing Countries): Evaluating faecal hand contamination between intervention groups in Ngara, Tanzania. • Vivien Price (MSc Medical Microbiology): Wastewater-irrigation and produce hygiene status – a “farm to fork” evaluation of faecal contamination in Accra, Ghana

Indicator 3 <i># of exchange visits organised</i>
<ol style="list-style-type: none"> 1. <u>March 2014</u>: Professor Sandy Cairncross, SHARE research director, spent 1 month as Visiting Professor at the Federal University of Minas Gerais, Brazil. 2. <u>September-October 2013</u>: Rick Rheingans and Elisa Roma visit to Tanzania to manage SHARE evaluation of National Sanitation Campaign. 3. <u>September 2013</u>: Noah Schermbrucker from SDI Secretariat made an exchange visit to Malawi, collected documentation on a DEWATS system being finalised by the SDI affiliate in Lilongwe, and shared this information with the other affiliates involved in the SHARE City-Wide project.
Indicator 4: <i># of training courses organised (on research methods, management, etc.) annually</i>
<ol style="list-style-type: none"> 1. <u>March 2014</u>: training of trainers on Menstrual Hygiene Management at WASH conference in Brisbane (Australia) organised by WaterAid. 2. <u>February 2014</u>: Representatives of eight microfinance institutions and NGOs with microfinance experiences received intensive two-week training in market research for sanitation, hosted by WaterAid Tanzania. 3. <u>November 2013</u>: Sanitation Mapper training conducted to WaterAid Malawi 4. <u>September 2013</u>: three-day training course for WASH professional entitled "Writing for WASH" with WaterAid/RWSN. Dar Es Salaam, Tanzania. 5. <u>June 2013</u>: Sanitation Mapper training conducted to WaterAid Tanzania

OUTPUT 5 Effective management of the consortium, including M & E of impact and value for money
Indicator 1: <i>Monitoring; % of indicators assessed and reported annually</i>
88%
Indicator 2: <i>Value for money; wasteful expenditure on: - ineffective hygiene promotion, - unused latrines, and - superfluous evaluations avoided by following SHARE advice or implementing SHARE findings (£)</i>
£4.8 million estimated in December 2013. This figure to be updated in the final report.

Indicator 3:*Monitoring country research groups (platforms) and evaluation of activities**a) No. of local research management groups set up**b) £ value of research proposals submitted for funding and approved*

a) All research management groups have been set up in Bangladesh, Malawi and Tanzania and in India.

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

ANNEX C: OUTCOME MAPPING OF SHARE ACTIVITIES (JUNE 2013 – JUNE 2014)

SHARE Boundary Partners and Progress Markers		
Boundary partner	Outcome Challenge	Outputs
<p>National Governments # in the target Country Platforms</p> <p>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>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>Bangladesh:</p> <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. Love to See: 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. <p>Tanzania:</p> <p>Love to See</p> <ul style="list-style-type: none"> 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

		<p>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> <p>India:</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>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 Bank and a report covering next steps and action points to incorporate SHARE results into policy.
<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. 	<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.

	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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.
<p>National Research Institutes</p> <p>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>Like to See</p> <ul style="list-style-type: none"> • The National Institute for Medical Research (NIMR) in Tanzania is actively collaborating to the process evaluation of the National Sanitation campaign.
<p>GLOBAL LEVEL</p>		
<p>DFID</p> <p>SHARE expects to see DfID’s receptivity and awareness to sanitation and</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>Expect to see</p> <ul style="list-style-type: none"> • DFID contacted WaterAid to ask for guidance on disability in the WASH sector. • October 2013 - Lynne Featherstone (Parliamentary Under-Secretary of State for

<p>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>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> <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. 	<p>International Development) and Ade Adepitan (MBE, Paralympian and British television presenter) visit the Undoing Inequity project in Uganda.</p> <p>Love to see</p> <ul style="list-style-type: none"> • 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) recent 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>International funders</p> <p>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.
<p>UN Agencies</p> <p>SHARE intends to see the generation of advocacy and policy programmes to promote sanitation and hygiene and the development of a global</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>Expect to see</p> <ul style="list-style-type: none"> • WaterAid invited by UN women to present on inclusive WASH project. • UNICEF requested SHARE information on WASH and Gender violence Toolkit. <p>Love to See</p>

<p>network to intensify efforts towards the achievement of global sanitation and health for all.</p>	<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. 	<ul style="list-style-type: none"> • SHARE will provide a lecture series entitled “Evidence based WASH Policy and Practice” to UNICEF staff (from August 2014). This series of webinar draws on SHARE research findings.
<p>Academic institutions: 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 inclusive sanitation.</p> <p>Love to see Support, fund, or bid for new research efforts in the field of sanitation and hygiene.</p>	

ANNEX D: City-wide Sanitation Project Annual Review Report

RESEARCH REPORT

City-wide Sanitation Project

12 month Report

May 2013 - May 2014

Diana Mitlin, Gordon McGranahan and Anna Walnycki (IIED)

Noah Schermbrucker (SDI)

Project Overview

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

The project is working to develop this approach 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.

Overview of the Year

Progress and achievements

The previous year’s report covered the first 15 months of the citywide project and described information collection and partnership building with local authorities in the participating countries. The situational analyses reflect these activities and have now been published. Additional publicity for these reports has been provided through a blog on the SHARE website which was cross-posted on the SDI website (<http://www.sdinet.org/blog/2014/05/15/citywide-sanitation-projects-report-successes-firs/>).

Hard copies have also been sent to countries for direct dissemination at meetings and events.

This section now gives a general overview of the precedent setting activities that took place during this period and then provides a more specific overview of activities in each city.

Precedents: introduction and general issues

Year 2 is one in which project partners have implemented precedent setting sanitation projects in line with the data collected, partnerships built and insights gained through the situational analyses. Using this basis and drawing on the experience and rituals of federations a variety of precedents have now been constructed (or are under construction). 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 elections (Malawi, Zimbabwe) and planning procedures.

The precedents represent a variety of approaches including individual, shared, communal and public toilets (see below for country summaries). 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. In the medium to long term it may be associated with rent increases, which 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 the year this has been a very active discussion topic within SDI with blog posts (www.sdinet.org/blog/2014/04/23/new-options-needed-improved-access-sanitation-afri/ and www.sdinet.org/blog/2013/10/11/landlords-tenants-relationship-improving-sanitatio/)

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. A related issue has been the creation of new policies with respect to eco-sanitation. Despite these institutional challenges the four project partners continue to plan for and construct sanitation precedents with an exciting new focus on Decentralised Waste Treatment Systems (DEWATS) emerging in Malawi, Tanzania and Zimbabwe.

Partner meetings

The SDI affiliates, SDI Secretariat, IIED, and local government officials from the project countries have met twice between May 2013 and May 2014 to support local affiliates in their activities and share learning, opportunities and challenges around the citywide project. The first meeting was held in Kitwe, Zambia in September 2013 and focused on precedent preparations for the project partners. It also served as a key interaction for the Zambian affiliate to improve relationships with the local authority and utility. The second meeting took place in June 2014 in Chinhoyi, Zimbabwe. This meeting allowed affiliates to share progress around precedents and begin to formulate plans for citywide sanitation coverage. During the meeting a renewed focus on scalable and affordable solutions emerged with all project partners committing to scaling up existing precedents and fast tracking new communal options. The World Urban Forum in Medellin (Colombia, April 2014) also provided a venue for informal discussions as all the affiliates in SHARE were represented and presented together (see below).

The Zimbabwe meeting saw greater participation from local authorities with participation from Malawi and Tanzania in addition to Chinhoyi staff (with the mayor opening the meeting). A Namibian delegation participated in this meeting with a local authority official.

Precedents: city details

In Blantyre, Malawi the federation have initiated 3 precedents. Firstly 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). Eco-san toilets do not require water supply, avoid groundwater contamination and manure can be sold to generate income or used for urban agriculture. During this period, financed primarily through ADB capital, 293 eco-san toilets have been constructed in Blantyre assisting 3,296 people. The second precedent is the construction of 2 public toilets for which the Blantyre City Council has allocated land. The facilities will be located near a busy market and comprise of 10 rooms. They will be run as an enterprise with funds recovered the costs of capital investment. Construction is scheduled to begin within the next month having been delayed while plans

were approved. The third precedent will involve the construction of a DEWATS system in an informal area and this is currently in the planning and feasibility phase. Through the precedent projects 43 builders and 9 female contractors from the federation and community have been trained.

In addition the Malawian alliance prepared a DVD illustrating the sanitation conditions in informal areas across Blantyre and the power of community led data collection in planning appropriate and affordable precedents to increase coverage for the urban poor. In terms of citywide planning 30 informal settlements have been profiled and 10 have been enumerated while several communities have begun drawing up community strategic plans (including sanitation precedents) that the Blantyre City Council can support. Settlement planning is linked to a participatory budget that is being implemented by the Council and which will provide new opportunities for the realization of neighbourhood priorities.

In Dar es Salaam, three precedents have been undertaken. The first precedent is the construction of shared compound toilets. To date 18 toilets have been constructed in 3 settlements (Keko Machungwa, Karakata and Vingunguti) benefiting 514 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 federation's improving relationship with municipality. One Gulper team is already in operation and 3 new groups are being trained to use the technology. A detailed business plan for these enterprises is also being developed. It is intended that each team will be able to serve up to 30 households per month. Thirdly, the Tanzanian federation is carrying out a feasibility study of the rolling out of a DEWATS system in the Karakata informal settlement.

Capacity building through shared learning was used to support the precedents and involved the practical training of 55 technicians. An on-going citywide profiling exercise in Dar-es-Salaam is being deployed as a key information-gathering strategy in scaling up sanitation activities across the city. However the Tanzanian alliance needs to begin formulating a more comprehensive citywide plan for sanitation into which profile and enumeration data can feed. 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. Five such forums have been conducted to date (two in Temeke, two in Ilala and one in Kinondoni municipality).

In Kitwe, the opportunities to engage with the African Development Bank financed Nkana water project have proved to be difficult to manage. The Federation has supported their local members to build 25 eco-san toilets in Kawama and Mulenga compounds and seven more are under construction. Shared septic tanks (for between 2 and 5 households) were planned for the same areas however this has not proved to be feasible as those members ready to build have not been located close to each other. 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. 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.

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

Other SDI affiliates, including those present at the June 2014 meeting, have been supporting the Zambian team to reflect on their progress. There have been suggestions about the need to pursue new strategies to “unblock” the provision of land for public toilet construction in Mulenga compound, and engage more successfully with Nkana. If successful, this could offer both a potential scaling up of activities and a re-configuring of the institutional and political arrangements at a city level. The SDI network and share project partners will actively support the Kitwe federation over the coming period to encourage and facilitate this process.

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 negotiating to rebuild and manage a dilapidated council facility. The designs are now complete and the council is working on the final details including the bill of quantities.. The plan is to use council plumbers in the construction with community members providing unskilled labour. The designs have individualised cubicles maintained and managed by the families using them. Four families will 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 25 in various stages of construction.

The June 2014 meeting in Chinhoyi was an opportunity for the local federation and project partner to reflect on the scale and affordability of the precedents constructed to date. These reflections have opened the space for planning and discussions around two new possibilities: a DEWATS system and the rehabilitation of existing communal facilities in Shackleton (providing the challenge of water supply can be tackled.) The Chinhoyi federation realise that they will have to deepen their engagement with local authorities in order to pilot more scalable options and a meeting with the Chinhoyi City Council took place in June 2014 in which IIED, the SDI secretariat and other project partners participated. The idea of DEWATS is being considered for other areas in Zimbabwe (specifically Epworth) as a result of learning emerging from this project.

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.

For this period two further precedents have been identified in South Africa and Namibia for support through the SHARE project. In Namibia funds will contribute to community driven sewer and toilet installation in a number of settlements. Support has already been provided in Tsandi (<http://namibia-shackdwellers.blogspot.co.uk/search?q=tsandi>) which was reported in the Namibian Sun (19/01/2014). These toilets are linked to sewer lines and the activities both provided sanitation and trained community members to extend this work. The intention is that the remaining finance will be spent in Gobabis where there is a need to upgrade an informal settlement with 1000 households and a communal block in need of renovation. A joint federation NGO and council delegation from Gobabis participated in the meeting in Chinhoyi. In South Africa work will focus on the spatial re-organization of an informal settlement to prepare for a settlement wide sanitation upgrade. Documentation for both these projects is being prepared.

Other SHARE related documentation

SDI affiliates have used SHARE funds to complete two further studies. Greg Bachmayer (an Australian architect) has worked with the Ugandan affiliate to document their communal toilet blocks (both construction and management). This draws on the toilet block funded by this programme in Uganda in the first year. Sheela Patel has prepared a report on the work of the Indian Alliance and sanitation facilities. This report has a particular emphasis on communal toilet blocks. Greg's report is currently being prepared for printing. The report from India is being redrafted following a first round to comments.

Gordon McGranahan published a working paper that explores some of the challenges and opportunities linked to community-driven solutions to sanitation on low-income neighborhoods in a paper entitled: RESEARCH REPORT
Community-driven sanitation improvement in deprived urban neighborhoods: Meeting the challenges of local collective action, co-production, affordability and a trans-sectoral approach: <http://pubs.iied.org/pdfs/G03615.pdf>.

Other SHARE meetings and affiliate and non-affiliate engagements

Gordon McGranahan presented his paper on obstacles to scaling up sanitation provision at the International Conference on Urban Health (Manchester, March 2014).

The World Urban Forum included a three-hour training workshop to disseminate the work of SDI affiliates within SHARE more widely. This included presentations from both the SDI federations and NGO (for all of the four cities) and elaborated particularly on the sanitation mapping activities. The session was co-chaired by Diana Mitlin (IIED).

A meeting in Kenya (Isiolo, March 2014) with IIED staff involved in SHARE provided an

opportunity to explore sanitation strategies with the Kenyan SDI affiliate. The discussion covered both technologies (and resulted in the sharing of details of a new eco-sanitation design across the SDI network) and the need for scaling up the number of communal sanitation blocks.

There have been a number of discussions between WaterAid and IIED staff related to this work including city wide planning, sanitation mapping and most recently approaches to community-driven city-wide sanitation in the Global South in June. At the most recent event, Gordon McGranahan presented at a meeting of 20 staff on 17th June 2014.

Preparations are underway for two additional meetings. One at the Stockholm Water Week as part of a SHARE session with UNICEF on equity in access to water. And a second at the Royal Geographers Society annual conference which is themed around knowledge co-production, the Zimbabwean affiliate will present a paper on the co-production of knowledge by urban poor groups and local government, which reflects on work undertaken during the first year. More details will be provided in the third year report.

Challenges and disappointments

The challenge of going to scale: 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. During the most recent project meeting in Chinhoyi affiliates discussed the need to deepen partnerships for affordable technical solutions to sanitation. They reflected on the fact that they are well-placed to build on their strengths and address the social and in some instances political processes that can affect pro-poor city-wide solutions; for example the challenges linked to developing collective sanitation solutions, discussed below.

The need to avoid taking over the functions of local authorities but managing to achieve a genuinely co-productive relationships: Local governments have a duty to deliver affordable and appropriate sanitation solutions to all communities within their jurisdiction, including lower income settlements. Affiliates are keen to ensure that community participation in service delivery does not let local governments off the hook, and are pursuing practical commitments beyond rhetorical assurances to ensure that effective co-production partnerships are established,

Overcoming red tape: Some affiliates have experienced delays in the implementation of their precedents as they wait for local governments to approve work and access to land. In other instances such as in Dar es Salaam the density of some settlements means that there is an absolute lack of land, which has shaped the sorts of precedents that have been developed.

Pushing rhetorical commitment towards policy change: 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. 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. Meanwhile in communities and affiliates that have more landlords and land owners, there is more pressure for individual facilities that are often unaffordable to the poorest households.

How to provide access to sanitation for communities of renters: Shared toilets can provide an affordable solution to sanitation in low income neighbourhoods but they require management and/or loan repayments. This can present certain challenges in communities that are largely populated by rent-paying tenants who may not be willing to invest in the community where they don't have tenure security, or who may be more likely to leave if, for example, rental prices go up. This instability in the community can undermine the long term sustainability of the management and running of collective toilets.

Unforeseen increases in costs: Affiliates have worked hard to reduce the price of toilets, however these gains can be undermined by trained builders seeking to increase the cost of their technical support and increasing the price of the toilet. 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. For example, when the Tanzanian Federation completed the SHARE situation analysis in 2012, one bag of cement (50kg) was US\$ 8 and it now costs US\$ 10.

Local political instability: A high turnover of officials in local government has slowed the development and approval of precedents in some communities. The Zimbabwean affiliate in particular has been challenged by the replacement of three town clerks during year 2 of the programme.

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. They are looking to do this by engaging with local universities that have departments focussed on technology and innovation, and also by engaging with other SDI affiliates such as the Ugandan affiliate, or partners such as The Orangi Pilot Project to consider how they can advance and develop the precedents that are underway.

Context

National elections in Zimbabwe on July 31st 2013 meant that the operations of Dialogue on Shelter were limited during the run up, and that the following months were affected by some uncertainty as changes around the new presidential term were decided upon. ZanuPF now dominate the council in Chinhoyi and relations have been built again. The town clerk has recently changed (primarily for political reasons) but other senior staff remain in place.

Heavy rain has delayed construction in Dar es Salaam.

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.	Overview not published as individual reports plus project summaries of situational analysis were all produced in full. Sanitation mapping paper delayed due to Martin Mulenga's departure from IIED. Now being prepared for RGS-IBG conference (August 2014) with publication in April 2015. Obstacle analysis presented at ICUH and now being prepared for journal publication (actually two papers)
2. Design, assessment and ranking of precedent solutions	Precedents completed; 1000 hhs reached in each city.	Numbers to date: Malawi: 300 hhs (part financed by AfDB) Tanzania: 95 households Zambia: 46 hhs Zimbabwe: 92 hhs (part self-financed) Further no. of hhs when precedents fully completed: Malawi: 620 hhs (part financed by AfDB) Tanzania: 1080 hhs Zambia: 10 hhs plus 2000 market traders Zimbabwe: 245 hhs plus 300 market traders
	Precedent reports completed	An assessment framework was agreed at the end of year one. This has been used to do reporting on the precedents. Reporting is up to date for most affiliates with some additional reporting being agreed following the recent meeting in Zimbabwe.

3. Conceptualization of city-wide strategies	At least one MOU per city (with either council or utilities) (by end of year two)	Zimbabwe: signed October 2012
	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. Videos: completed for Malawi, under preparation for Zimbabwe, now agreed for Tanzania Presentations: ICUH (Manchester March 2014), WWW (Stockholm August 2014), RGS-IBG (London August 2014), Feacal Sludge Management (application underway 2015) Additional papers: Uganda (being prepared), India (in draft), South Africa (to come), Namibia (to come)
	Web reports on all research reports available end of year 1.5. Policy summaries available for overviews. Newspaper articles in all four cities. At least 10-15 downloads per month..	Situational analysis disseminated through the web. SHARE STAFF to add download details

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 (includes details of sanitation deficiencies in informal settlements) reports 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), being turned into two journal articles

Assessment framework for precedents	Completed last year by team members, being used internally for precedent analysis
Sanitation mapping paper	Being presented at RGS-IBG by Anna Walnychy and Zimbabwe SDI alliance, to be published as journal article in special issue of E&U in April 2015
Four city studies of precedents plus overview report (5 reports – 4 internal and 1 external)	Precedent reports by affiliates currently being completed, intention still to produce single overview report (Noah Schermbrucker and Anna Walnychy, SHARE working paper)
Four city-wide scaling up strategies plus overview study (5 reports)	To be drafted towards the end of the year and finalised at a meeting at the end of January. Plan to meet at end of January with the potential to shift this to the end of February if the no-cost extension for SHARE is accepted.
A paper showing the implications of these models for equity (gender, people with disabilities, age)	To be drafted for SHARE working paper. Diana Mitlin
Assessment of city-wide strategies (sustainable, affordable) being implemented – four city wide assessments plus overview (5 reports)	To be 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 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)	Being prepared for publication: Uganda Being redrafted following comments: India Two further working papers drawing on current work in South Africa and Namibia
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) To come: 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	Malawi completed

city	Zimbabwe underway Tanzania now being conceptualised
Training/teaching module for university students (relevant to all four locations): case studies with technical and financial details, book lists and key documents, survey and mapping data	Still being considered. Session on sanitation mapping planned for Dale Whittington's MOOC on water and sanitation (University of Manchester)
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	Blogs to date: SHARE/IIED (Gordon): sanitation marketing, SHARE/SDI (four situation analysis, cross posting) (15 May 2014) 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
Practice brief for community-led sanitation to be developed by communities after they consolidate their experience with relevant professionals	To come (Noah)
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	Planned journal articles: Obstacles paper – two Mapping paper Community toilets paper Equity paper

ANNEX E: Health impacts of sanitation

The use of randomised controlled trials (RCTs) to investigate the health impact of water supply, sanitation and hygiene (WASH) interventions has a short history. Until the late 1990s, they had usually been held to be financially unaffordable, logistically unmanageable and ethically inadmissible. Three major factors contributed to the increased interest in this study design. One was the trend toward evidence-based medicine, and the systematic reviews trying to synthesise that evidence, which tended to privilege the findings of randomised intervention studies over observational or quasi-experimental designs.

Second, within the WASH sector itself, a new type of intervention appeared on the scene. Household-based (also known as Point Of Use) water treatment by various technologies including filtering and disinfection by chlorine or by sunlight, could readily be subjected to an RCT at moderate expense, and researchers responded to this opportunity; within the space of a few years, more than 30 RCTs of POU treatment had been conducted. Many of these trials were conducted by epidemiologists from the US Center for Disease Control and Prevention, whose impeccable reputation is well-known. Much of their research into POU treatment involved disinfection with chlorine, and it was less well-known that it was funded by Procter & Gamble, manufacturers of chlorine products. Nevertheless, enthusiasm grew among the donor community for POU treatment, culminating in its ranking in the 2002 World Health Report (WHO 2002) as one of the most cost-effective of all environmental health interventions. The growing enthusiasm was largely fuelled by the RCTs, and a number of observers drew the obvious conclusion; RCTs of other WASH interventions, such as sanitation, might prove worthwhile advocacy tools, justifying their cost.

The third major factor was the advent of the Bill & Melinda Gates Foundation, with the impatience, hubris, centralised decision-making and lack of commitment to the conventional wisdom which are characteristic of a young funding organization, and enough resources to follow its own inclinations while leveraging substantial funds from other sources. Fifteen years ago, the Foundation had rejected a proposed initiative to promote handwashing with soap, rejecting “any initiative concerned with diarrhoea as an outcome” (Sally Stansfield, personal communication); but since 2006, when Bill Gates began to take a more active role in the running of the Foundation, sanitation has become an increasingly important part of its portfolio.

Recent trials

In recent years, the Foundation has also funded a number of studies of the health benefits of sanitation. Each study has involved several million US dollars of Foundation funding, and most of the studies are in the stage of reporting their main results, or are due to do so soon. They include the following four multimillion dollar projects.

1. The WASH Benefits study, led by the University of California at Berkeley. It is a longitudinal cohort study of more than 5,000 children aged 0 – 2 years in Kenya, plus a

similar cohort in Bangladesh and Kenya. Various interventions are involved, including water, sanitation and hygiene, and considerable creative ingenuity has gone into their development. Their allocation is randomised by cluster.

2. The SHINE project in Zimbabwe, is led by staff from the Johns Hopkins University and the Zimbabwe Ministry of Health. It aims to offer to individual newborn babies in a rural area a range of hygiene improvements, with a view to testing for the existence of a hypothesised condition known as “tropical enteropathy”, which contributes to stunting later in life.
3. The World Bank’s cluster randomised controlled trial of India’s total sanitation campaign in rural Madhya Pradesh. This has also involved staff from UC Berkeley, and has been conducted in 80 villages, enrolling a sample of 5,200 children, with the intervention aiming to be as similar as possible to the Indian Government’s rural sanitation programme.
4. The SHARE-supported trial of sanitation in rural Odisha (Orissa) State, India, which is led by staff from the London School of Hygiene & Tropical Medicine and designed to implement a similar sanitation intervention, implemented by NGO partners of WaterAid and allocated randomly among some 100 villages in Puri District.

These last two are mainly funded by the Bill & Melinda Gates Foundation, although the Odisha trial is also funded by 3ie. When there was a delay in confirming its funding, SHARE provided the necessary funds to enable the initial preparations to continue. By investing some £200k in this way, it leveraged roughly £10 million of other funding and ensured that the Odisha trial went ahead.

Both the Indian trials (3 and 4 above) are about to publish their principal outcome results in the next few weeks of mid-2014, in the journals PLoS Medicine and Lancet Global Health respectively. In both cases, they are disappointing.

In Odisha, the intervention increased latrine ownership from 9% to 63% in intervention villages, compared with an increase from 8% to 12% occurring in control villages. Only 38% of village-built latrines are fully functional, but 63% of households with any latrine reported using it. Among latrine-owning households, reported use was 21% by men, 98% by women and 21% by children. The intervention had no effect on diarrhoea among children under 5 years or among the population at large. The intention to treat analysis gave no evidence of reduced prevalence or egg counts of any of the locally-prevalent intestinal helminths, nor of a significant effect on nutritional status. Nor was there evidence that the intervention had affected the contamination of household drinking-water, hands, a sentinel toy, or the density of flies in food preparation areas.

In Madhya Pradesh, access to a household toilet was increased by the intervention to 41% of households, compared with 22% in the control group. It also led to a reduction in open defecation from 84% to 72% among adults, and from 89% to 84% among children under 5 years; in this case, the figures for men and women were similar. There was no measurable effect on any of the child health outcomes monitored (diarrhoea, gastro-enteritis, enteric parasite infections).

Discussion

The first point to make is that these trials are not comparable to most previous intervention studies in the literature. They are effectiveness trials of full-scale operational programmes rather than efficacy trials in which the researchers themselves implement the intervention in a few communities. The difference is analogous to that between trying out a vaccine in the schools of one district, and testing it on a handful of volunteers in a laboratory.

Second, researchers often choose the most promising setting in which to carry out their efficacy trials, but these two effectiveness trials were both conducted in rural India, which some would consider the most difficult place in the world to promote sanitation. Two thirds of all the people worldwide who regularly practise open defecation are in rural India. Moreover, Indian traditional hygiene rules are not only perverse in many cases, such as those preventing people of different castes from sharing a toilet, but also especially doggedly held as they are part of the mechanism which maintains inequality in Indian society.

As the exposure data confirm, the sanitation marketing programmes met with only very limited success, at least in comparison with the objective of achieving open defecation-free status. Indeed, given the very marginal improvements in latrine ownership and use, it would be surprising if a major difference in health status were to be found between the intervention and control groups.

Thus the results of the two trials do NOT tell us that low-cost on-site rural sanitation offers no health benefits; rather, they show how painfully difficult it is to implement a rural sanitation programme in rural India which aims at complete or nearly complete coverage. Existing systematic reviews mention the modest reductions in diarrhoea rate – typically around 30% – to be expected from a sanitation programme achieving 100% usage, and 0% open defecation.

Assuming that such benefits are proportionate to the proportion of people adopting hygienic sanitation practices, one could use the exposure data to predict the likely reductions in diarrhoea. Thus

$$DU = U \times D100$$

where

DU = Diarrhoea risk reduction associated with usage rate U, and

D100 = Diarrhoea risk reduction associated with 100% usage ~ 30%.

For example, a reduction of 6% in diarrhoea risk is to be expected from a 20% increase in usage. This would not be statistically significant in either of the Indian sanitation trials.

These studies, though expensive, have not been a waste of money; they help to re-focus attention on how to implement these complex interventions effectively, when too much emphasis went on the why. The recent success of the SuperAmmu intervention trial shows that significant, sustainable behaviour change can be achieved by interventions, which are well-conceived and well-resourced, even in rural India.

The findings also remind us that reductions in diarrhoea and helminth infections are not the only potential health benefits from sanitation. Note, for example, the astonishing gender difference in usage rates in the Odisha trial; 21% for men and children, but 98% for women! These data look like a wake-up call, drawing our attention to a serious shortage of security against gender-based violence. SHARE has documented similar problems in urban settings associated with communal toilet blocks, and that led to the WaterAid toolkit on GBV which was launched on 9 June 2014.

Because of the scale and cost of these studies, a number of smaller research projects can ride piggy-back on them, such as studies in Odisha, still under way, to distinguish faecal bacteria of human and animal origin using genomic methods and considering other related and potentially important behaviours such as disposal of child faeces. By providing a field research platform, the large studies have made the smaller ones viable.

ANNEX F: Water, sanitation and hygiene burden of disease

A personal account by Professor Sandy Cairncross, OBE.

Early involvement

Ever since the first effort to assess the Global Burden of Disease (GBD) and to apportion it between risk factors and potential control interventions, it has been marred by controversy. The first time round, consensus was imposed, rather than achieved, by the senior management of the World Health Organization and the World Bank. Mrs Brundtland, then Director-General of the WHO, appointed the instigator and leader of the initiative, Dr Chris Murray, as ADG.

When an update was mooted, roughly a decade later, it was therefore to be expected that a 'softly, softly' approach would be taken so as not to disturb the fragile agreements of different sectors to collaborate on this project, in spite of doubts about the methodology. At first, this appeared to be the case. For instance, child survival issues such as paediatric diarrhoea and pneumonia, and the GBD associated with deficient WASH in particular, were referred to an existing inter-agency advisory committee, the WHO/UNICEF Child Health Epidemiology Reference Group (CHERG).

As the CHERG member representing the WASH sector, I managed the systematic reviews to determine the association between water supply, sanitation and hygiene on one side, and diarrhoea morbidity on the other (Cairncross et al. 2010). I also showed in general terms how other data could be used to estimate the Burden of Disease associated globally, or in specific countries, with deficiencies in water supply, sanitation or hygiene. In 2009 I was invited to Seattle by the Institute of Health Metrics & Evaluation (IHME), which had been set up to coordinate the extensive GBD effort with Murray as Director and the Gates Foundation as principal funder. I was thanked for my Seattle presentation, and given to understand that having specified the methodology and the sources of the parameters to be used, my task was complete. When, therefore, I began to receive requests for further breakdowns of the estimates, I handed the responsibility to the Environmental Health Section in WHO Geneva, where a group led by Annette Pruess had managed the process very adroitly and diplomatically the first time around. The task was already in their work programme for the year, so I had no difficulty persuading them to take it on.

The rival estimates of the IHME

By mid-2010 the WHO team had produced new estimates which improved on the old ones and took account of the changes which occurred in the sector over the previous two decades. Then in 2012 Dr Murray visited Geneva and gave a preview presentation, offering an overview of the whole exercise. The figures for the WASH sector were summarised in only two slides, but it was clear that the new figures put the BoD associated with shortcomings in WASH at an order of magnitude less than the previous estimate. The work of Dr Pruess had been rejected without explanation or justification.

Dr Pruess asked for my help in establishing dialogue with the IHME. Raising the issue through contacts at the Gates Foundation proved fruitless. They had clearly invested so much in the IHME that they saw any criticism of it as an attack on the Foundation. Only when I sent a message to Murray through one of his closest collaborators on the first version, Professor Majid Ezzati, did I get replies to my e-mails. I corresponded for a while with Steve Lim of IHME, but never received answers to all my questions.

In December 2012 the new estimates were published in the *Lancet* and a two-day launch meeting held at the Royal Society in London. By now, it was becoming clear that researchers in other sectors were also unhappy with their interaction with IHME and with the final outcome, and Professor Charlotte Watts and I managed to include a short piece in the same issue of the *Lancet* (Watts & Cairncross 2012), stressing the need for more consultation.

Now that the estimates were published, it could be seen that unimproved water and sanitation, which accounted for an estimated 6.8% of disability adjusted life years (DALYs) in 1990 and 3.7% in 2000, was estimated to represent only 0.9% of the DALYs in 2010 (Lim et al. 2012). Among risk factors, the rank of unimproved sanitation fell from 15th to 26th and that of unimproved water from 22nd to 34th. One factor underlying this fall was the continuing decline in the global total of infant and child deaths from diarrhoeal diseases. However, the importance of several risk factors had also changed, and so had the counterfactuals – the hypothetical scenarios which served as a baseline of good environmental health with negligible diseases (Cairncross & Petach, 2013). The IHME's meta-analysis was not included in the published paper. Altogether, there were 11 such meta-analyses of environmental and behavioural risk factors which were not published and so had not been subject to peer review. The audience at the Royal Society were being asked to take the figures on trust – hardly the most convincing approach, considering the sceptical tradition of the Society's founders.

A number of donor agencies began to ask whether the new estimates had implications for the amount of their investments in the WASH sector. The Swiss Development Cooperation hired a consultant to report on the issues, who visited London to interview informants. A senior health advisor at USAID quizzed me at some length about the reasons for the new numbers, and their implications for policy. We then published our conclusions (Cairncross & Petach, 2013).

In the middle of 2013, the IHME finally published what at first appeared to be the missing meta-analysis, but on closer inspection turned out to be only an abstract of it. By then, however a far more open and collegial process using meta-regression, led by the WHO and supported by SHARE and many researchers around the world, was under way. The results were recently published in a series of articles in the peer-reviewed journal *Tropical Medicine & Tropical Health* (Clasen et al, 2014; Freeman et al, 2014; Bain et al, 2014; Wolf et al, 2014; Pruss-Ustun et al, 2014). As the work on this 'open source' set of estimates advanced, the IHME became keener to see its results.

In 2014, the Bill & Melinda Gates Foundation seems to have discovered that there was a problem at the IHME, located about 500m from their head office, and requested Professor

Peter Piot, Director of the LSHTM, to convene and to chair an Advisory Group. At its first meeting in May 2014, more anomalies began to emerge. For example, one of the most prominent risk factors listed in the GBD report is the absence of nuts in the diet. This surprising finding appears to be based on a single study, which was funded by the California nut growers' association! Further developments are awaited.

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