



Recycling Networks  
& Waste Governance

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# SUSTAINABLE WASTE COLLECTION AND RECYCLING FOR INCLUSIVE CITIES:

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REPORT ON UPDATED RESEARCH OUTCOMES OF THE PROJECT  
*RECYCLING NETWORKS & WASTE GOVERNANCE*

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II. International Conference on Recycling Networks and Waste Governance  
Dar es Salaam 29<sup>th</sup> of April to 4<sup>th</sup> of May, 2019

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## Photos by Jutta Gutberlet



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# 1. Introduction

## 1.1 Conference context

Around the world, waste generation is rising especially in urban areas. The World Bank estimates that the world's cities generate over 2.01 billion tonnes of solid waste, amounting to a footprint of 0.74 kilograms per person per day. With rapid population growth and urbanization, annual waste generation is expected to increase to 3.40 billion tonnes by 2050. Compared to those in developed nations, residents in developing countries, especially the urban poor, are more severely impacted by unsustainably managed waste. While managing waste properly is essential for building sustainable and liveable cities, it remains a challenge for many developing countries and cities. However, in most cities around the globe, there are several informal waste pickers collecting household waste daily to earn a living. In doing so, they make a significant contribution to reducing the carbon footprint of cities, recovering resources, improving environmental conditions and health particularly in low income residential areas, creating jobs and income among the poor. Yet, as those initiatives contribute to reduction of both the adverse impacts of cities on climate and environmental change as well as urban poverty, the main challenge has been their sustainability.

Dar es Salaam generates 5,600 tons of waste on a daily basis, only 40% of the waste ends-up in the city's dumpsite. As the city's waste production is growing at an estimated 10% per year, and while some youth have identified business activities in waste management, the government has hardly taken serious initiatives to take advantage of this sector in creating youth employment. Despite recent efforts by the government to formalize micro-enterprises, the youth operating in this sector are almost left out of the ongoing initiatives. While the orderly and clean city is key in enhancing business environments, the institutions entrusted to coordinate waste management activities are not well connected with the private and the third sector. Some cooperative societies and community-based organizations are committed to commercializing waste management activities, but the business environment is not conducive for them to achieve their dream.

## 1.2 Conference purpose

For the purpose of contributing to the improved innovations and sustainability of the grassroots initiatives and networks, a group of nine universities in collaboration with grassroots initiatives from the global south are implementing the joint research projects on *Recycling Networks and Waste Governance* in Buenos Aires (Argentina), Dar es Salaam (Tanzania), Kisumu (Kenya), Managua (Nicaragua), São Paulo (Brazil), Vancouver & Montreal (Canada). The research project "**Recycling Networks**" aims at examining the challenges that innovative grassroots initiatives and networks encounter in generating urban livelihoods. The research project on "**Waste Governance**" seeks to map successful waste management initiatives, arrangements and policies in some cities in the global South and global North. Funded by the Swedish Research Council and SIDA (2017-2019) and the Canadian Research Council (2017-2019), the research partnership has generated multi-cases of waste picker groups/networks and local government initiatives and has documented lessons on innovation and sustainability of waste picker and

recycling networks. Consequently, several waste picker and recycling networks have been empowered through knowledge sharing, building and strengthening linkages with universities and local governments in their cities.

The planned Recycling Networks & Waste Governance Conference in Dar es Salaam, in 2019, aims to bring together waste picker and recycling organizations, waste processors, intermediaries, local government, scholars, policymakers and development partners to exchange views, models, experience and practical lessons on sustainability of waste collection and networks for inclusive and sustainable cities. The conference is organized by Mazingira Cooperative Society in collaboration with Dar es Salaam City Council, the Centre for Policy Research and Advocacy (CPRA), University of Dar es Salaam Business School and the other Universities involved in the project. The conference brought together around 150 delegates including local private sector organizations, waste processors, intermediaries, local government, scholars, policymakers, and development partners to exchange views, models, experience and practical lessons on sustainability of waste collection and creation of youth employment for inclusive and sustainable cities. This report provides some insights and feedback on the activities carried out during and after the conference.

## 2. Theme and Modality of the Conference

The main theme of the conference was *Sustainable Waste Collection and Recycling for Inclusive Cities*. The theme sustainable and inclusive waste collection and recycling was also inspired by the urge of most cities to transform waste collection and recycling organizations into more sustainable initiatives promoting environmentally and commercially sound waste disposal. In connection with this main theme, several sub-themes were covered including: innovative waste collection and recycling models, solid waste management governance, role of local government in waste management, sustainability of waste picker organizations, grassroots innovations and practical lessons/success stories across various cities in different countries. The conference opening was on April 29<sup>th</sup> 2019, followed by Roundtable Discussions, Workshops (specifically for waste picker organizations) and site visits between April 30<sup>th</sup> and May 4<sup>th</sup> 2019. The conference entailed presentations and demonstrations of various models of sustainable and inclusive waste management by project partners, discussing specific experiences and lessons learned, policies and the generation of new ideas and resolutions for inclusive and improved waste management in Dar es Salaam and other cities involved in the project. All events involved the research team, local government, waste pickers, intermediaries, recyclers, processors and other key actors, as well as other international interested participants.

## 3. Composition of the Conference Participants

The conference and follow-up activities brought together 149 participants who participated in the conference, dialogue sessions and visits to participants. Table 1 shows the groups of institutions and/or individuals who participated in the conference and their number. Both private and public sector actors were well represented.

Table 1: List of Participants

Institution/Group	Number
Joint research project members (International delegates)	30
The Office of Regional Administrative Secretary	2
Dar Es Salaam City Council & Local Government	3
Ilala Municipal Council	2
Temeke Municipal Council	1
Kigamboni Municipal Council	4
Kinondoni Municipal Council	2
Ubungo Municipal Council	3
University of Dar Es Salaam (UDSM)	23
State University of Zanzibar (SUZA)	3
Waste Pickers and Recyclers	76
<b>Total</b>	<b>149</b>

## 4. Notes on the conference activities

### 4.1 Day 1: Monday 29th April 2019

#### 4.1.1 Opening Session

The opening session started with the preliminary introductions of the participants and the conference. The moderator highlighted the importance of a sustainable environment in the current global outcry of climate change. The Dean, University of Dar es Salaam Business school welcomed all participants to the conference and then welcomed the Deputy Vice Chancellor (DVC-Administration), Prof. Cuthbert Kimambo to provide the welcoming remarks. The DVC welcomed participants on behalf of the Vice Chancellor, University of Dar es Salaam (UDSM). In his opening remarks, he appreciated the Guest of Honor for accepting to officiate at the conference on recycling networks and waste management. He complemented the efforts directed at improving the waste management and inclusive cities and in particular the government's efforts to ban the use of plastic bags as a clear testimony of the move.

DVC invited Hon. January Makamba (MP), Minister of State, Vice Presidents' Office, Union Affairs and Environment to officially open the conference. The Guest of Honor appreciate the University of Dar es Salaam and Conference Organizers for inviting him to the conference and thanked participants from various organizations and countries for participating in the conference. He shared the various trends in development and waste management in different countries which include;

- Low income countries graduating to middle income countries, and people entering into middle income category.
- The fact that the people in poor countries are also entering middle income generates a lot of implications in terms of waste generation and management.
- There is a change in consumption patterns such as an increase in the use of disposable products.

- The rate of urbanization is very high and the rate of people shifting from living in rural to urban areas is increasing and many areas are being transformed from rural to urban centers.

The Guest of Honor noted that there the local governments have been blamed for not tackling waste management issues adequately. In Tanzania, the local governments need to be enabled to work better on waste management. Data related to waste is important and needs to be correct. The different actors in waste management need to be engaged to provide the data on waste generated. The data will help in planning and policy development. While other countries such as Japan where waste is incinerated have made progress, the challenge remains what is happening in low income countries? What percentage of recyclable waste is actually recycled in low income countries?

The Minister further mentioned the various measures that could help address the waste management challenge including:

- Investment in waste management infrastructure.
- Enhancing legal and regulatory structures. Encourage Bylaws to stimulate and encourage waste management activities.
- Financial sustainability of the municipalities.
- Citizen engagement and community social engagement as municipalities cannot do it alone.

In addition, he highlighted some initiatives that have been undertaken in enhancing waste management in Tanzania being:

- There is an upcoming regulation which will require waste management to be a recognizable job.
- Private investment in waste management guidelines have been created, informing investors where to start and which office to deal with. These guidelines are expected to be published soon.
- Ban the use of plastic bags to become effective from 1<sup>st</sup> June 2019.

The Guest of Honor declared the conference officially opened at 9.30am.

After his speech, Prof. Jutta Gutberlet, from the University of Victoria, Canada, gave the vote of thanks on behalf of the project participants. In her speech, she appreciated the organizers and the participants for their willingness to share knowledge and experiences from various countries. She expected to learn different ways of dealing with the complex waste and recycling related activities. Special appreciation was also registered to the Minister, project sponsors, conference organizers, service providers, delegates and participants for their support to this venue. She reiterated the important role waste pickers, waste collectors and recyclers play, by working together and making communities sustainable. These actors are organized in associations, cooperatives, and networks struggling for recognition of the work they undertake. It is important to address the challenges governments face, such as what to do with waste generated, what can be done to reduce waste, what can be done to recycle waste etc. The

world needs to wake up to act on waste related challenges and needs to recognize the work of waste pickers. While waste incineration is portrayed as a solution, making waste disappear, it is not so much a solution because incineration will mean no recycling, which will mean that millions of people will be out of work.

Then the project Coordinator, Dr. Goodluck Urassa, UDDBS informed the participants that the project was being implemented by UDDBS under CPRA. Three major activities done are research, dissemination of research findings and engaging actors in dialogue on various models. He informed that the conference activities would include a visit to the dumpsite, public private dialogue with networks of waste pickers and workshops. After the overview of the program, the first session began.

#### 4.1.2 Session 1: Waste Collection and Recycling in Dar es Salaam: Opportunities and Challenges

##### *Presentation 1: UG Mazingira Cooperative Society*

This presentation highlighted the challenges faced by waste picker groups and other actors in Tanzania. Waste pickers have no specific place to dump the wastes collected which has an impact on the environment. They work in dangerous environments with the risk of infectious diseases. Lack of working gears, lack of conducive places for processing and storage their materials, inadequate business environment for conducting their businesses were also stated as their challenges. Constrained business environment to accomplish more profitable businesses due to one sided buyer decision. The achievements noted from UG Mazingira are increased public understanding on recycling activities. However, most challenges still remain such as limited government involvement on recycling, lack of tools and equipment, lack of equipment and waste gear, informal waste disposal, and limited knowledge and skills on solid wastes.

##### *Presentation 2: Asha Mbaraka, Tindwa Medics (TMHS)*

TMHS was established in 2008 and it 106 employees. They have incinerators and metal smelters. They transform bio hazard waste materials by autoclaving. The company presented their various activities and how they engage with the community.

#### 4.1.3 Session Two: Transforming Waste Collection in Dar Es Salaam

##### *Initiatives and Lessons Learnt. By Enezael Ayo, Dar Es Salaam City Council (DCC)*

This session informed the delegates that waste collection in Dar es Salaam is done by both formal and informal waste pickers from households, commercial establishment, institutions and industry. Dar es Salaam City has delegated the function to municipalities which involve the private sector in waste management activities. However, waste transportation is constrained by limited municipal budgets, traffic congestion which has impact on the collection of litter on streets and poor infrastructure. In terms of recycling, about 5% of waste and recovered materials are sold and recycled. The areas doing recycling include 33 industries which have been mapped. Output products are mats, brushes and composting. The Dar es Salaam City Council strategies and involvement include establishment of recycling policy of 2016, identification of 33 recycling industries and there is plan to facilitate construction of compost plants in 2019/2020.

#### 4.1.4 Session Three: Innovation Practices And Waste Governance: International Experience Sharing

The session was chaired by Prof. Maria Zapata in which four different experiences were shared from Kenya, Argentina, Brazil and Canada.

##### *Presentation 1: Kisumu Waste Actors Network (KIWAN), Kenya*

It started as a group then started the initiative on table banking which later graduated to KIWAN SACCO. They also get support such as external loans from KUSCCO loans at lower rates as 1.15% - 2.5%. The table banking innovation has enabled members to benefit through obtaining loans.

##### *Presentation 2: Reciclando Sueños Cooperative, Buenos Aires, Argentina*

Based on skills that the cooperatives had developed, collecting logistics, sorting taxonomies artifacts and reusing were done by them. The period 2012-2015 was a period of partnership building. After 2015, cooperation between private and cooperative waste management service providers. The challenges that were noted are competition with large companies, funding, and patent licenses. What can be done is inclusion and empowerment, knowledge flow – sharing of information, and epistemic politics.

##### *Presentation 3: Nova Glicério Waste Picker Association, São Paulo, Brazil*

Noted that the majority of workers are women around 70%, and this is good to formalize the work of collectors and fight for better conditions together with the National Movement. Various initiatives have been undertaken including sharing of information, reuse and promote reading with the establishment of a community library. The books collected in the streets became part of an open library in the neighborhood. Furthermore, working with children and listening to children can give inputs to the future. It is important to work closely with children's voices. The presented introduced the innovation with the production of biogas. Furthermore, they use technology to communicate with generations. A link is provided here: [CATAKI.ORG](http://CATAKI.ORG)

##### *Presentation 4: Les Valoristes & Binnars Project, Canada*

The creation of the cooperative Les Valoristes (in Montreal, Quebec), in 2012, was inspired by local social action. The mandate of the cooperative is also to educate the public and the government about binnars (the name of waste pickers in Canada), to include binnars in the current debates concerning the future of the refund, deposit system in Quebec. The problem encountered was returning containers to retailers. The proposal was to establish a bottle depot. In 2014, a temporary bottle depot project was established which opens in summers only (Winters are too cold). The uniqueness of the organization was the fact that they were able to introduce a social innovation by dealing with refundable containers. The challenges are to introduce something like a 'binnars hook', a devise where people can place their bottles to be collected by binnars.

In the Binnars Project, in Vancouver Canada, the two main issues of concern were on de-stigmatization and economic empowerment. The project organizes binnars through weekly meetings, they scheduled pick-ups for recyclables, they conduct public waste education, contribute to sorting recyclables, besides infrastructure development, public engagement, and

capacity building. The presenter shared his personal experience whereby he started as a drug addict but joining the project has enabled him to move out of being a drug addict and to become promoted to being the project manager.

#### 4.1.5 Session Four: Sustainable Waste Governance: International Experiences Sharing Round Table

##### *Presentation 1: University of Central America, Nicaragua*

The conference participants were informed that Nicaragua faces a socio-political crisis. In terms of waste management, the municipality of Managua has no capacity to collect all waste produced at an average of 50,000 tons of garbage per month. There are several programs to strengthen collection and waste management but only with a short term effect. There are estimated 13,500 waste pickers, most of them have been motivated by unemployment. The challenges faced by waste pickers are the lack of local government collaboration, lack of a legal framework that recognizes their work and the need for waste pickers to formalize.

##### *Presentation 2: Brazilian Waste Pickers Movement – Maria Monica Da Silva*

Most advances with more inclusive waste management were made by the waste pickers movement. Most groups and the movement started as a necessity to organize. Currently, there are 800,000 members of the national movement. Approximately 70% of the organized waste pickers are women. The movement started in three provinces. It was organized in three levels – the local base level, the regional committee level and the national level. Problem solving goes through the three levels. Women are always present and need to push for visibility to be heard at various levels up to the national level. The movement is present in 26 states, and thrives to participate in policy making. Today there is legislation in place that includes the waste picker activity as a recognized activity. The greatest successes of the movement were to bring a law that allows municipalities to contract organized waste pickers for door to door collection and the fight against waste incineration. Two of the main goals are to become visible and capacity building whereby they have developed pedagogy among waste pickers training being disseminated to other countries. The motto of the movement is **“Always be present”**.

##### *Presenter 3: RedLacre*

The presenter informed on the Chilean Waste Pickers Law Framework from June 2016. The Chilean environmental agency has started to implement mechanisms to reduce waste generation and to promote waste recovery. There is involvement of the participatory advisory council and the environmental agency. The law and the schedule for the regulation of each product is developed by the participatory advisory council. Currently the product priorities are oil, containers, electronics and tires. Waste pickers are defined by the Chilean Law as an individual who uses artisanal and semi industrial techniques. Under the Chilean Law waste pickers and waste picker groups have the right to participate as waste contractors if they are certified after being identified as a waste picker and can finally ask for tenders. They are allowed to bid for waste services with municipalities and large waste generators. The Chilean policy for the inclusion of waste pickers was passed in 2010. What has been done is to look for strategic alliances that pay for their certification. The results since the implementation of the waste pickers law in 2016 are:

- 5,500 recyclers are members of MNRCH
- 1,510 are registered in the system
- 502 have received certificates
- 610 are in the process of evaluation and certification.

The presenter shared his personal experience where he expressed that family support can enable one to implement their duties such as being part of the movement. He further emphasized sharing knowledge which makes us bigger both from Latin America and Africa.

#### *Presentation 4: WIEGO*

This presenter expressed her experience as a government worker for 10 years and also as a researcher with WIEGO. WIEGO is aimed at improving the work of informal workers, promoting policy dialogue, doing research and producing data and statistics that highlight the status of workers in the informal sector. The work aims at shifting the mindset of public sector workers who are involved in urban design and planning, by integrating waste collectors and waste pickers into these perspectives. Furthermore, her work provides necessary documentation and models for a better governance understanding, to influence policy so that policy makers can implement multi stakeholder service provision, with the informal sector.

## 4.2 Day Two: Tuesday, 30<sup>th</sup> April 2019

### 4.2.1 Knowledge Sharing Workshop among Initiatives (Part I)

This session had eight presentations divided into two parts that provided information on innovations that various initiatives were involved in, specifically taking into consideration social and economic inclusion, gender equity and possible interactions among agents. The innovations were presented by speakers from WIEGO, KIWAN, Maishabora Creations, and from Brazil.

#### *Presentation 1: WIEGO Communication Strategies on Waste*

WIEGO (Women in Informal Employment Globalizing and Organizing) is a network composed of membership based organizations (MBO), Development Agencies and Researchers. One of the project initiatives is the 'Gender and Waste Project' in Brazil. The general objective of the project is to improve gender equality among waste pickers in the personal lives, at the workplace and in the national movement. The project was a participatory process that involved women in all phases and engaged multiple partners, conducted regional workshops, coaching sessions and events with waste projects from Brazil and Latin America. The project also produced key resources (gender toolkit) and is involved in ongoing communication on the topic. Workshops involve discussing autonomy and gender roles at work. In sharing experiences of the project with waste projects in Brazil and Latin America, the project has been able to work with women, initially on a focus on individual and personal level developments then the project moved to women's roles. During the dissemination of outcomes, men have also been involved, through collective and individual coaching sessions, addressing communication and interpersonal skills. This was important in building capacity skills for women leaders, for example, to better listen and respect cooperative members and enhance their confidence.

The other project presented was the follow up project called “Care Project”, that addressed waste pickers health issues by mapping body parties focusing on risky parties. Beneficiaries have found the project to be beneficial enabling them to voice from the ground struggles for social justice and gender equality. Shared experience of a woman who faced domestic violence from her husband and she ended with some of her fingers chopped off her hand. The survivor noted that the movement involving waste pickers and gender discussions complement each other. WIEGO’s communication strategy on waste involves speaking on reduction of waste and you tube links are used. At national and international level. They also speak to waste pickers to reinforce benefits achieved through organizing and providing tools. They also speak to practitioners and policy makers on how waste pickers fit into existing systems.

#### *Presentation 2: A Tale of Financial Inclusion: Savings and Credit Cooperative Society Limited (KIWAN)*

This is an initiative from Kenya, founded in 2009, which provides lending to individuals. Due to challenges to obtaining loans, this initiative allowed individuals (with a focus on waste pickers) to lend to each other at lower rates. The models of financing are arranged in different levels; Level I being Table Banking, Level II being Group saving and lending and Level III being KIWAN SACCO. Table banking involves mobilization of resources –weekly collection which are later borrowed at a 10% interest rate. Table banking is based on trust among individuals. It takes one year to graduate to the next level. At Level II, individuals are able to graduate to different contribution levels, there are fewer meetings, strict rules and the meetings are hold like shareholder meetings. There are loan rotations with each member getting a loan at some point which allows the value of the money to grow. Codes rather than individual names are used which is used as a security measure. KIWAN SACCO has a formal registration by the government. It mobilizes finances through member contributions and external loans. Member contributions include shares, monthly savings, office contributions, fines and the payment of interest on loans. Lending has been affiliated with KUSCCO that has enabled KIWAN to access big loans at lower rates. Challenges include low membership (currently 23 members). There are some agreements that include small loans provision (two times the value of shares) to be paid within two months and the formation of groups.

#### *Presentation 3: MaishaBora Creations*

This is a private establishment which deals with up-cycling of waste motor vehicle tires and motorbike tires into indoor and outdoor decorations and furniture. The founder saw an opportunity of tires that are left in streets. The disposed tires pose challenges such as sources of mosquito breeding places and block drainage systems. The collection of the tires is done through waste pickers who pick up tires at wheel alignment stations and dealers. The tire collector is paid TZS 1,000 per tire. There are opportunities for cooperation and this will be considered along with other organizations like UG Mazingira.

#### *Presentation 4: Project Case studies from Brazil*

Two social innovations, the Associação Nova Glicerio and Cooper Fenix were presented as follows:

### *Case Study I – Associação Nova Glicerio*

The members of the association have their own tools and carts to collect recyclable waste in downtown São Paulo. Each individual has a separation station called ‘box’, where they separate their materials, then they sell their recyclables collectively, as an association. Every year, the administration is elected, which promotes the decentralization of power. Each person has the same right to vote. The working space is given by the government however the challenge is to maintain the space. The association is new but the waste pickers have been working in the area for a long period of time.

### *Case Study II – Cooper Fenix: A life story by Monica Da Silva as a waste picker*

She started as a waste picker since she was 11 years old and since became a waste picker to survive. She was an informal waste picker until 2014, when she joined Environmental Pact which was a collective organization of waste pickers. The city Diadema created a program called ‘Clean Life’ which enabled several other groups to rise. This was the first city to pay waste pickers. During the period 2005 – 2011, waste pickers were paid for collecting and separating waste. However, with change in government from left to right wing, the government stopped paying the waste pickers. In 2008, she was involved in anti-incineration demonstrations together with many others and she received death threats, but luckily was protected by the national waste pickers’ movement.

She notes that policy alone is not enough, hence political will is necessary as though the law instructs to pay waste pickers, but they are not being paid. She stopped getting involved in the struggles of waste pickers in 2014, for personal problems, however in 2015, her initiative was reborn, when she started the Cooperative Cooper Fenix, a group of 14 people, all women. The challenge faced was to find a space to do the work. They occupied an abandoned space and a process of dialogue with homeless people, also interested in the space, and negotiations with government were successful at the end. Since then, there has been a good dialogue with the government though they are not paid by the government. They are the only group that does door to door collection of recyclables. Waste pickers were not being considered in recent policy making and Cooper Fenix mobilized their members to protest against the new law, by occupying the city council. The cooperative has been able to provide social services such as recovering people who previously had no home, or were drug addicts. They have also contributed to the community making it a better place.

#### *4.2.2 Visit to the Dumpsite at Pugu*

The dumpsite is characterized by many scattered, huge piles of unsorted waste, with obvious leachate from the waste. However, the Dump Manager promised more improvements and a plan to process waste. Regarding the waste pickers at the dumpsite, we observed “big waste pickers”, with equipment, dumping the refuse materials at the site. We also observed countless “small waste pickers”, young males and females, scrambling to pick the recyclable materials dumped by the big waste pickers. Some of us noticed that young males were more active in picking waste compared to the ladies, especially when the trucks are still downloading and the caterpillar machines were at work. Females follow by picking the remainders. We heard stories that some of them are like intermediaries who wait for the young males to scramble, and then

they buy on site. By observation, there are as many women as men. Women felt more shameful and were not willing to meet with delegates.

**Photo: The dumpsite at Pugu, Dar es Salaam**



**Photo: Informal recycling at the dumpsite at Pugu, Dar es Salaam**



## 4.3 Day Three: Wednesday, 1st May 2019

### 4.3.1 Knowledge Sharing Workshop among Initiatives (Part II)

This session was moderated by Maria José and it was a progression of the deliberations on knowledge sharing on various issues highlighted during day two. It included learning experiences from Brazil, Chile, Argentina, Canada and Tanzania. Some speakers were Ezekiel from Chile, Marcelo from Argentina, and Darren from Canada.

#### *Presentation: RedLacre Duta De Recicladores Latino America Y El Calibe*

At first a historical perspective of the network organization was given highlighting the importance of waste pickers. It was informed that out of the four countries that started the network (Brazil, Chile, Argentina, Columbia) only Colombia was not represented at this conference. In 2003, a first meeting was held to get together and mobilize. In 2007, the group started to look for other partners in Latin America. It was not easy due to their small budget. They mostly had to sleep in bus stations, eat bananas and apples because they had no money for food or hotels. They organized a worldwide union of recyclers that started in Peru. However, they could not call it a union with only eight countries. They started by mapping and looking for partners in dumpsites. 2011 was a key year for them as they started gaining independence. The organization currently has 17 member countries. Some key historical highlights in building the network are:

- 2011 - First visit to Panama
- 2013 - A waste picker organization was created in Panama
- 2015 - The organization achieved legal status
- 2016 – The organization was involved in public policy making and communication about waste pickers
- 2018 - A new census for waste pickers was started in Panama

The main objective of the census was to learn about the situation of waste pickers and their impact in the city and country. The strategy was to build a good alliance with the University of Panama to gather data and evidence to be used in presentations with the Government. There were four steps involved in the preparation and implementation of this project. First, it was important to understand what was happening in the territory and to talk to partners. The team and the university then developed the questions and the data needed. The third step was the analysis and systematization of the data collected and, finally, the presentation of the findings. During the mapping, 4 representatives from the union visited. Some additional positive results were the capacity building of 288 waste pickers and the generation of additional data during the first and the second census.

In 2018, they conducted a first meeting with recyclers from all countries involved. Throughout this process there has also been added value by bringing the recyclers' local knowledge in contact with academic knowledge. The society is aware of the work done by recyclers. After the census what has been learnt by society at large and academia is that we need data to show to

the society. The network started to build new alliances with other partners, workers' unions, who acknowledge waste recyclers and who now work with them. The network has projects with AVINA, WIEGO and the Bill Gates Foundation. AVINA foundation administers the resources. Currently they also receive support from Pepsico, Coca Cola and the Interamerican Bank for Development.

*Presentation: Green Conservers, Tanzania*

The business was started in 2017, initially with 3 people and currently has 10 members. The idea came about as a result of the problems of deforestation and unemployment. Three products are made from waste, being briquettes, alternative furniture from oil steel drums, and paving blocks from plastic waste. The activities involved in the production start from collecting waste, sorting, burning, and crushing. The waste materials are obtained from households, farms and from the market. Challenges faced are lack of financial support and insufficient business skills. Carbonization is conducted and briquettes are packaged in bags. The production takes 8 hours per day and the cost of the briquettes at the market is TZS 1000, while charcoal is sold for TZS 2000. The products are sold to households, street vendors, hotels and chicken keepers. In terms of efficiency of the paving blocks, it is noted that they are still in a testing phase to see whether they will be effective. Available machinery is used for both the production of the briquettes and the paving blocks.

*Presentation: Working with a cooperative called Recycling Dreams in Argentina*

Following the political crisis in 2001, he started working with garbage due to the lack of opportunities. Nobody wants to work with waste it's awful to put your hands on others' garbage. There is a big stigma due to being a waste picker. A fundamental thing found in the cooperative is that they are workers. In streets, they get their education and become professionals in waste picking. It is important for society to acknowledge the importance of waste pickers just as doctors are acknowledged. Both are public workers preventing health issues in the society. They are professionals in recycling. It is noted that places with better living standards have better waste management and in developed countries, you need to have a big budget to have your waste collected. As a cooperative, they started considering competing with big companies and they thought of how they could use the same strategies as the big companies. It was also noted that Argentina's public universities train and build teams to work with the cooperatives. Street level and everyday experiences provided the university with a new theoretical framework. The waste pickers from this cooperative discussed with professionals, including engineers about different waste related topics and proposed to them that incineration is not the best solution in waste management. They have looked at different regulations that they had and were able to adopt to their environment.

They separate waste into two categories: special waste which includes pathological waste, and non-special waste which comes from households. They work with non-special waste which is further divided into dry and organic. They decided to work with dry waste due to the effects of organic waste. They focused on materials that do not have a price in the market and which thus go to the dumpsite. For instance, a bottle of water can provide three different material wastes and by separating them you get more materials. The cooperative initially compressed

(processed) bottles that then were sent to China. They now have changed the model of doing things, they want to work with an enterprise. As a solution they intend to look for a transport company to make an alliance with them in which the cooperative will do the processing and the company will do the transport. The cooperative was able to give certificate of traceability recyclables which happens in Europe, Canada, and USA. It was also noted that they are currently doing business with national Enterprises. Their alliance with the university has been able to establish an innovation lab for materials that do not have a market.

#### *Presentation: Stabilization of Projects - Quebec*

This presentation provided the way through which the deposit refund system on beverage containers got stabilized. Challenges that were associated with a permanent location on where to locate the cooperative as there was no income to support them. However, the cooperative has been able to receive support from donations and a working space. They continue to rely on donations.

#### *Presentation: The Bidders Project - Vancouver*

This project is now four years old. The objectives are to provide economic opportunities and to reduce waste issues in the city of Vancouver. The project achieves its activities through organizing weekly meetings, scheduled pick-ups, public waste education, home sorting, infrastructure development and public engagement. The bidders (recyclers) working under the project are paid \$ 60 per day. Currently the bidders' project employs 18 bidders as staff and engages with over 150 bidders through the weekly meetings and contracts. To be a member of the Bidders' project, they are required to attend the meetings and they are given '10 rules' to be signed by the members. They also use team leads as coordinators, who are responsible to show bidders their responsibilities. It is important to have social responsibility and binning is taken as a profession, thus bidders are required to behave responsible.

#### 4.3.2 Afternoon field visit

##### *Visit to a Chinese Industry*

We had a site visit to one Chinese recycling industry in Dar es Salaam that deals with recycling of plastic on a large scale. Here we could see how the industry connects with local waste pickers.

Photos: Reception of PET plastic bottles at the Chinese industry





We were able to speak with some local waste pickers and learned from them how they are socially and economically excluded, feel stigmatized and are not recognized nor by society, nor by the Government. The local government does not provide any support or help to these workers, e.g. by improving their working conditions and reducing health risks (e.g. by providing gloves, etc.). They try to work with waste, recovering recyclables, to get out of the misery, but the city only arrests them, makes them pay fines. There was a sense of hopelessness expressed by these workers. There seems to be little understanding of the local officials about the work and needs of waste workers and recyclers.

#### 4.4 DAY FOUR: Thursday 2nd May, 2019

##### **Advocacy and Dialogue on Improving Solid Waste Management and Governance in Dar es Salaam**

The moderator for the session, Dr. Goodluck Urassa provided information on the modalities of the session. Participants also included members from the five municipal councils in Dar es Salaam and one guest speaker from AMREF. The importance of the dialogue is to enable flow of information, establish trust among partners, relationship building, to have better policies and address social problems. Various issues of discussion were highlighted on solid waste management, being waste management and environmental policies, the integration of informal waste pickers into official waste management, support provided by the government and the strengthening of recycling networks. Furthermore, we discussed the current management of the dumpsite, as well as the management and coordination of waste collection in the city. The modality of the discussion involved a reflection of key observations or issues about waste management in cities and in particular in Dar es Salaam, sharing issues from practitioners, partners and researchers. This was followed by responses from policy makers, and the further discussions about resolutions, coming up with pragmatic solutions.

##### 4.4.1 Session I: Key Observations and Issues about Waste Management in Dar es Salaam

There are many waste pickers in the streets and thus there is need for better organization of waste pickers.

There is still room for collaboration between waste pickers and the government and it is important to draw on the experiences and learnings from various countries.

How does the municipality ensure the city is clean, since there are no dustbins in the streets of Dar es Salaam?

Participants were impressed with the innovation from other countries such as Argentina and emphasized the importance of learning from innovations in the waste sector and also government support for innovations and innovators.

Participants also noted a high level of self-awareness of waste pickers from other countries. However, in Tanzania, waste pickers need to be recognized and be well coordinated.

**Lack of awareness:** There is lack of awareness on waste collection. There is need to raise awareness on waste collection. Furthermore, waste pickers have to be heard and also establish seminars to learn on recycling of waste materials.

**Land occupancy:** There are still challenges with dumping waste, for instance at Jangwani. The government should provide areas that can be used for waste separation and for final waste destination.

**Organic waste:** The government should support initiatives for separate organic waste collection to produce compost.

**Government recognition:** The government should recognize waste pickers. They need to be visited and should be able to access education.

**Waste sorting and separation:** Waste generators should be educated on how best separate the waste they generate. In addition, some wastes are not allowed to reach the dumpsite such as tires, glass, hospital waste. It is important to know the adequate official strategy for such wastes that are left in the community.

**Revenue collection, payment and compliance requirements:** The new payment system for waste pickers takes a long time and also the compliance requirements such as registration are demanding for waste pickers.

**Harassment:** Waste pickers encounter harassment from the municipal council.

**Extended producer responsibility:** The government should engage industries making products such as diapers or pads, in the handling of the waste because these are not taken by waste pickers. In addition, other companies for instance, Bakhresa and Azam have distributors for their products in streets and nearby schools. The local government should find ways to engage and support initiatives to talk to the companies for instance putting up street dustbins that can help handle some of the wastes that is produced from their products.

**Government support for innovation:** The government is not enabling innovators. For instance, Plastic Recycling and the Youth Organization has innovated the production of petrol from plastic. The government should provide more support for innovations.

**Involvement of waste pickers and workers from the dumpsite:** These individuals need to also participate in these discussions and need to give their views and challenges. However, there was only one waste picker involved in the dialogue.

**Corporate social responsibility and waste management:** How does the government engage companies regarding wastes that emanates from their products? Are there any guidelines that focus on waste management?

**Engagement of waste pickers:** In the past waste pickers were not involved in the discussion of waste issues. However, there are slow improvements in the process of engaging waste pickers. For instance, from Ubungo Municipality it is noted that the waste management system is decentralized, allowing the sub-wards to contract waste pickers. It is also noted by Ilala that there are two types of contractors being the commercial contractors and the community-based contractors. Delays in collection of waste are observed because of a lack of enough cars for collecting wastes. In addition, it is also noted from Temeke Municipality that waste pickers have no cooperation among themselves since each one is working individually. On the overall, they agree on strategizing on improving the level of cooperation between the government and waste pickers.

**Household level engagement:** The household should also be engaged as they are waste generators. It is noted that it is the responsibility of the household to sort the wastes generated at the household level. Furthermore, education is needed to properly handle and sort their wastes.

**Hazardous wastes:** It is noted that there are guidelines to handling hazardous wastes (such as oil), however, it could be that some individuals are not aware of the guidelines. Regarding other wastes such as car tires, the municipals are in agreement that it is still a challenge as some of the wastes have not yet been accommodated.

**Composting and producing manure:** This is a good initiative. However, the government has not prioritized the funding for compositing and manure production. It was noted from Ilala Municipality that there is an initiative at Gongo la Mboto in which with AMREF collaboration, a company is making compost manure.

**Land occupancy:** It is clear that the Jangwani area is a prohibited area. The challenge in terms of a legitimate place will require individuals to identify an alternative area and work with the municipality on gaining permission to use the area for recycling.

**Revenue collection and payment:** It is noted that tender provision is based on qualities and capacities to perform. Experience from Ilala is such that waste collectors collect the money, however, they are advised to be more creative in managing their money.

**Harassment:** It is noted from Temeke Municipal that harassment arises from the house to house waste collection. This is because the collectors do not have a specific place to dispose the waste given the long distance to the dumpsite. Waste pickers could also be harassed because they might be invading areas from assigned waste collection contractors in these areas. Thus, informal sector waste collectors need to be capacitated and organized to avoid harassment.

**Laws and guidelines:** Recommend the need to establish bylaws that can take into account and incorporate producers in waste management.

## **Resolutions**

- Agreed to organize a meeting where municipals and waste pickers will discuss about collaborations.
- The local government is challenged to locate and formalize areas that the waste pickers can use.
- CPRA can coordinate the engagement of these suggestions including the meeting between the municipals and waste pickers.

## **A Word from AMREF**

It was noted that there is a need to think about value addition. AMREF has capacitated the groups in Ilala, by providing education and tools. They have also supported the production of various products. They are currently working with municipals on reviewing and discussing bylaws on group recognition, enabling them to become more engaged. It is noted that there is a need to have a strong financing mechanism. To enable waste pickers to meet their objectives and targets, for instance requires the implementation of the 10% rule for the municipality. This rule implies that 10% from the municipal budget are required to be set aside to provide loans to women and youth projects. This means that these groups involved in waste collection can take advantage of these resources made available by municipalities. The challenge is that most municipal councils are unable to fulfil this requirement. Microfinance institutions can also participate in the recovery of resources and enhance innovations coming out of waste. AMREF agreed that they are willing to facilitate the meeting to support transformational change on the discussion between the municipality and the waste pickers.

## **Closing Remarks**

It was noted that this was a historical meeting towards witnessing political will. There is motivation to work together with the waste pickers. Noted that their stay in Dar es Salaam has shown many pictures of waste. They have been able to pick key issues such as harassment and coordination. The future holds a big picture of increased separation of recyclable waste, facilitating and diversifying the work of waste pickers, reducing accidents and risks among waste pickers. There are three key important aspects in the issue of waste pickers being political will, cooperation and changing the mindsets from waste to resource. The participants acknowledged that they would be willing to support the various initiatives in waste recycling.

**Photo: Workshop session in Dar es Salaam**



**Field Visits in Zanzibar**

In Zanzibar we had the opportunity to visit several grassroots initiatives working with recyclable materials. These social enterprises and projects provide livelihood opportunities for men and for women.

**Photos: Glass and wood reworks**





Photos: Plastic recycling enterprise





## 5. Conclusion and Suggestions

Sustainability in waste governance can be achieved through inclusiveness of stakeholders. Through this conference various initiatives were revealed including the efforts of the '*waste governance and recycling network*' project, the success stories from members of networks as well as the challenges they have been encountering. The members really worked hard to create models that include all stakeholders in order to achieve sanitation in the cities and also their own livelihoods. However, for increased inclusiveness in sustainable cities, the question of resilience and agency have to be observed.

Resilience to the community: The increased inclusiveness to waste management and recycling is a result of effort and commitment of members. It is the role of the members to create the atmosphere that leads to community understanding, acceptance and acting in accordance with the designed models. The emphasis is to change the mindset, to make the community be more resilient, so that they can adopt the model by changing their traditional ways. They should also think that waste can be transformed from refusal material to useful materials.

The issue of agency has to be observed by the researchers, in order to understand the capability of the actors. This will help to develop the implementable models and the ones that

enable the actors' inclusiveness. Special attention should be given to women, it is important for women to join the network. We should understand that women have different and specific perspectives. They are main actors in waste management. They are the actors who participate underneath and significantly achieve what they want. It is the role of researchers to do more studies about the individual's agency in order to find the best ways of connecting them through networks.

The need for social enterprises in waste management and recycling was emphasized. There should be other ways of embracing social aspects, such as social inclusion and de-stigmatization, in the processes. The stakeholders have to take advantage of this Government, by ensuring that they cooperate with waste pickers, with big waste collectors and small collectors, as well as waste producers (domestic, industries etc.).

The issue of changing mindset and attitude toward sustainable governance was discussed. The question was 'how should we change it. Generally, the answer was to develop models that can be used to create favorable environments for all stakeholders including waste collectors and waste pickers, recyclers, waste producers (domestic and factories), government and non-government agents. Models such as waste exchange systems, community waste banks, circular economy, or gambling concept was discussed.

There is a need to continue to have a look on the implementation of governance that addresses inclusion in waste management. What kind of links do we need between Government and other stakeholders to work sustainably? There can be the establishment of avenues that allow stakeholders to negotiate their positions. The workshop on Day 3 (02 May 2019) is a good example of collective participation among stakeholders. Face to face roundtable meetings are capable of creating 'political will', in which the government is listening to the voices of other stakeholders.

All in all, the conference promised to have come out with innovative waste collection and recycling models, solid waste management governance, and clearly stated roles of local governments in waste management, sustainability of waste picker organizations, grassroots innovations and practical lessons or success stories across various cities in different countries.

To implement the outcomes of this conference the various actors will have to play their roles as follows:

### **Waster Pickers Organizations**

These organizations have a role to play on sustainable solid waste governance. They have to use the experiences shared from this conference and the suggested models to implement their responsibility that includes providing remunerated services in waste collection, recycling, environmental education and improving health in local communities. They have to improve their relevance to the community going beyond sanitation services by establishing other activities such as training the users of their services on waste management. Generally, waste pickers are responsible to:

- link different waste management actors in the community
- communicate messages concerning health and sanitation
- maintain cleanliness and safe ways
- generate social benefits to the community
- bring elements of solidarity to neighborhoods and to the family level

### **Local Government Authority**

Local governments have to play a ‘listening role’. They have to establish waste governance models that allow and enable the dialogue with other actors, including researchers, waste pickers, waste workers as well as entrepreneurs in the waste management value chain. The dialogue will also allow for these other actors to engage in public policy making.

### **Researchers**

Continuous research is required to accommodate the complexities and dynamics in waste governance, waste management, recycling, environmental sustainability and community health. Research, particularly community-based research, is needed to address some of the major current waste challenges and to find innovative and adequate solutions. They have a role to play in suggesting the models that can coordinate and link the actors in the whole network of the waste management value chain. Finally, researchers are responsible to communicate their findings, to engage with Government and civil society in adequately transmitting research results.

### **Grass root innovators**

It is their role to make their voices heard. They should find the ways to link with other actors in the value chain, as well as with researchers and other grassroots supporters. They also construct a sense of proud for the work they do by seeing it as a paying career and a livelihood.



## 6. APPENDICES

### Appendix 1: Conference and Follow-up Activities Program

#### CONFERENCE PROGRAM 29<sup>th</sup> April - 4<sup>th</sup> May 2019

Day	Activity	Presentation & Discussion
<b>Monday 29<sup>th</sup> April 2019</b>		
8.00 - 9.00	Arrival and registration of the delegates	
9.00 - 9.10	Welcoming Remarks	Prof. Cuthbert Kimambo, Vice Chancellor, University of Dar es Salaam
9.00 - 9.40	Introductions & Opening of the conference	Hon. January Makamba (MP) Minister of State, Vice President's Office, Union Affairs and Environment.
9.30 - 9.50	Vote of thanks	Jutta Gutberlet, University of Victoria, Canada
9.50 - 10.10	Project & Conference overview	Goodluck Charles, CPRA, Tanzania
10.10 - 10.40	Waste collection & recycling in Dar es Salaam: Opportunities & Challenges	Christopher Rugemalila (Mazingira Cooperative Society) Isaack Christopher (UG Mazingira) Aisha Mbaraka, TMHS
10.40 - 11.10	Group Photo & Tea Break	
11.10 - 12.00	Transforming waste collection in Dar es Salaam: Initiatives & lessons learnt	Anasencia Ayo (Dar es Salaam, City Council)
12.00 - 13.30	Innovation practices and waste governance: International experience sharing	Ben Obera (KIWAN Kisumu Waste Actors Network, Kenya) Marcelo H. Loto (Reciclando Sueños cooperative, Buenos Aires, Argentina) Cleiton Ribeiro (Nova Glicério waste picker association, São Paulo, Brazil) Darren R. Innis (Les Valoristes) & Davin Q. Boutang (Binners Project, Canada)
13.30 - 14.30	Lunch break & networking	
14.30 - 15.00	Sustainable waste governance: International experiences sharing Round Table	Jessica H. Perez (University of Central America, Nicaragua) Maria Monica Silva (Brazilian Waste Pickers Movement, MNCR) Exequiel R.E Tapia (RedLacre, Chile)

		Sonia Dias (WIEGO, Brazil)
15.00 - 16.30	Roundtable discussion: sustainability models of waste collectors & recyclers	Waste picker and recycler organizations and government officials
16.30 - 17.00	Conference closing & Refreshments	

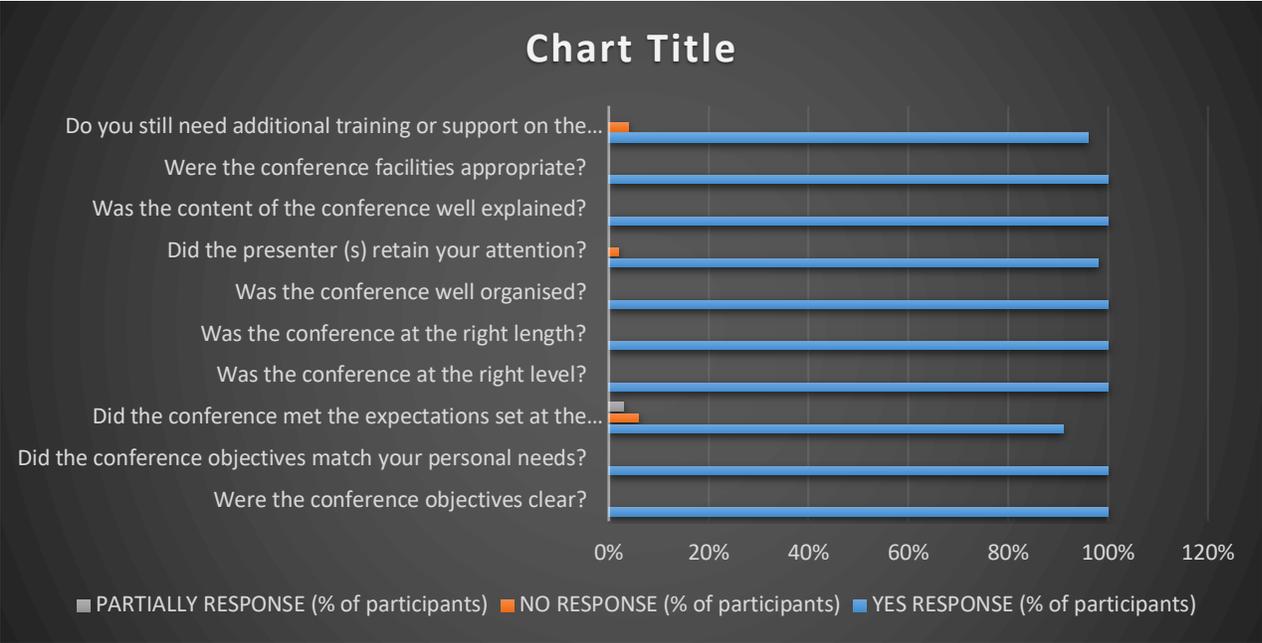
<b>Tuesday 30<sup>th</sup> April 2019</b>		
8.30 -12.30	Knowledge-sharing workshop among initiatives (Part I)	Initiatives present their networks/organizations (internal management, External governance as partnerships, commercialization) (RedLacre, Wiego)
12.30 - 13.30	Lunch	
13.30 - 18.00	Site visit: Dumpsite at Pugu, Dar es Salaam	All delegates
<b>Wednesday 1<sup>st</sup> May 2019</b>		
8.00-13.00	Research Seminar: Discussing papers and in-depth studies	Academic and network partners
	Knowledge Sharing Part II	Waste picker organizations
13.00 - 14.00	Lunch	
14.00 - 17.00	Site Visit: Chinese Industry and visit to Jangwani	All delegates
17.00 - 18.00	Courtesy visit to University of Dar es Salaam Business School	All delegates
<b>Thursday 2<sup>nd</sup> May 2019</b>		
08.00 - 10.30	Research Workshop: Discussing papers and planning for knowledge communication and dissemination (ii)	All delegates
10.30 - 12.30	Public-private dialogue on improving waste management in Dar es Salaam	Grassroots Initiative Representatives & Public Sector
12.30 - 13.00	Lunch	
16.00 - 17.30	Departure for Zanzibar (Oceanic View hotel)	
17.30 - 23.00	Zanzibar by Night	
<b>Friday 3<sup>rd</sup> May 2019</b>		
8.00 - 12.30	Waste governance workshop	All delegates

12.30 - 13.30	Lunch	
13.30 - 17.30	Meeting with Waste Collectors & Other Actors in Zanzibar: Experience sharing from Zanzibar	All delegates
17.30 - 22.00	Zanzibar by Night	
<b>Saturday 4<sup>th</sup> May 2019</b>		
9.00 - 11.00	Planning activities for research project 2019, and discussing new projects	All delegates
9.00 - 11.00	Discussion of initiatives	All delegates
11.30 - 12.30	Reflection on lessons learnt & Way forward	All delegates
12.30 - 13.30	Lunch	
13.30 - 16.00	Visit to the old Stone Town in Zanzibar	
<b>Sunday 5<sup>th</sup> May 2019</b>		
	Departure from Zanzibar	

**Appendix 2: Participants Evaluation of the Conference**

**A: Close Ended Questions**

Responses of Participants on Different Aspects of the Conference



## **B: Open Ended Questions**

### **Most important things learned from the conference as pointed out by participants included:**

- Some authorities have no waste management plans in place.
- Waste pickers are seeking government compensation for the services they provide.
- Networked with other recyclers fellows and organizations in Tanzania.
- The role of unit and cooperation in solving waste related problems.
- Considering mutual benefits between waste pickers and buyers when doing business of waste/recycling.
- Register all waste collectors.
- Different recycling methods.
- Women Involvement in waste management.
- How people within authorities are directly engaged in recycling activities.
- We have the ability to improve our solid waste management system.
- Working together can be implemented.
- Waste pickers and recyclers are doing more to our community.
- Plastic recycling and waste management (and the relation between the two).
- Paper waste governance and the importance of recycling for environmental conservation.
- Need for exposure.
- Waste management networks from other countries outside of Tanzania.
- The government will recognize and collaborate with the waste pickers in Dar es Salaam.

### **Actions to be taken as a result of attending the conference were listed as:**

- Working closely with Mombasa waste pickers toward network formation.
- Talking to academia for entrepreneurship nurturing.
- Encourage waste actors to initiate cottage industries.
- Start the network among the recyclers in our country.
- Innovation on the bio gas technology.
- Writing papers in co-authorship.
- Inspiring new ideas to move forward.
- Separating wastes from home.
- Organizing waste pickers within my street.
- Make wastes understood as a resource.
- To make our network stronger.
- Establish regular meeting with recyclers, waste pickers and the government.
- Policy initiation to our country.
- Conduct research that can be helpful to the community of the waste pickers.
- Practicing back home what I have seen here.
- Create awareness.
- Negotiation with authority for the benefit of the waste pickers and recyclers.
- Engage Government in dialogue on recognition of waste pickers and recyclers' networks.

### **Additional training/support needed on waste recycling and governance includes:**

- I need technical skills particularly in the recycling of bottles.
- Financial support to our network to enable us to switch to modern technology.
- Training of trainers on spreading awareness to stop discrimination of waste pickers.
- Prepare another formal Public Private Dialogue, which means to prepare another dialogue engagement between the private and public sector actors.
- to discuss the sustainable strategies of the recycling sector.
- Facilitation of meetings with actors from Kenya, Dar es Salaam and Zanzibar to discuss issues concerning recycling and waste governance.
- Assist to formalize the recycling sector so that it can be easier for them to access finance and other financial help.
- Peer learning for the Mombasa waste actors.
- Spread education on waste matters and their importance for environmental protection.

**Changes needed to improve the learning experience for this conference:**

- Let's make it more action oriented so that at the end of the workshop we come up with some tangibles.
- We should add more site visits to make the workshops full of interactions.
- Expand the project to other countries and increase the number of waste pickers participating in the project.
- If possible, include break-away sessions to make the workshop more actionable.
- Increase the number of stakeholders participating.
- We should give more time to the recyclers to network and to share experiences by setting aside a special session that will allow them to interact.

### Appendix 3:

Before our meeting in Tanzania, we organized a ‘waste picker to waste picker’ technology development workshop, from April 25<sup>th</sup> to 26<sup>th</sup> 2019, in Kisumu, Kenya. Waste pickers from Argentina, Brazil and Chile together with local waste pickers in Kisumu have developed simple but useful technological solutions to improve the working conditions of waste pickers (smart carts, presses and a small-scale waste-to-biogas solution). A short written and visual report guide to build a bio-digester can be downloaded from our websites. We are supporting the replication of these technologies at informal settlements and among other members of the Kiwan Waste Actors Network.

Further information on the Recycling Networks & Waste Governance project can be viewed at our facebook site: <https://www.facebook.com/Recycling-networks-Grassroots-resilience-297035903792716/>

And our websites: <https://www.cbri.uvic.ca/>

### Appendix 4: List of Conference Participants

#### I. Government and Local Government – Municipal Councils

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13	Victor Mneni	Local government	victor.mneni@gmail.com
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## II. International Participants

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