

# Urban Resilience and Local Governance

## COMMUNITY-LED WASTE MANAGEMENT IN DAR ES SALAAM

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## Urban Resilience and Local Governance in Tanzania

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## Context for this conversation

Rapid increases in urban population place demand for urban services beyond a threshold that local governments are able to meet satisfactorily. Additionally, the continued proliferation of informal settlements which are often disconnected from formal service delivery mechanisms excludes residents from the benefits of urban services. Noting that a considerable number of people living in urban areas live in informal settlements, it is important to develop innovative approaches that aim to work with informality rather than against it. Key areas requiring attention in informal communities include access to water and sanitation; solid waste management; and accessibility (roads, public space and storm water drainage). Of particular concern is the increase in the volume of waste that isn't directed to existing urban service lines, which creates a public health hazard, reducing people's immunity to disease with more exposure to chemical pollutants and disease vectors, while degrading the environment, and reducing the aspirational quality of the community.

Approaches that involve mobilisation of communities in development and support of alternative waste management practices have been seen to be impactful within informal contexts. These alternative waste

management practices should also be integrated with the existing urban service delivery mechanisms to support a safe circular economy approach that makes use of existing material flows rather than consistently producing more. These should be linked to national level policies that guide waste management practices. The provision of these services also upholds the Constitution of the United Republic of Tanzania under Act no.14, which advocates that "every person has the right to live and to the protection of his life by the society in accordance with the law". This can be interpreted to mean that all citizens are entitled to a healthy environment. Policies highlight the decentralisation of environmental management which encompasses aspects of waste management. Furthermore, the Tanzania National Solid Waste Management Strategy highlights the efforts in engaging with multiple stakeholders including community-based organisations to address and improve solid waste management through a participatory approach. However, an integrated approach involving various stakeholders especially from the community level is imperative to act as a catalyst for the improvement and maintenance of water and sanitation infrastructure in the urban environment.



What follows is a reflective conversation, organised through a series of key questions, that unpacks the tensions between top-down and bottom-up development process, providing insight into how community led processes offer value and require a different worldview to implement effectively.

### **How are you engaging with the Waste Management issue? And with the interdependencies of waste with other sectors?**

Waste management is a problem for which we have never developed real solutions in Tanzania, neither in urban or rural Tanzania: both of them don't actually have solutions for waste management. And traditionally speaking, it used to be a manageable issue because we didn't have the sheer amount of solid waste we currently have and most of the waste then was organic. Now, with the change in production and consumption patterns, this is changing. About 75% of all the waste we find in Tanzania is produced by Tanzanian industry. This modern business model that is centred around disposable, low-value packaging, without a clear recovery plan, means that waste management has become a much more significant problem. In a city like Dar es Salaam, there is a lot of disparity in the way that people live, where you see that people who cannot afford drinking water or sanitation, find themselves drinking water from an environment that's completely polluted

with water bottles that are not from their own consumption. Basically, the production model that we have doesn't take people's needs into account and pollutes the environment.

We frequently blame a lack of education or a lack of awareness as the key problem, but this is not really the case. We do not actually provide people with the systems that solve the structural problem. You cannot ask people to be mindful of how they dispose of their waste when they do not have waste collection systems. We cannot ask people not to dump waste somewhere if they don't have collection services. These systemic problems require systemic solutions. If we want to have a solution to this problem, we need to collectively design a system that works for the people and we know, when talking about systems, that everything is interdependent.

Lack of waste management results in environmental damage, results in poor health, results in flooding, creates breeding grounds for mosquitoes, pollutes drinking water and so on. These intersections are frequently overlooked by decision makers and by individuals in the community. What is most upsetting is that despite waste being everywhere and being extremely visible in the country, we have unfortunately reached the point in which we've gotten used to this scene. We've gotten used to seeing waste everywhere, and used to the idea that there isn't a solution to the problem, and

therefore there is a reduced energy to actually find a solution.

**The paradigm that you're working on is around Zero Waste. What does this mean? How do we know that we're in a zero waste reality? What does this look like? How has your zero waste work in cities evolved in Tanzania?**

The Zero Waste society, or zero waste systems that we're trying to implement are effectively systems that aim to produce zero waste. More ambitiously, they also aim to have zero waste being generated, and this requires that we address both production and consumption systems. There are a whole set of waste streams that we must then engage with and think about how we redesign or repurpose and also regulate production. For example, with organic waste, we can do compost, we can work with black soldier flies, there's biogas and many systems that can effectively treat organic waste and turn it into something useful. These systems can also generate employment and promote social justice. There are some easily-recyclable wastes, but the problem is that we don't have good solutions for removing these recyclable streams from other waste streams. So here, upstream solutions are required for our downstream solutions to work. Unless we change what's being produced, we'll never be able to manage what's being disposed of.

The Zero Waste society is trying to promote a radical perspective that is not

afraid of transitioning out of the current waste system or of phasing out specific waste streams that we shouldn't be producing in the first place. Our work is about making sure that people are aware that real waste management only happens if you have a vision of the whole life cycle, tracking these materials from production through consumption and disposal, and trying to insist that there are no simple solutions, like dumping or burning, that will make the whole problem go away. Instead we are showing that you have to tangle with the complexity of the whole life cycle, otherwise we end up shifting the problem from one place to another: solving the waste burden, but creating a health burden or an environmental burden instead. For this work, there is a vital policy component; there's a lot that the government can do just through policy. No one else can do this at all, and it is key to restricting or enabling others to do their work. As we mentioned, community is vital to ensure that such policies are developed in an appropriate way and that they are then implemented effectively.

We started working on the zero waste systems in Tanzania in 2019 and it's been quite a journey so far. We have worked with a couple of communities in Dar Es Salaam, and we now have communities working in Arusha, Zanzibar, and soon, Tanga and Mwanza. Our approach to community engagement is to try and understand, again and again, what people value and use that as an entry point. If you go to



people and talk about the environment and people don't have solutions to their own specific, tangible problems, such as water, food or shelter, then they may not be very receptive to your interest in the environment. But if we talk to people about health, about their livelihoods, that's something more relatable, particularly in low income communities, and so we start there and see how their needs specifically link to the questions that we're exploring about waste and the environment. Once we've explored these system linkages together, and if there is interest to proceed, we support with community education and begin discussions around segregation at source. From here, we form a zero waste cooperative.

Through this method, we've been able to register the first robust waste cooperative in the country, and it basically opened the door for waste-related cooperatives to work in Tanzania and also for waste pickers groups to register themselves. In our framing, the Zero Waste cooperative becomes the head of this waste system because they're responsible for community education and for the actual collection and management of waste. They make sure that segregation at source is being done at household level and make sure that it is accurate. For you to have your waste collected at home, you have to make sure that it is properly segregated. And then each of these four streams are taken to a decentralised material recovery facility that is just for that community and its

cooperative members. There, the cooperative separates it even further, beyond what people have already separated at home. In some cases, there's integration with black soldier fly commercial producers that would like the organic waste as feedstock for their processes. Recyclables are all sorted and stored, and then the final worry is the residual waste, which you can't do anything with; that gets stored.

The value addition of this process is threefold: first, there is proper record keeping of each of these streams of waste, giving us a clearer image of production, consumption and waste typologies. When each stream reaches a certain volume - the appropriate volume to sell if it's recyclable, or to fill a disposal truck, if it's residuals - that stored recyclable or residual is then picked up by the company or municipal truck. So, second, we are effectively reducing the number of trips that the municipality has to take from neighbourhood to landfill, and we're ensuring that the municipality doesn't have to worry about last mile collection or household collection. We have seen these trips go down to two trips a month, compared to a trip every couple of days. Third, we are able to recover about 70 to 85% of usable waste out of broader household waste, which is an incredible diversion rate compared to any African city and even global rates, with the co-benefits of health and environmental safety and protection.

The ethos of this approach is to try and

manage as much waste as possible at the local level, particularly through decentralised organic waste treatment processes. But anything that can't be managed at the local level gets passed on to the appropriate destination. The process of storing the waste means that you have a sense of reliability of the quantities of waste that arrive by truck, because it only goes once it passes a certain volume. The thing that I find most beautiful about this system is how Zero Waste cooperative members become integral parts of their community by providing these services to people and demonstrating a very clear value that they're offering, building relationships with the very household they're servicing. Through this, they're regaining a form of social status that has been lost through lack of opportunities. I'm not saying that the value wasn't there beforehand, but it wasn't recognized. Through this form of cooperative that then demonstrates very robust implementation, many communities have fully recognized this value again. There are, of course, variations across cities, across neighbourhoods, because distances to different facilities vary, and in some cases, the recycling is based on what the market needs, not based on what material is actually showing up from the households. So for example, in Zanzibar, they have less recycling infrastructure, so here they're still trying to work out what to do with the recyclable streams. This mismatch of market demand and actual waste creation is something that now benefits

from clear environmental policy.

**Through this process, what are the links that you see with the Zero Waste work led by communities in terms of improving the resilience in these cities?**

Well in this sector, one of the things people frequently say about Tanzania is how hard it is to implement the Zero Waste model or to implement anything solid waste management related, because they usually fail to get the community to embrace it. In my opinion, that's because waste management has typically been undertaken in a top-down model that comes without listening to, or involving or engaging, community in collectively designing the solution. So people see something being imposed from outside that doesn't actually resonate with their articulated needs, particularly their long term perspectives. Therefore it is understandable that they don't embrace it. For example, in Tanzania, we have bylaws that say segregation at source is a requirement, yet the municipalities tend to hire, or give contracts to, companies that undertake collection without the segregation at source embedded in their systems. What this means is that you have a law that compels households to separate but the company will arrive and put each of the separated streams into one truck, which instantly devalues the efforts of the household to separate, and delegitimizes the lawful requirement to separate. People are smart enough to notice this. And these simple mistakes

fundamentally reduce buy-in to a systematic approach. It takes a lot of time to rebuild this interest, trust and buy-in.

Our zero waste approach takes on this reality and follows a bottom up approach, starting with the community, interviewing community members, running community engagements to build mutual understanding and arrive at workable solutions from within. By having community level material recovery facilities, people can see how their waste is being separated, stored and processed, and that builds confidence that their efforts are leading to the outcomes that they discussed. Many people in the community now have jobs that provide some income, that allow them to gain a livelihood from the zero waste activities, so wealth is being created within these communities rather than being extracted from them. This very purposeful integration within the community is the heart of the model that makes the Zero Waste approach so successful.

The fact that this integration happens on a daily basis is something visible and tangible, not a simple once off project, but something reliable. Waste collectors come following a certain schedule. They check that separation of the waste has been done in the way that they've guided and if there's any mistake, then they engage people right there about how to do it properly. And this builds a set of trust with the people offering the service to the degree where people are

now trusted to enter people's backyards to collect waste when the owner is not home.

### **What are the principles that you witness that have made your engagements more successful?**

Through many engagements we've had with the development sector, it seems that many people don't quite know how to do community engagement very well, even if they speak about it. I think one of the things that we frequently miss when doing community-led initiatives is to trust the process. This requires us to surrender our neat plans to a degree: whatever we've designed or modelled ahead of time may not be what actually emerges when we go into implementation with the community. We need to embrace what organically emerges and how the community interprets and adapts these plans to their own needs. If we remain too rigid about ensuring that the perfectly modelled project must be done our way, it may not be embraced. As I noted, the day to day engagement and arriving at a set of routines with community members allows them to take on this planning approach, contribute to the fundraising, and slowly start to see solutions emerge in the way that they believe they should. Each cooperative will adapt to the specific community that it's engaging with and, again, each neighbourhood will end up having a slightly different approach to the others.

It takes a huge amount of bravery to

invite uncertainty into your organisational planning, to surrender. And I think these approaches are still not mainstreamed. Instead, the main perspective on waste management tends to be about building a large technological waste treatment plant and making assumptions about how the waste will arrive there. This is often imagined through a top-down deployment of expensive collection vehicle fleets, many of which cannot access informal or unplanned areas, and which require external expertise to maintain and repair. The social and institutional work that needs to be done to ensure that people have bought in and that feedstock can be made available for this plant is typically forgotten. I think we need to celebrate and invest in more of these bottom-up approaches that invite uncertainty into the process and demonstrate that community-led initiatives are more viable. We also need to demonstrate that community initiatives also need to be purposeful as they're not simply going to emerge when a new plant is built.

**Could you describe a little bit what this has looked like in Dar es Salaam, given that you've been working to convince funders to shift away from a focus on large plants and into a bit more of a decentralised approach?**

In general, when it comes to solid waste management, most people agree that it's easier to do when you don't need to handle people, given that people add

many layers of complication with multiple perspectives and expectations. But ignoring people simply doesn't work, because people in households are where solid waste will typically emerge and where solid waste management needs to start. You cannot think about solid waste management without separation at source. No matter what solution you are trying to follow, however centralised, expensive or supposedly viable, it simply won't work without segregation at source. Even something as simple as a landfill: these solutions are built and supposed to last many, many years, but suddenly fill up in three to four, because there is no diversion of the valuable elements of waste.

What we argue is that you cannot run before you walk. You cannot implement solid waste management before engaging communities, before engaging people. Thinking about the many, many years of solid waste management conversations taking place in Tanzania and in Dar es Salaam, I think we have finally arrived at the realisation that it doesn't matter what type of waste model you're trying to implement, people must be central to how that implementation takes place. Similarly, the idea of decentralised waste management at the community level has become more prominent given the costs associated with transporting waste and the potential value that processing waste can have in the actual community.

**How do we go from narrative change to meaningful change on the ground? How are you making the value proposition work for funders?**

I do think it's an interesting question about narrative shifts, and that's certainly an important thing for us to do. However, I do think many funders genuinely are interested in working in these areas, but their systems demand a very specific value proposition. So I think the key question that I'm working on is: how do we come up with a clear proposition of value for this type of work?

I believe that every organisation has a specific strength, and we need to acknowledge the different types of strengths that are needed to change an entire system. For me, it's about coming to a common agreement about the specific goal that we're trying to achieve, and having a very clear understanding of what the benefits are from these multiple agendas and making sure that they converge. I think there are many moments where the different players are simply not in agreement. For example, if incineration is brought onto the table, I wouldn't be able to contribute to the broader process. But for 80% of the time, I think there are mainly convergences between the different players who genuinely want to improve waste management in Dar es Salaam. So if we try to allow everyone to play in the space, there's strength in this system, and it's quite robust; we can acknowledge that there

are a set of different niches that each organisation fills. I am not the right person to design and build a landfill and the big funders, like the World Bank, are not the right people to do community-led solid waste management. I've already noted the unique position of government to develop policy. By acknowledging this, we can see the instant need for partnership and that we all have a role to play. The funders of large scale infrastructure are vital. The people who mobilise communities are vital, and government who set the policy and enabling environment are vital. By engaging honestly about these different strengths and roles, we can start to see a broader systems change.

I'm actually currently working with the World Bank now because they are finally planning to incorporate our zero waste model into their solid waste management master plan for Dar es Salaam. What we've been working on is engaging with their incredibly centralised, expensive approach that they are quite committed to, but discussing with them some specific concepts. While they are certainly still keen to build landfills, we have an understanding that we will support in ensuring effective community engagement around collection and separation. We also have agreement that we won't continue to work on this, if incineration is considered. So they plan to build landfills, transit stations, the road infrastructure, and many of these other, typically large capital projects. Where we have been advocating with

them, and where there is interest, is around how we engage communities, how we generate employment, and how we ensure that social justice and environmental justice are considered in these journeys. In this way, we are pushing to ensure that the system that's implemented works for the people, and that people will actually embrace it.

So the agreement that we have is that we build the bottom part and they build the top part. And basically we then have a system in which we are managing waste all the way from the household to decentralised material recovery facilities, and they then take on the materials from these facilities further into the broader Waste Management System. This is an experiment. We're trying to make it work for Dar es Salaam.

### **How does your zero waste approach contribute to urban resilience?**

I think for me, what needs to come out of this piece is the fact that you cannot achieve urban resilience without engaging the communities. Resilience is not a top to bottom approach, but needs to be a collectively built process. Without this collective agreement, you can come up with a very convincing system on paper, but people will find a way to ensure that it does not work. That's something we're very good at. If we feel that the system is not of our own making, we're very good at making it fail. This is not just about raising awareness, or about capacity building;

it's actually about developing systems that speak to the problems that people have, supporting the specific articulation of those problems, and then ensuring that people can contribute the very solutions that they have been working on already. That's the key route to resilience for me.

In relation to resilience in the waste system, I believe there are two main elements that need to be solved; firstly segregation at source, which is what enables everything else to happen. Without it, you can make many large waste treatment investments but they will absolutely not work. We have a lot of experience in Dar es Salaam with this type of systems failure. I've also shared how we are effectively doing separation.

The second important element is social justice. Social justice in relation to solid waste management has a number of components; here, we're talking about a lot of people who've been neglected by every single system that's been proposed. And so there's something very powerful about going into a low income community where people don't necessarily have access to many services, saying I'm here and I care about you, I care about your environment, I care about your livelihoods, and I'm here to help create a solution together with you, so that we can solve this problem. It's very powerful. Simply, the act of acknowledging groups and offering support is well received in communities that have been neglected for

generations. Again, it takes a while to connect people's own articulations of their challenges to the challenges that you're seeing. But this is often easier than one may expect. I think about a simple example of women looking after children in their house and seeing waste outside. No mother wants their kids to be playing in that waste. So if you can come and offer a proposition that removes that waste, you will have instant buy-in. You don't need to do much to convince a mother who is keeping their kids from playing out in the waste that cleaning the environment is important.

Doing that work together and arriving at the specific solutions or approaches that people feel excited by, or drawing the connections between the solutions that they want to see and the solutions that you're proposing with regards to waste can be very powerful. As I said, people who are providing a collection service may not have been valued before. Through these types of interventions, we can elevate the social status of people doing this work; we can see how important it is for people to have a societal role, and how much harm it does if they feel that they are not contributing to broader societal goals.

Many people in the cooperatives didn't have identification documents, didn't have a birth certificate, and now many of them have passports and have actually travelled outside the country to talk about their work and to help implement Zero Waste processes in

other countries and communities. This is something that fills me with hope about this approach; people have seen direct benefit in their own communities. We've seen people who felt purposeless, now taking their purpose to many spaces.

## Closing reflection?

If I were to leave you with one closing reflection, it's that, in general, when people are given a good choice, they will take it. We should believe in people more than we do. Yes, they can bring complications because they don't see their own needs represented in externally-led processes. But if you engage earnestly and honestly with what people need, they can become your strongest allies. I have huge faith that people can drive the change that we need to see, as long as we're engaging openly with them and listening to their needs properly.

