



## Project title

Application of remote sensing and citizen science in monitoring water resources in the Red River Delta - fieldwork activities

## Summary



This is a follow-up of the MK27 project, “Inclusive development paths for healthy Red River landscapes based on ecosystem services”. The objectives of these fieldwork are to validate the certainties of the results estimated by remote sensing analysis and to maintain the involvement of citizen in a data provider system which is jointly using the two free data sources:

- 1) remote sensing and
- 2) citizen science

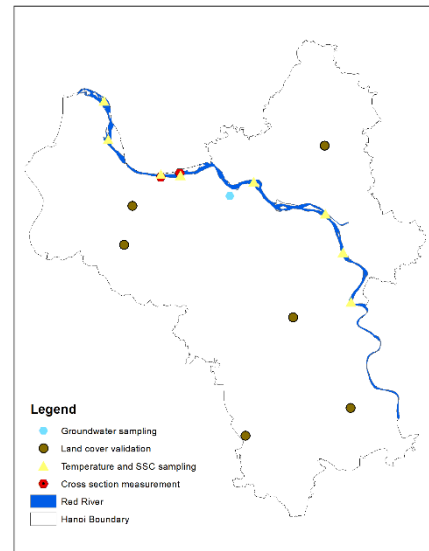
Taking water sample in the Red River

## Activities of the field trips

- Validating land-cover types which are classified by using remotely-sensed data
- Using Acoustic Doppler Current Profiler (ADCP) to monitor some cross-sections and other parameters (discharge, suspended sediment concentration, velocity) in the Red River
- Measuring temperature and taking water samples to analyse suspended sediment concentration in the laboratory
- Taking water samples in the aquifers

## Lessons learned after the fieldwork trips

- The participations of both junior students and senior students as citizen did not trigger the difference of the measurement results. By carefully doing some trainings before sending them to the fields, all the participants can perform the works effectively
- The field trips can be designed toward obtaining two objectives at the same time: collecting data and training students
- Involvement of experienced hydrologists are important to train the participants before and during the field trips, particularly with ADCP



Locations of sampling

## Conclusions and suggestions

The continuous measurements of some water parameters in the Red River Delta are important to persistently build a dataset for both research and training. Our method proves to be effective: combining Remote sensing Data and field data collected by citizens. Annual activities continuously organised by HUNRE are building a bigger database and are better providing educational services. In this respective, small funding prove that it can certainly provide many supportive activities if it is reasonably used.

## Contact

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ADCP measurement preparation



Using GPS to mark locations



Seepage measurement

## Results of ADCP measurements

### Cross section 1

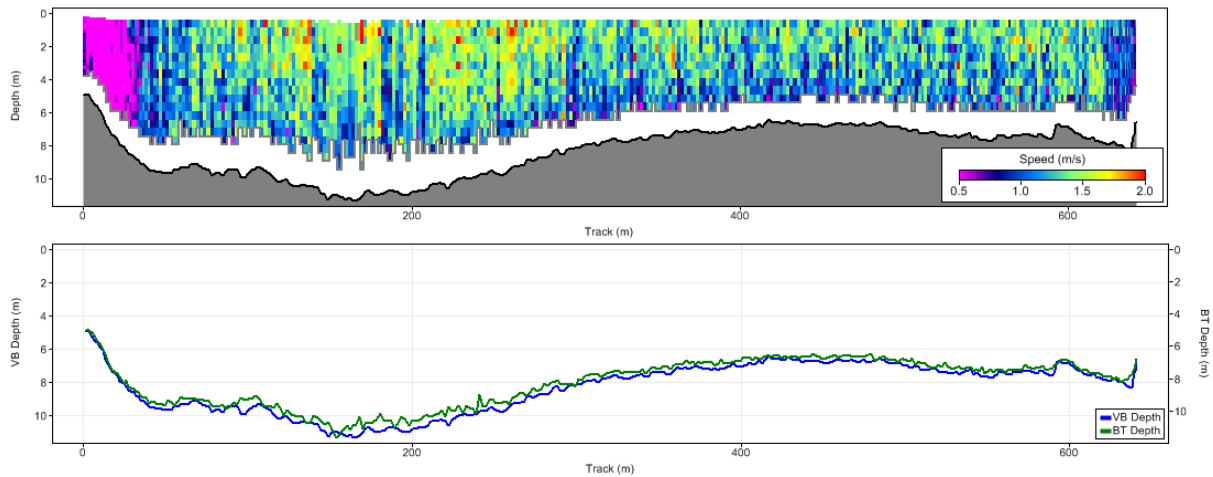


Figure 1. ADCP measurement result in the first location

### Cross section 2

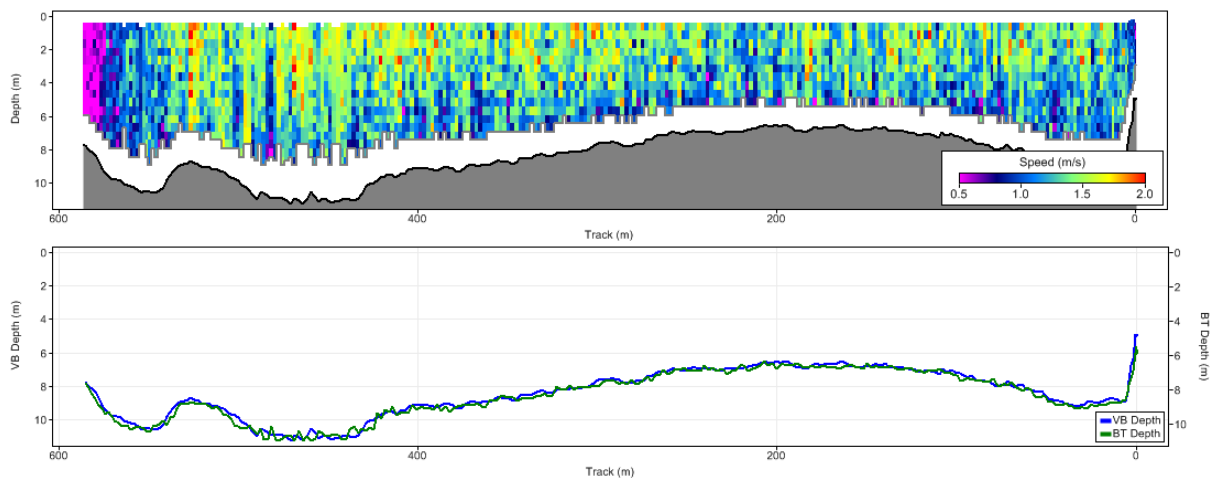


Figure 2. ADCP measurement result in the second location

## Results of temperature and SSC measurements (from upstream to downstream)

Parameter	Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8
T (degree)	25.8	26.3	25.2	25.5	25.8	25.8	27.9	26.8
SSC (mg/l)	25	25	25	25	30	30	30	35