

Module: Resource Efficient and Cleaner Production

Project number: 2020-1-MK01-KA205-077462

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Key indicators of performance



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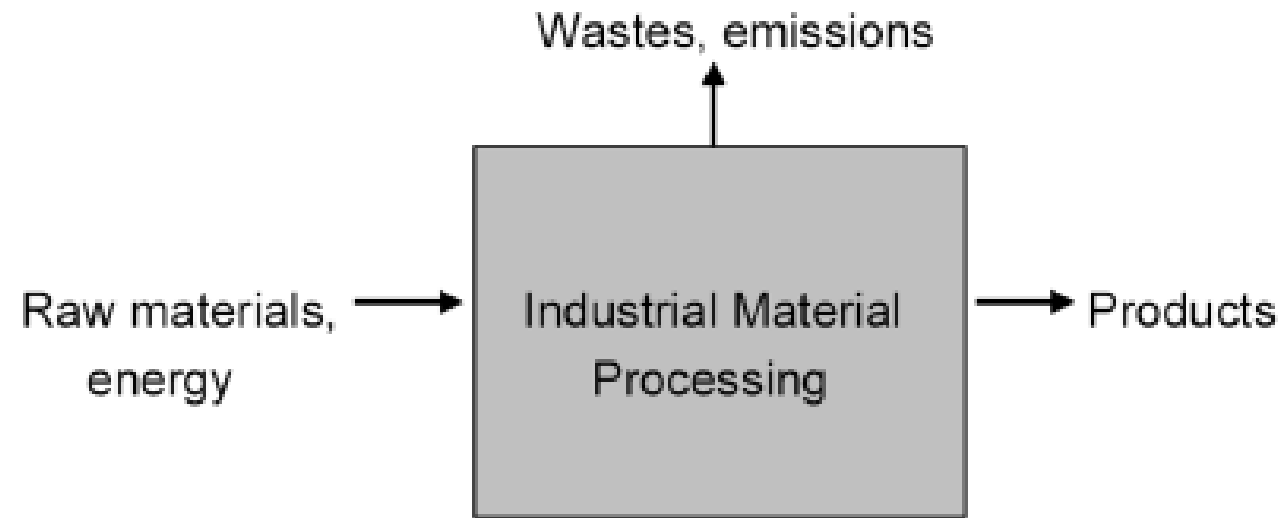
Key indicators of performance

- **Key indicator of performance** is an indicator that serves as a strategic measure that precisely shows how a company (enterprise) or a manufacturing process is set by the lead management role of that company.
- The key indicators of the performance enable companies to monitor and evaluate the efficiency of using of input resources in their manufacturing, i.e., efficient usage of energy, water, and materials.
- Through the key indicators it is also monitored the amount of generating waste materials and emissions in the air and water.
- The main characteristics that reflect the key indicators of performance are given in the following chart:

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KPIs (Key Indicators for Performance)	The interconnection is through	KPIs should enable
<ul style="list-style-type: none"> - to be in accordance with the company’s strategy/entity for which they are made - to be easily understandable - to enable action - to be contextual – in accordance with the context of the production and the enterprise - to not repeat over time 	<p>Management/ governing body</p> <p>The engaged stakeholders and relevant entities as “interface” in the process of decision-making</p>	<ul style="list-style-type: none"> - management (empowers employees to show excellent job performance) - emergency procedures (to prevent and / or address appropriate risks) - communication with / among stakeholders local community, government and / or other relevant authorities / entities, non-governmental organizations, etc.)

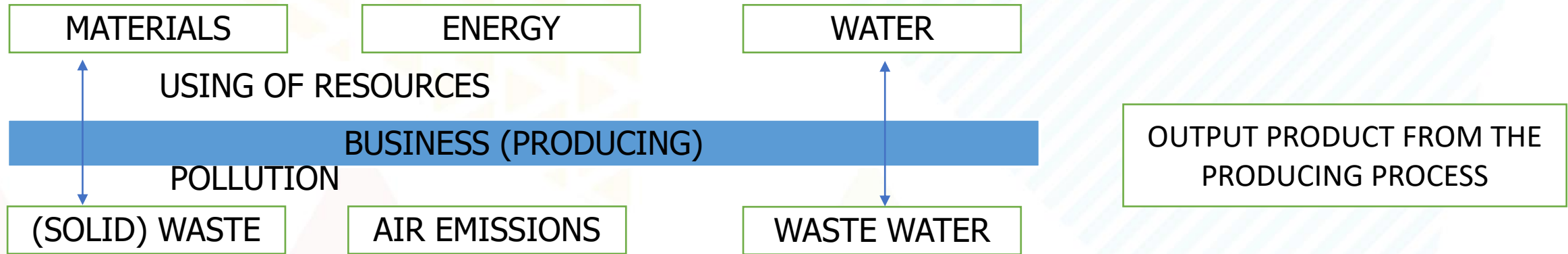
Absolute key indicators of performance

For precise defining of the concept for cleaner producing (RECP), it is planned to have seven absolute indicators, such as:

1. Three absolute input indicators that describe the implementation of the input resources – materials, energy and water.
2. Three absolute output indicators that describe the emissions of waste materials in three natural waste mediums (solid), air emissions and waste water.
3. One absolute indicator of manufacturing as output indicator for the manufacturing.

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CORRELATION BETWEEN ABSOLUTE INDICATORS



Relative key indicators of performance:

The absolute key indicators of performance explained above are the basis of defining suitable 6 relative indicators that are normalized contrary to the referent output of manufacturing, i.e., in accordance to the mentioned, are defined:

1. Three relevant input indicators that describe the productivity of the input resources, i.e., productivity of materials, energy and water;
2. Three relevant output indicators that describe the intensity of pollution, i.e., intensity of emissions of waste materials in the three natural mediums – solid waste, air emissions and waste water.

▶ Tools of implementation of the concept for more efficient and cleaner manufacturing regarding resources:

Tools that are functioning in the concept of RECP are:

- Input/output analysis
- Material flow and Energy analysis
- Risk assessment
- Monitoring and controlling
- Transfer of environmentally sound technologies and Feasibility analysis

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- **Main benefits for enterprises that apply the RECP concept are:**
 - Reducing of costs,
 - Better productivity,
 - Improved reputation as a sustainable industry and
 - Access to the market as a green company

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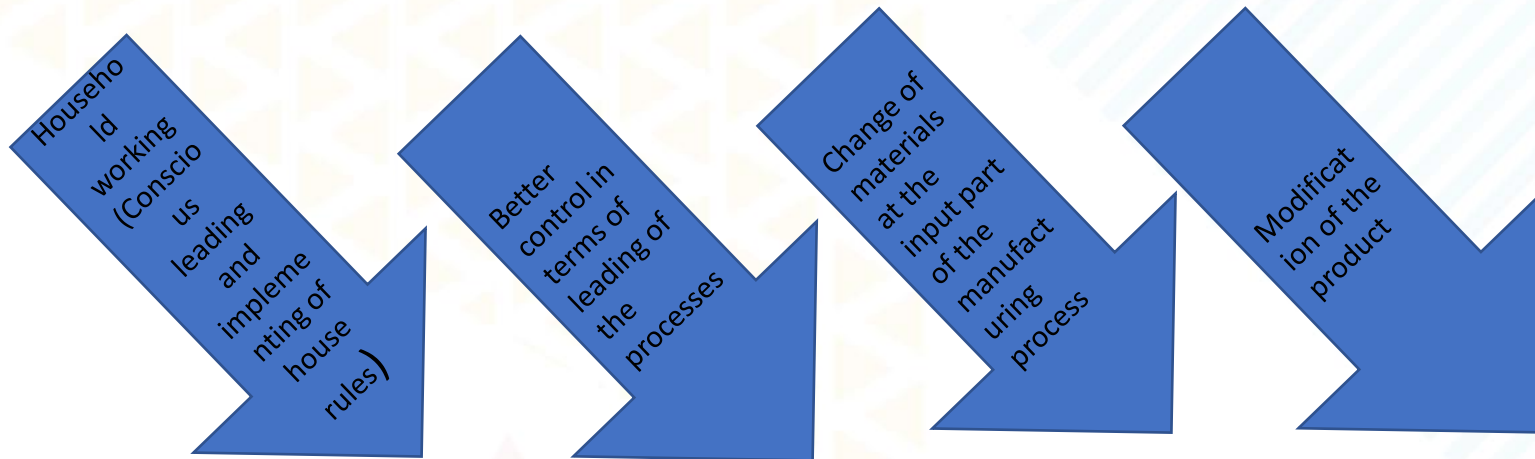


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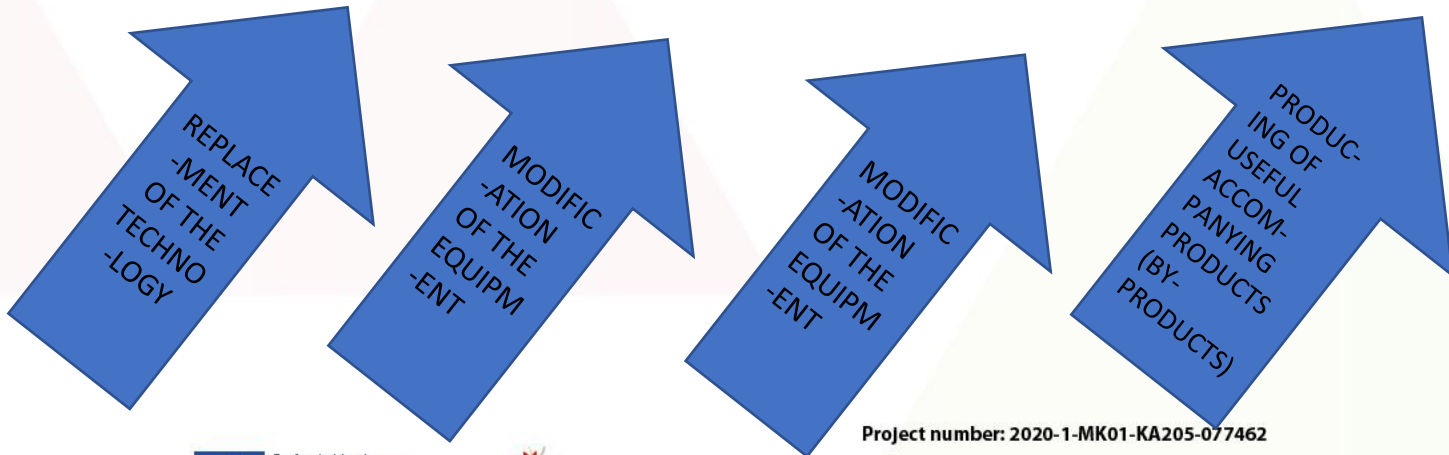




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MORE EFFICIENCY REGARDING RESOURCES AND CLEANER PRODUCTION



- Sustainable production
- Efficiency of resources and energy
- Safe production, Management of chemicals
- Redesigned products and eco-innovative
- Corporative-societal responsibility

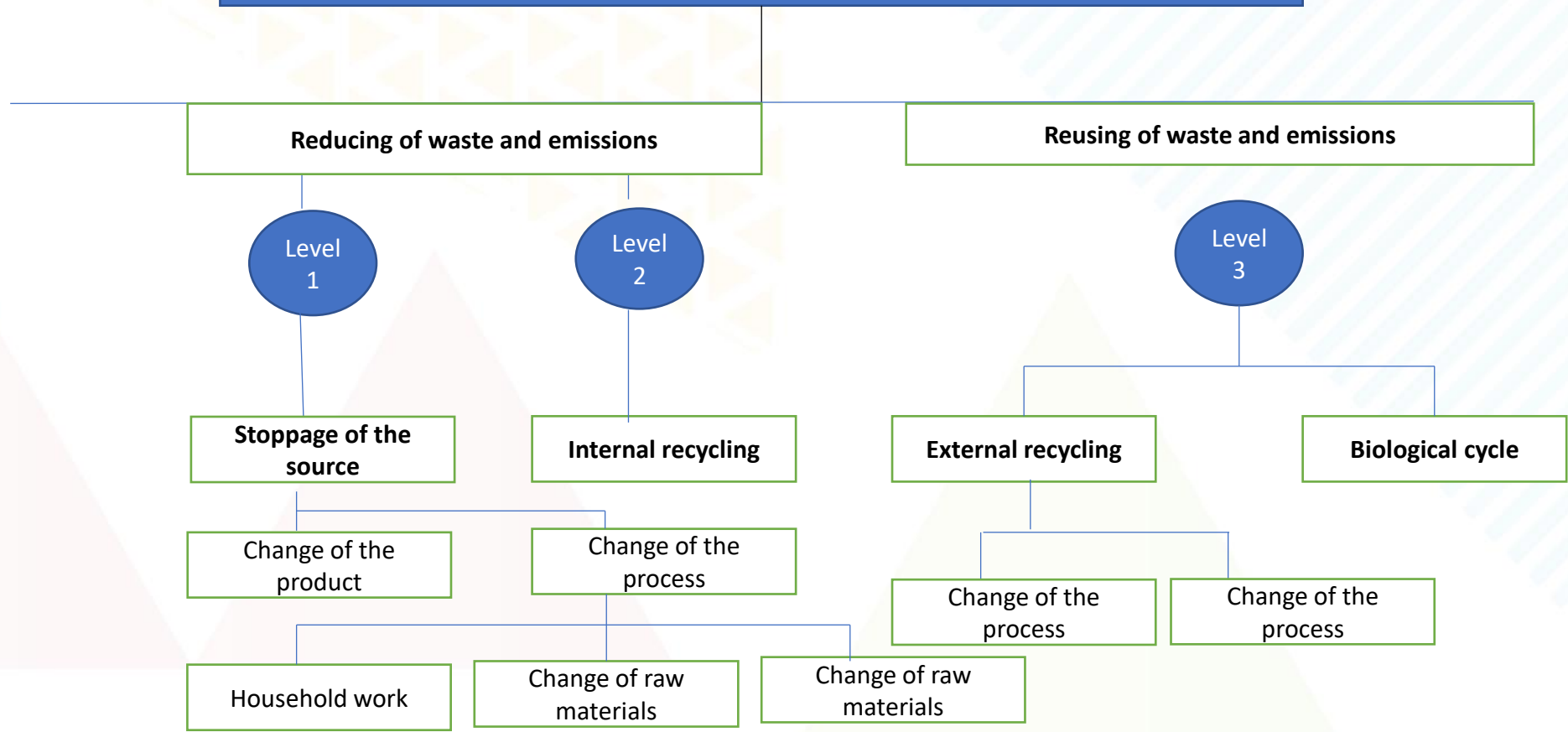
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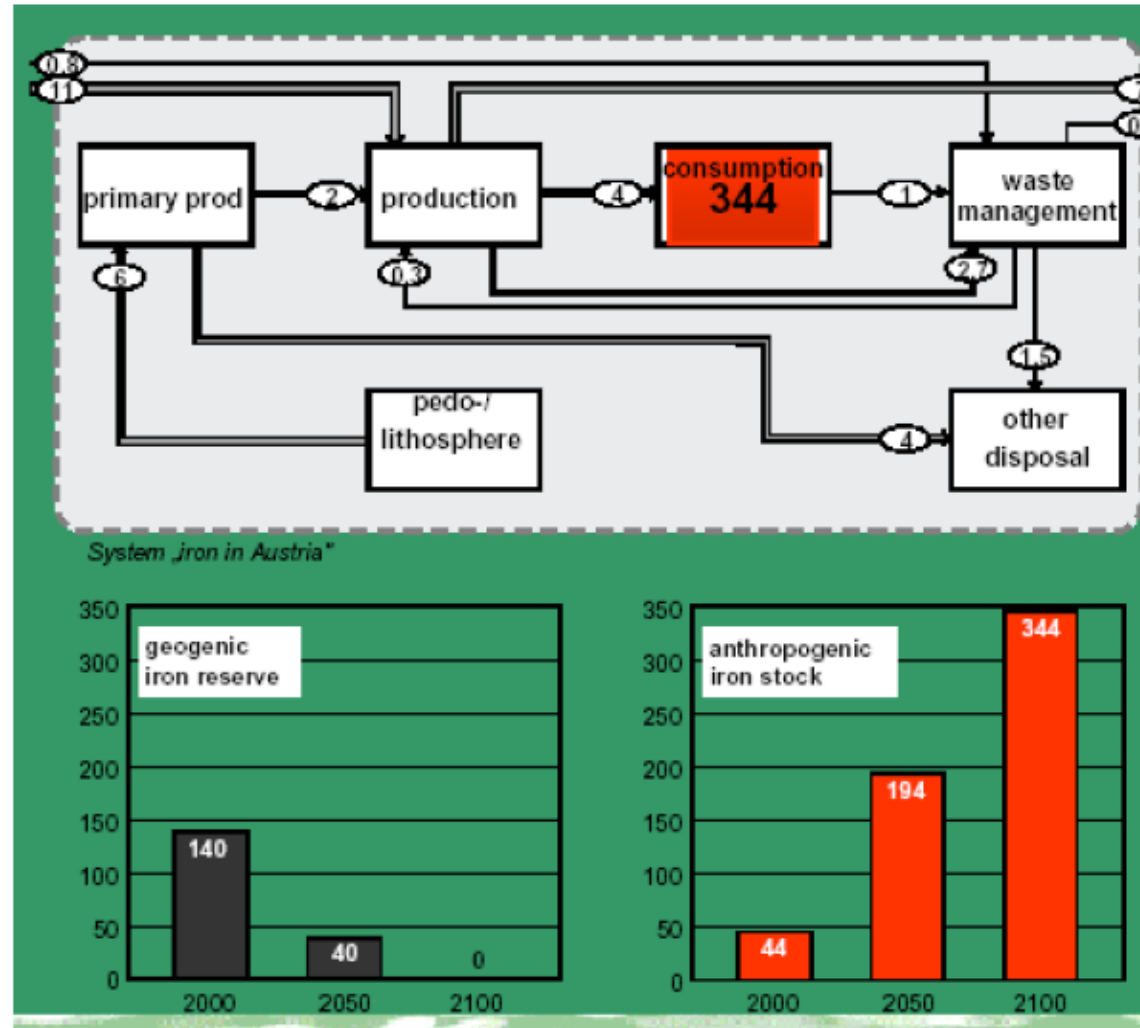


Different strategies:



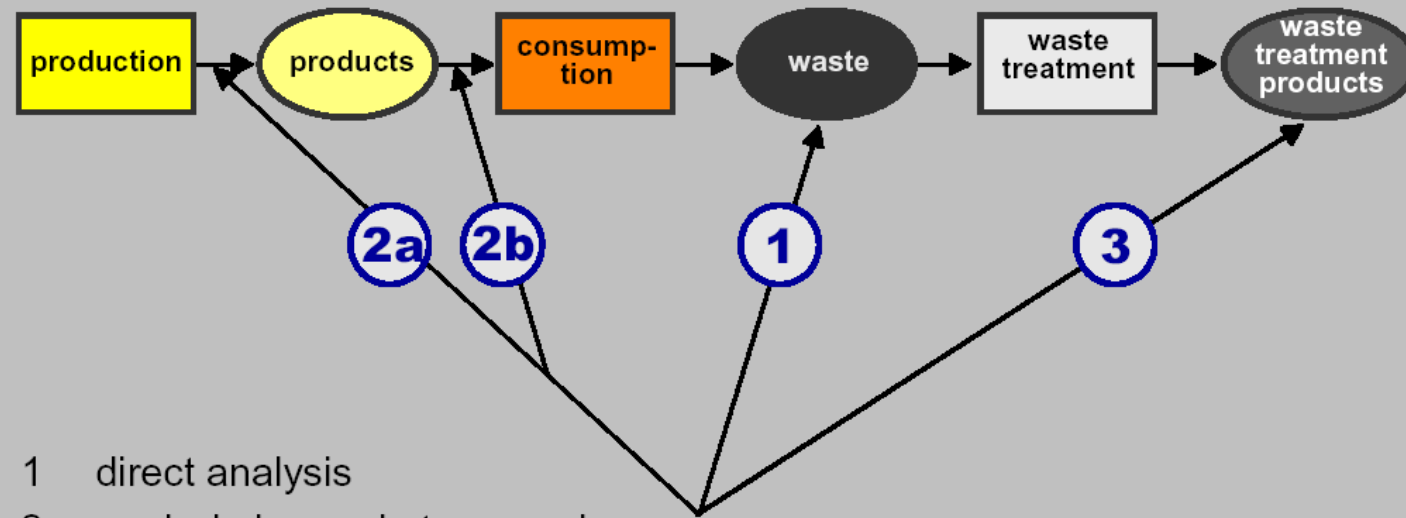
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Analysis example of flows:



ANALYSIS EXAMPLE OF FLOWS:

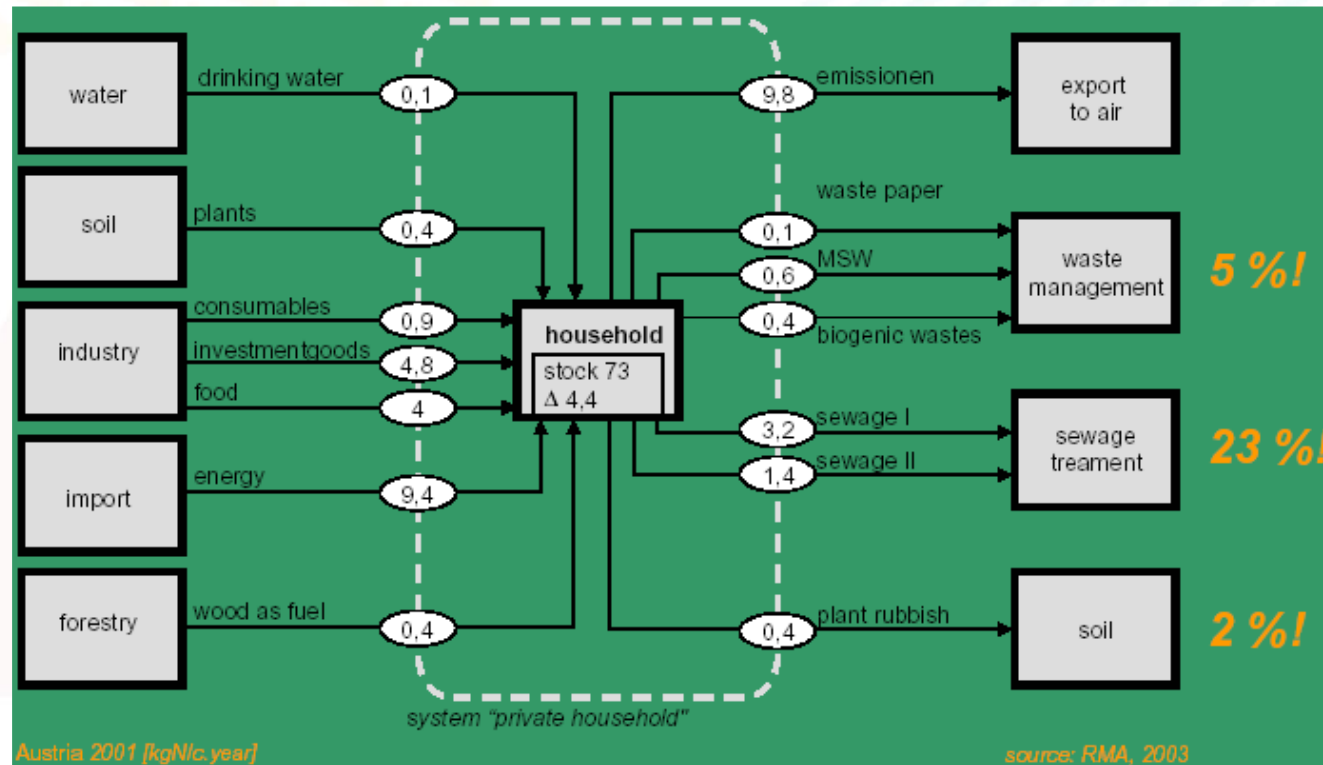
MFA to determine waste composition



- 1 direct analysis
- 2a analysis by market research
- 2b household statistics
- 3 analysis of waste treatment products

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Following the nitrogen in one household:



Suggestion-measures for implementation in accordance with the concept RECP:

The measures/options that would stem from the implementation and for benefit of the RECP concept are measures of different scopes and type, as:

Measures of energy efficiency (implementation of all kinds of transformations of energy that are in usage of the reviewed entity, motors, light bulbs, boilers, cooling, compromises air, efficiency in building objects, their insulation, as all-covering approach toward energy efficiency of objects, implementation of a managing system (management) with objects (building management system, BIMS)

- Measures for **saving, optimizing and correct usage of material resources**;
- Measures for **reducing waste and emissions in air and water**;
- Measures **linked to implementation of a so-called managing system (management) of the environment (EMS)**, etc.



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- dr. Anita Grozdanov, regular professor; manual for implementing of a training for sustainability advisor, Skopje 2018
- <https://ecologic.mk/the-manual-for-development-%d0%b0-training-advisor-of-sustainable-development/>

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