



May 2020

Source-to-sea stakeholder assessment

Lake Hawassa Sub-Basin

Plastic pollution



This document has been authored by David Hebart-Coleman, Ruth Mathews, Josh Weinberg, Kanika Groeneweg-Thakar, SIWI. It has been produced as an outcome from the “Foundations for Source-to-Sea Management” project carried out by SIWI from September 2019– May 2020 and funded by the German Federal Ministry of Economic Cooperation and Development (BMZ).

The authors and SIWI wish to thank BMZ and Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) for their support.

This project followed the guidance provided in “Implementing the Source-to-Sea Approach: A Guide for Practitioners” and “Source-to-Sea Framework for Marine Litter Prevention: Preventing Plastic Leakage from River Basins”. Both of these resources as well as many others can be found at www.siwi.org/source-to-sea.

About SIWI

SIWI's vision is a water wise world, where we recognize the value of water, and ensure that it is shared and allocated sustainably, equitably and efficiently, to meet everyone's basic needs.

Through applied research, policy consultation, capacity-building, and connecting key actors across sectors, SIWI stimulates the development of innovative policies and scientifically-based solutions to water-related challenges.

We bridge science, policy and practice for a water wise world.

Founded in 1991, the Stockholm International Water Institute (SIWI) provides and promotes water wise solutions for sustainable development in the areas of water governance, transboundary water management, and through international policy processes.

Foundations for Source-to-Sea Management

The Stockholm International Water Institute (SIWI), funded by the Federal Ministry of Economic Cooperation and Development (BMZ) conducted a project "Foundations for Source-to-Sea Management" to pilot the source-to-sea approach¹ in the Vu Gia Thu (VG-TB) River Basin, Viet Nam and the Lake Hawassa sub-basin, Ethiopia. By focusing on the first three steps of the source-to-sea approach, the two pilots:

- Increased knowledge of priority local challenges constraining sustainable development;
- strengthened awareness of the linkages between upstream and downstream activities and their impacts;
- built local capacity for taking a holistic approach to natural resource management and economic development;
- highlighted the opportunities and challenges associated with implementing the source-to-sea approach to management.

Contents

- Foundations for Source-to-Sea Management 2
- Introduction 5
 - Lake Hawassa sub-basin 6
 - Plastic pollution in Lake Hawassa 7
 - Stakeholder Assessment 9
 - Source-to-lake approach 9
 - Conducting the stakeholder assessment 10
 - Source-to-lake stakeholder categories 10
 - How do different categories of stakeholders contribute to source-to-sea management? 14
 - Source-to-lake roles 15
 - Interest vs influence 15
 - Stakeholder engagement plan 16
- Discussion 18
- References 19
- Annex: Stakeholder assessment worksheet 20

Figures

Figure 1: Six Steps of the source-to-sea approach (Source: Mathews, et al 2019)..... 5
Figure 2: Administrative Map of Hawassa sub-cities (Source UN-Habitat Report)..... 6
Figure 3: Household waste composition in 2014 (Source USAID, 2014, RWA, 2019)..... 8
Figure 4: Informing the Engagement Strategy 16

Tables

Table 1: Breakdown on quantities and per capita generation of solid waste in the study area (Source: RWA, 2019)..... 7
Table 2: Identified impacts and sources of plastic pollution..... 8
Table 3: Identified primary stakeholders 10
Table 4: Identified targeted stakeholders 11
Table 5: Identified enabling stakeholders 12
Table 6: Identified supporting stakeholders 13
Table 7: Identified external stakeholders..... 13

Introduction

The Stockholm International Water Institute (SIWI), funded by the Federal Ministry of Economic Cooperation and Development (BMZ) conducted a project “Foundations for Source-to-Sea Management” to pilot the source-to-sea approach as it is laid out in [“Implementing the source-to-sea approach: A guide for practitioners”](#) and [“Source-to-Sea Framework for Marine Litter Prevention: Preventing Plastic Leakage from River Basins”](#). Two specific locations, Vu Gia-Thu Bon River Basin (VGTB), Viet Nam, and Lake Hawassa sub-basin, Ethiopia, were selected for the implementation of pilot studies that involved the application of the first three steps within the S2S approach (**Error! Reference source not found.**).

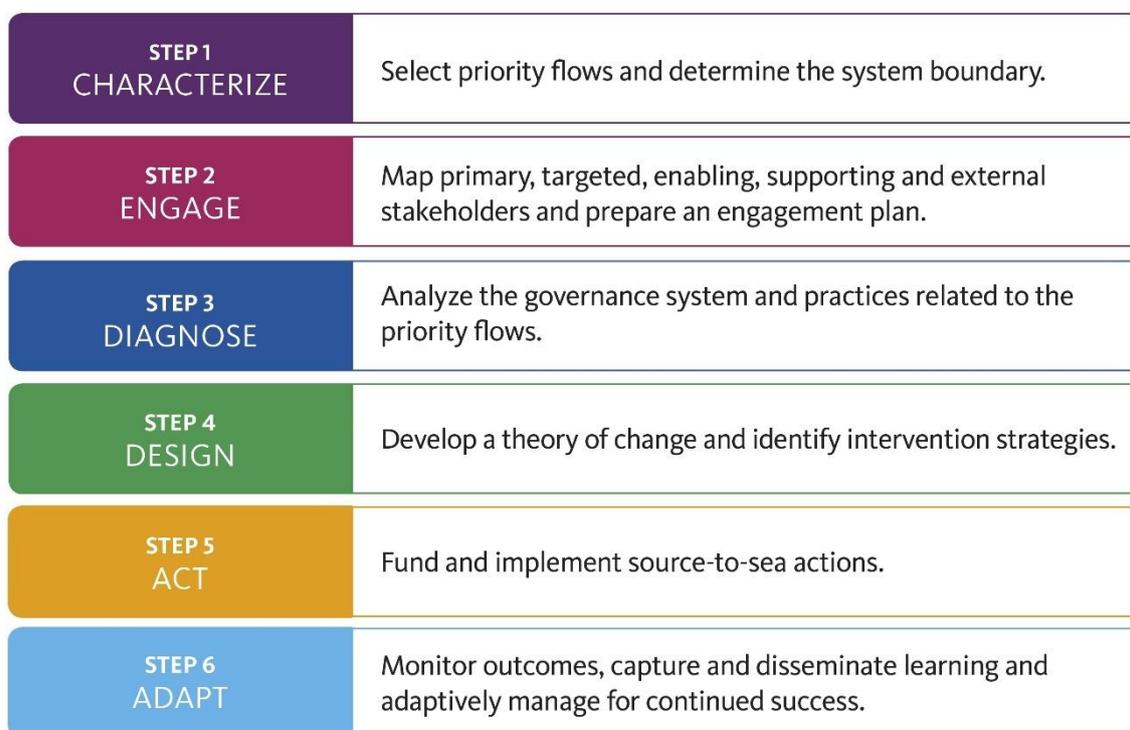


Figure 1: Six Steps of the source-to-sea approach (Source: Mathews, et al 2019)

In the Lake Hawassa sub-basin, two priority source-to-sea flows were identified as important – sediment from soil erosion and plastic pollution. In the VGTB, plastic pollution was selected as the priority source-to-sea flow for this project. These priority flows were chosen following early discussions with local partners. In both Ethiopia and Viet Nam, stakeholder workshops, capacity building workshops and field visits were conducted. Activities in the Lake Hawassa sub-basin were conducted with GIZ, and the Basin Development Authority of Ethiopia (BDA). While activities in the VGTB were conducted with IUCN, Department of Natural Resources (DONRE) and Quang Nam Provincial Peoples’ Committee. In the Lake Hawassa sub-basin, the source-to-sea approach was adapted to source-to-lake, recognizing the similarities in characteristics in an endorheic lake basin and as compared to a sea or ocean. Consultants were commissioned to prepare reports characterizing the priority flows as described in Step 1 of the source-to-sea approach. These reports

were used to define the system boundary for each priority flow, and, in turn, provide a base for undertaking Step 2: Engage and Step 3: Diagnose within the pilot.

The focus of this report is the results from carrying out Step 2: Engage.

Lake Hawassa sub-basin

The Lake Hawassa sub-basin is located 275 km south of Addis Ababa and is covers approximately 1400 km². Lake Hawassa is 90 km² in size and is the endpoint of an endorheic hydrological system, with some limited groundwater outflow. Plastic pollution is an emerging issue in Hawassa, one that can result in local impacts such as urban flooding, increased costs of clean-up, and pressure on local biodiversity (RWA 2019) and is thought to be entering the food chain through impacts on local fisheries and urban dairy farming.

The main urban area is Hawassa City and it is one of the fastest growing cities in Ethiopia. The population of Hawassa City in 2015 was estimated to be 350,000 in the urban area and was growing very quickly at 4% per annum. The population of the entire sub-basin is approximately 3 million people who mainly live in rural areas. Prominent land uses in the sub-basin include agriculture (including enset, maize and potatoes), tourism, and, most recently, industries supported by the inception of a major industrial park (Hawassa Industrial Park (HIP)).

RWA (2019) observed a recent population of 403,000 people divided across several sub-districts within the city, as indicated in Figure 1.

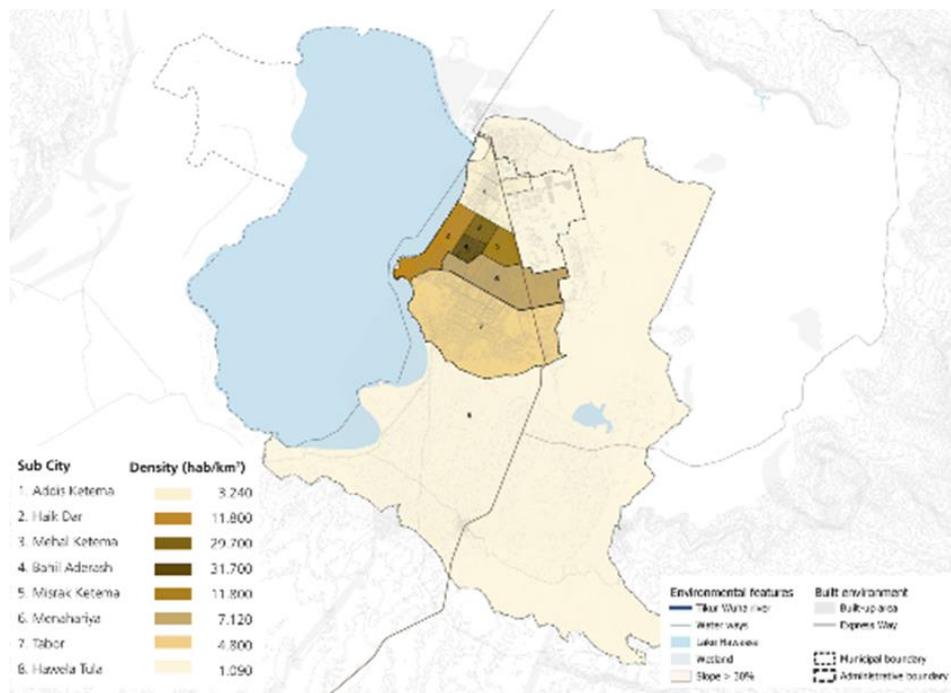


Figure 2: Administrative Map of Hawassa sub-cities (Source UN-Habitat Report)

Plastic pollution in Lake Hawassa

RWA (2019) estimated that the urban area generates approximately 206 t/day of municipal solid waste (MSW), from which 8% (15.94 t) is plastic waste. The 206 t/day estimate includes both domestic and commercial sources and was based upon a mixture of modelling using established processes, augmented by local sampling at the solid waste facility to verify estimated values. Urban areas are considered to be the main source of plastic waste at 63.9% of the total, followed by touristic and rural areas at 25.6% and 10.5%, respectively.

Table 1: Breakdown on quantities and per capita generation of solid waste in the study area (Source: RWA, 2019)

Study area	Population	Quantities of waste generated (t/day)			Per capita generation (kg/day)
		Households	Premises	Total	
Urban	206,496	89	38	127	0.62
Touristic	59,835	26	11	37	0.62
Rural	136,694	29	13	42	0.31
Total		144	62	206	
		Weighted Average			0.51

RWA (2019) identified several types of plastic pollution that are generated and used in Hawassa. These include dense/heavy (PET, LDPE, HDPE, PP), film/light (bags and wrappers) and fishing nets. They observed that light plastic forms most of the plastic waste at 60.9% of the total load followed by dense plastic and fishing nets at 38.9% and 0.2%, respectively. Dense plastic, especially PET, has a high market value in the recycling industry. Alternatively, despite the large amount of light plastic being generated, very little of this plastic type is recycled since it has no market value. Strategies to manage plastic pollution will need to take these limitations into account, and therefore would push for prevention strategies and interventions. Another source of plastic in the Lake Hawassa context is fishing nets. The lifecycle of many fishing nets is limited, RWA (2019) found that fishing nets that are illegal at the end of their life span i.e., 1 year, are often disposed directly into the lake as a convenient disposal method. Whilst the total material of plastic from this source is limited compared with other sources, old nets can result in local biodiversity impacts.

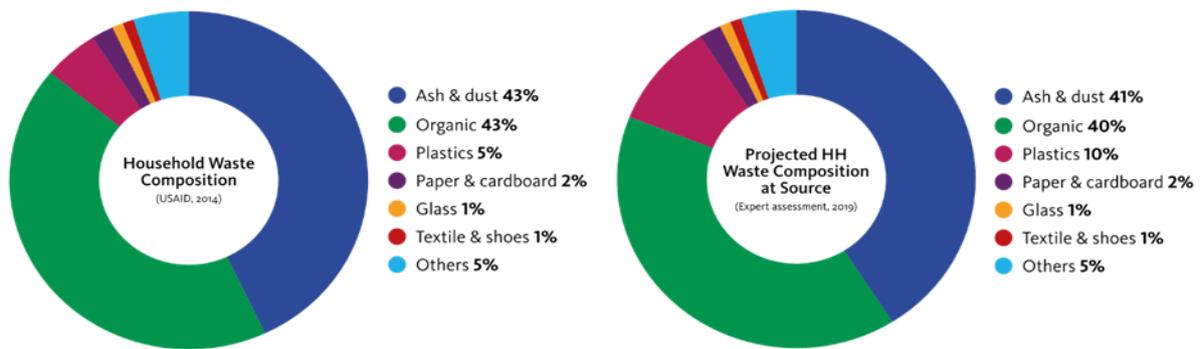


Figure 3: Household waste composition in 2014 and 2019 (Source: USAID, 2014, RWA, 2019)

RWA (2019) observed that collection and management of plastic waste is similar across both urban and touristic areas. However, there is no waste management system found in rural areas. It is assumed that plastic waste sourced from rural areas is burnt or ends up in the environment and finds its way into waterbodies. Similar sources of plastic pollution may be found outside Hawassa City in the rural areas of the sub-basin, but these were not accounted for within this study. RWA (2019) estimates that in urban and touristic areas, approximately 32% of all the plastic waste generated is collected for recycling (21%) or disposal (11%). This implies that close to 68% of the plastic waste generated in these areas is not disposed of appropriately.

Of this uncollected plastic waste, RWA (2019) estimated that 56% is left on land, 25% is burned, 18.6% ends up in Lake Hawassa, and 1% in drains. Although it is a small percentage of plastic waste that collects in drains, it is important to note that drains are the main transmitters of plastic into Lake Hawassa and can cause flooding during wet seasons through blockages.

Inadequate plastic waste management in Hawassa has resulted in environmental, economic, ecosystem and public health impacts including but not limited to (RWA 2019):

- increased cost of clean-ups,
- flood damage to roads and houses,
- increased risk of flooding due to blockage of storm drains
- increased risk of malaria outbreak.

Impacts

During a stakeholder workshop, stakeholders were asked to identify impacts from excessive plastic pollution as well as some of the key geographical locations or practices that they thought contributed to this. The following table outlines stakeholder knowledge on various impacts and sources of the plastic pollution. Whilst many of these are found in urban areas, a number of these identified impacts are more applicable to rural areas. It is noted that the sources of plastic identified in this process were very widespread, touching on most parts of the sub-basin, especially compared with the urban focus taken in RWA (2019).

Table 2: Identified impacts and sources of plastic pollution

Impacts	Sources of Pollution
<ul style="list-style-type: none"> • Farmland and farmers • Livestock 	<ul style="list-style-type: none"> • Industries (packaging) • Irrigation (Packaging and broken equipment)

<ul style="list-style-type: none"> • Lake fisheries • Ecosystem • Health impacts (from waste burning in various areas) • Air pollution and residues • Impacts on biota / biodiversity • Direct impacts on Poor communities • Ingestion of plastic in cattle • Health impacts – general and specific • Flooding in many areas 	<ul style="list-style-type: none"> • Polyethene cubes • Health Centers (Packaging of medical equipment and waste) • Agricultural – agrochemicals • Nursery Sites: Plant packaging • Irrigation pipes • Water harvesting materials • Pipes and bags in agricultural areas • Bottle users • Events • Industries – Textiles, Construction, Food • Retail sector • Tula sub-city as an example of a hotspot • Bus centers • Bazaars and markets
---	---

Stakeholder Assessment

There are many different sources of plastic pollution into Lake Hawassa, often from different land use types as well as activities. Applying a source-to-sea approach (locally called source-to-lake) helps address this issue by focusing on the linkages between land, rivers and lakes. The approach considers the entire source-to-lake system – stressing upstream and downstream environmental, social and economic linkages and stimulating coordination across sectors and spatial segments, including the whole production, use and disposal of plastic materials. This knowledge is then used to build commitment by critical stakeholders for designing strategic courses of action that hold greater benefits for the land-to-lake system, rather than one or two sectors or specific sources of sediment flow.

The project in the Lake Hawassa Sub-basin provides a good opportunity to highlight the benefits of taking an integrative approach for source-to-lake management and working with local stakeholders on developing solutions and strategic course of action and identifying gaps or overlaps in terms of governance on a long-standing issue.

Source-to-lake approach

The source-to-lake approach begins with Step 1: Characterization. In this step, the local challenges related to the alteration of the patterns and behaviours of the priority flow and the observed biophysical changes to the system are assessed. With this understanding of changes to the priority flow and their impacts, the next step is to identify stakeholders that are either affected by alterations to the priority flow, are contributors to those alterations, or are important for supporting future interventions. Stakeholder assessments differ in the level of granularity required, dependant on the system boundary being used, the objectives being sought, and the overall purpose of the project.

In this project, the stakeholder assessment is informed by initial identification of stakeholders to engage in project activities and is elaborated through this engagement and as more understanding of the local challenges from the biophysical, social and governance perspectives is gained., where the different combinations of system boundaries, stakeholders, and governance frameworks feed into next steps with the purpose of eventually identifying a theory of change that identifies important interactions, and possible interventions. However, the source-to-lake does not simply identify the different stakeholders that will be affected by or involved in the behaviour leading to alterations in the priority flow, it also recognises the importance of identifying gaps or overlaps amongst the

stakeholders already engaged. Ultimately, the aim is to involve the full suite of stakeholders needed to ensure that the proposed interventions are implemented. Five categories of stakeholders are considered in the source-to-lake approach: primary, targeted, enabling, supporting, and external. The descriptions of each will be found in the next section, but it is important to realise that each type has a role to play in the overall source-to-lake approach.

Conducting the stakeholder assessment

Methods

In order to undertake Step 2: Engage and identify source-to-lake stakeholders, two different research approaches were used. The first was through the Step 1 Characterization study commissioned as part of the characterization reports prepared by a local consultant (RWA 2019). While the focus of this report was on providing baseline information that helps to characterize the situation regarding plastic pollution, they also included sections on Step 2: Engage and Step 3: Diagnose. The second approach was through engagement with stakeholders in workshops held as part of the project in late 2019 and early 2020. These workshops included representatives from various institutions and communities throughout Lake Hawassa sub-basin as well as from the regional and federal level and focused on enhancing knowledge about the system boundary and the identification of impacts, stakeholders and institutions as applicable. In terms of restrictions, whilst the combination of both approaches contributed to the stakeholder assessment, the programme was intending to hold further workshops in Hawassa to verify and endorse the findings, and potentially identify other stakeholders as necessary, which were cancelled due to Covid-19.

Source-to-lake stakeholder categories

Primary Stakeholders

Primary stakeholders are those individuals or communities who are affected by changes in the priority flow, generally negative. These are the stakeholders that are being impacted by increased solid waste flows that create water-related issues such as drain blockage, pollution of the lake, plastic entering food chains, and reduced recreational and tourism values associated with Lake Hawassa. In Hawassa, these include urban communities where land is subject to flooding, communities that depend on fisheries whose catch may be affected by plastic leakage, or those who suffer a loss of income associated with a perceived decline in water quality and associated loss of perceived value, such as water-based tourism operators. As stated in Mathews (2019): *Primary stakeholders are affected by the alteration of priority flows and benefit from the intervention strategies.*

Table 3: Identified primary stakeholders

Stakeholder name	Level	Source-to-lake segment	Source-to-lake sub-segment	Interest	Influence
Farmers	Local	Land system	Urban/Rural	Moderate	Weak
Fisherman	Local	Freshwater system	Lake	Moderate	Weak
Municipalities (Urban Authorities)	Municipal	Land system	Urban	Moderate	Strong

Woredas	Local	Land system	Rural	Moderate	Weak
Kebeles	Local	Land system	Urban	Moderate	Weak
Urban communities (incl. Fish consumption)	Local	Land system	Urban	Strong	Weak
Tourism	Basin	Land system	Urban	Moderate	Weak
Lakeside Communities	Basin	Freshwater system	Urban / Riparian	Moderate	Weak
Ecosystems	Basin	Freshwater system	Lake	Strong	Weak
Farmers	Local	Land system	Urban/Rural	Moderate	Weak

Targeted Stakeholders

Targeted stakeholders refer to those stakeholders whose practices or behaviours are creating or exacerbating the problem. Stakeholders in this category include consumers in urban communities whose plastic usage has increased, waste management operators that provide inadequate or unreliable services, and municipalities that are mandated to provide services upon which urban communities depend. Other targeted stakeholders include the private sector operators whose practices help expand plastic usage or use poor quality plastic types that are single use plastics. As stated in Mathews (2019): *Targeted stakeholders are actors or sectors whose practices are contributing to the alteration of priority flows and whose behaviour intervention strategies are aimed at changing.*

Table 4: Identified targeted stakeholders

Stakeholder name	Level	Source-to-lake Segment	Source-to-lake sub-segment	Interest	Influence
Waste Collectors and transporters	Local	Land system	Urban	Moderate	Weak
Business (Local Industrial)	Municipal	Land system	Urban	Weak	Moderate
Business (Industrial) Sectors	Municipal	Land system	Urban	Moderate	Strong
Business (Commercial) Sectors	State	Land system	Urban	Weak	Moderate
Health Sectors	National	Land system	Urban	Weak	Moderate
Industries	Basin	Land system	Urban	Weak	Strong
Market	Local	Land system	Urban / Rural	Weak	Weak
Government Sectors (Bottles)	State	Land system	Urban	Moderate	Moderate
Hotels	Municipal	Land system	Urban / Riparian	Moderate	Moderate
Wedding Events / Event Organizers	Local	Land system	Urban / Riparian	Weak	Weak
Hawassa City Administration	Municipal	Land system	Urban	Moderate	Moderate
Customers /Consumers	Global	Land system	All	Weak	Weak

Enabling Stakeholders

Enabling stakeholders are those who have roles in managing practices and behaviours that impact on the priority flow. These include institutions granted formal or informal mandates governing the use and disposal of plastic materials, and those that control budgets that support the provision of sanitation services. Many enabling stakeholders are institutions from the different tiers of government, including federal ministries that provide direction on the use and disposal of different types of plastic, regional state bureaus that monitor solid waste management, and urban authorities that provide solid waste management services. Some enabling stakeholders may also be classified targeted stakeholders as their own practices and behaviours can contribute to the problem. Urban authorities can often fall into both categories as they are responsible for managing solid waste, but the level of priority granted to this activity has an impact on the service provided. As stated in Mathews (2019) *Enabling stakeholders provide the enabling conditions for behaviour changes to occur and benefits to be sustained over time.*

Table 5: Identified enabling stakeholders

Stakeholder name	Level	Source-to-lake segment	Source-to-lake sub-segment	Interest	Influence
Health Ministry and Centres	National	Land system	Urban	Moderate	Weak
Environmental Protection Authority	State	Land system	Urban / Rural	Moderate	Strong
Ministry of Environment, Forest and Climate Change Commission (ECCC)	National	Multiple	Urban / Lake	Weak	Moderate
City Administration	Municipal	Land system	Urban	Moderate	Moderate
City Sub-administration: Urban Planning Sanitation and Beautification	Municipal	Land system	Urban	Strong	Moderate
Agri-Sectors	Basin	Land system	Rural	Weak	Moderate
RVLBO	Basin	Freshwater system	Urban / rural	Moderate	Moderate
Environmental Officers (Regional Bureaus)	State	Land system	Urban / Rural	Moderate	Moderate
Ministry of Water Irrigation and Energy	National	Freshwater system	Urban / Lake	Weak	Moderate
Ministry of Health	National	Land system	Urban	Weak	Moderate
Ministry of Agriculture	National	Land system	Rural	Weak	Moderate
Ministry of Industry	National	Land system	Urban	Moderate	Strong
Ministry of Urban Development and Construction	National	Land system	Urban	Moderate	Moderate
Ministry of Culture and Tourism	National	Multiple	Urban/Lake	Moderate	Moderate

Supporting Stakeholders

Supporting stakeholders are those who already provide support for addressing plastic leakage and solid waste management but may not have legislative powers or formal mandates. These include

stakeholders that build awareness or knowledge about an issue, such as universities, or civil society organisations and development partners that bring additional resources to address plastic leakage. Supporting stakeholder are often an important source of funding for future interventions. Many supporting stakeholders in Hawassa comprise different civil society organisations who are actively engaged in improving solid waste management through their programmed activities or development partners working with federal ministries at the national level, such as CIFA. Supporting stakeholders may also include private sector interest who provide finance for solid waste management activities., recycling opportunities, or product development. As stated in Mathews (2019): *Supporting stakeholders include development partners or financiers whose strategies are aligned with and can support the source-to-sea objectives.*

Table 6: Identified supporting stakeholders

Stakeholder name	Level	Source-to-lake Segment	Source-to-lake sub-segment	Interest	Influence
Hawassa University	National	Land system	Urban / Rural	Moderate	Weak
CIFA (Community Initiatives Facilitation and Assistance)	Local	Land system	Urban	Moderate	Moderate
UN Agencies	Global	Land system	Urban / Rural	Moderate	Moderate
Recycling artists.	Local	Land system	Urban	Strong	Weak
CBO (Central Business Organizations)	Municipal	Land system	Urban	Moderate	Moderate
Recyclers – Circular Economy (Internal)	Local	Land system	Urban	Strong	Weak
GIZ IWaSP	Basin	Freshwater system	Urban / Lake	Strong	Weak
The World Bank	Global	Land system	Urban	Strong	Moderate
USAID	Global	Land system	Urban / Rural	Moderate	Moderate
UN Habitat	Global	Land system	Urban / Rural	Strong	Moderate
SOS-Sahel	Global	Land system	Urban / Rural	Moderate	Moderate
GIZ	Global	Land system	Urban	Strong	Moderate
Irish Aid	Global	Land system	Urban / Rural	Moderate	Moderate
Dfid	Global	Land system	Urban / Rural	Moderate	Moderate

External Stakeholders

The final category of stakeholder are external stakeholders. This category includes stakeholders whose interests may be aligned in managing the priority flow but may sit outside the biophysical boundaries or may be unaware of opportunities for involvement. As stated in Mathews (2019): *External stakeholders are individuals or groups outside of the system boundary who share an interest in the outcomes of the project or programme.*

Table 7: Identified external stakeholders

Stakeholder name	Level	Source-to-lake segment	Source-to-lake sub-segment	Interest	Influence
Ethiopian Tourism Organization	National	Multiple	Urban / Rural / Lake	Weak	Moderate

Ethiopian Tour Operators Association	National	Multiple	Urban / Rural / Lake	Weak	Moderate
---	----------	----------	----------------------	------	----------

For plastic leakage, it is recognised that stakeholders are highly diverse as they should be reflective of the plastic pollution life cycle. Whilst opportunities to avoid plastic leakage are most evident at collection, recycling, and disposal stages, the source-to-lake approach may also identify other opportunities for prevention at different phases of the life cycle – including through production, packaging design, materials design, public awareness, governance, and financial opportunities.

How do different categories of stakeholders contribute to source-to-sea management?

The source-to-lake approach is designed as a structured approach in which each step in the process contributes to the development of an overall theory of change and a suite of interventions that is tailored to the specific context. By taking a more structured approach, new insights or perspectives may be gained at each step. When combined with a holistic perspective, it is more feasible to develop strategies that intervene at important leverage points.

In the approach, through Step 1: Characterisation, system boundaries and issues are identified which used to identify stakeholders and their specific roles or contributions to source-to-sea management. Whilst impacts of plastic pollution on Lake Hawassa is often similar, irrespective of the leakage source, different pathways for preventing leakage require different intervention activities, at a range of scales.

Reducing the impact of practices or behaviours that negatively impact on primary stakeholders is often a key objective of a programme or project. Within source-to-sea, primary stakeholders contribute as they better contextualise the extent and impact of problems, identify priority sources, and may be encouraged to take part in interventions to reduce the impact. They may also provide support for interventions made by enabling or supporting stakeholders. Many indicators that monitor and evaluate the effectiveness of interventions will be based on reducing the impact of plastic leakage on primary stakeholders.

Targeted stakeholders contribute to source-to-sea management as it is their practices that contribute to the problem and are those who may need support for their behaviour or practices to change and therefore reduce the impact or extent of the problem on primary stakeholders.

Enabling stakeholders are granted formal or informal mandates to manage the priority flows and their contributions to source-to-sea management is dependent on how they give effect and priorities activities within their mandates, creating the enabling conditions for local practices. For example, one enabling stakeholder may have responsibilities for managing activities across several sub-segments, but how they allocated effort and resources to each creates the conditions for change.

Supporting stakeholder contribute to source-to-sea managing by bringing in additional resources or capacity that support changing of behaviours by targeted stakeholders, potentially through knowledge sharing, advocacy and potentially additional financial resources not available through enabling stakeholders.

External stakeholders are less likely to initially contribute to source-to sea-management, as they may be unaware of the opportunities for interventions or normally operate at a scale that precludes

active local engagement. Some of their actions may support changes to enabling conditions whether positively or negatively, or, alternately interventions may be designed to support them to shift to being supporting stakeholders.

It is important to note that many stakeholders can be linked to one or more stakeholder categories. For example, members of governance institutions may also be affected by impacts of plastic pollution in many ways, but it may be their own practices that exacerbate the problem.

Of note is that most of these stakeholders identified in the workshop are active in some way within the Hawassa sub-basin and were generally quite visible to participants. This differs from the list compiled by RWA (2019) and SIWI that included federal institutions, especially those identified as enabling stakeholders. These tables represent both the results from the workshops and those identified by RWA (2019)

Source-to-lake roles

RWA (2019) observed that most plastic leakage into Lake Hawassa is predominantly sourced from urban areas, although impacts from rural areas were identified by workshop participants. Given the widespread nature of plastic leakage in the sub-basin, it is recognised that multiple interventions that target different sources of plastic pollution in Hawassa City and potentially beyond. Such interventions will need to be developed according to the different sub-segment, whether urban, touristic, commercial or rural, but take into account system interlinkages and shifts in stakeholder roles. An urban community in one part of the system may be responsible for practices and behaviours that affect another sub-segment. Enabling stakeholders may be active in several sub-segments, but their role can change according to the specific sub-segment. An example of this is Hawassa City Administration who may have legislative and regulatory powers in regards to managing solid waste as an enabling stakeholder, but they may also be primary stakeholders as their operations are affected by plastic pollution, or may be a targeted stakeholder as solid waste management services are inadequate to meet the needs of the urban population.

Interest vs influence

In the source-to-sea approach, it is important to understand how the various interests and influence of various stakeholders plays out in terms of their role in the process and desire for change. Interest, in this context, refers to the level of stakeholder interest in changes being made of present practices and behaviours under current management. For example, there may be stakeholders who are comfortable with the status quo, or the perceived costs outweigh the perceived benefits from change and therefore have very little interest in changes being made.

Influence, in this context, refers to stakeholder capacity to foment or catalyse changes in behaviours or practices and therefore reduce the extent or intensity of impacts listed in Table 1 or to block these changes. Influence can arise from formal or informal mandates, leadership, resource access, or technical capacity and knowledge. Enabling stakeholders often have the most influence, owing to legal mandates, but other parties may also be influential such as knowledge institutions, associations or private sector actors. On the other hand, there may be stakeholders who are very interested in changes being made but have little capacity to influence those changes through a lack of power, resources or capacity.

Interest and influence are important considerations within Step 2: Engage, as it helps to reveal stakeholder interests and motivations, and their capacity to support or limit change. More importantly, it can be used to help identify how to engage each stakeholder in developing and implementing interventions that are identified during Step 4: Design. Further information can be found in Annex 1: Stakeholders Assessment Worksheet.

Stakeholder engagement plan

The main objectives for stakeholder engagement differ according to the project. The project in Lake Hawassa was primarily concerned with developing capacity in source-to-lake management of the very real challenges found in Lake Hawassa.

Their roles and levels of interest, and influence of each stakeholder will have an impact on the way that they should be engaged in designing and implementing interventions. Whilst the project was more concerned with implementing Steps 1-3, it needed to be very cognizant of how results of this work impact on Steps 4- 6 of the source-to-lake approach. For example, if a stakeholder has little interest in change, as it is benefitting from the status quo, but has a strong influence on whether change occurs, engagement strategies should be designed around raising their interest. Similarly, engagement of stakeholders that have a high interest in seeing change and a high capacity to influence those changes may be built around active engagement to address the issues.

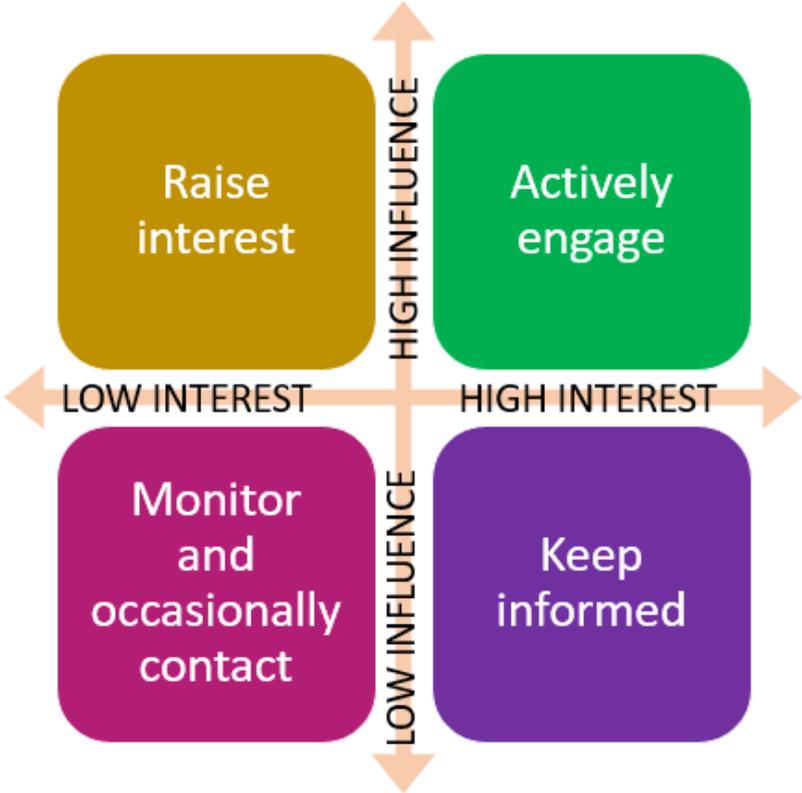


Figure 4: Informing the Engagement Strategy

In terms of these four categories, stakeholders with low interest and low influence, engagement is mainly through occasional check-in. Such engagement may help shift interest in change higher, but otherwise this is a low intensity component of future interventions.

The strategy for engagement with stakeholders with low interest in change but high influence is primarily concerned with activities that build awareness of the priority flow and how their practices and behaviours impact on the effectiveness of future interventions. In the more difficult cases, some stakeholders may have low interest in change due to benefiting from the status quo, but substantial influence in local decision-making, and the purpose of the engagement is primarily concerned with limiting opposition or perhaps encouraging support. Many businesses, whether local industrial, industrial or commercial fall into this category.

The guiding approach for stakeholders that have high interest but low influence is information sharing, and potentially giving them the tools to undertake local activities themselves, or potentially influence other stakeholders. Many primary stakeholders fit into this intervention guiding approach, as do ecosystems.

Those stakeholders that have a high interest and high influence are likely to be the main driver of local activities and will be the main proponents of future interventions. Engagement with the stakeholders should form the bulk of activities and interventions as they have an interest in seeing change and the influence to make it happen. For this group, it may only be specific barriers to action. Examples include municipalities.

There may also be stakeholders that have either moderate interest in change or moderate influence over where change happens. They will form an important component of future engagement in order to raise their interest in change. There will be more barriers to their involvement, but can become strong allies, and effort should be made to enlist them.

Discussion

This report represents the initial findings for one component, Step 2: Engage, of the Source-to-Lake project being undertaken in Hawassa and will inform further steps in the process, especially Step 3: Diagnose, Step 4: Design, and Step 5: Act. As such, the report is more concerned with general attributes of stakeholders, but more detail about the motivations, activities, interest and influence of different stakeholders can be found in Annex 1.

Of particular interest is that stakeholders identified by participants in Hawassa workshops tended to identify and categorise local stakeholders as enabling stakeholders but often failed to recognise the important role that federal institutions play as enabling stakeholders. This result may be due to limited workshop time, but further work is necessary with various stakeholders to ensure that the plastic pollution priority flow is addressed more holistically, incorporating national perspectives rather than just focusing on local concerns.

It should be noted that most stakeholders in this report have only been identified generically, and further work is needed to fully understand the stakeholder landscape and who need to be involved in upstream-downstream cooperation and cross-sectoral coordination to establish source-to-lake management of plastic pollution. For example, specific plastic pollution hotspots and associated actors could be used to specifically identify priority communities for action within Step 4: Design.

References

Mathews, R., Stretz, J. (2019). Source-to-sea Framework for Marine Litter Prevention: Preventing Plastic Leakage from River Basins. Stockholm: SIWI

Mathews, R., Tengberg, A., Sjödin, J., & Liss-Lymer, B. (2019). Implementing the source-to-sea approach: A guide for practitioners. Stockholm: SIWI.

Resources and Waste Advisory Group. (2019). Plastic Waste Management in Lake Hawassa Basin: Report on quantitative and qualitative assessment characterizing plastic solid waste flows in the Lake Hawassa Basin from source-to-lake. Report commissioned by the Stockholm International Water Institute, p 1- 50.

Annex: Stakeholder assessment worksheet

STEP 2: Engage

Stakeholder Name	Description	Category	Level	S2S segment	S2S sub-segment	Interest	Influence	Activities	Additional Comments
Farmers	Farming activities are highly significant in the Sub-Basin. Such activities are not limited to rural areas, but can be found in urban and peri urban areas also. Plastic litter impacts on farming communities in several ways, including entry into the food chain.	Primary	Local	Land system	Urban/Rural	Moderate	Weak		Provide social backing for changes. Relieving or reducing the impact of the flow on this stakeholder is a key indicator of successful interventions. Reducing the probability of plastic litter entering the food chain i.e. urban dairy farming is a key outcome.
Fisherman	Fish is an important source of local protein as well as a resource used to support the tourism industry. Plastic litter can impact on fisherman in many different ways including impacts on recruitment, product quality, fish catch, and ease of transportation	Primary	Local	Freshwater system	Lake	Moderate	Weak		Provide social backing for changes. Relieving or reducing the impact of the flow on this stakeholder is a key indicator of successful interventions in terms of improved fishery ecosystems.
Municipalities (Urban Authorities)	Urban authorities are a unit of governance that provides services, but can also be affected by impacts of plastic litter, including increased costs due to clean-up, damage to infrastructure, and impact on reputation. Sanitation services are a very costly activity for most municipal services, and efforts to reduce plastic litter at source can result in cost-savings downstream.	Primary	Municipal	Land system	Urban	Moderate	Strong		Relieving or reducing the impact of the flow on this stakeholder is a key indicator of successful interventions, especially frequency/intensity of urban flooding events, as well as costs associated with litter clean-up or impact of municipal infrastructure. It is noted that litter collection is a key activity for many households, with large clean up parties in vicinity of the lake being organised. It is unclear whether there is payment for services or whether this contributes to an individuals obligations within the Ethiopian State.
Woredas	Woredas are a unit of governance that can be affected by impacts of plastic litter, including increased costs due to clean-up or damage to infrastructure.	Primary	Local	Land system	Rural	Moderate	Weak		Relieving or reducing the impact of the flow on this stakeholder is a key indicator of successful interventions. Sanitation services are often unavailable many Woredas, but there may occasional costs associated with litter clean-up or impacts on woreda infrastructure.
Kebeles	Kebeles are the smallest unit of governance found in both urban and rural areas. Urban kebeles that can be affected by impacts of plastic litter, including increased costs due to clean-up, impact on their service provision, or damage to infrastructure.	Primary	Local	Land system	Urban	Moderate	Weak		Relieving or reducing the impact of the flow on this stakeholder is a key indicator of successful interventions. Sanitation services are sometimes provided through kebeles, depending on agreements with the urban authority, therefore they may costs associated with impacts on urban infrastructure managed locally.
Urban communities (incl. Fish consumption)	Local communities can be affected by plastic litter in several different ways. In terms of Hawassa, the impacts on local fisheries, increased costs associated with service provision, and the role of plastic litter in exacerbating urban flooding are important impacts to consider.	Primary	Local	Land system	Urban	Strong	Weak		Relieving or reducing the impact of the flow on this stakeholder is a key indicator of successful interventions, especially frequency/intensity of urban flooding events as well as ensuring that there is adequate protein in many households. Urban communities are both impacted by plastic litter, but are also a targeted stakeholder.
Tourism	Hawassa is a popular destination within Ethiopia, with close to 200000 visitors per annum. Visitors are attracted by the climate, lakeside locations, and reputation for being an attractive locale. Impacts from plastic litter can impact on its attractiveness as a tourist destination.	Primary	Basin	Land system	Urban	Moderate	Weak		Hawassa has a good reputation for being an attractive tourism destination. The tourism industry should provide support for efforts to reduce plastic litter, and should look at internal activities. It is noted that tourist operations may also be a key source of some types of plastic litter. Better awareness of the connection between their reliance on an attractive destination and being a source needs to be highlighted.
Lakeside Communities	Many lakeside communities are dependent on the Lake Hawassa fishery as a significant source of income, including through local fish markets.	Primary	Basin	Freshwater system	Urban / Riparian	Moderate	Weak		Provide social backing for changes. Relieving or reducing the impact of the flow on this stakeholder is a key indicator of successful interventions in terms of improved fishery ecosystems or local employment in the tourist industry.

Stakeholder Name	Description	Category	Level	S2S segment	S2S sub-segment	Interest	Influence	Activities	Additional Comments
Ecosystems	Plastic litter can have a widespread impact on ecosystems, especially freshwater and marine types. Various types and sizes of plastic can have impact throughout the ecosystems and associated food chains.	Primary	Basin	Freshwater system	Lake	Strong	Weak		Highlight practices that have a reduced impact on ecosystems, and ensure public awareness about the impacts on this stakeholder.
Waste Collectors and Transporters	A number of sanitation activities are subcontracted to local operators. Many use poor quality municipal solid waste transportation and disposal approaches, mainly donkey carts.	Target	Local	Land system	Urban	Moderate	Moderate		Upgrades services/equipment to ensure that leakage from this part of the process is limited. While this group would generally support improved solid waste management, due to direct connection with livelihoods there may be some concerns about upstream policy changes around plastic that result in reduced flows of high value plastic.
Business (Local Industrial)	This includes businesses engaged in the manufacture and sale of household and commercial (durable) plastic products.	Target	Municipal	Land system	Urban	Weak	Moderate		Ensure that any waste generated through the production phase is adequately managed, with a focus on re-use if possible. Evaluate opportunities for building local production chains using plastic materials sourced in the sub-basin for further use within the sub-basin. Investigate options for using higher quality plastics.
Business (Industrial) Sectors	This category of stakeholder is very broad and can be separated into several categories but includes businesses engaged in other industrial activities that generate plastic waste (e.g. polystyrene foam, polyethylene plastic films, plastic cones, etc.); these include textile and garment factories operating in the Hawassa Industrial Park and other factories.	Target	Municipal	Land system	Urban	Moderate	Strong		Create opportunities to reduce plastic leakage through product re-design, preferences for alternative techniques, shift to higher quality and multiple use plastics, and ensure adequate waste disposal within industrial stakeholders.
Business (Commercial) Sectors	This category of stakeholder is very broad and can be separated into several categories. This group includes businesses engaged in the production, distribution and sale of bottled water, bottled beverages, and other plastic products or use plastic bags (factories, hotels, restaurants, supermarkets, shops, & kiosks).	Target	State	Land system	Urban	Weak	Moderate		Create opportunities to reduce plastic leakage through product re-design, shift to higher quality and multiple use plastics, and alternative materials/water distribution options. This stakeholder group may be very resistant to change due to the direct connections with livelihoods.
Health Sectors	The health sector can be a considerable source of plastic litter through the inappropriate disposal of medical waste, which may contain large proportions of plastic material. A large regional hospital is situated close to Lake Hawassa, and may be a source of plastic litter into the lake.	Target	National	Land system	Urban	Weak	Moderate		Look at opportunities to reduce plastic waste inhouse and/or ensure that solid waste management meets national standards and obligations.
Industries	Industries can contribute to the plastic litter issue in several ways, including through the reliance on poor quality plastic that is unable to be recycled, the inadequate disposal of plastic packaging, leakage from industrial sites, and the lack of support for alternatives.	Target	Basin	Land system	Urban	Weak	Strong		Look at opportunities to reduce plastic waste inhouse and/or ensure that solid waste management meets national standards and obligations. Increase opportunities to use higher standards of plastic that is more recyclable.
Market	Local markets inadequately dispose of solid waste, or their solid waste is very high in organic matters, meaning that disposal is complex or difficult.	Target	Local	Land system	Urban / Rural	Weak	Weak		Look at opportunities to reduce plastic waste inhouse and/or ensure that solid waste management meets national standards and obligations. Of specific note are those markets whose food waste flows supply urban dairy operations in many families. Plastic may enter the food chain if not
Government Sectors (Bottles)	Local and regional governments ongoing reliance on plastic bottles within their administration was specifically raised by participants.	Target	State	Land system	Urban	Moderate	Moderate		Look at opportunities to shift water supply options within government offices, from bottled supplies to larger container based versions or glass versions. Plastic bottles (PET) form the basis of the local recycling industry, and a source of income for many households, and alternative sources of income need to be considered.

Stakeholder Name	Description	Category	Level	S2S segment	S2S sub-segment	Interest	Influence	Activities	Additional Comments
Business (Commercial) Sectors	Business sectors can exacerbate the use of plastic litter through distribution of products using plastic as packaging or packaging used to protect their products.	Target	Basin	Land system	Urban	Weak	Strong		Look at opportunities to reduce plastic waste sourced from inbound packaging and products that are outbound. Ensure that solid waste management meets national standards and obligations. Increase opportunities to use higher standards of plastic that is more recyclable or alternative forms of packaging. The HIP should continue to provide leadership on this issue.
Hotels	Hawassa is a popular destination with many hotels located in the urban area, and many close to Lake Hawassa itself. Inadequate disposal of plastic litter, including plastic bottles, is a concern raised on a regular basis.	Target	Municipal	Land system	Urban / Riparian	Moderate	Moderate		Plastic bottles (PET) form the basis of the local recycling industry, and a source of income for many households, and alternative sources of income need to be considered. Look at opportunities to reduce plastic waste sourced from inbound packaging, with particular reference to plastic bottles. Ensure that solid waste management processes meets national standards and obligations. Increase opportunities to use higher standards of plastic that is more recyclable or alternative forms of packaging.
Wedding Events / Event Organizers	Weddings and other celebrations, whether organised privately or through hotels, involve significant amounts of solid waste. Many of these events are carried out in particular seasons, and puts pressure onto limited solid water management infrastructure in Hawassa.	Target	Local	Land system	Urban / Riparian	Weak	Weak		Look at opportunities to reduce plastic waste during event catering, with particular reference to plastic bottles. Ensure that solid waste management processes following events meets national standards and obligations. Increase opportunities to use higher standards of plastic that is more recyclable or alternative forms of packaging or equipment during the event.
Hawassa City Administration	HCA is mandated to provide solid waste management services, but inadequate provision or a lack of control over leakage during collection can result in plastic litter being conveyed into Lake Hawassa or allowing plastic litter to collect in and clog urban drainage, leading to urban flooding.	Target	Municipal	Land system	Urban	Moderate	Moderate		Ensuring that the provision of sanitation services is an important role of this stakeholder. Increasing access and opportunities for communities to practice property disposal, increase internal awareness on the need to provide appropriate services and prioritise accordingly. This includes collection services.
Customers /Consumers	Consumers may not dispose of plastic litter appropriately, even when a service is available. Consumer habits, and the preference for packaged goods, continues to drive the use of plastic products.	Target	Global	Land system	All	Weak	Weak		Consumer preferences are a strong driver for the use of plastic materials, with cost and convenience being major factors. Overall, a change in behaviour and preference for alternatives must be fostered. Changes may be driven by public awareness, options for alternative packaging, and changes made by the producer.
Health Ministry and Centres	The Ministry of Health has some public health responsibilities in regard to solid waste management, as well as managing its own processes to both provide an example and ensure that it is not contributing to local health crisis.	Enabling	National	Land system	Urban	Moderate	Weak		Enable stronger involvement in public awareness campaigns and provide guidelines on waste disposal for medical and health centres.
Environmental Protection Authority	The EPA holds responsibilities in regard to environmental impact assessment, environmental protection, climate change, and monitoring the efforts of other agencies.	Enabling	State	Land system	Urban / Rural	Moderate	Strong		The EPA should work more with urban authorities to reduce the leakage of plastic litter into the environment. This could involve supporting the use of transfer stations, monitoring leakage in the collection process, and providing an enabling atmosphere for others to be involved in solid waste management.

Stakeholder Name	Description	Category	Level	S2S segment	S2S sub-segment	Interest	Influence	Activities	Additional Comments
Ministry of Environment, Forest and Climate Change Commission (ECCC)	This Ministry has been granted a strong mandate in formulating and overseeing environmental policies, regulations and guidelines. In terms of plastic litter, this includes the administration of national proclamations for environmental pollution, environmental impact assessment, solid waste management, and other activities that have an impact on the management of solid waste in <u>land and waters</u> .	Enabling	National	Multiple	Urban / Lake	Weak	Moderate		Provide support for plastic waste reduction activities at a national level, including through policies, resources and capacity building.
City Administration	The city administration is the main provider of solid waste management services and, through these activities, can enable the safe disposal of solid waste including plastic litter. Any changes to the national legislative framework will be administered through the <u>urban authority</u> . Solid waste management is often a significant cost for <u>urban authorities</u> .	Enabling	Municipal	Land system	Urban	Moderate	Moderate		The City Administration should take more steps to reduce the leakage of plastic litter, including the upgrade of collection services, development of waste transfer stations, and fostering opportunities for jobs and employment in the sector. It is also noted that some of the responsibilities between different departments are unclear and there may need to be more streamlining.
City Sub-administration: Urban Planning Sanitation and Beautification	This stakeholder administers multiple aspects relating to solid waste management, including solid waste management, collection, and clean-up activities; and disaster management (flooding during the heavy rains).	Enabling	Municipal	Land system	Urban	Strong	Moderate		Provide support for plastic waste reduction activities at a local level, including through resources and capacity building, with a focus on solid waste management activities and investment into services. Also has an important role in enhancing public awareness <u>on the issue</u> .
Agri-Sectors	Agriculture is a significant land use in Hawassa, and there is growing investment into higher land use intensity through increased irrigation, fertilisers, and other packaging. It is unclear how much involvement that the Agricultural Bureaus have in ensuring that plastic litter is disposed of appropriately, or <u>reduced in frequency of use</u> .	Enabling	Basin	Land system	Rural	Weak	Moderate		
RVLBO	As well as the Basin Development Authority hosted at the Federal level, there are local offices working in different basins across Ethiopia. The RVLBDO has an important role in coordinating different interventions on plastic litter flow that affects the Lake Hawassa, as well as a mandate to manage riparian locations.	Enabling	Basin	Freshwater system	Urban / rural	Moderate	Moderate		Provide support for local activities, either directly or through strategic planning undertaken as part of the present Basin Plan process. The RVLBDO may have a some impact on the management of plastic litter through its coordination and IWRM functions, as well as strategic planning through the Basin Plans, but it may be less influential than other local institutions in <u>regards to the solid waste sector</u> .
Environmental Officers (Regional Bureaus)	Administer plans, policies, and regulations of various tiers of governance.	Enabling	State	Land system	Urban / Rural	Moderate	Moderate		Ensure a higher priority for administering solid waste provisions. Whilst environmental officers are more accurately a sub-component of the Regional State or Urban Authority administrations, they may have a greater or lesser interest in a topic that their respective institutions. Similarly, there may be <u>peer groups for exchanging information</u> .
Ministry of Water Irrigation and Energy	This Ministry is responsible for water resource management, especially in terms of planning and strategy. It also hosts the Basin Development Authority that is enacted under the River Basin Councils Proclamation. The mandate within the BDA is related to coordination and strategic planning around IWRM, but it unclear how involved it is within solid waste management activities.	Enabling	National	Freshwater system	Urban / Lake	Weak	Moderate		Provide support for plastic waste reduction activities at a national level, including through policies, resources and capacity building, with a focus on implementing IWRM.

Stakeholder Name	Description	Category	Level	S2S segment	S2S sub-segment	Interest	Influence	Activities	Additional Comments
Ministry of Health	The Ministry of Health, and local counterparts, plays a role in governance of solid waste, predominantly from a health perspective. Health facilities were noted as key sources of plastic litter in the Basin, including inadequate management of medical waste and packaging. The presence of a regional hospital in Hawassa, close to Lake Hawassa, is seen as a concern by local institutions. The appropriate disposal of medical waste can be resource-intensive, and it is unclear how well this is <u>integrated into wider solid waste</u>	Enabling	National	Land system	Urban	Weak	Moderate		Provide support for plastic waste reduction activities at a national level, including through policies, resources and capacity building, with a focus on health impacts. Ensure that health centres undertake appropriate waste management, especially in terms of medical waste.
Ministry of Agriculture	This Ministry supports the preparation and administration of policies, proclamations and regulations relating to agriculture and rural development at a national level. It is unclear as to whether plastic litter in rural areas is given a high priority within its operations, but given that workshop participants identified plastic litter sources in the rural <u>environment, there may be a gap.</u>	Enabling	National	Land system	Rural	Weak	Moderate		Provide support for plastic waste reduction activities to be carried out in rural areas, including through policies, resources and capacity building.
Ministry of Industry	The Ministry of Trade and Industry is responsible for facilitating investment across Ethiopia. Amongst their duties they are promoting the expansion of domestic trade and take appropriate measures to maintain lawful trade practices. They also control the compliance of goods and services with the requirements of mandatory Ethiopia standards and take measure against those found to be below the standards <u>set for them: which may be important for</u>	Enabling	National	Land system	Urban	Moderate	Strong		Provide support for plastic waste reduction activities at a national level, including through policies, resources and capacity building, with a focus on industrial activities and investment.
Ministry of Urban Development and Construction	The responsibilities of this Ministry are to design, approve, and implement policies, strategies and programs relating to urban development. Through its influence over urban policy and planning, it has an impact on the way that solid waste is planned and managed and should provide support for ensuring that <u>services, such as solid waste</u>	Enabling	National	Land system	Urban	Moderate	Moderate		Provide support for plastic waste reduction activities at a national level, including through policies, resources and capacity building. However, this should also include stronger local activities due to the presence of Hawassa Industrial Park.
Ministry of Culture and Tourism	This Ministry is responsible for the promotion of tourism across Ethiopia and provisions around accommodation and services around tourism. Some types of plastic litter are mainly sourced from tourist related activities, and this Ministry should be coordinated within wider solid waste management activities <u>in the sub-basin.</u>	Enabling	National	Multiple	Urban/Lake	Moderate	Moderate		Provide support for plastic waste reduction activities at a national level, including through policies, resources and capacity building, with a health focus. Ensure that appropriate measures for medical waste disposal is undertaken correctly by local health centres.
Hawassa University	Provides knowledge and experience on addressing solid waste management, as well as the capacity to build public awareness amongst students. It is also a significant local employer that may have significant waste management needs.	Supporting	National	Land system	Urban / Rural	Moderate	Weak		Provide local leadership on solid waste management, including through reduced inhouse plastic bottle use, improved opportunities for students and staff to access water on campus through alternate means, and create further public awareness within staff and students.

Stakeholder Name	Description	Category	Level	S2S segment	S2S sub-segment	Interest	Influence	Activities	Additional Comments
CIFA (Community Initiatives Facilitation and Assistance)	CIFA is a specific international NGO that already operates in Hawassa, and has provided support for improved solid waste management. They have been supporting the Hawassa Wubet Waste Disposal and Recycling Association since January 2018. They supported this association through capital support from which the recycling association could build a shed and sorting/storage facility.	Supporting	Local	Land system	Urban	Moderate	Moderate		Continue to operate in the Hawassa sub-basin, and help catalyse further action through the partnerships that it has formed.
UN Agencies	Various UN agencies operate in Hawassa, especially UNDP. As global entities, a number of different agencies could be more strongly involved in addressing solid waste management issue, including UNIDO and UNDP.	Supporting	Global	Land system	Urban / Rural	Moderate	Moderate		Provide support for local activities, either directly or through blended programmes.
Recycling artists.	In recent years, there has been growing global interest in upcycling where materials are re-purposed into art works and other structures. Such activities could provide an opportunity to create value in some types of plastic products or, at the minimum, increase public	Supporting	Local	Land system	Urban	Strong	Weak		Provide support for local artist activities
CBO (Central Business Organizations)	Local association of businesses located in central Hawassa. Provides services and advocacy with government on behalf of members, as well as being a means to channel information to its members.	Supporting	Municipal	Land system	Urban	Moderate	Moderate		Advocates for improved solid waste management and create awareness amongst members.
Recyclers – Circular Economy (Internal)	Provides local recycling services, including conventional as well as activities through the informal sector	Supporting	Local	Land system	Urban	Strong	Weak		
GIZ IWaSP	This is an ongoing multi-stakeholder partnership. Among other activities, it organises partnership building and solid waste management workshops, as well as advocacy	Supporting	Basin	Freshwater system	Urban / Lake	Strong	Weak		Provide support and advocates for plastic waste reduction at a local level, including through resources, partnerships, and capacity building. It also has an important role in enhancing public awareness on the issue.
The World Bank	The World Bank has made several investments into sanitation activities in Hawassa in recent years. Ongoing programmes are the Urban Productive Safety Net Project (UPSNP) and the Urban Institution and Infrastructure Development Project (UIIDP). Through UPSNP, up to 60,000 people are regularly mobilised in Hawassa for urban improvement and clean-up campaigns. The UIIDP supports financing of various infrastructures such as skip loaders, a sanitary landfill site, compactors, public toilets, storm water drains and artificial wetland systems.	Supporting	Global	Land system	Urban	Strong	Moderate		Continue to provide support, resources and capacity for sanitation activities in Hawassa, including the ongoing administration and use of UPSNP and UIIDP. Through these programmes, it also has an important role in enhancing public awareness on the issue.
USAID	This international institution supports a range of development activities, including within the Hawassa sub-basin.	Supporting	Global	Land system	Urban / Rural	Moderate	Moderate		Provide support for solid waste management activities in Hawassa, including resources and capacity building.
UN Habitat	Various UN agencies operate in Hawassa, especially UNDP. As global entities, a number of different agencies could be more strongly involved in addressing solid waste management issue, including UNIDO and UNDP. This stakeholder supports a range of development activities, including within the Hawassa sub-basin.	Supporting	Global	Land system	Urban / Rural	Strong	Moderate		Provide support for local activities, either directly or through blended programme, with a particular focus on urban planning and transitions to sustainable waste services.
SOS-Sahel	This international institution supports a range of development activities, including within the Hawassa sub-basin and is a member of IWaSP.	Supporting	Global	Land system	Urban / Rural	Moderate	Moderate		Provide support for solid waste management activities in Hawassa, including resources and capacity building.

Stakeholder Name	Description	Category	Level	S2S segment	S2S sub-segment	Interest	Influence	Activities	Additional Comments
GIZ	This international institution supports a range of development activities, including within the Hawassa sub-basin and is a member of IWaSP	Supporting	Global	Land system	Urban	Strong	Moderate		Provide support for solid waste management activities in Hawassa, including resources and capacity building.
Irish Aid	This international institution supports a range of development activities, including within the Hawassa sub-basin and is a member of IWaSP.	Supporting	Global	Land system	Urban / Rural	Moderate	Moderate		Provide support for solid waste management activities in Hawassa, including resources and capacity building.
DFID	This international institution supports a range of development activities and investments, including within the Hawassa sub-basin.	Supporting	Global	Land system	Urban / Rural	Moderate	Moderate		Provide support for solid waste management activities in Hawassa, including resources and capacity building.
Ethiopian Tourism Organization	This national organisation supports the expansion and improvement of tourism opportunities across Ethiopia. Tourism as a product is dependent on locations that are attractive, and solid waste may impair the quality of the product.	External	National	Multiple	Urban / Rural / Lake	Weak	Moderate		Build awareness amongst members of the plastic litter issue and the risks that it poses to their industry, and take steps to build sector-wide positions on addressing solid waste.
Ethiopian Tour Operators Association	This national organisation supports the expansion and improvement of tourism opportunities across Ethiopia, with a focus on supporting tour operators. Whilst Hawassa is a destination itself, it also is an important launching pad for tours that explore southern parts of Ethiopia. Such tours may put pressure on local solid waste operations, whether in Hawassa or within sites located as part of tour itineraries.	External	National	Multiple	Urban / Rural / Lake	Weak	Moderate		Build awareness amongst members of the plastic litter issue and the risks that it poses to their industry, and take steps to build sector-wide positions on addressing solid waste, with a particular interest in reducing impacts from their tours in Hawassa and southern Ethiopia.