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Research

The Quality Of Fresh Water From Ezu Lake And Phu Sra Dok Bua Reservoir

Group 20

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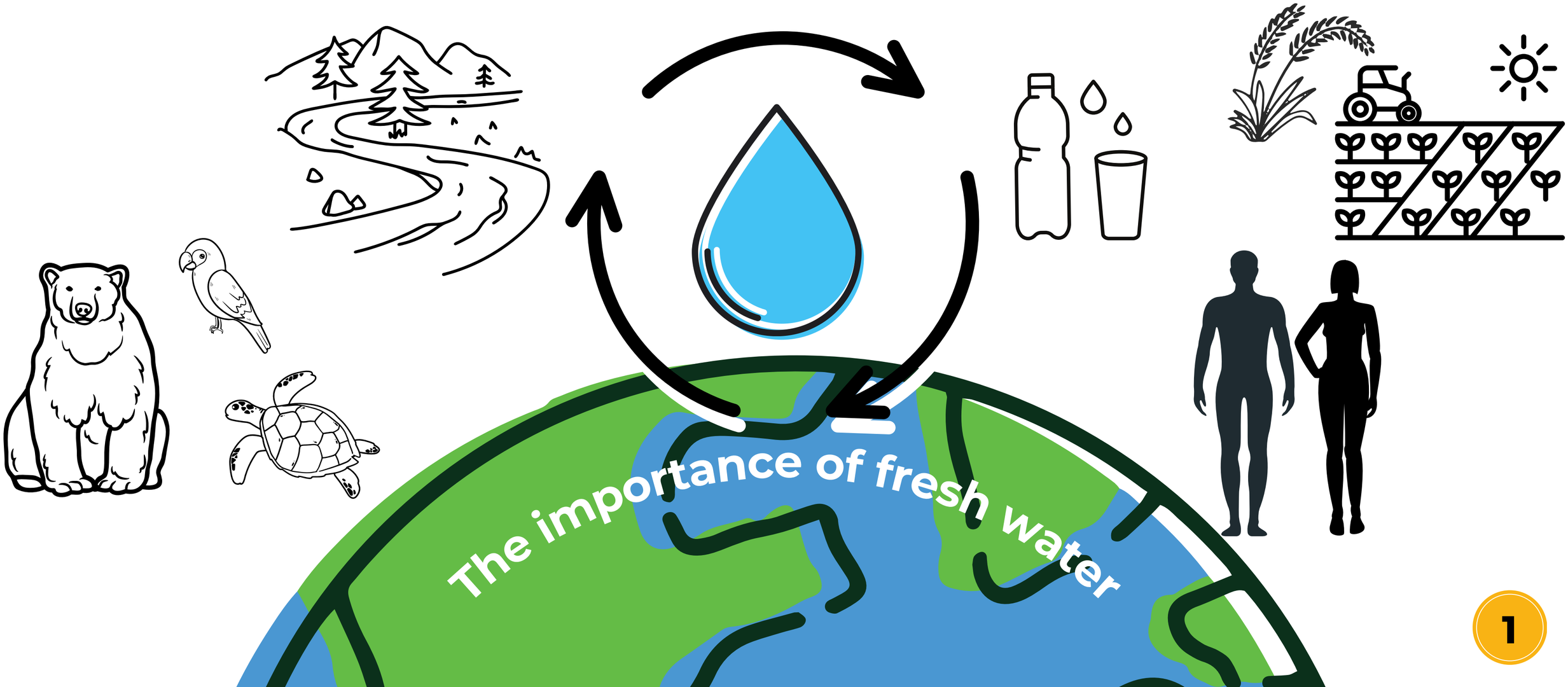
01. Introduction



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01. Introduction

Human activities may be affecting water quality

- chemicals pollutants are released into air widespread
- some chemicals can dissolve in natural water resources
- release drained water into natural freshwater resources
- herding livestock animals around natural freshwater resources by local people

01. Introduction

Parameters indicated freshwater quality

Dissolved Oxygen (DO)

indicates the amount of dissolved oxygen in water

Total Solid (TS)

indicates total inorganic and organic substances dissolved in water.

Ammonia-Nitrogen (NH3-N)

indicates the contamination of microorganisms.

pH

indicates acid-base condition of water.

COD

indicates the Oxygen required for organic or inorganic compounds catalyst in water.

02. Method

Method 01

Decide where to measure

Method 02

Collect water and take photo of the spot

Method 03

Measure values using a machine

Method 04

Compare Japanese and Thai values

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02. Method

Thailand

Japan

〈 Survey place 〉

Phu Sra Dok Bua

Ezu Lake

〈 Survey points 〉

9 points
3 each general points,
reference points and end points

4 points

〈 Survey date 〉

November 6th

September 10th

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03. Results

Parameters	Criterion	Results					
		Results			Phu Sra Dok Bua		
		point 1	point 2	point 3	point 1	point 2	point 3
pH	6.5 – 8.5	6.80	6.91	6.80	7.24	7.18	6.98
DO (mg/L)	≥ 5.0	10.2	14.5	9.6	4.53*	6.12	7.12
NH_3-N (ppm)	≤ 0.5	4.40*	4.05*	4.42*	0.17	0.11	0.09
NH_4-N (ppm)	≤ 0.5	0.29	0.37	< 2.0	-	-	-
COD (mg/L)	≤ 3.0	< 2.0	< 2.1	< 2.3	-	-	-
Total Solid (ppm Tds)	≤ 50	-	-	-	27.7	22.0	28.0

04. Discussion

1. Factors affecting DO: algaes and total solid

More light

Less solid dissolved

Higher DO

Less light

More solid dissolved

Lower DO

Phu Sa Dok Bua reservoir

04. Discussion

1. Factors affecting DO: algaes and total solid

Ezu Lake

The area where DO are high represented a large amount of algaes.

04. Discussion

2. NH3-N

Ezu Lake possessed higher NH3-N amount than that of Phu Sa Dok Bua reservoir.

Reason : Ezu Lake is located in center of the city while Phu Sa Dok Bua reservoir is surrounded by mountains.

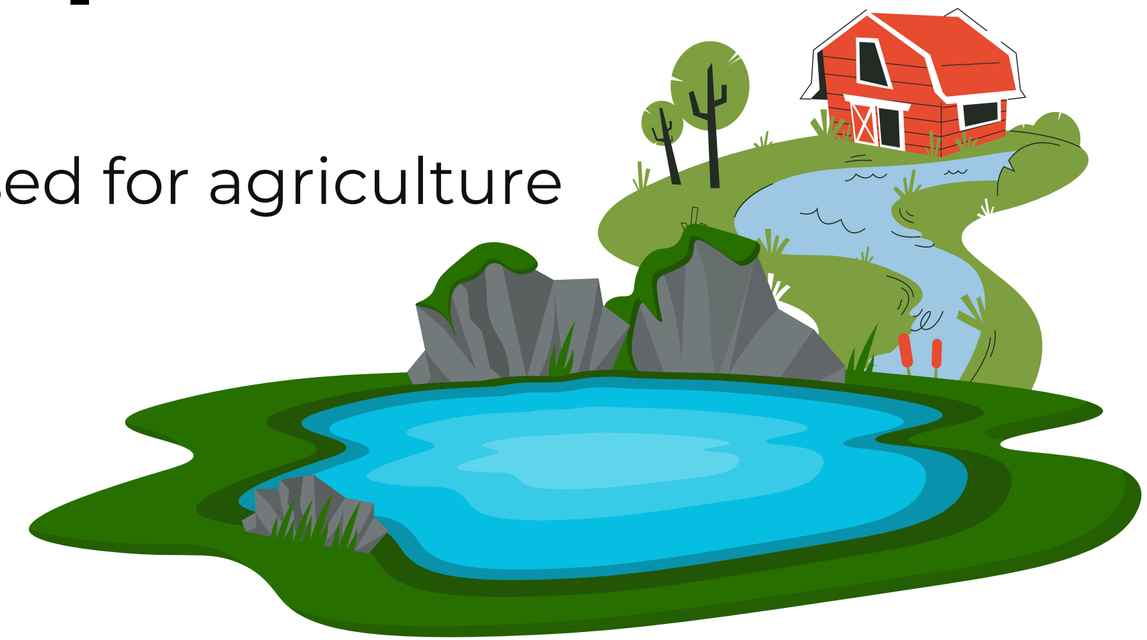
Phu Sa Dok Bua reservoir

Ezu Lake

04. Discussion

3. pH

used for agriculture



Phu Sa Dok Bua reservoir

Weak base

source of spring water

Ezu Lake

Weak acid

04. Discussion

4. COD

Ezu Lake

Water samples from three points that we measured has equal COD quantity. The organic compound that can be referred to in this experiment is NH3-N and it’s low.

Therefore, microorganisms doesn’t require much Oxygen to catalyst resulted in low quantity of COD.

05. Conclusion

The qualities of fresh water from Ezu Lake and Phu Sra Dok Bua reservoir are comparable. Fresh water from both natural sources is safe for livestock animals feeding and agricultural plant growing.

Phu Sra Dok Bua Reservoir

Ezu Lake

06. Accomplishments & Challenges

1) **Communication methods** : switch from online meeting to texting

2) **Language** : the nuances and interpretations of words used

3) **Equipment** : different available equipment

However, we were finally able to conduct the experiment and analyze freshwater quality from both freshwater resources, Phu Sra Dok Bua Reservoir in Thailand and Ezu lake in Japan.

QUESTION ?

THANK YOU

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