



## Urban Sustainability Review of Shashemene 2020

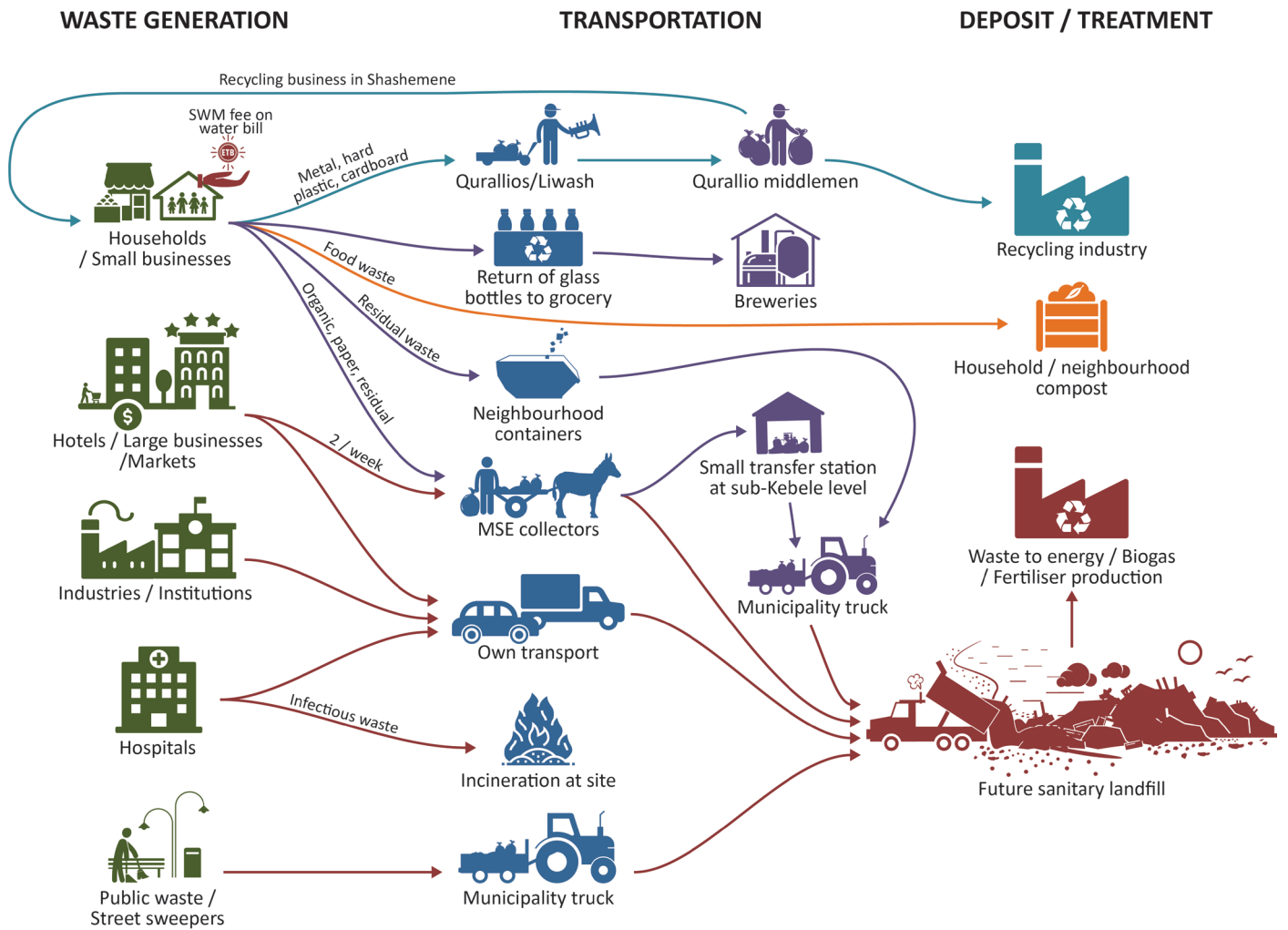
THEMATIC AREA: SOLID WASTE MANAGEMENT



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Overview of vision of how the SWM system in Shashemene will work in the future.



# Executive summary

Ethiopia is one of the most rapidly urbanizing nations in Africa, with an average urbanization rate of more than 5.3 percent per annum. From a low level of urbanization, about 21 percent, such rapid urbanization is the driver of a major societal change. Ethiopia holds a national population of about 110 million people. With a rural-urban migration rate of about 4%, close to 4 million people will start a new life in Ethiopian cities every year. This puts pressure on urban managers in terms of providing services, homes, infrastructure, jobs and utilities for urban dwellers. Urban Ethiopia is going to be a central arena for reduction of poverty as cities will host rural to urban migrants searching for employment.

The government of Ethiopia's national plan for development, Growth and Transformation Plan (GTP), has embraced this reality through its focus on industrialization and urbanization as key vehicles for economic transformation and sustainable development. Ethiopia is implementing a framework called Ethiopian Cities Sustainable Prosperity Goals (ECSPG). The framework aims at achieving the SDG 11 which emphasizes safe, resilient and clean urban development. The SymbioCity approach of sustainable urban development is a tool and process methodology for achieving participatory, people-centred and integrated planning for sustainable city/society building. It fits well with the Ethiopian framework of inclusive, sustainable and economically growing cities. The approach builds on experiences and research from the Swedish context where key success factors of sustainable city building have been analysed and conceptualized.

Following the selection of Shashemene and Debre Berhan, to pilot the SymbioCity approach project, several activities have been carried out to identify key urban challenges and to diagnose the current situation in the city. This Urban Sustainability Review (USR) serves to describe the review for Shashemene city, and the vision the city has developed for improving urban sustainability with focus on solid waste management. This review emphasizes on the process used, the methodology and tools applied and the outcomes so far.

The SymbioCity pilot projects in Ethiopia were set up so that the cities would in an early stage of the project select a thematic or geographic area for each city to focus on. The project working group members composed of experts and officials from various sectors were engaged in setting the priority areas. The city of Shashemene identified a priority area that can also have synergies with other urban issues. The thematic area was presented and discussed at city cabinet-level after which it got approval. Accordingly, the SymbioCity project in Shashemene has had solid waste management (SWM) as priority area within this project.

After having defined and organized the project, the second step of the process involves making a diagnosis of the

current situation of solid waste management and its connection to other urban systems, structures and goals. The working group also analysed roles and responsibilities of the various stakeholders affected by or contributing to the process. This was made through a participation by waste collectors, government officials, business sector, NGOs in the assessment. The stakeholders helped to provide a comprehensive understanding of how the system was currently working, what its strengths and weaknesses were and how it impacted different groups in the city. The working group went in the field and observed and (walk-through-evaluation) identified areas of the city including slum areas, condominium housing, market areas, existing dumping sites, future dump site to develop a thorough understanding of the spatial and physical dimensions. The views from waste collectors (85% women), city officials and business sector were then triangulated to understand the current systems and collect ideas for improvements. This second step, with a diagnosis of the current situation and identifying and inviting stakeholder participation, will be a steppingstone for formulating a vision and objectives for the thematic area (which is the third step in the approach).

Having recorded the input from the stakeholders a wide group participated in creating a vision for solid waste management for the city. "Shashemene a clean, green city with well informed and responsible community, which leads by example and creates jobs in the environmental protection sector". The vision captures the city's wish to use improved solid waste management to create more sustainable jobs, improves human health and creates an understanding of the need to protect the environment.

From the vision the working group identified key goals and targets of how to achieve improvements and identified how they would like the future system to work. Below is an illustration of how the municipality of Shashemene would like to organize solid waste management in the city in the future. It includes at household level source separation of waste in three fractions 1) Organic 2) Recyclables 3) Residual waste. The MSE collectors would still be operating in the residential areas but would drop off the waste at smaller kebele level transfer station to allow for more efficient transport of waste to the future sanitary landfill and recycling industries. Hotels and large business would continue to organize collection by themselves to encourage private sector involvement. Also industries and large institutions have to organize their own collection and transport of waste and they will be charged a gate fee to dispose of waste in the landfill. An important difference is also that the fee for SWM would be bundled with the water bill, making it easier for the municipality to control the process.







# 1. Introduction

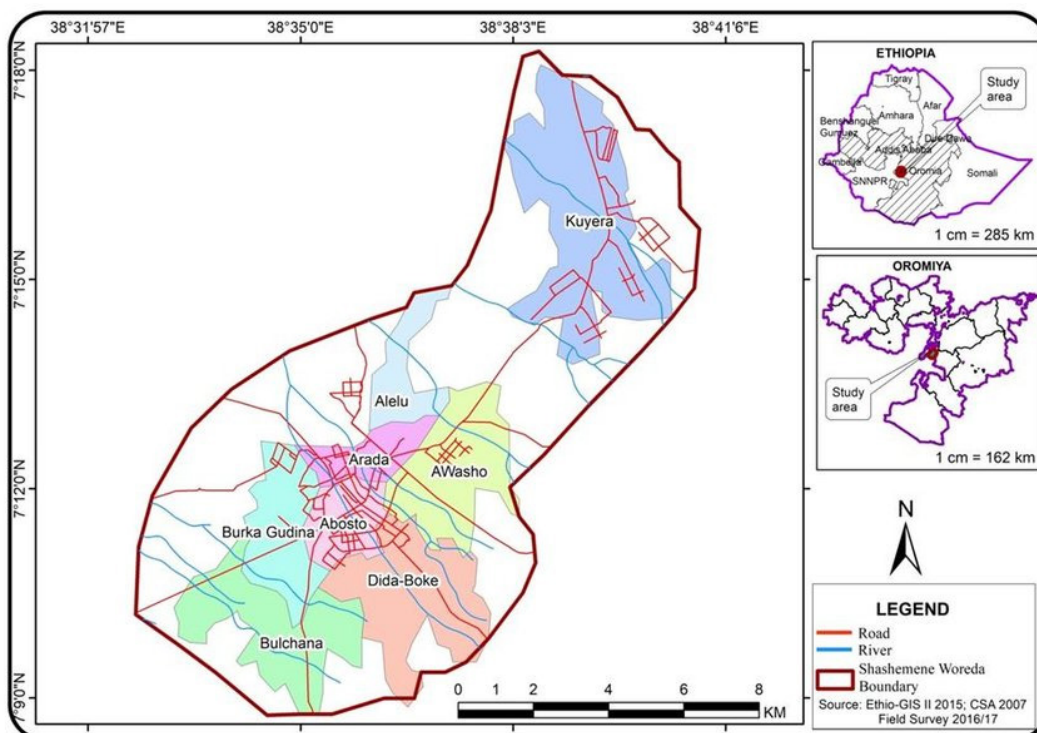
The city of Shashemene is applying the SymbioCity Approach in order to improve urban sustainability and capabilities to plan for inclusive and sustainable urban development. The project in Ethiopia is part of the Global SymbioCity Approach Programme which is funded by the Swedish International Development Cooperation Agency (Sida). Shashemene has selected a cross-sectoral working group as well as a steering committee of decision-makers and a national advisory board to oversee the project. The working group meet regularly with an international SymbioCity Approach facilitator as well as a national urban expert. The working group in Shashemene commenced work in April 2018 and during the first phase of the project focused on defining and organizing the project and developing this Urban Sustainability review. The Swedish Association of Local Authorities and Regions (SALAR) and its subsidiary SKL International are implementing the pilot project in Ethiopia.

Shashemane was established in 1910/1911 (1903 E.C). The area was previously used as a pathway of trade caravan routes for southern Ethiopian region. The name Shashemene was derived from a famous Oromo lady named “Shashe”, who operated a rest-stop named ‘Mene’ in the area. (Source:

Local Elders and different written materials). The City has had a municipal status since 1935/36 and has had a Master plan since 1996. Currently it is the administrative capital of the West Arsi zone and is characterized as a level-one city in Oromia Regional State.

The city’s strategic location at the intersection of roads connects several cities in the southern part of Ethiopia has both advantages and disadvantages. While the connections create good business opportunities and centre of commerce and the presence of lakes such as Langano and Shala around Shashemene are key assets that attract tourism for the city. In other hand the transient population also produce additional solid waste for the city to deal with.

Shashemene is home to close to 250, 000 residents and the population is growing by an average of about 4.5 percent per annum. The city is going to be under a strong pressure in terms of service demand, jobs and infrastructure. The population of Shashemene is young, 65% of the population are under 25 years of age. This could be both an opportunity as well as a challenge. It is an opportunity in terms of the productive potential of the youth, but it is also a challenge for cities in terms of meeting the demand for jobs, housing and other social services.



Overview map of Shashemene City Boundary.



# 2. Background and purpose

## 2.1 Purpose of the Urban Sustainability Review

The purpose of the Urban Sustainability Review for Shashemene is to conduct an assessment of the city’s strengths and challenges regarding urban sustainability with special focus on solid waste management (SWM), and at the same time, provide stakeholders with an overview of the present situation as well as transparent insight into the upcoming strategic planning process. The Urban Sustainability Review can also act as a baseline for future follow-up.

The review of the current status of urban sustainability has been developed through a participatory process including several key stakeholders and actors, who have offered their views regarding urban development and solid waste management in Shashemene. By involving a wide range of stakeholders, the information obtained has led to a more comprehensive understanding of the challenges, opportunities, potential synergies have been achieved. The USR has therefore been an important process for stakeholders in the city, allowing them to get involved to describe the problems, influence the development of possible solutions and plans early in the process.

The SymbioCity Approach can be applied in many ways. The project set up for the two pilot cities (Shashemene and Debre Berhan) in Ethiopia was that they, early in the project, would select a thematic or geographic area to focus the subsequent project on.

## 2.2 Project organisation

The project is organised through a multi-level scheme, reaching from national level down to local level through the stakeholder participation process.

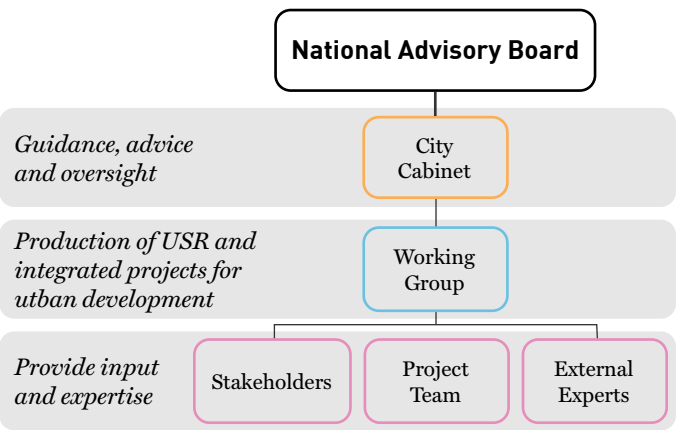


Figure: Overview of the project organisation structure.

The National Advisory Board regulates the overall project and disseminate experiences gained from the pilot cities to other similar cities in Ethiopia. It ensures and coordinates possible synergies with other urban development programs. The Ministry of Urban Development and Housing (MUDH) is the chair of the National Advisory Board and serves as a key client of the project. The Ministry of Finance and Economic Cooperation (MOFEC), regulates the fulfilment of legal aspects and control that necessary formalities are in place to allow the implementing organisation (SKL International) in Ethiopia.

At national level the project is guided by the National Advisory Board comprising of representatives from:

- Ministry of Finance and Economic Cooperation
- Ministry of Urban Development and Housing (the main national project owner)
- Ministry of Environment
- World Bank
- UN-Habitat
- Regional Bureau of Urban Development and Housing for Oromia and Amhara regions
- SKL International
- Mayors of both Shashemene and Debre Berhan cities
- Ethiopian Cities Associations
- Christian Relief and Development Association (CRDA)
- Ethiopian Institute of Architecture, Building and Construction (EiABC)
- Academic institutions

At City level the project is guided by the City Cabinet acting as steering committee, composed of the Mayor and Head of Office representatives from key sectors in the city. The role of the City Cabinet is to oversee, guide and advise the project. The cabinet is also responsible of approving project activities and findings as well as deployment and monitoring of the project working group.

At project level, the working group consists of a selection of experts, from the following sectors:

- Job-creation Office
- Health Office
- Education Office
- ULGDP / UIIDP-project Office
- Solid waste management department
- Mayor’s Office / Anti-corruption Office



## Shashemene's working group

- **Mr Gemed Bedasa**  
*Solid waste management office and focal person*  
(Replaced by **Seyum Mekuria** in 2019)
- **Mr Eliyas Jamal**  
*Education Office*
- **Mr Siyum Mekuria**  
*Anti-corruption officer in Mayors Office*
- **Ms Derartu Borojo**  
*ULGDP/UIIDP Department*
- **Mr Dhibbaa Daniel**  
*Health Department*
- **Mr Fiseha Niguise**  
*Job Creation Department*

## Project support

- **Ms Anna Älgevik**  
*International SymbioCity Facilitator*
- **Dr Belay File**  
*National Urban Expert*

The working group is responsible for applying the Symbio-City approach, including conducting planning and carry out stakeholder participation, a diagnosis of the current situation of the city and produce the Urban Sustainability Review on the chosen thematic area. The working group will also lead the development of integrated sustainable proposals for urban improvements. The work is supported by an international SymbioCity Facilitator (SCF) and a national urban expert.

The international SCF and national urban expert meets with the working group in workshop trainings sessions that are planned to take place eight times throughout the project period. The trainings include practical application of the SymbioCity methodology, inspirational lectures and tasks and assignments for the working group to carry out as part of the training program.



## 3. Process and Methodology

### 3.1 SymbioCity

The SymbioCity Approach promotes a holistic, integrated and multidisciplinary path to sustainable urban development based on extensive experience from Sweden and application in developing countries. Sustainable urban development is a complex field comprising of interconnections between urban systems, services and relationships, and the SymbioCity Approach provides a conceptual framework for the many issues and linkages that need to be considered in urban development initiatives. The SymbioCity model allows decision-makers to review urban areas holistically and attempts to show how spatial, environmental, social-cultural, and economic factors are in fact integrated and mutually supportive. The approach recognizes that urban areas are created by people for the people and, therefore, should be inclusive and build on stakeholder participation.

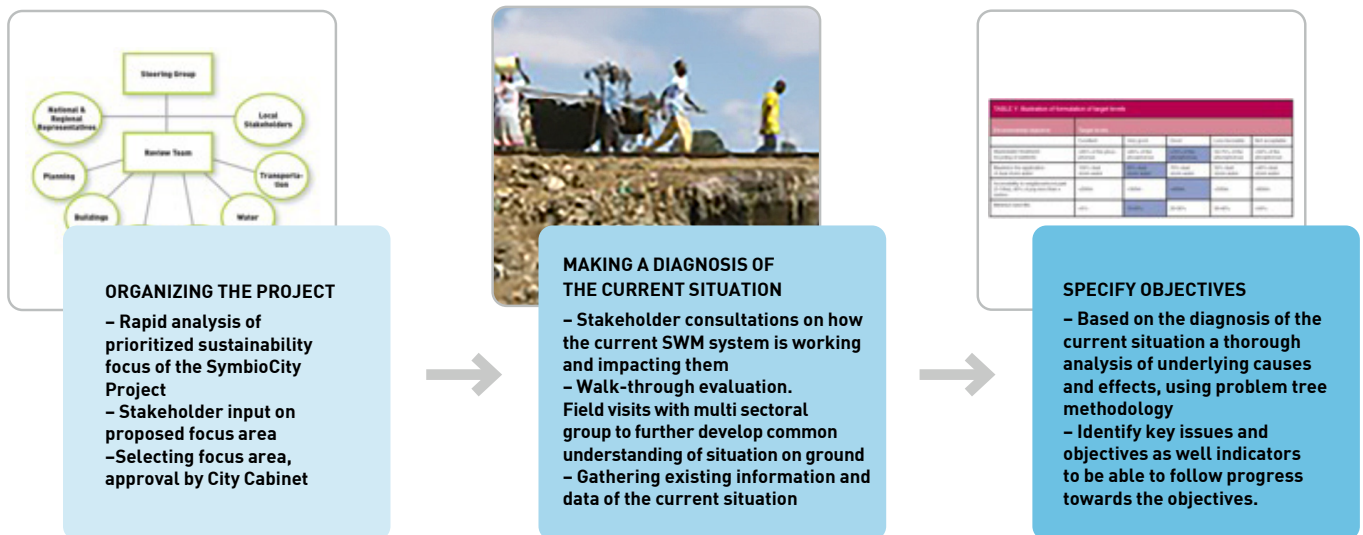
The main objectives of the SymbioCity approach are:

- Support multi-disciplinary **cooperation among stakeholders** and a holistic and integrated approach.
- Contribute to **capacity building** by mutual sharing of knowledge and experiences between stakeholders.
- Be a **platform for dialogue** and cooperation between stakeholders at the local level.
- **Guide the Urban Sustainability Review (USR)** at different levels using multi-disciplinary and sector approach.
- **Contribute to city-wide strategies** for improving urban areas.
- Help cities and towns to **plan practical and integrated systems solution**.



*The four dimensions of urban sustainability; environmental, economic, socio-cultural, and spatial (the built environment). Human health, comfort, safety and overall quality of life are in the center.*





Overview of the first three generic steps of SymbioCity Approach.

The SymbioCity approach comprise of six generic steps:

1. Define and organize the process.
2. Make a diagnosis of the current situation.
3. Specify objectives.
4. Develop alternative proposals.
5. Analyse impacts.
6. Implementation and follow up.

This URS outlines the result and describes the work with the first three steps of the SymbioCity process.

### 3.2 Organizing the project and Selection of Thematic Area

As mentioned above, the Symbio City Ethiopia Project in Ethiopia was organized in such a way that the city early on would focus their planning efforts on a specific geographical or thematic area.

There was initial indication on priorities even before the project started, the City Administration of Shashemene had identified topics already when the MoI for the project was formulated. At the start of the SymbioCity project the working group, representing several departments of the administration, made a new assessment of the most prioritized areas for sustainable urban development in Shashemene.

Based on a rapid SWOT and Grid analysis key issues were identified and clustered. The working group discussed

what type of interventions could potentially have impact on multiple key issues that they wanted to address. For example, improving SWM could generate more low-skill jobs for urban poor, improve human health, improve quality of public space and reduce pollution. The working group was asked to prioritize the key issues and select the one of what in their view was the highest priority. The issue that received highest priority among the working group was Solid Waste Management.

After prioritizing key issues, the working group decided to focus on SWM with the following arguments.

Why focus on SWM;

1. It is an issue that the citizens of Shashemene repeatedly have raised as a serious problem that impacts their daily life.
2. It is a prioritised development area on a national level.
3. It addresses improving urban environment.
4. It addresses urban health.
5. It could potentially create more jobs.
6. Improved solid waste management may have synergies with urban greening.

The reasoning behind the working group's choice of thematic area of focus for the continued project was presented, discussed and unanimously approved by the City Cabinet, the steering group for the project.

Below is a summary of the rapid SWOT analysis the working group carried out.

<h3>Strengths</h3> <ul style="list-style-type: none"> <li>• City of commerce and trade.</li> <li>• Good road network and connections to other cities.</li> <li>• Comfortable weather condition.</li> <li>• Available labour force.</li> <li>• Sectoral collaboration within the city administration.</li> </ul>	<h3>Weaknesses</h3> <ul style="list-style-type: none"> <li>• Lack of awareness about solid waste management both with the public and government institutions.</li> <li>• Lack of finance/budget to provide services.</li> <li>• Solid waste management has not been prioritized by the local government.</li> <li>• Low stakeholder involvement i.e. NGO who work on solid waste management.</li> </ul>
<h3>Opportunities</h3> <ul style="list-style-type: none"> <li>• Favourable location, good connections to neighbouring cities.</li> <li>• Skilled professionals and labourers.</li> <li>• Strong community that is involved in the urban development through the Kebele organization.</li> <li>• Shashemene is a UIIDP-city and can be awarded funds for development projects if they are in line with the UIIDP program.</li> <li>• Shashemene has several different nationalities, ethnic and religious groups.</li> </ul>	<h3>Challenges</h3> <ul style="list-style-type: none"> <li>• Local government capacity to implement projects and plans.</li> <li>• Lack of attention to eco-system services and urban development impact on the environment.</li> <li>• To create jobs for the increasing urban population.</li> <li>• Improve solid waste management.</li> <li>• Improve liquid waste management.</li> <li>• Improved housing.</li> <li>• Improved drinking water supply.</li> <li>• Increase public awareness regarding drugs and alcohol.</li> <li>• Improve payment for municipal services.</li> <li>• Increased general budget for the municipality.</li> <li>• Improve urban health.</li> </ul>

### 3.3 Stakeholder mapping and Community participation

Having selected the thematic area to focus on the working group continued to elaborate on key stakeholders whose input and participation would be crucial to the project. It is a key principle of SymbioCity approach to identify and engage key stakeholders early in the process. This since, stakeholder consultation is a crucial step towards finding integrated sustainable local solutions for local problems.

The working group identified and recorded stakeholder groups with whom the project would interact through the process. The record included motivation and characterisation of the identified group and the list of stakeholders has

throughout the project been revised and updated.

Urban development is influenced by several stakeholders in the city: Citizens, local organizations such as religious groups, unions, trade groups, women's organizations, NGOs and local business. By involving representatives from these stakeholder groups, the city can develop more sustainable and adapt to people-centred solutions. Academic institutions do also have a role in the discourse of sustainable urban development through research and training. As such universities and training institutions are key stakeholders for knowledge sharing and dissemination.



*Presentation for City Cabinet and City Council members regarding suggested thematic focus for the project.*



**Table: Stakeholder mapping**

Stakeholder	Types of stakeholder	Motivation	Description of stakeholders
Citizens Survey of 550 households (random selection)	Public	Achieve national goals, i.e. job creation and local economic development in SWM sector and well improved SWM and urban environment.	Households and residents of the city including youth, women and senior citizens are in one way or another influenced by or will influence the project.
Working group	Representatives from local government departments	Capacity building i.e. learning to apply the approach Cross-sectorial collaboration and interdisciplinary exchange of experiences.	A group of experts from various sectors in the municipality and responsible for the overall diagnosis and implementation of the project.
Steering committee/ City Cabinet Heads of all municipal departments	Local Government	Decision making, political leadership, official approval, helping to communicate with stakeholders.	Project steering group is made of cabinet members headed by the city mayor. The steering group is responsible for the approval of various proposals raised by the working group.
Municipal experts/ Departments SWM department, finance department, ULGDP department, job creation department, regional representative for SWM issues.	Local Government	Sharing ideas and experience	These are the various departments in the municipality. Each working group member represents his/her own department, shares experiences and disseminates it.
National Advisory Board	National and Regional Government, University, World Bank, NGO	Guidance, spreading information	The National Advisory Board oversees and guides the project at national level and is responsible to make sure that the project fits to national priorities and programs.
SKL International	Subsidiary company to SALAR	Executing body	A Swedish based company fully owned by the members association Swedish Association of Local Authorities and Regions (SALAR). Created with the sole purpose of implementing international development projects on behalf of SALAR. Prepares TOR, provides capacity training etc.
Sister cities	Local Government	Share information and experience, develop proposals.	Sister cities at national level include Shashemene and Debre Berhan, the two project cities. It is expected that they share information and experiences.
Local NGOs: Dorcas International Tamaria Local branch Red Cross International Sport academy	NGO	Find possible partnerships, get better knowledge of existing situation, create better impact for public awareness.	Stakeholders already active in the city working on health and hygiene issues. The NGOs are organizing clean-up days, supplying equipment to waste workers, contributing to urban greening, providing public awareness, and other community activities.
New Global Vision University Pharma Collage TVET Collage	Academia	Vid possible partnerships, the collages have instructors that can help with training, they can assist in outreach to students, other ways to collaborate.	There are several collages and vocational schools in Shashemene. The academic institutions have been important drivers for improved urban environment and have been active in solid waste management.

After having mapped the key stakeholders the working group started to plan for how to engage with the stakeholders. The main purpose of the stakeholder meetings was to allow waste collectors, households, officials and concerned representatives to consult the project development, from the project introduction until the vision and objective setting.

The stakeholders were engaged to identify the comprehensive picture of the current situation, and to discussing priorities and to formulate the thematic area. The collaboration with stakeholders will continue as the project continues.

### 3.4 Developing an overview of the current situation

In order to develop a thorough understanding of the current situation of solid waste management in the city the working group started to collect information by engaging the stakeholders they had mapped, like households, solid waste collectors, NGOs, local administration departments, businesses etc to give their opinions on the issue.

The format for engaging with stakeholders and other information gathering was carried out in several different ways, engaging in workshops to add to SWOT and grid analysis, distributing questionnaires, in field consultations and plenary meetings. The working group recorded the information given by the stakeholders to provide diverse and complex view of the current situation of solid waste management in the city, and produced this USR. The USR also includes review of secondary data like existing studies and plans.

A large group from the municipality, experts from the SWM department, kebele<sup>1</sup> administrators and the communications department gathered to add to the assessment of the present situation and to add to the SWOT and the GRID analysis. The SWOT analysis investigates how the experts view the overall strengths, weaknesses, opportunities and threats that the city faces in terms of solid waste management.



*Stakeholders from the Solid Waste Management Department elaborating SWOTs regarding the current situation of Solid Waste Management in Sashemene.*

Further stakeholder consultations were held with the City Cabinet, Solid Waste collectors working in the city, NGOs and private institutions and local government representatives. The solid waste management department was responsible for inviting the various stakeholders to the workshop where the analysis was carried out. The USR is composed of results of these discussions.



*Working group in workshop.*

#### Consultation with waste collector representatives from micro and small enterprises

This stakeholder meeting was held with the workers who are directly involved in solid waste collection in the city districts/Kebeles. The purpose was to learn about the workers view of their working conditions and challenges they face.

The waste collectors are a central stakeholder group for the project. They are the operators of the current waste collection system, organized as small MSEs in each Kebele. The waste collection workers are primarily women (about 85% of the total). They have low and unreliable income and very poor working environment. Several of the waste collectors are not originally from the Oromia region and might not speak the local language, and several of the workers do not read and write. It is crucial to have their input on how to improve the solid waste management system, so that is why the consultation was organized using questionnaires so that the workers could help each other with translations, the working group helped the workers to record their responses.

The meeting started with a short introduction to the project and the SymbioCity approach as well as a short lecture on occupational safety of waste collectors. The waste

<sup>1</sup> Kebele administration is the smallest administrative unit in Ethiopia.





*Consultation with waste collection workers, WG member assisting the workers to answer the questionnaire.*



*Workshop and discussion with the solid waste management department at the municipality.*



*Workshop with municipality experts.*



*Workshop with municipality experts.*

collectors' input was collected through questionnaires and interviews regarding the current solid waste collection system, safety measures, and the how waste is handled today and the need of operational supports.

The stakeholder meeting with the waste collectors conveyed the that;

- They appreciated that the municipality invited them to discuss on waste management issues.
- The waste collectors pointed out that for them to do a good job and get clean streets public awareness is very important.
- The collectors inform people not to dump waste in nature and to refrain from burning or burying waste, but they don't get much response from the inhabitants.

- The collectors said that they do not have equipment to protect themselves and often get injured at work.
- The waste collectors also said that the distance to transfer stations often is far and that emptying of community containers is unreliable.

#### **Workshop with municipal staff**

The purpose of the meeting was to collect the municipal staffs input on the current situation and get their assistance with identifying strengths, weaknesses, opportunities and threats regarding waste management in the city of Shashemene.

The outcome of the workshop was the following;

- The administrative level involved in SWM point to that in order to manage solid waste well, awareness creation is necessary.





*Consultation with waste collection workers, workers are organized in micro-enterprises through the local administration (Kebele).*

- The current low awareness of and absence of a robust system to comply with makes it difficult to improve the system.
- The inhabitants do not understand their own responsibility and they are complaining about the municipality not doing their job.
- The municipality is lacking in service provision but in order to get improvements everyone must do their share.
- The budget which is allocated for waste management is not enough to cover collection in the city and there is a lack of equipment, both containers and vehicles as well as other technology.
- There are little commitment/focus on the matter from the political leaders.
- There are not enough incentives for workers to implement improvements, there is little public participation in solid waste management activities such as clean up days, there is little/no source separation of waste, plastic materials are a large issue since only certain plastics are collected by informal recyclers and most of it ends up in nature.

## 4. The current situation – Shashemene

Below is a description of urban characteristics of the city of Shashemene based on the SymbioCity conceptual model that includes spatial aspects, environmental aspects, urban systems, institutional aspects, urban economy and urban systems and functions.

### 4.1 The Urban City (spatial dimensions)

The city of Shashemene is in the southern part of the Regional State of Oromia, about 250 km from the national capital Addis Ababa. The city is situated at the upper great East African Rift Valley and is one of the largest cities in the Regional state of Oromia. Shashemene is the headquarter of West Arsi Zone and has “A” grade level city regional status. This means that the city has authority to be contributing part in urban master planning, rather than just receiving the masterplan from the regional authority.

The city has eight geographical urban kebele administration units; Awasho (Kebele 01), Abosto (Kebele 02 & 03), DidaBoqe (Kebele 04), Bulchana (Kebele 05), BurqaGudina (Kebele 06 & 07), Arada (Kebele 08 & 09), Alelu (Kebele 10), Kuyeratown.

The city planning is guided by a structured plan and a master plan which is approved by the Regional Urban Planning Institute (RUPI). RUPI operates in consultation with

The city expansion primarily take place on surrounding farmland, with the largest expansion taking place in the sub-city of Kuyera. Initially Kuyera was its own town but it has now merged with Shashemene and is now administratively a Kebele (sub-city). This horizontal expansion has led to a change in urban topography, size and area as well as elongated the city into a pear shape.

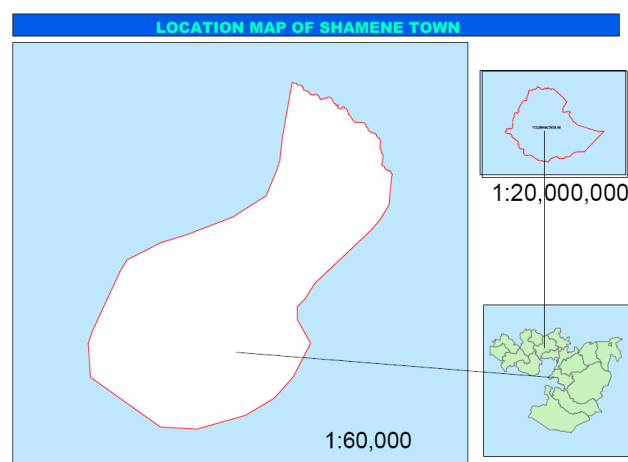


*Expansion of informal settlements in unused pockets of the city and city borders.*

#### Urban Form, Architecture and Housing

Master planning in Shashemene is carried out with the help of external consultants and The Regional Urban Planning Institute (RUPI). However, masterplan revisions are far apart and do not keep up with the quickly expanding urbanisation. The city boarder has not been extended in many years and there are now settlements that functionally are a part of the city that do not fall within the city’s planning zone or governance jurisdiction.

The city has capacity to develop Local Development Plans (LDP). This is done for certain parts of the city (Awasho LDP, Arada LDP, Abosto and Hessa River LDP). The local development plans focus on redevelopment of slum areas, building height (densification) and buffer zone development. Most of the buildings in Shashemene are informal buildings, informal housing are structures not meeting building code. According to a study conducted under the Drainage Network Master Plan of the city (Metaferia Consulting Engineers, 2013), a socioeconomic survey indicated that of the total residential housing units about 87.5 percent are constructed with Corrugated Iron Sheet (CIS) roofs with wood and mud walls. The remaining houses are comprising of 3% CIS roofed and stone-walled houses, 2,5% CIS roofed and hollow-block walled houses, and 1% condominium buildings. Other types of building materials of housing, such as plastic roofed, plastic walled, etc, account



the municipality as well as the wider public.

*Map of Shashemene in relation to Oromia’s map.*

Shashemene’s urban area is expanding with informal settlements along the main roads. It is challenging for the City Administration to keep up with the rapid population influx. The fast urban sprawl also brings that it is difficult for dwellers in the new unplanned settlements to access and utilise urban services like tap water, waste management, jobs and schools.





*Left: Examples informal dumping of waste in public space. Right: Public space where street-sweepers keep streets clean.*

for 5.8% of the total sampled housing units. However as the city is growing and new local development plans are implemented an increasing number of multi-storey buildings are being built and the city is growing more in the vertical.

### Public Space

Public Space such as parks and recreational areas are available in the city, however the upkeep and quality of these areas does not reach the goals set in the masterplan. According to the masterplan public green space should be double the space than what is currently allocated. The poor quality and upkeep of public space is connected to poor solid waste management and the lack of waste bins along major roads in the parks. It is also a challenge to keep open areas free from occupation of informal settlers, cattle grazing and other activities that damage the space.

### Water

The water supply of Shashemene comes from two rivers; Weshia in Wendo-Genet Wereda, and Hessa in Shashemene. There are also three boreholes in the Solie area. About half of the urban population has access to drinking water in their home, residents not connected to the municipality piped water system use community taps or mobile water delivery services. The residents that do have access to piped water have many interruptions, the supply of water to the system is not enough. The water utility has a total of 19,208 customers, of which 18,396 are residential, 407 are commercial, 373 are institutional and 32 are industrial.

### Energy

Charcoal is the most important energy source for the citizens of Shashemene, used for cooking and heating homes. The penetration of electricity is also fairly high, there are more than 28,000 electricity meters installed in the city. The electricity supply has frequent interruptions and back-up power is often used. The city has about 22-megawatt capacity at the

substation, the current use level is about 52% of the available capacity.

### Mobility

There is no public transport organized by the city administration. For shorter trips most residents walk, use horse carts or ride bicycles. The moto-taxis Bajaj are the most common mode of transport for longer trips within the city and close surroundings. There are full size and minibuses that occupy routes to the regions and beyond. The daily mobility pattern in the city is that city dwellers use transport from their homes to place of work and market areas. During peak hours traffic is very busy and informally organized, with poor lane structure, no traffic lights and compliance to traffic rules. The situation for pedestrians is not well organized in and persons walking must often walk in the streets. There are frequent traffic accidents, between vehicles but also with pedestrians and cyclists.

### Urban Structure and Land Use

The land use pattern in the city is crucial for economic, transport and social development within the city. According to Structural plan preparation, the land was allocated for different land uses. The detail land use classification is presented in the following table.

## 4.2 Key Assets and Opportunities

The city's strategic location in the south of Ethiopian gives it a good opportunity for specialization in trade and commerce. The presence of agro-processing industries and some small-scale industries such as; textile and garment industries, construction companies, metal and metal-related factories yield key assets for the city's economy. Tourism and travel industry also offer an important asset for the city, due to the city's proximity to the lakes Langano and Shalla and the City of Hawassa.



**Table: Urban Land Use Classification (area in hectares) According to Structural Plan**

No	Land Use Classification	Area in Hectares	%
1	Residential	4262.6	33.00
2	Transportation	2718.7	21.05
3	Green area, Sport field, Forest and buffer urban agriculture, park and recreation	2448	18.95
4	Commercial center	1291.7	10.00
5	Manufacturing or Industry	1291.7	10.00
6	Service	517	4.00
7	Special function reserved area and water bodies	387.3	3.00
<b>Total</b>		<b>12,917</b>	<b>100.00</b>

Other key opportunities identified are:

- Strong political commitment within the regional government towards urban development as well as among the staff at the City Administration and in the Municipality along with enthusiastic community members.
- Accessibility of important service utilities and infrastructure such as road networks, hydroelectric power, drinking water, ICT and transport facility and availability of urban facilities, like hotels, schools, hospitals and other services.
- The number of skilled, semi-skilled and unskilled labour force, to be utilized when establishing labour-intensive investments.
- The accessibility of fertile urban agricultural land, natural- and indigenous resources in or around the town, like vegetable, fruit, root plants and other agricultural goods, as well as marketable and marketed surpluses of agriculture commodities.

## 4.3 Key Challenges

### Urban Waste Management

The management system of urban waste products at different level is not adequate. There is inadequate awareness within the community, a lack of source separation at household level, lack of transfer sites, insufficient logistics equipment and lack of qualified human resources in the field. There is also a lack of revenue, transparency and accountability in the municipal delivery of services. This is especially affecting the poorest communities and new informal settlements which are located in areas where the city does not provide any collection services.

### Shortage of Land Provision

In the previous decade the preparation and the provision of land for housing for urban dwellers was very meagre. The rapid urbanization rate that the city faces does not much with the existing pace of delivery of housing to the residents as the former exceeds the latter. This could be one factor for the expansion of informal settlement in the suburb of the city.

### Land Management

At the outskirts of the city there is land that is not included into city jurisdiction according to structural plan. Due to this case there are high constructions of informal settlement undertaken. So, this will affect the future growth and development of the city.

### Traffic Congestion

The narrow roads, presence of large number of vehicles, and animal-drawn carts (that are allowed to operate without any restriction) together with motorized modes of transport as well as concentration of commercial activities, bus terminal and market area were observed the major causes of traffic congestion in Shashemene City. The process of traffic management also seems to suffer from lack of enough and well-trained personnel as well as insufficient equipment. This coupled with low awareness of the safety rules by the city residents has led to traffic congestion in the city.

### Infrastructure Development

The provision of social and economic infrastructure within the city is not sufficient when we compare with rate of population growth and economic development. There is shortage of the availability and coverage of standard roads, street light, higher education institutions, and recreation and sport facilities for children, etc.



*Working group discussing areas generating a lot of solid waste and areas impacted by solid waste management.*



*Walk-through-evaluation, a chance for the working group to get a common view of the current situation, the marketplace where a lot of solid waste is generated.*

### **Deforestation and Degradation of Vegetation**

There is a continuous and fast urbanization and thus increased demand for land and wood for constructions and fuel. As a result, the size of natural and man-made vegetation has been gradually diminished in the urbanized and pre-urbanized areas of the city. The destruction of vegetation has different short- and long-term impacts on the community and the natural ecosystem.

## **4.4 Key Trends connected to spatial issues**

Key trends in Shashemene has been that urban expansion is happening rapidly and the city administration cannot fully keep up. New settlers arriving to the city build informal settlements on the outskirts of the city and in pockets in the city that are flood prone or in other ways not suitable for construction. This is causing strain on the environment, urban systems and local institutions. The urban expansion has been a big factor of the destruction of forests and wild animals adversely affecting sustainable urban development. Rivers are also polluted causing human health problems, harms to ecosystem services including the nature that at-

tracts tourists such as the lakes around the city. The city is growing horizontally along the main roads instead of getting higher density. The people of Shashemene has indicated that improved solid waste management is a priority to them. Improved solid waste management can potentially lead to more sustainable jobs and improve the living conditions for the poorest income groups as they are more exposed to the environmental pollution from waste management.

The urban sprawl also contributes to making investment in infrastructure expansion more costly. The population is also causing traffic congestion, there are few options for public transport and traffic laws are not well enforced in the city. Animal carts and Bajage are allowed in most places.

The Working group also identified and mapped areas of importance when it comes to solid waste management. The mapping included areas where large amounts of waste is generated but also areas that are strongly affected by poor solid waste management like the slum area close to the market, the river banks etc. After the mapping exercise the working group also went out in the field to evaluate the sites as a group. The working group was asked to identify aspects that were good or beneficial in the place and what was a challenge and needed improvements.

## 5. The Human City (socio-cultural dimensions)

### 5.1 Current situation

Shashemene is a young and rapidly growing city. It is home to many ethnic groups, bringing a multitude of languages and cultures to the city. Shashemene is also famous for the international community of Rastafarians. Many of the newcomers to Shashemene come to take part in the large trade market that is available in the city. Shashemene's strategic location between the capital and access road to neighbouring Kenya makes it an important hub for both local and regional trade. Furthermore, the city's proximity to touristic resorts and parks such as Abjata-Shalla, Sinqalle Sanctuary, Wondo Genet Hot Spring, Lake Langano and Hawassa Lake also attracts tourists. As a result Shashemene is called the "ever light city" with businesses open 24 hours and a large amount of through traffic.

Common livelihoods in the city is farming, micro and small businesses and trade activities. The government is a key employer but there is large unemployment of both low-skilled workers as well as graduates of different levels. Job creation and sustainable livelihoods are important objectives of the national and local government. The waste management and circular economy sector has been identified as one of the potential sectors that could generate more jobs. The city administration also has strong focus on improving health and educational levels in the city to further support the improvement of living standards in the city.

#### Education Services

There is a wide range of educational institutions in the city. The primary school institutions have increased in order to offer universal access to primary school education. Shashemene also have two special needs schools. Even though, in theory, children have access to schooling there are children who are not attending primary school since they have to work to support themselves and their families. In the current waste system there are many children involved in collecting and picking waste to sell to scrap dealers.

The students in school programs are however increasing and there seem to be equal representation between men and women. Overall access and coverage of primary school education was 95% 2016/17 in Shashemene.

Schools have been identified as important institutions to spread awareness about hygiene and proper solid waste management.

#### Health Services

The health status of people affects the welfare and the productivity of the society. The health status of a society is mainly affected by environmental condition, personal hy-

giene, nutritional value, shelter, etc. It is essential to provide adequate and improved health services. Poor solid waste management adversely affects the health of the residents and hence reduces productivity. Improving public health is a key synergy linked to the project of improving solid waste management in the city.

In Shashemene there are 132 health institutions in 2016/17. Six of them are owned by government, 123 are privately owned and 2 by NGO. The numbers of private health institutions are increasing rapidly.

To secure the health care national policy (prevention of transmitting diseases) the City Health Office has achieved a strong development in facilitating and establishing health institutions, recruiting professional health staff and rendering health services. According to the information obtained from health office in Shashemene it is indicated that health services coverage is about 71.1%. This means that 71% of the population in Shashemene is included in health information services. This is also an important asset to disseminate information about solid waste management, the health workers are responsible for informing households about what they can do in everyday life to improve health.

According to the information obtained from the City Administration Health Office, the top ten diseases present in Shashemene are acute febrile illness (AFI), pneumonia, acute upper respiratory tract infection, dyspepsia, urinary tract infection, trauma (Injury, Fracture), infection of the skin and subcutaneous tissue, diarrhea (non-bloody), helminthiasis and epilepsy were recorded for year 2016/17. Several of these diseases are caused by lacking sanitation, low personal hygiene, absence of proper waste disposal sites, absence of adequate potable water, etc. People living in poverty are more affected by the diseases since they have less access to potable water, have bad living conditions and live close to informal dump sites.

#### Sports and Recreation

The Shashemene City Administration, organize many types of sport such as football, volleyball, athletics, taekwondo, Paralympics games, handball, gymnastics, chess, basketball, wrestling etc. The city also has 13 youth centres that organize recreational activities for youngsters. There is high pressure on these resources since the city is growing rapidly. The city is currently not meeting master plan goals in terms of available public space for recreation and sports facilities.

The city of Shashemene is trying to increase the city's attractiveness for tourists. Touristic attractions and destinations such as the Danaba man-made cave, Shashe Monument and cultural museum, RasTafarians Banana Art Gallery, Botanical Garden with more 27 indigenous species of



trees and the Millennium Park, etc. is important for the future growth of the city. There are also several religious institutions such as churches and mosques that are of potential interest to the tourists. Both within the city and in its surrounding areas there are natural environment areas such as natural forest and animal reserves that also attract tourists.

### **Security**

Shashemene was the centre for the Oromia youth groups that were protesting the former government. During the protests there were occasional violent episodes as different groups clashed. Since the beginning of 2018 the political tensions have decreased, and the security situation has been primarily good. There have been times of political tension that have resulted in closed schools and government offices. As the citizens of Shashemene are relying on being able to operate their businesses twenty-four-seven, security is a main concern. Community policing has been playing a great role in ensuring sustainable peace and security in the city. At each kebele, the public is actively taking part in keeping peace and security of their respective neighbourhoods. The public has also built houses for community police officers, invested in equipment for them and pays their monthly salary. The prevalence of peace and security has in turn been contributing to continuous economic development.

### **Information and Communications Technology**

Most people in Shashemene have access to a phone, about 187,200 cell phones are in use in the city (source Ethiotelcom 23/3/2019). The phone service is not always reliable and is at time deliberately turned off during times of unrest. Internet services are available to most via wireless, internet cafes, hotels and offices, few have fixed internet connection in the homes. Citizens with access to smart phones access news and other services online however this is not available to a large share of the population. Radio broadcasts and television are important mass media in the city. Shashemene city administration produces weekly radio broadcasts containing information on what is happening in the city and other important messages.

Electricity was first introduced in Shahsemene in 1954. Today Shashemene including small towns such as Kuyera, Ethiopian Adventist College “Tikur Wuha” and other urban areas like Sole and Jigessa have electric supplied by the Hydroelectric power station from “Melka-Wakena” and Koka stations. The power supply and the electricity grid are not meeting the increase in demand and there are frequent (almost daily) power cuts. Shashemene has over 100,000 registered electricity meters the city, indicating that many households have access to electricity.

### **NGOs and Civil society**

There are many Non-Governmental Organisations, community and religious groups that are active in Shashemene. Most citizens are active in religious groups in some way as religion plays an important role in a majority of Ethiopians life. The City administration encourages cooperation with civil

society, and view them as key stakeholders to achieve the Growth and Transformation Agenda. There are over thirty active NGOs in the city, a few of them are focused on improving waste management. Namely Dorcas International, tamaris and the local Red Cross. Also religious groups are partners in improving living conditions in the city, many of the churches and mosques are organizing community clean-up days and can be helpful in informing their followers about improved solid waste management.

## **5.2 Key Assets and Opportunities of the Socio-cultural dimensions**

Shashemenes connectivity gives strong opportunities for trade, commerce and convergence for people in southern Ethiopia. It is a city that has seen positive development in living conditions over the past years, following the positive economic development that Ethiopia has seen. There is a large available workforce, ranging from university graduates to unskilled workers. The city has an active civil society with organized communities that handles common problems together, such as community police. This active engagement in the community is important to build on and includes the system of health outreach workers, Kebele administrators and Got leaders.

## **5.3 Key Challenges of the Socio-cultural dimensions**

Even though there have been improvements in living standards, the city is under strong pressure to further develop municipal services and housing to the many rural-urban migrants and other newcomers to the city. The lack of sustainable jobs in the city is acute and the trend of continued migration from rural areas to the city to access jobs, creates tension between long-time residents and newcomers. There are many workers, both men and women waiting idle, hoping to be hired to do daily labour on government funded projects such as cobble stone projects or drainage. The issue that not enough jobs are available has high impact on socio-cultural aspects in the city, leaving many unable to afford basic needs. The urban poor is a vulnerable group in many respects. Poor solid waste management has a proportionally high impact on the urban poor. Informal dumpsites are often located close to settlements of urban poor and other effects like clogged drainage and flooding also affects this group more than others since their settlements tend to be in unfavourable locations.

## **5.4 Key Trends of the Socio-cultural dimensions**

An important positive trend is that Shashemene is an attractive city where many want to come to live, visit and do

business. The city administration has implemented many development projects and residents can see the benefits of them, including health services, schools, the much appreciated and visited public park along Gogeti River, improved drainage and more paved and cobbled roads. The rapid urbanization rate and undersupplied labour market is putting large strain on further sustainable development of the city. Social services such as health, education and sports are currently delivered within the national average but is not reaching everyone, in particular people living in poverty and urban migrants who are settled in areas where the city administration is not providing services, and there is a need to increase the services given the rate of urbanization.

It is important to build on the local tradition of organizing communities to improve problems that are affecting everyone. The poor solid waste management is such an issue, improvements can reduce pollution, odour, vermin and improve human health and protect the environment.



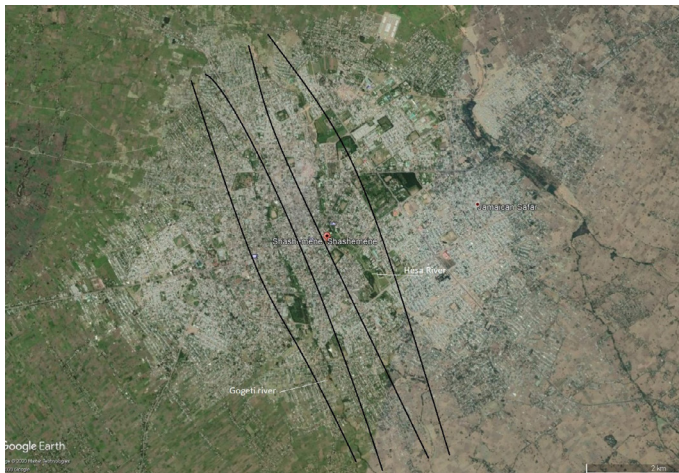
## 6. The Green City (environmental dimension)

### 6.1 Current situation

In recent years development of urban land use and physical planning has taken special consideration to include public green areas, sport fields, forests and urban agriculture. According to the structural plan of the city of Shashemene, a total area of 2,448 hectares (18.95%) has been allocated for this purpose. The data obtained from the municipality of Shashemene shows that about 90.4 hectares of land has been developed for greenery and recreation sites by the City Administration, which is far from the allocated 2,448 hectares.

The urban population in Shashemene are actively engaged with agricultural activities including dairy farming, cattle rearing, apiculture, horticulture. Domestic animals are visible throughout the city and green areas are often under large pressure.

Two of the main nature corridors through the city are the rivers Gogeti and Hesa. The city administration has worked to transform areas along the rivers (buffer zones) from former waste lands, categorised by wild dumping, criminal activities and unsafe environment, to destinations for recreation for the city dwellers.



Map of main green corridors in Shashemene.

The urban green is present in most neighborhoods of the city, there are not many areas that have impermeable surfaces. Only a small primary network of asphalt roads and sidewalks are paved. The building density is low in most places and leaves space for trees and plants. In the center of the city the density is higher and there is very limited green features. There is little planned blue green infrastructure to support ecological functions, like green corridors and protected natural areas. Drainage ditches follow main streets and are often cement lined. The drainage is often used for wild dumping of solid waste, causing pollution, blockage, odor, vermin and flooding.



Domestic animals are common in the city, important for the populations livelihoods but causing large pressure on the city's nature resources.



Gogeti park, one of the areas developed from waste land to public park, citizens now come here to relax, hold weddings and celebrations

### 6.2 Key Assets and Opportunities

Shashemene's location with moderate warm temperatures and fertile soil create good conditions for both flora and fauna. The region can have up to three harvests of certain crops and the conditions for growing urban vegetation and greenery are good. The city has identified that with rather small investments the green elements in the city can be improved.

The already started initiatives to protect and transform the buffer zones along the rivers are not only important in terms of climate change adaptation but also to allow for ecological corridors to ensure pathways for fauna and flora to spread. It has also become popular places for residents to visit and organize community functions and weddings.





*Above: Clogged drainage in central Shashemene.*



*Youth sports organization planting trees and cleaning up their neighbourhoods in collaboration with the city administration.*



According to the municipality there is increasingly more awareness about environmental issues among the residents, they see the importance that natural environment has for life in the city. Shashemene city administration is collaborating with partners from civil society to promote tree planting and environmental awareness. The community engagement to protect the local environment is an important opportunity to build on. The community members who are interested in environmental issues can help to influence their neighbours to also take action to protect the local environment.

### 6.3 Key Challenges

The fast urbanization rate, putting pressure on urban expansion and new construction is currently taking place on land that in the masterplan was meant for greenery. In-

creased land value in the city is also causing some impediments for further achieving the ambitions for public green space. The city needs to provide new land for housing and commercial projects that generate jobs and income, making it hard to motivate developing land as green space. The major greenery projects that the city has carried out have been around the riverbanks, land that is unsuitable for building construction. Though the riverbanks are important green corridors, green development needs to happen in other places as well.

The population increase and the fact that the urban population in Shashemene are involved in urban agriculture also puts pressure on the available green infrastructure. When new plants are put in, they need to be protected from grazing animals (cows, goats, donkeys etc) who are present in most areas of the city. The lack of infrastructure for proper sanitation and solid waste management is also causing a large toll on the natural environment. Close to





*Solid waste dumped at the riverbank, causing pollution of the water (often used for drinking and cleaning), clogging drainage channels causing flooding during rainy season, odour, vermin etc.*



*Community clean-up, removing waste close to the river to protect water quality.*



*Solid waste transported downstream, often impacting vulnerable groups who live close to flooding areas.*

half of the urban population lack access to potable water taps in their homes and rely on community wells or trucks, many also use local water bodies for their water needs. The water quality in the water bodies differ with seasons but the quality is of course affected by the wild dumping and lacking infrastructure for liquid waste.

awareness within residents and political leaders about the connection between the state of the natural environment and the human health and livelihoods. It is important to capture this momentum and improve the urban infrastructure to protect the environment and thereby also people and animals.

## 6.4 Key Trends

The city of Shashemene have some positive developments in terms of green public space along the river buffer zones as well as increased greenery in road medians and urban pockets. However the load of the increasing population and the pressure to develop land for housing and commercial purposes in combination with the lack of infrastructure for solid and liquid waste management is causing large human health and environmental problems. There is an increasing

# 7. The Urban Economy (economic dimension)

## 7.1 Current situation

In Shashemene the commercial activities are ongoing day and night. The main activities are trading and small-scale service businesses. The biggest market in Shashemene is located at Arada market. There are also business districts such as Abosto area, Mobile area, Alelu and Awasho close to the bus station. At the trade markets a wide variety of commodities are traded, they are operational throughout the week and attracts large numbers of visitors from various urban and rural centres. There are not many industrial manufactures in Shashemene, but many residents commute to nearby Hawassa and the industrial parks located there.

Data obtained from Shashemene City Trade and Market Office indicates that the number of trade professionals in the city in 2015/16 and 2016/17 increased from 9,739 to 11,741, which corresponds to a growth of more than 20%. The data that the City has on existing trade professionals are not disaggregated by gender. Government spending was increased from 269.37 million birr to 565.9 million birr which corresponds to an increase of 110%.

The major commercial activities are retailer trade activities (51.3 percent), followed by service-related trade (39.7 percent), thirdly and fourthly comes wholesale and manufacturing-related trade (7.2 percent and 1.8 percent) respectively.

### Financial Institutions Services

The economic expansion of Shashemene is a testament to the impact that urban centres can have to stimulate economic growth and development. The presence of financial institutions that can provide capital for businesses is one of the driving factors for attracting and developing businesses. There are 18 government-owned banks and 34 private banks in the city. In addition to this, there are 8 insurance companies working on safety and protection of business activities. Furthermore, there are more than 5 micro-financial institutions playing a pivotal role, by providing credit to micro and small enterprises for those who usually have limited access to regular bank loans.

### Investment Activities

Shashemene has strong potential for developing agro-processing industry. The fertile farmland can ensure availability of raw materials such as different cereal crops, oilseed crops, cattle rearing and horticulture productions. The location of the city provides a suitable position to markets for processed products. The availability of low-cost manpower is also a factor for attracting investors.

The city administration has been facilitating the acceleration of investments to the city, making land available for industrial companies.

**Table: Trade activities, their capitals and percentage**

Serial No	Trade activities	Number of trader and their capital (in millions)	Years		Percentage	Growth rate
			2015/16	2016/17		
1	Wholesalers	Number	695	841	7.2	21.0
		Capital	4	21	4	425.0
2	Retailers	Number	4,970	6,018	51.3	21.1
		Capital	25	300.9	53	1103.6
3	Services	Number	3,855	4,667	39.7	21.1
		Capital	240	233.3	41	-2.8
4	Industries	Number	219	215	1.8	-1.8
		Capital	0.37	10.7	2	2791.9
	Total	Number	9,739	11,741	100.0	20.6
		Capital	269.37	565.9	100	110.1

Source: Shashemene City Trade and Market Office.

**Table: Land prepared, land transfer and revenue obtained from investment for 2015/16–2016/17**

No	Types of Investment	Land Prepared	Land transferred	Available land for investors	Revenue Obtained in million
1	Manufacturing	67	12	55	19.641
2	Trade and Services	19	8	11	4.356
3	Hotel and tourism	3	1	2	0.631
	<b>Total</b>	<b>89</b>	<b>21</b>	<b>68</b>	<b>24.628</b>

**Table: Investment performance of Shashemene city for 2015/16–2016/17**

No	Types of Investment	Number of project	%	Capital	%	Job opportunity	%
1	Manufacturing Industry	12	60	367,380,631.80	70	3141	74.1
2	Trade and Services	8	40	157,448,824.20	30	1100	25.9
	<b>Total</b>	<b>20</b>	<b>100</b>	<b>524,829,474</b>	<b>100</b>	<b>4241</b>	<b>100</b>

Table: Performance diaspora investment of Shashemene City for 2016/17.  
Source: Shashemene City Investment office.

**Table: State and Municipal Budget Expenditure**

Serial No	Budget Year	Allocated budget	Used budget	Utilized budget in %	Share of salary in %	Share of recurrent in %	Share of project in %
<b>State Budget Expenditure</b>							
1	2014/15	75,293,731	73,706,208	97.9	84.0	6.9	7.0
2	2015/16	95,525,285	90,481,378	94.7	74.4	10.4	10.0
3	2016/17	176,328,090	158,850,974	90.1	56.7	8.0	25.4
<b>Municipal budget Expenditure</b>							
1	2014/15	64,254,894	53,451,156	83.2	16.8	58.3	8.1
2	2015/16	90,000,000	63,504,475	70.6	11.7	41.4	17.5
3	2016/17	87,209,305	72,491,563	83.1	19.7	55.4	8.0
<b>State and Municipal Budget Expenditure</b>							
1	2014/15	139,548,625	127,157,364	91.1	53.0	30.6	7.5
2	2015/16	185,525,285	153,985,853	83.0	44.0	25.4	13.6
3	2016/17	263,537,395	231,342,537	87.8	44.4	23.7	19.7

Sources: Shashemene City Administration Finance and Economy Cooperation Office.

The local government: The municipal budget, budget allocations, revenue and tariffs, key investments.

Shashemene city Administration wants to enhance service delivery and increase infrastructural coverage to eradicate poverty and improve the welfare of the community. Currently the expenditure budget is allocated for salaries,

recurrent costs and capital projects, with salaries taking up the bigger part. As in the table below, out of total budget of the city administration in the year 2016/17 great share was allocated for salary was 44.4%, secondly the recurrent budget share 23.7% and finally capital project share 19.7% budget.



The municipality is receiving budget support from the national level and also other sources. For almost one decade the City administration has been supported by the World Bank, the Road Fund and Oromia Grant Fund.

One of the funding programs is ULGDP/ UIIDP (Urban Institutional and Infrastructure Development Program). It aims to build on and consolidate capacity-building efforts, supporting improved performance in the planning, delivery and sustained provision of priority municipal services and infrastructure. Over the years the city has gained experienced and capacity of effective and responsive planning to meet service delivery priorities identified by citizens, improved financial management and mobilization of own resources and more effective operations and maintenance of infrastructure assets, improved dissemination to the public of budgets/plans and performance measures and effective implementation.

The data obtained from ULGDP team of Shashemene Municipal show that in the past three years 100% of the fund granted was utilized effectively. Within the three years the supporting fund was increased by 20% annually.

#### Revenue Collection

For local revenue collection, efforts have been made towards promoting compliance and equipping tax collection institutions with adequate legal power which will further boost revenue mobilization. The City is speeding up the implementation of the tax reform program through further enhancing the capacity of tax collection institutions, implementation

of the TIN system, improvement of the presumptive tax system, development and implementation of an audit program to cover all taxes and expansion and improvement of the administration of the Value Added Tax (VAT).

The tax revenue collection has over the past three years been increasing, over the period the average increase of the state tax revenue and municipal tax revenue is 26.8% and 5.4% respectively.

The municipality has not enforced revenue collection for waste collection. Households pay MSE collectors directly and is not a revenue stream that is currently controlled by the municipality. Other urban services like potable water reaches about 50% of the urban population. Water is paid for via prepaid water bill. The municipality does intend to increase fee-based cost coverage for urban services but there are many challenges such as the capacity and systems in place to collect and administer the fees as well as the difficulty to introduce new fees in times of unrest and political instability.

#### Tourism

Recently the City Administration has been focusing on making the city more attractive for tourists. The efforts to improve public parks has been one step in that direction. The working group has through the urban sustainability review also identified that proper solid waste management will be positive for attracting tourist. Tourism generate much sought after private-sector jobs. About 4000 people are working in businesses reliant on tourism.

**Table: State and Municipal Revenue collection of Shashemene City for 2013/14–2016/17**

Serial No	Year	Planned	Achieved	Achieved in %	Rate of growth
<b>State Revenue</b>					
1	2013/14	108,528,104	96,472,763.00	88.9	
2	2014/15	151,629,313	124,790,299.67	82.3	29.4
3	2015/16	196,336,909	158,234,182.90	80.6	26.8
4	2016/17	216,034,272	196,700,085.29	91.1	24.3
	<b>Average of three year</b>	<b>188,000,164.7</b>	<b>159,908,189.3</b>	<b>84.7</b>	<b>26.8</b>
<b>Municipal Revenue</b>					
1	2013/14	66,298,653	54,551,569.51	82.3	
2	2014/15	80,386,000	63,060,553.84	78.4	15.6
3	2015/16	90,000,000	64,340,496	71.5	2
4	2016/17	87,209,305	63,474,900.85	72.8	-1.3
	<b>Average of three year</b>	<b>85,865,101.7</b>	<b>63,625,316.9</b>	<b>74.2</b>	<b>5.4</b>

Source: Shashemene City Administration Revenue Authority Branch Office.

According to data obtained from Shashemene City Culture and Tourism Office the number of domestic and international tourists visiting the city in 2015/16 was about 168 000 and 8 000 respectively.

#### **The citizens: Employment, affordability, informality, livelihood and consumption.**

Unemployment has been and continues to be the key challenge that Shashemene faces. The unemployment rate is close to 20 percent according to the office of Finance and Economic Development, the number includes both men and women. It is common that both men and women are engaged in supporting the household income. In poor households also the young children are involved in supporting the family income, for example by scavenging for waste materials that can be sold to qorallios. Street vending and informal employment is very common.

Workers with low skills are engaged in shoe-shining, vending, loading and unloading etc, as they have little chance of accessing better-paying jobs. This includes both men and women, the men tend to do the heavier jobs but women are also hired as daily laborers, to transport material within construction sites, carry water, do clean-up etc they are also often engaged in small scale vending of vegetables and food items. Moreover, life is getting expensive in the city making it hard for the poor and low-income citizens. Job creation through MSEs could yield some positive outcomes in this regard.

## **7.2 Key Assets and Opportunities**

Shashemene's economic prospects are impressive as the city enjoys its connection on the juncture between five routes to the south. Its trade destination gives it a good potential for revenue generation and local economic growth. The fertile soil and favourable weather conditions provide good conditions for farming and horticulture and also agricultural processing. Shashemene is also located close to large national parks that are of interest to tourists, also the rich cultural life in Shashemene is an asset to attract tourism.

The city has a large available workforce, both men and women, including both skilled and unskilled workers at fairly low cost. The active financial market is also important to provide loans and credits to businesses.

## **7.3 Key Challenges**

Unemployment and jobs that do not pay enough to sustain workers are key challenges that the city faces. Low municipal revenue, fees and taxes, poses challenges for service provision. The urban infrastructure cannot meet the demands of the population which puts strain on urban economic growth.

## **7.4 Key Trends**

The trend has been that the city's revenue as well as the economic activity in the city are increasing. In parallel there has also been increased unemployment and informal jobs due to rural migrants coming to the city. There is a need to further facilitate economic growth in the city and generate more decent employment in both private and public sectors.

## 8. Urban Solid Waste Management (thematic focus)

### 8.1 Current situation

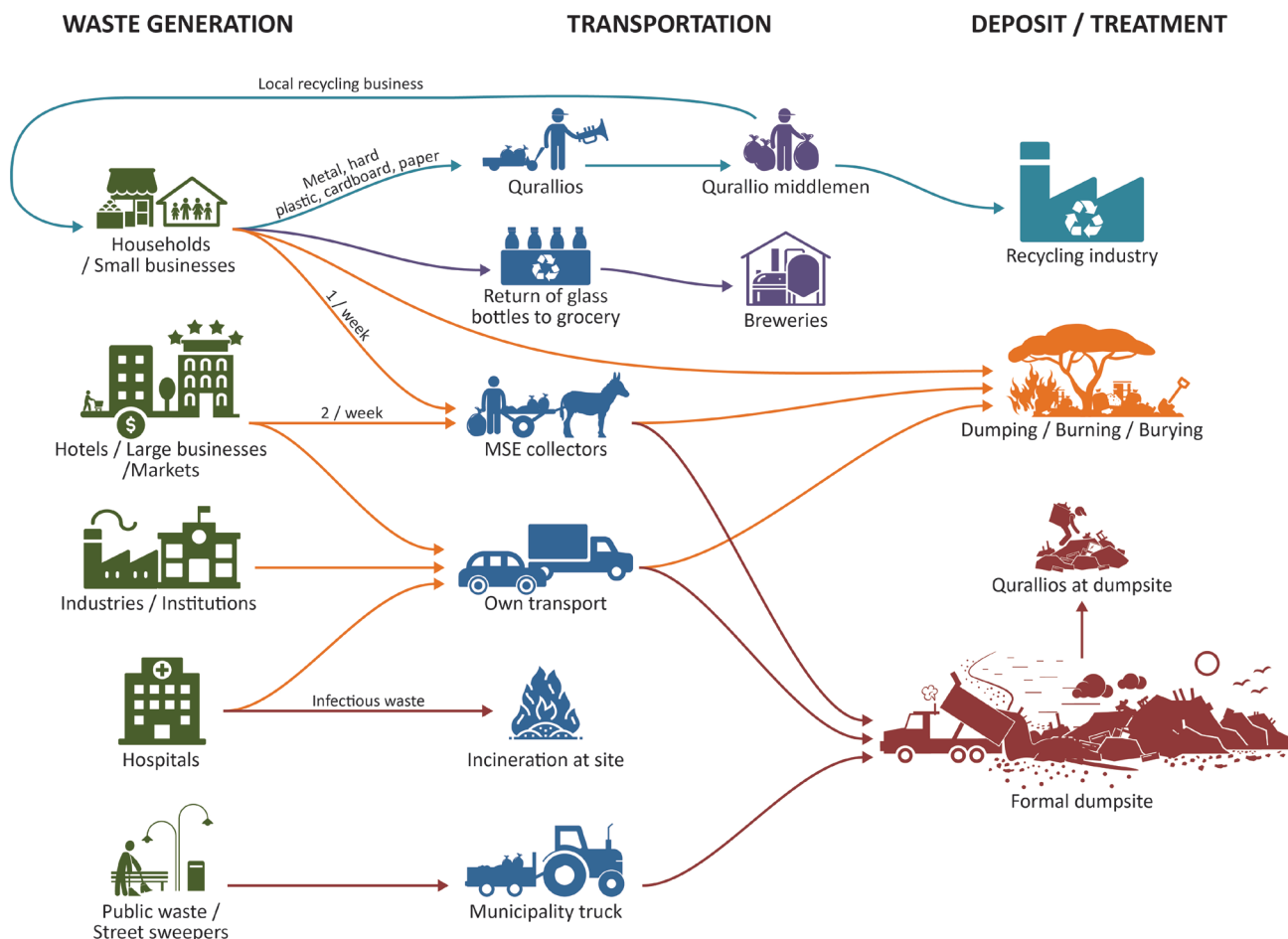
The working group has mapped the current situation of solid waste management in Shashemene. Below is a diagram of the current situation, showing that much of the waste ends up being dumped on the ground, burnt in open fires or buried.

The households in Shashemene collect their solid waste in plastic bags known as “Madaberia”. A few households use other collection methods like metal sheets and used plastic baskets for handling waste at their compound/yard. Very few households sort their waste at source, for example compost, rather households use the Madaberia bags for all waste material. It is often the women of the household who handle and organize the waste in the household.

Many residential areas in Shashemene have door-to-door waste collection. This collection is carried out by officially organized MSEs using 14 donkey’s carts and 5 hand carts that have been supplied by the municipality. A majority of the

waste collection workers in the MSEs are women. Waste collection is also carried out by informal solid waste collectors operating without sanction from the local government. The informal collectors operate irregularly and use any number of means to collect waste; on their shoulders, on donkeys and hand carts. Informal collectors and maybe sometimes also organized MSEs dump the waste in area-based containers, streams, under bridges and in ditches.

Door-to-door collection is not offered in certain areas like condominium housing, the households themselves bring the waste to area-based containers. Two skip loaders transport the containers to the existing open and uncontrolled solid waste dumping site. The municipality is responsible for the pickup of community containers but is operating irregularly. There are many complaints from the community regarding community containers being left without pick-up for weeks. Causing severe hygienic and en-



Overview of current waste management system in Shashemene.





*Waste collection with donkey cart on the way to the transfer site.*

vironmental problems. During public consultations for this assignment, stakeholders gave accounts of being asked to pay extra for pick-ups. Stakeholders also pointed out that women and children are especially effected by the poor collection, spending more time in the home they are effected by the bad smell, unsafe environment and pollution that the wild dumping is causing.

### **Area Based Solid Waste Containers**

Currently there are 24 area-based containers with a volume /capacity of holding 8 m<sup>3</sup> of waste. Out of this limited number 10 container are not completely functioning. Further the area-based containers are distributed unevenly over the kebeles. There are parts of the city that do not get the container service at all because people don't want to put containers nearby to their residence, due to the poor pick-up service by the government. Kuyera, the sub-city where the referral Hospital is found has more than 20,000 people and Kuyera is relatively far from the centre, at least to share the containers located in another sub-city. Awasho, where more than 40,000 people live, does not have a single area-based container when this report was written. The lack of containers reflects the inefficient waste management system of the municipality. The municipality does not fully know what percentage of the city households and businesses that currently have waste collection service or a designated container. An estimate has been carried out based on the average theoretical waste generation per person. However, the frequent waste burning, dumping and depositing in streams and rivers make it apparent that the service is severely lacking.



*Transfer/uncontrolled official dump site.*

Due to the shortage and uneven distributions of containers and improper and irregular door to door waste collection service, some of the households and businesses travel long distances to dispose solid waste where accessible containers are located, or they dump it in nature. Conversely, residents often object to the municipality, and want to keep the containers away from their neighbourhoods. This is to minimize the potential health risks that could emerge from mini-dumps arise around the containers.

The municipality reported that area-based containers are emptied by the municipality about twice per week, however stakeholder confirm that this is not the practice on the ground.



*Community container and informal dumpsite by condominium housing.*





*Informal collector of materials for recycling, not seldom children are working to supplement the family income.*

### **Informal Solid Waste Collectors**

Informal waste collection is common in Shashemene. This includes both collection of household waste as well as waste meant for recycling. The informal collectors are often dumping the waste at informal dumpsites around the city. Daily labourers, most of which are women and not seldom children, collecting non-segregated solid waste from households and business establishments at negotiable fees. The waste is dumped in the rivers and under bridges. The dumping does not only happen in remote areas but also in the parts of rivers and bridges found in the centre of the town. The informal waste collection is a means of livelihood for a number of poor citizens of Shashemene but this harmful practice with large impacts both on the informal workers and nature.

### **Solid Waste Collection Efficiency**

According to the data obtained from the municipality residential, commercial establishments and public service institutions are the major waste generators. These are followed by industry, transport and agriculture sectors. The data also reveals that the amount solid waste dumped in open space or backyards and in the rivers is higher than wastes formally collected and dumped in the existing dumping site.

On the other hand, according to a sample survey assessment and physical observation a good proportion of waste from domestic sources and business establishments including hazardous wastes are burned, also part of household waste is used as source of fuel and animal feed.

The amount of waste collected from 2013 to 2015 is estimated in the table below. The annual average of collected waste was 24,700 m<sup>3</sup> per year or 68 m<sup>3</sup> of waste per day.

### **Solid Waste Burning and Burying**

With the absence of adequate, consistent and coordinated door to door waste collection, inadequate distributions of area-based containers, lack of awareness of the negative impacts of poor solid waste management and with a large portion of the residents accustomed waste burning and burying in their compounds and outside this practice is widely used.

Also the fact that waste is frequently burned by the main roads by road sweepers, mainly women who are municipality employees, gives the image that the municipality accepts the practice.

### **Current waste transporting vehicle park of the municipality**

Shashemene has a few vehicles to assist in the waste collection. Below is listed the available vehicles and the estimated gap to provide adequate collection throughout the city. During the stakeholder consultation it also became apparent that the current vehicles are not maintained well and often break or lack fuel. Future improvements have to include maintenance and operation cost to be sustainable.

The formal involvement of the private sector in waste collection and transportation is so far limited. There is one vacuum truck, emptying septic tanks in the entire city despite



*Image: Informal dumpsite in Kebele 04, here with solid waste collectors.*



*Informal dumpsite by the river.*

**Table: Average Per-Capita Waste Collection Estimates against Per-Capita Generation**

Years	2013	2014	2015	Annual Average	Remark
Annual Waste Collected in m <sup>3</sup> and in Liter	25,367.5/25367500	20,736/20736000	27,993.6/279936000	24,699/24699000	
Estimated Population	215,269	223,879	232,834	223,994	
Annual Per-Capita Waste Collected in m <sup>3</sup> or in Liter	0.12/ 120	0.09/ 90	0.12/ 120	0.11/ 110	
Daily Per-Capita Waste Collected in m <sup>3</sup> or in Liter	0.0003/.3	0.0002/.2	0.0003/.3	0.0003/.3	
Daily Per-Capita Waste Generation in m <sup>3</sup> or in Liter				0.0007*/.7	* Sample Analysis Result
Proportion Per capita Waste Collection against Generation				42 percent	

Source: Own Computation based on Reports of the Municipality and Sample Survey.

**Table: Current number of SWM vehicles and estimated demand to service the whole city**

S.No	Vehicle	Current Amount	Amount needed	Gap
1	Skip Loader	2	4	2
2	Tractor	1	8	7
3	IVECO	1	2	1

Source: Shashemene Municipality Office (2007 E.C).

huge demand. Lack of planning and accountability issues might have contributed to the lack of interest from the private sector.

### Solid Waste Composting, Reuse and Recycling

Except the waste collectors (“Qoralew”) mainly men who buy old and used metal scraps, plastics, bottles and textiles and shoes, there is no formal recycling and reuse practices and initiatives in Shashemene so far.

The municipality has identified that composting could be good activity to create jobs for micro and small enterprises but no formal composting initiatives and activities exists so far in Shashemene. During stakeholder consultations, we learned that some of the waste collectors had been trained on how to prepare compost and that they would be very interested to work with it if they were awarded some land. The presence of several small scale and commercial farms in and around the city creates market potential for composting product.

### Solid Waste Disposal

The existing open and uncontrolled solid waste dumping site is located in an old quarry in what is now quite central close to the river Malka Oda. The open dumping site is estimated to cover 8,000m<sup>2</sup> of land. At the site the municipality has constructed a transfer station with the idea to sort waste and reload for efficient transport to the planned sanitary landfill 15 km outside the city.

The transfer site which was designed before the start of SymbioCity project has not been used in the way it was intended. The space has not been designed for easy access with vehicles, it is actually not possible to turn with a large truck inside the transferstation. It is currently used primarily to store waste that can be sent for recycling and also house scavengers working on the dumpsite. Over the course of the SymbioCity project the collection of waste has increased a lot, and since the new planned sanitary landfill is still not completed the official dumpsite has received much more material and is approaching its maximum capacity. This uncontrolled and unsanitary dumpsite is unacceptable in many ways as it causes health problems, as well as planning challenges. The waste is piled up and not covered so it easily scatters to the surrounding and can potentially pose serious health and environmental threats to the people and the ecology near the site and downstream on the river.

Although it is reported that most of infectious wastes from Hospitals, Health Centers, Health Posts, Clinics, Pharmacies and Drug Stores are burned is incinerated at their place of business, the absence of segregating hazardous waste from mixed solid waste is a threat to waste collectors, the general public, the soil and underground water.





*Official dumpsite by the river and the transfer station not used for intended purpose.*



*Official dumpsite impact on surrounding residents and the river.*



*At the beginning of SymbioCity project in Shashemene – Dumping site and transfer site is being built, design determined before SymbioCity project. Located close to low-income settlement and the river.*





*Regulatory framework for solid waste management in Oromia, Ethiopia.*

### Existing Institutional, organizational and human capacity

The institutional setting for solid waste management cascades down from the national level to the municipal level who are responsible for planning and implementing the rules and regulations on solid waste management.

The solid and liquid waste management of Shashemene is organized around the position of the City Manager. The department is one of the nine urban system services processes organized under the Municipal Service office.

The Municipal Service office is led by the City Manager and is one of the 33 offices organized under the city administration. The leaders of each office constitute the city cabinet. The City Manager is accountable to the Mayor and is tasked with management of the operational units responsible for municipal services. The operational units include; Plan Execution control, Greenery Development and Urban Beautification and Sanitation. The coordinator for Greenery Development and Urban beatification and Sanitation is responsible for both solid waste management and greenery development staff.

The Waste management sector of the municipality is organized with total of 540 regular and temporary workers about 70% are women. Out of the total 95 percent of employees are temporary workers employed in Contracts, daily and association base. The higher paid jobs like driving waste management vehicles and managing the waste workers are 70-80% men. The solid waste management unit consists of 4 professionals at the city administration level, there are also in each kebele a person responsible for organizing the local level. They assist in forming the MSEs who

handle the door-to-door collection and also supervise the work. During stakeholder consultations it was made clear that the Keble staff do not have very clear directives on how to carry out the work and they have very little possibility to influence the performance of the workers.

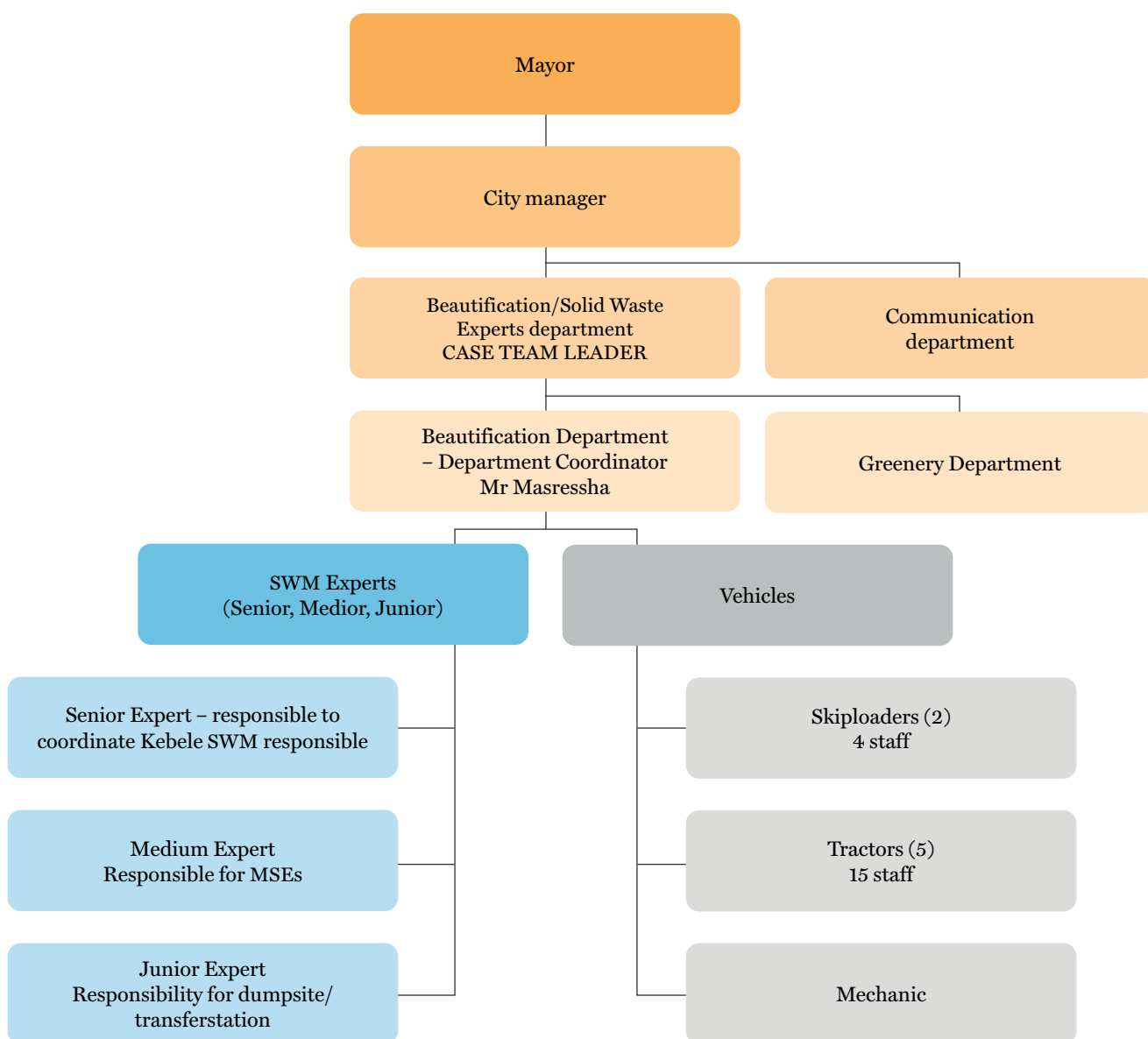
The city administration staff reported that they are understaffed and also relay on workers/colleagues who do not have enough knowledge about how to implement better solid waste management. “The existing staff both in number and professional composition are not in a position to manage efficiently and effectively the waste management system” said one of the staff members. The working group noted that to make improvements for the solid waste management system it will be important to create a common vision of what the solid waste management system is going to look like and how the city is going to get there.

### Waste Sector Financing

#### Operational Cost against Service Charge Fee:

The municipality average annual operational cost for the waste sector is about Birr 5 Million. These include the cost of sanitary unit staff salaries, wage of road sweepers, fuel and maintenance costs for waste trucks, stationary and per-diem expenses. The budget is not allocated depending on how much that is needed to operate the system for the entire city but rather allocated as a percentage of the spending available for the purpose.

The current cost of collecting 1 cubic meter is calculated Birr 148. However, the demand side of the services are not considered or mapped by the city administration.



Organizational structure solid waste management department in Shashemene.

**Table: Average Annual Operational Costs of Waste Sector of the Municipality**

S.N	Cost Descriptions	Average Operational Cost in Birr			
		Annual	Monthly	Per day	Per m <sup>3</sup>
1	Staffs Salary	996,058	83,005	2,767	
2	Road Sweepers Wage	1,232,086	102,674	3,422	
3	Fuel and Maintenance	1,721,801	143,483	4,783	
4	Stationary	294,592	24,549	818	
5	Per-diem	416,250	34,688	1,156	
6	Average Total Operating Cost	3,664,729	305,394	10,180	148
	<b>Total</b>	<b>8,325,516</b>	<b>693,793</b>	<b>23,126</b>	

Source: Own computation based on the data from Municipal Sanitary Unit (2007 E.C)

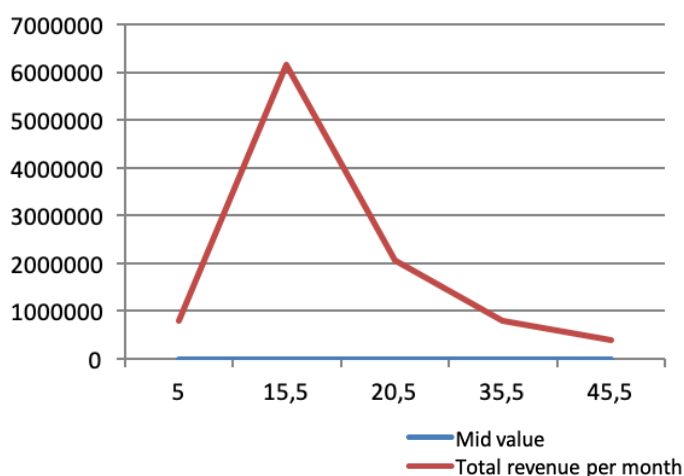


As a result of this lack of information the working group and the SymbioCity facilitator and National Urban planner with support from SKL International performed a *Willingness-To-Pay* study to find out more about how the citizens value the current solid waste management service and what improvements would be worth to them.

In the study 350 households in Shashemene were selected randomly. The respondents (54% male, 46% women) were asked a set of questions regarding the size of the household, the household income and their opinions about solid waste management services and attitudes toward improved service provision.

The survey showed an average household size of 4,5 people and with an average income of 2 500 Birr per month. In the survey 48% owned their home while 52% were renting or squatting. 61% of the respondents reported being unsatisfied with the current service provision naming low frequency of collection, poor collection service in the sense that so much waste was left in the wrong places was mentioned as root causes. Of the respondents about 70% answered that they would be prepared to pay more for an improved service. The study also showed the amount most people were willing to pay for solid waste management, showing a sharp decline of willingness to pay after 15,5 Birr per sack.

**Figure 2: Total Revenue of Improved solid waste collection service per month.**



*Mid Value of Maximum Willingness to pay.*

#### **Solid Waste Management Fee:**

Currently the waste collectors charge a monthly fee of 30 to 50 birr per households. For business depends on the amount of waste they produce, but usually around 10 Birr per sack. There are many households who are not paying a collection fee and are not using waste collection services. This of course means that they are disposing of waste in unwanted ways such as burning or burying. The willingness to pay study indicates that there is room to increase the fee for solid waste collection in order to improve services and coverage.

## **8.2 Key Assets and Opportunities**

The willingness to pay study shows that a majority of the surveyed population are in favour of increasing charges somewhat if the service is improved. There is also opportunity to create more jobs in solid waste management since there is currently no service in the whole city. There is an existing management structure that can be better utilized for more effective management of the solid waste in the city. Funding programs such as the ULGDP could add opportunities to enhance the infrastructure in order to improve the system.

There are several NGOs and private initiatives who are working to improve solid waste management. These organisations will be important stakeholders for the city to interact with in order to speed up improvements. Also religious organisations are important channels who can assist the city in informing the citizens about changes coming and why it is a health risk to keep the current solid waste management practice. The educational system has also been identified as an important partner for improving solid waste management.

## **8.3 Key Challenges**

A key challenge has been the lack of awareness about the sustainable solid waste among both residents and public officials. Many existing rules and by-laws, like the national plastic bag ban, are not implemented. The low level of ownership and organization of this sector in the city has many reasons, lack of accountability, ownership and municipal funds are a few.

The role of regional urban planning and the regional institute influencing the city structure without taking SWM into account is another problem. New areas are developed without strategies for how solid waste will be handled, increasing the problem.

There has been poor coordination between the municipal sectors as well as among the line institutions to implement changes on solid waste management. A clear vision of how the solid waste management system should function is needed and as well an implementation plan and proper follow up.

## **8.4 Key Trends**

The key trends have been the rapid urbanization growth and the increase in per-capita waste generated creating a large increase of solid waste in the city. The focus on SWM by the municipality has increased since the start of the SymbioCity project, however there is still great room for improvement in coordination and collaboration among stakeholders in the city.

## 9. Conclusion: Key Urban Sustainability Issues

The urban sustainability review has been an important process to map and get a common understanding of the key urban sustainability aspects in Shashemene. Shashemene has good opportunities to build on in terms of improving the current situation as well challenges on the way towards sustainable urban development. The city is urbanizing rapidly and is enjoying some growth benefits, but the city is also under pressure to develop urban systems and function to create a liveable and successful city. For the city to develop in a sustainable way, it needs to address the following key issues:

- Poor awareness of proper waste management practices and their implications in the community
- Lack of adequate solid waste treatment options
- Lack of cooperation with stakeholders other than the municipality
- Lack of adequate space for SWM
- Financial sustainability issues
- Lack of comprehensive solid waste collection service

The issue of SWM among other issues rests on the degree to which the various stakeholders engaged are aware of it. Awareness spans from households to waste collectors to responsible city officials. A sustainable management can only take place given a good understanding of the matter. Likewise, treatment options and stakeholder consultations at various levels would yield a good result towards sustainable waste management in the city. An effective SWM also rests on the availability of enough resources in terms of both financial and human capacity. These are key issues identified in the USR using the methods described in the introductory part.

The following key assets/opportunities should be leveraged when improving solid waste management in the city:

- Stakeholder collaboration is vital in addressing sustainable urban development.
- Awareness creation at all levels in the city would benefit the urban sustainability for Shashemene.
- Identifying a mechanism for sustainable financing of the solid waste management system, such as formalizing fee collection from households attached to the water bill could alleviate the financial bottlenecks that the sector is currently facing.
- While maintaining the safety and security of the current waste collectors it is also vital to train more skilled personnel in the area of SWM.
- The issue of planning especially in coordination with regional urban planning institute is vital. The city

administration's view on the matter needs to be heard at regional level. Proper and adequate spaces for solid wastes must be included during the process of structure plan revision.

- Issues of accountability and planning need to be addressed at all levels in the city.
- The city should develop a holistic strategy for what the solid waste management systems should look like while also identifying possibilities to have synergetic effects on other sustainability targets that the city has such as increasing the urban green, improving sustainable livelihoods for the urban poor and improving environmental and human health in the city.

# 10. Vision and Objectives

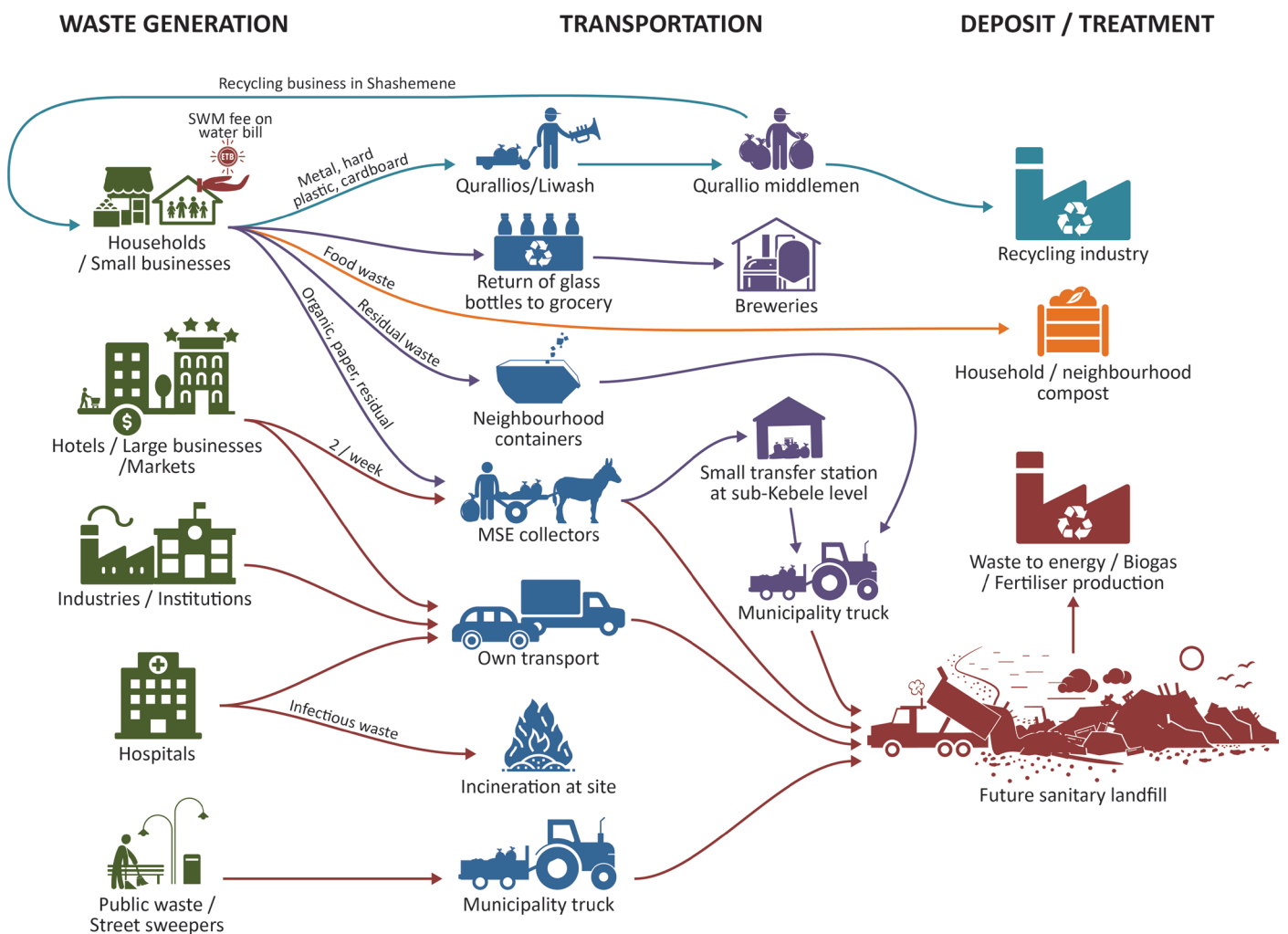
Based on this analysis the working group have together with the stakeholders formulated a vision for the project as well as objectives and indicators. The working group as also identified a future image of what they would like the solid waste management system to look like.

## Vision

*Shashemene a clean, green city with well informed and responsible community, which leads by example and creates jobs in the environmental protection sector.*

Below is an illustration of how the municipality of Shashemene would like to organize solid waste management in the city. It includes at household level source separation of

waste in three fractions 1) Organic 2) Recyclables 3) Residual waste. The MSE collectors would still be operating in the residential areas but would drop of the waste at smaller kebele level transferstation to allow for more efficient transport of waste to the future sanitary landfill and recycling industries. Hotels and large business would continue to organize collection by themselves to encourage private sector involvement. Also industries and large institutions have to organize their own collection and transportation of waste and they will be charged a gate fee to dispose of waste in the landfill. An important difference is also that the fee for SWM would be bundled with the water bill, making it easier for the municipality to control the process.



Overview of vision of how the SWM system in Shashemene will work in the future.



The following key issues with corresponding objectives, indicators and targets were formulated:

Key Issue: Lack of adequate solid waste treatment options	
<u>Objective A</u> Create adequate Solid waste treatment options at municipal level.	<u>Objective B</u> Create adequate solid waste treatment options for organic waste at household level.
<u>Indicator</u> % of waste generated which will be treated in a sound way.	<u>Indicator</u> % of generated organic waste which will be treated at household level.
<u>Target by 2021</u> 50% of waste generated which will be treated (measurement by m <sup>3</sup> ).  <u>Target by 2025</u> 80% of waste generated which will be treated (measurement by m <sup>3</sup> ). 80% of organic waste is treated biologically.	<u>Target by 2021</u> 20% of organic waste generated will be treated at household level.  <u>Target by 2025</u> 40% of organic waste generated will be treated at household level.

Key Issue: Increasing the financial sustainability of the SWM system by three sources		
<u>Objective A</u> Increase payment of SWM services from households and businesses in Shahemene.	<u>Objective B</u> Increasing the share of ULGDP budget for solid waste management service.	<u>Objective C</u> Increasing the investment support from donors other than ULGDP.
<u>Indicator</u> % household and businesses that are paying the municipality for SWM services.	<u>Indicator</u> % of ULGDP budget directed toward SWM infrastructure.	<u>Indicator</u> Amount of money received from donors.
<u>Target by 2021</u> 50% of the household and businesses are paying for SWM services.  <u>Target by 2025</u> 80% of the household and businesses are paying for SWM services.	<u>Target by 2021</u> The Share of SWM projects from the ULGDP budget will increase by 10%.  <u>Target by 2025</u> The Share of SWM projects from the ULGDP budget will increase by 20%.	<u>Target by 2021</u> The amount of money received from donors will increase by 30% from 2018.  <u>Target by 2025</u> The amount of money received from donors will increase by 50% from 2018.

**Key Issue: Lack of comprehensive Solid waste collection service**

Objective A

Increase comprehensive solid waste collection service.

Indicator A

% of total populated city area that has comprehensive solid waste collection service.

Indicator B

Number of households that have comprehensive solid waste collection.

Indicator C

Number of Identified problem areas (currently 31) with informal dumping that are cleaned.

Target A by 2020

To identify the areas that have door-to-door collection, as well as areas covered by common waste collection (community container) and increase the coverage by 10%.

Target B by 2020

30 000 households (out of about 50 000) will have solid waste collection.

Target C by 2020

20 of the identified problem areas where informal dumping is taking place are cleaned and when appropriate made green.

Target A by 2025

At least 80% of the populated areas of the city have solid waste collection.

Target B by 2025

48 000 households (out of about 60 000) will have solid waste collection.

Target C by 2025

All of the identified problem areas (that were identified in 2018) where informal dumping is taking place are cleaned and when appropriate made green.

<b>Key Issue: Lack of cooperation with local stakeholders other than the municipality</b>
<u>Objective A</u> Increase and improve cooperation with local stakeholders outside of the municipality.
<u>Indicator</u> Number of local stakeholders, other than municipality like government sectors, NGOs and business groups who are cooperating with the municipality regarding SWM issues.
<u>Target by 2020</u> 100 stakeholders are involved in the SWM of the city.
<u>Target by 2025</u> Shashemene has a strong cooperation with local stakeholders other than the municipality regarding SWM issues.

<b>Key Issue: Lack of adequate space for SWM, due to poor attention to SWM system during preparation of masterplan and LDP</b>
<u>Objective A</u> Increase adequate space for SWM and improve attention to SWM issues in preparation of masterplan and LDP.
<u>Indicator</u> Number of building permits that include SWM (same as for septic tank) Number of comments given to regional government to include space for SWM in new construction. Masterplan that includes space for SWM. Number of LDP that includes space for SWM.
<u>Target by 2020</u> At least 1 building permit includes space for SWM. Masterplan for Shashemene that includes space for SWM.
<u>Target by 2025</u> At least 1 LDP that includes space for SWM. Regional government includes space for SWM in plans sent to Shashemene.



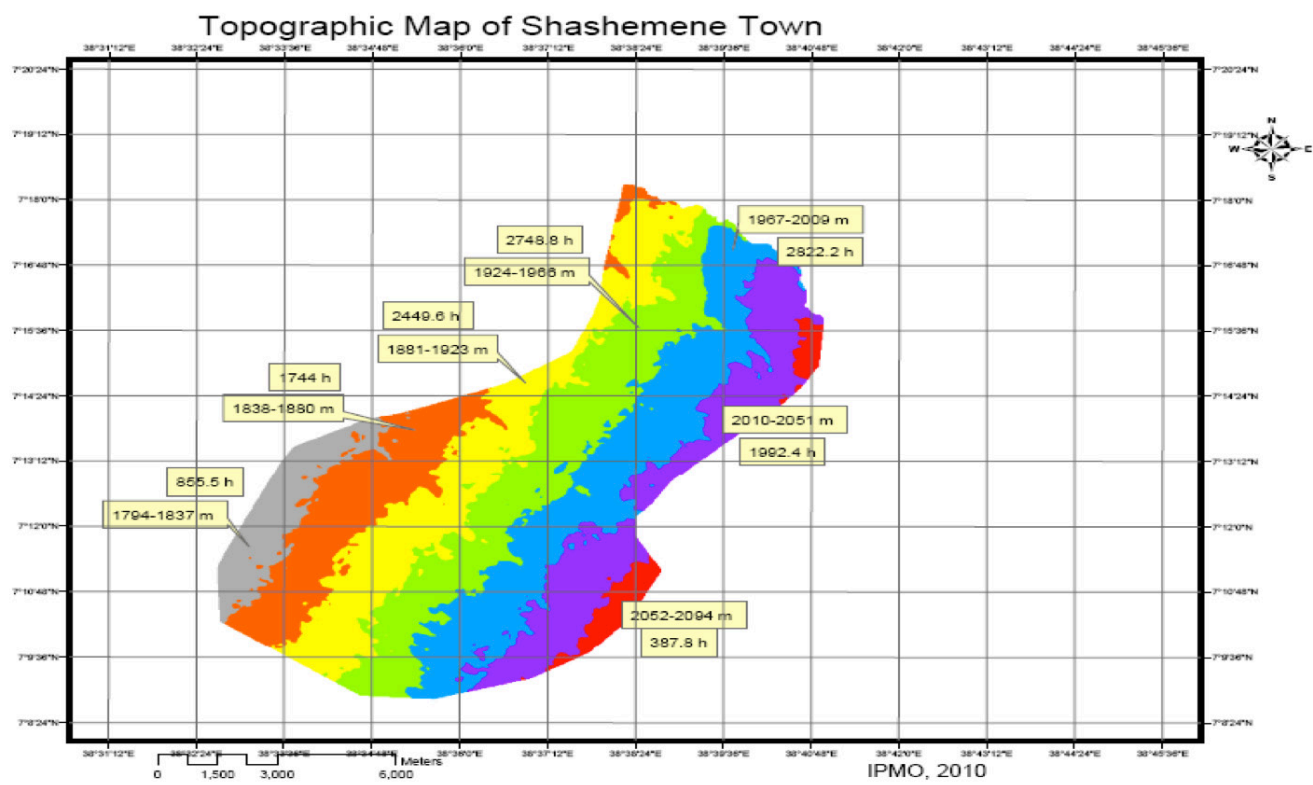
## 11. The next steps



The coming steps in the process is to continue to collaborate with the stakeholders and develop alternative solutions for how to reach the ambitious vision and objectives. The SymbioCity approach is an iterative process where information is updated as more information is developed throughout the project, therefore the objectives might be updated. The working group would like to thank all parties who have participated in the project so far and ask for your continuous support throughout the continued project. Should you have any questions please don't hesitate to contact the working group at the municipality compound in Shashemene.

# 12. Appendices

## Annex 1 Topography of Map of Shashemene town



Source: Field Survey Result January, 2010.

## Annex 2

### Solid Waste Generation Rate and Collection efficient

Horizon (year)	Unit	2011	2015	2020
Waste generation rates	gr/c.d	250	300	350
Estimates of collectable waste		55%	60%	65%
	Waste densities (households) in Kg/m <sup>3</sup>			500
	Waste densities in temporary disposal site Kg/m <sup>3</sup>			620
	Waste densities at landfill, initially Kg/m <sup>3</sup>			775
	Waste densities at landfill, after a few years Kg/m <sup>3</sup>			1000

Source: MoWE (2011).

## Annex 3

### Requirements of Land in Hectare for Land fill Site by Towns with population size Category

Category	Population Range	Land Fill Site area of a typical town within the indicated Category (Hectare)		
		2011	2015	2020
1	100,000 to 200,000	0.60	2.12	4.46
2	200,000 to 500,000	1.07	3.78	7.94

Source: MoWE (2011).



## Annex 4

### Waste Management Staffs by Profession, Educational Level and Employment Status

S. no	Job Title	No of Employees	Profession	Educational Level	Employment Status
1	Work process owner	1	Urban Management	MA	Permanent
2	Sanitary Team Coordinator	1	Management	BA	Permanent
3	Sanitary Senior Expert	1	Environmental Health Science	Diploma	Permanent
4	Road Sweeping Supervisor	1	Management	BA	Permanent
5	Road Sweeping Supervisor	1	Non-professional	Primary School Level	Permanent
6	Road Sweeping Supervisor	1	Non-professional	Secondary School Level	Permanent
7	Greenery (team leader)	1	Environmental Protection Science	BSC, MA	Permanent
8	Skip Loader Driver	2	Non-professional	Junior School Level	Permanent
9	Tractor (driver)	1	Non-professional	Primary School Level	Contract
10	Tractor (assistant)	1	Non-professional	Primary School Level	Permanent
11	Loader (driver)	1	Non-professional	Primary School Level	Permanent
12	Loader (assistant)	1	Non-professional	Primary School Level	Daily labour
13	Solid and Liquid waste dumping site Gourds	2	Non-professional	Primary School Level	Temporary
14	Greenery Team Coordinator	1	Environmental Protection Science	MA	Permanent
15	Environmental Protection Senior Expert	1	Applied Biology	BSC	Permanent
16	Greenery workers Supervisor	1	Industrial Engn.	BSC	Permanent
17	Greenery workers Supervisor	1	Non-professional	Diploma	Permanent
18	Greenery workers Supervisor	1	Non-professional	Primary School Level	Permanent
<b>Total</b>		<b>20</b>			
1	Workers at Kebele Levels	11			
2	Daily workers on solid waste management and greenery development	20	Professionals and non-professionals	Secondary and Primary School level	
3	Member of association works on solid waste management and greenery development	489	Professionals and non-professionals	TVET, Diploma, Secondary and Primary School Level	
<b>Grand total</b>		<b>540</b>			

Source: Shashemene Municipality Plan execution control, Greenery Development and Urban sanitation Working Process department (2018).

## Annex 5

Number of teachers by education level, sex and years of the city of Shashemene for the years of 2015/16-2016/17

Level of Education	Sex	2015/16					2016/17				
		1-4	1-8	9-10	11-12	Total	1-4	1-8	9-10	11-12	Total
Certificate	Male	30	95	-	-	125	-	60	-	-	60
	Female	26	76	-	-	102	-	101	-	-	101
	Total	56	171	-	-	227	-	161	-	-	161
Diploma	Male	76	246	-	-	322	-	204	-	-	204
	Female	75	218	-	-	293	-	261	-	-	261
	Total	151	464	-	-	615	-	465	-	-	465
Degree	Male	-	36	215	123	374	-	116	205	85	406
	Female	-	20	63	114	197	-	138	86	11	235
	Total	-	56	278	237	571	-	254	291	96	641
MA/MSc	Male	-	-	1	14	15	-	-	-	27	27
	Female	-	-	1	3	4	-	-	-	4	4
	Total	-	-	2	17	19	-	-	-	31	31
Total	Male	106	377	216	137	836	-	380	205	112	697
	Female	101	314	64	117	596	-	500	86	15	601
	Total	207	691	280	254	1432	-	880	291	127	1298
Percentage of Female Teachers		48.8	45.4	22.9	46.1	41.6	-	-	29.6	11.8	46.3
Percentage of teachers in a level of education		14.5	48.3	19.6	17.7	100.0	-	-	22.4	9.8	100.0

Source: Shashemene City Administration Educational Office.

## Annex 6

Number of health institutions by types and owners from 2014/15-2016/17 years

No	Type of Health Institutions	2015/16				2016/17			
		Gov't	NGO	Private	Total	Gov't	NGO	Private	Total
1	Hospitals	2		1	3	2		1	3
2	Health Centers	3	1		4	4	1		5
3	Clinics			59	59			64	64
4	Pharmacies/ Drug Vendor/Shop/ Store			25	25		2	58	60
	<b>Total of Health Institutions</b>	<b>5</b>	<b>1</b>	<b>85</b>	<b>91</b>	<b>6</b>	<b>3</b>	<b>123</b>	<b>132</b>
5	Hospital Beds	341			341	341			341

Source: Shashemene City Administration Health Office.







**SymbioCity supports local governments in addressing several of the Sustainable Development Goals (SDGs) and in implementing the principles of the New Urban Agenda. The overall goal is to improve living conditions with a special emphasis on the urban poor.**



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 **Swedish Association  
of Local Authorities  
and Regions**

SymbioCity is based on Swedish municipalities' approach to urban development and experiences from implementing this in transition- and developing countries. Since 2010, with funding from the Swedish International Development Cooperation Agency (Sida), the Swedish Association of Local Authorities and Regions (SALAR) and SKL International have used SymbioCity as an approach and a method to promote sustainable urban development and contribute to the alleviation of urban poverty around the globe.

To learn more about SymbioCity please see [www.symbiocity.org](http://www.symbiocity.org), call phone +46 (0)8 452 70 00 or send us an e-mail on [info@sklinternational.se](mailto:info@sklinternational.se)