

Go ECO!
Go FRIENDLY!

March 2021



Designing an area focusing
on the implementation of
innovative water
management technology.

concept:



ISMAIL QEMALI HIGH SCHOOL





GOALS:

Modeling an eco-school/zone.

Why don't we make every school/zone an eco one?

Because the costs would be very high and most of the countries don't have the appropriate budget to prioritize such investments.

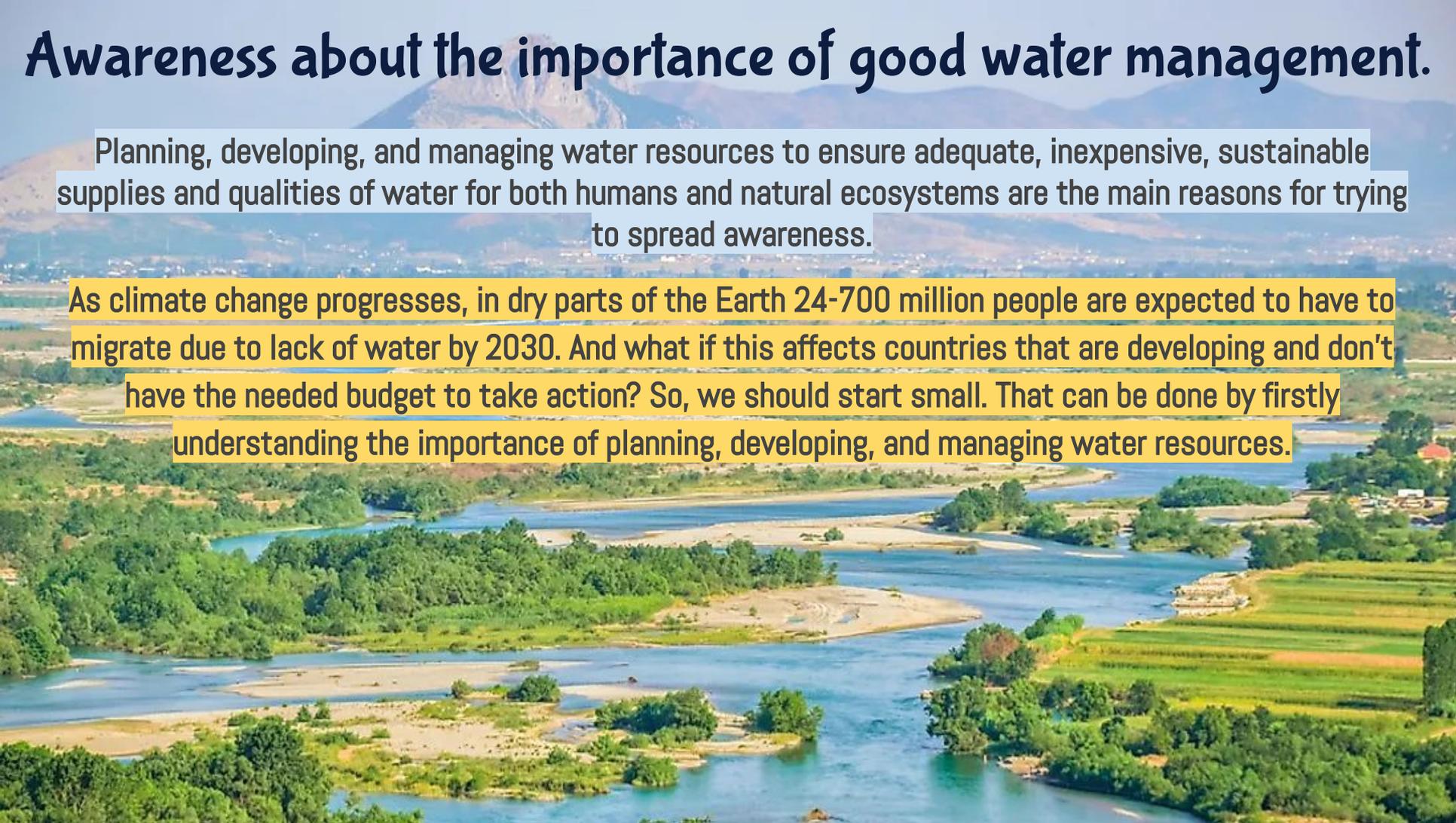
Basically, we tend to grow the existing methods and means into more affordable ones with a raised functionality.



Awareness about the importance of good water management.

Planning, developing, and managing water resources to ensure adequate, inexpensive, sustainable supplies and qualities of water for both humans and natural ecosystems are the main reasons for trying to spread awareness.

As climate change progresses, in dry parts of the Earth 24-700 million people are expected to have to migrate due to lack of water by 2030. And what if this affects countries that are developing and don't have the needed budget to take action? So, we should start small. That can be done by firstly understanding the importance of planning, developing, and managing water resources.



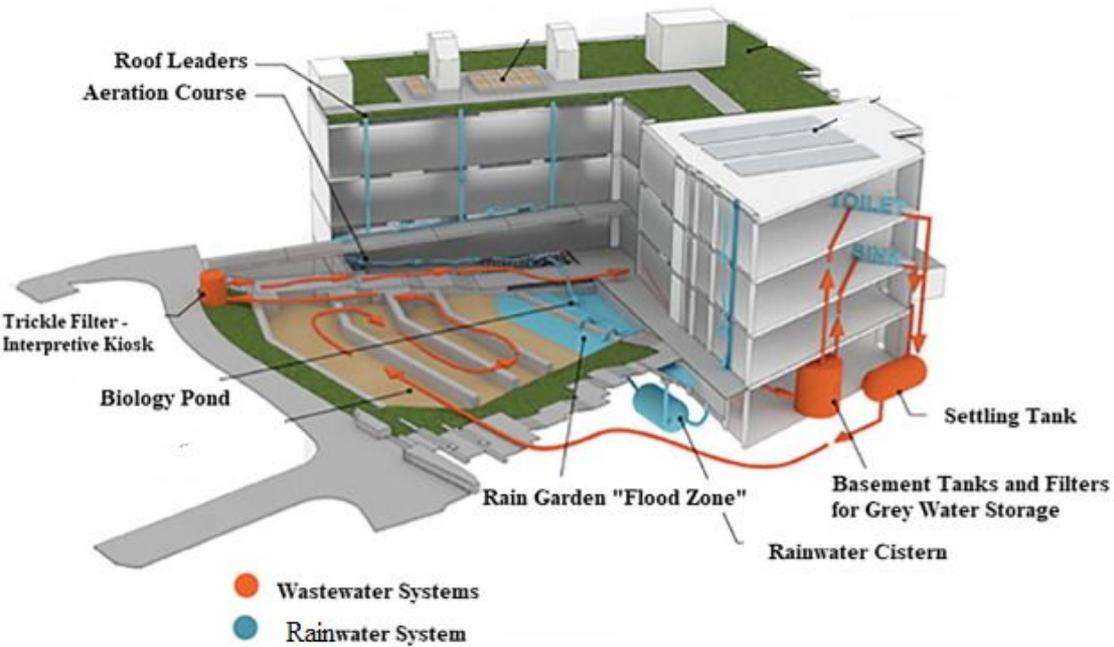
Collaborate with the local authority to contribute to the fulfillment of Objective 6 for Sustainable Development: Clean water and sanitation.



PHASES:

1. **Establishment of the working group**
2. **Ideation**
3. **RESEARCHING:**
 - A. Determining the program where the engineering plan will be worked out
 - B. Analyze the problems that the area around the "Ismail Qemali" High School has in relation to the water supply system.
 - C. Request for information addressed to the local government about current water management practices/method
 - D. Research on methods applied in developed countries
 - E. Research on the used equipments
4. **Analysis and selection of information to crystallize the final idea**



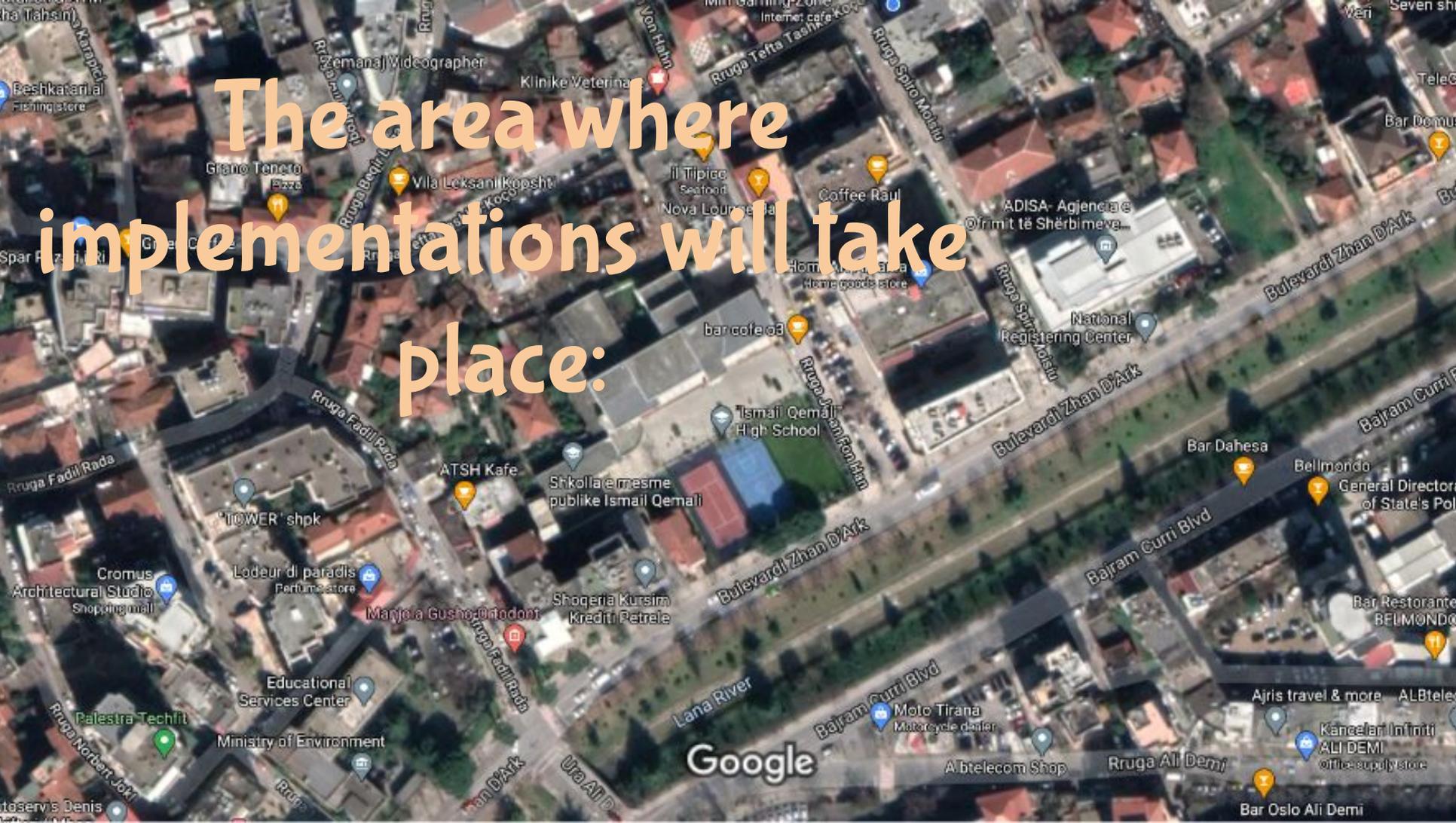


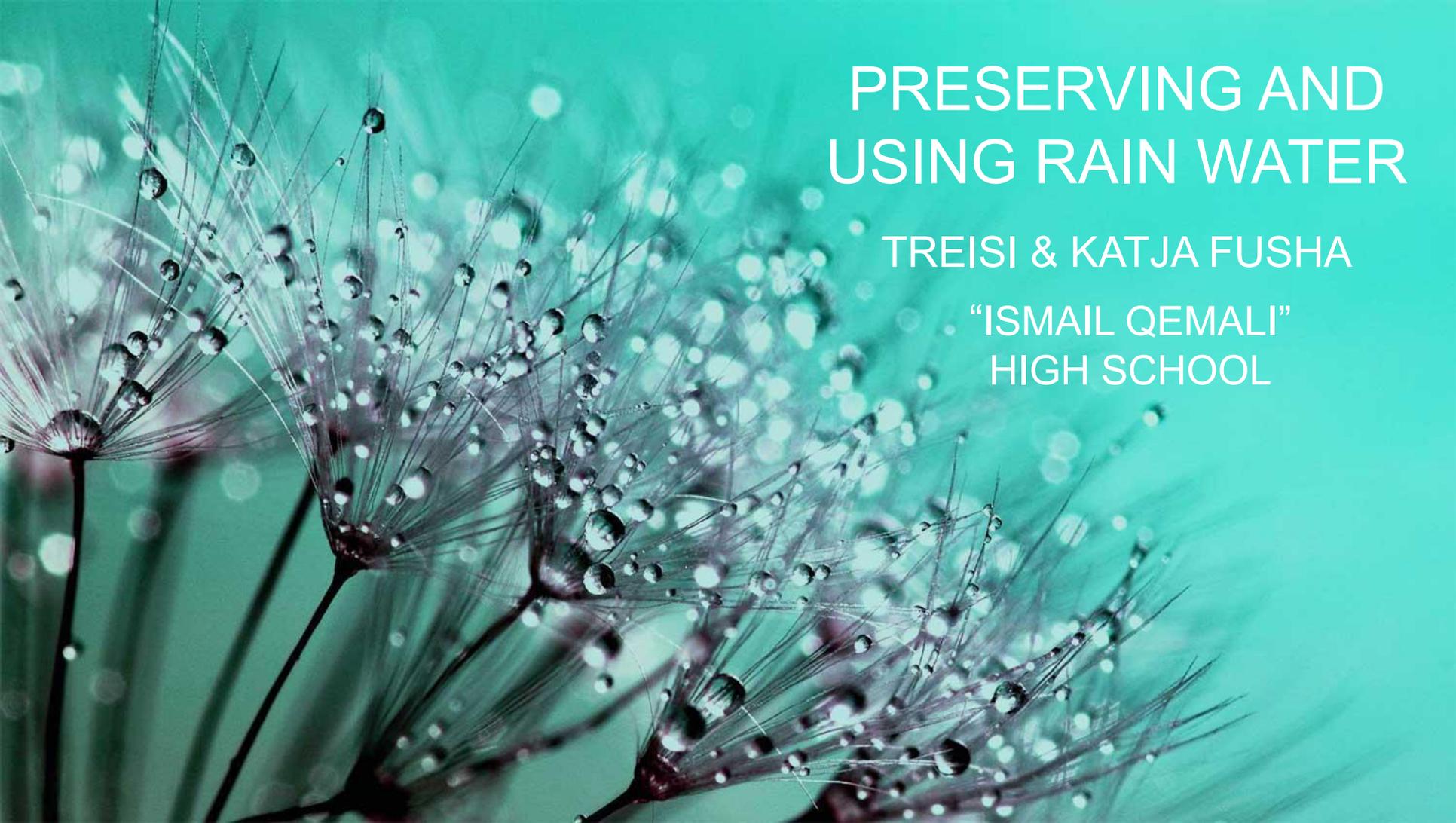
5. Budget planning
6. Preparation of the engineering plan.
7. The conception of the model.
8. Construction of equipment.
9. Experiment planning in relation to built-in equipment.
10. Conception and realization of the video with awareness purpose.
11. Reporting!

PHASES:



The area where
implementations will take
place:



The background of the slide is a teal color with a close-up photograph of several dandelion seed heads. The seed heads are covered in numerous small, clear water droplets, suggesting rain. The lighting is soft, creating a bokeh effect in the background.

PRESERVING AND USING RAIN WATER

TREISI & KATJA FUSHA

“ISMAIL QEMALI”
HIGH SCHOOL



Albania is one of the countries with the largest amount of rainfall per year in terms of Europe. According to some statistics from the internet, the average amount of rainfall in Albania in 2020 was 1219 mm. All this amount of water is wasted. And we have an idea on how to use it for our personal purposes.

➤ 1 person goes to the toilet approximately 10 times a day.

How many times does he/she go to the bathroom for a period of 6 hours, which is the time a student usually stays at school?

He/she goes to the bathroom approximately twice during 6 hours.

➤ According to some statistics, toilets nowadays are designed to flush using approximately 7 litres per flush.

An average person goes to the bathroom twice a day and uses 14 litres of water for flushing the toilet.

What about 1750 students/ people?

$14 \times 1750 = 24\,500$ litres = 24.5 m^3 of water for flushing the toilet

➤ An average person uses 7.5 litres of water per minute to wash hands.

This means that he/she uses 15 litres of water to wash hands twice during a 6 hour period at school.

What about 1750 students/ people?

$1750 \times 15 = 26\,250$ litres = 26.25 m^3 of water for washing hands

➤ As a consequence, all the people in our school use about:

$24.5 \text{ m}^3 + 26.25 \text{ m}^3 = 50.75 \text{ m}^3$ of water for toilet flushing and hand washing per day.

➤ In 180 days of school they use:

$50.75 \text{ m}^3 \times 180 = 9135 \text{ m}^3$ of water per school year.

□ As we know:

1 mm rain water = 1 litre/ m²

□ The average annual rainfall in Albania in 2020 was 1219 mm.

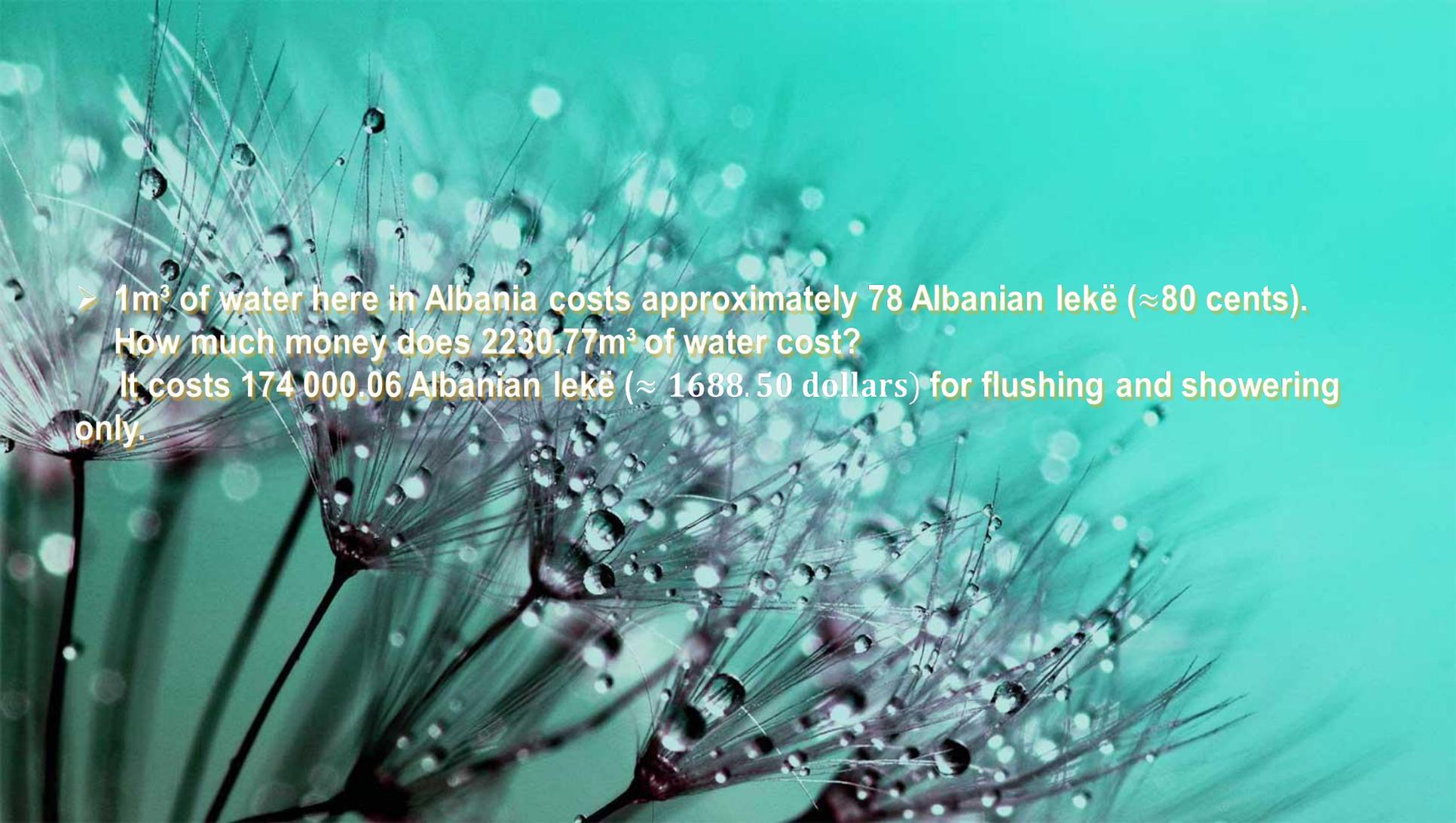
□ If we convert the average annual rainfall to litres/ m² it is:

1219 mm = 1219 litres/ m²

How much rain water can we collect from a 1830m², which is our school's terrace surface?

1219 mm = X litres / 1830 m²

X = 1219 × 1830m² = 2 230 770 litres of water = 2230.77 m³ of rain water collected

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- 1m³ of water here in Albania costs approximately 78 Albanian lekë (≈80 cents).
How much money does 2230.77m³ of water cost?
It costs 174 000.06 Albanian lekë (≈ 1688.50 dollars) for flushing and showering only.

THE BUDGET

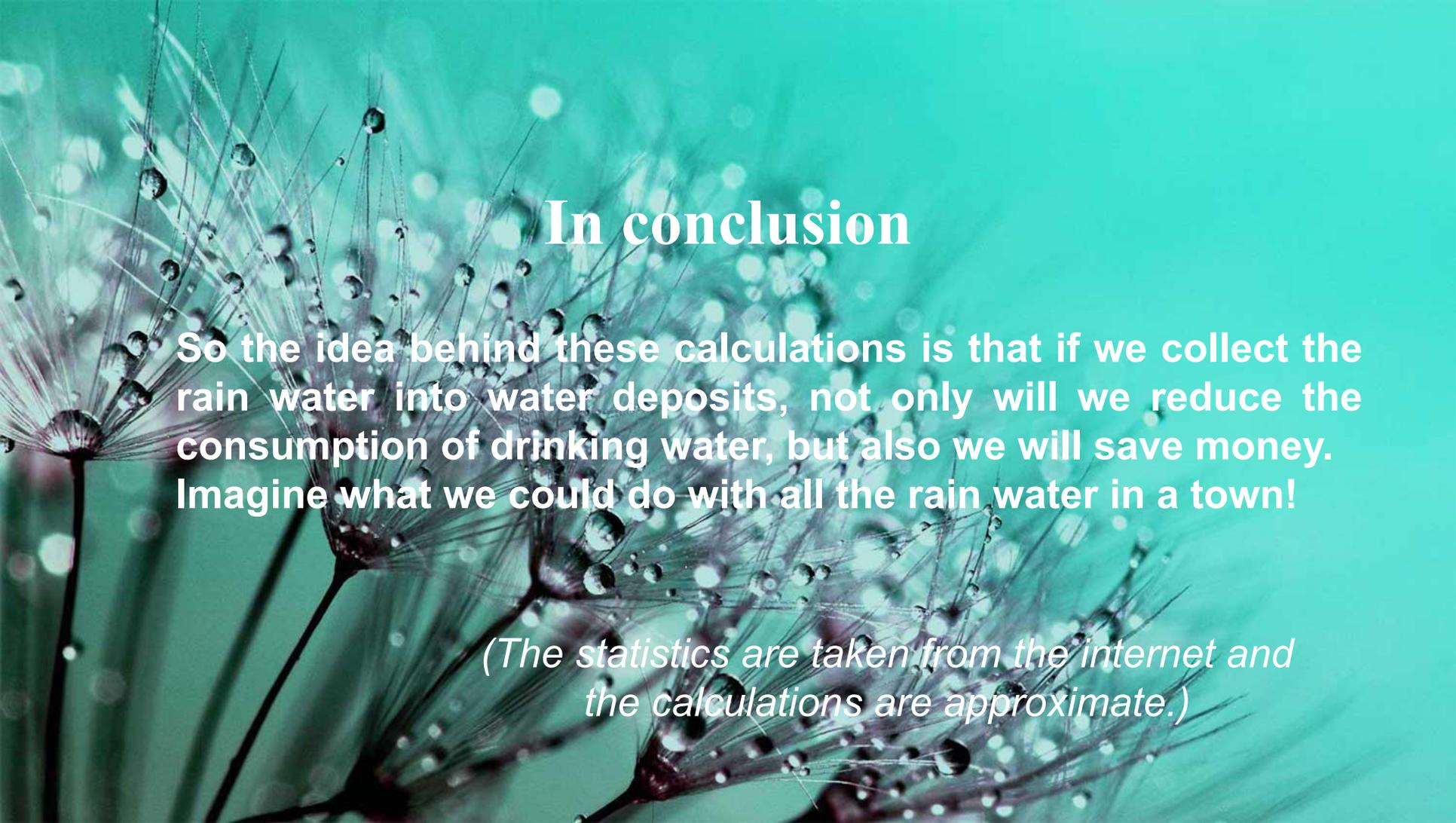
- A water deposit with a capacity of 18 900 litres, costs around 2500 dollars.
- The pump costs between 80-120 dollars.
- The pipes that transfer the water from the water deposit to the school, cost around 300 dollars.

In total it costs approximately: 2900 dollars.

WHERE CAN WE APPLY THIS METHOD?

This method is ideal for:

- 1-2 storey houses.
- Places where the water price is too high.
- Poor places that can't afford high prices of water.
- Places where it rains a lot.
- Small businesses that aren't very profitable and where the water price per cubic meter is too high.



In conclusion

So the idea behind these calculations is that if we collect the rain water into water deposits, not only will we reduce the consumption of drinking water, but also we will save money. Imagine what we could do with all the rain water in a town!

(The statistics are taken from the internet and the calculations are approximate.)

THANK YOU!

DO YOU HAVE ANY QUESTIONS?

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website - in development

