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REPORT

How collective action strategies of the urban poor can improve access to sanitation

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Building knowledge. Improving the WASH sector.

Anna Walnycki and Noah Schermbrucker with the Tanzanian Urban Poor Federation and the Centre for Community Initiatives, Malawi Homeless People's Federation and the Centre for Community Organisation and Development (CCODE), Zambia Homeless and Poor People's Federation and the People's Process on Housing and Poverty in Zambia, Zimbabwe Homeless People's Federation and Dialogue on Shelter for the Homeless in Zimbabwe Trust.

Contributors

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Contents

Acronyms

ADB	African Development Bank
CBO	Community-based organisation
CCODE	Centre for Community Organisation and Development
FSM	Faecal sludge management
GDP	Gross domestic product
IIED	International Institute for Environment and Development
JMP	Joint monitoring programme
MDG	Millennium Development Goal
MHPF	Malawi Homeless People's Federation
NGO	Non-governmental organisation
NWSC	Nkana Water and Sewerage Company
OPP	Orangi Pilot Project
PPHPZ	People's Process on Housing and Poverty in Zambia
SDI	Shack/Slum Dwellers International
SHARE	Sanitation and Hygiene Applied Research for Equity
SPARC	Society for the Promotion of Area Resource Centers
TZS	Tanzanian shilling
ZHPF	Zimbabwe Homeless People's Federation
ZHPPF	Zambian Homeless People's Federation

Abstract

In the absence of sufficient and well-targeted investment in sanitation infrastructure in sub-Saharan Africa, low-income communities tend to rely on a host of informal and on-site arrangements. Drawing on research undertaken in Chinhoyi in Zimbabwe, Dar es Salaam in Tanzania, Kitwe in Zambia and Blantyre in Malawi as part of the Sanitation and Hygiene Applied Research for Equity (SHARE) City-wide Sanitation project, this paper reflects on processes that can trigger and/or develop collective action to identify sanitation needs, and on the scope that they have to develop appropriate, affordable, scalable sanitation solutions for low-income communities. It specifically considers how federations of the urban poor have collectively organised around sanitation on several fronts. Firstly, we explain how stronger social movements and capacitated leaders, particularly women, can emerge through collective processes. Secondly, we analyse how communities can collectively organise to identify their sanitation needs, and design and develop precedents in sanitation. As part of this process, practical and strategic knowledge networks for faecal sludge management and toilet provision have developed that traverse scale. Thirdly, we consider how communities organise to engage with local authorities and utility companies to leverage resources and build incremental partnerships for service delivery with the state. Finally, we consider how engagement of federations of the urban poor with sanitation provision has changed the boundaries of collective action in each city.

1. Introduction

Access to sanitation in informal and low-income neighbourhoods in sub-Saharan African cities is dire, as conventional approaches to improving and governing urban sanitation have failed. There has been insufficient or poorly-targeted investments in the development and maintenance of sanitation infrastructure particularly for low-income and informal settlements; this means that access to sanitation is uneven and unequal, and that low-income men, women, girls and boys lack access to safe, affordable appropriate sanitation.

Households can individually develop on-site solutions such as pit latrines, and small-scale private enterprises can empty pits or remove waste. Sanitation microfinance is available to some households to build on-site solutions, but this is rarely affordable to the lowest-income households. Moreover it is only accessible by those with reasonably high levels of tenure security (UN-Habitat 2005). Local authorities and water and sanitation utilities have been unable or unwilling to develop on-site solutions at scale, while market products do not serve to address the collective sanitation needs of a settlement or city (McGranahan 2015). Uneven sanitation provision undermines the health and environmental benefits that universal or almost universal sanitation could bring to everyone (Genser et al 2008)environmental and behavioural determinants of childhood diarrhoea: analysis of two cohort.

Drawing on action research undertaken between 2012 and 2015 as part of the SHARE City-wide Project, SDI affiliates in Chinhoyi in Zimbabwe, Dar es Salaam in Tanzania, Kitwe in Zambia and Blantyre in Malawi, this paper considers how collective action around sanitation can serve to identify and address the sanitation needs of low-income communities, and achieve greater scale than do existing efforts through dialogue and partnerships with local authorities. This paper reflects on understandings of collective action and the work of federations of the urban poor, before considering how the work of Shack / Slum Dwellers International (SDI) federations in the four cities has sought to: build stronger community-based organisations (CBOs) and leaders in low-income settlements; develop precedents in sanitation technologies and governance arrangements; and engage in dialogue with local authorities to develop meaningful co-production partnerships.

1.1 The urban sanitation deficit in sub-Saharan Africa

Global progress around access to sanitation has been sluggish under the Millennium Development Goal (MDGs). While 2.1 billion people worldwide have gained access to an improved source of sanitation since 1990 (UNICEF and WHO 2015), there are considerable parts of the world where levels of access remain poor. Sub-Saharan Africa missed the MDG target to halve the proportion of the population without sustainable access to safe sanitation, and there has been limited or no progress around the proportional target in Zambia, Zimbabwe, Tanzania and Malawi, where the cities that are the subject of this research are located.

Table 1: Sanitation provision in SHARE City-wide project countries

Country	Total number of people with improved sanitation		Percentage of population that is urban		Percentage of urban population with improved sanitation	
	1990	2015	1990	2015	1990	2015
Zambia	3,216,450	6,828,800	39%	42%	59%	56%
Malawi	2,739,630	7,096,690	29%	41%	46%	47%
Tanzania	1,783,950	8,366,560	19%	32%	6%	31%
Zimbabwe	5,231,000	5,567,020	29%	32%	52%	49%

Source UNICEF and World Health Organization (2015)

The lack of progress around the percentage of urban population that has been reached reflects both the growing populations in urban areas, and also the challenges in financing the maintenance and development of sanitation infrastructure. The total figures demonstrate that some sub-Saharan countries have doubled, tripled or even quadrupled the numbers of people living in urban regions. Nonetheless, the low percentages demonstrate the significant proportional deficits in urban regions in the four SHARE City-wide project countries. A major reason for this is the lack of investment. The Africa Infrastructure Country Diagnostic estimates that an average of 0.23% of gross domestic product (GDP) is spent on sanitation across sub-Saharan states. Meanwhile in the most recent African Conference on Sanitation and Hygiene, member nation states agreed that at least 0.7% of GDP would have to be spent on constructing and maintaining sanitation infrastructure in order for citizens to have access to improved sanitation, as defined by the Joint Monitoring Programme (JMP) for Water Supply and Sanitation for MDG target 7 (Foster and Briceño-Garmendia 2010). Consequently, sanitation infrastructure in many African cities is at best dilapidated and dysfunctional and in many cases is simply not in place.

The financing challenge is twofold. Firstly, further international, national and private sector finance is required for the development of sanitation infrastructure. As outlined above national governments need to allocate more finance to developing and managing sanitation.

Secondly, jurisdiction over water supply and sanitation is often housed in multiple government departments and lacks clear coordination at the national level. These contradictions lead to unclear roles and responsibilities, and increase tensions between various agencies. International development finance has the scope to fund innovative precedents in the development, management and governance of sanitation, thus moving beyond traditional support for national programmes (Satterthwaite et al 2015). Private-sector investments could fund sanitation programmes, but these will be limited in scale unless subsidies are in place to enable effective cost recovery for low-income populations. In practice, the sanitation management arrangements in sub-Saharan African cities do not recover costs even from higher-income households (van Dijk et al 2014:212).

Secondly, the sanitation finance and subsidies that do exist have been poorly targeted and frequently spent on developing and maintaining technologies that do not serve low-income and informal communities (Tremolet et al 2014:156). A lack of public investment and maintenance has led to the decay of sewer systems that do exist while treatment plants only cater to a small proportion of expanding populations and are often in a very poor condition, often operating below their intended capacity. While a comprehensive sewer system installed in a densely populated low-income neighbourhood can provide a cost-effective and long-term solution to the need for sanitation for cities, in practice pit latrines play a significant role in communities with access to either sewers or piped water and where households have limited resources (Satterthwaite et al 2015). Indeed, the growth of African cities means that informal sanitation solutions are pursued in low-income parts of the city, as sanitation infrastructure has been unable to extend beyond the traditionally gridded economic and residential urban areas. Higher-income households also have on-site facilities but are more likely to invest in septic tanks.

2. Sanitation – public or private?

Insufficient state investment is increasingly rationalised by government policies that place emphasis on household rather than public investment. The regulatory frameworks that have developed put the responsibility for improvements at the household level (McGranahan 2015). Conceptualising sanitation as a private good has significant implications for inclusion as the lowest-income households clearly cannot afford to provide themselves with adequate sanitation. Concerns stretch much wider than this too, as there are significant private and public costs for all households linked to this lack of provision. In densely populated residential areas, the benefits of sanitation are not just related to the investment of any single household but also to the number of people able to access these services. The quality of the local environment – the places where people walk, vendors sell goods and children play – is greatly affected by the quality of sanitation provision (ibid). Related to this, as the intensity of provision increases, greater health benefits for all the community are secured (Genser et al 2008).

2.1 Total costs and affordability

Looking first at the issue of affordability and exclusion, it should be recognised that costing sanitation services is difficult due to the complexity of providing toilets and faecal sludge management (FSM), and the potential value of spreading the cost of capital investments over time. Wankhade's (2015) analysis shows that low-income households in urban India cannot afford the costs of adequate on-site sanitation provision.[1] Septic tanks are significantly more expensive than pit latrines, yet the latter are unlikely to be safe in locations where plots are small and residential densities high.

2.1.1 Distribution of costs

Wankhade (2015:564) compares the costs of on-site sanitation and networked systems and concludes that, notwithstanding difficulties in comparison, "…there is general agreement that on-site systems require less investment compared to sewerage networks" (page 563). However, total cost is only one factor determining affordability. Also important is the distribution of costs:

> …the household investment requirements for on-site systems, especially septic tanks, might be higher than for a household connected to a sewered network. In India, the combined cost of a water closet and sewerage connection was comparable to the cost of a pit latrine, and lower than the cost of a septic

1 In India, 33% of urban households are connected to sewers and a further 38% have septic tanks; 6% use improved pit latrines with the remaining 23% having only inadequate provision (Wankhade 2015).

tank. In one of the few studies that compare on-site systems with sewers, the household investments are found to be higher for on-site systems. This conundrum of overall cheaper on-site systems requiring more investments from households has been experienced by NGOs in India. In a guidance note on community toilets for urban poor, [the Society for the Promotion of Area Resource Centers] SPARC clearly urges that these toilet blocks be attached to sewer networks as far as possible, because of the greater expense of building septic tanks.

2.2 Total costs are financial costs and externalities

In addition to facing the costs of sanitation investments, households have to manage the consequences of a lack of investment in sanitation services and particularly the low quality of the neighbourhood environment if there are insufficient toilets and if the challenge of managing faecal sludge is not met. Management challenges are particularly high in dense residential neighbourhoods. Low-cost on-site facilities such as pit latrines are unlikely to be adequate in these areas. One serious problem is the risk that ground water will be contaminated as densities increase and/or if flooding takes place. Other problems include the low quality of the immediate environment. Septic tanks are safer but, as noted, they are significantly more expensive. Flooding of settlements results in further problems with pit latrines because few are protected. In high density settlements plots sizes are likely to be small and pathways between plots are likely to be narrow; this means that it is both difficult to construct new pit latrines when the existing provision is full, and to empty pits by conventional means. Moreover, it is evident from the high numbers of people practising open defecation and using 'flying toilets' that significant numbers of the population living in low-income settlements lack access even to pit latrines.

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In addition to the cost of self-provision of sanitation, many households rent accommodation and have fewer options to improve their own access; low-income tenants are unlikely to be able to afford the rent of houses with standards of sanitation that are compliant with the regulations (Pastore 2015). This emphasises the need to develop affordable solutions, and for the imperative role of the state in developing sanitation that delivers full environmental and public health benefits.

Enabling households to link to sewers at low or no cost would also assist in improving access. Private household-level investment may be expensive if economies of scale are not realised in the provision of the infrastructure for FSM. Concerns relating to cost recovery and users' ability to pay partially explain the limited investments in sanitation infrastructure for low-income communities by city utility companies. These prioritise investments in sewers for wealthy formal neighbourhoods that can afford connection fees and/or whose residents make significant capital contributions to the provision of sewer networks when they pay the development costs of greenfield

developments. The high cost of sewers means that it is difficult for low-income residents to pay the full costs; ideally repayments would be extended over a long period to be affordable, and even if this is the case, charges may still be too high. In practice, utility companies may not be able to access the capital that would enable this to happen, reflecting the fact that they might not have a demonstrable repayments strategy. Securing repayments can be undermined by institutional failings such as poor management of payments, or unaffordable rates. Meanwhile low-income households might be disinclined to invest in sanitation if they are renting, and landlords who decide to connect might chose to increase rental costs, thus excluding lower-income households from access.

Utility companies and state agencies have been reluctant to supply public services to informal low-income settlements for a range of reasons. As well as the relatively high cost of sewers, there have been concerns that this would confer legitimacy on the occupation of sites. There are now indications that such attitudes are changing, at least in respect of piped water services that have been extended into low-income and informal settlements by some formal water providers. However, water has been sold through kiosks, which enables the providers to secure income more easily than is the case with monthly billing. It is more difficult to secure payments for connections to sewers. State agencies may be willing to allow private sector investments in informal settlements such as the development of mobile phone masts.

High investment costs, uncertainties in securing customers and the need to install pipes in public spaces (i.e. under public roads and pathways with adequate protection from traffic) make it extremely unlikely that sewers will be provided by the private companies unless installed as part of a greenfield development with the infrastructure costs being passed onto those purchasing houses. Such factors also make it difficult to address the lack of provision through collective action at the community level. An exception has been the work of the Pakistan non-governmental organisation (NGO) the Orangi Pilot Project, which has supported over 100,000 households to provide themselves with sanitation (Hasan 2006; Hasan 2008). The Orangi Pilot Project (OPP)-Research and Training Institute began developing simplified sewers in the informal settlement of Orangi, Karachi (Pakistan) in the early 1980s. This involved communities organising collectively through lane committees. The land sewers were then connected to trunk sewers. Sanitation is co-produced through component sharing, as the utility company took on responsibility for removing and treating wastewater through trunk sewers. The lane committees did not rely on any external funding, and were able to reform standards around the simplified sewer technology. In Orangi, natural drainage channels enabled households to provide themselves with sewers in local lanes (immediately outside their dwellings) that deposited waste in streams. Over time the government invested in secondary and main drains, and lane sewers connected to these facilities. Hasan (2006; 2008) explains how residents' investments persuaded politicians to change their minds and finance the public networks that were required to remove waste from the lane sewers and bring it to waste treatment plants. This work began in 1980 by

Akhtar Hamid Khan and spread to reach more than a million people in Pakistan; it has influenced urban sanitation provision nationally, and inspired groups internationally.

OPP demonstrates how collective action around sanitation presents an opportunity to address sanitation deficits where the state and the market have failed. In the case of sanitation, there appear to be multiple benefits from collective action. At the settlement level, new and affordable options need to be developed to increase the numbers of households able to access safe sanitation options without imposing externalities on their neighbourhoods. In the absence of state commitments to provide subsidies, there has been limited experimentation and innovation in finding solutions relevant to the lowest-income households. This lacuna urgently needs to be addressed. Shared or public toilets for households that cannot afford to make the capital investment or who are renting accommodation without such provision may be important (Patel and and the SPARC team 2015). In other cases, as exemplified by the experience of OPP, shared FSM may be the best option, with households either sharing or providing themselves with toilets. Decentralised waste management systems or, as was the case for OPP, depositing waste into natural channels may offer cost-effective ways to enable households to access the benefits of sewerage in the absence of local authority investment. Hence, the specificities of sanitation require strong collective processes if solutions are to be affordable and inclusive.

"OPP demonstrates how collective action around sanitation presents an opportunity to address sanitation deficits where the state and the market have failed."

In the absence of sewers, there has been some experimentation with decentralised wastewater treatment in which a sewer network is provided to a neighbourhood and waste collected in a local treatment pond. However, no other community-led waste management initiatives have reached the scale of OPP's supported lane sewers. OPP has itself developed an intervention using decentralised wastewater treatment but this is rarely chosen in urban settlements. In the absence of private, public or community investments, higher-income households living in established settlements tend to self-provide through septic tanks and low-income households make do with inadequate provision for FSM.

"...the specificities of sanitation require strong collective processes if solutions are to be affordable and inclusive."

In additional to FSM, sanitation provision depends on access to a toilet. For the most part, toilets are provided in the house or in the plot. Public sanitation blocks at the neighbourhood level have been provided in some informal settlements where there is limited toilet provision in dwellings, but are now considered by local authorities to have high running costs and be difficult to manage. In the absence of state provision, there has been some provision by community organisations and private enterprises. Typically such toilets charge per use, which may restrict access, as many households are unable to afford adequate use. McFarlane and Desai (2015) describe how one group of women in Mumbai were able to persuade a private provider not to increase the cost of use from one to two rupees; but it would be naïve to generalise from this experience and many providers charge what they can.

Low-income community groups have also provided themselves with both shared toilets and/or communal toilet blocks in attempts to

increase access. The experience in many low-income communities is that communal toilets (whether public or community) need to be managed if adequate standards of cleanliness are to be maintained. Patel and the SPARC team (2015) describe how organised communities in Mumbai and Pune have been able to develop a model toilet block that is affordable and well managed. Previous experiences with public toilet blocks meant that residents were initially reluctant to consider this option. Residents were only persuaded to agree to communal toilets when an operative model was developed that included a full-time caretaker who lived on-site. However, in the state of Maharashtra the government provides a subsidy for the capital investment and the households simply have to cover operational and maintenance costs of less than US$ 2 a month. An alternative to communal toilets is shared toilets; these are generally locked to restrict access to the small number of households that 'own' the facility. Research with the Shack Dwellers Federation of Namibia found that residents were more comfortable with shared toilets than with communal blocks without caretakers (Gold et al 2013).

On-site solutions cannot be presumed to deal with waste effectively and insufficient attention has been paid to FSM in the sector. This may be because the JMP on sanitation had limited scope to include FSM, and has only recently outlined the imperative to address FSM (Mitlin 2015:2). City-wide sanitation planning will have to consider both toilet design and FSM. Not only is some form of public (or collective) action that addresses FSM and toilet provision needed, but the health and environmental benefits of improved sanitation for any single households are limited unless neighbouring households also decide to improve sanitation. Hence there are many benefits in low-income settlements if community organisations are able to manage sanitation services in ways that increase the take-up within neighbourhoods. Local community groups may assist by sharing ideas both about improved sanitation technologies and about how environmental costs can be better managed and well-being of all residents improved. In a context in which some sanitation solutions mean that significant externalities are imposed on others and regulations have not been helpful, new forms of collective management need to be developed that offer a way forward. Households, especially women, have often been shamed by their inability to address the sanitation needs of their families, and it is critical that solutions do not exacerbate this but rather empower women to address their individual and collective needs (Patel and the SPARC team 2015).

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Collective action is also needed to challenge public utility companies to be more pro-actively engaged in servicing the needs of low-income citizens and the residents of informal settlements, which is part of the challenge of engaging with local authorities, and aiming to develop co-production partnerships, of varying configurations and commitment. Indeed, processes that are focused on scaling up collective action, or creating networks of low-income communities at local, city, national and international scales, have the scope to challenge representations that place sanitation as a private good. Such engagement may be more than lobbying agencies: through demonstrating new solutions, such networks can provide examples of how state agencies can be

more effective in their efforts. They may result in new co-production initiatives in which organised communities and state agencies work together to deliver on shared sanitation goals (Evans 1996; Watson 2014; McGranahan 2015)

Urban sanitation is complex. To understand the potential for collective action, it is necessary to consider both the services that manage faecal sludge and toilets, and the ways in which communities can support intensifying efforts in particular localities, and networked communities can engage constructively with government providers (Satterthwaite, Mitlin et al 2015). In the following section we consider how collective action around upgrading and service provision can serve to build social movements and leaders, develop precedents in development, leverage dialogue and even partnerships with local government, and influence regulatory and policy change hence helping grassroots organisations to build up multiple capabilities

"Collective action is also needed to challenge public utility companies to be more pro-actively engaged in servicing the needs of low-income citizens."

3. Reflections on collective action

3.1 Collective action in low-income cities today

Shifts towards 'people-centred' approaches to development, underpinned by Amartya Sen's 'human capabilities' theory, have emphasised the ability of poor people to help themselves, and overcome constraints in their lives (Sen 1999; Berner and Phillips 2005; Osorio and Zepeda 2007). Sen's contribution coincided and interacted with the development of the forms of collective action that were identified in the 1980 and 1990s e.g. women's groups, religious groups, human rights activists and shack/slum dweller federations, such as India's National Slum Dwellers Federation (Slater 1985; Jelin 1987; Eckstein 1989; Escobar and Alvarez 1992; Wignaraja 1993 in Walton 1998:461).

Significant paradigm shifts in urban development programming have taken place since the 1990s and 2000s, with increasing scholarship on the role of federations of informal settlements and their collective base groups, insurgent planning and southern urbanism, which have sought to challenge static North to South knowledge creation and dissemination (Appadurai 2001; Roy 2005; McFarlane 2004; 2010; Robinson 2011; Mitlin and Satterthwaite 2011, 29113). In a way, such informal settlement residents have *always* been agents in their own development; it has just taken practitioners and policymakers too long to take note (McGee 2004). Within these debates, 'social agency is conceived in terms of a skilled, capable entrepreneurial poor whose knowledge and abilities have been long ignored by states and international donor agencies' (McFarlane 2007:346).

According to Mitlin and Satterthwaite (2014), collective action is a critical component of pro-poor political change for multiple reasons. The organised urban poor have strategic knowledge, the capability to engage with urban development and negotiate with the state, the strategies to challenge prejudice and discrimination from better-off citizens, and the ability to secure universal rights and needs. They argue that the interaction between factors such as an unreliable state, overconfidence in the capacity of low-income groups to participate in market relations, vertical authorities, unaccountable and unrepresentative local organisations, accounts for the failure of many urban poverty reduction programmes to date (ibid). While such problems are widely known, they have received little scholarly attention.

In light of the failure of formal provision of sanitation, and the imperative to promote collective solutions to it, the contribution of organised communities in urban areas becomes particularly pertinent. The need for sanitation to be inclusive and the regulatory constraints

around its provision require the active engagement of state agencies. A supportive government is essential to provide access to subsidies and to ensure that community efforts are consistent with appropriate regulatory frameworks. In section 3.2 we consider how collective action in low-income urban areas can be used to galvanise social movements; develop practical precedents in sanitation; advance dialogue and even partnerships with state actors; and influence policy and regulatory change, before applying this framework to the action research undertaken by SDI affiliates under the SHARE City-wide project.

3.2 Collective action for stronger social movements

There is a growing body of evidence that indicates collective strategies play a significant role in addressing local needs, reducing local level poverty and the broader 'politics of recognition' (Fraser 1997) for low-income groups. CBOs can enhance grassroots participatory development, facilitate access to locally available resources, challenge the 'one-size-fits all' development approach, link local development initiatives to the global context, create a platform for local voices to be heard, and facilitate acceptance of difference and respect for local knowledge (Burkett and Bedi 2007 in Makuwira 2014:7–8). According to Mitlin and Satterthwaite (2014), the role of grassroots organisations in social transformation and progressive politics has long been recognised. Federations and networks of grassroots groups provide an 'institutional home' to marginalised citizens (ibid).

There are multiple levels of collective action. 'Collective' can refer to multiple, interlocking processes with an array of strategies or 'actions' deployed i.e. sporadic or reactive events, incremental or longer-term social movements, savings groups, associations, co-production and multi-stakeholder collaboration. These proactive and reactive processes that emerge around local needs can serve to consolidate and galvanise social movements, and their engagement with processes and actors at different scales – at the community, city, national and even global level. The collective production of knowledge networks around basic service provision and upgrading can traverse local, national and international scales. This not only contributes to the practical sanitation knowledge of affiliates; the general process of knowledge production also serves to empower federations as they seek to strategically engage with the state and other sector stakeholders.

3.3 Collective action for improved dialogue with the state and co-production partnerships

Although civil society is understood as the sphere for citizen action, there are historical underpinnings of strategies that increasingly involve a multitude of (state and non-state) actors, engaged in legal and illegal activities, across geographical space and over time i.e. local authorities, politicians and private landlords. Collective action around specific development allows communities to identify and develop local solutions around local needs, but collective action processes that successfully achieve scale do so by engaging in dialogue with the state and other stakeholders.

There is increasing evidence of federations of informal settlement dwellers working with multiple actors and organisations across geographical space, lead to unique forms of collaboration and co-production. Broadly defined, co-production is the joint and direct involvement of public agents and private actors in planning, financing and implementing state services, such as shelter improvements (Mitlin and Satterthwaite, 2014). Such involvement seeks to build 'regular, long-term relationships between state agencies and organised groups of citizens, where both make substantial resource contributions' (Joshi and Moore, 2004:40). For some, this presents the danger of projects being 'co-opted' by government actors and agents that can act to 'de-radicalise' and 'de-politicise' these activities (McFarlane 2012). Indeed, co-production can fundamentally mask the causes of urban poverty and support the assumption that urban social movements operate *within* existing political structures to affect change, as opposed to 'transforming' fundamental power inequalities (Mukhija 2001; Pieterse 2008; Benjamin 2008). For others, however, *citizen-led* co-production is fundamental to creating new spaces of engagement, changing terms of recognition and realising material goals (Mitlin 2008?). In the case of SDI, the urban poor groups are using multi-stakeholder networks to internationalise themselves, what Appadurai (2001) refers to as 'globalisation from below'. Crucially, the urban poor engage in a 'politics of visibility' (ibid), which attempts to re-shape local, or in this case sanitation, governance to be more responsive. For Mitlin and Satterthwaite (2014:260), it is no longer an issue of people needing to participate in government programmes, rather, it is an issue of government learning to participate and support people's programmes.

3.4 Collective action, precedent development and identity politics

Networks of citizens living in informal settlements tend to orientate themselves (at least in part) towards the provision of collective consumption goods. Collective action around service provision provides groups with an opportunity to collectively identify local basic service needs, and to develop precedents (i.e. model interventions) that address such needs at the local level. CBOs with networks at the city, national and international level present opportunities for communities to share learning around precedent development. The development of precedents also enables further collective political and identity-based struggles. In practice, collective action around service provision can have significant overlaps with identity-based politics, as shack/slum dweller movements seek to gain political recognition through the programmes to develop basic services locally. Collective action can be both proactive and reactive, as in the case of community-based responses to basic services, adaptation to climate hazards (building dams, raising houses) and sporadic anti-eviction protest.

3.5 Collective action leading to policy and regulatory change

Collectively organised groups can contest, create and transform political spaces on various scales to address their basic needs (adapted from Cawood 2012:22).

Local: transforming political space at settlement and city-wide levels, focusing on strategies of engagement between shack/slum dwellers and local authorities at the community level. This can involve engaging with local authorities to support the development of precedents in principle or with resources.

National: transforming political space at national level, focusing on the strategies of engagement between shack/slum dwellers and central government actors/agencies. This is likely to involve shaping the development of policies and regulations that overlook or exclude low-income communities.

Global: transforming political space at the international level, focusing on the strategies of engagement between shack/slum dwellers and 'development' actors/agencies.

Although multi-scalar political space is a relevant and useful framework, to understand how policies and regulations underpin unequal service provision, it becomes clear that mobilisation (and strategies) at the local level are not necessarily 'enough' to alter fundamental exclusion and inequality within the slum as well as at the city-wide, regional and national scale. Specific tactics are required to address planning regulations, policies and standards promoted at the local, national and international level.

Collective action around sanitation provision often fell outside of the parameters of the MDG definitions of improved sanitation. Notably, shared facilities, whereby two or more households share a toilet, were not recognised as part of the ladder, despite the fact that shared seats have played a central role in improving access to sanitation as part of the national Indian Sanitation Strategy, following the significant advances made around sanitation by the National Slum Dwellers Federation. Furthermore, this definition of 'shared sanitation' overlooks the reality of provision in several African cities whereby households sharing a single plot might share a toilet. This is set to change as part of the indicators developed for the Sustainable Development Goals, revealing that there is scope to develop flexible regulatory and monitoring arrangements that are able to recognise innovations in on-site sanitation technologies in improving access. While on-site solutions have the scope to contribute to the incremental and progressive realisation of sanitation improvements, the concept in itself raises questions around who defines global standards. More open and participatory processes around the sanitation indicators in different settings could serve to address these shortcomings, by including low-income communities in the development of sanitation solutions and indicators (Mitlin 2015).

3.6 Collective action in informal settlements is dynamic and interrelated

Collective action in informal and low-income settlements is clearly dynamic and deeply interrelated. For example, the Indian women's savings group Mahila Milan act as the financial base for National Slum Dwellers Federation community (housing and sanitation) self-builds and exchanges (Appadurai 2001; Mitlin and Satterthwaite 2014). Collective actions can be 'place-based' but also transcend formal/informal boundaries by involving multiple actors and institutions across geographical space e.g. though neighbourhood associations and anti-eviction protests, savings and credit groups, community-based adaptation to climate change and unions of the working poor (Appadurai 2001; Kabeer and Kabir 2009;Jabeen et al 2010;; Mitlin and Satterthwaite 2013, 2014). Actions can also be 'organic', led by CBO, NGO, state and donor organisations, and may be forced and/or coerced through obligatory participatory processes (Banks 2008; Mitlin and Satterthwaite 2014).

In section 4 we consider how SDI affiliates have sought to identify and address their sanitation needs over time. We outline some of the key methods or 'rituals' used to organise collectively, before considering the role of collective action in the precedents developed as part of the SHARE City-wide project.

4. SDI collective action strategies for upgrading and sanitation

Federations from across SDI's network have a sustained history of collective action around upgrading informal settlements, including sanitation provision, which stretches back over two decades. While contexts have varied over time and location SDI has always understood the lack of sanitation provision to the urban poor as a failure of governance at the local and national level. In the absence of state action, SDI federations seek to create precedents that are scalable models for sanitation provision, build partnerships with politicians and officials committed to addressing the poor quality of existing provision, and mobilise citizens to pressure local authorities to upgrade informal settlements, improving sanitation provision, and reforming laws and policies. In order to create the critical mass to create this change, federations have practically demonstrated new modalities of provision that can be incrementally delivered and work for the poorest households in the city. The Indian Federation has been at the forefront of this wave having fundamentally changed the way in which sanitation is provided to the urban poor in Mumbai and Pune through the construction of communal toilets (Burra et al 2003; Patel 2015). In so doing, it influences the national sanitation strategy in India.

While the Indian communal model has had traction in Mumbai's dense informal settlements, it was not simply a matter of transplanting it to Africa's less dense, sprawling and peripheral settlements. Over the years, exchange visits, experimentation and failures led to hybrid models and a variety of innovations evolving in the African context. In addition the lack of state subsidies meant that African sanitation models needed to consider the repayment of capital infrastructure and accessing government budget lines to be sustainable. In general African federations have invested in shared residential facilities[2] as well as construction/rehabilitation of communal market toilets.

In southern Africa, federations have built thousands of shared eco-san[3] toilets in the last decade. The Malawian Alliance alone has funded the construction of 3,500 toilets since 2003. Not only has this delivered sanitation options to non-gridded, water-scarce communities, but challenged the state to change legislation and policy related to the legality of dry sanitation provision as demonstrated by the work

2 Shared toilets are defined as a WHO improved sanitation facility shared by two or more households

3 Closed loop toilet using minimal water, often separating faeces and urine and rendering the by-products safe for agricultural use

undertaken by the Zimbabwean SDI affiliates. Concomitantly it has built partnerships with local authorities and drawn in external funding. For example, in Blantyre, the Malawian Alliance now works with the Blantyre City Council to provide eco-san toilets to informal dwellers (not just federation members) through a project funded by the African Development Bank (ADB).

Box 1: SDI rituals to trigger, develop and sustain collective action

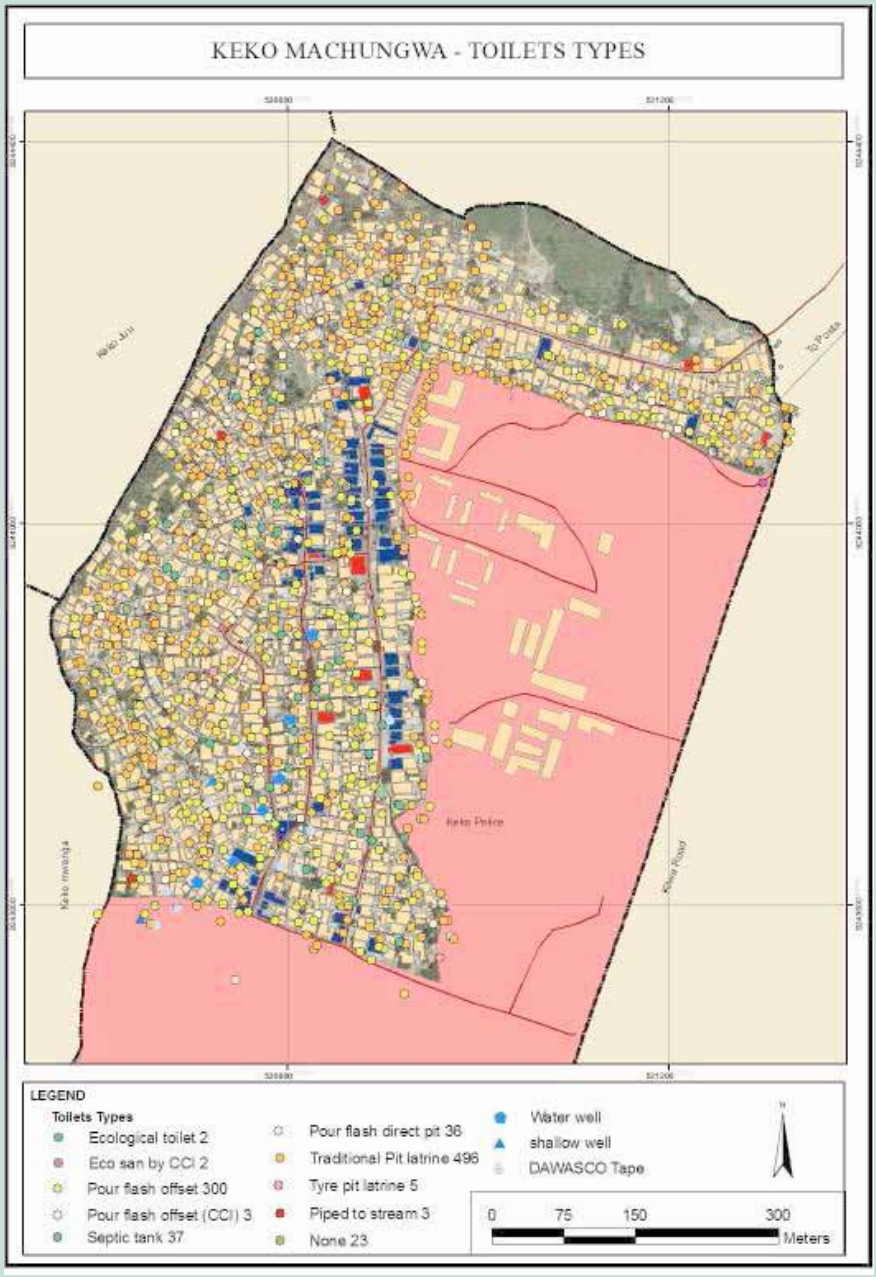
The following SDI rituals have been used by communities to identify and address basic service and upgrading needs, including sanitation, and to trigger and sustain collective action around sanitation.

Community-led documentation: enumeration surveys, maps and profiles

Community-led documentation first and foremost provides communities with an opportunity to understand and document the living conditions and demographics of informal and low-income settlements. These communities are often omitted from maps and the census. Developing maps, enumerations and settlement profiles is a means of demonstrating to local authorities who lives in their cities, and the conditions that they live in.

Community profiles and household surveys are the principle means by which communities collect data around their local needs, to provoke discussion around collective solutions. **Profiling** involves mapping and developing a community profile with community members. Profiles provide a concrete discussion point not only for communities, but for engagement with local authorities, around community development needs. **Enumerations** are standardised household surveys establishing who belongs to the community, the findings of which are triangulated by community members (see Beukes 2016 for more on profiles and enumeration). The data is collected and owned by the community, and forms the basis for discussions around upgrading. This is a pivotal step in consolidating collective action and developing an appropriate local development plan that the community has agreed on. **Mapping** is often used to establish community boundaries, and for communities to agree on a visual representation of their community – which might not be present on official town maps – to work from. Mapping was particularly useful in the SHARE City-wide project, because settlements were able to present local authorities with the diverse types of sanitation that are used in settlements. Figure 1 reveals the diverse toilet types that exist in one of the Tanzanian settlements that was mapped for the SHARE city-wide work, and became a powerful tool for engaging with local government.

Figure 1: Map of sanitation provision in Keko Machungwa, Dar es Salaam



Savings schemes and revolving funds

Savings schemes and revolving funds are used to underpin the participatory community-led development processes that communities are engaged in. Despite the modest sums of money that are saved by low-income households, savings schemes are strategically important because they have the scope to gather people as well as funds. Savings groups provide a source of loan finance for the urban poor that is not often available. Importantly, savings meetings present an opportunity to think collectively about upgrading initiatives in the community, and also to provide finance for household emergencies. These monies are loaned, enabling

them to revolve and be used by others in the future. Savings groups are often led by women and/or have a high proportion of female savers. Savings group meetings provide an opportunity for women to identify local needs around housing and basic services such as sanitation and then work collectively to develop community-based solutions (D'Cruz and Mudimu 2013). In the four towns that are included in the SHARE City-wide project, savings groups were already established, and so the project builds on pre-established community savings and associated rituals. Community savings groups tend to be part of a network of groups that can build a platform and voice around the needs of low-income groups at the city level and even nationally.

Co-production and partnerships

Co-production and partnerships are encouraged with local city authorities whereby community-led upgrading processes receive political support and resources from government. This is often an incremental process, underpinned by community documentation processes. In settings where local authorities have limited resources and agency, SDI affiliates have demonstrated capacity to leverage practical support for basic services and upgrading, but also to make strategic gains as communities are able to shape planning processes through more democratic decision-making processes (Chitekwe-Biti et al 2015; Nyamweru and Dobson 2014).

Exchanges

Exchanges enable low-income communities to learn from other communities about their experiences of community-led development. They provide an opportunity for communities to reflect on their own experiences, and present them to others. In practical terms, this can facilitate discussions on the most appropriate and/or affordable upgrading options in different contexts. Exchanges can also provide more strategic opportunities for communities travelling with local authority representatives to consider how low-income communities work in partnership with local authorities in other contexts. International exchanges with CBOs beyond SDI that have engaged in similar grass-roots processes provide an opportunity for groups to think "outside the box", as exemplified by the exchange between the Tanzanian SDI federation and the OPP based in Karachi and discussed in section 2.2 (Hasan 2006).

5. Methodology

5.1 The SHARE (sanitation and hygiene applied research for equity) City-wide project

This paper draws on research undertaken as part of the SHARE City-wide project 2011–2015. The action research project was developed as a programme between affiliates of Shack/Slum Dwellers International/ SDI and its affiliates and federations in Tanzania, Malawi, Zimbabwe and Zambia, and the International Institute for Environment and Development (IIED). The project was intended to complement and scale up the federations' existing sanitation efforts in Chinhoyi, Dar es Salaam, Kitwe and Blantyre.

Recognising the challenges that both public and market-driven approaches have faced in meeting the sanitation needs of the urban poor, this project presented an opportunity to consider the scope that community-driven approaches have to meet the needs of low-income groups, and to incorporate these groups into government sanitation planning processes. In phase one each alliance produced a succinct situational analysis outlining existing sanitation conditions and challenges (Mkanga and Ndezi 2014; CCODE and MHPF 2014; ZHPF et al 2014; PPHPZ and ZHPPF 2014[4]). In line with the findings in phase one, phase two saw an array of practical sanitation precedents rolled out in each city. Phase three supported each country to build on the precedents, deepen partnerships with local governments and plan for city-wide sanitation strategies.

Table 2 outlines the sanitation situation in each city, while Table 3 outlines the SDI presence in each setting. The SHARE City-wide project has focused sanitation work in four cities in which SDI affiliates have long been active. Precedents were built on the federations' engagement with sanitation and existing construction programmes that advocate an affordable and incremental approach to informal settlement upgrading. Throughout the course of this project, stakeholders have reflected on the progress made to develop community-driven sanitary improvements according to four of the principle challenges that have often thwarted community-driven approaches. This draws on the principles that guided OPP's development of simplified sewers and those that shaped the work of the Indian Alliance around communal toilet blocks, discussed in section 2. The OPP identified four barriers to this approach during the early 1980s. Its project was defined to overcome these barriers (Hasan 2008):

4 CCODE: Centre for Community Organisation and Development; MHPF: Malawi Homeless People's Federation; PPHPZ: People's Process on Housing and Poverty in Zambia; ZHPF: Zimbabwe Homeless People's Federation; Zambian Homeless People's Federation: ZHPPF.

1. ***The social barrier*** of lacking the community organisation to engage in collective action.
2. ***The psychological barrier*** of thinking that improved sanitary facilities should and will be given to them by the government.
3. ***The economic barrier*** of not being able to afford to cover the costs of conventional sanitation facilities.
4. ***The technical barrier*** of not having access to the technical support needed to develop affordable sanitation systems of reasonable quality.

Mahila Milan, SPARC, and the Indian National Slum Dwellers Federation formed the Indian Alliance during the early 1990s. The Alliance's work on sanitation began in the informal settlements of Mumbai and Pune 'slums'. In response to the inadequate sanitation conditions, the Indian Alliance supported the development and management of public block latrines by local communities. This began as a grassroots process, driven by community action, then gained government support to build over 1,000 toilet blocks with over 20,000 seats. The approach was developed around the following principles:

1. **Community residents and local organisations were at the centre of the design construction and management of the toilet blocks.**
2. **The approach aimed to secure contributions from the government to achieve scale.**
3. **The toilet blocks were developed to be affordable.**
4. **Toilet construction was promoted alongside other Indian Alliance upgrading programmes to improve tenure security, and improve access to other basic services and housing.**

The principles have shaped the work undertaken as part of the project, but reflect the aims and needs of the affiliates involved in the city-wide work:

1. **The collective action challenge of getting local residents to coordinate and combine their demands for sanitary improvement.**
2. **The co-production challenge of getting the state to accept community-driven approaches to sanitary improvement, and where necessary to co-invest and take responsibility for the final waste disposal.**
3. **The affordability challenge of finding improvements that are affordable and acceptable to both the state and the community - and to other funders if relevant.**
4. **The trans-sectoral challenge of ensuring that other poverty-related problems, such as insecure tenure, do not undermine efforts to improve sanitation. (McGranahan 2015).**

In sections 6 and 7, this paper considers the challenges and opportunities around collective action as a key component of endeavours by communities to improve sanitation. Addressing the collective action challenge has implications for the other components identified above. Reflecting on the themes identified in section 3, the following sections of this paper consider how collective action around sanitation has sought to mobilise and capacitate local leaders, build precedents in sanitation for low-income communities, and build dialogue and partnerships with local government.

6.Sanitation in the four cities

The SHARE City-wide project has complemented ongoing work by SDI affiliates around sanitation by deploying the SDI methodologies or 'rituals' outlined in this paper in a process of reflection and action. Work has drawn on the values and experiences of urban poor communities. The city-wide project builds on the existing activities and methodologies of SDI affiliates in each country -developing an approach rather than proposing a new course. The approach developed reflects the sanitation situation in each city and the presence and activities of the federation in each instance.

Table 2: The sanitation situation in the four SHARE City-wide project cities

City	City population	Number of informal settlements	% living in informal settlements	% of city population with no or inadequate sanitation
Blantyre	850,000	21 (recognised by local council)	75%	67%
Chinhoyi*	79,368	16	44%	35%
Dar es Salaam	4,363,541	297	75%	60%
Kitwe	522,092	48	32%	38%**

*These are formally planned low-income settlements
**Based on 77% of those living in informal settlements
Source: adapted from Banana et al 2015

Table 3: SDI federations and processes in each city

City	Federation savers	Settlements where federation is active	Federation members participating in sanitation events	People collecting data on sanitation in the city*
Blantyre	608	42	30	50
Chinhoyi	2,300	5	92	300
Dar es Salaam	4,300	62	75	80
Kitwe	1,200	38	200+	50

*Includes students and non-federation members
Source: adapted from Banana et al 2015

The approach gleaned different results in each city, reflecting the social and political context, and the priorities and objectives of affiliates and communities. This following section provides a broad overview of the technologies developed in each of the four cities, before we consider how the communities organised to develop some of the sanitation solutions outlined here. For a full discussion of the cost and affordability of the precedents please see SHARE (forthcoming).

6.1 Precedent overview for each city

6.1.1 Tanzania

In Dar es Salaam the Tanzanian Urban Poor Federation has a long history of providing sanitation service in informal settlements. Upgrading activities have included latrine construction, solid waste management and the use of the Gulper technology to address the challenge of pit emptying in dense informal settlements. The Tanzanian Federation has had a particular focus in the last three years on addressing challenges between landlords and tenants. It has been difficult to build strategic relationships with local authorities, to influence policies and to secure resource flows to develop the scale of its work. However, the recent establishment of municipal forums that enable officials to discuss sanitation needs with local communities including federation members has been an effective strategy to take forward discussions about collaborative planning.

As part of the SHARE City-wide project three precedents have been undertaken. The first precedent was the construction of shared compound toilets. To date 49 toilets have been constructed in 3 settlements (Keko Machungwa, Karakata and Vingunguti) benefiting 5,191 people. Toilet finance is disbursed as a loan to landowners and repayment rates have been 100% to date. Loans ensure that finance revolves 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 which exemplifies the federation's improving relationship with municipality. One Gulper team was in operation by June 2014, and three new groups were being trained. Teams now have permits and licenses and are operating. The emptying fee for each toilet is TZH 15,000 to TZH 30,000. An estimated 6,300 people have benefited from improved facilities due to Gulper emptying. The third precedent involved the Tanzanian federation installing a DEWATS (decentralized wastewater treatment systems) system in the Vingunguti informal settlement. Overall 250 people were connected during the first phase and 200 during the second phase.

6.1.2 Blantyre, Malawi

In Blantyre, the Malawi Homeless People's Federation initiated three precedents. First funds were used to augment an existing programme of eco-san toilet construction in informal areas across the city (funded primarily by the ADB). Eco-san toilets do not require water supply, avoid groundwater contamination, and the manure can be sold to generate income or used for urban agriculture. Financed primarily through ADB capital, 783 eco-san toilets have been constructed in Blantyre assisting 14,094 people. The second precedent is the construction of five public toilets for which the Blantyre City Council has allocated land. The facilities are located near busy markets and comprise of 10 rooms. They are run as an enterprise with funds recovered the costs of capital investment. Construction was scheduled to begin in July 2014 but was only finally begun in March 2015 due to the need to secure planning permission. Five toilets have been completed at market places in the settlements of Ndirande (two), Manase, Nancholi, and Likotima, and the Ndirande toilets were formally opened by Councillor Cecilia Zeka Phiri in May 2015. The third precedent was to involve the construction of a DEWATS system in an informal area. This drew on a similar system installed in a formal development in Blantyre developed by a sister agency to the Centre for Community Organisation and Development. Unfortunately the federation was unable to identify a suitable site with land available for the treatment pond and the settlement was unable to install sewers without relocating physical structures. Discussions with the council are ongoing.

6.1.3 Kitwe, Zambia.

Kitwe has been the most challenging of the four cities. Despite considerable efforts to engage with the ADB-financed Nkana Water Supply and Sanitation Project to extend sanitation in the city to informal settlements, there has been limited progress. Zambia Homeless and Poor People's Federation and the People's Process on Housing and Poverty in Zambia have supported their local members to build 63 eco-san toilets in Kawama and Mulenga compounds. Shared septic tanks (for between two and five households) were planned but not taken forward as those members ready to build have not been located close to each other. Twelve individual septic tanks have been constructed.

The Kitwe federation has struggled to secure permission from the city council to build and manage communal facilities in Mulenga compound despite the fact the council has two vacant plots demarcated for public toilet construction that are currently being used as dumping sites, and the ablution block has been designed. The federation has started working with market traders in its efforts to increase pressure on the city council. Difficulties have been exacerbated by reshuffles of council staff and bureaucratic procedures.

The Kitwe federation has faced significant challenges in persuading informal settlement residents to adopt their model. The local utility, Nkana Water and Sewerage Company, had pledged to provide 1,500 free toilets (later reduced to 1,000 due to an increase in costs),

through an ADB loan, in the informal areas. While the federation tried to develop a partnership with Nkana to jointly deliver the project this has not proven to be feasible. Despite the stated interest of the utility, they have not been willing to negotiate and sign an agreement. Some activities such as training were shared but the utility was not willing to deepen this relationship. Residents were keen to get a free toilet from the utility and were not willing to work with the federation efforts as they would have had to repay the costs of the toilet. The Zambian affiliate has, however, launched a sanitation forum in Lusaka to build up a momentum for greater central government investment in sanitation.

6.1.4 Chinhoyi, Zimbabwe

Three precedents were developed in Chinhoyi. Individual flush toilets have been connected to the existing sewage network in Mpata with 10 toilets being built by mid 2016. In Gadzema, a settlement located close to Chinhoyi's city centre, the Zimbabwe Homeless People's Federation rebuilt and is now managing a dilapidated council facility. The council provided skilled labour and community members provided unskilled labor. The designs have individualised cubicles maintained and managed by the 60 families using them. Four families share one toilet. The council is responsible for maintaining the municipal sewer line and major repair work. In Shackleton, an old mining town located 15km from Chinhoyi that has no water connection, the federation is rolling out eco-san toilets. So far 37 have been completed, reaching 475 people.

Recently, discussions with the municipality have advanced considerably. Chinhoyi Municipality is now constructing school toilets; and parents are charged 15 cents a month to build up a fund for further such investments. The programme has just started, with only two blocks having been built at a single school by mid-2016. If all the possible monies were collected, then the income would be US$ 8,000 a month. In practice only US$ 2-3,000 a month is collected but already the difference is evident in the schools in which new toilets have been installed. The council is also in the process of renovating public toilets, and is about to begin discussions with the Zimbabwe Alliance to establish a sanitation fund.

6.2 Collective action and sanitation provision

Collective activities are central to the majority of precedents explored within the city-wide project. As explained, such precedents have been developed by organised grassroots federations working with their technical assistance agencies. As shown below, the specific contribution of collective action to each precedent varies considerably. A small number are individual but most involve some form of shared toilets. Off-site FSM has benefits particularly in dense settlements but involves considerable complexity.

Table 4: Collective action and sanitation provision

	Finance (deposit, loan repayments)	Management of facility	Faecal sludge management	Toilet provision
Shared compound pit latrines (Dar)	Land Owners	Shared between tenants	On-site	Shared between tenants
Shared eco-san (Blantyre)	Land Owner	Shared between tenants	On-site	Shared between tenants
Shared eco-san (Chinhoyi)	Shared between users	Shared between council tenants	On-site	Shared between council tenants
Shared septic tanks (Kitwe)	Shared between users	Shared between owners	On-site	Individual
Shared toilets with sewers (Chinhoyi)	Land Owner	Landowner	Sewers	Shared between neighbours
Individual septic tanks (Kitwe)	Home owner	Home owner	On-site	Individual
Decentralised wastewater treatment (Dar)	Grant	Collective	Sewers	Shared between tenants
Market eco-san toilets (Blantyre)	User charges	Collective	On-site	Collective
Shared toilets in communal block (Chinhoyi)	Council tenants (within rent)	Collective	Sewers	Shared between council tenants
Gulper emptying provision (Dar)	Micro-enterprise loan	Enterprise	Transported to council treatment ponds	n/a

7. Collective action for sanitation in Blantyre, Kitwe, Chinhoyi and Dar es Salaam

The following section reflects on how SDI affiliates in Blantyre, Kitwe, Chinhoyi, and Dar es Salaam collectively organised around sanitation, and the implications that this has had for sanitation precedents, and also for strengthening their own organisations and leadership, promoting engagement with local authorities, and engaging with national and international stakeholders.

7.1 Collective action around sanitation builds stronger local mobilisation and capacitates local leaders.

In Dar es Salaam collective action to build stronger local processes and organisations has been central to the development of the precedents. The situational analysis of sanitation in the city highlighted a number of community actions that were then used as a foundation for the precedent setting projects (CCI and TUPF[5] 2013). These actions included engaging all communities in the settlement profile, enumerations and mapping. In most areas, the community federation had already initiated community-driven projects such as solid waste management, hygiene promotion and toilet improvements. In all these projects, all communities in those settlements worked together to address the sanitation challenges. In an attempt to extend the reach of the initiative beyond the federation, and recognising the public good benefits of sanitation, loans from the federation's Jenga Fund were available to all community members regardless of their federation membership status. During construction of simplified sewerage projects, community members negotiated with landlords to improve relations between tenants and landlords. This involved securing land for laying pipes, and ensuring that improvements to sanitation would not increase the rental costs to tenants. Finally, a community operation and maintenance committee was formed to take care of the infrastructure operation and maintenance of the simplified sewer.

5 CCI: Centre for Community Initiatives; TUPF: Tanzania urban Poor Federation

7.1.1 Capacitating local female leaders in Blantyre.

Numerous examples from across the SDI network illustrate the value of placing women at the centre of community-led development processes – from building female-led savings groups to negotiations with government, and the conception, construction and management of community-changing projects. Poor sanitation affects women and girls disproportionally to men and boys and manifests in deprivations and increased risks (Nallari 2015). Women forced to walk long distances to use toilets at night face heightened security risks. Outbreaks of disease due to poor sanitation affect women and children more than they do men, while inadequate sanitation impacts women's health during pregnancy and menstruation. Efforts to improve sanitation require more than improved access, instead women need to be central to identifying sanitation needs, developing solutions, and managing and governing sanitation, in a broader context where women play a central role in slum upgrading programmes. In Blantyre, Malawi the value brought to the City-wide sanitation[6] process by women is best told through their own stories.

Mrs Loveness Chimatiro, a national leader of the Malawian Federation of the Rural and Urban Poor feels that a key task has been leading the federation's sanitation work, and mobilisation process. This involves local-level community work, talking to community members in equal terms, making it easy for them to understand the ideas that the federation promotes and – most importantly – being a living example of the actions she preaches. Loveness often sits with women in the community to discuss the importance of a clean living environment and a hygienic house and toilet for both their own and their families' health.

> *"Being a woman has made the dissemination of ideas and habits [relevant to sanitation improvement] easier. Women are the ones adopting new routines, especially when it comes to sanitation – and the process of transferring knowledge is easier when it is from women to women, as it feels more familiar."*

Mrs Cecilia Sabawo, a National Federation leader, argues that since women have driven the local mobilisation process it has also become easier for communities to consider, develop and adopt new ideas and technologies. She notes:

> *"Women play a key role in looking after the house and the family, and are in charge of household chores. If you can influence them, you can change the sanitation and hygiene of the whole community. And being a woman myself, it has been easier to inspire them."*

6 As in all of the other cities where the SHARE City-wide project was rolled out, the federation had existing programmes of sanitation provision that were augmented by the project. In the case of Blantyre value was added to eco-san sanitation provision funded by the ADB. The City-wide project also enabled the Federation to pilot market-based public eco-san facilities.

Cecilia and Loveness provide powerful examples of how women can practically and strategically improve their own lives and capacities through the provision of sanitation. Through sharing their stories and experiences they inspire women in many other communities to pick up the sanitation 'baton' at the household level, and to recognise the public health benefits if communities work to improve sanitation collectively. A gendered approach to mobilisation adds a unique dimension to sanitation provision and creates opportunities and discussions that may not take place through more traditional approaches. It also presents an opportunity to overcome the sense of shame that can obstruct efforts to identify sanitation needs and solutions for women and girls. Women have been able to build on the role that they have secured in local development processes through the savings groups that pre-date the City-wide work, to ensure that the specific sanitation needs of women and girls could be reflected in the sanitation precedents considered.

7.1.2 Leadership learnt through doing

Women played a key role in the practical precedent phase of the City-wide project, which involved constructing and managing both household and public (market-based) eco-san toilets. They were involved in (and learnt from land negotiations with local chiefs, the pricing and procurement of materials, the supervision of toilet construction and eventual management and monitoring of facilities (both locally and city-wide). Cecilia is a member of one such committee that regularly monitors the public toilets.

This type of hands-on experience builds capacities allowing federation women to become sanitation experts. Knowledge is shared with other women through regular federation meetings, both regionally and nationally. This has created a platform for the federation to discuss successes, challenges and strategies to further and deepen the sanitation process. Loveness, who has been a member of the federation for 11 years, notes that involving other women, starting from the savings group, is crucial to this type of learning. While Loveness has never attended school herself, she has been invited to teach university students from the Architecture and Physical Planning Departments of the University of Malawi during a community-planning studio that focuses on developing realistic plans for informal settlement upgrading. She notes:

> *"Now people think I have a diploma. I can discuss ideas and persuade councillors, MPs, walk into offices and talk to people in an equal relationship."*

7.1.3 Changing perceptions

Cecilia, Loveness and other federation women have been closely involved in the process of building toilets: working as contractors, sourcing materials and instructing builders – roles that women do not traditionally fulfil in Malawi. In doing so they were able to overcome some of the day-to-day sexism experienced by women in the community.

> *"By delivering results we have gained the respect of leaders, authorities and the communities. Chiefs, councillors, community leaders and the communities know us as the women who have been there from day one, mobilising, constructing, and involved in toilet management, and monitoring. We have earned their respect by having a central role in the process."*

Cecilia cites the example of the federation's work in the informal settlement of Ntopwa in Blantyre. The settlement was characterised by a lack of toilets and poor hygiene. Federation women led a programme of toilet construction, solid waste management and hygiene education encouraged by the local chief. The situation in Ntopwa has now drastically improved with cleaner roads, less standing rubbish and improved toilets. Cecilia reflects on how the Ntopwa community has adopted the federation's approach:

> *"The adoption grows in a continuous process, a virtuous cycle – as more women adopt new practices, the interest in better sanitation and hygiene practices also grows."*

Another important precedent-setting project, negotiated by women, was the construction of a public eco-san toilet in Chemussa in 2006.[7] This became a reference point for the council partnering with the federation on the public eco-san toilets that were rolled out during the City-wide project. Cecilia recalls:

> *"When the idea of a public eco-san toilet was first discussed, the majority thought it was an impossible concept. Eco-san toilets existed only at the household level at the time. But the Chemussa case proved that is was in fact possible, and this precedent helped to pave the road for land to be secured for constructing five more toilets."*

7.2 Collective action around local precedents in sanitation

Collective action has been instrumental in negotiating the upgrading of latrines in Dar es Salaam, and developing new sanitation precedents. The Tanzanian federation's ability to negotiate agreements with landlords to restrict rent increases has been critical. For example, in Keko Machungwa settlement landlords oversee sanitation upgrading improvements for compounds where they can rent out rooms to families of, on average, five people (per room). Keko Machungwa has a high coverage of latrines, but many are in poor condition and in need of upgrading (CCI and TUPF 2013). SDI rituals deployed to encourage landlords to improve sanitation provision included community meetings (bringing landlords, tenants and local authorities together to discuss the sanitation challenge), joint visits by the federation and local officials to specific households to facilitate negotiations between landlords and tenants, and taking advantage of public events (e.g. handover of new toilets). These events were used to highlight sanitation challenges and the solutions that could be developed by

7 www.iied.org/achieving-universal-sanitation-sharing-experience-sdi-affiliate-blantyre-malawi

the federation. Through this process, loans for latrine upgrading – with terms agreeable to both landlords and tenants – principally involve securing assurances from landlords that there would be no drastic increases in rental prices to cover costs.

> *Zaituni Mohamed, a 30 year old resident, lived without a toilet for a time after it collapsed in the house that she shares with 10 other people. The landlord said he did not have money to repair the toilet, so Zaituni and the other tenants shared the neighbour's toilet during the day and used tins to relieve themselves at night, for fear of going out at night and also because of the distance. The tenants were concerned that looking for a different affordable house to rent might only bring them the same difficulties. Zaituni knew about the provision of loans for toilet construction provided by the federation. By organising her fellow tenants and drawing on the TUPF/ CCI mobilisation team, Zaitnui was able to convince the landlord to take the loan and put in an eco-san toilet.*
>
> *(CCI and TUPF 2013)*

The City-wide project sharpened the federation's approach in this regard, with key indicators being negotiated sanitation solutions between landlords and tenants and the establishment of municipal sanitation forums. Tenants are responsible for operating and maintaining latrines while landlords are responsible for guaranteeing the capital finance used for latrine construction. As owners of the asset, landlords take loans from the federation urban fund and ensure repayment of the money borrowed.[8]

However, the scale of the sanitation challenge in Dar es Salaam calls for appropriate and affordable solutions that seek to fundamentally re-align the institutions that deliver unequal access to sanitation in the city.

In an attempt to develop new solutions that are better able to meet this challenge, the federation has been seeking to develop affordable simplified sewers in the informal settlement of Vingunguti, home to around 106,924 residents. Despite living in close vicinity to the council's waste disposal ponds, which service the centre of the city, residents are not connected to the sewers and face extremely poor sanitary conditions that are exacerbated during the rainy season. Outbreaks of disease are common.

During the course of the City-wide project, the Tanzanian Alliance piloted a simplified sewerage system built using plastic pipes in a shallow excavation, which connects to the waste treatment pond nearby, and served 42 households. The precedent shows how local collective action supported by international exchanges can help to identify and address key challenges to existing precedents, and advance plans to achieve scale. Considerable collective action will still be required for this precedent to be developed to the point at which it can be scaled up; this requires both the engagement of local residents and support from the local authorities and utility company.

8 http://sdinet.org/2014/07/scaling-up-shared-latrine-options-karakata-settlement-dar-es-salaam/

Despite considerable challenges the Tanzanian Alliance believes it is possible to expand the system to cover the entire Vingunguti settlement. Preliminary planning to reach 1,000 households[9] has already begun with support from the SHARE City-wide project.

An exchange visit by OPP that took place in August 2015 provided an opportunity for the Tanzanian Alliance to learn and share learning around simplified sewers as a sanitation precedent. Their inputs highlighted some key collective action challenges.

1. The clearer delineation of responsibilities between the federation, support NGOs, SDI and local government (see Annex 1). OPP inputs emphasised the responsibility of government to provide secondary and trunk sewerage infrastructure. However, OPP argued that the Tanzanian Alliance should not wait for the government's commitment to provide secondary and tertiary facilities, as they may wait for 50 years, but rather begin the installation of their own system thus placing the onus and pressure on government to deliver. This requires the federation to work with local communities both to reduce their risks, and to advocate for support from the relevant authorities.

2. Stronger local ownership with residents paying for and building the simplified system. The communities' financial commitment and participation in the installation of infrastructure were stressed as fundamental to the project's expansion and sustainability. Deepening and strengthening of savings across the Vingunguti community is a first step.

In addition to these interventions to strengthen collective action within and between communities, the OPP provided technical advice to the NGO and federation technical teams to reduce the costs of the simplified sewerage system.

7.3 Collective action for improved dialogue with the state, and partnerships with local government

As indicated by the discussion above, in addition to collective action mobilising local people to take action on sanitation, it can also strengthen engagement with the state. The examples above have highlighted the significance of advocacy with the state to ensure that local investments made by communities can link up with sewers and/or waste treatment facilities. Collective action also has a role in ensuring that state regulations are supportive of community-led sanitation improvements and that subsidies are made available to support the inclusion of the lowest-income households. People living in informal settlements are rarely listened to; collective action is critical to amplifying the voice of the urban poor to ensure that their experiences and knowledge is heard.

9 This number is based on a commitment made during a meeting with local authorities in Vingunguti in which the federation committed to provide connections to 500 households if the authorities would match this number.

The following section discusses the ways in which the federation in Chinhoyi has used the city-wide project to deepen its engagement with the city authorities, and briefly shares some key experiences from the other cities.

7.3.1 Profiling and mapping in Chinhoyi for improved dialogue with the state

The Zimbabwean Alliance has a long history of developing shared eco-san toilet provision (Banana et al 2015a and b) growing out of the need for alternative sanitation options in low-income settlements without access to water. Through its work across Zimbabwe it has been able to influence city officials to loosen out-dated planning regulations and accept eco-sanitation as a viable and affordable sanitation option for many low-income settlements across the country. The success of eco-sanitation provision has built on organised women-led savings groups who have prioritised sanitation within their upgrading agenda and who have been able to save towards toilet construction and draw government into constructive partnerships to support this agenda.

The city-wide work in Chinhoyi builds on an existing process. The Zimbabwe federation began engaging the local authority in 2006 after it was allocated a greenfield site in the neighbourhood of Brundish for housing construction. Over time, and through exchanges, the federation was able to convince the Chinhoyi authorities to relax regulations and allow the construction of eco-san toilets to service the houses. Before the city-wide project began, the community had built 140 single and 189 two-roomed units. The timeline provides a synopsis of the development.

Timeline of Brundish development

2003 Members mobilised to join the housing waiting list

2005 Land negotiations with council

2006 Community land identification exercise undertaken and findings presented for council verification

2006 Greenfields land allocated

2007 Community physical layout sketch plan produced by Federation technical team

2007 Physical planning consultant engaged to improve the sketch

2009 Layout and survey plots approved

2009 Building materials mobilised and >300,000 standard clay bricks moulded

2010 Incremental development proposal developed and exchanges held to areas already using eco-san toilets (e.g. Hatcliffe and Epworth)

2010 Boreholes drills and model eco-san Skyloo constructed (urine diverting dry toilets/UDDT)

2010 Plots occupied by beneficiaries and houses constructed

2012 118 two-roomed housing units completed and 130 Skyloo toilets completed

Data collection for the situational analysis was completed by the community-led profiling and enumeration team and formed the basis for the federation's engagement with the city. This provided useful information on particularly neglected areas such as Shackleton[10] where no previous data on sanitation coverage and costs existed. Data collected as part of the city-wide research shed light on toilet coverage and usage, current investments in sanitation and willingness to pay for water and sanitation. The enumeration and profiling process in Shackleton and other areas across Chinhoyi was used to mobilise new federation members and prepare the community for future project interventions. This process was instrumental in getting communities talking about, and then collectively planning, how to address the sanitation challenges that they, themselves, have identified and highlighted through federation structures. The maps, documents and reports produced were useful for engaging city officials.

Collectively owned data also had practical benefits. During the planning and construction of a communal facility in Gadzema, enumeration survey and profile data helped in overcoming a number of hurdles. The project steering team[11] armed with accurate profile and enumeration data were able to reconcile a rates dispute between residents and the council and both parties began to see sanitation as a common challenge that must be addressed collectively. The task of convincing both authorities and the community that a public toilet can function with the right model of ownership and management required intensive "unlearning" of preconceptions – especially given previous experiences in Zimbabwe (Banana et al 2015a). The continued use of profile and enumeration data enabled the Gadzema community to clearly articulate, and appreciate, their role in the maintenance of community-managed facilities. The toilet has now been built and had been operating successfully for over 6 months at the time of press. Local authorities contributed US$ 9,000 to the capital costs and the partnership has opened up the potential for the federation to be awarded a contract to build school toilets in Chinhoyi as well as possibilities around upgrading other communal toilet facilities in the area.

10 Shackleton was established 25 miles west of Chinhoyi in 1960, after the discovery and subsequent exploration of sedimentary copper mineral deposits in the area. The small mining compound is owned by the Zimbabwe Mining Development Corporation but the mine ceased operating in 1999. Central government moved people into the abandoned housing from three informal settlements in Chinhoyi town, and from surrounding farms that were affected when the government seized white-owned commercial farms in 2000. The national government had been concerned about the threat of a cholera outbreak in the three informal settlements, and it was hoped that Shackleton would provide an alternative for these communities, because it had infrastructure in good condition. Shackleton residents live with insecurity. Tenure in mining towns has typically been vested in the mining corporation and where mining activities have ceased, complex tenure situations have arisen (Banana et al 2015: 10).

11 The team is composed of representatives from the local council, federation, Chinhoyi community and Dialogue on Shelter. From the council side, the project was being anchored by the Housing, Health, Engineering and Planning Department and usually the departmental heads would attend. The Federation was represented by one of their national and regional leadership as well as Chinhoyi federation enumeration, health, savings and mobilisation and technical components. Settlement representatives were selected on a voluntary basis from all Chinhoyi settlements.

In line with the Zimbabwean federation's national strategy, the Chinhoyi federation were clear that:

> *Being bottom-up does not remove the local authorities' traditional role of assuming the overall responsibility for service delivery. What the project sought to do was redefine accountability, governance and the relationship between the local authority and its citizens, to achieve a strategy to address the sanitation needs of all.* (DoST 2013: 17)

The city-wide project added value to the collective production of data through the focus on on-the-ground conditions in low-income and informal settlements across the city, and also developed the capacities of the local residents who collected the data. This process, and the federation's relationship with authorities, affirmed the legitimacy of the data collected and hence its acceptance by authorities. This led to a city-wide sanitation fund being developed in Chinhoyi, and a city-wide sanitation plan developed jointly by authorities and representatives of the federation.

The process has challenged the Chinhoyi federation to rethink how collective and inclusive its sanitation precedents are. Discussions at meetings of SDI affiliates involved in the City-wide work in Zimbabwe and exchanges to Uganda revealed that shared or individual eco-san toilets would not be affordable to the lowest-income community members, nor would they address the scale of need in Chinhoyi. This process led to intense debate within the Zimbabwean Federation (in both Chinhoyi and more broadly) around which sanitation options were affordable and scalable and how community members beyond the federation could also access sanitation services. While eco-san is a sanitation option for some, especially in water scarce neighbourhoods, communal options like the toilet block in Gadzema have entered the "toolkit" of the Chinhoyi Federation as a more affordable option, with possibilities of re-habilitating dilapidated communal facilities in Shackleton also under discussion (Banana et al 2015a).

7.3.2 Changing mindsets to work with local authorities in Blantyre

The Blantyre Federation believes that engaging authorities (councillors, community leaders, MPs) is crucial for implementing sanitation upgrading. The federation has taken this seriously and included officials, and facilitating partnership meetings, at all stages of its sanitation programmes. These officials are crucial to addressing community demands, making improved policy decisions and allocating resources for inclusive sanitation. The city-wide project built on the existing partnership and authorities were involved throughout the information collection and precedent process. Loveness describes how the federation's relationship with authorities has changed over time.

> *"We have changed the mindset of leaders and officials, who use to think that people in the communities don't know anything. They now respect us and use a bottom-up approach."*

Based on the proven capacities of the federation, authorities allocated land for the construction of market toilets during the City-wide project, and allowed the federation to lead the construction and management of these facilities. Cecilia explains the value of women in this process, and implicitly elaborates on the empowering potential that this process may have for female community organisers:

> *"Sometimes being a woman makes it easier for them [the authorities] to listen. Despite gender inequalities that still exist, organisations like Blantyre City Council are putting a conscious effort to promote gender equality, and are particularly supportive when women are leading the processes."*

7.3.3 Modalities for engaging with local authorities in Dar es Salaam

The City-wide project sharpened the federation's approach to political engagement, as indicated by its establishment of municipal sanitation forums. However, the scale of the sanitation challenge in Dar es Salaam calls for new appropriate and affordable solutions that require the realignment of institutions that currently deliver unequal access to sanitation in the city.

New options include simplified sewers in the informal settlement of Vingunguti, with ongoing discussions with the local authorities about how this work can be scaled up. Municipal forums established during the course of this project (and catalysed by the idea of sanitation forums) are providing for stronger collaboration actions between the federation and local government. Forums with Temeke, Ilala and Kinondoni municipalities are now taking place. Relations with the utility company (DAWASA/DAWASCO) have enabled both the simplified sewerage and Gulper teams to deposit waste in ponds after paying the standard fee.

The federation believes that local government's involvement in sanitation has improved at settlement, ward and municipality levels. The sanitation mapping data generated interest particularly at the settlement and ward level. Municipal officials provided positive recommendations towards the development of precedent setting and provided technical and advisory support. The federation is currently developing relationships with the national government especially in linking it with existing ongoing national sanitation programs. Furthermore, an Urban Sanitation Forum for Dar es Salaam has been established involving community, government and other key actors, including the utility company as chair and the federation as secretary. It is envisaged that this forum will provide a gateway to interface with local government authorities and utility companies and thereby be able to influence policy changes in the future.

7.3.4 Partnership challenges in Kitwe

The experiences of the Zambian Alliance demonstrate how state structures and agency alignments, in a given context, can impede effective community-driven processes, thus contributing to our understanding of the importance of developing appropriate state support for community processes in order to achieve scale.

In the case of Kitwe, an existing ADB-funded programme between the Kitwe City Council and the local utility, Nkana Water and Sewerage Company[12], was to provide 1,000 free latrines to low-income residents in the same areas as those targeted by the federation. This initiative pre-dated the City-wide interventions. The Kitwe Federation had already tried to partner with Kitwe City Council and NWSC to assist in the development and rollout of latrines, which were behind schedule. They hoped that federation processes would add value to the programme in a number of key areas, and ensure that the sanitation infrastructure reflected local needs. The federation argued that providing the latrines free of charge would not generate a sustainable process, particularly in light of the scale of sanitation need in Kitwe, where 60,000 families lack adequate access to sanitation. It contended that loan finances could revolve to scale up delivery. Furthermore, it highlighted that free toilets could entrench dependencies on external donor finance with communities having little involvement in the design, construction and management of the toilet facilities. Participation and collective action premised on federation rituals – e.g. collective planning/design, linking the project to organised savings groups and expecting communities to contribute financially to the project – were suggested to ensure that the project had greater reach and secured a stronger sense of ownership. Despite sustained negotiations over a period of four years, the federation was unable to reach an agreement with the NWSC.

In Kitwe's case, grassroots community processes were unable to change institutional norms and create the conditions for new modes of sanitation delivery. The federation sought council support for an alternative precedent, the rehabilitation and federation management of dilapidated market facilities, but bureaucratic red tape hampered the process.

12 Nkana Water and Sewerage Company is owned by the cities of Kitwe and Kalalushi.

8. Conclusion

This paper has sought to demonstrate how federations of the urban poor in Chinhoyi, Dar es Salaam, Blantyre and Kitwe has pursued collective responses to the sanitation challenge in low- income communities in each setting. In our conclusion, we pick up four key themes that have emerged as a result of collective action responses including: the platforms that have been created for female community leaders to identify and address their sanitation needs; the role of sanitation precedents in developing sanitation knowledge networks at and across various scales; how sanitation has changed the boundaries of collective action in each city; and finally how collective action around sanitation is used by the federations to pursue partnerships for incremental upgrading with local government.

8.1 Gender and identity – strengthening female voices in local development processes

SDI affiliates have made considerable efforts to strengthen local grassroots organisations. The purpose of SDI, its raison d'etre, is to strengthen the voice of disadvantaged groups living in cities. This has led to a primary emphasis on organising women living in informal settlements. Traditional male-led organisations generally fail to represent the interests and address the needs of women. Savings is chosen as a key modality because of its attraction to women, and lack of attraction to men. This creates an organisational space that enables relations between women to consolidate, leading to more and stronger women community leaders, which in turn gives their public role greater legitimacy and authority (Mitlin, Satterthwaite et al. 2011; d'Cruz and Mudimu 2013). Women's savings groups offer training in many skills particularly those related to financial management. Their contribution is perhaps most significant in the values that they nurture as they facilitate the cultivation of relations of empathy and collectivity between women who are disadvantaged at multiple levels, and particularly in the home, in their neighbourhoods and with the city administration.

> Federations of the urban poor are collective action responses to the poverty and inequality that affects low-income and informal settlements in the global South. Social movements such as SDI[13] are not inherently progressive, and active steps have to be taken to build platforms for the voices of women and equitable power distribution (Horn 2013), so that the gendered needs of members around issues such as sanitation, are recognised. Women leaders are central to SDI federations, as the organisations are built around women-led

13 SDI's mission is to build the voice and agency of slum dweller communities, with a special focus on the role of women, to achieve inclusive cities in which the urban poor are at the centre of strategies and decision-making for equitable urban development.

savings groups, which not only provide a space for women to save, but also for women to reflect on local needs and develop upgrading processes (Patel and Mitlin 2010). Daily saving enables women to save when they have available income and enables savers to save as much or as little as they like – this means that even the women with the lowest incomes can be part of local development processes. The gendered inequality that characterises society is often reflected in participation in the savings groups; it might be more or less difficult for some women to participate in and contribute to savings groups than others. While the City-wide sanitation project builds on the foundations established by the federations around savings, the approaches developed by federations have sought to put women at the centre of the process.

"Poor sanitation disproportionately affects the health of women and girls."

Poor sanitation disproportionately affects the health of women and girls, inadequate provision can put women at risk of assault, and can also promote a sense of shame that makes it difficult for women to express and voice their sanitation needs. However, women's gendered relations and gendered responsibilities encourage them to collaborate to improve their living environment. Increased 'cleanliness' through the provision of waste management, water and sanitation at the house and neighbourhood level has multiple benefits for women. First, it reduces the burden of women's reproductive role, and helps to maintain the health of all household members particularly the old and young, whom women are frequently expected to care for. Second, it reduces their sense of shame and increases their confidence. Women recognise the injustice of the present distribution of public services and the neglect that is evident in many informal settlements; some feel personally responsible for providing for their family and a sense of inadequacy due to their inability to provide as they would wish. Working together to address this situation challenges this negative self-perception. Third, the successful provision of such communal facilities raises women's status in the community. Fourth, such activities raise the profile of the work of savings groups, and begin to draw in other residents. In the case of sanitation, with the commitment of others required for gains are to be realised by each household, drawing in others becomes an imperative. Hence sanitation is one of the collective infrastructure goods whose provision complements other organising approaches of the affiliates. Sanitation needs lots of residents to participate – it incentives federations to work with others in their settlement (this point is elaborated below).

In each of the cities, women have sought to be central to identifying sanitation needs, developing and constructing sanitation precedents, and developing strategic partnerships and links with local authorities. In particular the experiences of the female leaders in Blantyre demonstrate how women have been involved and led at each step of the process. The process has provided scope for women to discuss individual sanitation needs without shame, and also the sanitation needs of the household, to form and develop practical and strategic solutions. The consolidation of identity is important in strengthening the social movement; indeed it might be argued it is a pre-condition

for successful mobilisation. However, it is also significant as an end in itself, creating a collective public identity that challenges isolation and the negative effects of such isolation on individual well-being, and which enhances individual well-being through, for example, the "capacity to aspire" (Appadurai 2001).

In each of the cities, women have sought to be central to identifying sanitation needs.

8.2 Precedent development and strong social movements operating at multiple scales.

Collective action around sanitation in each of the four cities has contributed to the development of sanitation knowledge networks that serve local communities, but which can extend across communities in a city, and between cities both nationally and internationally. The work undertaken by affiliates around sanitation continues with this approach, and exchanges (see Box 1) have become a means of extending, supporting, and strengthening knowledge networks relating to technologies and governance arrangements for toilets and FSM at various scales. On-site toilet solutions are often considered as acceptable forms of improved sanitation where there are no sewers, but this overlooks the need to consider adequate FSM and toilet technologies, particularly in densely populated settlements (Mitlin 2015:2).

8.2.1 Knowledge networks for faecal sludge management

Simplified sewer technologies were pioneered as a means of extending provision to low-income households in Pakistan through the Orangi Pilot Project, (see section 2.2). The technology and governance was built around a co-production partnership whereby communities funded and constructed local 'small pipes' at the level of the lane, while local authorities and utility companies linked local pipes to big pipes and were responsible for FSM. This approach was rolled out as the government reformed sanitation standards to accommodate simplified sewers, while OPP encouraged communities to fund and construct lane-level infrastructure so that the programme was less dependent on external finance. As the project progressed it gained sufficient political traction to catalyse a change in state policies and programmes leading to greater investment in sanitation in informal settlements. Exchanges between OPP and the Tanzanian federation have been instrumental in sharing knowledge about this FSM technology, and how OPP has engaged with government to secure political support for scaling up. The Tanzanian simplified sewer precedent was initially developed locally and has the scope to address local sanitation needs at scale. But the federation has struggled to secure payment from residents, to bring down the cost so that it is affordable for others, and to secure support from the local authority to extend provision. An exchange with OPP presented an opportunity to extend local discussions around payment and subsidies for simplified sewers, in light of the experiences of OPP.

In the absence of sewers, simplified or traditional, emptying on-site

services such as pit latrines can be challenging, particularly in narrow lanes. Households might resort to informal solutions such as manual emptying or making holes in pits during the rainy season. Small-scale Gulper technology, managed by local community members, provides a service that is accessible to more households. International meetings and exchanges between other affiliates that we facilitated as part of the SHARE programme presented opportunities for them to learn about the Gulper technology managed at the community level. Gulper technology is also commonplace in Lilongwe in Malawi but it has never been central to the priorities of the alliance in Blantyre; this could be linked to its incompatibility with the eco-san toilets that have been so central to the sanitation efforts in Blantyre.

8.2.2 Knowledge networks for toilet technologies

One of the core collective action activities of the SDI affiliates is that of knowledge production and this has been completed as part of and beyond the SHARE City-wide work. Some of the multiplicity of ways in which SHARE has contributed to the generation of knowledge are discussed in the cases above. In addition to the specificities of sanitation-related knowledge, the general contribution of knowledge production to the empowerment of informal settlement dwellers also has to be recognised. Specific knowledge networks relating to FSM and toilet technologies have developed enhancing local practical knowledge of SDI affiliates around these themes and building the capacity of federations to engage strategically around them.

Collective toilet blocks have had significant success in Mumbai and Pune (India), as demonstrated by the achievements of the Indian Alliance that has supported the construction of 20,000 toilet seats and that was able to influence the development of the national sanitation strategy. Community-managed toilet blocks have been adopted in somewhat different contexts in the sub-Saharan African cities engaged in the city-wide project, reflecting the different priorities of low-income households in densely populated Indian settlements, and low-income households in more sparsely-populated African cities. The construction and management of toilet blocks in Chinhoyi as part of the SHARE city-wide work has drawn on some of the SDI collective rituals that have underpinned broader upgrading processes. However, federations have generally only used communal toilet blocks in market areas; in this SHARE project this is exemplified through the experiences of the Malawian federation.

Community-managed toilet blocks for households have been developed as part of the SHARE work in Gadzema, where a dilapidated block was rehabilitated. Here, 60 households worked together to develop a local management plan. The federation was also able to secure a working partnership with local government that enabled it to openly discuss developing a fund seeded with repayments from the Gadzema communal toilet block to upgrade further dilapidated blocks. The federation has also used funds from its Urban Poor Fund to construct a toilet block in a primary school.

As part of the SHARE City-wide project there has been extensive interest in eco-san toilets and finance for eco-san at the household level. In comparison with newly constructed pit latrines, eco-san is relatively odourless, requires little water, requires less space and land, and can be easily emptied. There is scope to save money and even generate income from the manure generated. However, certain challenges persist, and the affiliates have sought to develop and share learning around the cost of eco-san toilets: how to engage with local authorities around standards so that they might accommodate eco-san, and also on the affordability of and finance for eco-san toilets.

The Zimbabwean federation has undertaken extensive work to bring down the cost of eco-san, having experimented with models that cost as little as US$ 100, but which compromised on hygiene and might be affected by flooding. It has a model that is acceptable to households for US$ 250. The federation has found that eco-san generally works at the household level, but can be difficult to implement as part of a collectively managed block because of the difficulty in ensuring that the toilets are always used properly, specifically that urine and faeces are separated and ash is used (Banana et al 2015a). Nonetheless, the Malawian Federation has used eco-san as part of their marketplace toilet blocks with some success.

National sanitation policies and standards shape the sorts of sanitation technologies adopted locally and promoted innovation in the sector to develop technologies that might be more affordable, or less dependent on traditional infrastructure, or water, such as eco-san. As part of the city-wide project affiliates have sought to produce and share knowledge around the use and acceptability of eco-san, and to influence policies and standards to accommodate this emerging technology. The Zimbabwean federation has sought to document and demonstrate the potential of eco-san, in light of concerns by local and national government about potential associated risks because it is not recognised as part of existing sanitation standards. As part of this process the federation has worked with the local authority in Chinhoyi to demonstrate that this technology is an acceptable form of sanitation that does not pose environmental or health risks. Consequently a series of memorandums of understanding with local government have been signed recognising the role that eco-san can play in sanitation provision, and local standards and regulations have been amended to recognise eco-san

“... eco-san generally works at the household level, but can be difficult to implement as part of a collectively managed block.”

The SHARE City-wide project has also supported the development of knowledge networks on collective social processes and technologies that can manage sanitation. This has included the expansion of eco-san in communal sanitation blocks in Blantyre. While the Zimbabwe federation had limited success with community-managed eco-san blocks, these have been more successful in Blantyre. The community blocks that have been built by the Zimbabwean federation are shared between households, and located in a community that is in the process of upgrading the area and improving access to services and sanitation. Blocks have been effectively managed when there was someone in the group of families who knew what to do and was comfortable working with all the neighbours to make sure

that standards were maintained. However, this was not the case in all groups. In some situations, the waste material was not correctly separated and the faecal matter got wet and would not decompose. Then the waste material had to be emptied and the toilet "restarted". In Blantyre the community-managed eco-san blocks are located in markets and are used both by traders and by local residents. They have a person who manages them in return for an income. The experience of the federation is that this works well. The market traders have no alternative toilets to use (they come in from rural areas to sell produce) and have the income to pay for using the toilets from their trading activities.

These toilets are important because they enable on-site sanitation to be used without imposing externalities on neighbourhoods because the faecal sludge is more safely managed. These precedents demonstrate that there are certain precedents that are more likely to facilitate and enhance collective action that others. There is less scope for facilitating local collective action with household solutions than with the simplified sewers of the OPP or the community block latrines of the Indian Alliance that require community participation in their development and use. These collectively developed approaches have provided more scope for communities to negotiate standards collectively (McGranahan and Mitlin forthcoming).

"These collectively developed approaches have provided more scope for communities to negotiate standards collectively."

8.3 How collective action for sanitation changes the boundaries of collective action

Savings groups have emerged to establish and consolidate collective action processes, but relational dynamics do not always encourage widespread membership as people may fear that either they or their neighbours are unable to participate regularly in savings and repay loans that may be advanced. While SDI's leaders emphasise the importance of daily savings opportunities and avoiding minimum contributions, these practices are not always taken up as groups replicate the practices of more formal (and powerful) groups and use monthly or weekly minimum contribution. Equally significant is when women are prevented from participating due to gendered oppression in the household, and when women choose not to participate as they are not convinced by the political approach that is being used. In this context, women's savings groups have partial participation, see section 8.1.

The early experience in India offers an exploration of both the strengths and weaknesses of savings-based organising. In India, the women's network of savings collectives, Mahila Milan, aligned with the National Slum Dwellers Federation to provide a movement that maintains an organisational space owned by women and enables them to realise their collective voice. It also brings into the mix the more traditional male-led organisations with their connections to patron-client relations. Only through working with these dual organisational configurations could sufficient mobilisation occur; and it was the large numbers of residents being mobilised that led to political legitimacy

and influence. Other SDI affiliates increasingly came to recognise that political strategies might be more effective with such a balance. The challenges that they face are to protect and build women-led savings groups, and to find ways to link these groups with other residents in the settlement. In some cases these residents are organised but not always.

In the last eight years, affiliates beyond India have sought to build alliances with other households and their organisations. Alternative modes of action have been identified, and enumerations (or data collection) have proved to be a particularly powerful way of drawing households together. Young people are attracted to data collection and the groups that take place in profiles, surveys and planning activities are generally equally divided between men and women. These processes have been seen to be effective in providing a platform for the local community to determine their priorities, and in creating links with local government, which has a formal responsibility for informal settlements and which is keen for further data. Section 7.3 describes how local savings groups have successfully used collective activities in information (with a specific focus on sanitation) to create and strengthen links with local government in the four cities involved in this action research project. However, while information collection makes an essential contribution through building important capabilities in managing tasks and related budgeting, and mobilising large numbers of residents, it does not improve the material conditions. It also does not require households to provide their own monies through savings, with the added benefits of ownership that such "hot money" brings (Patel and d'Cruz 1993). Moreover participation is voluntary and there is no imperative to ensure, for example, that a certain percentage of residents participate.

Organising around sanitation challenges an understanding of the relations in the federation from one based on membership towards one based on spatial location and lived disadvantage. It motivates federation members to raise the intensity of participation. And it develops collective capabilities to secure material improvements on this basis i.e. with strong formal and informal norms that govern behaviour in the interests of the collective even if there is not "membership". This requires and develops multiples skills in federation leaders.

Providing sanitation has required federation members to reach out to other residents in the settlement. During the course of the precedents, federation members have had to build their skills to manage a new set of relations with other people in the settlement. In contrast to information collection that enables relations to be relatively superficial, material improvements require complex and contested relations. Neighbours have to resolve financial issues including residents contributions and loan repayments; they also have to manage production processes, including taking care of materials, contracting and monitoring contractors. Some of the most difficult issues they face are negotiating layouts and building plans with local government. These government officials may be cooperative when offered information but significantly less so when asked to change established processes to make them more affordable and/or relevant

"... federation members have had to build their skills to manage a new set of relations with other people in the settlement."

to the livelihoods of low-income groups. As argued by Mitlin and Mogaladi (2013), this builds new collective capabilities in federation leaders.

The analysis above includes examples of federation collective action that has resulted in organisations that have greater breadth to existing activities (i.e. more people participating in activities whether members or not) and new activities that require all to participate. This includes those who have gained access to loans (Blantyre), those next door to federation members benefiting from access to sewers (Dar es Salaam), and those who are part of the group of council tenants that has benefited from the Gadzema communal toilet block.

In Blantyre, for example, the federation decided to redevelop its loan systems to enable non-federation members to access credit and invest in eco-san. The federation had to think through new terms and conditions, pilot them and then change its practice to mobilise communities around sanitation provision and provide technical and eco-san finance and product support at scale (Hunga 2016). Indeed, the loans have been extended to over 2,000 households. The Malawian federation has worked to develop accessible finance for low-income households to access eco-san. The federation has sought to roll out loans that were available to federation members in the broader community, through a process of mobilisation led by federation members (Hunga 2016). Certain challenges remain, as some households would prefer to access finance for alternative technologies, and the manure is not used by households to the extent that was expected. While seemingly a non-political adjustment, this has potential political implications as it challenges an understanding of the relations within the federation from ones based on membership towards ones based on spatial location and experienced disadvantage – from the particular to the general. As noted above, this shift coincides with a broader recognition n the SDI network of the benefits of aligning more closely with male-led traditional community organisations, and with efforts to strengthen such relations.

In Vingunguti, the simplified sewerage system offers neighbours the opportunity to connect. In practice a minimum number of residents is required for the costs to be affordable. Obviously the larger the number of potential residents who are involved, the lower the costs for all. However, once the minimum number has subscribed the lane can go ahead.

In Gadzema the toilet block required all residents to agree, including those leasing from the council and those sub-letting from those with a council lease. Initially, the Gadzema community was fraught with political divisions and even calling a general meeting was impossible. The enumeration process led to the formation of a Toilet Committee (eight community residents, three men and five women), tasked with supervising the construction and maintenance of the toilet and with mobilising the community to support the project. As the project progressed, 95% of absentee landlords cooperated, while 5% allowed their tenants to negotiate on their behalf. The federation provided a loan to each of the 60 households who will use the toilets (US$ 150 per family). Households repay this loan through monthly repayments of

US$ 6.25 that are added to council rates for the next two years. After construction was completed, all 60 households met and designed a management model.

There are further areas that remain work in progress. While community-managed toilet blocks are very affordable in Mumbai and Pune due to government subsidies this is rare outside of this context. Many SDI communal toilet blocks have been charging significant fees when these are aggregated across the month and all members of the household. The federations are much more conscious of the scale of this affordability crisis as a result of their shared learning. There is a reluctance to introduce a monthly household fee in part due to the additional financial management challenge that this poses and the need to manage these funds in an accountable way. At the same time, federations recognise the need to make toilet use affordable.

"... this work on sanitation has emphasised the potential of engaging with community residents as workers."

In addition, this work on sanitation has emphasised the potential of engaging with community residents as workers, providing opportunities for income generation. There are such opportunities both related to waste management (with the Gulper technology) and the caretakers of communal sanitation blocks. This requires a new skill set within local federation groups that have to establish ways of managing the opportunities that they create, and negotiating between the self-interest of the employee or entrepreneur and the collective interests of residents.

8.4 How practical collective action can build strategic partnerships

Collective action around basic service provision such as sanitation at the community level can only aim to achieve scale by building dialogue and partnerships with local government and sanitation sector stakeholders. A further necessary factor is large-scale mobilisation and considerable numbers in the settlement being involved in activities to create a political imperative for state action. The experiences of SDI affiliates engaged in improving sanitation demonstrate that this is an extended and iterative process, with identifiable incremental phases.

"Mapping and profiling provides an opportunity for communities to identify and document the reality of local sanitation provision."

Dialogue and partnership building begins locally with information gathering, building on the enumerations and mapping processes that has become central to the work of SDI affiliates around upgrading urban settlements. Mapping and profiling provides an opportunity for communities to identify and document the reality of local sanitation provision down to the household level, as demonstrated in the maps produced by the Tanzanian SDI affiliates. Communities can then discuss the reality of sanitation provision, and agree on solutions, precedents and strategies that reflect local needs. With this information, SDI affiliates in each of the four project cities have sought to engage with local authorities and sector stakeholders around identified needs and potential solutions. The Blantyre federation aimed to change the mindset of local authorities in an attempt to influence policy decisions around sanitation through meetings and presentation with community leaders. Meanwhile the Tanzanian federation has created

a formal municipal sanitation forum for engagement around sanitation policies, made up of stakeholders from across the sector including the federation. The Zimbabwean federation succeeded in working with the local authority in Chinhoyi to relax sanitation standards to recognise eco-san toilets, and in setting up a joint working group for the project in Gadzema. Despite the broader challenges that have subsequently undermined progress around partnership in Kitwe, the federation succeeded in opening up dialogue with Kitwe City Council and Nkana Water and Sewerage Company around the ADB-funded sanitation programme.

This is the next identifiable phase in partnership building, and entails moving beyond dialogue to discuss solutions in partnership with local authorities. The Tanzanian federation has engaged with local authorities around the scaling up of simplified sewer technologies to serve up to 500 households. However, to date this has been around a feasibility plan, and it is yet to receive the financial and political support required for implementation. The Zimbabwean federation has received some support from the local authority to upgrade communal toilet blocks that are managed by the community in Gadzema. Meanwhile in Blantyre, the state has engaged with the federation around the development of eco-san, providing land for public toilets, and supporting the federation in the design of their eco-san programme including sanitation finance. In practice, this process has been driven by the federation and it has received no financial support from the city. The Zambian federation was unable to move into this stage because of the institutional challenges presented by the funder, ADB. In practice, the processes outlined above are not linear; indeed progress is often iterative and can be fragile. For example, in settings such as Chinhoyi where there has been a high degree of political instability, and subsequently turnover of staff in the local authority, the federation often has to rebuild relationships with mayors and civil servants, which can slow or even push back progress (Banana et al 2015a). Moreover the authority is reluctant to contribute its own resources to community-led development.

The following step in this process would be to scale up some of the precedents and processes that have emerged in light of engagement between the federation and local authorities, to inform the development of sanitation solutions that could reach the city level. This requires meaningful co-production partnerships whereby the state and local communities commit resources to developing and implementing sanitation at scale (Joshi and Moore 2004; Mitlin 2008). This process is also underpinned by political commitment, as demonstrated by the city and national achievement of the Indian Alliance and the OPP in Pakistan. The scalar leap from community precedent to city-wide processes is significant, and the affiliates continue to organise around this aim.

“The scalar leap from community precedent to city-wide processes is significant.”

In each city, collective action has driven significant attempts to develop precedents in sanitation that respond to local sanitation needs. The SHARE City-wide project has been instrumental in building women’s leadership, mobilising communities and collective action processes linked to sanitation to reach beyond savings groups, deepening and broadening knowledge networks relating to FSM

and toilet technologies, and also contributing to the incremental development of partnerships with local authorities and utility companies. However, in each instance it has been difficult to move beyond the precedent to achieve city-level scale. Without securing local and national political and financial support, community-led processes can only demonstrate the sanitation solutions that could respond to local needs. Federations continue to work to identify sanitation needs and to improve sanitation precedent solutions in each city, but also to drive the collective processes that empower local communities and leaders, and seek to secure vital government support.

Annex 1: Example of division of responsibilities between the federation, support NGO, SDI and local government in Dar es Salaam

No	Stakeholder	Finance	Technical	Social	Institutional
1	Community	Saving for the project; *Purchasing material *Paying for technicians *Repaying loan	Providing unskilled labour	Mobilization of community members by routes of the project	Forming committees of the project
			Supervision of the work	Monitoring and evaluating the project	-
			-	Conducting enumeration	-
2.	CCI	Mobilization of finance from different stakeholders.	Developing technical designs	Developing guidelines of	Coordinating other stakeholders
			Capacity building to Community on technical aspect.	Mobilization	Approval of technical designs.
		Capacity building to federation on financial management	-	Capacity building to federation on mobilization.	Support the project on policy and regulations
		Management of the funds related to the project.	Developing affordable technology options.	Organizing forums by engaging different stakeholders including utility provider.	-
		Project related operational costs	Costing of technical designs in relation to the market price.	Documentation and dissemination of information.	-
			Supervision of the work.	Monitoring and evaluation	-
3	Government/ Utility/ Municipal	Support financial offside for construction.	Technical assistance	Local leaders support on community mobilization and awareness creation.	Policy support to the project.
		Utility to support user fee which is affordable.	Approval of technical modal, policy and regulation	-	Auditing of finance of the project.
					Documentation
4	SDI	Financial exposure to Donor.	Research and technical innovations.	Support advocacy	Support the international exposure.
		Support CCI financially	Technical exchange	Support the documentation	Documentation
			Technical advisory support	-	-

Notes: Community refers to members of the Federation; CCI: Centre for Community Initiatives (national support NGO).

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Keppel Street
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WC1E 7HT, UK

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