Circular economy model as a result of the implementation of sustainable development

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SUSTAINABLE GROWTH IN SMALL OPEN ECONOMIES

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SUSTAINABLE DEVELOPMENT

- The essence of numerous definitions, have a common basic **justice** – intragenerational and intergenerational justice
- „development should satisfy the needs of present generation without questioning the possibility of future generations to satisfy their needs“ – Our Common Future
- Such perception of the concept of sustainable development **imposes** ethics review, especially ecological ethics review

THE CONCEPT OF LINEAR ECONOMY: LEM

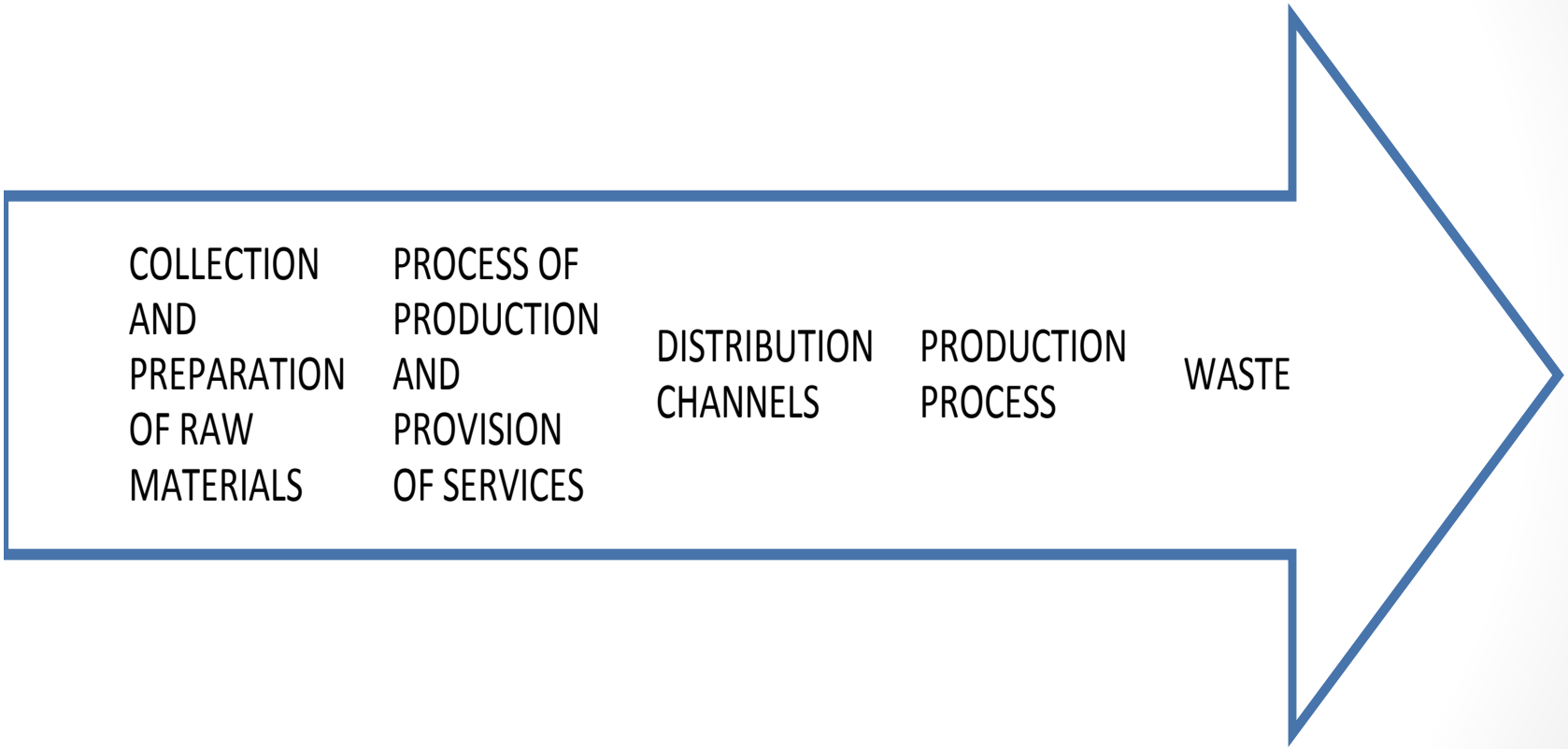
- Until now economy developed based on the simple principle: „take, produce, consume and throw“
- So-called „linear model“ **implying** unlimited and easy access to resources
- LEM treats **waste** as a residual of production that finishes its life cycle as a **trash** in the environment (waste=trash)
- According to LEM: waste is a material or an object which is not usable and which its owner plans to dispose permanently

THE WASTE

- The waste is divided into **solid and hazardous waste** *(hazardous waste can not be treated any more, but must be safely disposed)*
- Solid waste is further classified into:
- Municipal waste
- Industrial waste
- Internal industrial waste
- Medical waste

- According to LEM all waste will be permanently disposed after consumption, regardless which group of waste it belongs to: hazardous or not, whether it can be recycled or not
- Such attitude towards the nature and production is unsustainable and it **has to be abandoned**
- The following scheme shows a LEM indicating that waste is **the end of the life cycle of that production process**

CONCEPT LEM


COLLECTION AND PREPARATION OF RAW MATERIALS
PROCESS OF PRODUCTION AND PROVISION OF SERVICES
DISTRIBUTION CHANNELS
PRODUCTION PROCESS
WASTE

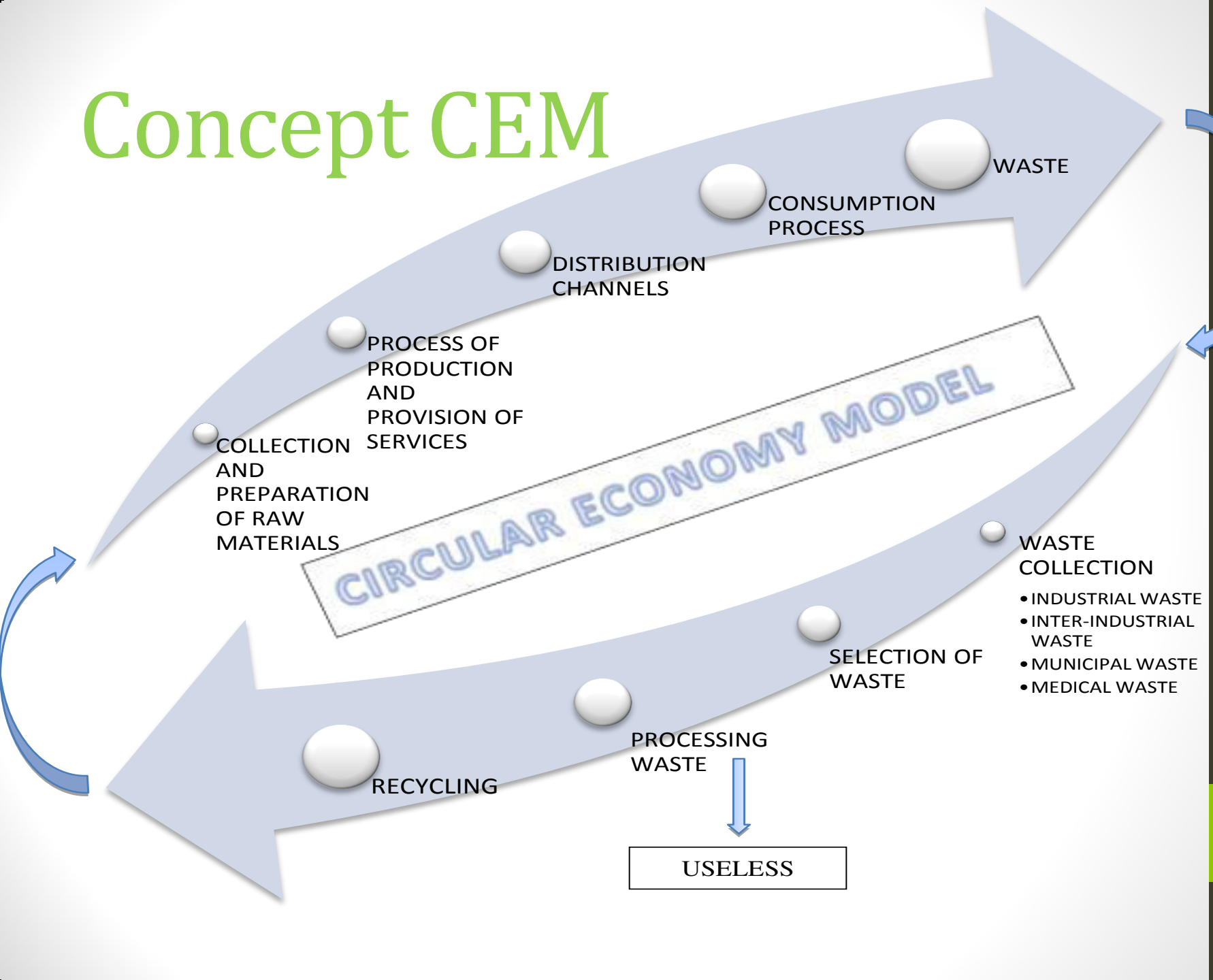
CIRCULAR ECONOMY MODEL: CEM

- According to CEM: **Waste is not just trash** that pollutes the environment. It becomes a raw material that reduces the price of final product (role: competitiveness on the market)
- CEM is needed not only for environmental protection, but also for cost savings
- According to the assessments of the Ellen MacArthur Foundation, the European Union could save 400-600 billion dollars per year (mostly in automated and machine industry)
- In circular economy, value-added product **is used longer** and **more rationally** before it becomes trash

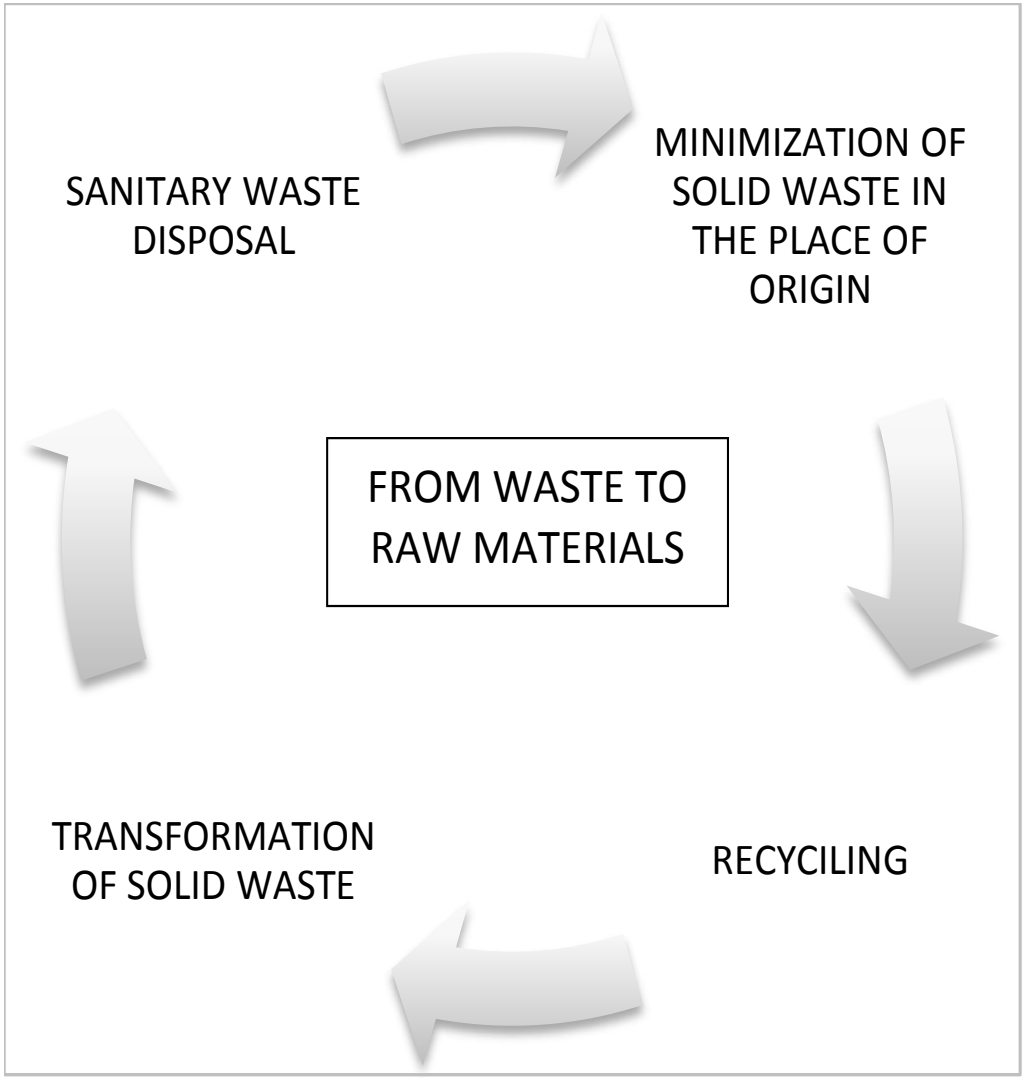
CIRCULAR ECONOMY MODEL: CEM

- After the production or consuption, waste is **collected and processed**
- It not has a negative impact on the environment and it is **used again** as a raw material in the production process
- Processes which can be used: recycling, regeneration, using of valuable properties of waste as an input or energy source, direct reuse, reduction of quantity and volume of waste before permanent disposal

Concept CEM


WASTE
CONSUMPTION PROCESS
DISTRIBUTION CHANNELS
PROCESS OF PRODUCTION AND PROVISION OF SERVICES
COLLECTION AND PREPARATION OF RAW MATERIALS
CIRCULAR ECONOMY MODEL
WASTE COLLECTION
• INDUSTRIAL WASTE
• INTER-INDUSTRIAL WASTE
• MUNICIPAL WASTE
• MEDICAL WASTE
SELECTION OF WASTE
PROCESSING WASTE
RECYCLING
USELESS

PHASES OF MINIMIZING UNUSABLE WASTE



WASTE MANAGEMENT

- CEM keeps some elements of the concept of LEM
- The path of the raw material from a resource through production, distribution, consumption and becoming waste is **identical in both concepts** (upper arrow)
- It is necessary to establish an integrated system of waste management, to be able to use advantages of CEM in the company

CONCLUSION

- LEM: based on the principle „take, produce, consume and throw“, does not treat waste adequately
- The price of raw materials falls resulting in the attitude that linear economy is an **optimal BUT unsustainable model of growth EVEN characterized by**: employment growth, production growth, profit growth and growth of a standard of living, but for a short time
- ***Such attitude towards the environment is not sustainable in the long run because of limitation of resources and degradation***

- CEM: A new **global response** to ecological and economical crisis and climate changes
- It has an aspects of social, ethical and ecological **responsibility**
- There is a **feedback** bringing selected and processed waste back, in the new production cycle as a raw material (down arrow)
- It is sustainable in the long run, 21st century
- It is economically justified, reduces the use of raw materials and quantity of waste
- **It is almost full implementation of sustainable development in the practise**

THANK YOU!

Questions?

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