URBANIZATION AND SOLID WASTE PRODUCTION: PROSPECTS AND CHALLENGES

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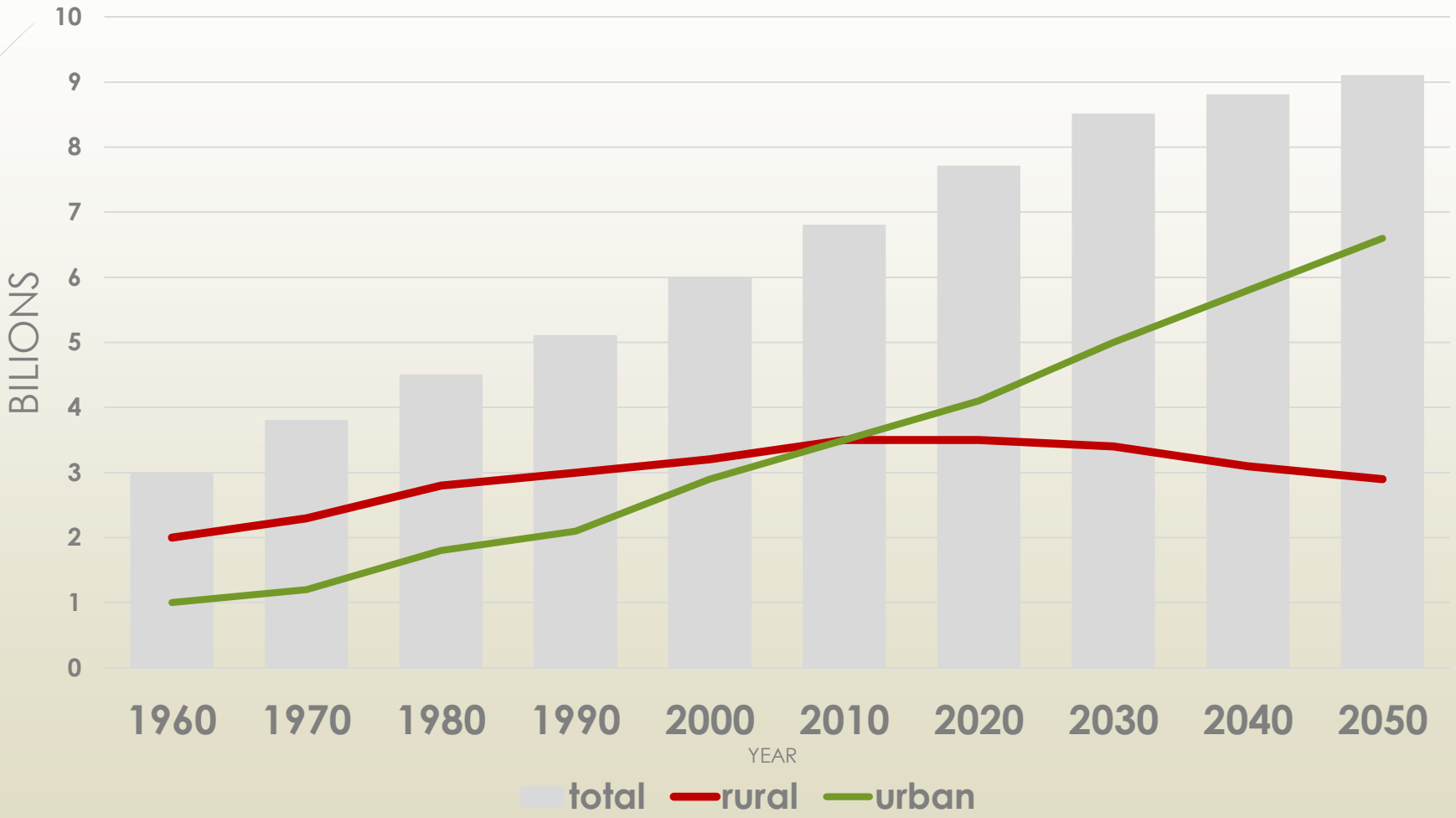
WORLD POPULATION

- The world's population it is growing by **1.10% per year**, yielding an additional *83 million people annually*.

- The population is predicted to increase more than one billion people over the next 13 years, reaching 8.6 billion in 2030, and to 9.8 billion in 2050 and 11.2 billion by 2100

- Cities allocate about **50%** of world's population, and it is expected that this number will increase up to 66% by 2050

URBAN VS RURAL POPULATION



Change in the Global Urban Rural and Total population of the world:1960 -2050

URBANIZATION

Although urban areas account for **only four percent** of the Earth's land surface area they are responsible *for 60% of water consumption and 80% of carbon emissions*

URBANIZATION

Cities worldwide **are facing the challenge** to find and implement alternative strategies towards more sustainable management of urban resources.

The main issues rising from the uncontrolled growth of cities are:

i. climate change
ii. use of natural resources
iii. energy consumption
iv. water consumption
v. waste production
vi. biodiversity loss

Urbanization and Waste generation

- The urban territory is responsible for *a high percentage of natural resources consumption and waste generation*
- The total waste generation in the *EU-27 is more than 2.62 billion tn*.
- The annual increasing rate of *Municipal Solid Waste (MSW) is about 2 billion tn.*
- Besides the explosive growth in the weight and volume, the composition of the MSW is becoming more and *more complex*

THE CASE STUDY OF PROTARAS AREA

Protaras (Paralimni) is situated on the southeastern of Cyprus and **is one of the most attractive tourist destination** of Cyprus.

THE CASE STUDY OF PROTARAS AREA

Waste Compositional Analysis Methodology

Sampling period:
June to October for a period of 7 days per month

Sampling program:
on a daily basis,3 times a day

- 9:00-9:30am,
- 13:00-13:30pm and
- 16:00-16:30pm

Sampling methodology:
Standard Test Method for Determination of the Composition of Unprocessed Municipal Solid Waste, D5231 – 92.

Waste Compositional Analysis - Results

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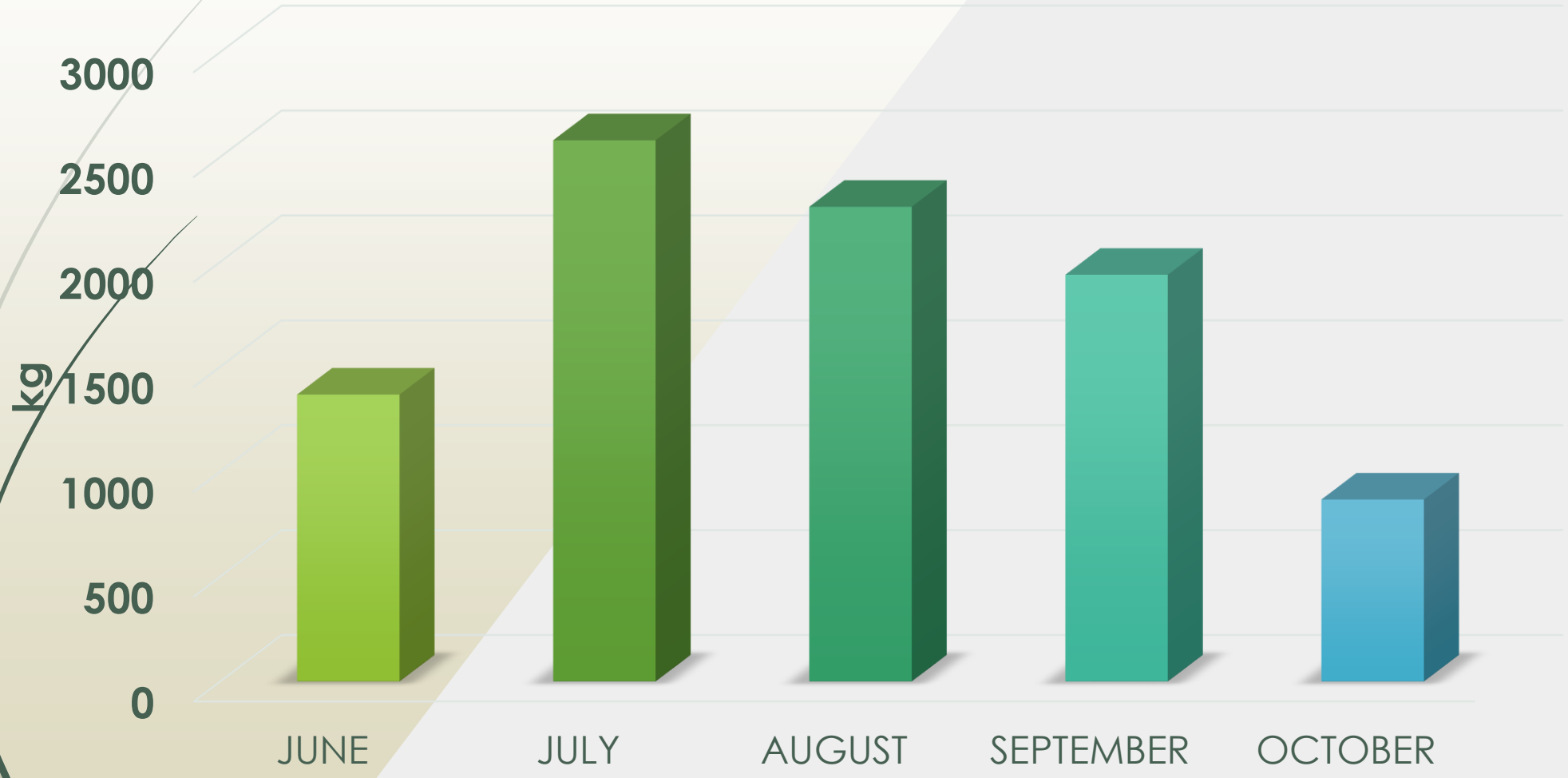
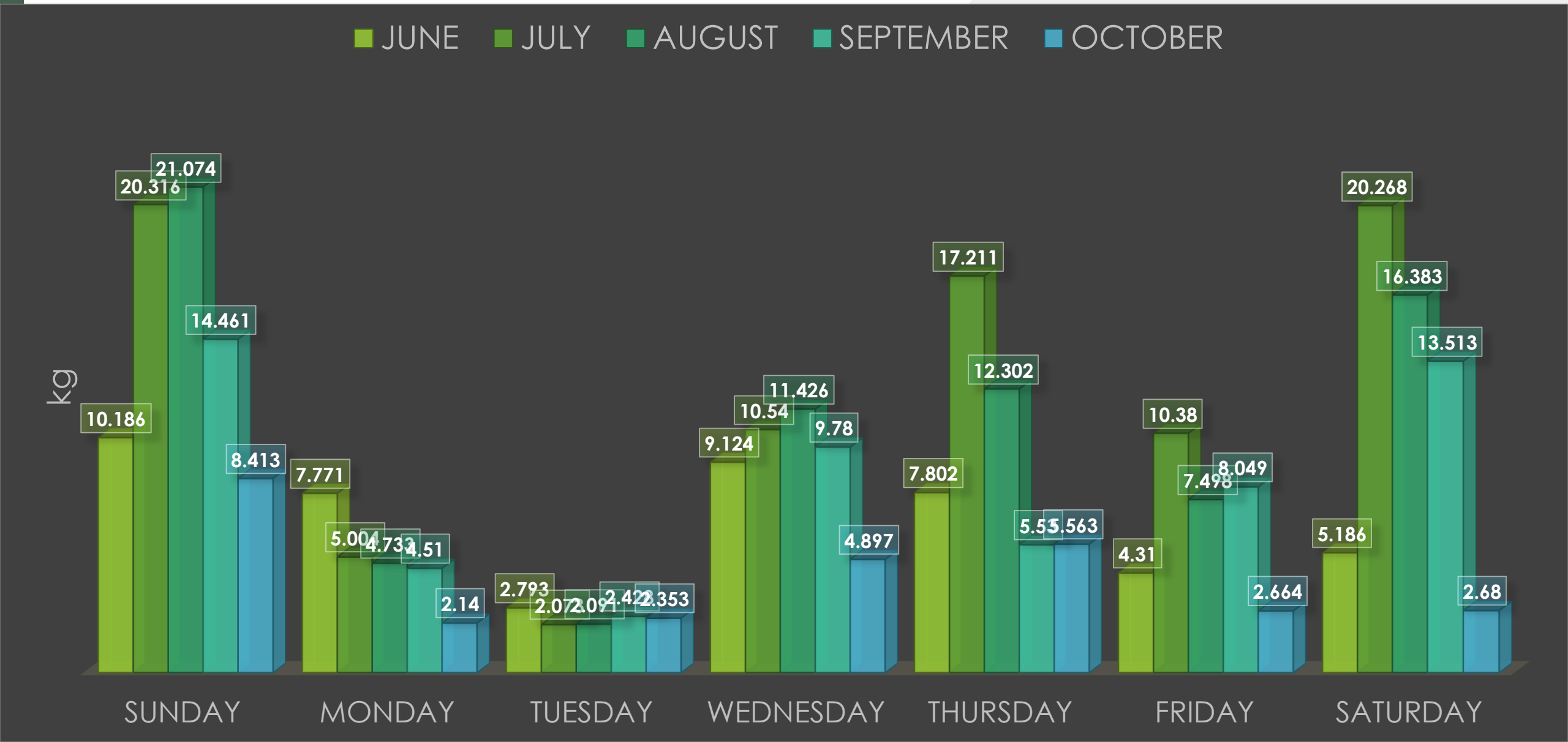
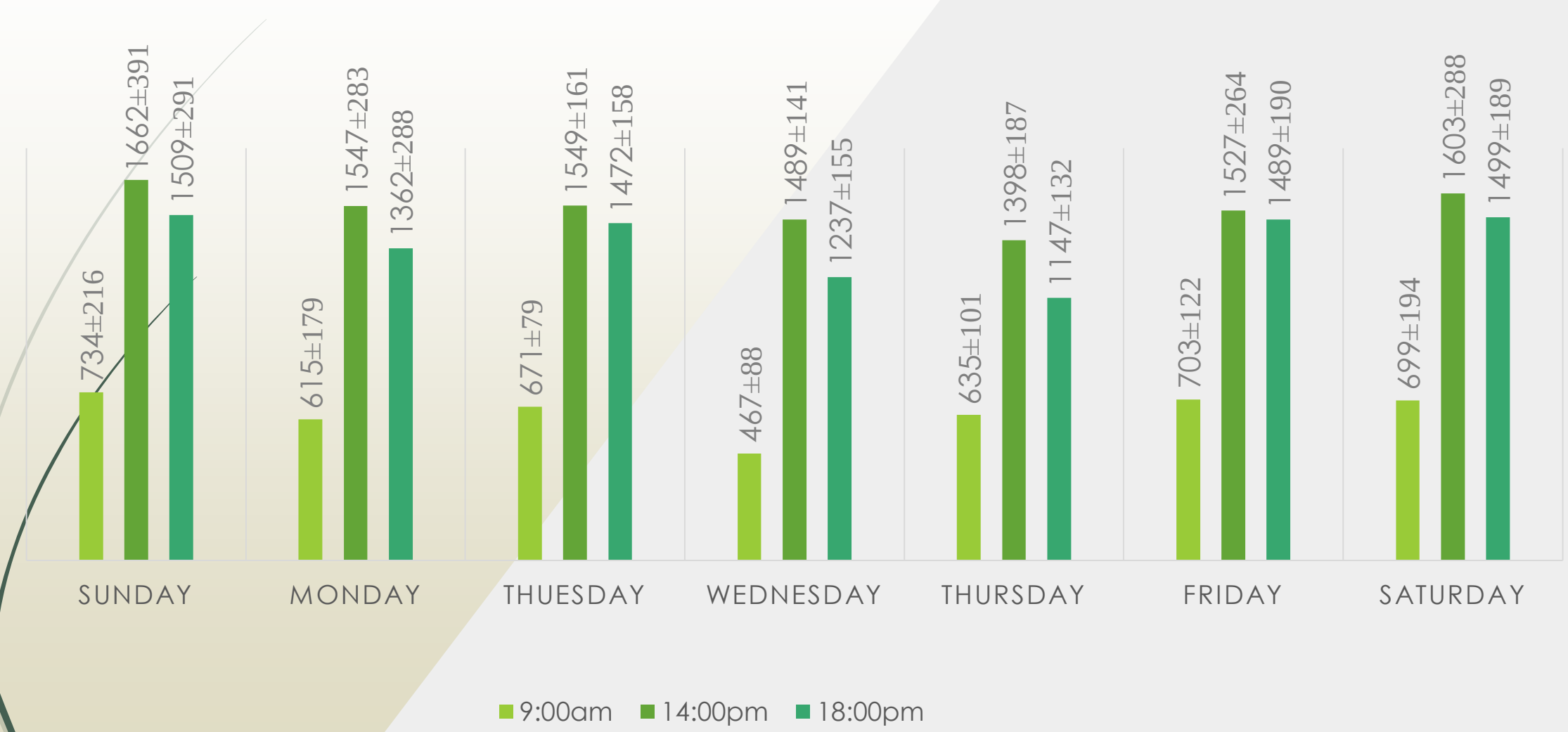


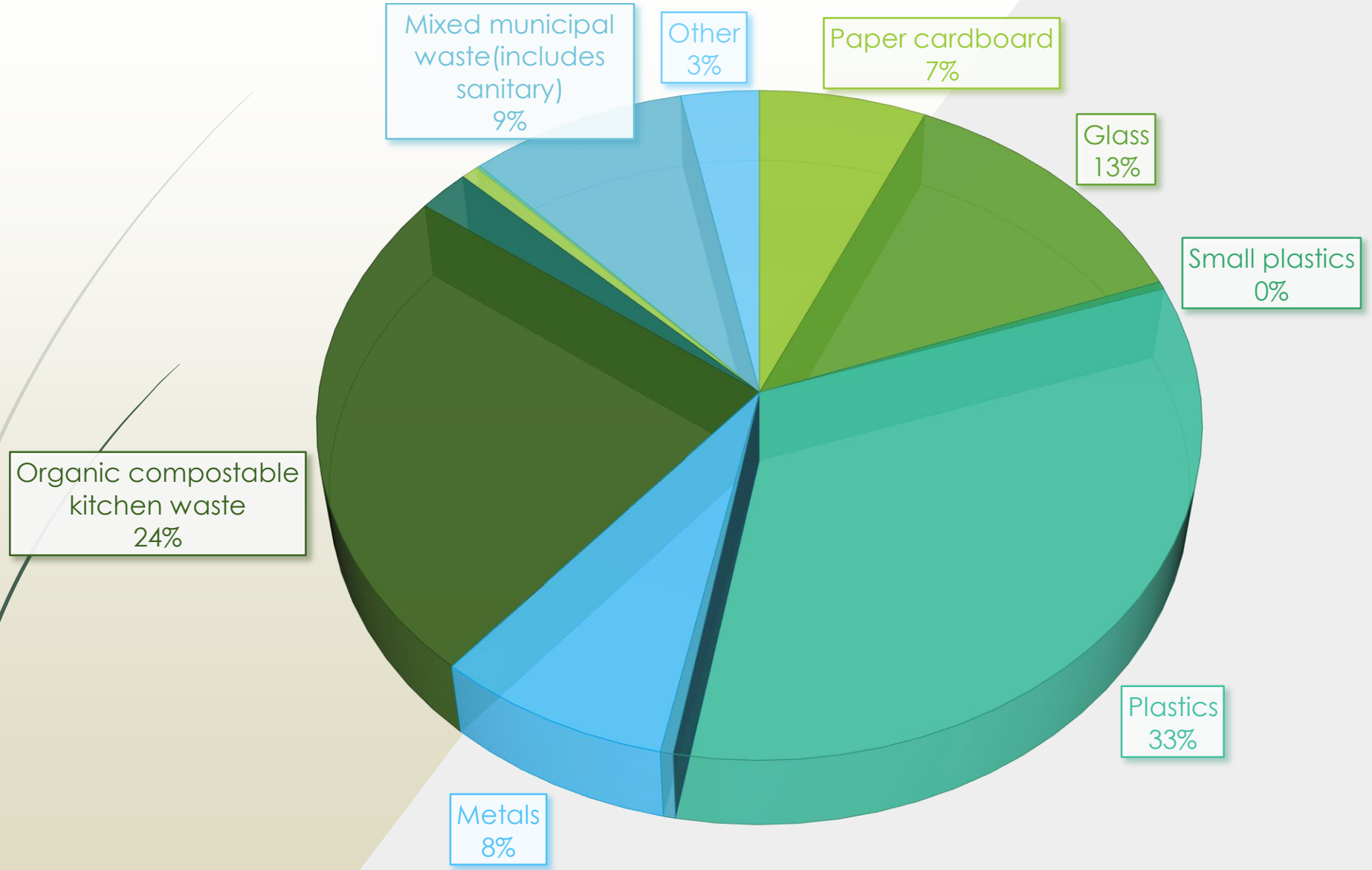
WASTE COMPOSITIONAL ANALYSIS RESULTS



Waste Compositional Analysis - Results



Waste Compositional Analysis - Results



CONCLUSION

The higher the population density in an area, the higher the of waste production, while at the same time the requirements for infrastructure are increased.

To measure the tourism relationship with the environment and the pressure that adds, ***is extremely complex.***

The massive and rapid growth of tourism in recent years, both globally and locally, has had the ***effect of changing*** the character of a wider rural area into a tourist one.

SUSTAINABLE WASTE MANAGEMENT

Effective and efficient MSW management has been widely accepted as an **emergent factor.**

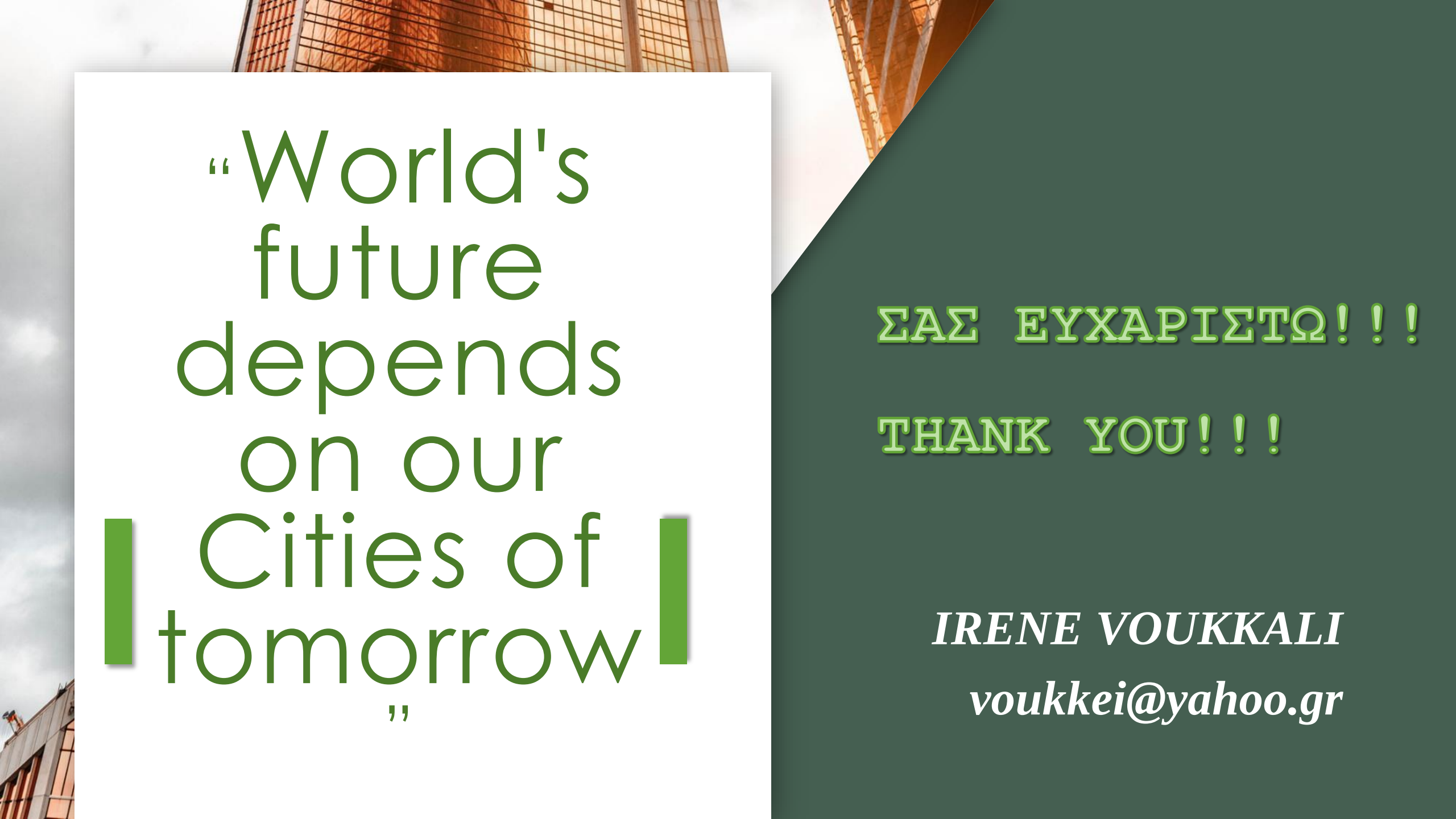
An integrated MSW management should take into consideration the goals of the ***CIRCULAR ECONOMY*** according to the framework of ***SUSTAINABLE URBAN METABOLISM.***

SUSTAINABLE WASTE MANAGEMENT

Municipalities have the challenge to provide an

effective and efficient system

to the inhabitants and also to face problems due to lack of organization, financial resources, complexity and system multi dimensionality



"World's future depends on our Cities of tomorrow"

ΣΑΣ ΕΥΧΑΡΙΣΤΩ!!!

THANK YOU!!!

IRENE VOUKKALI

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