



Synthesis Report 2010–2015

Foreword

High quality research plays a vital role in supporting the UK Department for International Development's work to end extreme poverty. It is essential for improving our understanding of key development questions and ascertaining what approaches and interventions are the most effective in each setting. A strong evidence-base provides us with the information we need to make informed policy choices and design strong programmes.

The Sanitation and Hygiene Applied Research for Equity (SHARE) consortium was established in 2010 with exactly this purpose in mind: to contribute to achieving universal access to effective, sustainable and equitable sanitation and hygiene through generating evidence and supporting its use by policy-makers and practitioners.

Over the last five years, SHARE has convened sector partners to identify critical research questions and knowledge gaps constraining progress on sanitation and hygiene, synthesised existing knowledge or generated new information to address those gaps, and worked with policy makers, practitioners, and communities to use that information to deliver more effective policy and practice.

This pioneering approach has been extremely successful: delivering evidence that has improved access to sanitation and hygiene for at least 15 million people worldwide.

This publication presents some of SHARE's key successes achieved over the last five years. Case studies are used to: illustrate the breadth of WASH-related issues explored by SHARE researchers; demonstrate that with a concerted effort, rigorous and relevant academic and operational research can influence policy and practice and thus improve the lives of the poorest worldwide; and to inspire others working in similar consortia. Beyond the work included here, there is a wider body of SHARE research, capacity building and uptake activities which is captured on the SHARE website.

I congratulate all those who have contributed to SHARE's activities thus far and wish share every success as it scales up its innovations in the coming three years. I am confident that the SHARE consortium will continue to contribute to much-needed progress towards the Global Goal for Sustainable Development of ensuring availability and sustainable management of water and sanitation for all by 2030.



Professor Tim Wheeler

Deputy Chief Scientific Adviser,
UK Department for International Development

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Acronyms

DFID Department for International Development

HWWS Handwashing with soap

LSHTM London School of Hygiene & Tropical Medicine

MHM Menstrual hygiene management

MNH Maternal and newborn health

RMNH Reproductive, maternal and newborn health

SHARE Sanitation and Hygiene Applied Research for Equity

UNICEF United Nations International Children's Emergency Fund

WEDC Water, Engineering and Development Centre

WASH Water, sanitation and hygiene

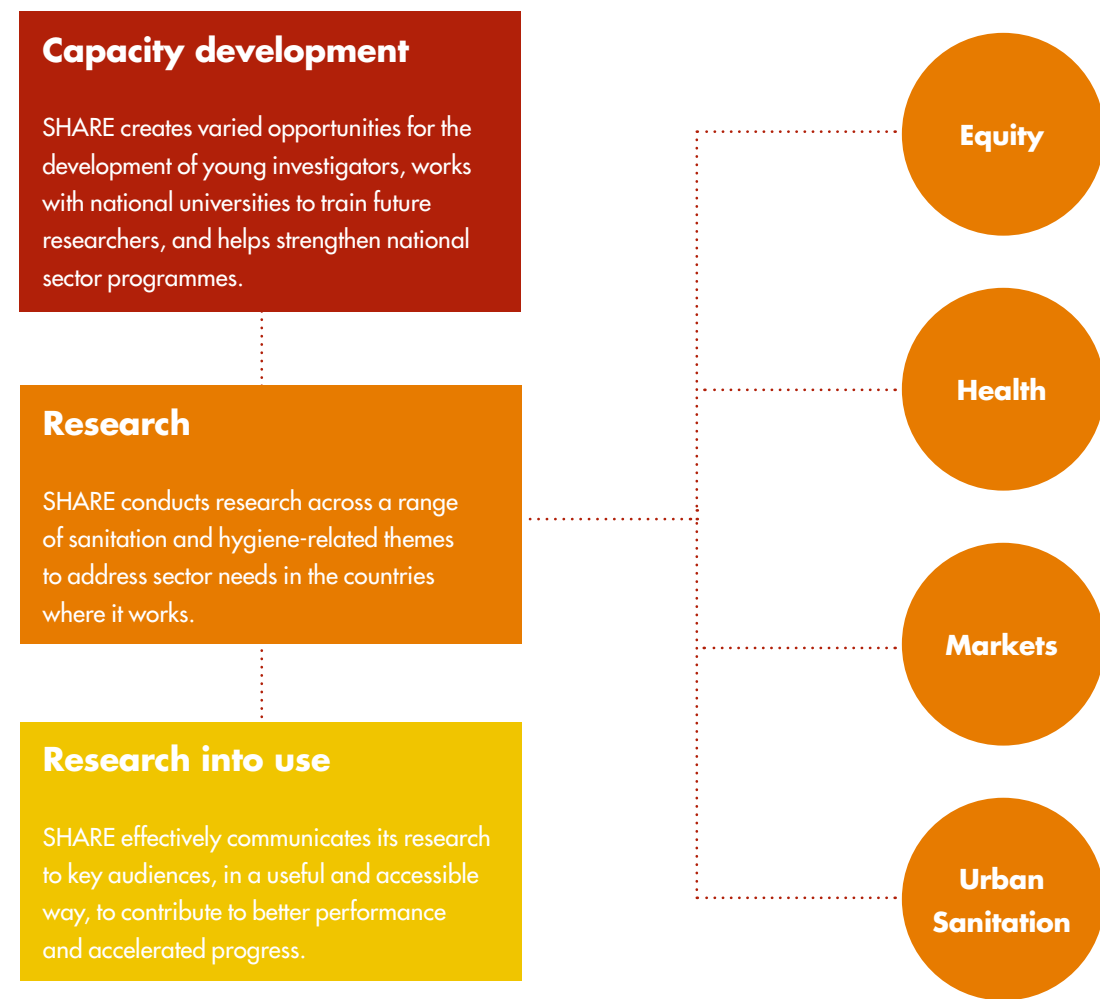
WSSCC Water Supply & Sanitation Collaborative Council

About SHARE

Building knowledge. Improving the WASH sector.

The SHARE consortium contributes to achieving universal access to effective, sustainable and equitable sanitation and hygiene by generating, synthesising and translating evidence to improve policy and practice worldwide.

SHARE activities

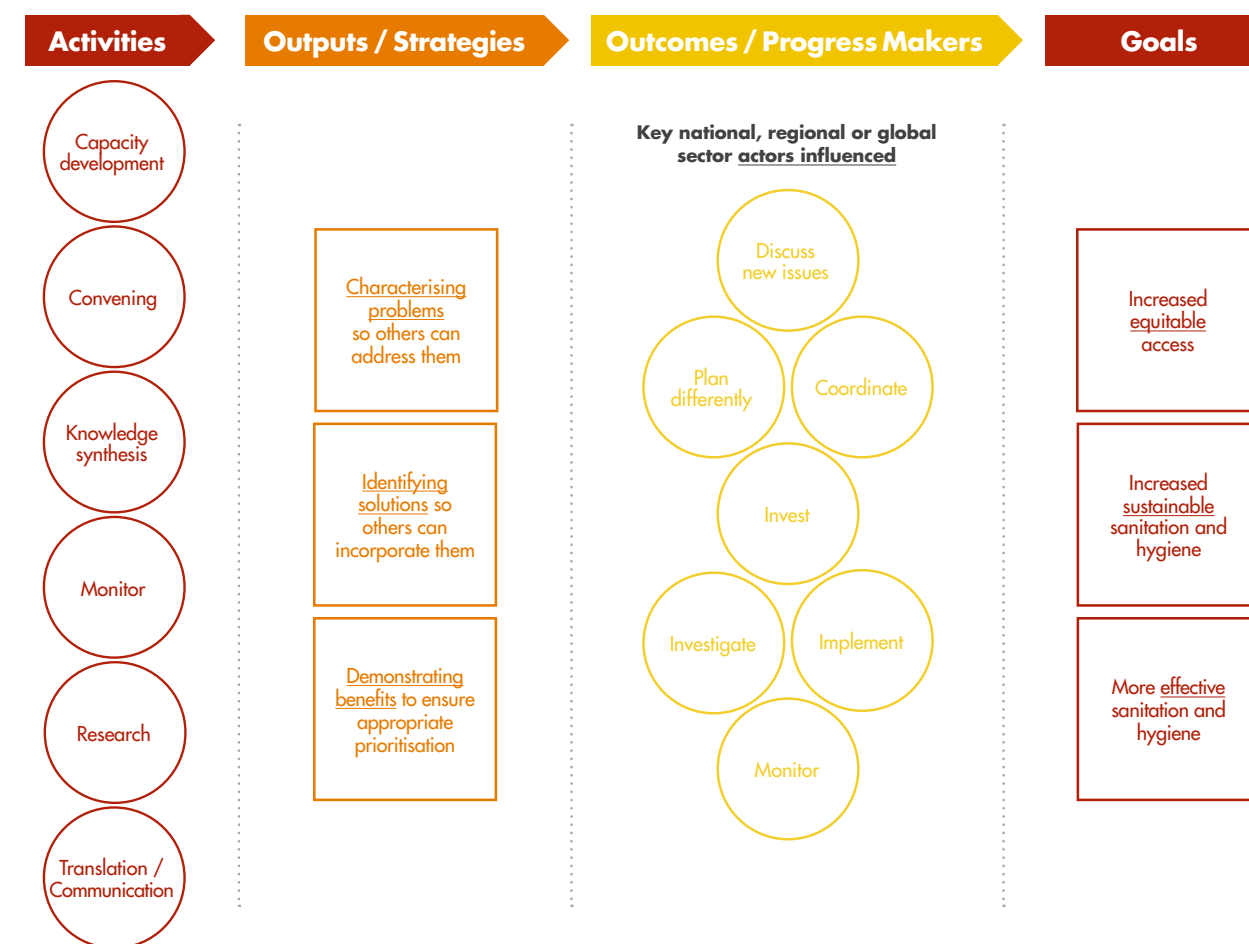


A dynamic partnership

Led by LSHTM, SHARE’s first phase of work (2010–2015) was delivered through a one-of-a-kind combination of distinguished partners from well-regarded practitioner organisations and academic institutions working on public health – the International Centre for Diarrhoeal Disease Control, Bangladesh, the International Institute for Environment and Development, Shack/Slum Dwellers International, and WaterAid – and funded by UK DFID. This unique partnership was formed to ensure relevant and rigorous research.

Theory of change

SHARE’s work is guided by its Theory of Change which outlines the change SHARE intends its research to effect (goals), how this change will be attained (activities), and how progress will be assessed along the way (progress markers).



Where we work

Between 2010 and 2015, SHARE focused the majority of its work in four countries: Bangladesh, India, Malawi and Tanzania. However, to respond to global evidence gaps, SHARE’s geographical coverage expanded over the five years as illustrated by this map.



Read more

For more information about where we work please see:

bit.ly/SHAREmap

SHARE's impact

Since 2010, in the countries where SHARE works 17 million people have been reached with improved sanitation and 459,000 fewer children under the age of five have died. SHARE has contributed to these global improvements in sanitation and hygiene access by influencing the way national and global sector partners' plan, implement and monitor sanitation and hygiene programmes.



17 million

People with improved sanitation



459,000

Fewer child deaths



£79 million

Leveraged through other WASH investments



£4.1 million

Leveraged for additional research



669

Citations of SHARE research by other authors



80

Manuals, handbooks and resource materials



60

Publications in peer-reviewed journals (119 female authors)



52

Knowledge sharing events



29

Requests for technical support to implement implications of SHARE research



26

Training courses



25

Programmes embodying SHARE findings

WASH, violence and sanitation-related psychosocial stress

Lack of access to safe sanitation facilities infringes on women's dignity and puts them at risk of violence. When forced to defecate in the open or use an unsafe facility women lack privacy and face feelings of shame, and become vulnerable to violence and sexual assault. Beyond the physical impacts, violence can have long-term psychological impacts associated with harassment, bullying, discrimination or marginalisation, and psychosocial impacts, associated with the fear of these threats.

SHARE has made a significant contribution to advancing the knowledge base on this important topic. In 2011, studies shed light on the experiences of women from slums in India and Uganda. Women reported intense feelings of shame and stigma associated with going to the toilet, and expressed fear of rape and violence when using sanitation facilities or defecating in the open.

SHARE and WSSCC also funded research in India to explore the negative impact of WASH on the psychosocial stress levels of women and girls. One study found that during the course of sanitation-related activities women encountered environmental, social and sexual stressors, the intensity

of which were modified by the woman's life stage, living environment and access to sanitation facilities. The study also developed an innovative tool to quantify sanitation-related psychosocial stress.

In response to this problem, in 2013, SHARE and 28 development and humanitarian organisations co-published the 'Violence, Gender and WASH Practitioner's Toolkit' which presents best practice for responding to and protecting individuals against WASH-related violence throughout all aspects of policy and programming.

Research dissemination efforts have seen these findings and guidelines widely taken up. For example, the toolkit has been referenced as a useful tool in the UN Secretary General's 2015 'Girl Child' report and on the Global WASH Cluster 'WASH Minimum Commitments for the Safety and Dignity of Affected People' website, and fed into and is referenced in the Inter-Agency Standing Committee's 2015 Guidelines for Integrating Gender-based Violence Interventions in Humanitarian Action. It is being used widely by international agencies and practitioner organisations and in trainings in 10 countries.



© Lakshmi Anantnarayan

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Women experience discomfort, inconvenience and fear going about their daily WASH needs. Denial of these basic human rights is a denial of life itself. I hope this research informs policy and practice, replacing this drudgery with dignified WASH.

– Archana Patkar, Programme Manager, WSSCC

Read more

For detailed references and more related resources and publications, please visit:

–
bit.ly/ps-stress
bit.ly/WASH-viol

WASH and reproductive, maternal and newborn health

Improving RMNH in low-income settings requires further understanding of WASH conditions in health facilities and the impact of poor WASH on MHM.

SHARE advanced the knowledge base, through a systematic review exploring the health and social effects of MHM, and studies in Bangladesh and Malawi investigating MHM practices of and challenges faced by girls in schools. The review found a plausible health effect from poor MHM, and informed an innovative case-control study in India examining the impact of MHM practice on urogenital infections. This study concluded that interventions that ensure women have access to private facilities with water and educate women about safer, low-cost MHM materials could reduce urogenital disease among women.

In 2012, SHARE and WaterAid funded a first-of-a-kind manual, 'Menstrual Hygiene Matters', co-published by 18 organisations, which brings together practical experiences on MHM from across the WASH, health, education and gender sectors, and from development and humanitarian settings.

SHARE has explored the linkages between WASH and maternal health and evaluated existing evidence on the impact on maternal mortality through a systematic review and conceptual framework. Poor

household sanitation was found to increase the possibility of women dying from maternal causes three-fold. Further analysis showed strikingly low levels of WASH coverage in birth settings in Tanzania. Finally, co-funded studies developed tools to perform a 'situation analysis' and 'needs assessment' of maternity units' WASH and infection prevention and control in Tanzania, India (WASH & CLEAN), and – through leveraged funding from Soapbox Collaborative – Bangladesh. SHARE also funded another first-of-its-kind study that demonstrated an association between sanitation and adverse pregnancy outcomes.

Findings from the work have been shared widely and have influenced policy, practice and research. Examples include: informing a trial on menstrual hygiene and safe male circumcision promotion in Ugandan schools; a training guide for practitioners being developed from the Menstrual Hygiene Matters manual; WASH & CLEAN being taken up at state level in Gujarat (India) and shaping Ministry of Health action plans in Zanzibar; feeding into the 2015 WHO and UNICEF 'WASH in Health Care Facilities' report and global action plan; and shaping SHARE's submission to the Zero Draft UN Global Strategy for Maternal, Newborn, Adolescent and Child Health.

Read more

For detailed references and more related resources and publications, please visit:

–
bit.ly/WASH-MNH
bit.ly/WASH-MHM

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The practical focus of the toolkit and the way it has been written in a clear language to help WASH practitioners easily understand the issues, is very much appreciated.

– Toolkit launch event attendee



© WaterAid / Tara Todras-Whitehill

Inclusive WASH

People who are disabled or chronically ill face unique challenges when accessing WASH services. Some challenges are environmental, such as facilities being located in hard to reach areas or not being appropriately designed, while others are attitudinal, stemming from experiences of stigma and social exclusion. Both can be seen at community and institutional levels.

While it is becoming increasingly recognised that issues of disability in WASH have historically been neglected, little is known about how to overcome this inequity and marginalisation. In order to better understand disabled and chronically ill people's experiences of WASH access and the associated impacts on the individual and wider community, SHARE funded studies on 'Undoing Inequity' in Uganda and Zambia. A collaboration between WaterAid, WEDC, and Leonard Cheshire Disability, the project engaged communities to design and test cost-effective and inclusive WASH solutions.

The project has seen great success. In policy, its findings informed the International

Development Select Committee's recommendations on disability in development, which were in turn taken up by DFID in their Disability Framework. In practice, tools developed during the project are being used by key sector actors. For example, WaterAid, Water and Sanitation for the Urban Poor, and the Rural Water Supply Network have all used the barrier analysis tool in either programme planning, monitoring, or training. Additionally, a 'Compendium of Accessible WASH Technologies' comprising of simple and practical guidance for WASH practitioners working with households in rural sub-Saharan Africa has been published and well-received, with sector actors using it in their responses to the Nepal earthquake in 2015, and WaterAid India and India's Ministry of Drinking Water and Sanitation using it to formulate a Handbook on Accessible Sanitation. In research, the end-line tools developed by the project are being used in the AU\$ 1 million Australian AID-funded study by LSHTM on inclusive WASH in Malawi.

Read more

For detailed references and more related resources and publications, please visit:

bit.ly/u-inequity

Behaviour change via Behaviour Centred Design

Handwashing with soap is one of the most cost-effective ways to prevent disease and unnecessary death. Yet, many people, particularly those that live in high-risk environments, fail to practise adequate hand hygiene. Recent studies have highlighted that knowledge of the benefits of handwashing alone does not typically improve handwashing practices.

In support of this, SHARE funded the development of the 'Choose Soap' toolkit, an innovative approach to HWWS behaviour change. The toolkit was based on years of research into the drivers of hand hygiene and current best practices for effective behaviour change. Following the development of the tool in 2010, it was successfully adapted and trialled in a rural Indian context.

Its success led to SHARE and the Wellcome Trust supporting the testing of a new and radical approach to HWWS behaviour change in seven Indian villages in 2011 called 'Behaviour Centred Design'. This theory-based approach identifies levers of behaviour change. Following the identification of disgust, nurture, and affiliation as key levers

of behaviour change in the Indian villages, a creative agency developed a targeted campaign called 'SuperAmma'. A trial showed HWWS rose to 37% post campaign, six times higher than control villages, and was sustained at follow up. A process evaluation also showed major changes in perceived norms about handwashing.

This pioneering approach, and the various associated training sessions delivered, has sparked renewed interest in WASH and behaviour change. Today, 'Behaviour Centred Design' is being replicated in Nigeria at national scale by WSSCC. Its adaptability is also seeing it used in Indonesia in the context of maternal health and infant feeding, and in Zambia to target diarrhoeal disease related behaviours. Its success and reach have seen the approach featured as a success story in USAID's ministerial event on ending preventable child and maternal deaths, and become a recipient of the first-ever Elsevier Atlas Award recognising the approach's potential to significantly impact people's lives around the world.

Read more

For detailed references and more related resources and publications, please visit:

bit.ly/b-change
www.choosesoap.org
www.superamma.org

“

The Undoing Inequity project is influencing UNICEF's WASH and disabilities programming globally.

– Sanjay Wijesekera, Chief, Water, Sanitation and Hygiene, UNICEF



© WaterAid / Guilhem Alandry

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The 'SuperAmma' research was bestowed the award because as it nicely demonstrates the effectiveness of well-conceived and targeted health promotion campaigns to significantly improve health conditions at a local and possibly global level.

– Paul-André Genest, Publisher at Elsevier and Project Manager of the Elsevier Atlas Award



© WaterAid / Poulomi Basu

Vaccination and hygiene promotion

Vaccination has long been deemed to be amongst the most successful and cost effective public health interventions, greatly reducing the global burden of communicable disease. Despite the potential for disease control, critical childhood oral vaccinations appear to perform less well in low-income settings compared to high-income settings. One hypothesised explanation for this is that chronic enteric infection, the result of exposure to faecal matter and pathogens, reduces the oral vaccine.

A SHARE-funded study in Zimbabwe – part of the SHINE trial – aims to provide rigorous evidence to substantiate this plausible hypothesis. The study, results for which will be available by end 2016, aims to better understand why the polio vaccine is less immunogenic when given to children in developing countries compared to children in developed countries.

Irrespective of the benefits for vaccine performance, routine immunisation campaigns may be a useful entry point for promoting safe hygiene among caregivers for young children.

In 2012, an exploratory study in Nepal, conducted by WaterAid and LSHTM and co-supported by SHARE, revealed the acceptability and feasibility of incorporating hygiene promotion into vaccinations programmes.

Since the study, WaterAid has taken this work forward in partnership with Nepal's Ministry of Health and Population. A first of its kind pilot project integrating hygiene promotion into the national routine immunisation programme is currently underway across four districts. If successful, the approach will be scaled up nationally, and will offer valuable lessons to national and global immunisation policy.



© CDC Global Flickr / CC



© WaterAid / Nepal

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We had not thought of integrating WASH into vaccination programmes; this is a missed opportunity.

– Ministry of Health and Population representative

Read more

For detailed references and more related resources and publications, please visit:

– bit.ly/WASH-vac

Complementary food hygiene and nutrition

The World Health Organization estimates 45% of all child deaths to be related to malnutrition. Malnourished children are more likely to get, and die from infections. Children that survive chronic malnutrition suffer from irreversible effects to their cognitive, physical, social, and emotional development.

Poor WASH significantly contributes to the global burden of child malnutrition. WASH-related infections such as diarrhoea, schistosomiasis, soil-transmitted infections, and environmental enteric dysfunction negatively impact a child's nutritional status, and are highly prevalent among children in low-income settings.

Despite clear links, there has long been little progress bringing together WASH, nutrition, and health sectors in research and practice. In 2011, SHARE supported a Cochrane Review to systematically evaluate the strength of evidence linking WASH interventions with childhood nutritional status. This first of its kind study produced a synthesis of current evidence which revealed the link. Implications for policy and practice and research priorities and gaps were

identified. The findings were incorporated into a training series for UNICEF staff, supported combined WASH for health and nutrition interventions, and stimulated further research on the topic globally.

Poor complementary food hygiene has also been overlooked in consideration of child exposure to WASH-related diseases. Prior to SHARE funding applied research studies in Bangladesh, Nepal, and the Gambia, there was a lack of robust evidence on food hygiene in low-income settings. These studies demonstrated the ability of simple and affordable behavioural food hygiene interventions to significantly reduce exposure to pathogens transmitted through complementary foods, learnings which are already influencing policy and practice globally. For example, in Nepal efforts to incorporate food hygiene into national programming are underway. For SHARE, the next step in this series will be to specifically test the impact of food hygiene interventions on child health and nutrition outcomes.

Read more

For detailed references and more related resources and publications, please visit:

– bit.ly/comp-fh

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I was about to feed my child but he became angry and told me “I won't eat anything without putting on the baby bib”... I never forgot to put it on afterwards. The baby bib has a message called ‘Did you wash your hands before feeding me?’

– Participating mother from Nepal food hygiene intervention



© WaterAid / Eliza Deacon

Developing sector capacity

As part of SHARE's commitment to developing capacity in the WASH sector, SHARE has supported over 25 Masters students and six Doctoral students from low-income countries to conduct research in the field of sanitation and hygiene.



Richard Chunga

Modelling Household Sanitation Technology Choices in Peri-urban Areas in Blantyre and Lilongwe, Malawi: A Revealed Preference Approach



Parimita Routray

Gender and Sanitation in Orissa, India: Implications for Intervention Strategies



Sheillah Simiyu

Socio-economic Dynamics of Sanitation in Informal Settlements of Kisumu City, Kenya



Tarique Md Nurul Huda

Role of Sanitation in Preventing Contamination of the Domestic Environment and Protecting Health, Bangladesh



Prince Antwi-Agyei

Wastewater Use in Urban Agriculture in Ghana: An Exposure and Risk Assessment in Accra, Ghana. Supervised by Dr Jeroen Ensink

While there are clear benefits to using wastewater for agriculture, little is known about the risks to human health and the environment. Prince started a SHARE-funded PhD on the use of wastewater in agriculture at LSHTM in 2011. Within this context, his research aimed to identify key risk factors for produce contamination. His results revealed wastewater use for irrigation as a risk factor, but only one of several, and that hygiene improve-

ments are needed across a broad front for international standards to be met.

Before coming to the UK from Ghana, Prince was a WASH engineer for over seven years. Since successfully defending his PhD dissertation in April 2015, he has been working at SHARE/LSHTM on the evaluation of Tanzania's National Sanitation Programme. As an expert in his field, he is also a reviewer for two WASH journals.

“

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



Om Prasad Gautam

Food Hygiene Intervention to Improve Food Hygiene Behaviours, Reduce Food Contamination and Diarrhoeal Diseases Burden in Nepal. Supervised by Dr Val Curtis

Despite being easily prevented, food-borne diseases remain a major source of illness worldwide. Om started a SHARE-funded PhD on food hygiene at LSHTM in 2011. Following formative research into the food hygiene practices of mothers in rural Nepal, Om designed, delivered, and evaluated an intervention using a Behaviour Centred Design approach at district scale. Post-intervention, behaviours improved and food con-

tamination levels were significantly reduced.

Before coming to the UK from Nepal, Om worked as a public health professional for over ten years. Since successfully defending his PhD dissertation in April 2015 he has been working at WaterAid UK as the Technical Support Manager for Hygiene. As an expert in his field, he has also been invited to serve as an independent reviewer for international peer-reviewed journals.

“

Through my studies I have deepened my research capacity, skills, and knowledge, and am now able to successfully design, implement, and evaluate rigorous research and behaviour change intervention projects and programmes.

What next for SHARE?

The successes of SHARE to date, coupled with the potential to build on lessons learned and to use established networks, systems and research teams, resulted in the consortium being granted an extension to 2018. SHARE’s second phase of work has three objectives:

1

Capitalise on research insights from existing work in order to maximise value for money and support scaling-up

2

Scale-up results through targeted work with key sector actors

3

Strengthen the capacity for sustained global sanitation and hygiene research by southern researchers and institutions

SHARE activities will continue to focus on research, research into use and capacity development, as it draws on lessons learned to support the continued development of national research programmes in Kenya, Malawi, Tanzania and Zambia.



SHARE will now work solely in sub-Saharan Africa, building on the foundations laid in Malawi and Tanzania, and drawing on new strategic partnerships. SHARE will collaborate with four partners – one from each country where it will work: the Centre for Infectious Disease Research in Zambia; the Great Lakes University of Kisumu in Kenya; the Mwanza Intervention Trials Unit in Tanzania, and the Malawi Epidemiology and Intervention Research Unit at the Polytechnic of the University of Malawi.



For this extension period, SHARE’s focus will be on the following four global thematic areas.



WASH and complementary food hygiene



WASH and pro-poor urban sanitation



WASH and routine immunisation



WASH and undernutrition

Building knowledge. Improving the WASH Sector.

The Sanitation and Hygiene Applied Research for Equity (SHARE) consortium seeks to contribute to achieving universal access to effective, sustainable and equitable sanitation and hygiene by generating, synthesising and translating evidence to improve policy and practice worldwide. Working with partners in sub-Saharan Africa and Asia, two regions with historically low levels of sanitation, SHARE conducts high quality and rigorous research and places great emphasis on capacity development and research uptake.

www.shareresearch.org

 @SHAREresearch

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Partners



SHARE's successes to date could not have been achieved without the immense contribution and dedication of Dr Jeroen Ensink, SHARE Capacity Director and Senior Lecturer in Public Health Engineering at LSHTM, who sadly passed away on 29th December 2015. Jeroen worked tirelessly with SHARE partners to support the development of early and mid-career scientists and to expand the capacity of research institutions to effectively conduct and disseminate their research. He will be deeply missed by all who knew and worked with him and SHARE will endeavour to continue his legacy through its capacity development activities. We dedicate this report to him; our colleague, our friend.