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# International Tracing Events 2021-2023

## Discussion and developments in sediment tracing

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### Context

- Tracing or “fingerprinting” methods are used to identify sediment sources and quantify the dynamics of particle-bound contaminants.
- The use of these techniques is often associated with **several methodological and statistical limitations**.
- These are often reported, but **rarely addressed** in the framework of concerted actions.

### TRACING 2020 > 2021 School

- 4-days seminar in Oct. 2021
- AIM: Concrete suggestions to improve the design and implementation of tracing methods.

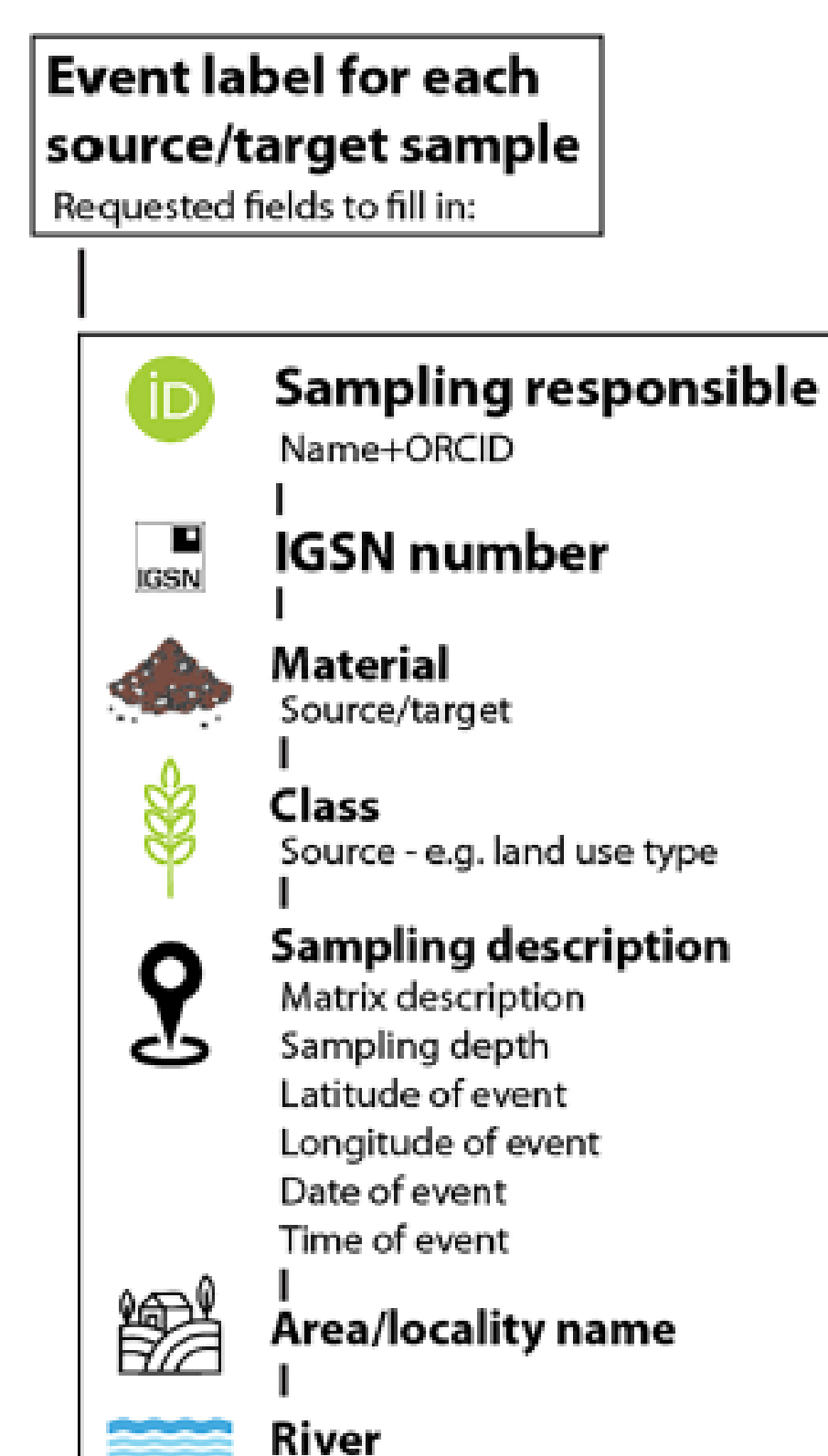
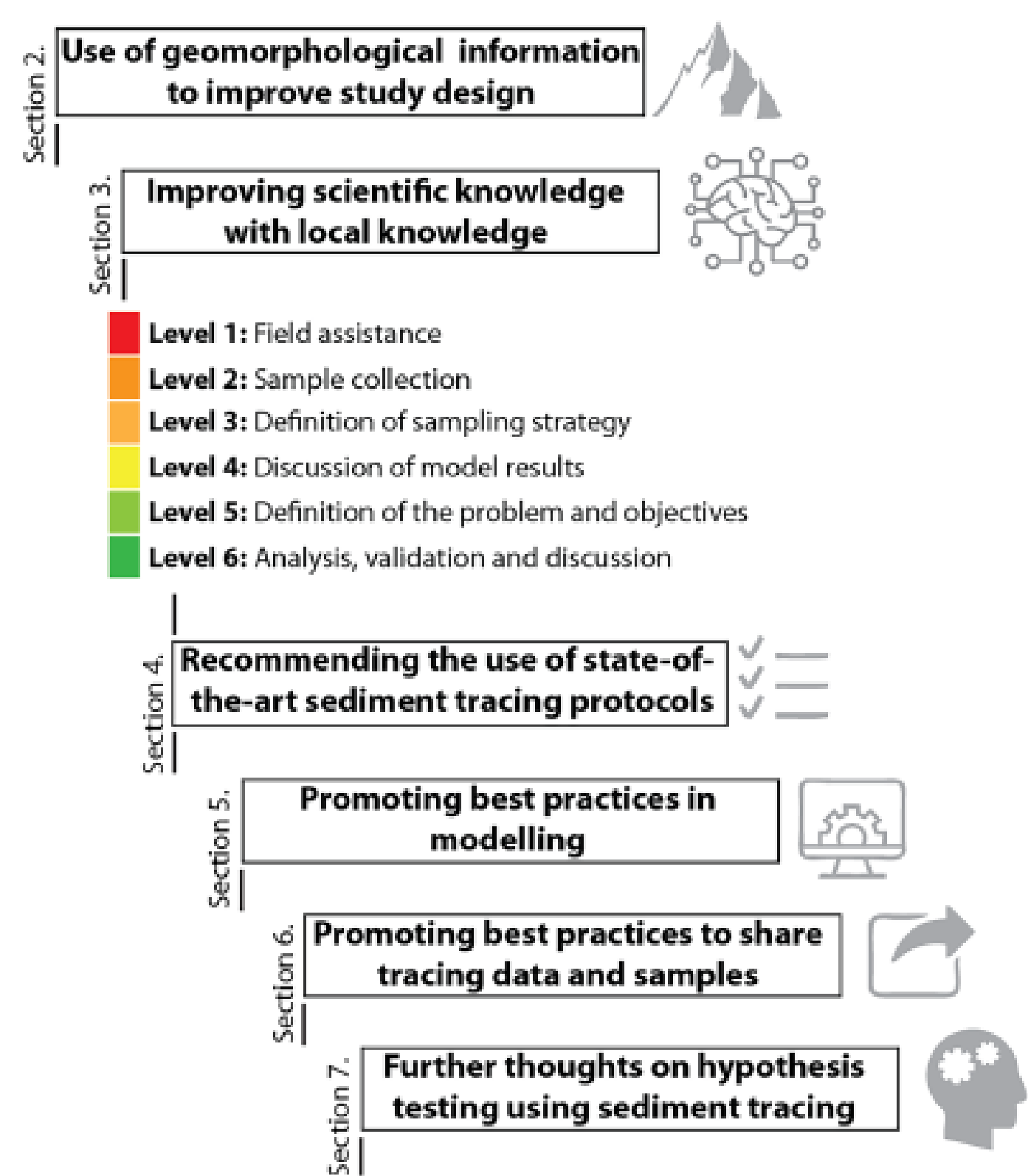


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Frontiers in Soils and Sediments • Research Article | Published: 23 April 2022

#### Improving the design and implementation of sediment fingerprinting studies: summary and outcomes of the TRACING 2021 Scientific School

[Olivier Evrard](#), [Pedro V. G. Batista](#), [Jaume Company](#), [Aymeric Dabrin](#), [Anthony Foucher](#), [Amaury Frankl](#), [Julián García-Comendador](#), [Arnaud Huguet](#), [Niels Lake](#), [Ivan Lizaga](#), [Núria Martínez-Carreras](#), [Oldrich Navratil](#), [Cécile Pignol](#) & [Virginie Sellier](#)



1. Use geomorphological information:
  - scrutinize all the knowledge available on the catchment,
  - obtain multiple lines of evidence regarding sediment contrib.
2. Improve scientific knowledge with local expertise:
  - describe different levels of involvement of locals in research.
3. Use state-of-the-art sediment tracing protocols to conduct sampling:
  - deal with particle size, examine data before modelling,
  - account for the hydro-meteorological context.
4. Best practices in modelling:
  - run multiple models and select appropriate tracers,
  - report on model errors and uncertainty.
5. Share tracing data and samples:
  - increase the visibility of the fingerprinting technique.
6. Formulation of hypotheses:
  - improve the knowledge about erosion and sediment transport processes in a more unified way.

### International Tracing Day (2022–2023)

- 2022 and 2023, before the EGU, an International Study Day took place
- AIM: **Practical plans to make progress regarding three main issues:**
  1. design of tomorrow’s tracers,
  2. optimized modelling methods,
  3. organisation of an inter-comparison tracing exercise.



Scan this code to access the proposed dataset format



⇒ Need to compile international ensemble of data sets (and possibly samples) with the same format to test hypotheses.

⇒ Increase the visibility of our community and its ability to address the ongoing scientific/societal challenges.



November 1, 2022

Dataset Open Access

Organic matter, geochemical and colorimetric properties of potential source material, target sediment and laboratory mixtures for conducting sediment fingerprinting approaches in the Mano Dam Reservoir (Hayama Lake) catchment, Fukushima Prefecture, Japan.

[Chaloux Clergue, Thomas](#); [Evrard, Olivier](#); [Durand, Roxanne](#); [Caumon, Alison](#); [Hayashi, Seiji](#); [Tsuji, Hideki](#); [Huon, Sylvain](#); [Vauray, Véronique](#); [Wakiyama, Yoshifumi](#); [Nakao, Atsushi](#); [Lacey, J. Patrick](#); [Onda, Yuichi](#)

### Upcoming actions

- Preparation of a data paper with a sufficient number of sediment tracing datasets in contrasted environmental contexts,
- Presentation of the approach and testing a common research hypothesis.

“Subsoil erosion is the major process of sediment supply to river systems”

Suggested test hypothesis applicable in a large data set of various environmental conditions



### Interested in participating ?

Want to add to the current data compilation?  
Interested in taking part in the hypothesis testing exercise? Or the next International Tracing Day in 2024, just before the EGU? Please feel free to contact Sabine and Olivier!



### Supporting organisations

