

# HCMUS Fishpond Water Quality

Unexpected sediment patterns  
observed across samples  
(S01–S09)

This study presents a preliminary observation of surface water quality based on visual characteristics and basic measurements.

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**14-28 Dec 2025 (Fieldwork & analysis)**



# STUDY SITE & CONTEXT

**Location:**

HCMUS fish pond (Campus 2, Thu Duc , Ho Chi Minh City, Vietnam).

**Study focus:** Preliminary assessment of surface water quality (visual + basic measurements).

**Motivation:** Noticeable spatial differences in turbidity and bottom deposits across sampling points.

**Dataset:** 9 sampling points (S01-S09), collected in Dec 2025, multiple rounds.

Figure 1. Overview of the sampling site (fish pond).



# PROBLEM STATEMENT



Although this is a single fishpond, samples collected at different points show clear differences in water clarity and bottom deposits (sediment/soil-like clumps).

This indicates spatial variability, potentially influenced by local sediment resuspension, low circulation, and inflow/runoff.

S04 VS S09



TW

S04

S09

TW VS S09



# OBJECTIVE

This pilot study aims to screen surface water quality variability within the HCMUS fishpond using visual evidence (clarity/sediment) and basic measurements (pH, EC, temperature, turbidity proxy) across sampling points S01-S09 and multiple rounds in Dec 2025.



## RESEARCH

Compare clarity/turbidity and bottom deposits among S01-S09.

Identify spatial patterns (possible hotspots of sediment/clumps).

Check consistency across rounds (temporal variation).



## IMPACT

Provide a baseline snapshot for a campus pond.

Suggest local influences (low circulation, resuspension, runoff).

Support future monitoring/early warning improvements.



## PRODUCTIVE

A labeled dataset: photos + measurements (S01-S09).

Simple plots in Excel: turbidity proxy vs visual ranking.

A structured report & GitHub-ready documentation.



# METHODOLOGY

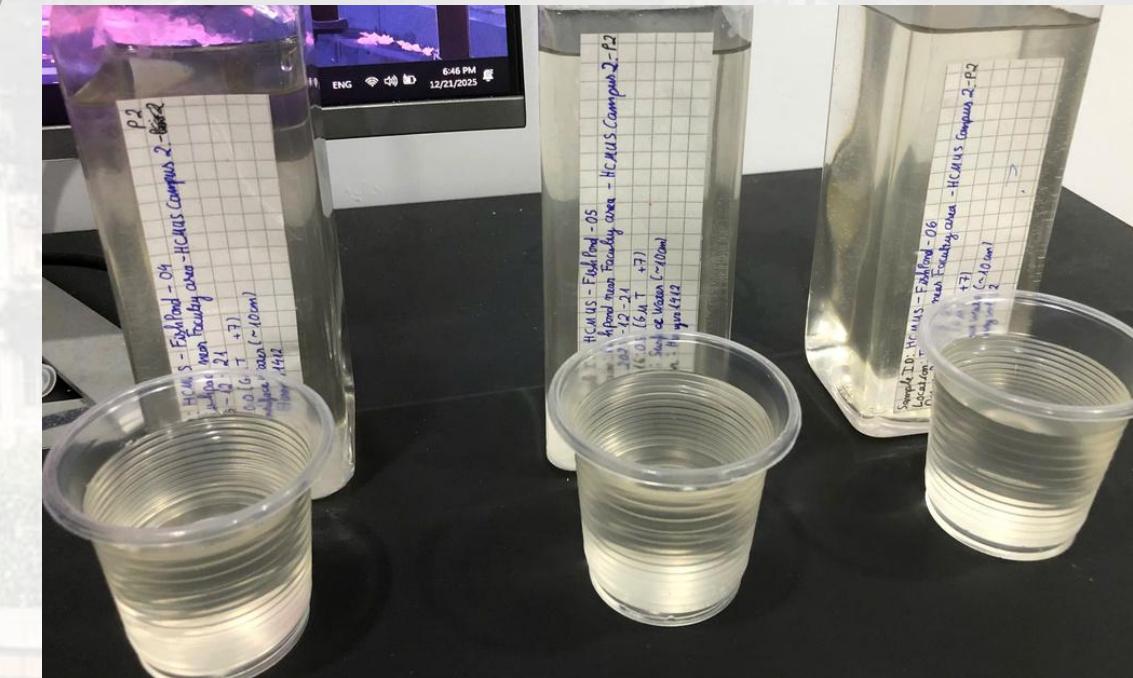


## METHODOLOGY (PILOT WORKFLOW)

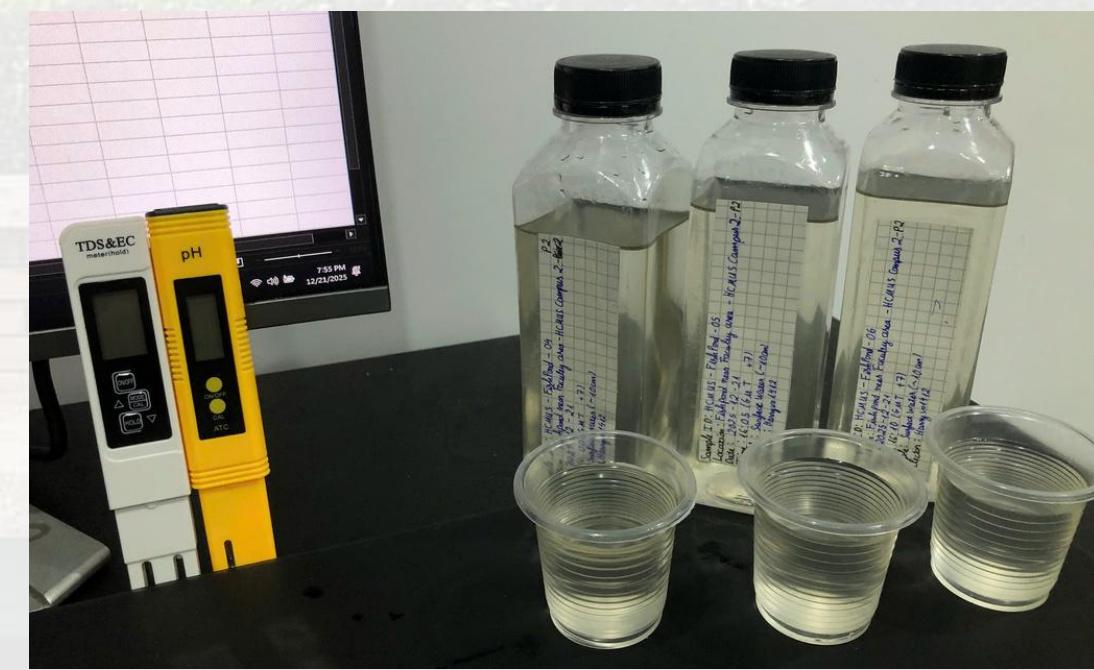
1. Sampling design: 9 points (S01-S09) around the fishpond; multiple rounds in Dec 2025.
2. Collection: rinse bottle (pond water), collect ~500 mL at ~10 cm depth; label time & ID.
3. Visual screening: photo under consistent lighting; record clarity + sediment/clumps (bottom deposits).
4. Basic measurements: pH, EC, temperature, and turbidity proxy (if available).
5. Data handling: enter to Excel, compute summary stats, compare between sites and across rounds.

## PARAMETERS MEASURED (RECORDED)

1. pH (-) | EC ( $\mu\text{S}/\text{cm}$ ) | Temperature ( $^{\circ}\text{C}$ )  
| Turbidity proxy (a.u./NTU if sensor)
2. Visual rank: clarity (1-5) | sediment/clumps (present/absent)



Measurement\_Completed\_Lab\_Setup -->

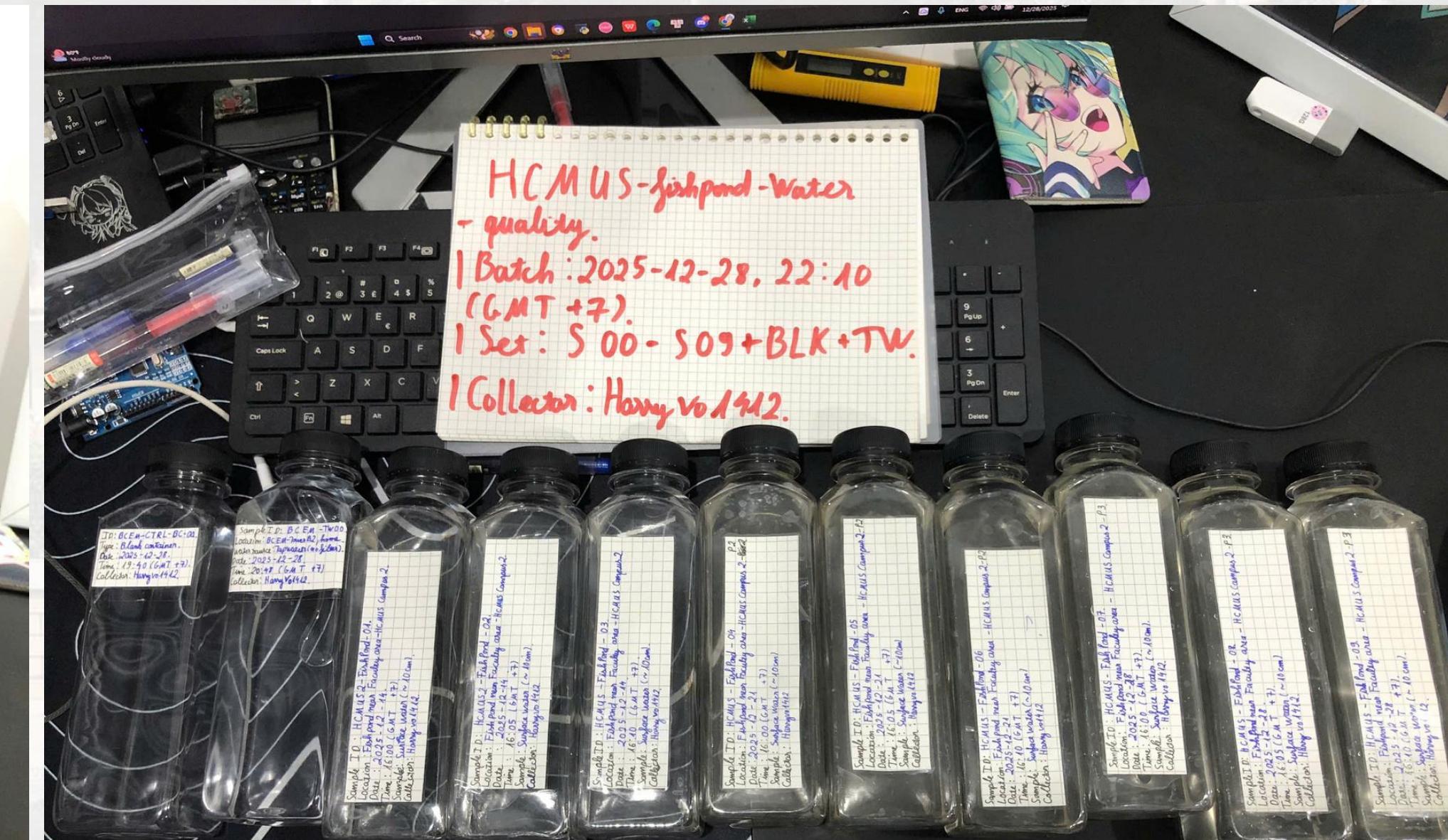


## QUALITY CONTROL (QC)

Same container type, same photo background/lighting, same measurement order; repeat reading 2-3 times and take the average.



# DATASET MEASUREMENT SETUP



Batch: 2025-12-28, 17:00-22:10 (GMT+7)  
 Set: S00-S09 + BLK + TW  
 Measurements: pH, EC, temperature, turbidity proxy + visual notes  
 Goal: compare clarity + bottom deposits across samples



# PREDICATE RESULTS



## Key observations (visual):

- Water clarity varies across sampling points (S01-S09).
- Bottom deposits/soil-like clumps are visible in several samples (not uniform).
- Reference samples (BLK, TW) provide a baseline for comparison.

## Basic measurements (in progress):

- pH, EC, temperature + turbidity proxy were recorded for each bottle.
- Goal: check whether measured patterns align with visual clarity/deposits.

## Interpretation (hypothesis):

- Differences likely reflect local sediment resuspension and low circulation / inflow-runoff effects.



# CONCLUDING STATEMENT



S01-S03



S01-S03



- This pilot shows spatial variability in water clarity and bottom deposits across the HCMUS fishpond samples.
- Visual observations suggest sediment settling/resuspension may influence turbidity patterns (needs repeated trials to confirm).
- Next steps: fixed sampling points, replicate across days, and calibrate turbidity sensor for quantitative comparison.



S04-S06



S04-S06



S07-S09



08

# LIMITATIONS & FUTURE WORK

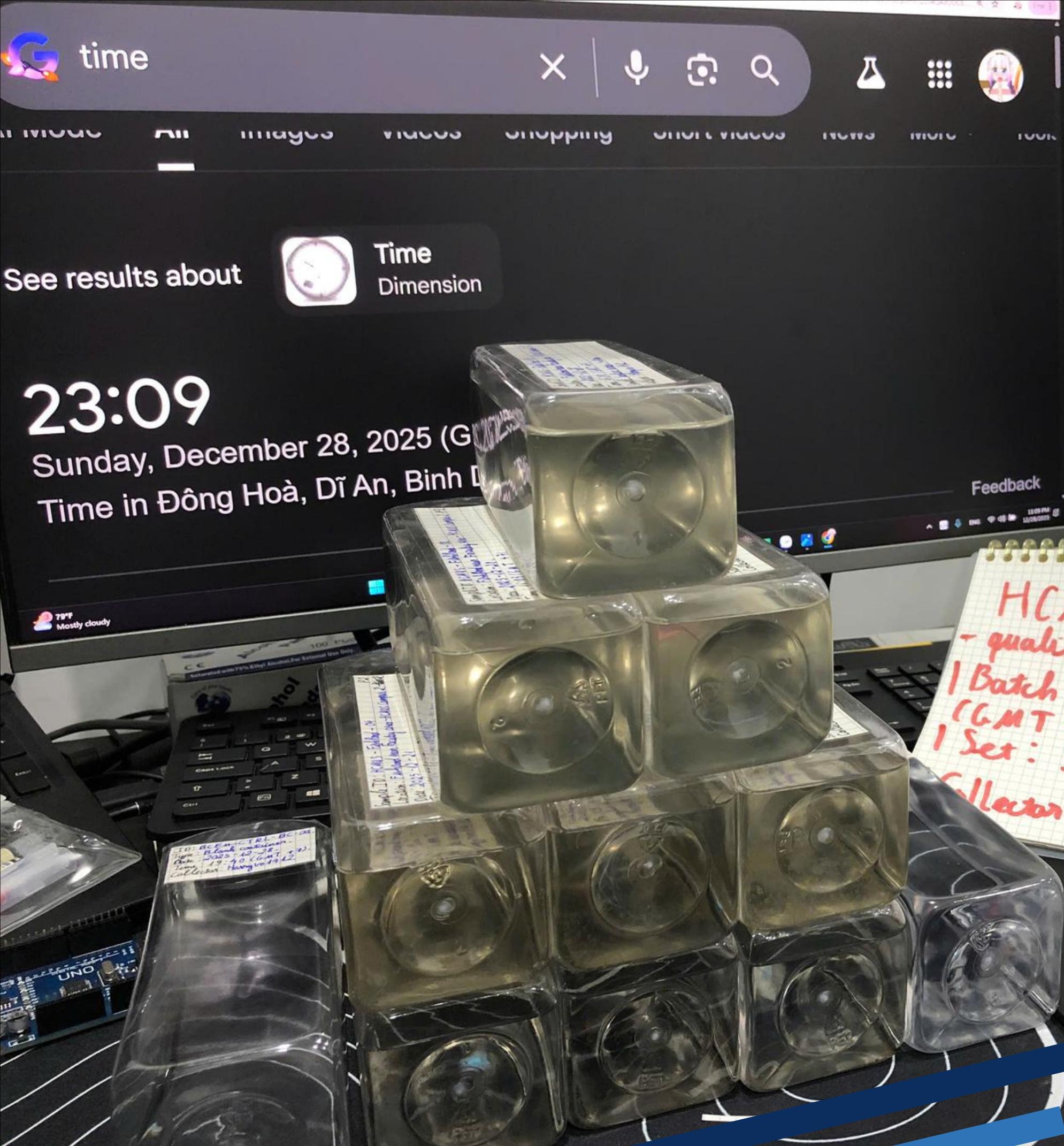
# Limitations

- Pilot scope (Dec 2025), limited time coverage.
  - Turbidity measured via visual + proxy, not lab-grade TSS.
  - Photos may vary by lighting; sediment can be disturbed during sampling.

## Next steps

- Standardize photo station + sampling depth; add replicates.
  - Calibrate sensors / turbidity proxy; add DO if available.
  - Map sampling points + record weather/activity (runoff, circulation).





# THANK YOU

## FOR ATTENTION

Harry Vo – HCMUS (Environmental Science)  
Dataset: S00-S09 + BLK + TW (Dec 2025 pilot)