



MSCA-ETN

SULTAN

European Training Network for the Remediation
and Reprocessing of Sulfidic Mining Waste Sites

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EU H2020 MSCA-ETN SULTAN Mid-Term review
SEPTEMBER 2019, Freiberg, HZDR

Hello, I'm the ESR 15...

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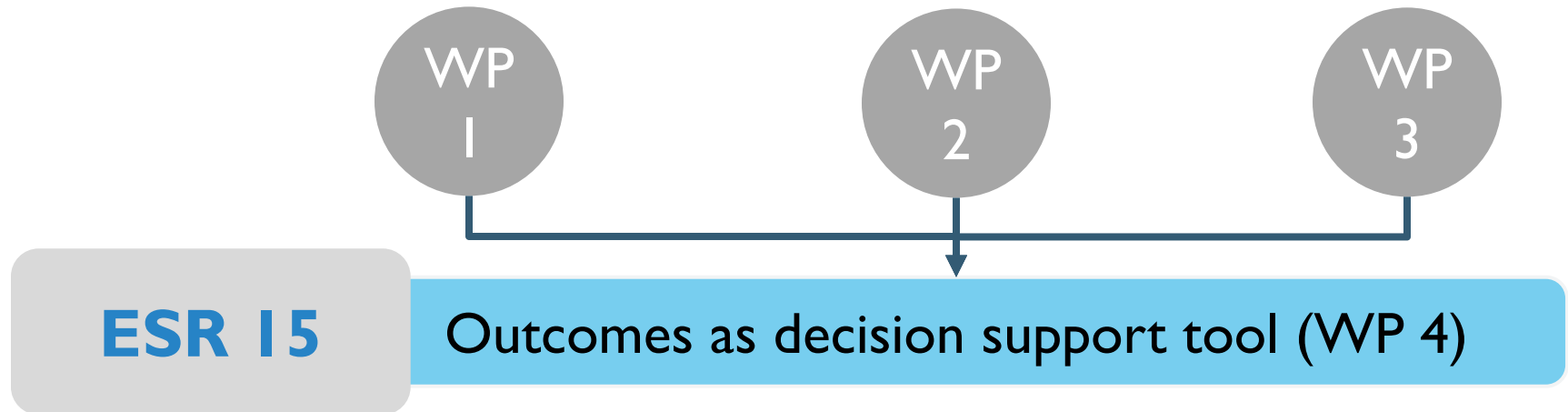
“I perform **environmental modelling and assessment** in our project”

Keywords: life cycle assessment (LCA), waste valorization, process improvement

Energy & Environment graduate
École polytechnique (France), KTH (Sweden)

Topic: LCA in mine tailings

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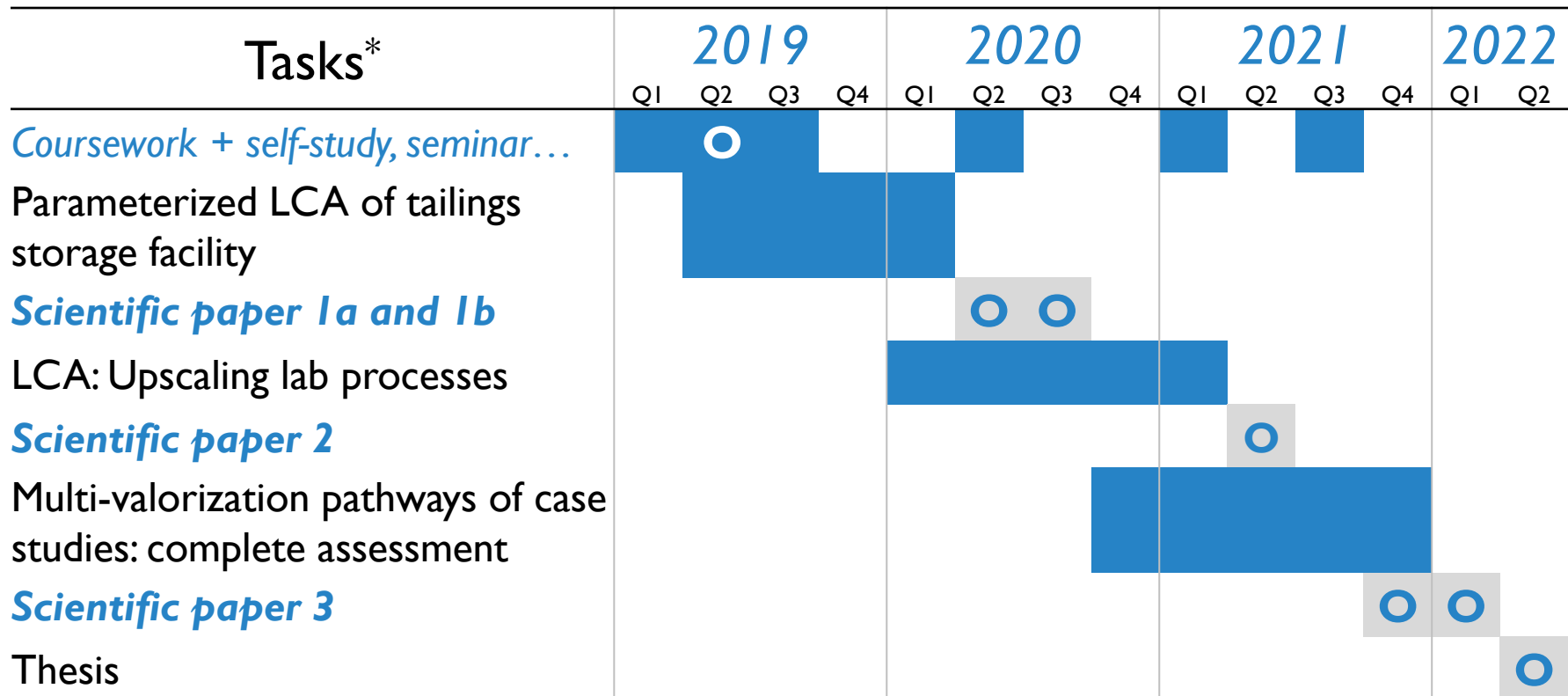
“Environmental assessment and decision support for the process design of tailings valorization”

Host : *ETH Zurich in January 2019*

Supervisor(s) : *Stefanie Hellweg, Stephan Pfister*

Work in progress

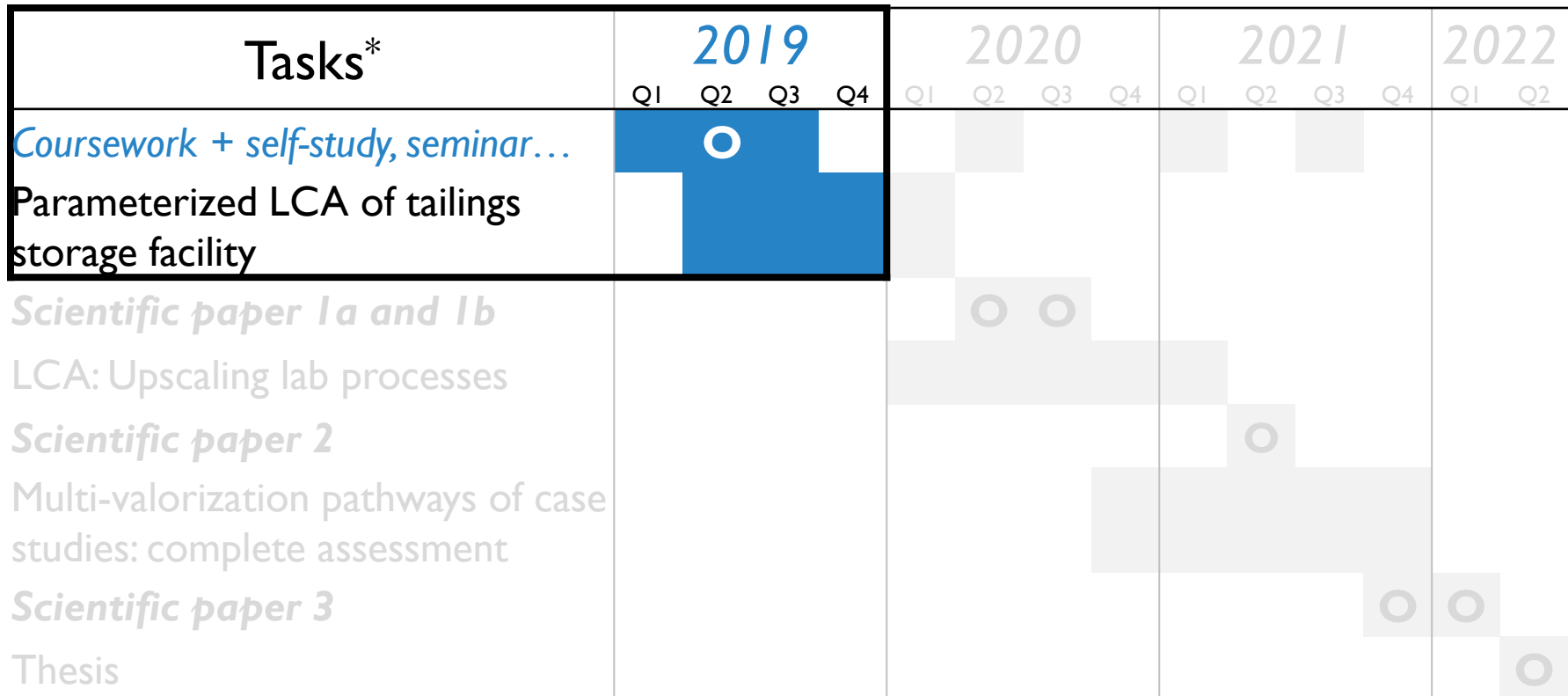
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*a detailed Gantt chart is available in RTDE

Work in progress – focus

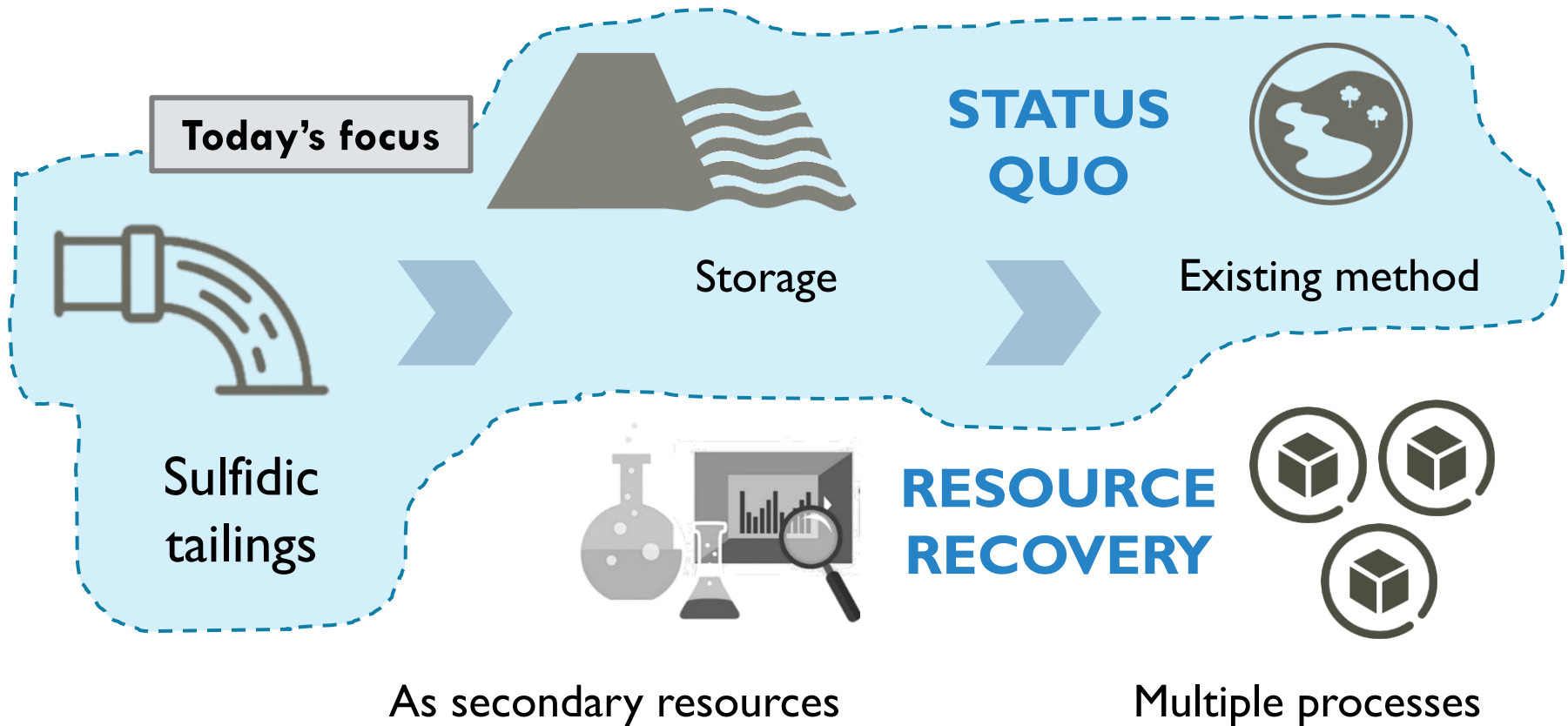
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*a detailed Gantt chart is available in RTDE

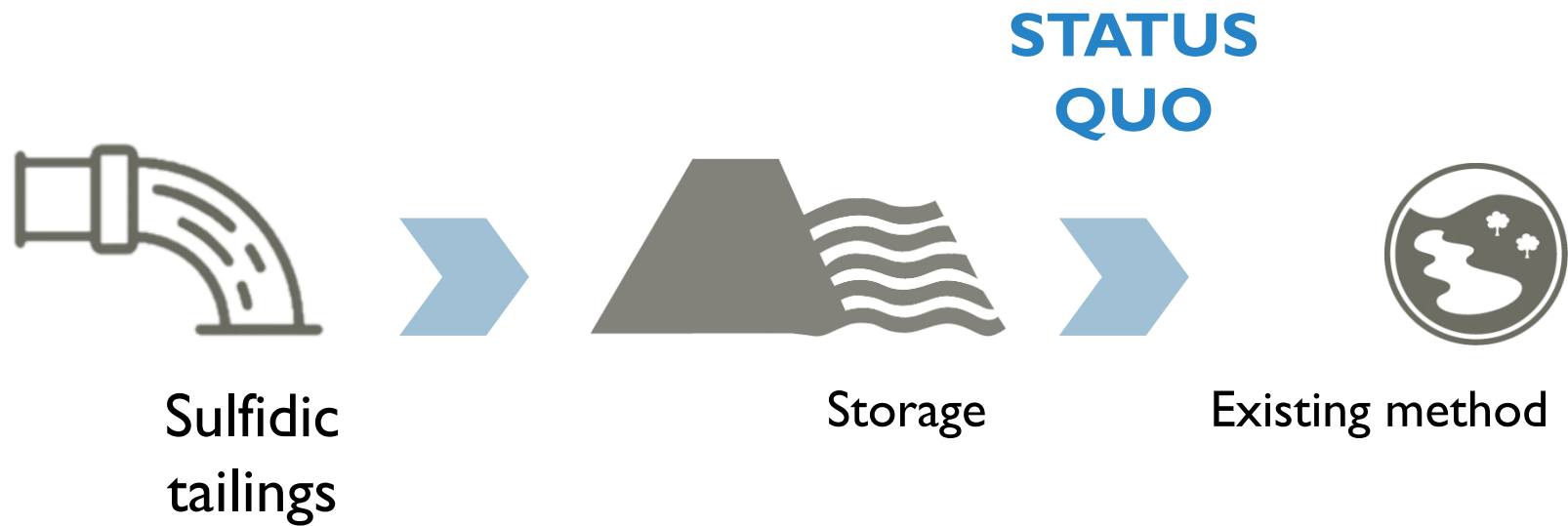
The scope of SULTAN assessments

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Investigate current system

7



Issue: What is the main environmental risk?

Acidic water from mine activities

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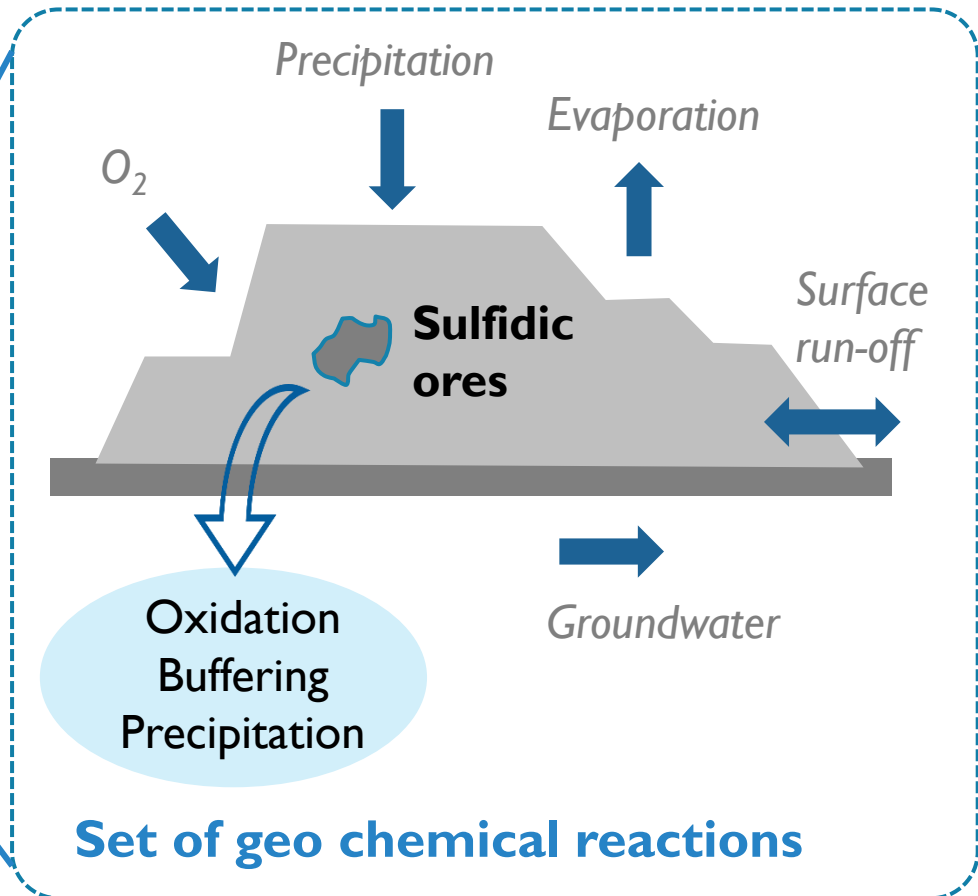
Goal: To model important processes in mine drainage

**Toxic,
heavy metals**



Rio Tinto site, Spain

Source: Wikimedia



Emission model of tailings storage

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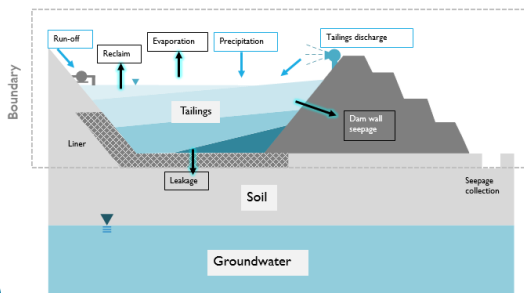
Approach: predict leachate with hydrology + geochemistry

Environmental: leachate toxicity impacts

Important: variability of inputs

INPUT

Site-specific data

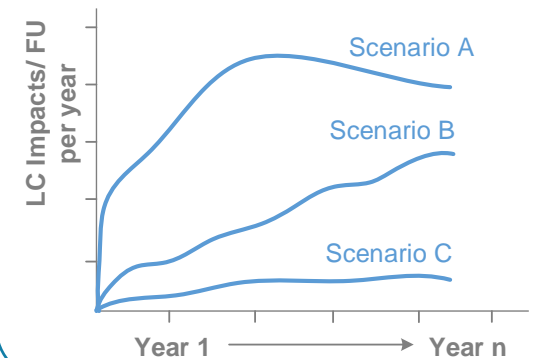


FRAMEWORK

- Predictive tailings composition
- Geochemical modelling

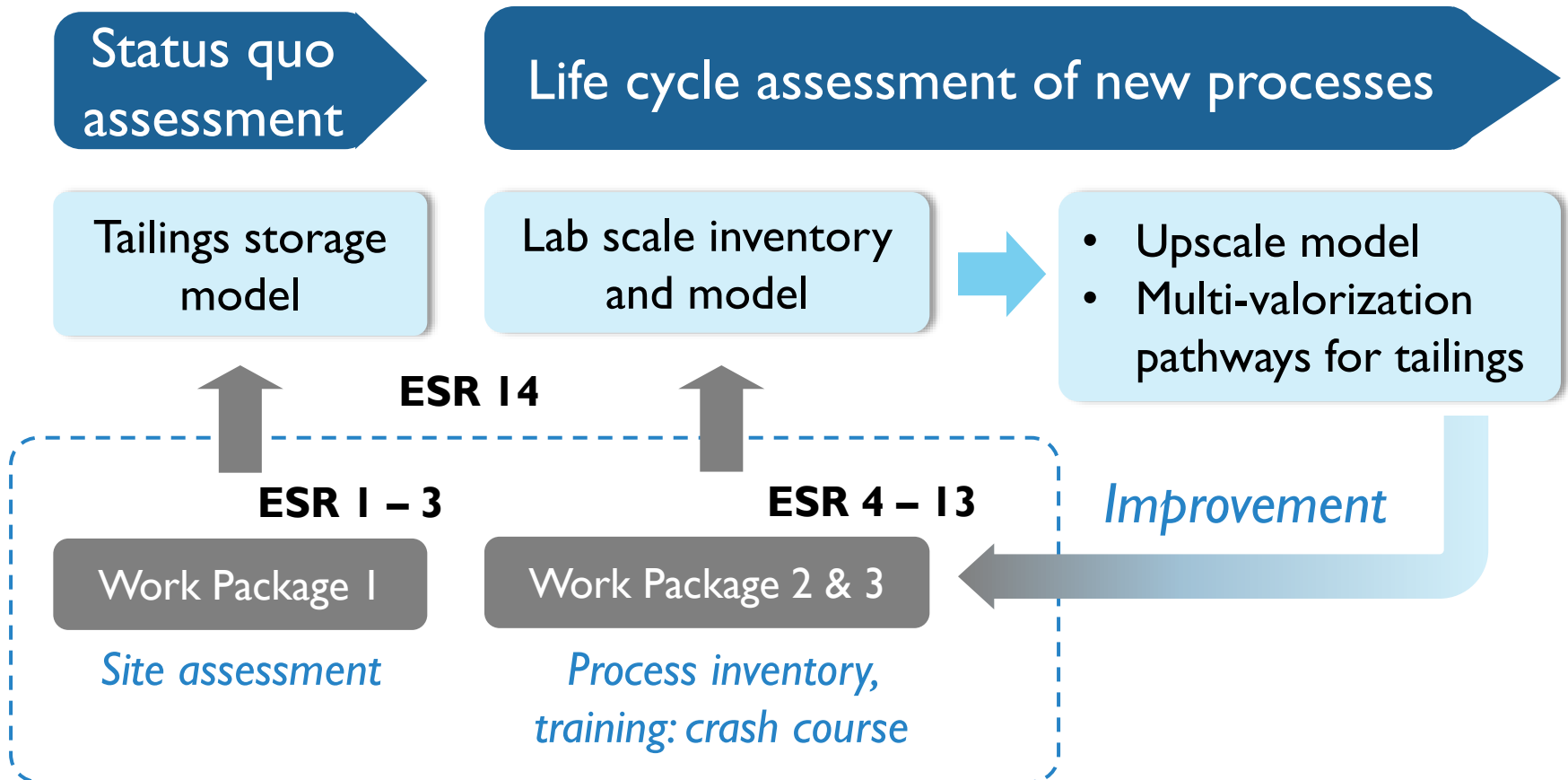
DESIRED OUTPUT

Impact results



Reliable models based on WPs work

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First secondment is underway...

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- Effective charts workshop
- Data science and analytics

TU BAF & HZDR (Sep 2019)

- Metallurgical process simulation
- Geo statistics

TRAINING

Geochemical modelling, open source codes

Others

SECONDMENT

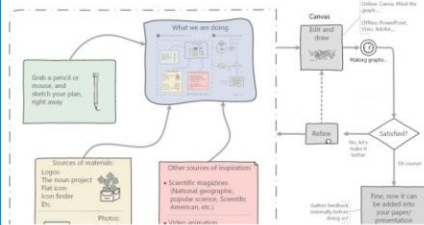
KU Leuven (2020)

Leaching studies integration into LCA

Communicating our research

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Making visually appealing scientific illustrations: a friendly tutorial for researchers



How do you prepare a visually engaging graphic? Where can we get those catchy images? Which aspects should a researcher improve concerning his images? All the quick and useful guides, succinctly written in the article :)

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BLOG ARTICLE

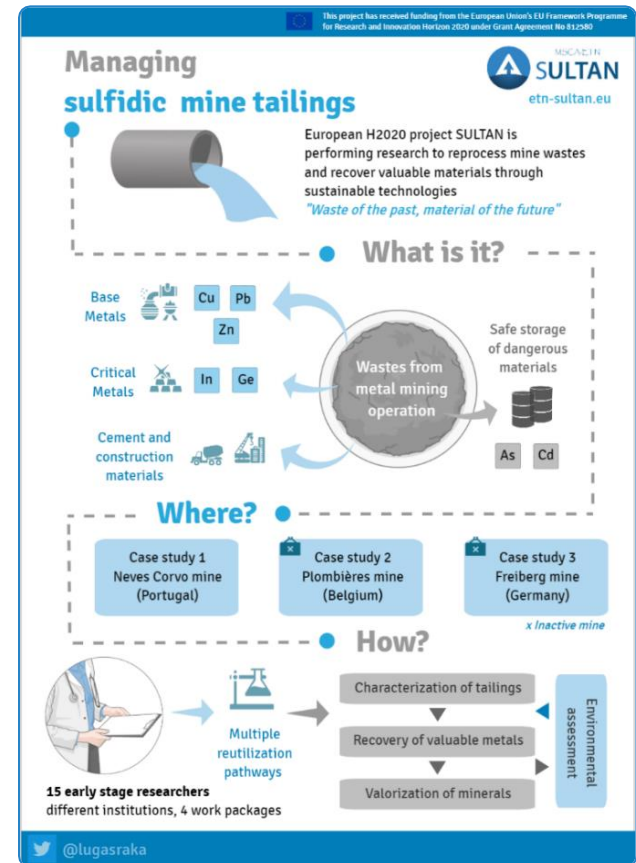
SCIENTIFIC
PITCH

ESR 15

POSTER
PRESENTATION

Ex:

MA THÈSE
EN **180**
SECONDES



Take home messages

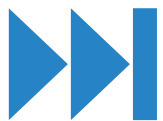
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In conclusion: well-started



Knowledge investment
Research plan preparation and defence

Way forward



Geochemists supervision
“Colouring” dissemination page

Q&A

Questions?



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