

FLORA MERKO
UAMD
Business Faculty



**THE IMPORTANCE OF CIRCULAR ECONOMY IN
SUSTAINABLE DEVELOPMENT OF A COUNTRY**

INTRODUCTION

Current World Population
8,056,285,776

[view all people on 1 page >](#)

TODAY

Births today
208,583

Deaths today
94,382

Population Growth today
114,201

THIS YEAR

Births this year
86,647,686

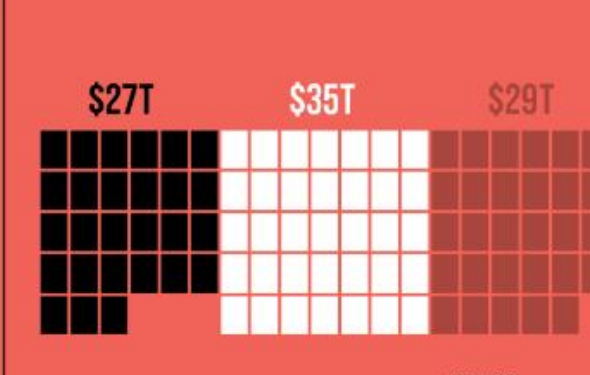
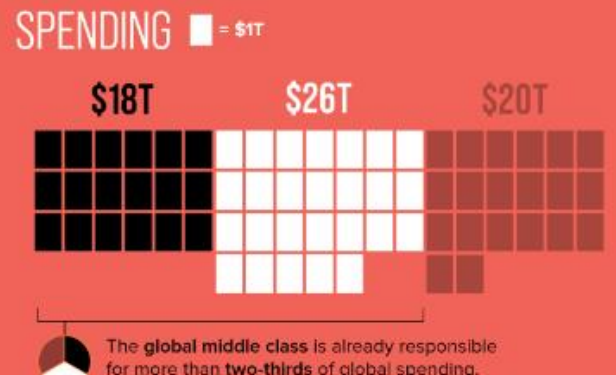
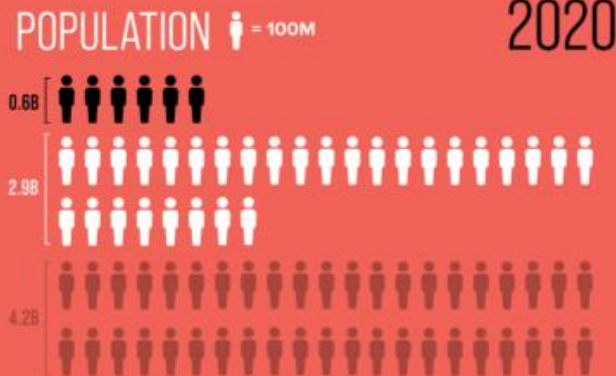
Deaths this year
39,207,163

Population Growth this year
47,440,524

THE WORLD'S GROWING MIDDLE CLASS

The world's middle class is already the largest spending group, driving increased consumption of goods and materials. Over the next ten years, it's only expected to grow.

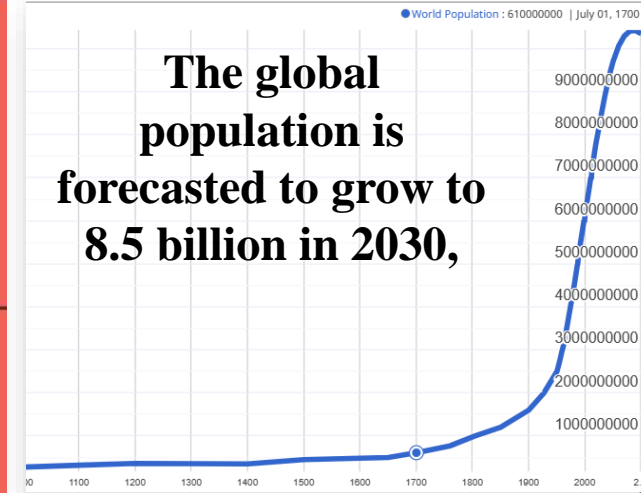
■ Upper Middle Class (Earn \$51-\$110 per day*)
■ Lower Middle Class (Earn \$11-\$50 per day*)
■ Upper Class and Poor & Vulnerable



The global middle class is already responsible for more than two-thirds of global spending.

*2011 PPP
Source: Brookings 2021

The global population is forecasted to grow to **8.5 billion in 2030,**



**9.69 billion in 2050,
and 10.36 billion in 2100**

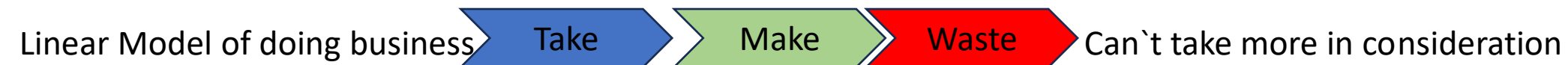
Municipal solid waste generation is predicted to grow from 2.1 billion tons in 2023 to 3.8 billion tons by 2050



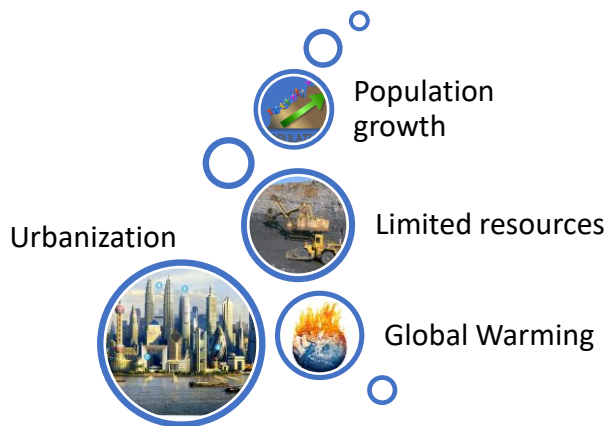
It's time for a circular economy



According to the Ellen MacArthur Foundation, only in the consumer goods sector, about 80% of its value is irretrievably lost each year.



Challenges and trends nowadays:



The aim of circular Economy:

Good management of materials by designing products and services in such a way as to allow their reuse for as long as possible.

The fundamental difference between LE and CE, is that if linear economy follow the rule "Take => Make => Waste"



Circular Economy follow the rule 3R "reduce => reuse => recycle", eliminating totally the waste.



Do you know how many aluminum cans are produced every minute?

350,000 aluminum cans every minute.

**Wait
What**



How many times can Aluminum be recycled??

There is no limit to the number of times aluminum can be recycled.



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WASTE MANAGEMENT IN WESTERN BALKAN COUNTRIES



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CIRCULAR ECONOMY IN ALBANIA

CONCLUSIONS



DEFINITIONS ON THE CIRCULAR ECONOMY



European Commission

- The circular economy is described as an economy where the value of products, materials and resources are shared in the economy as long as possible and the generation of losses is minimized.



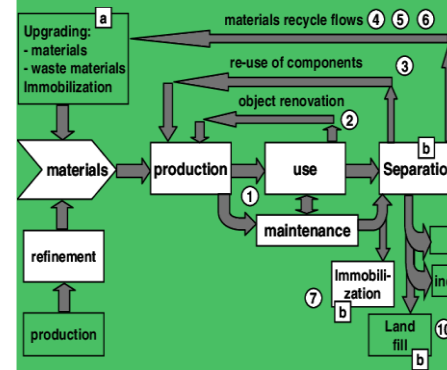
Ellen MacArthur

- The circular economy is "an industrial system which is regenerative. It replaces the "end-of-life" concept in restoration, shifts to renewable energy, eliminates the use of toxic chemicals that harm reuse, and aims to eliminate waste through the design of materials, products, systems, and business models.



Souve et al

- The circular economy refers to the production and consumption of goods through closing the cycle of material flows, thus minimizing negative impacts on the external environment.



- The circular economy focuses on recycling, minimization of used resources, reuse of physical inputs and use of waste as a resource that leads to the reduction of the consumption of the main resources.

LINEAR MODEL

It is accompanied by a number of weak points that are discussed within the costs that this model has produced.

1) In statistical terms 21 billion tons of all materials used in production process :

- ↳ refuse;
- ↳ low efficiency;
- ↳ improper storage.



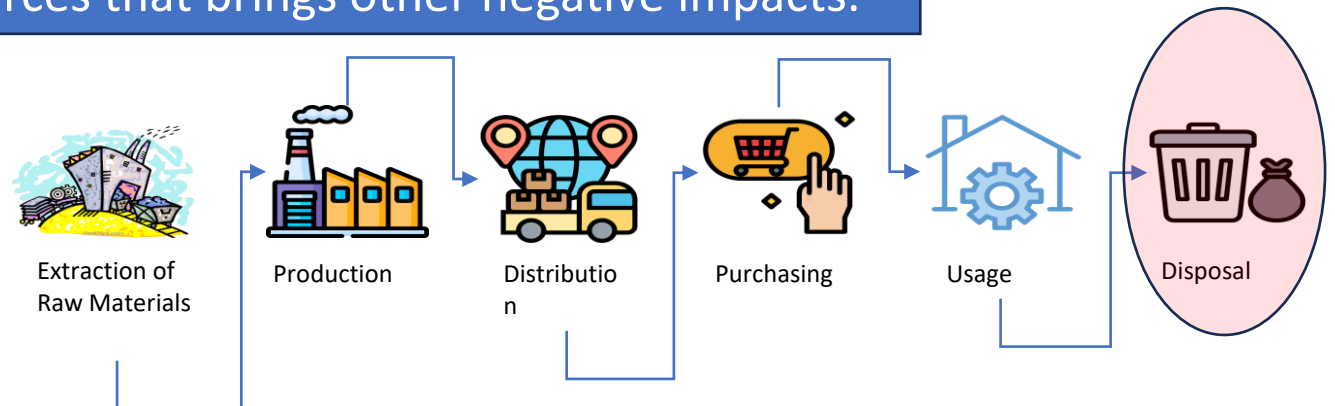
lost during the

2) Loss of 2.7 billion tons out of 65 billion of the total inputs used in Europe in 2010, in the form of waste:

- ↳ less than 40% was recycled;
- ↳ 60% of the waste was never used.

This indicates mismanagement of resources that brings other negative impacts.

Up to XX Century Costs < Incomes.
After XX Century Costs > Incomes.

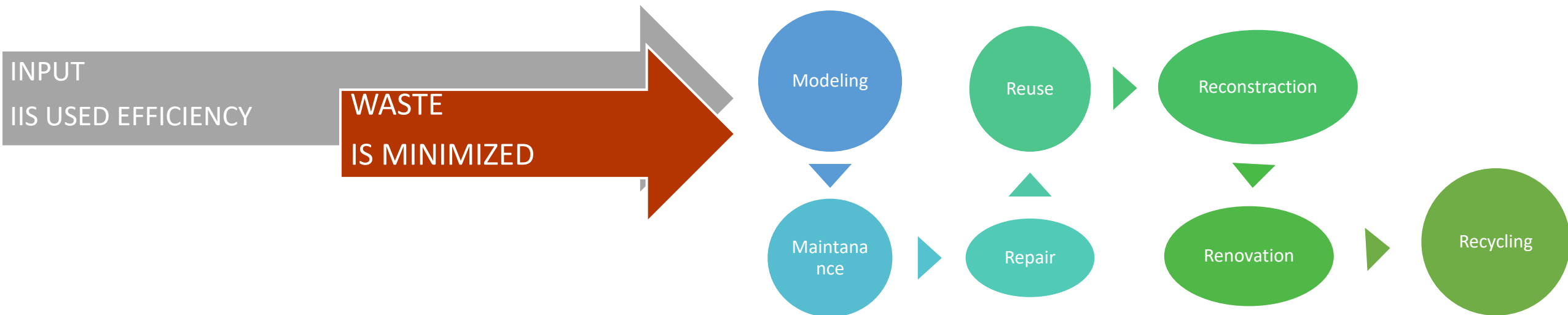


CIRCULAR ECONOMY

WHAT?

WHAT IS CIRCULAR ECONOMY?

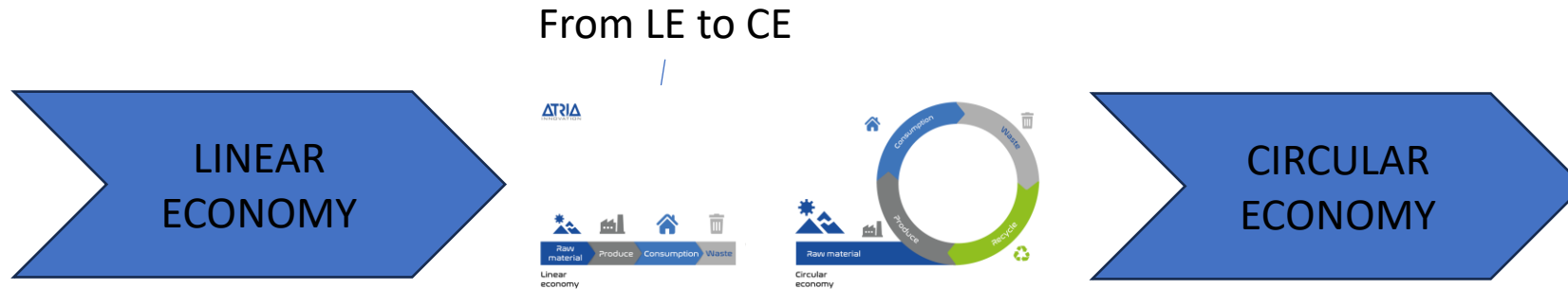
- It is an economic system that aims to minimize waste and intensive and extensive use of resources.



Fakt

- In one year in the United States, steel recycling saves enough energy to heat and fresh 18,000,000 homes!
- The energy saved by recycling a glass bottle can light a 100-watt light bulb for four hours. It also causes 20% less air pollution and 50% less water pollution than when a new bottle is made from raw materials.
- On average, a person generates about 1.9 kg of garbage every day. **So think twice before you jump please!**

ADVANTAGES OF CIRCULAR ECONOMY



It brings benefits related to the connection of a sustainable and productive innovative economy

BENEFITS

Significant material savings and reduced exposure to price volatility

- In the industry of complex products, about \$630 billion is saved every year

- About \$700 billion is saved in consumer goods every year

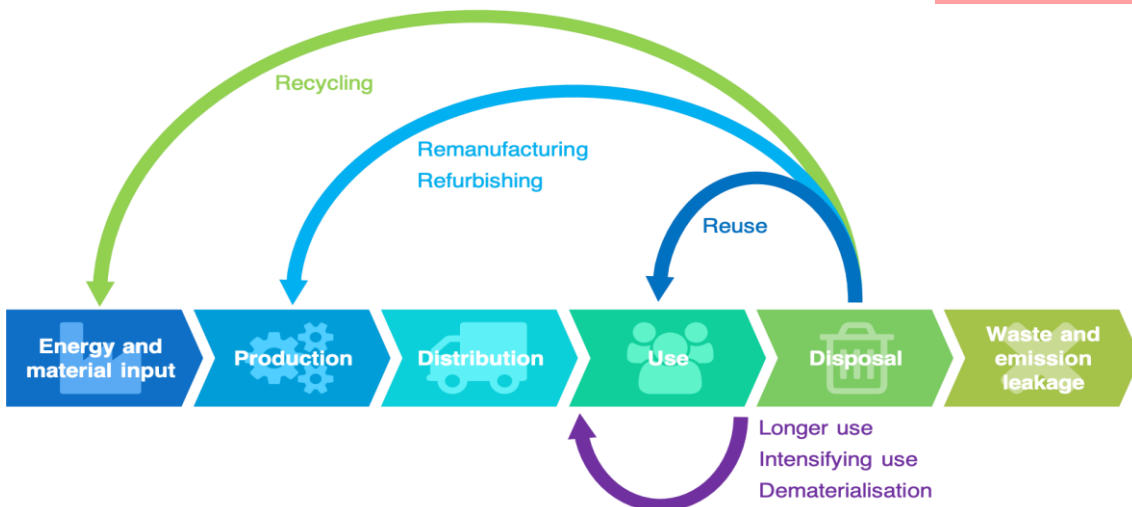
Increasing innovation and the potential for job creation

Sustainability growth

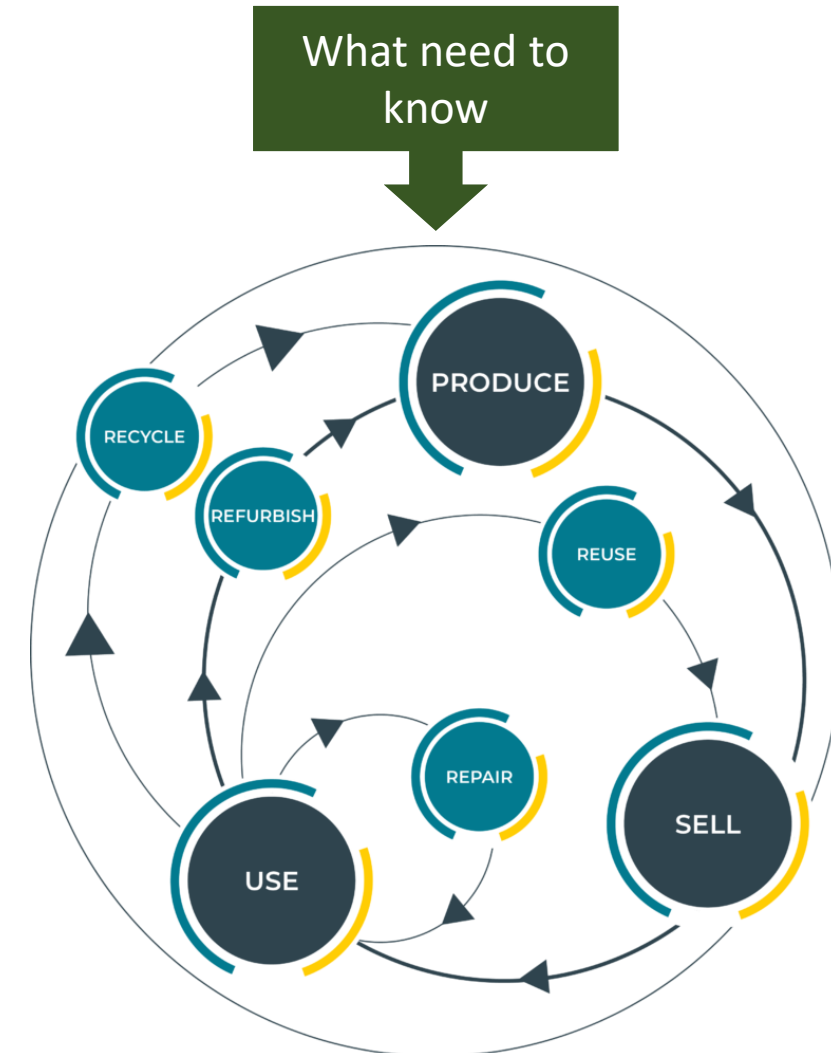
ADVANTAGES OF CIRCULAR ECONOMY

The use of the circular economy is associated with more benefits.

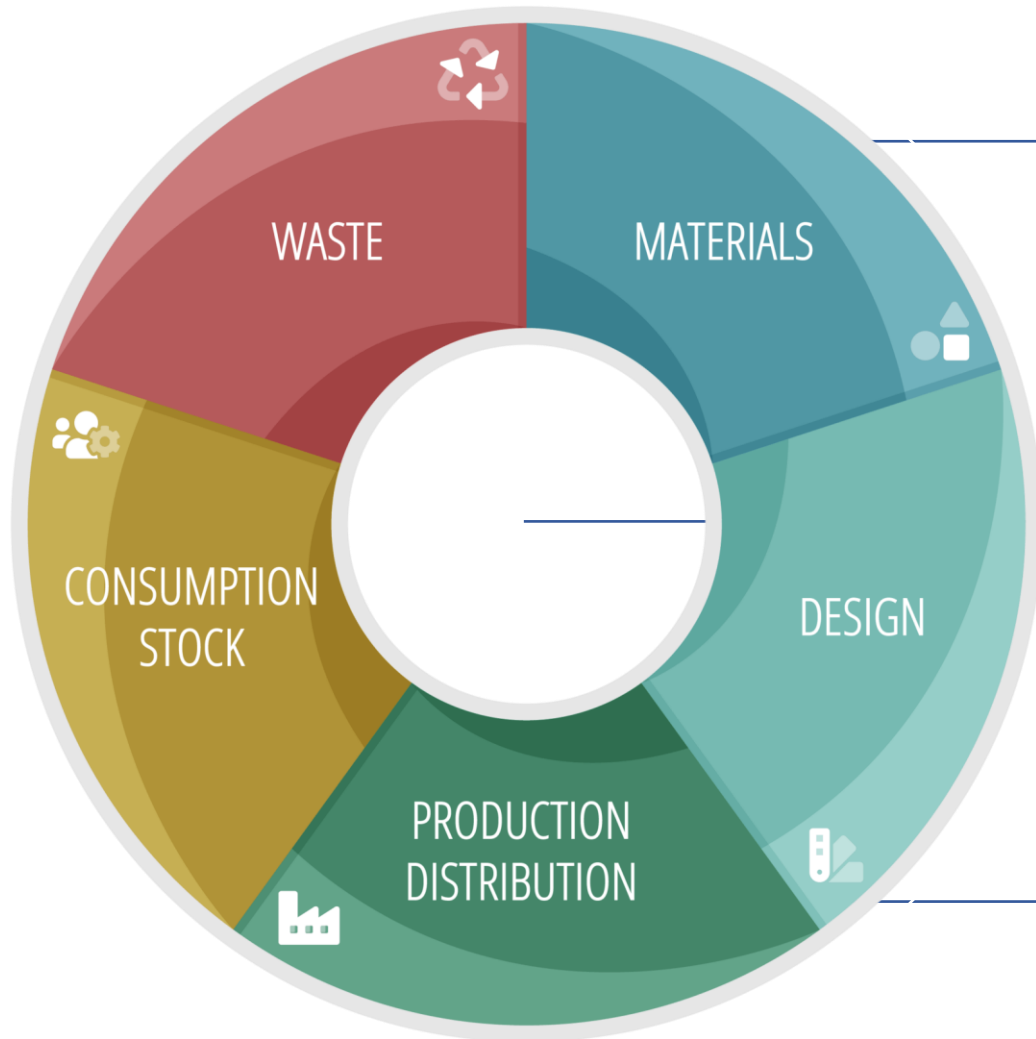
- ✓ There is a reduction in the negative impact on the environment.
- ✓ Increases the efficiency of the use of resources => increase in the financial performance of firms.
- ✓ Such a business model increases competitiveness and as a result the development of more innovative production methods.
- ✓ It creates opportunities for new jobs by increasing the employment rate and promotes economic growth:
 - The EU foresees **170,000** new jobs by 2035 as a result of the draft circular economy package.
 - Reducing carbon emissions in EU countries by **450 million** tons by 2030.



From Linear
to Circulate



CHALLENGES OF CIRCULAR EKONOMY



High costs



Resistance to change

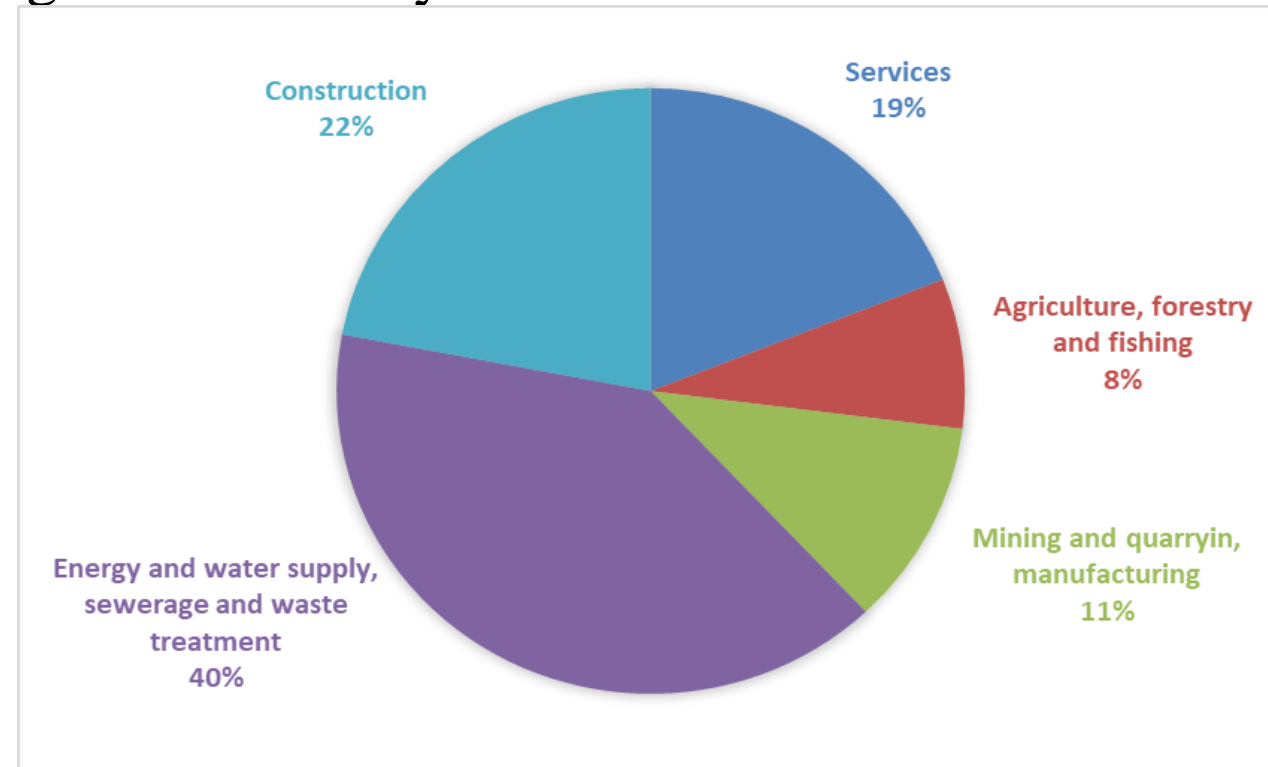


The perception of a lack of consumer demand

CIRCULAR ECONOMY

Figure 1. Gross value added of the environmental economy, by activity, EU

- The role of environment economy is increasing year by year. The figure highlights the significant role that the energy and water supply, sewerage, and waste treatment sector plays in the environmental economy, accounting for 40% of the total value added. The construction sector follows with a 22% contribution, while services contributed by 19%. The remaining activities mining and quarrying, and manufacturing account contributed by 11%, and finally agriculture, forestry, and fishing contributed by 8%.



WASTE MANAGEMENT IN WESTERN BALKAN COUNTRIES

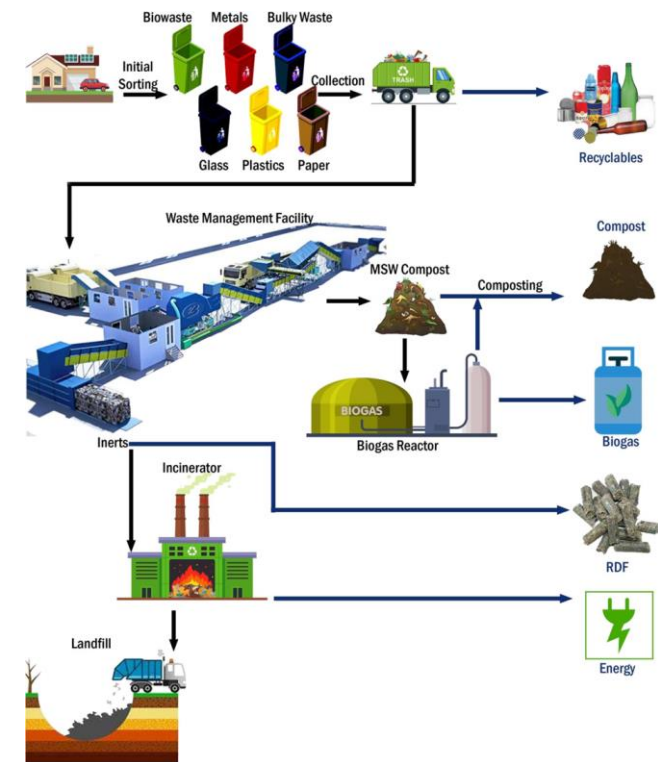
Table 1. Municipal waste management in Western Balkan Countries

- This table provides an overview of how municipal waste was managed in several Western Balkan countries, almost in the same period. The data are presented as percentage of the total waste treated by various methods.
- *Landfill:* The majority of municipal waste in all the listed countries is sent to landfills, where Kosovo and Montenegro have the highest percentages (100% and 89%, respectively). Albania has a relatively lower landfill rate at 81%, indicating some diversion to other forms of waste management. So, landfilling is the predominant method of waste management across Western Balkan Countries. Kosovo, in particular, relies entirely on landfilling for waste management.
- *Incineration:* Incineration is not commonly used in these countries, with only Albania reporting a very small percentage, only (1%) of waste being incinerated.
- *Recycling (including composting/digestion):* Recycling rates are generally very low across these countries. Albania stands out with a significant recycling rate of 18%, higher than other countries in the region, suggesting better infrastructure or policies supporting recycling activities. Montenegro has a small recycling rate at 5%, while other countries reported negligible or no recycling activities.
- *Unknown treatment or storage:* A significant portion of waste treatment in North Macedonia (31%) Serbia (12%), and Bosnia and Herzegovina (11%) are classified as unknown treatment or storage, indicating a lack of comprehensive data or unregulated disposal methods, so highlighting potential gaps in waste management reporting or practices.

Percentage	Serbia (Year 2018)	North Macedonia (Year 2020)	Montenegro (Year 2020)	Kosovo (Year 2020)	Bosnia and Herzegovina (Year 2019)	Albania (Year 2020)
Landfill	87%	69%	89%	100%	89%	81%
Incineration	0%	0%	0%	0%	0%	1%
Recycling (including composting/digestion)	0%	0%	5%	0%	0%	18%
Unknown treatment or storage	12%	31%	7%	0%	11%	0%



SITUATION OF CIRCULAR ECONOMY IN ALBANIA



- ✓ The integrated management of waste and their differentiation in an organized way is estimated to have legal beginnings in Albania in the 60s, but it is thought to be an earlier process.
- ✓ The industrialization of the country, the need for raw materials, the tendency to provide alternative sources for raw materials and the reduction of costs are estimated to have been some of the main reasons why in Albania of those years there was an integrated waste management; where recycling and resource allocation by the population as a whole were foreseen.
- ✓ In that period, we cannot say that we are dealing with a pro-environmental policy or a developed recycling industry, but only with a pure economic solution.
- ✓ A special importance has been given to the separation of waste at the source, including in this process not only Albanian families, but also commercial units, transport companies, etc.

SITUATION OF CIRCULAR ECONOMY IN ALBANIA



Before the 90s, Albanian families would be stimulated to separate waste at source, mainly separating paper, cardboard and glass.

- Recycling after 1990 and especially in today's period has expanded a lot.
- Based on the need for development, the Association of Recyclers of Albania was established on March 8, 2007 and currently consists of 16 companies from different sectors of the recycling industry.



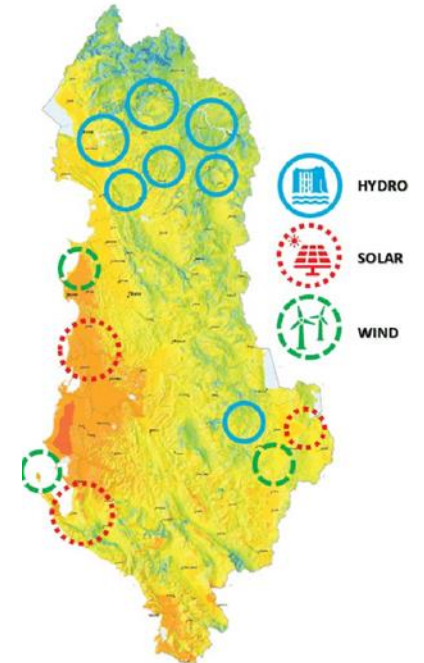
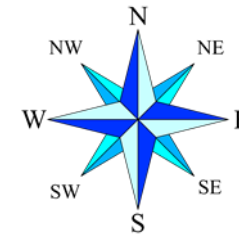
the wood waste would be used for furniture



waste plastic for clothing



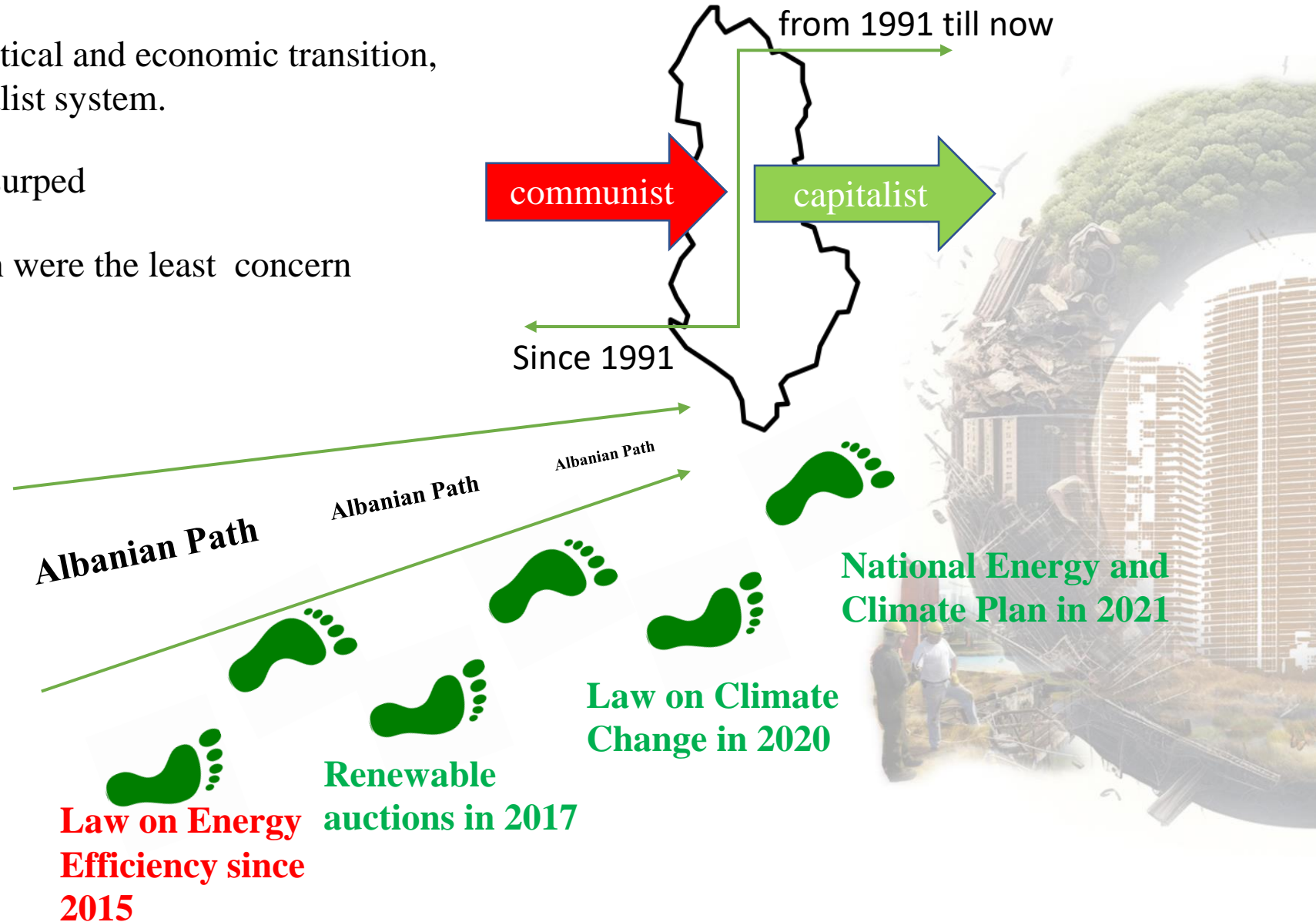
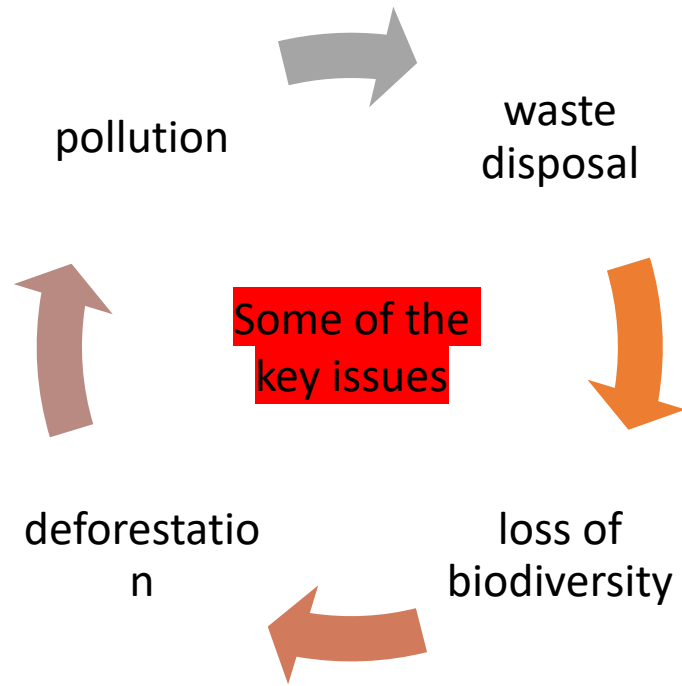
metal waste would be subject to reprocessing



SITUATION OF CIRCULAR ECONOMY IN ALBANIA

In the 1990s, Albania entered a great political and economic transition, passing from the communist to the capitalist system.

- All resources in common use were usurped
- The environment and its conservation were the least concern



SITUATION OF CIRCULAR ECONOMY IN ALBANIA

- During the 2008 financial crisis, the green economy comes to be a political approach to the solution of two problems:
 - preventing environmental degradation
 - creating new mechanisms for economic growth and development

In the course of the last twenty years in Albania



PM_{2.5} quality improved, the current PM_{2.5} concentration is below the recommended limit given by the WHO 24 hrs air quality guidelines value.

exponential growth
of car use

increase of
productive
activities

reduction of green
spaces

WATER SOURCES AND WASTE MANAGEMENT

Water sources



are contaminated by

industrial effluent

human waste

untreated sewage

Waste management



don't use suitable technology

to treat waste

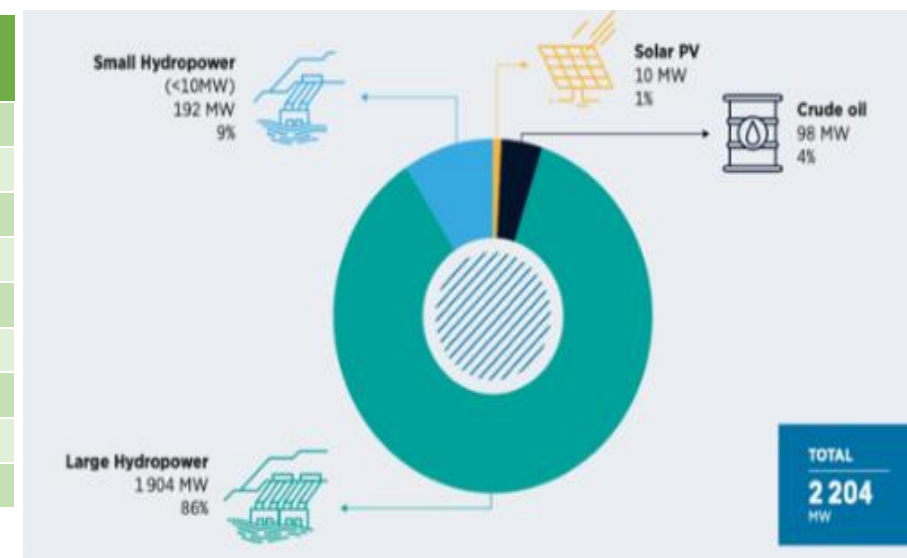
to protect the environment

SITUATION OF CIRCULAR ECONOMY IN ALBANIA

Table 2. Content of some air pollutants in Tirana

- The data indicates significant fluctuations in air pollutant levels in Tirana over the years. Key observations include:
 - *Impact of Industrial and Vehicle Emissions:* Peaks in pollutants such as SO₂, NO₂, PM₁₀, and CO correspond to periods of increased industrial activity and traffic.
 - *COVID-19 Pandemic:* There is a noticeable reduction in most pollutants in 2020, reflecting the impact of reduced economic and transportation activities during the pandemic lockdown.
 - *Regulatory Measures:* Decreases in pollutants like O₃ and benzene suggest effective regulatory measures and improvements in air quality management over the years.

Air pollutions	Years	2012	2013	2014	2015	2016	2017	2018	2019	2020
SO ₂	µg/m ³	6.3	:	15.52	10.46	13.66	9.94	:	25.68	3.21
NO ₂	µg/m ³	23.83	27.30	35.01	42.38	47.63	49.32	:	37.85	19.42
Pb	µg/m ³	:	:	0.01	:	:	:	:	:	:
O ₃	µg/m ³	55.79	51.03	32.64	33.34	22.33	26.22	:	31.7	30.02
LNP	µg/m ³	:	:	:	:	:	:	:	:	:
PM ₁₀	µg/m ³	35.44	32.56	54.06	57.34	52.05	62.49	:	:	:
PM _{2.5}	µg/m ³	19.24	16.45	:	:	:	:	:	:	:
CO	mg/m ³	0.43	:	0.85	0.87	0.8	2.56	:	0.48	0.56
Benzen	µg/m ³	3.95	:	2.76	2.9	2.7	1.83	:	:	1.78



SITUATION OF CIRCULAR ECONOMY IN ALBANIA

Table 3. Urban waste treatment in tons and %, in Albania

- The table shows that the amount of waste treated through combustion for energy increased significantly over the three years, from 1.1% in 2020 to 4.4% in 2022. This indicates a growing focus on energy recovery from waste.
- Combustion for elimination remained relatively low and stable, with a slight increase in 2022.
- Recycling rates have been relatively steady, with a slight increase from 18.1% in 2020 to 18.9% in 2022.
- The percentage of waste deposited in landfills decreased from 80.2% in 2020 to 76.6% in 2022, reflecting efforts to divert waste from landfills.
- Deposits outside landfills have decreased significantly, indicating better management and reduced illegal dumping or unregulated disposal.

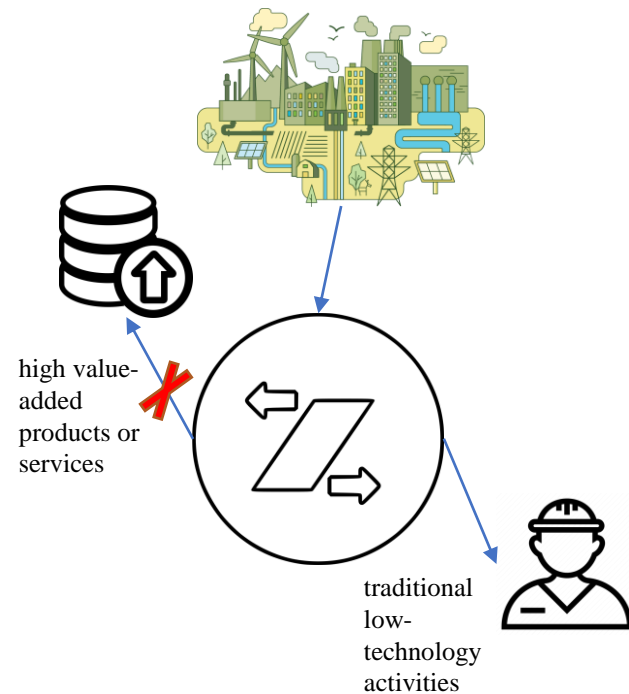
Years	Combustion for energy		Combustion for elimination		Recycling		Deposits in landfills		Deposits outside landfills	
	Ton	%	Ton	%	Ton	%	Ton	%	Ton	%
2020	11,150	1.1	896	0.1	189,871	18.1	840,658	80.2	5,278	0.5
2021	17,189	2.0	311	0.04	164,444	18.8	691,352	79.0	1,811	0.2
2022	35,996	4.4	379	0.05	154,934	18.9	628,239	76.6	775	0.1



ALBANIA, ECONOMIC OPPORTUNITIES AND POLICY RESPONSES

- Albania's response toward the development of technology and innovation has not been in the proportion with the country's objective of being a member of the European Union
- Production sector composition is heavily skewed towards traditional low-technology activities, based on labor costs rather than high value-added products or services, and competitiveness remains low generally
- The environmental policy in Albania is still underdeveloped, regardless of the fact that the legal framework is well-defined and according to EU guidelines

Production sector



Competitiveness remains low

International organizations are providing valuable assistance in the circular economy implementation in Albania. A project financed by the EU, for 14.6 million euros, aims to contribute to the implementation of European environmental standards and the principles of the circular economy in Albania. The project will help Albania reduce waste and move towards a circular economy model, serving as an example for the entire region and not only.

CONCLUSIONS

This paper underscores the critical need to transform our lifestyles and production methods to address the insufficiency of natural resources and the deteriorating state of the environment, highlights the essential role of waste management in transitioning to a circular economy, emphasizing that waste should be seen as a resource rather than a problem. Effective processing and recycling of urban solid waste can yield substantial financial benefits, transforming waste into a source of energy and a starting point for new processes.

Natural resources are insufficient to meet the needs of people, therefore we must change the way we live and produce. The global population is forecasted to grow to 8.5 billion in 2030, 9.69 billion in 2050, and 10.36 billion in 2100. Municipal solid waste generation is predicted to grow from 2.1 billion tons in 2023 to 3.8 billion tons by 2050, which will be accompanied by increased costs for their management. If we aim for a sustainable development economy, the solution will be towards the Circular Economy.

The Balkan region faces significant challenges in urban waste management, with a heavy reliance on landfilling and low recycling rates. Albania stands out for its relatively higher recycling rates and efforts to increase the use of waste-to-energy methods. However, there is a pressing need for improved waste management infrastructure, better data reporting, and enhanced recycling and energy recovery initiatives across the region. By adopting comprehensive waste management strategies and investing in sustainable technologies, the Balkan countries can improve their environmental outcomes and move towards a more circular economy.

CONCLUSIONS

To achieve these goals, the paper calls for substantial investments in sustainable development practices by governments, including Albania and other developing countries. It stresses the importance of a dedicated budget for circular economy initiatives, supplemented by international funding. The involvement of businesses, public institutions, and the active participation of citizens and local governments is crucial. The cooperation between these stakeholders, supported by academia and social media, is essential to foster collaborative management of environmental pollution and carbon emissions.

In conclusion, the paper advocates for a comprehensive approach to reuse, reproduce, and recycle waste to preserve nature, ensure a clean and sustainable environment, and secure a higher quality of life for future generations. The transition to a circular economy is not only a necessity but also an opportunity for sustainable development and economic growth.

think

Natural resources are no longer sufficient to meet our needs. Faced with this fact, we must change the way we live and how we produce. This means reducing our consumption of natural resources, but also reusing and recycling them on a massive scale.

thank you
