Annexures

Annexure 1) Interview guide for different stakeholders and actors

Interviews

General

Name, Position, Role, Context

Where are you living, how is waste handled there?

Waste Generation and disposal, collection (PRIVATE PERSONS)

How much waste is generated in your household ?

Which kind of waste?

Do you sort waste?

Do you recycle waste?

Where do you carry your waste?

What are you doing with your waste?

How often the waste is collected?

What are your main issues with the waste?

How would you describe the waste situation and why is it like it is?

Collection and transport (OFFICAL COMPANIES)

Do you have general data about the amount of waste? Which type of waste ?

In which areas/districts is your company working? How many districts exist?

How many people are working in your company? How is your equipment? How many trucks?

How do you collect waste? Kerbside House-to-House General Container?

How many containers do you place in each district? Where? Why did you place them there? How big are the containers?

How often do you collect waste? On which days?

How much waste do you collect? Per District?

What are you doing with the waste? How much will be recycled? How much Landfill?

Which kind of waste? (MultiplayerPlastic how much?)

How much costs your services? Waste fees

How much do you pay for the licence?

How do the licence process work?

How long is your contract? What was the tender award budget?

Do you have any storage rooms for the collected waste? Where? How long is the waste stored there?

How much is the maximum transport distance from generators to landfills?

What are the main issues regarding the Waste Collection? (e.g. Streets, time, etc.)

How much money do you pay for petrol? How much money for repair? How much money for cleaning?

How much money for your employee?

Do you also work with informal waste pickers?

Storage (OFFICAL COMPANIES)

How many storage places for collection of waste exist?

Where are these places? How high is the rent? Is security required? How long? How high are personal costs?

How much other costs, e.g. electricity?

How much waste can be stored?

Does any treatment or sorting takes place there? Or at any other place?

Treatment (OFFICAL COMPANIES)

Treatment in sense of sorting? Who is doing what where?

How much are the personal costs?

How much time for which amount of waste?

Sell / Incineration (OFFICAL COMPANIES)

How much waste is sold for recycling? To whom?

Which is waste is recycled?

How often the MLP can be delivered?

Where are the cement plans?

Self disposal (OFFICAL COMPANIES)

How much waste is self-disposed via burning? How much waste is self-disposed via buried? How much waste is self-disposed via dropping wild?

Education (OFFICAL COMPANIES)

How much money required for education for inhabitiants?

Disposal (OFFICAL COMPANIES)

How much is the maximum transport distance from generators to landfills?

Gate fee? If any fee for waste disposal at landfills per ton?

How much waste on the landfill? Which kind of waste? How much regarding the collected waste?

What happens with the waste?

How many Waste Pickers? What do they need?

Fig. 21: Interview guideline (own illustration)

Annexure 2) Aggregator / Interview transcript

- 16.10.2022 / Informal waste collector / aggregator
- Aggregator in Missis (illegal landfill)
- The waste is weighed because it is paid by kg.
- The waste that comes also comes from "richer areas".
- Approx. 2–3 trucks are filled per day.
- These belong to different waste companies.
- They are the main supplier of recyclable material.
- All 7 days a week.
- They collect and sell different types of plastic at different prices.
- Working day: 8–17h.

Sum / day	**Selling**	**Buying**
LDPE: 500 kg–1t	LDPE: 3 ZMW/ kg	LDPE: 5 ZMW/ kg
HD: 300–500 kg	HD: 7 ZMW/ kg	HD: 5 ZMW/ kg
PP: 200–300 kg	PET: 1,5 ZMW/ kg	PET: 1 ZMW/ kg
PET: 300–500 kg	PP: 6 ZMW/ kg	PP: 8 ZMW/ kg

Annexure 3) Waste collector 1 / Interview transcript

- 17.10.2022 / Waste Collector (only collection)
- 2 districts (Low income)
- Collection once a week
- N: Chilenje, Chilenje South, Burma road area: Fee 120 ZMW/month
- T: Part of woodland, Nyumba yanga, Leopards hill area: Fee 150 ZMW/month
- House-to-House; and specific contracts for houses, companies
- Chunga Landfill / Landfill fee: 50 ZMW/t
- LICENCE 15.000 per district/year
- Licence 4 years valid
- 13 Employees; loan between 1.500–4.500 ZMW/month
- 5 Trucks (2 more to come); 2* 15 t; 2*5 t; 1*10 t
- Trucks are doing 2 trips in a day
- 200 to 250 t of waste per month (both districts together)
    - 2/4 plastic, 1/4 food and 1/4 boxes+sacks

Annexure 4) Waste collector 2 / interview transcript

- 21.10.22 / Waste collector (only collection).
- 2 districts (upper income).
- Collection once a week.
- C: Chudleigh, Kalundu, Olympia, Roma : Fee 160 ZMW/month.
- H: Handsworth, Kabulonga, Sunningdale: Fee 160 ZMW/month.
- House-to-House and specific contracts for houses, companies.
- Chunga Landfill / Landfill fee: 50 ZMW/t.
- LICENCE 15.000 per district/year.
- Licence 4 years valid.
- 50 Employees / 30 collectors; loan between 3.000–8.000 ZMW/month.
- 5 Trucks: 2* Skiptruck; 3*25 t.
- Trucks are doing 1–2 trips in a day.
- Skiptrucks once a day.

Top 3 aspects to be changed in Lusaka waste management:

- Payment for waste.
- Education/Awareness.
- Illegals stopping.

Annexure 5) Recycler 1 / Interview transcript

- 22.10.22 / A company that produces, among other things, plastic sidewalk stones. As a basis can be used different types of plastic.
- Uses 300 kg/day minimum up to 1 t per day (LDPE, PP, HDPE).
- Goal: 30–50 t/month.
- Buy it for the average of 2,6 ZMW/Kg.
- Colored plastics costs (LDPE): 1,5 ZMW/ kg.
- White plastics: 5 ZMW/ kg.
- 2 employees.
- Possible to sell i. e., fence poles for 75 ZMW instead of 200 ZMW for steal ones.
- However, there is still a lot of convincing to be done in both sales and waste handling.

Annexure 6) Recycler 2 / Interview transcript

- 22.10.22 / Recycler produces pellets and products (chairs (35 ZMW) and tables (48 ZMW).
- Delivery: between 7a.m.–5 p.m. Every ten minutes a truck with 500 kg – 1 t per different material (e. g., HD, PP, LDPE) arrives.
- Truck arrives, material will be sorted and only the requested material will be paid / takes ten minutes.
- Colored plastic required: 800 t–1 metric ton/month.
- Use plastic waste from smaller, illegal landfills due to a better quality.

Prices:

- LDPE: 3–5 ZMW/kg
- HD: 5–7 ZMW/kg
- PET: 1–1,5 ZMW/kg
- PP: 6–9 ZMW/kg
- LD: 5 ZMW/kg
- Mixed plastic: 1–1,5 ZMW/kg
- White plastic: 5–6 ZMW/kg

Selling pellets:

- LDPE: 15.000 ZMW/t
- HD: 19.500 ZMW/t
- PP: 27.000 ZMW/t
- LD: 15.000 ZMW/t
- Colored plastic: 3.000 ZMW/t

Annexure 7) LCC / Interview transcript / visit at Chunga Landfill

- 17.10.22
- There are Franchise Contractor and CBE Services (approx. 182 registered companies).
- Usually 2 ZMW/day for waste pickers but at the moment no one is controlling due to broken fence.
- Tried to register waste pickers, approx. 2.000 waste pickers. 70 % waste pickers, 30 % aggregators.
- 2.000 waste pickers; 1.500 of them woman; 70 % Pickers, 30 % Aggregators. There is a handwritten list of some of them (183) but no one really cares. In the list before also the type of waste is displayed.
- 2 ZMW a day, but at the moment due to missing fence, no one is taking the money. Usually, the money should be used for the waste pickers and their conditions.
- Top 3 to change: A news fence; road Inside the landfill; closing an old cell.

- Only 50 % collected. Inhabitants Lusaka: 3,5 m.
- 20 % of the collected is Recyclable (plastic, paper, etc.).
- 650.000–1.200.000 kg/d; 550.000–650.000 kg/d.
- Only 50 % of the complete waste arrives at Chunga; 0,5 kg/day/person.
- 15 registered recyclers, but more informal.
- Fee: Franchise: 50 ZMW/t; CBE: 1–5 t = 50 ZMW; 6–10 t = 100 ZMW; 11–15 t = 150 ZMW; 16–20 t = 200 ZMW.
- Recycle Dealer: 4 Companies arriving daily; 2–3 trips every day.
- ZEMA is now responsible for hazardous waste.

Daily

- PET: 32 bags
- LDPE: 5–10 bags
- PP: 5–10 bags
- HD 5–10 bags

Sell

- HD: 7 ZMW/kg
- PP: 9 ZMW/kg
- LDPE: 5 ZMW/kg
- PET: 5–6 ZMW/kg

Annexure 8) Waste picker / Interview transcript

- 17.10.22
- Collecting in the streets, mainly HD.
- Between 15 kg/day up to 75 kg/day.
- Receiving different prices between 4–5 ZMW depending on material and dealers.
- Works 8–16 h.

Annexure 9) Contribution SWIMP to SDG

Tab. 24: Contribution SWIMP to SDG (LCC 2022: 31)

SDG	SWIMP Contribution
SDG 1 End poverty in all its forms everywhere	• Increase economic opportunities in the waste value chains; contribute to jobs, livelihood improvement, and business development. • Contribute to a cleaner, greener, and healthy environment. • Reduce vulnerability and exposure of marginalised groups to floods due to drainages blocked by waste. • Contribute to the maintenance of ecosystems, protection of soil quality and strengthened capacity for climate change adaptation.
SDG 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture	
SDG 3 Ensure healthy lives and promote well-being for all at all ages	• Contribute to the reduction of illnesses from contamination and pollution due to the safe disposal of waste. • Contribute to a clean, green, and healthy living environment.
SDG 4 Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	• Contribute to a safe, clean, green, and healthy environment for conducive learning in schools and communities. • Support improved access to education through increased economic opportunities for households and income derived from participation in waste value chains to support access to education. • Increased community empowerment and ability to lever education and awareness for advocacy.
SDG 5 Achieve gender equality and empower all women and girls	• Increased economic opportunities for women in waste value chains. • Increased awareness among community members on the Human Rights Based Approach and the importance of inclusiveness, accountability, and empowerment. • Increased opportunities for women to effectively participate in leadership & decision-making positions in community structures.

SDG 6 Ensure availability and sustainable management of water and sanitation for all	• Improve water quality by reducing pollution, eliminating dumping, and minimizing release of hazardous chemicals and materials. • Promote principles of a circular economy and reduce solid waste threats to sanitation systems. • Contribute to the protection of water related ecosystems. • Support and strengthen the participation of local communities in improving sanitation management through the waste value chains and working with WDC's.
SDG 7 Ensure access to affordable, reliable, sustainable, and modern energy for all	• Promote waste to energy technologies, especially for industry, as part of circular economy principles creating economic opportunities in the waste value chain.
SDG 8	• Create business opportunities in waste value chains, including Creating Shared Value (CSV) models with big businesses and communities. • Promote entrepreneurship, job creation and livelihoods, creativity and innovation in management of waste, especially amongst youth and women Facilitate formalization and growth of micro-, small- and medium-sized enterprises in waste value chains.
SDG 9 Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	• Develop climate proof solid waste management infrastructure. • Increase access to financial services targeted to small-scale industries, community based enterprises (CBEs) and other small businesses working in waste value chains and related markets.
SDG 10 Reduce inequality within and among countries	• Effectively implement LCC resolution adopting the Human Rights Based Approach deepening empowerment, non-discrimination, and accountability. • Effectively implement LCC's Social Inclusion and Gender Policy. • Strengthen local governance through empowering WDCs and improving Local Area Planning to increase the control and prevention of unconducive waste generation and disposal practices.

SDG 11 Make cities and human settlements inclusive, safe, resilient, and sustainable	Reduce environmental impact of waste on the living conditions of people, especially the most vulnerable (women, children, persons with disabilities and the poor). Contribute to a cleaner, greener, and healthy environment for enhanced human development. Promote principles of circular economy for resource efficiency and city resilience. Increase awareness on the link between waste management and local governance in achieving a sustainable healthy city.
SDG 12 Ensure sustainable consumption and production patterns	Promote principles of circular economy and reduce waste generation through prevention, reduction, recycling, and reuse. Increased awareness on economic potential in waste value chains amongst communities and policy makers.
SDG 13 Take urgent action to combat climate change and its impacts	Strengthen adaptive capacity at local level through contribution to improved local governance. Reduce emission of greenhouse gases (GHG) from waste through effective waste management practices. Disaster risk reduction (floods and epidemics) through inclusive, effective, and efficient management of waste. Increase awareness on role of waste in climate change mitigation and adaptation.
SDG 14 Conserve and sustainably use the oceans, seas, and marine resources for sustainable development	Reduce pollution of water bodies by waste to prevent it from ending up in and polluting oceans and seas. Increase awareness on the link between land-based waste management and the health of oceans and seas.

SDG 15 Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Contribute to the protection of ecosystems through reduced levels of waste polluting the environment. Contribute to restoration of degraded land and soil through the removal of waste pollutants from the environment. Increase awareness on the link between integrated planning, improved local governance, and waste management in maintaining healthy terrestrial ecosystems.
SDG 16 Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels	Contribute to implementation of the Human Rights Based Approach deepening empowerment, non-discrimination, and accountability. Promotes inclusive, participatory and representative decision making through the use of different governance structures i. e. WDC's. Contribute to effective development and implementation of Local Area Plans to underpin community and political support for waste management.
SDG 17 Strengthen the means of implementation and revitalize the global partnership for sustainable development	Promote multi-stakeholder partnerships and collaboration among private sector, public sector, civil society organisations and community structures. Build collective leadership and mutual accountability, e. g. LCC leadership under Lusaka Water Security Initiative (LuWSI). Promote environmentally sound technologies and sustainable financing mechanisms for waste management. Advocate for policy and institutional coherence and coordination for effective waste management.

Annexure 10) Examples of calculation under EPR

Products	Fill size	Price in €	Packaging material	g per pack	License price (ct. per kg)	License costs (ct. per pack)	License price in % of product price
Toothpaste	125 ml	1.39	Plastic tube with screw cap	21.8	54	1.18	0.85
Toilet paper	8 roles	2.15	Plastic bags	14.6	54	0.79	0.37
			Cardboard core	4.3	7	0.03	0.01
			Total	18.9		0.82	0.38
Handkerchiefs	30 Packets	2.75	Plastic bags	8.4	54	0.45	0.16
			Plastic bags	0.6	54	0.03	0.01
			Total	9		0.48	0.17
Grated cheese	200 g	1.89	Plastic bags	5.9	54	0.32	0.17
Flour	1,000	0.39	Paper bags	8.4	7	0.06	0.15
Sugar	1,000	0.75	Paper bags	7.5	7	0.05	0.07
Salt	500 g	0.19	Cardboard folding box	16.8	7	0.12	0.62
Cream, fresh	200 g	0.39	Plastic cups	6.1	54	0.33	0.84
			Aluminum lid	0.4	52.50	0.02	0.06
			Total	6.5		0.35	0.90
Fresh milk	1,000	0.71	Liquid carton	29.3	52	1.53	2.15
			Plastic closure	1.0	54	0.05	0.08
			Total	30.3		1.58	2.23
Canned cucumber	530 ml	0.79	Preserving jar	239.9	3.5	0.84	1.06
			Tinplate lid	13.7	49	0.67	0.85
			Total	253.6		1.51	1.91
Instant coffee	200 g	3.49	Preserving jar	408.9	3.50	1.43	0.41
			Screw cap	16.3	54	0.88	0.25
			Total	425.2		2.31	0.66

Fig. 22: Examples of calculation under EPR based on Umweltbundesamt (UBA 2019) (Giz 2021: 28)

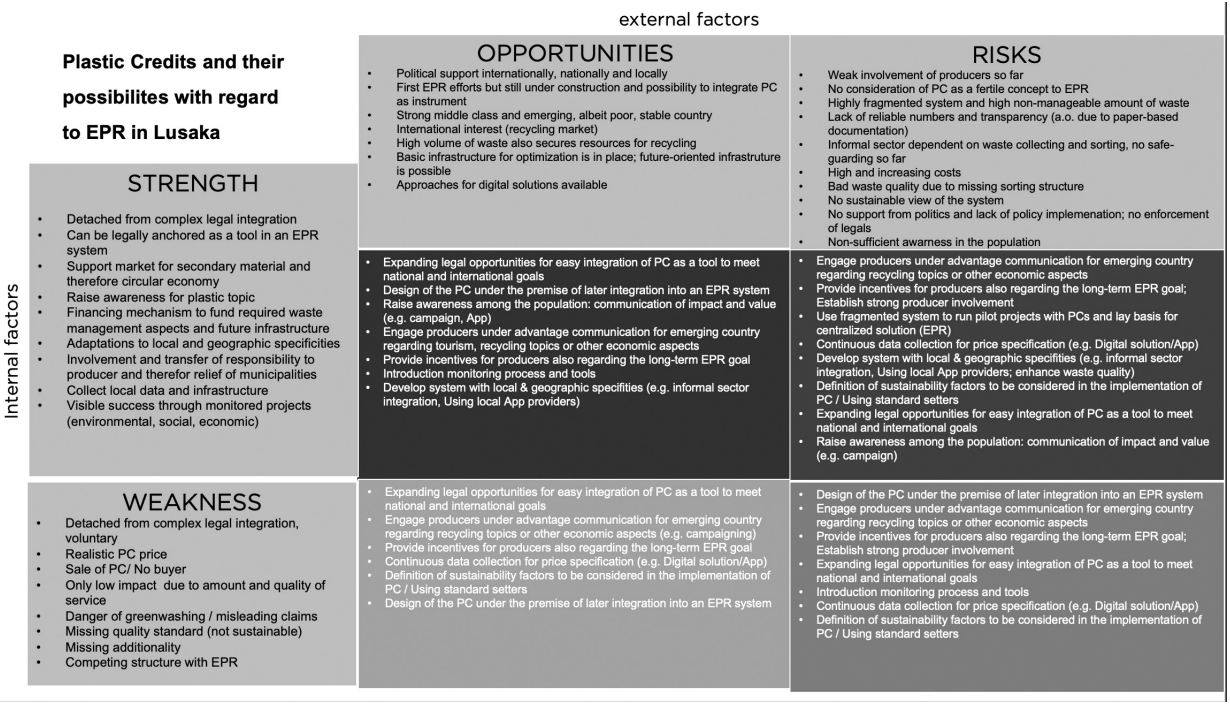

Fig. 23: SWOT Analysis (own illustration)