Integrated Solid Waste Management System

requirements and success factors

Gabi Schock

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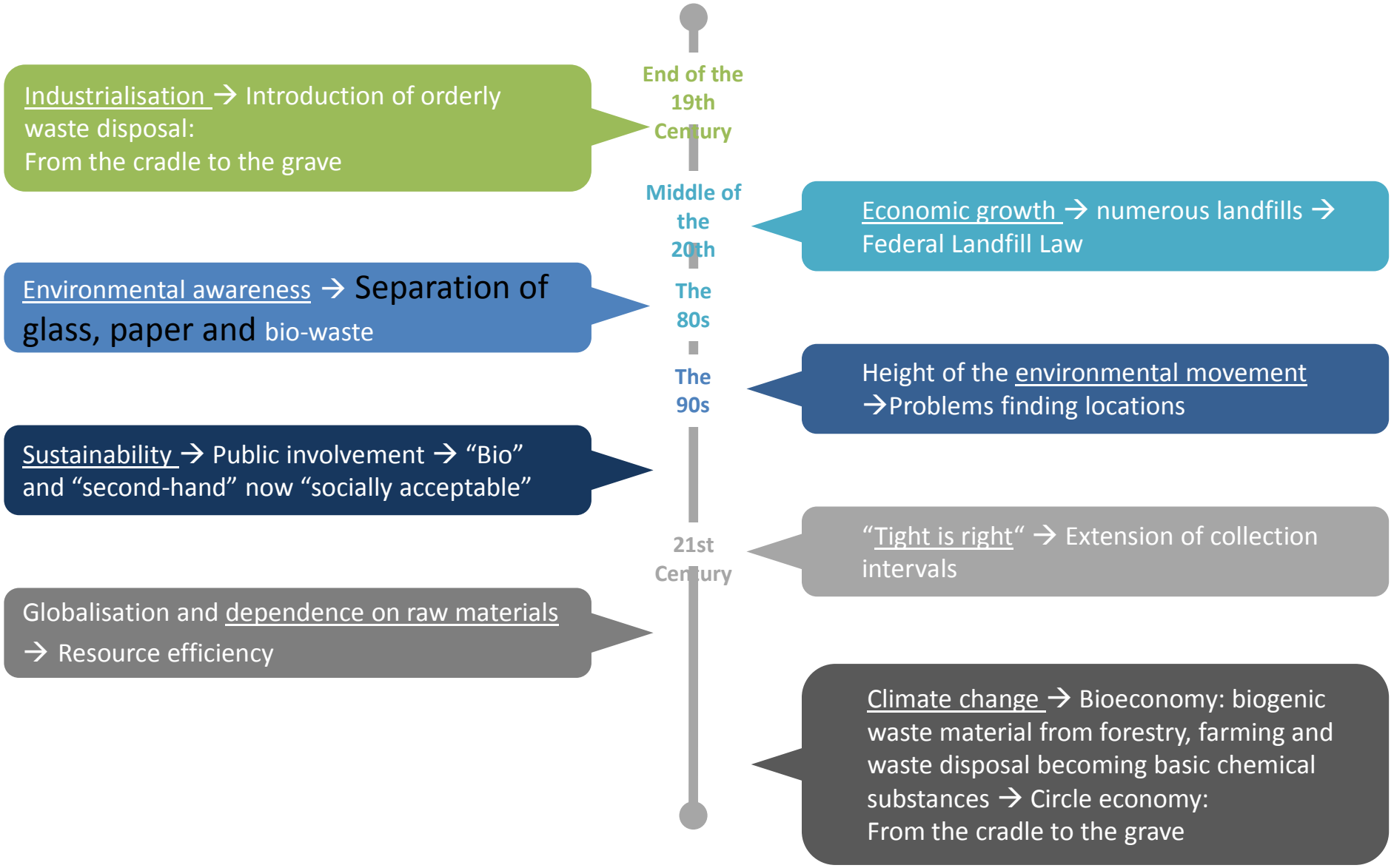
AGENDA **Integrated Solid Waste Management Systems (ISWM)**

I. **How did we get to ISWM in Germany?**

II. **Elements of an ISWM**

III. **Successful factors of ISWM**

120 years of waste history in Germany



VALUE OF THE CONCEPTS

Compliance and implementation of legal regulations

Involvement of the public and companies

Catalogue of measures with budgets and schedules

Decision making through municipal policy

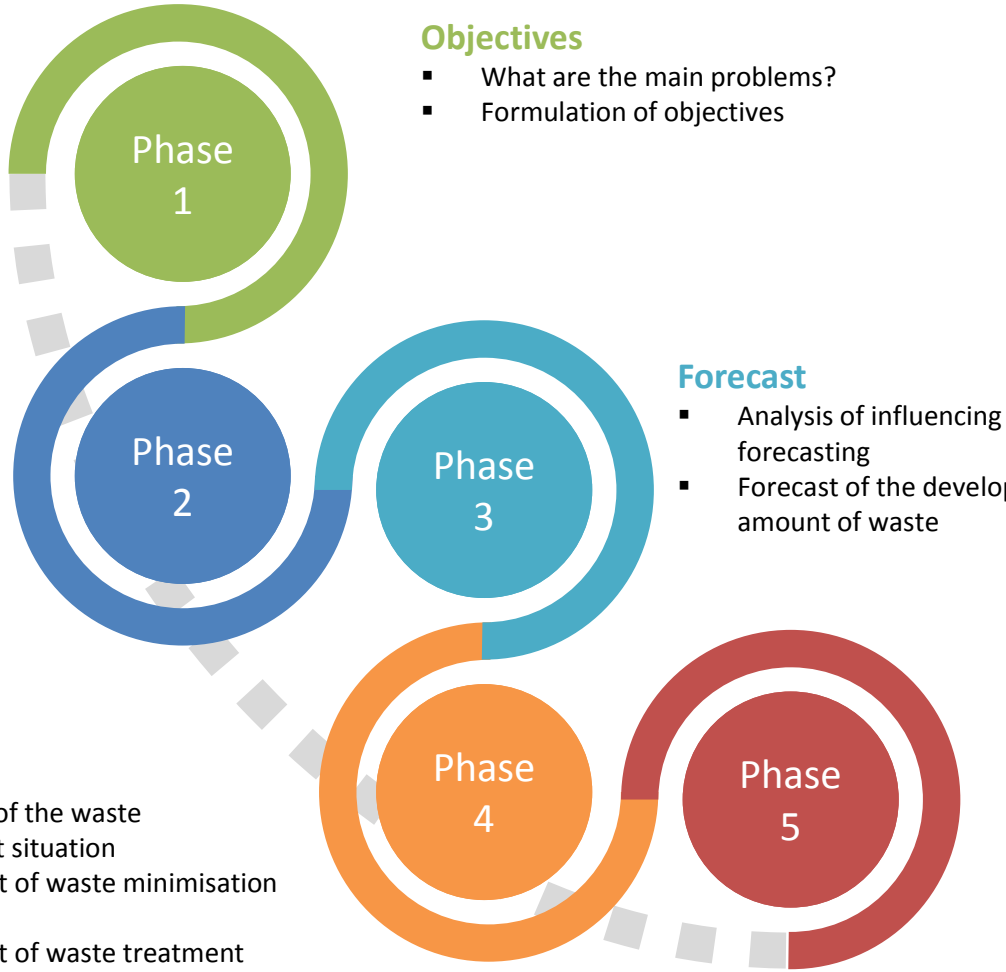
Administrative planning security

Comprehensible decisions on waste management measures

Overview of waste and recyclables streams and corresponding costs

Documentation of waste management measures

ELEMENTS **INTEGRATED SOLID WASTE MANAGEMENT SYSTEMS**



Objectives

- What are the main problems?
- Formulation of objectives

Determination of frame conditions and basic data

- Basic waste regulatory data
- Data collection
- Description of waste management measures
- Description of management elements

Forecast

- Analysis of influencing factors relevant to forecasting
- Forecast of the development of the amount of waste

Concept draft

- Assessment of the waste management situation
- Development of waste minimisation measures
- Development of waste treatment and disposal measures
- Assessment of the measures
- Action plan

Council order

Advantage of public information and – participation

- Knowledge and understanding of the interests of others
- Working towards a common goal with the greatest possible balancing of interests
- Waste management: a part of the democratic process
- and the development of municipal self-governing

Potential public participation process

- **Public information on the future of waste management in the municipality**

→ Formation of a **waste management advisory committee**: Policy, administration, environmental associations, economy, university and bearers of public interest ...

First Meeting

- Presentation of the next steps (see presentation)
- Presentation of the representatives and how they can/want to participate
- Formulation of the goal

→ Clear presentation to all involved on what should be achieved with the AWIKO

Potential public participation process

Second Meeting following Phase 2 (determination of basis data) and Phase 3 (forecasting),

expanded by “bearers of public interest” including neighbouring municipalities, the fire service and energy supply companies among others

Third Meeting following Phase 4 (concept draft)

- Evaluation of whether the goals can be met with the concept
- Recommendation to policy and administration
- Reflections on common, next implementation steps e.g. participation in school events (potential additional meeting)

– **Public information on concept draft: Suggestions can be made and associated initiatives can be launched**

→Feedback to policy, followed by council order (slide 17)

FORMULATION OF **OBJECTIVES**

Involvement of municipal policy, municipal administration, citizens, companies, commerce, NGOs

The legal framework for waste is regulated nationally; temporal and financial frameworks are determined by municipal policy and municipal administration

1. **Solution for existing waste problems**
2. **In cost efficient ways**
3. **Is environmentally friendly**
4. **Socially established**
5. **Develops robust organisational structures**
6. **Develops jobs in the region and creates value**

Consensual objective determination with relevant actors useful

DETERMINATION OF **BASIC CONDITIONS & DATA**

Waste regulatory principles

- Local disposal
- Disposal safety
- Priority of waste minimisation
- Separation of types of waste
- Minimisation of pollutants
- Re-using residual materials
- Material utilisation before energy-related utilisation
- Environmentally friendly treatment and landfilling of residual waste

Step 01

Step 02

Data collection of the present and potential future disposal infrastructure with regard to area-specific data and waste-specific data

Description and assessment

Step 03

Environmentally friendly waste colle systems

- Local waste collection
- Reducing transfer stations and transport co
- *How could waste collection in Jordan be improved?*

Assessment of the waste treatment infrastructure

- Waste separation to obtain recyclable materials and compost
- Disposal of residual waste at landfills
- *How does one acquire varietal materials, in Jordan, that can be capitalised on?*

Step 04

Description of the existing and potential management elements

Success factor in the frame conditions and data collection:

No city is like the other!
Each will come up with a specific waste management concept -
Regional cooperation is still a necessity however!

FORECAST

1. **Step: Analysis of influencing factors relevant to forecasting**
   - Demographic and economic development
   - Consumer behaviour
   - Legal development

2. **Step: Forecast of the development of the amount of waste**

A maximum period of 10 years is taken into consideration

and a review takes place every 5 years

Involvement of "bearers of public interest":

- Citizens
- Non-governmental organisations
- Neighbouring municipalities
- Business associations, higher education institutions
- Involved authorities: The fire service, hospitals, schools ...
- …

Success factor: Important actors support the ISWM

1. Step: Assessment of the waste management situation

- Organisational, financial and legal measures i.e. preliminary waste minimisation, utilisation and disposal measures
  - Staffing
  - Own office / department at the city administration
  - Cooperation with other municipalities → administration union
  - Alternatively: Operator and financial models
  - Waste and fee statutes

- Deduction of treatment alternatives due to existing and potential new disposal facilities and expected waste streams

→ Deduction of need for action

Development of waste minimisation measures

- Regulatory measures, e.g. ban on glass bottles at festivals
- Cooperative solutions, e.g. the waste of company A is the primary product of company B
- Economic measures, e.g. bottle deposits
- Preventative measures, e.g. ecological building materials
- Information and motivation, e.g. schools
- Secondary markets, e.g. second-hand clothes stores

CONCEPT DRAFT Step 3

Selection and assessment of waste treatment and disposal procedures, e.g. composting and sorting facilities

- Determination of the costs of individual treatment procedures for investments, operating costs, personnel, energy costs, recycling proceeds and waste disposal among others

  → Financial assessment of the measures of the different variants of disposal logistics and technology

- Determination of the emissions of the individual treatment procedures

  → Ecological assessment of the measures

- Development of management elements
  - Minimisation strategies
    - Recirculation of materials within facilities
    - Low waste and pollutant product design
    - Changed consumer behaviour
  - Product responsibility
    - Retraction obligation
    - Multi-usability
    - Technical longevity
    - Upcycling

- **Assessment of the measures based on:**
  - Disposal safety
  - Minimisation of emissions
  - Minimisation of collection, transport and treatment costs
  - Costs, value and efficacy
  - Legal security and acceptance

→ **Assessment of treatment alternatives in ecological and economic respects**

CONCEPT DRAFT Step 6.1

- Action plan I for a sustainable, integrated, municipal waste management concept
- Sub-steps taking the schedule and budget into account
  - Quantities / approach
    - Allocation of waste types in facilities
    - Recyclable quantity and quality
    - Availability and flexibility of the facilities
    - Flow chart
    - 10 year disposal safety
  - Organisation and efficiency
    - Charitable institutions
    - Municipal hand: Public-law institution office
    - Operating involvement of private companies: Public-private partnership
    - Autonomous construction of facilities or by operators
    - All municipalities should receive voting rights at a regional association
    - How should the costs be apportioned (size, number of personnel, services)?

→ Dependent, among other things, on investments and workplace requirements

Action plan II for a sustainable, integrated, municipal waste management concept

Sub-steps taking the schedule and budget into account

- **Legal aspects**
- **Environmental aspects**
  - Transport connection
  - Energy footprint
  - Emissions
- **Public relations and communication**
  - Education and consultation
  - Citizen involvement in environmental planning
- **Controlling**

Success factor: High citizen involvement and motivation is important!

COUNCIL ORDER

- Decision making by the city council with a catalogue of measures incl. schedules and budgets for the next 10 years

- Updating is urgently needed at least every 5 years

→ The waste management concept is dependent on the municipal area structure, the existing facilities, the operational structure and the waste regulatory frame conditions

→ This is a sustainable process, that is constantly improved and adapted

III. SUCCESS FACTORS

Sustainable process that is constantly being improved — 5.

Every city “ticks” differently but: Together we are strong! — 4.

Important actors support the Project — 3.

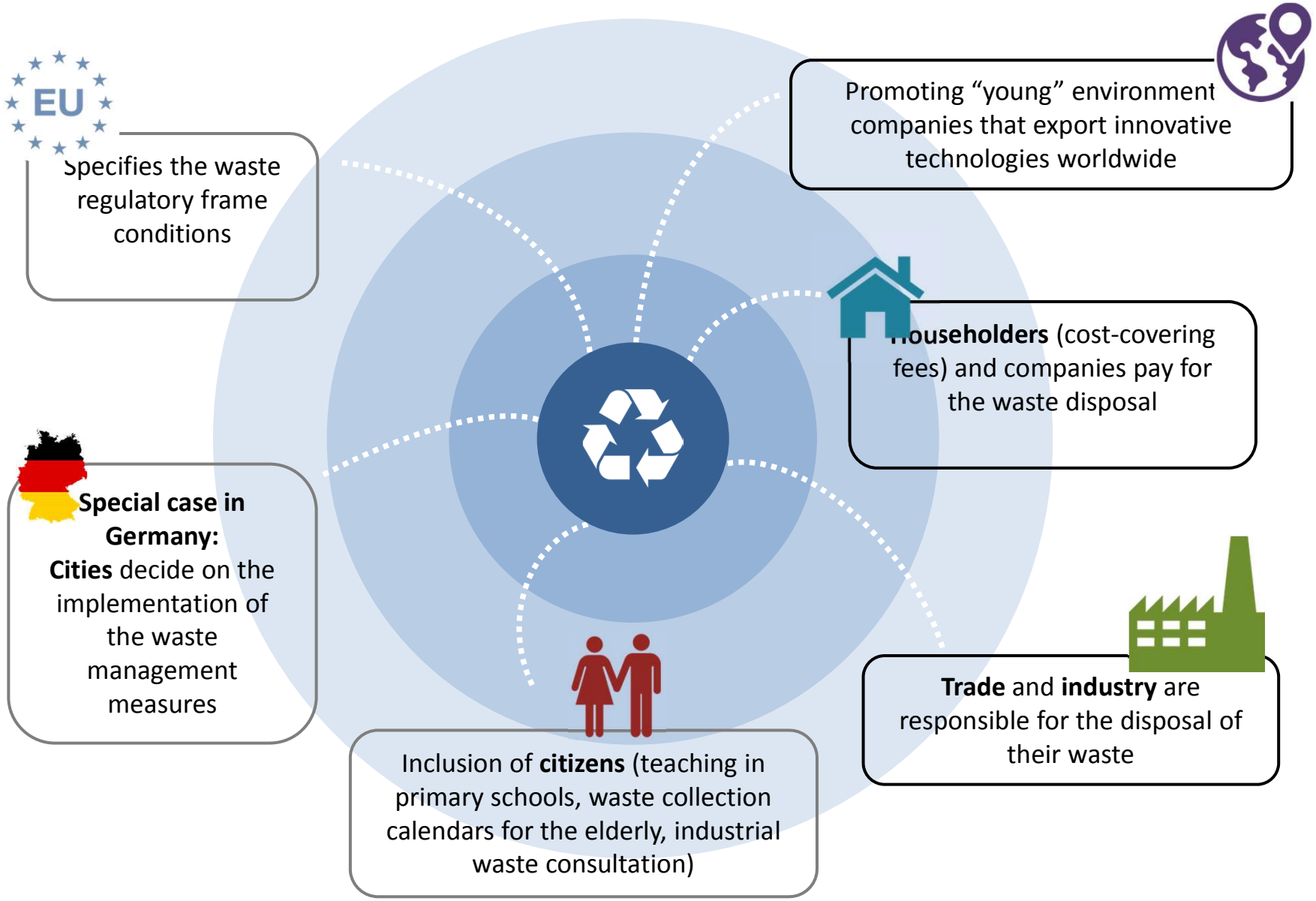
Consensual objective determination with all relevant actors — 2.

Citizen involvement and motivation, e.g. consultation and waste exchanges — 1.

Planning and implementation of modern and sustainable waste management

- **Presentation** (partition)

Institutional setting: What were the frame conditions for the practice that will be presented (e.g. policy, legal regulation, instrument, reform approach, demand by people etc.; which actors/stakeholders were involved?)

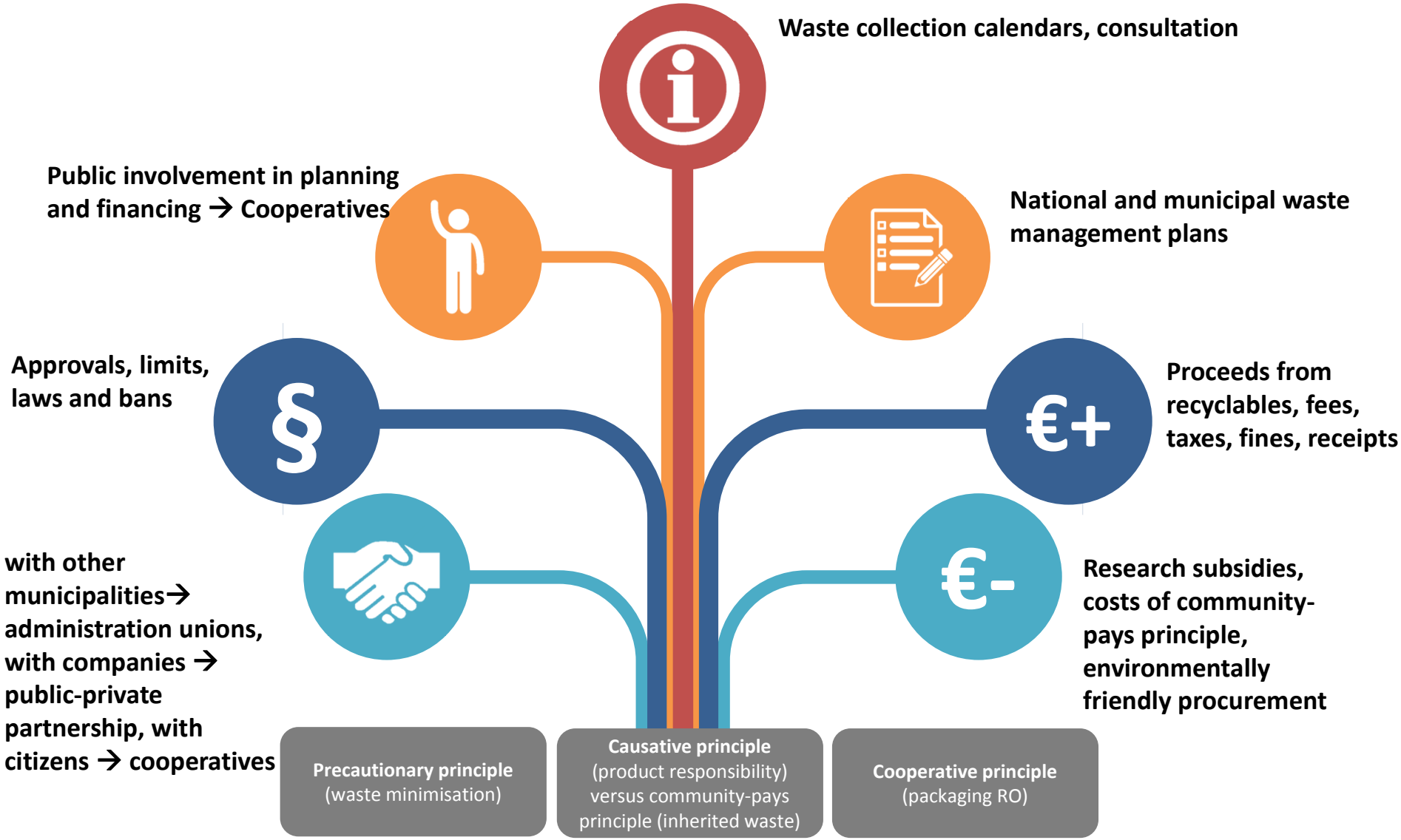


Starting point: What was the main **challenge**, issue, problem to be addressed by the practice?

Just as society changed,
so did awareness of waste management

NIMBY Effect

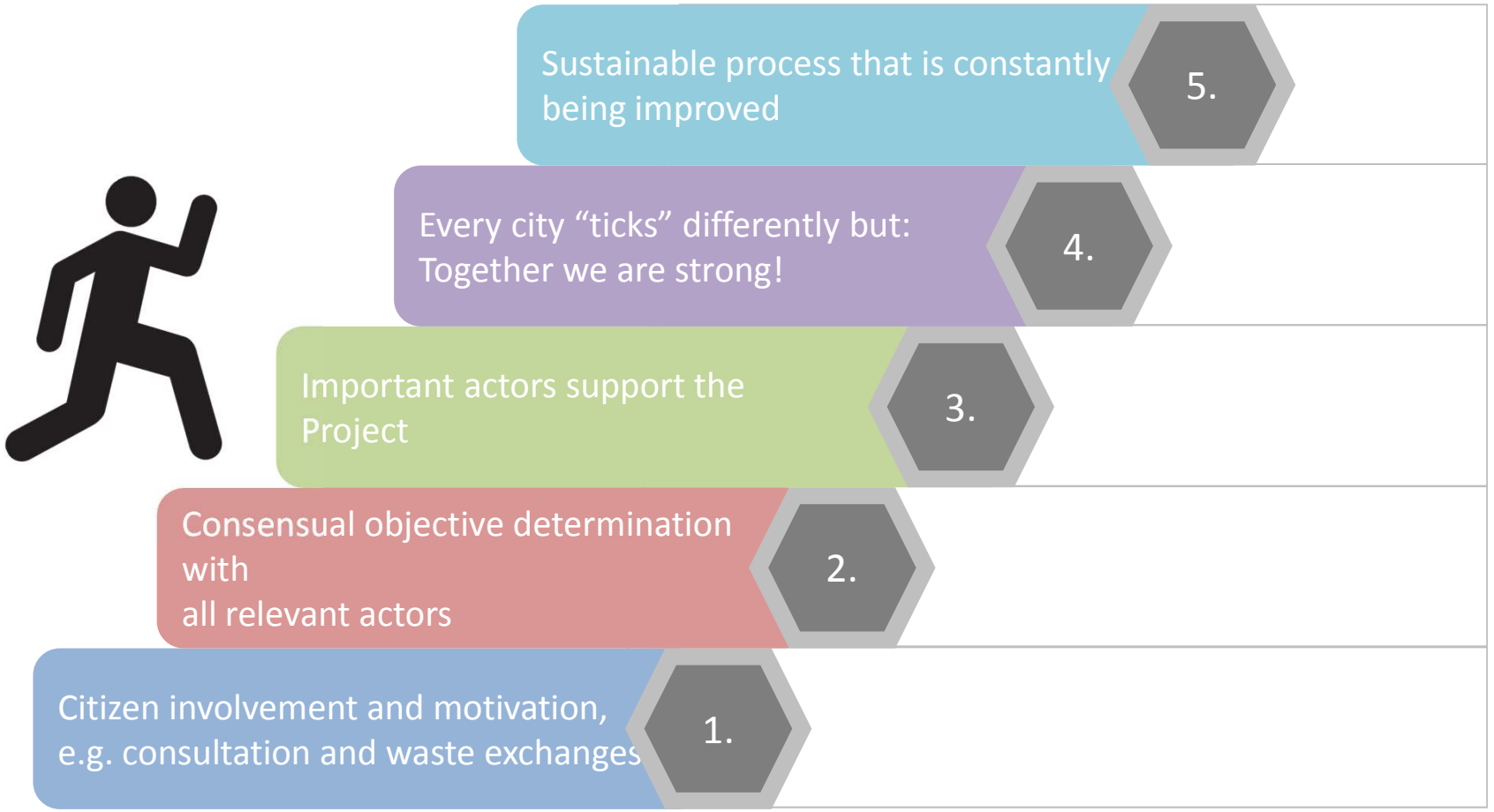
Approach: Which methods, tools or instruments have been developed and were applied to address the challenge?



Outputs: Which were the concrete tangible results, outcomes and/or impacts of the good practice and how do they ensure sustainability of the practice?

- **Environmental awareness** must be promoted. Information, consultation and participating interests are vital for this
- Most important municipal / regional responsibility **integrated waste management concept**
- Waste management must meet the **hygiene**standards set by the cities
- Collection, transport, treatment, utilisation and disposal of waste should **not negatively impact** water, soil or the air
- The **financing** of the waste management must be secure; sustainable **work places** can be created and secured

Lessons: What are the main lessons learnt in the course of implementation of the good practice? Are there any open questions that need to be dealt with?



Transfer: What are the necessary preconditions to transfer this practice to another place? What would be the first steps to take?

- Involvement of interested and influential municipal / regional actors from all areas (NGOs, economy, politics, administration ...)
- Determine the city's strengths and weaknesses, opportunities and threats on a solid data foundation
- Legal, financial and organisational frame conditions should be clarified where possible