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Water Overconsumption: Devices for Efficient Water Management in Tourist Cities

Civil Engineering Department
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English II - 2023

Universidad Tecnológica Nacional
Facultad Regional Paraná

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INTRODUCTION

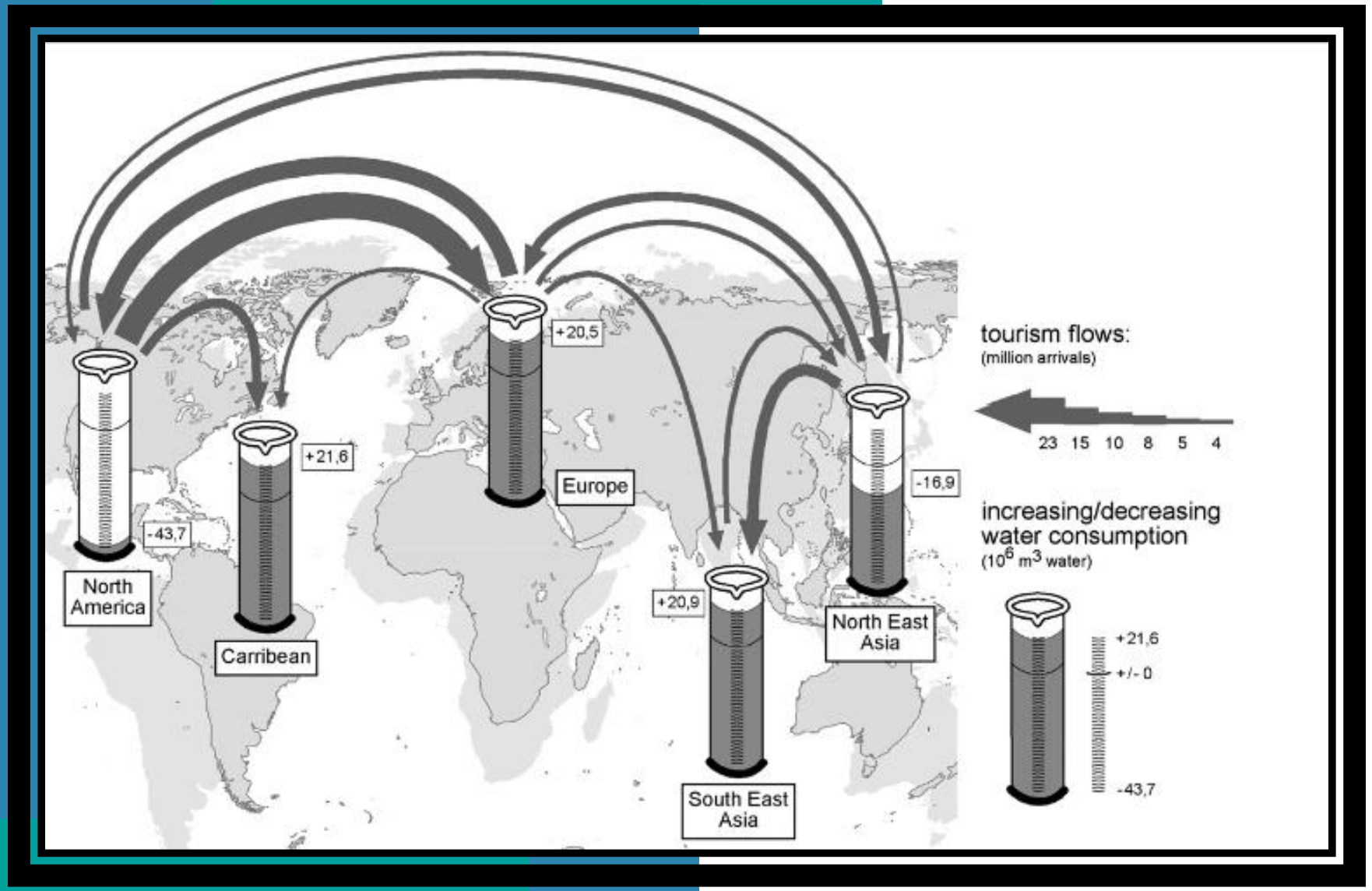


Fig 1: Tourism-related shifts in global water use

INTRODUCTION

Ensure availability and sustainable management of water and sanitation for all.

INTRODUCTION

Purpose of the paper:

Talk about: Inadequate use of water

Propose: Solutions

Reduce: Overconsumption

MAP OF THE PRESENTATION

01 *DESCRIPTION OF THE WATER USE PROBLEM IN TOURISM*

02 *PROBLEM DEFINITION: CLASSIFICATION OF WATER USE IN TOURISM AND ITS CONSEQUENCES*

03 *PROBLEM APPROACH: DEVICES PROPOSAL*

04 *ANALYSIS: POSITIVE AND NEGATIVE ASPECTS OF THE PROPOSED DEVICES*

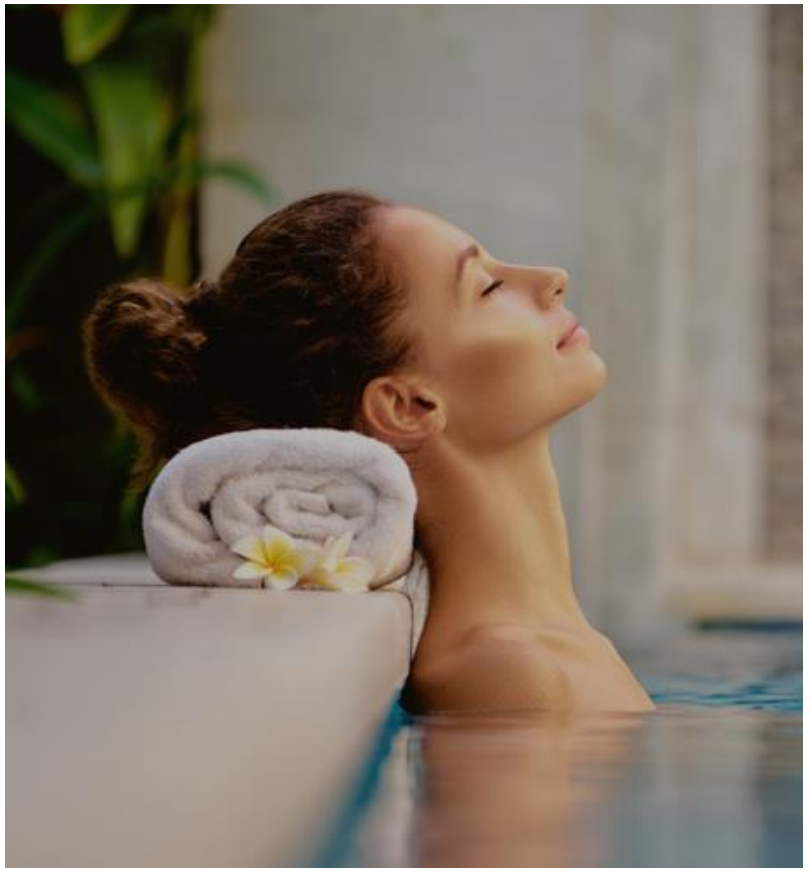
INTRODUCTION

Expected impact:

-Water use awareness

-Water saving habits

PROBLEM DEFINITION



Tourist consumption

PROBLEM DEFINITION

- Water use embodied in a holiday will vary considerably, depending on hotel standard, distance to the destination, as well as the type and amount of food consumed.

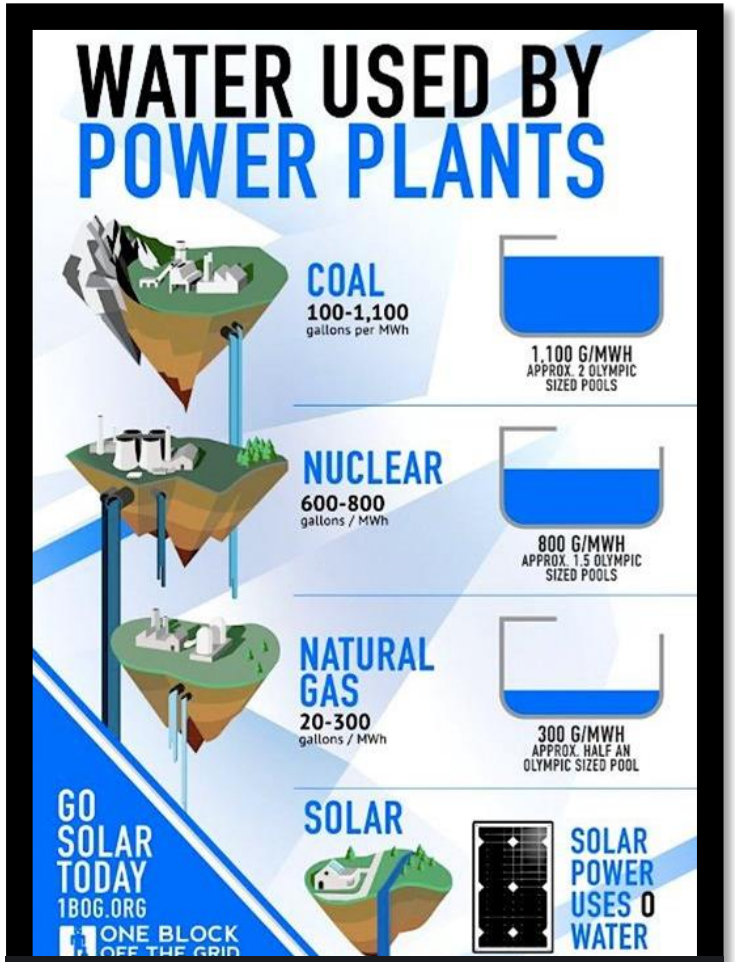
Water use category – direct	L per tourist per day
Accommodation	84–2000
Activities	10–30
Water use category - indirect	L per tourist per day
Infrastructure	n.a.
Fossil fuels	750 (per 1000 km by air/car)
Biofuels	2500 (per 1 L)
Food	2000–5000
Total per tourist per day	Estimated range: 2000–7500

- **FIG 2: Water use categories and estimated use per tourist per day**

PROBLEM DEFINITION

Indirect use of water

Water embodied in food production



Comparison between the water needed to produce the purchased energy and the water needed if the hotel produces it

Embodied water in accommodation: energy, infrastructure and food

PROBLEM DEFINITION

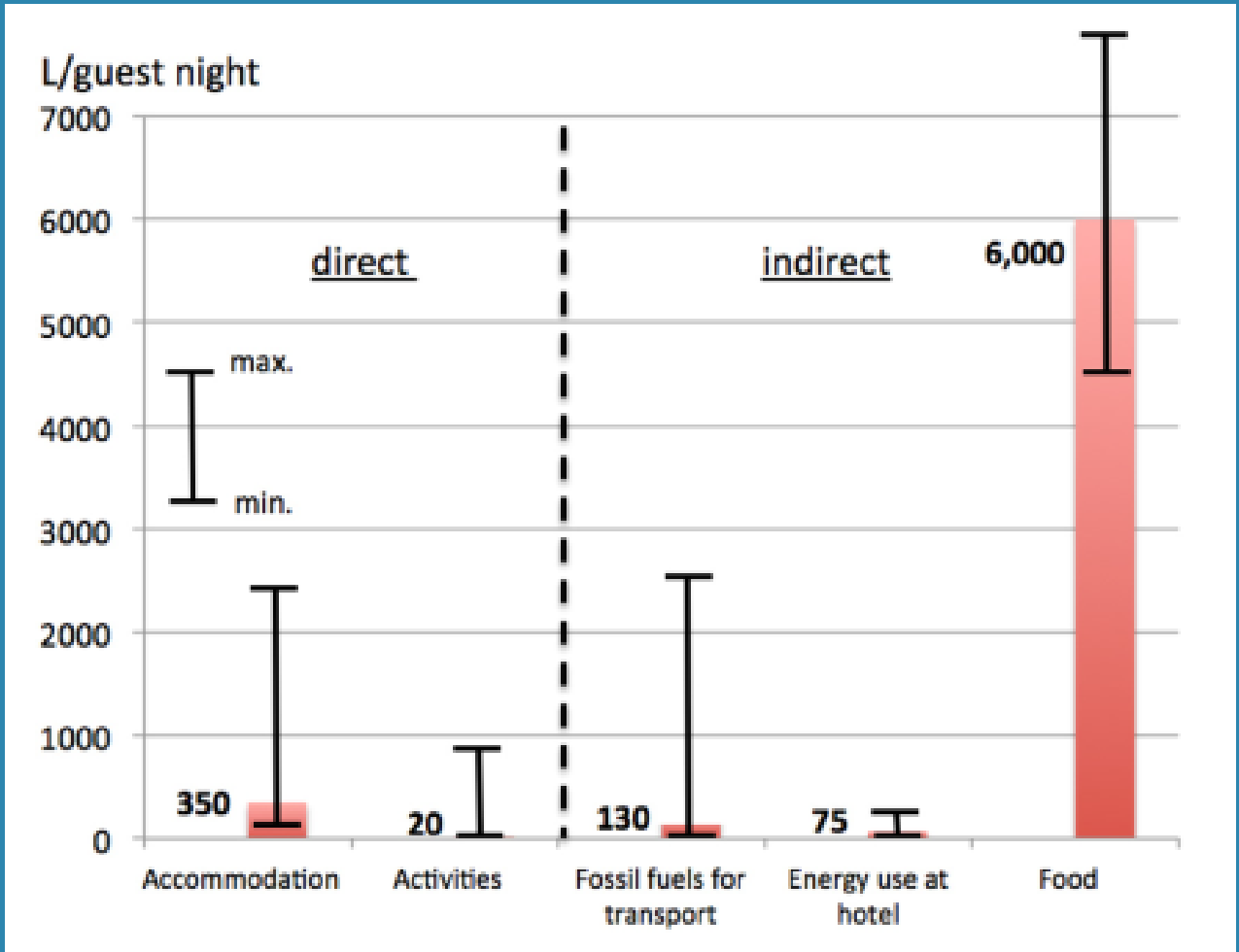
Direct use of water: water used for accommodation

PROBLEM DEFINITION

Contaminated water

Water supply outages and low water pressure

PROBLEM DEFINITION

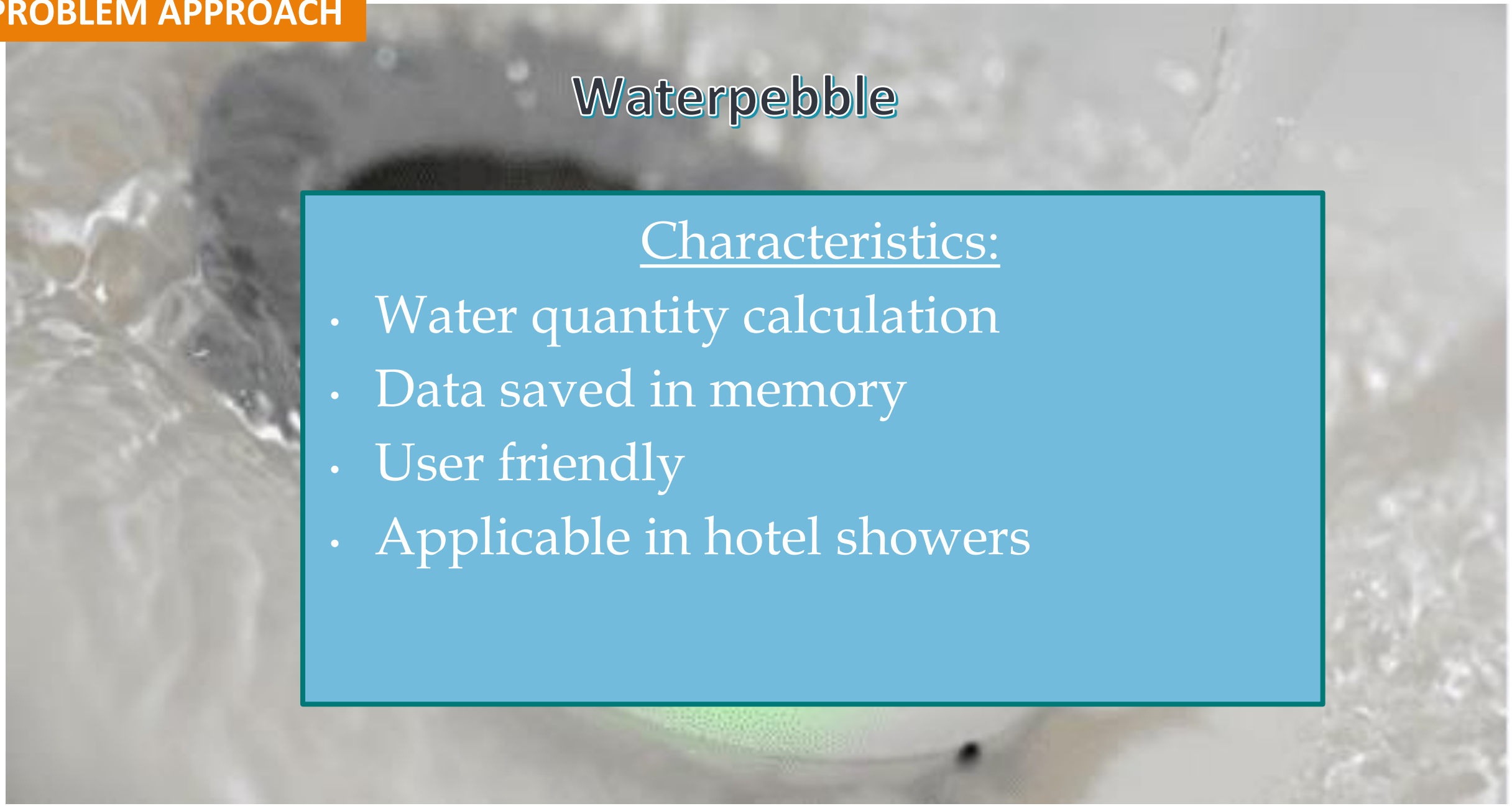


Globally averaged water footprint

PROBLEM APPROACH

Waterpebble

PROBLEM APPROACH



Waterpebble

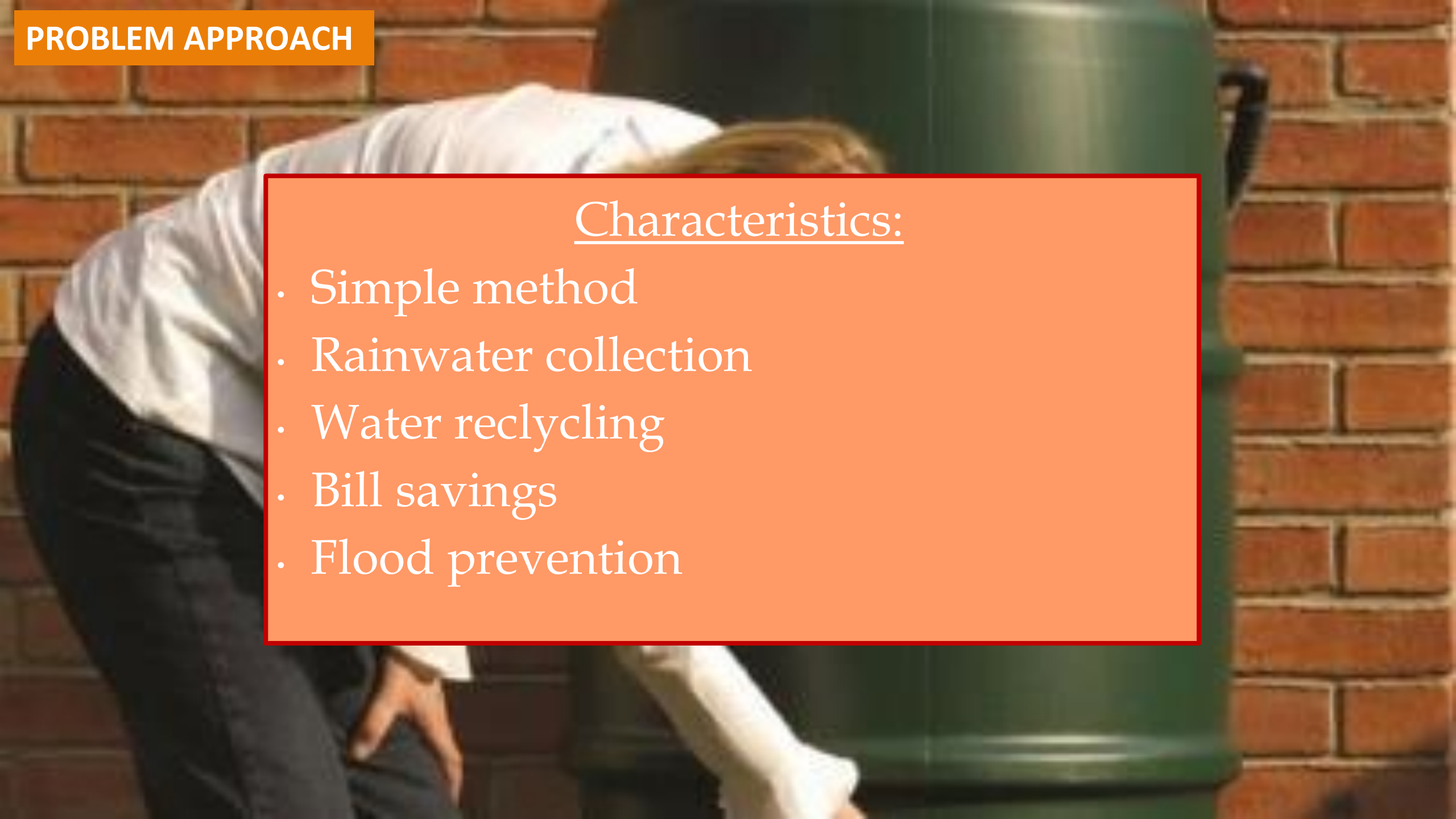
Characteristics:

- Water quantity calculation
- Data saved in memory
- User friendly
- Applicable in hotel showers

PROBLEM APPROACH

Water butt

PROBLEM APPROACH



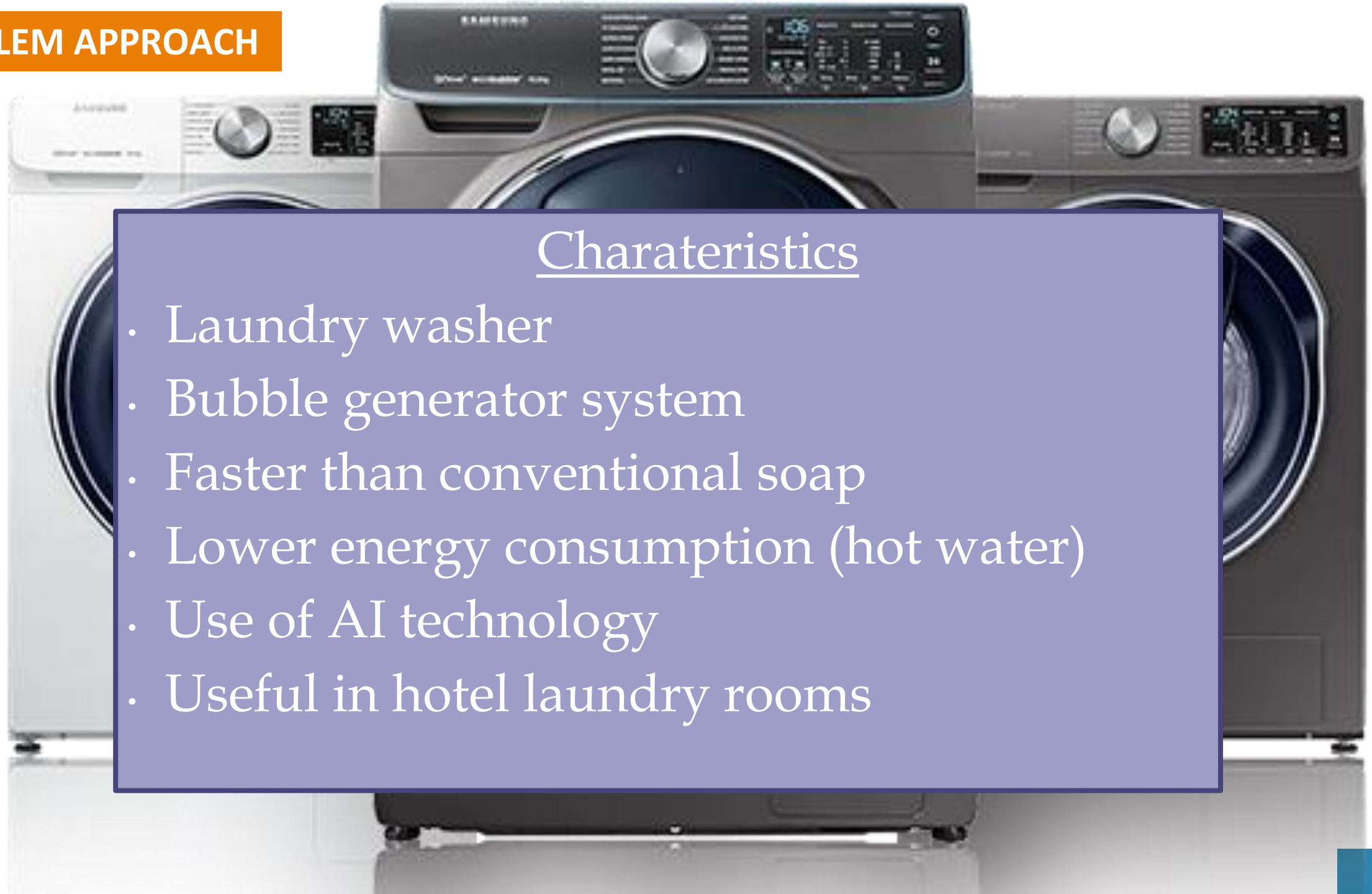
Characteristics:

- Simple method
- Rainwater collection
- Water reclycling
- Bill savings
- Flood prevention

PROBLEM APPROACH

Samsung Ecobubble

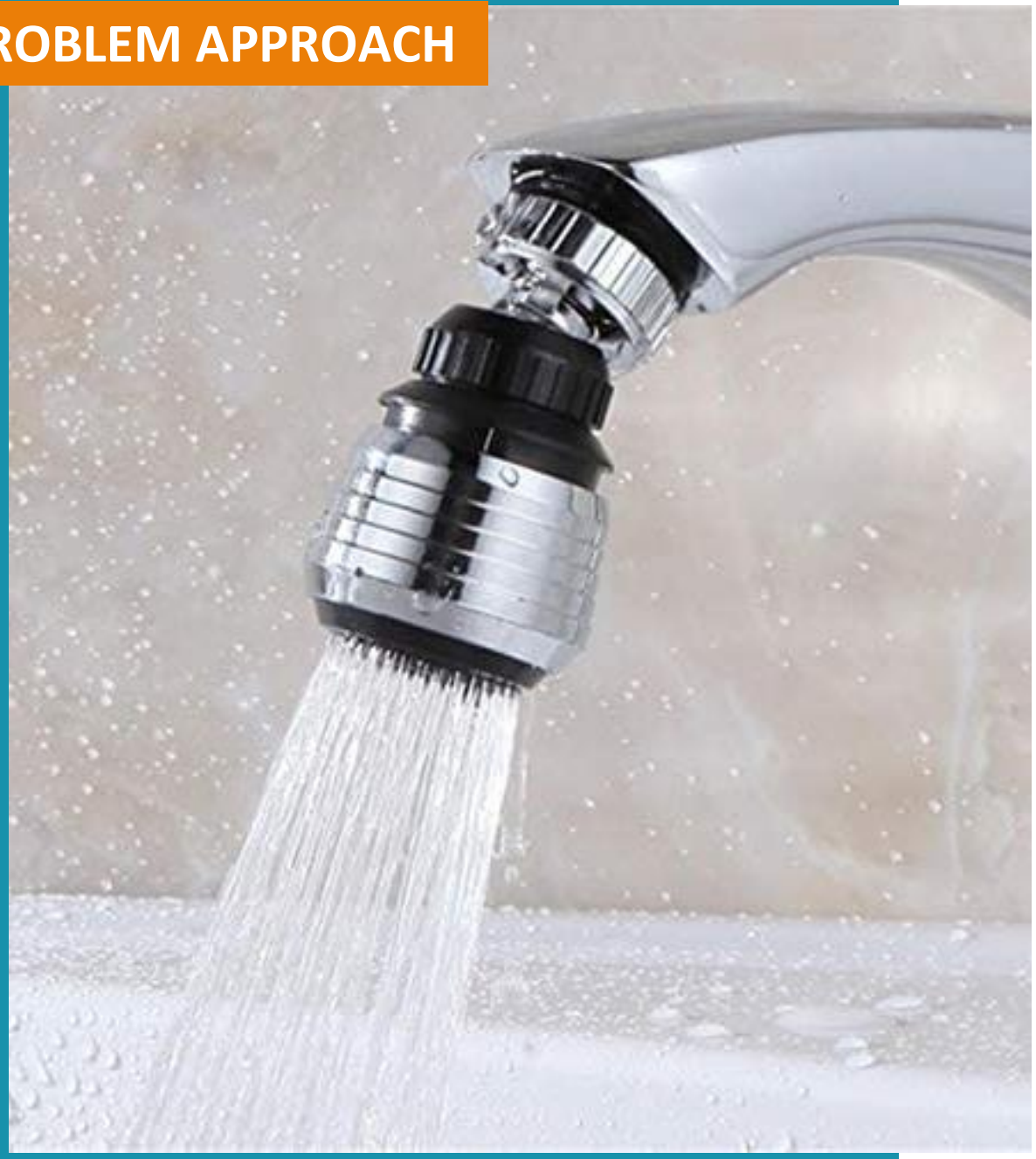
PROBLEM APPROACH



Charateristics

- Laundry washer
- Bubble generator system
- Faster than conventional soap
- Lower energy consumption (hot water)
- Use of AI technology
- Useful in hotel laundry rooms

PROBLEM APPROACH



Water Aerator

PROBLEM APPROACH

Characteristics

- Water amount control
- Mixture of water and air
- No effect on water pressure
- Accessory adaptable to any faucet
- Useful in every faucet of hotels

Positive and Negative aspects

- Reduction in the energy used for water treatment
- Improvement in water availability
- Useful in every house and accommodation facility

- Device efficiency depends on the user.
- Some can be expensive.

CONCLUSION

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