

Data collection workshop

Master Thesis Julia Weißert

IVY Hotel, Bishoftu Town

16.01.2023, 09:00 am – 01:00 pm



SDG colour wheel: <https://www.un.org/sustainabledevelopment/news/communications-material/>

Workshop goals

Workshop Goals

Sustainability Assessment of a waste management system in sub-Saharan Africa
– case study of the corridor from Addis Ababa to Adama, Ethiopia

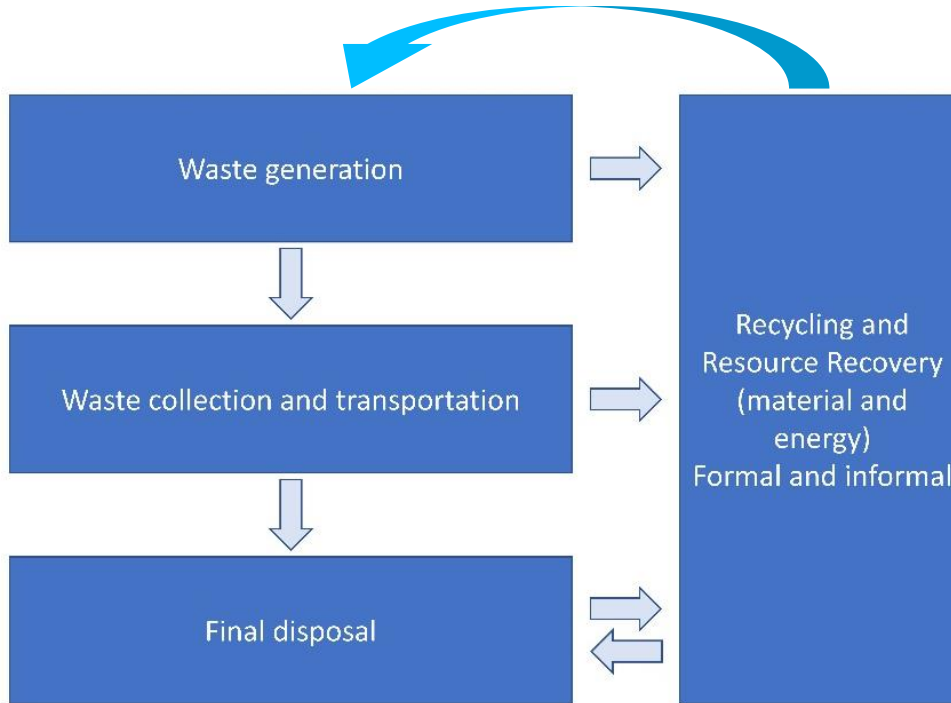
- What is a Sustainability Assessment?
- How is the Master thesis structured?
- Why is it important to you and what are the benefits?
- What do we need to know from you?
- How will we proceed?

→ **Data collection for a sustainability assessment of the waste management system in Bishoftu**

What is a Sustainability Assessment?

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Life Cycle Sustainability Assessment (LCSA) Framework *Life Cycle:*



What is a Sustainability Assessment?

Life Cycle Sustainability Assessment (LCSA) Framework

Sustainability:



What is a Sustainability Assessment?

Life Cycle Sustainability Assessment (LCSA) Framework

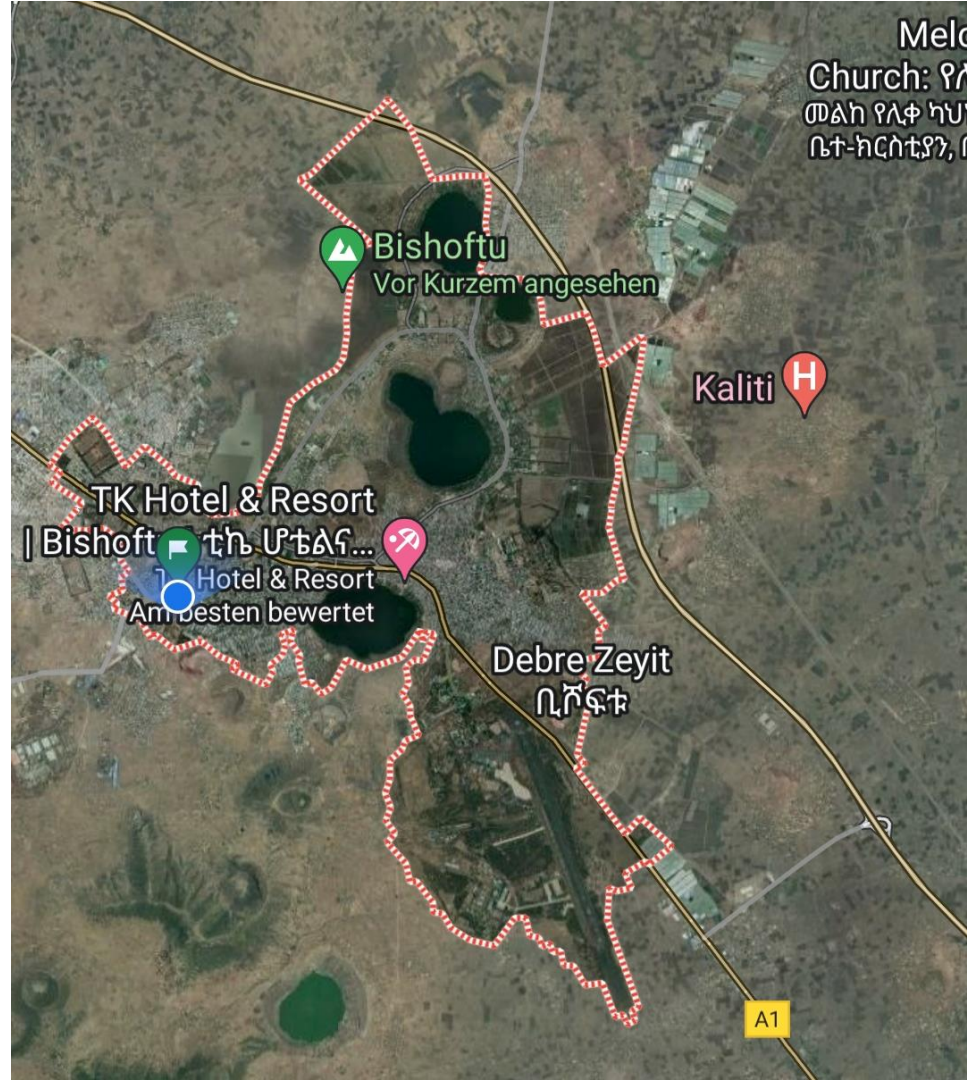
Assessment: making impacts measurable → SDG-based indicators

The Life Cycle Sustainability Assessment Framework is:

The analysis of social, economic and environmental impact of resource and waste management structure

→ Decision making support

**How is the master
thesis structured?**



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Bishoftu
Vor Kurzem angesehen

Kaliti H

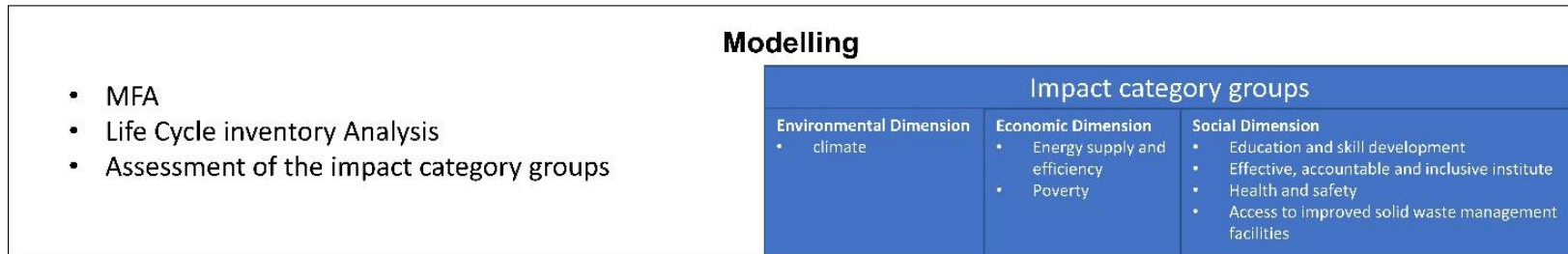
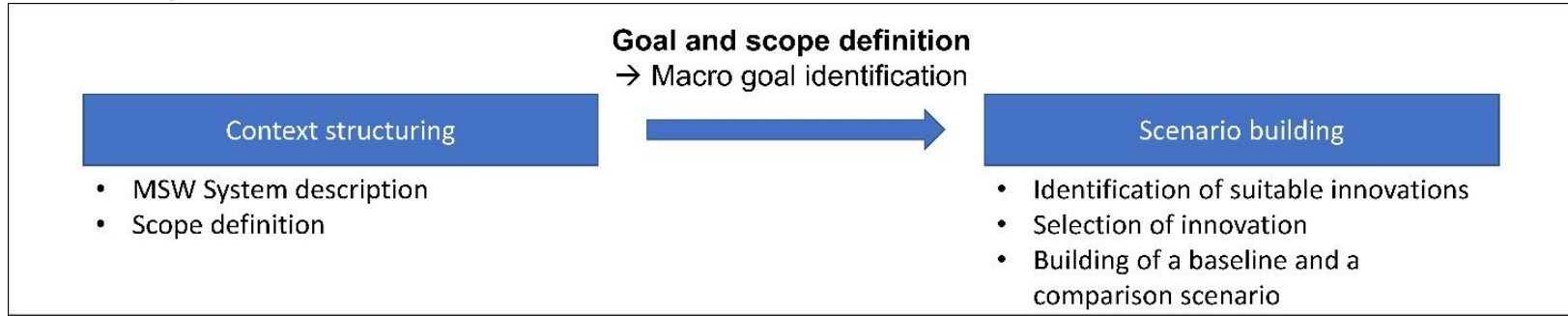
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Am besten bewertet

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A1

Sustainability Assessment of a waste management system in sub-Saharan Africa – case study of the corridor from Addis Ababa to Adama, Ethiopia

Methodology: LCSA Framework



Sustainability Assessment of a waste management system in sub-Saharan Africa – case study of the corridor from Addis Ababa to Adama, Ethiopia

LCSA Framework



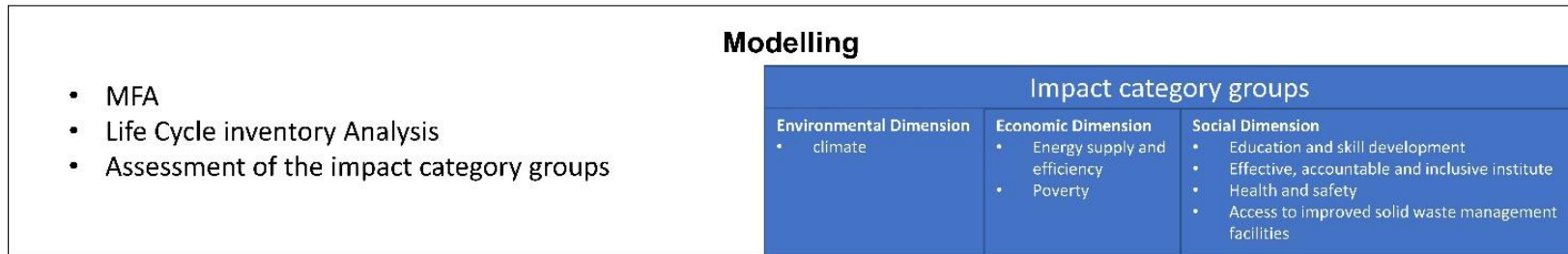
Comparing available **innovations** to find **the optimal solution**

Identifying the **hot spots** and taking measures to **combat the negative impacts and to enhance positive impacts**

Providing the **basis for monitoring the implementation** process and the ex-post performance assessment

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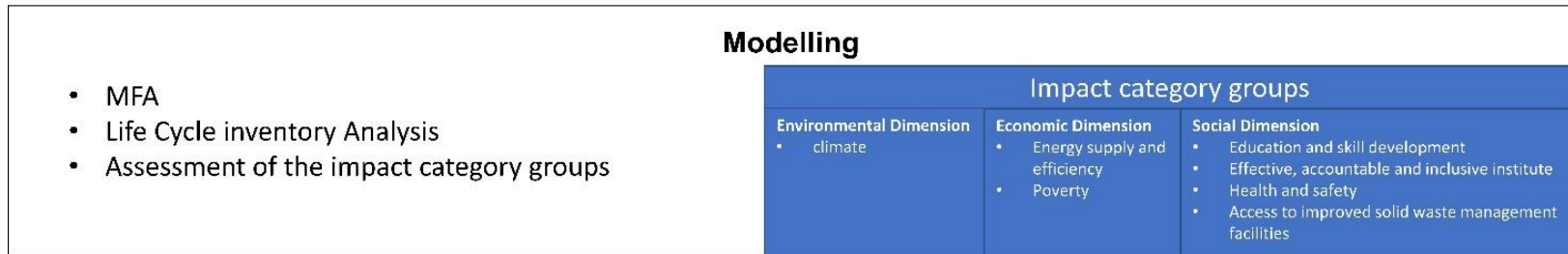
Macro Goal

Composting should be promoted, as the **large share of organic waste** in the waste composition offers great potential for recycling of this waste category. Waste recycling has generally **positive effects** on the **environment** and **human health**.

Bishoftu Town is a **pioneer in** this area with its **composting** plant and could become a **role model for other cities in sub-Saharan Africa** through further development in this field.

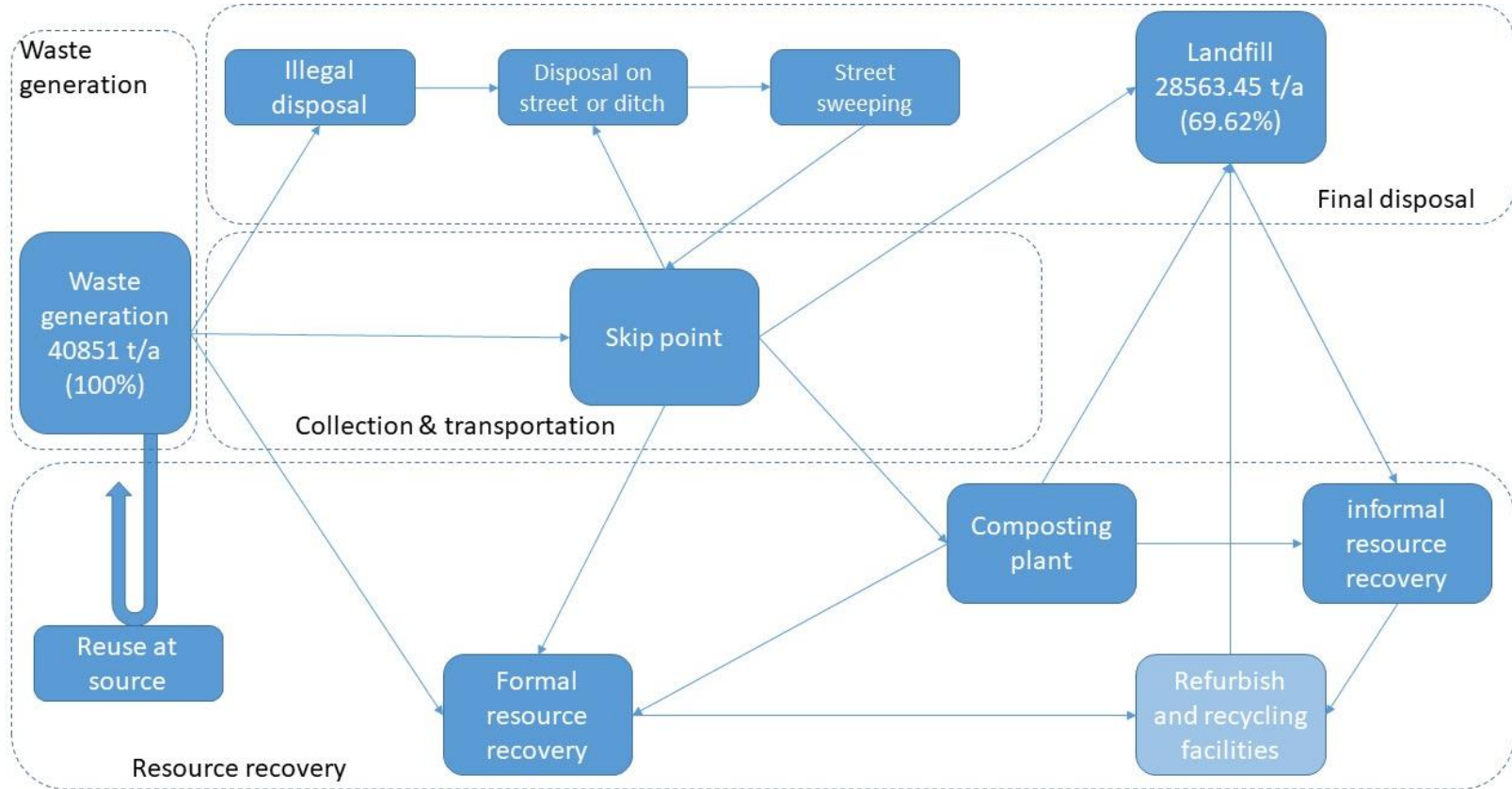
Sustainability Assessment of a waste management system in sub-Saharan Africa – case study of the corridor from Addis Ababa to Adama, Ethiopia

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Scenario building: Current Waste Management System of Bishoftu based on Admassu, 2022



Sustainability Assessment of a waste management system in sub-Saharan Africa – case study of the corridor from Addis Ababa to Adama, Ethiopia

In the different processes of

- Waste generation
- Waste collection
- Waste transportation
- Waste recovery/recycling
- Waste disposal

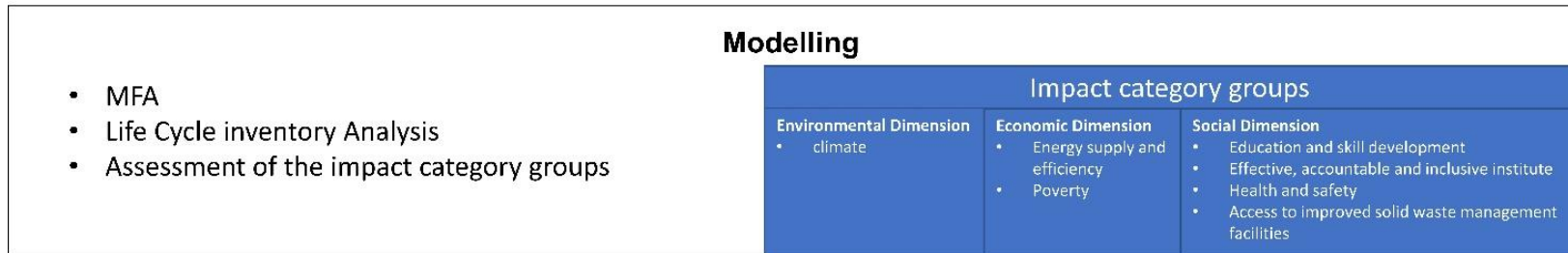
different stakeholders are involved.

- All perspectives are needed to assess the overall sustainability of the system.



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- **Selection of an innovation**
 - Increasing the **composting capacity**
 - Changing the **composting technology**
 - Introducing a standardized **transfer station** with waste separation
- **The innovation will be chosen based on the hot spots and needs that we identify**
- The innovation will be implemented in a certain mode and thus have an impact on
 - Waste streams
 - Jobs and income
 - Costs of the waste management
 - Energy consumption
 - Emissions
 - ...

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Modelling: SDG-based indicator set

- Tailored indicator set
- Including needs and perspectives of stakeholders

SDG Indicator
Workshop in Addis
Ababa Apr 2022



SDG Indicator
Finalisation with the
SuCESS 24
Partners Jul 2022

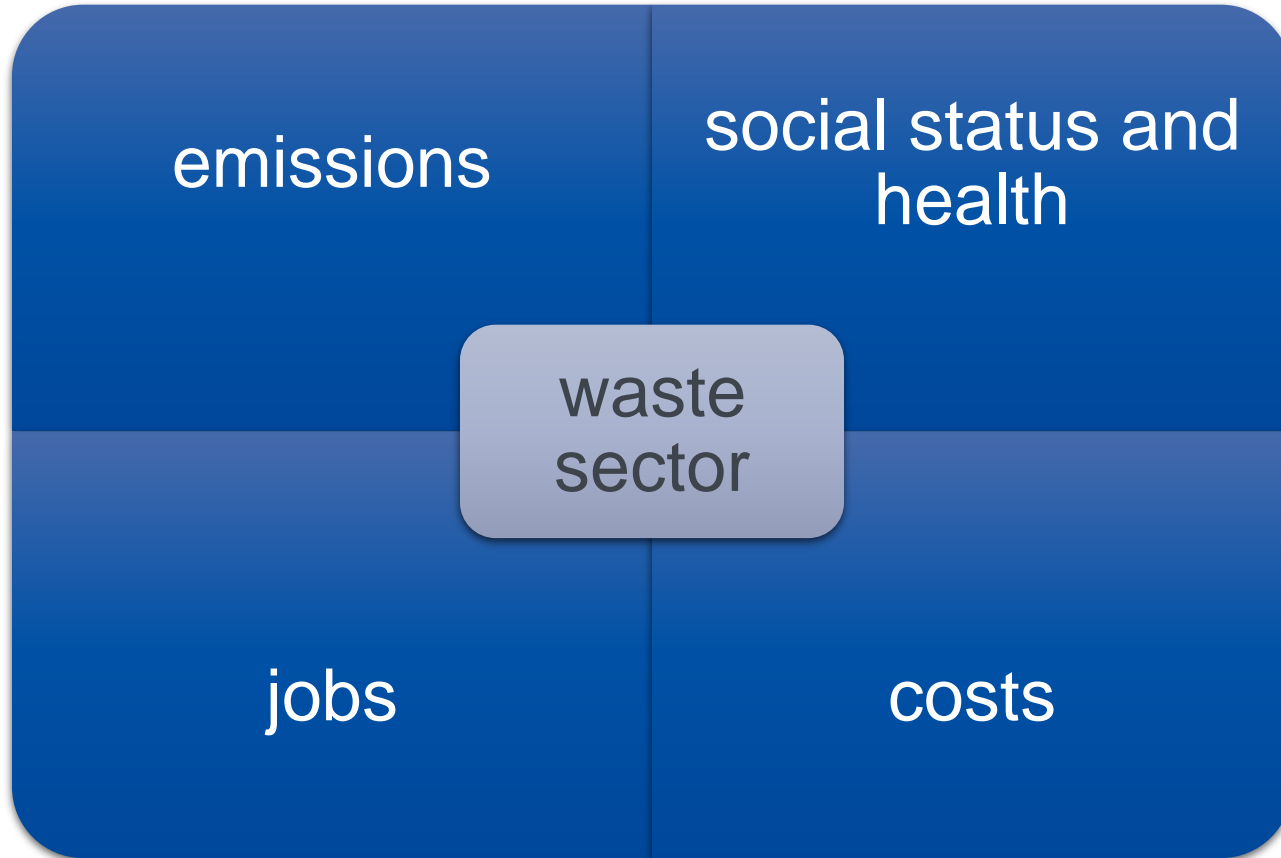


Adaptation of
indicator set & Data
collection with for
indicators Jan 2023



**Why is the
sustainability
Assessment
important to you and
what are the
benefits?**

Why is it important to you and what are the benefits?



Why is it important to you and what are the benefits?

- Identification of hot spots
- Sustainability of horizontal and vertical structures
- Innovation tailored to needs → Your interests are heard
- System improvement for everyone
- The innovation might have affects on:
 - Education and training
 - Your health and safety while working
 - Income generation
 - Cost effectiveness

Why is it important to you and what are the benefits?

- Modelling a system always just an approach to **reconstruct the reality**, the data put into the model is crucial to say how close the model gets to reality. → usefulness of the results improves with data quality
- **Inclusion** of many **different perspectives**
- Identification of real **hot spots**
- Adjustment of innovation to the hotspots/
innovation needed most
- **Improvement** of the Municipal Solid Waste Management **system**
→ improvement of **working conditions**



**What do we need to
know from you?**

SUSTAINABLE DEVELOPMENT GOALS





Poverty

- Poverty in waste sector
- Standard of living, income
- Interviewees: Workers, Municipality, Enterprises
- Data needs: income range, expenditures

Impact Category Group

3 GOOD HEALTH AND WELL-BEING



Health and safety

- Health and safety issues in waste sector
- Accidents and health incidences, human toxicity
- Interviewees: Workers, Enterprises, Municipality
- Data needs: accidents, regularity of symptoms while working

13 CLIMATE ACTION



Climate Change

- Climate change and its impacts in waste sector
- Climate change measured by Global warming potential
- Literature
- Data needs: greenhouse gas emissions from different processes



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



Effective, accountable and inclusive institutions

- Institutions in waste sector that are productive, profitable, responsible and inclusive/fair
- Costs of waste management services, effectiveness of waste management services, inclusivity, accountability
- Interviewees: Municipality, Enterprises
- Data needs: number of employees, costs, access to complaint units

Impact Category Group

12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



Access to improved solid waste management facilities

- Is the system not only working but also working with good standards
- Interviewees: Municipality, enterprises, households
- Data needs: frequency of waste management services, modes waste treatment and recycling quotes, waste rates

4 QUALITY
EDUCATION



Education and skill development

- Inclusive and equitable/fair quality education in waste sector
- Training/Education, Effectiveness of education/training, Quality of training/education
- Interviewees: households, enterprises, municipality, workers
- Data needs: no. Of offered and attended trainings, applicability of knowledge, satisfaction of training



7 AFFORDABLE AND CLEAN ENERGY



Energy supply and efficiency

- Affordable, reliable, sustainable and modern energy in waste sector
- Energy usage, energy intensity
- Interviewees: Enterprises, municipality
- Data needs: information about transportation vehicles, fuel usage, driving distances, equipment



next steps

Getting started with the questionnaires



Evaluating the current system



Modeling the innovation and assessing its impacts

next steps



Comparing the baseline and the comparison scenario



Making a recommendation about the innovation

**How will we
proceed?**

Questionnaires

Stakeholder group	Time of interview	interviewers
Residents	16., 17., 18. Jan	Mahelet Admassu and Niguse Ideo
Municipality	16. Jan	Kristina, Dr Shimelis and Julia
Enterprises	16., 17. Jan	Kristina, Dr Shimelis and Julia
Workers	20., 23. Jan	Mahelet Admassu and Niguse Ideo

Thank you very much!



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