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WASH Field Note March 2016

WASH Programming in Urban Areas and Small Towns: Lessons from Zimbabwe's Emergency Rehabilitation and Risk Reduction Programme (ER&RR)

INTRODUCTION

This Field Note presents the learning from the UNICEF-managed Emergency Rehabilitation and Risk Reduction Programme (ER&RR) and the subsequent Small Towns WASH Programme (STWP). The ER&RR programme was designed in response to the cholera epidemic of 2008-2009 which resulted in more than 98,000 cases and approximately 4,300 deaths; major contributing factors to the cholera outbreak included deteriorating water, sanitation and hygiene (WASH) services, following more than a decade of low WASH investment, lack of maintenance and skills flight combined with economic crisis characterized by hyperinflation and a dysfunctional health service.

The ER&RR programme was intended to address the underlying WASH-related causes of the epidemic. The programme was conceived as a multi-donor emergency funding mechanism[1]. While the initial phase focused on quick wins to restore water production (water trucking and borehole drilling, hygiene kits, water treatment chemicals and tablets), most systems were still in a dire situation due to lack of resources for replacement, operation and maintenance (O&M) and expansion.

With a transition towards recovery and development, the ER&RR subsequently expanded to include rehabilitation of water and sanitation systems in 10 towns[2] (mostly focused on

KEY POINTS

- ***UNICEF is not usually involved in large-scale rehabilitation of urban infrastructure. But a unique combination of factors – political crisis, economic collapse, extensive but decaying urban infrastructure and a cholera epidemic – drew UNICEF into an unusual role as a 'provider of last resort'.***
- ***Replicating rural models in urban areas – an intervention dubbed 'rural solutions to urban problems' - would not be enough. Thus, UNICEF Zimbabwe had to rapidly increase its capacity in urban work.***
- ***An approach to urban programming developed that involved the coordination of all major urban WASH actors in Zimbabwe, including the Government of Zimbabwe, bilateral cooperation agencies (such as GIZ), multilaterals (such as AfDB and World Bank), UN (UNICEF), NGOs and Civil Society and evolved in a way that each actor, according to its particular institutional perspective and strengths, contributed to the 'model', based on the principles of rehabilitation, community mobilization and institutional strengthening.***
- ***Over time, the implementation modalities evolved, moving from 'quick wins' through implementing partners (such as NGOs) towards more robust contracting modalities involving international and national consulting firms and contractors.***

1 In total the ER&RR mobilized over US$ 40 million, received in batches from 2009 to 2012. The main contributors to this fund were: Australia, UK, ECHO, Belgium, UNOCHA, Spain, Korea
2 Bindura, Bulawayo, Chegutu. Chipinge, Harare, Karoi, Masvingo, Rusape, Shurugwi and Zvishavane,

electromechanical rehabilitation), and later on continued with the development and implementation of a complete package of interventions (i.e. hardware, software and institutional capacity building) which was implemented in seven towns under the last phase of the ER&RR[3]. Transitioning from the ER&RR to the current STWP, an additional seven towns have been included so that a total of 14 towns are receiving a complete package under the STWP.

This Field Note documents the experiences of this programme to date, and draws lessons for urban programming.

ZIMBABWE'S WATER AND SANITATION SECTOR

In the 1980s and 1990s Zimbabwe had almost 100% urban WASH coverage, with relatively high service levels (house connections for water and flush toilets to sewers for sanitation). However, in the late 1990s, political and economic crisis meant the Zimbabwean dollar collapsed and, by 2008, five million people needed emergency food assistance.

The collapse of the Zimbabwean dollar meant that WASH service providers, such as Town Councils and the Zimbabwe National Water Authority (ZINWA), lacked foreign exchange, which severely limited the supply of spare parts and chemicals. General distrust between residents and local authorities led to low willingness to pay (compounded by the economic crisis). As revenue from tariffs (from industry and households) declined, urban councils were unable to generate sufficient revenue to provide services. There was minimal/no central government budget allocation: local and national governments were unable to borrow due to arrears on existing loans and because lending agencies ceased operations. Many trained staff left their posts to find opportunities elsewhere, often out of the country. The private sector, already limited in terms of experiences in undertaking significant water and sanitation works was also greatly affected by the economic crisis with reduced financial capacity for rehabilitation works. Operation and maintenance suffered, and under-investment for expansion of systems meant that infrastructure became insufficient for the needs of an ever-increasing urban population.

As a result, the reliability of the water supply system was compromised: water systems were no longer able to supply safe water and forced residents to look for alternative sources (usually unsafe). In addition, low sewage flows resulted in blocked sewers leading to raw sewage running open through the streets in residential areas. Coupled with a parallel decline in health services, the lack of safe water and basic sanitation led to the cholera epidemic that started in August 2008, resulting in more than 98,000 cases and claiming 4,300 lives by June 2009.

Bindura. sewage treatment ponds

3 Bindura, Chipinge, Chiredzi, Karoi,Plumtree, Rusape and Shurugwi

DESCRIPTION OF INTERVENTION

The goal of the ER&RR Programme was the reduction in cholera risk and other WASH related diseases amongst the most vulnerable population groups through: i) support to supply of essential water treatment chemicals; ii) rehabilitation of critical components of the water and sanitation systems; iii) institutional capacity development for water utilities; and iv) strengthening of WASH policy and institutional frameworks in order to contribute to equitable and sustainable provision of water, sanitation and hygiene services. Additionally, piloting of Community Approaches to Total Sanitation (CATS) in seven rural communities also formed part of the overall ER&RR programme.

The major donors to the programme included the governments of the UK, Australia, Belgium, Spain, and Republic of Korea, the European Commission Humanitarian Aid Department (ECHO) and the UN Office of Coordination of Humanitarian Affairs (UNOCHA).

The Government of Australia became the sole partner for the last phases of the ER&RR where the transition to STWP was incorporated and has subsequently continued sole funding of the STWP.

Although some interventions and activities were common throughout, two (overlapping) phases can be identified in the implementation of the ER&RR Programme.

Emergency Response (2009 -11); a three-pronged strategy was used:

1. **Water trucking**

2. **Supply of chemicals:** Many utilities had immediate needs for chemicals and equipment, which they had been unable to fulfill themselves. This was due to low revenue collection from residents not able/ willing to pay. The rapid supply of chlorine and aluminum sulphate, imported and paid for through the ER&RR, dramatically increased service providers' ability to deliver treated water.

3. **Supply of critical equipment and rehabilitation:** Sewerage pipes in many towns and cities had become blocked, causing raw sewage to overflow into the streets; the supply of sewer rods and other equipment helped utilities to unblock the pipes, taking the sewage away from the doorsteps (in some cases);

   Borehole drilling/rehabilitation fitted with hand pumps (or high yielding boreholes with motorized pumps for clinics) to provide an emergency supply of water during the cholera epidemic at key points in residential areas[4]; and

   "quick fix" emergency rehabilitation of (mainly) water services and sewage collection systems through NGOs.

Other activities undertaken in this phase included: "software" interventions and Non-Food Items distribution (hygiene promotion and community mobilization activities) through NGOs to improve knowledge of safe hygiene practices; training on O&M (critical staff and critical activities); WASH sector coordination through the Technical Working Group (TwG) for the urban WASH sub-cluster and support to national-led coordination structures (during and post-cluster).

Community members in line to use stand pipe. Karoi

4 In 2009 UNICEF provided 201 boreholes in 17 urban centers (including Harare metropolitan area. An intervention dubbed as "rural solutions to urban problems" in many cases and for long periods, they were the only safe water source in many high density suburbs.

WASH Road Show in Chipinge

Early Recovery, Rehabilitation & Development: 2011 – 2014.
The ER&RR phases included:

Rehabilitation of critical components of water supply and sanitation systems, to regain their original designed production and treatment capacity. NGOs, and then consultants and contractors, rehabilitated services in large and medium towns, with the focus later shifting to rehabilitation in seven small towns and three cities. The works included rehabilitation and replacement of pumps, mixing and dosing equipment, and repairs on various components of water treatment plants, rehabilitation of water and sewage networks and wastewater treatment plants[5].

5 The actual scope of works per town varied in each town and was dependent on most critical needs and available budget.

Plumtree. Mhlanga high lift pump station before rehabilitation

Plumtree. Mhlanga high lift pump station after rehabilitation

Bindura. Chemical dosing system before rehabilitation

Bindura. Chemical dosing system after rehabilitation

New water pumps (left) installed at Shurugwe water treatment plant and rehabilitated sedimentation tank (right) at Chipinge water treatment plant

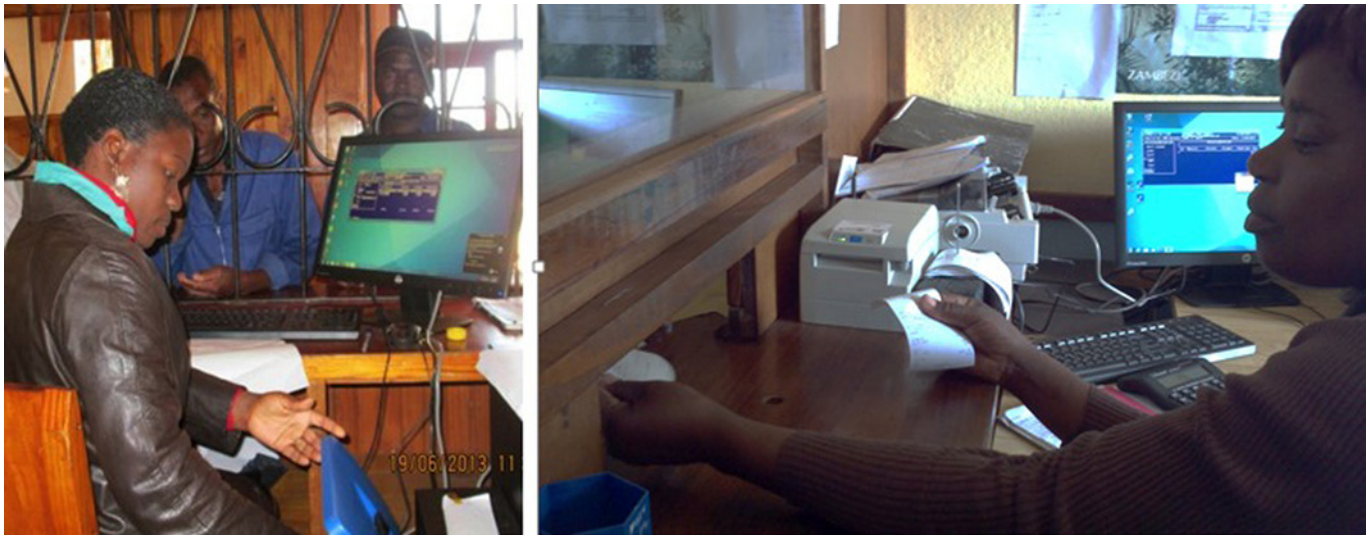
Sludge Pump Station at Karoi, before (left) and after (right) rehabilitation works

Table 1 - Time line for Early Recovery, Rehabilitation and Development

	ER&RR									
					Small Towns WASH Programme					
Phase/intervention	2009	2010	2011	2012	2013	2014	2015	2016	2017	**Comments**
Emergency response phase										
Water treatment chemicals	■	■	■	■						20 urban centers & ZINWA
Emergency borehole drilling	■	■								18 urban centers
Water trucking	■	■	■							
Hygiene promotion and NFI distribution	■	■								
Dosing and sewer unblock equipment	■	■								20 urban centers
First rapid assessment in urban centers	■									9 urban centers (Inc. 3 major cities), following cholera attack rates
Immediate rehabilitation/quick fixes of water supply (through NGOs)	■	■								3 urban centers
Operators training		■								National training
Clinic and school WASH	■	■	■							Mostly rural
Early recovery, rehabilitation and development										
Rehabilitation of water supply and sanitation systems (through private contractors)		■	■	■	■	■	■	■	■	17 towns/ 2 phases. Current phase includes improvements of operational efficiencies
Software interventions: Hygiene promotion and community mobilization, x-cutting issues, customer care, trust building etc.				■	■	■	■	■	■	Through NGOs
Institutional capacity building: Assessment support for ICT and billing systems, support for business plans				■	■	■	■	■	■	Through NGOs, private contractors/consultants
Support for strengthened national coordination and governance structures		■	■	■	■	■	■	■	■	Focused on national led-coordination structures (during and post-cluster)

Capacity development: the departure of so many trained personnel left utilities running with very few staff and who had little professional knowledge. In collaboration with the Institute of Water and Sanitation Development (IWSD), a Zimbabwean capacity development organization, UNICEF established training for 440 Local Authorities / ZINWA operators at three levels (a practical one-week course, a certificate course and a diploma programme). Training covered O&M, hygiene promotion, customer care, and cross-cutting issues.

Institutional support for increased capacity for WASH service delivery included strengthening of billing systems and information and communications technology (ICT) support. This included provision of ICT equipment, network and billing systems and training on the use of these and customer care. Institutional and financial assessments, business plans and support for improved communication between residents and local authorities (customer care, feedback mechanisms, citizen's engagement, etc.) was also carried out.



Billing clerk in Chipinge processes water bills using ICT equipment and billing system supported under the ER&RR programme

OUTCOME

Figure 2 - Key Achievements to Date

	# PEOPLE (RE)GAINING ACCESS TO WATER AND SANITATION SERVICES	# PEOPLE IMPROVING THEIR LEVEL OF SERVICE FOR WATER AND SANITATION
WATER SUPPLY	374,000+ people Through rehabilitation of water supply systems and borehole drilling and rehabilitation.	Four million people Through provision of water treatment chemicals to urban councils and ZINWA stations, water trucking and borehole drilling and rehabilitation
SANITATION	31,000+ people Through rehabilitation of sewage / wastewater collection and ZIMCATS	227,000+ people Through rehabilitation of wastewater collection, conveyance and treatment, ZIMCATS.
HYGIENE	Number of people reached with hygiene messages 869,000+ people Through participatory health and hygiene education, health clubs and community mobilization (last phase only 7 towns)	Five million people Through mass media, interpersonal communication and participatory health and hygiene education, including health clubs.

Other outcomes related to the programme and the above results include:

- (Emergency) rehabilitation of water supply and/or sanitation systems was completed in 12 urban centers.
- Improved capacity for O&M: 20 urban centers were provided with dosing and sewage unblocking equipment and 440 water and waste water treatment operators were trained.
- People benefited with improved WASH services in institutions: WASH in clinics served 442,000 people and WASH in schools served 70,000 children.
- Improvements in the accounting and billing systems have increased local authorities' amount and percentage of revenue collected. Also, the support for improved customer care capacity and relationship with beneficiaries is improving community perception and strengthening the trust between councils and residents.
- Six towns have improved ICT networks and are operating updated billing systems (an additional eight towns have been similarly supported under STWP).
- Environmental pollution has been reduced and wastewater treatment capacity restored.

WHAT WORKED SUCCESSFULLY?

Several factors contributed to the success of the ER&RR program:

A combination of implementation modalities and implementing partners: Throughout the ER&RR programme and into the current STWP, the use of a mixture of different players and modalities to deliver programme interventions was a contributing factor to the results achieved. National stakeholders at highest level - ministries, ZINWA, and Local Authorities - facilitated implementation of activities at local level.

UNICEF used its **supply system** to procure and distribute critical material and equipment, including water treatment chemicals for national scale distribution, laboratory equipment, sewer rods, pipes, computer and IT equipment.

- **International NGOs** who were already well established in Zimbabwe and had personnel on the ground were used to quickly mobilize resources and implement WASH activities both at community level and also in support of service providers until a more robust modality using Engineering Consulting Firms and Contractors could be developed.
- **Consulting Engineering Firms** worked with Local Authorities for identification of priorities, design, tender and procurement process for construction and later on, the monitoring, quality assurance and institutional support functions for the implementation of works.
- A mix of **international and national contractors** delivered the hardware component as well as other aspects like ICT interventions to improve Local Authorities' billing and revenue collection systems.
- UNICEF **oversight consultants** with experience in urban work joined the UNICEF WASH team temporarily to increase internal capacity.
- **Management consultants** were engaged to design tender documents, support the procurement of commercial contracting services and assist in supervision.

Use of local and specialised expertise: Engagement of engineering consulting firms (one of them had designed some of the systems being rehabilitated) added an additional layer of technical quality assurance and professional liability. The knowledge and familiarity of the Engineering Consulting Firms was pivotal for the success of the interventions by filling the gap that town councils had in terms of information and experience.

Hand pumps built during the cholera epidemic are still being used; they provide a valuable "safety net" of free water for the poorest urban residents, although their continued use raises the question as to whom should maintain them in the long term.

Sector coordination: The WASH Cluster held regular monthly meetings and tracked each other's activities during the height of the epidemic,

contributing to improved communication and high standards of information management. Sector coordination resulted in harmonization of approaches among urban WASH partners (customer care, billing systems, and hygiene promotion), effective allocation of resources and consistency in approaches and methodologies, learning and collaboration. The monthly Urban WASH Rehabilitation Technical Working Group provided a platform for information sharing, strategy definition and advocacy. At town level, coordination through multi-stakeholder Steering Committees was instrumental in managing expectations from stakeholders, fostering synergies among them and increasing town councils' accountabilities for WASH-related issues.

KEY IMPLEMENTATION CHALLENGES

Despite significant improvements in the WASH services of the target towns, challenges included: funding gaps; state of the infrastructure; low human resource capacities; limited access to credit by the private sector; complex procurement/contracting processes; delayed implementation; and weak and highly politicized local authorities.

- The **NGOs** embarking on the emergency rehabilitation of water/waste water works were not necessarily familiar with the technical requirements of urban rehabilitation. Whilst UNICEF was able to transition to employ or contract qualified engineers and contractors to support the process, the initial phase of the programme, though providing the immediate response required, faced challenges in that NGOs were often relying on more traditional 'rural' project staff, which potentially posed higher risks and so required more supervision at that time.

- At the beginning of the programme, **lack of familiarity with the existing systems** led to inappropriate equipment being procured (in terms of specifications, availability of spare parts, etc.). This was tackled by engaging engineering consulting firms familiar with the Zimbabwean environment and systems who were able to contextualize the required interventions.

- **The timelines for donor funding** (for a relatively short-term emergency response) were not conducive for rehabilitation works, which are typically multi-year interventions. However, UNICEF used a wide range of partners and implementing modalities to be able to match funding timelines and needs/interventions.

- **Donor conditions:** The programme was only designed (due to donor conditions) to rehabilitate and re-establish existing systems and therefore the contributions towards improving coverage in the targeted towns was limited to (re)connecting already reticulated areas which did not benefit previously from the systems. This approach continued in the on-going STWP and necessitated significant management of expectations of town councils.

- **Roles and responsibilities:** Lack of clarity on roles and responsibilities (e.g. between Local Authorities and ZINWA) was particularly critical in the case of provision of water treatment chemicals, which required several extensions before phase out of UNICEF support, which was eventually based on an exit strategy developed by UNICEF and government with the support of an external consulting firm.

- **Poor O&M procedures:** Problems with water distribution network persist, especially leakages and low pressure in high lying areas. This means that some localities are still not getting adequate water supply and results in 'high' requirements for O&M (and dependence on electricity).

- **Provision of power supply:** The high-dependency of systems on electricity was a very important limiting factor for the success of interventions in some towns. While advocacy efforts at national level and with private companies resulted in the removal of some water treatment plants from systematic load shedding, the impact over other components of the system still affects service delivery and will need investment in construction of dedicated power lines, as was achieved through UNICEF's advocacy in Rusape, Cheugutu and Bindura.

LESSONS LEARNED

Lessons from the ER&RR programme for global programming in other urban settings include:

- **Timeliness of Response:** The critical, immediate needs during an emergency can be addressed through 'quick wins' to sustain minimum levels of services. However, the more extensive interventions required to re-establish systems and capacity often involve the contracting of services for rehabilitation, which demand at least a year of preparatory activities before the actual implementation starts.

- **Pick the right partners** and foster **effective collaboration and communication between them:** Map the capacity of the various players, particularly if the intervention is driven as a result of an emergency response, since 'traditional' NGO partners may have the software skills but not necessarily have the hardware skills needed for urban WASH interventions, which often require private contractors.

- **Provide adequate contingency funds:** The work required proved to be more extensive than previously envisaged due to the old age of the infrastructure, resulting in frequent extension of the scope of works. This was managed at a later stage by including provision for contingencies and additional works within the rehabilitation works contracts.

- **Factoring additional adequate time for completion of rehabilitation works in programme design due to extended works and supply of equipment is critical.** Non-availability of equipment (pumps and other machinery) locally meant that most of the equipment had to be imported with the associated delays in lead-time, which led to delays in project completion. Other factors contributing to delays included lack of records on the part of local authorities and loss of institutional memory due to skills flight.

- **Managing the expectations of beneficiaries so they are clear on what can be done** was critical particularly in the context of Zimbabwe where the intervention did not cover areas that are not served by the existing systems. Additional support, particularly evidenced based advocacy including a coordinated approach with other development partners and government in subsequent interventions, will be required to reach those in these various urban settlements who are not served by existing systems.

- **Sustainable, effective and efficient WASH services require continuous investment in capacity development and behavior change** (both among communities for hygiene practices but also for service providers for improved billing systems, management practices, and customer care). While capacity building was incorporated in the ER&RR, in order to maintain results extended support and handholding is required beyond the emergency period. There should be a requirement in the bidding documents that foreign firms partner with a local contractor for capacity building, as well as to ensure local experience and knowledge of local legislative requirements. There also needs to be a dedicated exit strategy (i.e. for example, as was done in the procurement of water treatment chemicals) with clear roles and responsibilities.

- **Community Health Clubs provided an effective vehicle for communication flow between council and community** for hygiene promotion and in areas such as water and sewage leaks/blockages and breakdowns, understanding the billing processes, and also for better accountability for water and sanitation services more generally. The complementarity of hardware and software interventions has resulted in better access among the residents of the targeted towns. The "software" elements – hygiene promotion, cross cutting issues such as gender and social inclusion - should be incorporated as early as possible in the design and implementation of urban WASH programming.

- **Improved level of services from rehabilitation works has enabled councils to regain residents' trust.** This has the potential to also trigger involvement of the community for improved water and sanitation service. The gains on trust building among the residents can be realized in the perceptions of the residents on the systems performance and improvements being made, which has been progressively reflected in revenue collection by WASH service providers. Additionally, there was significant trust between the stakeholders - donors, UNICEF, implementing agencies and government - allowing for both flexibility and risk-taking.

- **Deliberate efforts at improving Internal UNICEF coordination (Programme & Operations, Supply) proved very useful.** Having both sections engage in the formulation of activities and implementation strategies (especially when it relates to contracting and contract management for the rehabilitation works) was crucial to both comply with UNICEF regulations and risk management measures and to keep up with stakeholders expectations in terms of timely implementation of interventions. UNICEF tendering procedures and contracting mechanisms for large works were adapted based on other tendering and contractual procedures used in the construction sector including those developed by the World Bank, FIDIC, among others[6]. The confidence and leadership of senior management, and an understanding of the urgency of the work, helped expedite the process.

- **The introduction of flexible payments and cash advances to contractors against bank guarantees helped to overcome financial and cash flow problems of contractors and facilitated project implementation.** Zimbabwean firms and companies were (especially at the beginning) not eligible for credit for international procurement to pre-finance rehabilitation works. Some contractors participated through partnerships/joint ventures with international companies which enabled them to improve their technical capacity and financial soundness.

NEXT STEPS

- Complete rehabilitation of water and sanitation systems and software interventions in 14 towns (through the STWP)
- Assess how to serve the unreached to inform future actions
- Assess WASH in urban schools to inform future actions, particularly focusing on key hygiene practices, menstrual hygiene management and functionality of school health clubs
- Support town councils for household level interventions
- Support implementation of business plans
- Support for reduction of non-revenue water (NRW) e.g. through introduction of residential and commercial water meters
- Secure improved support from the private sector (Public Private Partnerships, including local businesses)
- Support for development of a regulatory framework as well as for strengthening of sector coordination

6 http://www.fidic.org

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