

Guidelines for group project: Modeling and managing resource flows in cities

ENV-501

Material Flow Analysis
and Resource
Management

Fall 2025

Departure point: Case study documents

TASK

Specific guiding questions for starting your journey: Please prepare for next week Sep 19, 2024

- Which **goals** do the cities specify and in how far do they quantify them?
- Which **sectors** do they target to reach these goals?
- Which **strategies and specific measures** are mentioned and how do they **assess and monitor** them?
- Is there any **spatial component** in these strategies?
- Which **actors** are relevant and can influence the success in reaching these goals?
- Which **role could material flow analysis play** in supporting the cities to reach their goals?

Interactive project session

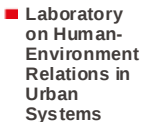
GOALS

In how far are the goals specified?
In how are the goals quantified?

MEASURES

- (a) Which **sectors** do the measures tackle?
- (b) Are the measures related to **technical solutions** or **behavioral changes**?
- (c) Are the measures targeting on **efficiency** or **sufficiency** principles?
- (d) Which **life cycle stages** can the measures be assigned to (design, production, use, end-of-life)?
- (e) Are some measures targeted on a specific **spatial scale**?

Which **role could MFA play** in supporting the cities to reach their goals?



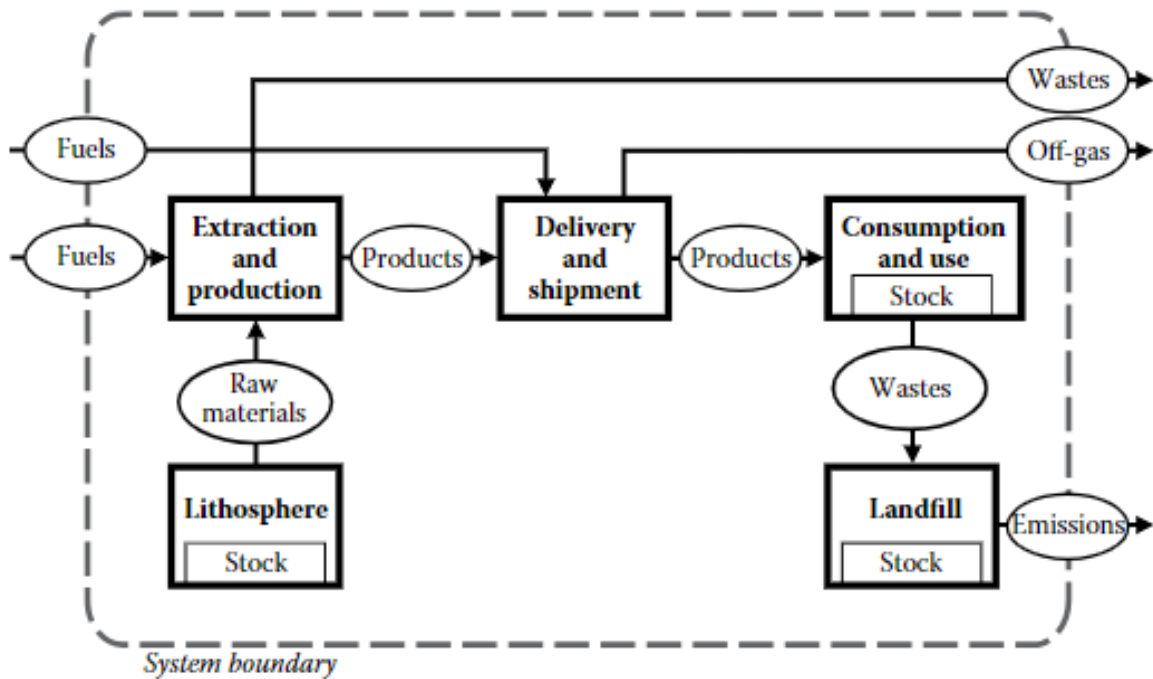
Set up your system and boundaries

TASK

Specific guiding questions: Please prepare for next week Sep 26, 2024

- How would you define your **problem** and which **goals** would you set to approach it?
- How would you **draw your system**? Which processes, stocks and flows are the most relevant?
- What are the **materials** you want to focus on (e.g., biomass, metals, minerals, emissions)?
- What are your **temporal system boundaries** (e.g., time steps, time series)?
- What are your **spatial system boundaries** (e.g., city, neighborhood)?

Draw your system and its boundaries



Strategies for data collection

TASK

Specific guiding questions: Please prepare for next week Oct 3, 2024

- Which **generic databases** exist for the flows and stocks in your system?
Please, look at the data sources we provided to you as a starting point ...
- How do you deal with **missing data**? Which strategies, i.e., **assumptions, proxies or conversion factors** could you use?
- Which **MFA studies** could you use to collect data for your system?
Please, look at the urban metabolism studies we provided to you as a starting point ...



**Thanks for collaborating
with us!**