Annexure 1)	Interview guide for different stakeholders	
	and actors	123
Annexure 2)	Aggregator / Interview transcript	127
Annexure 3)	Waste collector 1 / Interview transcript	128
Annexure 4)	Waste collector 2 / interview transcript	128
Annexure 5)	Recycler 1 / Interview transcript	129
Annexure 6)	Recycler 2 / Interview transcript	129
Annexure 7)	LCC / Interview transcript / visit	
	at Chunga Landfill	130
Annexure 8)	Waste picker / Interview transcript	131
Annexure 9)	Contribution SWIMP to SDG	132
Annexure 10)	Examples of calculation under EPR	136
Annexure 11)	SWOT Analysis	137



# 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?
Llaw office do you calle thought 2
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?

Fig. 21: Interview guideline (own illustration)

What do they need?

# 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: 7ZMW/kg	HD: 5 ZMW/kg
PP: 200-300 kg	PET: 1,5 ZMW/kg	PET: 1ZMW/kg
PET: 300-500 kg	PP: 6ZMW/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 1t 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 –1t 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: 7ZMW/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	<ul> <li>Increase economic opportunities in the waste value chains; contribute to jobs, livelihood improvement, and business development.</li> </ul>		
SDG 2	Contribute to a cleaner, greener, and healthy environment.		
End hunger, achieve food security and	Reduce vulnerability and exposure of marginalised groups to floods due to drainages blocked by waste.		
improved nutrition and promote sustain- able agriculture	<ul> <li>Contribute to the maintenance of ecosystems, pro- tection of soil quality and strengthened capacity for climate change adaptation.</li> </ul>		
SDG 3	Contribute to the reduction of illnesses from con-		
Ensure healthy lives	tamination and pollution due to the safe disposal of waste.		
and promote well- being for all at all ages	Contribute to a clean, green, and healthy living environment.		
SDG 4  Ensure inclusive and equitable quality	<ul> <li>Contribute to a safe, clean, green, and healthy envi- ronment for conducive learning in schools and com- munities.</li> </ul>		
education and promote life-long learning opportuni- ties for all	<ul> <li>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.</li> </ul>		
	Increased community empowerment and ability to lever education and awareness for advocacy.		
SDG 5 Achieve gender	<ul> <li>Increased economic opportunities for women in waste value chains.</li> </ul>		
equality and empow- er all women and girls	<ul> <li>Increased awareness among community members on the Human Rights Based Approach and the impor- tance of inclusiveness, accountability, and empower- ment.</li> </ul>		
	<ul> <li>Increased opportunities for women to effectively participate in leadership &amp; decision-making positions in community structures.</li> </ul>		

SDG 6 Ensure availability and sustainable man-	<ul> <li>Improve water quality by reducing pollution, eliminating dumping, and minimizing release of hazardous chemicals and materials.</li> </ul>
agement of water and sanitation for all	Promote principles of a circular economy and reduce solid waste threats to sanitation systems.
	Contribute to the protection of water related ecosystems.
	<ul> <li>Support and strengthen the participation of local communities in improving sanitation management through the waste value chains and working with WDC's.</li> </ul>
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 creat- ing economic opportunities in the waste value chain.
SDG 8	<ul> <li>Create business opportunities in waste value chains, including Creating Shared Value (CSV) models with big businesses and communities.</li> </ul>
	<ul> <li>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.</li> </ul>
SDG 9 Build resilient infra-	Develop climate proof solid waste management infrastructure.
structure, promote inclusive and sustain- able industrialization and foster innovation	<ul> <li>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.</li> </ul>
SDG 10 Reduce inequali-	Effectively implement LCC resolution adopting the Human Rights Based Approach deepening empower-
ty within and among	ment, non-discrimination, and accountability.  • Effectively implement LCC's Social Inclusion and Gen-
countries	der Policy.
	<ul> <li>Strengthen local governance through empowering WDCs and improving Local Area Planning to increase the control and prevention of unconducive waste generation and disposal practices.</li> </ul>

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SDG 11  Make cities and human settlements inclusive, safe, resil-	Reduce environmental impact of waste on the living conditions of people, especially the most vulnerable (women, children, persons with disabilities and the poor).
ient, and sustainable	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	Strengthen adaptive capacity at local level through contribution to improved local governance.
to combat climate change and its	Reduce emission of greenhouse gases (GHG) from waste through effective waste management practices.
impacts	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 sustain-	Reduce pollution of water bodies by waste to prevent it from ending up in and polluting oceans and seas.
ably use the oceans, seas, and marine resources for sustain- able development	Increase awareness on the link between land-based waste management and the health of oceans and seas.

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SDG 15 Protect, restore, and	Contribute to the protection of ecosystems through reduced levels of waste polluting the environment.
promote sustainable use of terrestrial eco- systems, sustainably manage forests, com- bat desertification, and halt and reverse	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 man-
land degradation and halt biodiversity loss	agement in maintaining healthy terrestrial ecosystems.
SDG 16  Promote peaceful and inclusive socie-	Contribute to implementation of the Human Rights Based Approach deepening empowerment, non-discrimination, and accountability.
ties for sustainable development, pro- vide access to justice	Promotes inclusive, participatory and representative decision making through the use of different governance structures i. e. WDC's.
for all and build effec- tive, accountable, and inclusive institutions at all levels	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	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 (LuW-SI).
development	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 fold- ing 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)  $\,$ 

# Annexure 11) SWOT Analysis

Annexure 11) SWOT Analysis				
	PISKS  Weak involvement of producers so far.  No consideration of Post as fertile concept to EPR  No consideration of Post as fertile concept to EPR  Lask of reliable numbers and transparency (a.o. due to paper-based documentation)  Informal sector dependent on waste collecting and sorting, no safe-quarding so far.	High and increasing costs     Bad waste quality due insing sorting structure     No sustainable view of the system     No susport from politics and lack of policy implemenation; no enforcement of legals     Non-sufficient awarness in the population	Ergage produces under advantage communication for emerging country regarding produces under advantage communication for emerging country regarding pro-position to other exconence september of the produces also regarding the long-term EPR goal; Establish strong producer introvenent in Throwenent in September 10 and training producer in Throwenent in Confinuous data collection for price specification (e.g. Digital solution/Apr). Confinuous data collection for price specification (e.g. Digital solution/Apr). Develop system with book a geographic seportities (e.g. Infranta sector impegation, Using local App providers, enhance waste quality). Develop system with book a geographic specifies (e.g. or stassinability factors to be considered in the implementation of PC U Lising standard setters.  Expanding legal opportunities for easy integration of PC as a tool to meet national and an international goals. Raises everences among the population; communication of impact and value (e.g. campalign).	Design of the PC under the premise of later integration into an EPR system     Eigage produces under externance controllication for energing country     Registering recycling topics or other according system.     Erdening properties of the coordinal system EPR goal:     Establish strong produces involvement expects     Expanding legal opportunities for easy integration of PC as a bod to meet national and international goals     Introduction monitoring proses and toos     Continuous data collection for price specification (e.g. Digital solution/App)     Definition of sustainability factors to be considered in the implementation of PC Using standard setters.
external factors	OPPORTUNITIES  Political support internationally, nationally and locally First First fettins but use under construction and possibility to integrate PC strong modified easts and emerging, after poor, stable country international interest (recycling market) High volume of waste also secures recovering to recycling assist printestucture for optimization is in place; future-oriented infrastructure	is possible Aproaches for digital solutions available	Expanding legal opportunities for easy integration of PC as a tool to meet national and interactional goals.  Design of the PC under the premise of later integration into an EPR system Raises aventees among the probulation communication of impact and value (e.g. campaign, App.)  Engage productors under advantage communication for emerging country regarding fuulsin, recycling topics or other economic sapects.  Provide incentives for producers also regarding the forg-term EPR goal introduction monitoring process and tools.  Develop system with local & geographic specifities (e.g. informal sector integration, Using local App providers).	Expanding legal opportunities for easy integration of PC as a tool to meet inflored and fermathorists of communication for emerging country. Engage produces under advantage communication for emerging country regarding producing such country of the country of th
	Plastic Credits and their possibilites with regard to EPR in Lusaka	STRENGTH Detached from complex legal integration Can be legally anchored as a tool in an EPR	System that the secondary material and therefore circular economy therefore circular economy. Raise awareness for plastic topic. Financing mechanism to fund required waste management assocks and future infrastructure Adaptations to local and geographic specificities producer and therefor relief of municipalities. Collect local data and infrastructure. Visible success through monitored projects (environmental, social, economic).	WEAKNESS Detached from complex legal integration, voluntary Realistic PC price Sale of PC/No buyer Only low impact due to amount and quality of service Darger of greenwashing / misleading claims Missing quality standard (not sustainable) Missing additionality Competing structure with EPR

Fig. 23: SWOT Analysis (own illustration)

Internal factors

