ZERO BRINE

WP7. Evaluation of ZERO BRINE systems sustainability performance

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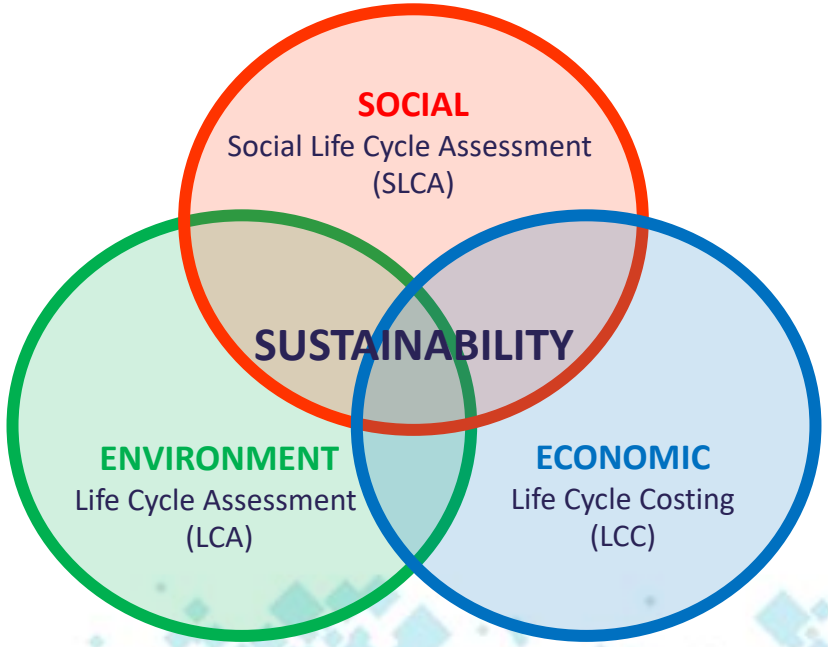
WP7 Evaluation of ZERO BRINE systems sustainability performance

Overall objective

Evaluation of the environmental benefits, the social benefits and the economic feasibility of the innovative ZERO BRINE systems.

Lay foundation for Environmental Technology Verification.



Overview of WP7

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WP7 key to enabling and legitimising the upscaling of the technology systems

- Demonstrating the benefits and potential of the system
- Analysis of economic, social and environmental benefits
- Basis for market exploitation and replication

Task	**Start (M)**	**End (M)**
7.1 Evaluation of demo activities results	11	47
> 7.1.1 Unified project approach and model LCA and LCSA	11	46
> 7.1.2 Botlek demo evaluation	36	47
> 7.1.3 IQE Spain demo evaluation	36	47
> 7.1.4 Poland and Turkey demo evaluation	30	35
7.2 Economic evaluation of case studies (feasibility study)	36	47
7.3 Environmental Verification Technology	24	47

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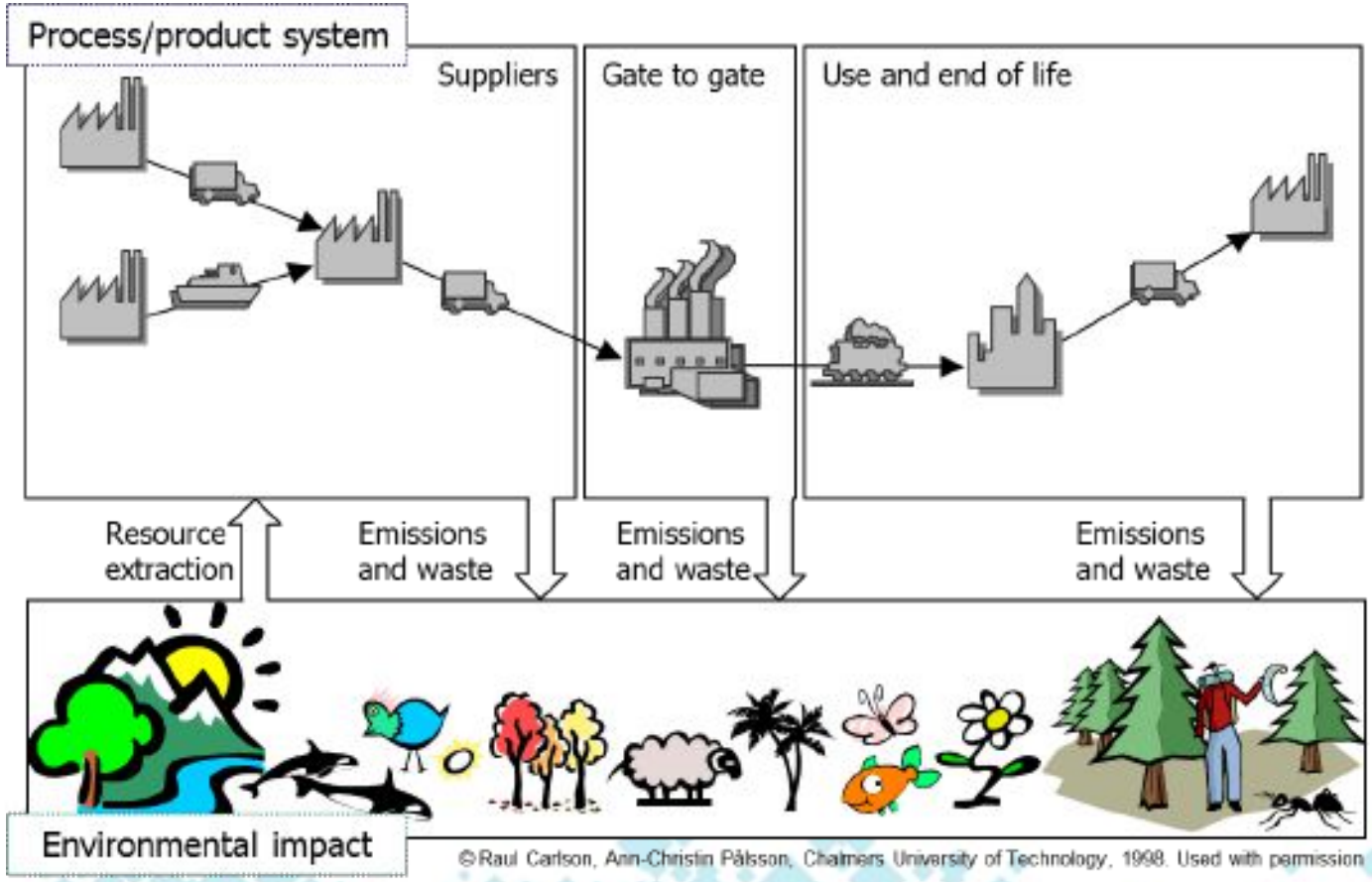
The evaluation is made in a Life Cycle perspective



WP2 EVIDES and ZB Flowcharts

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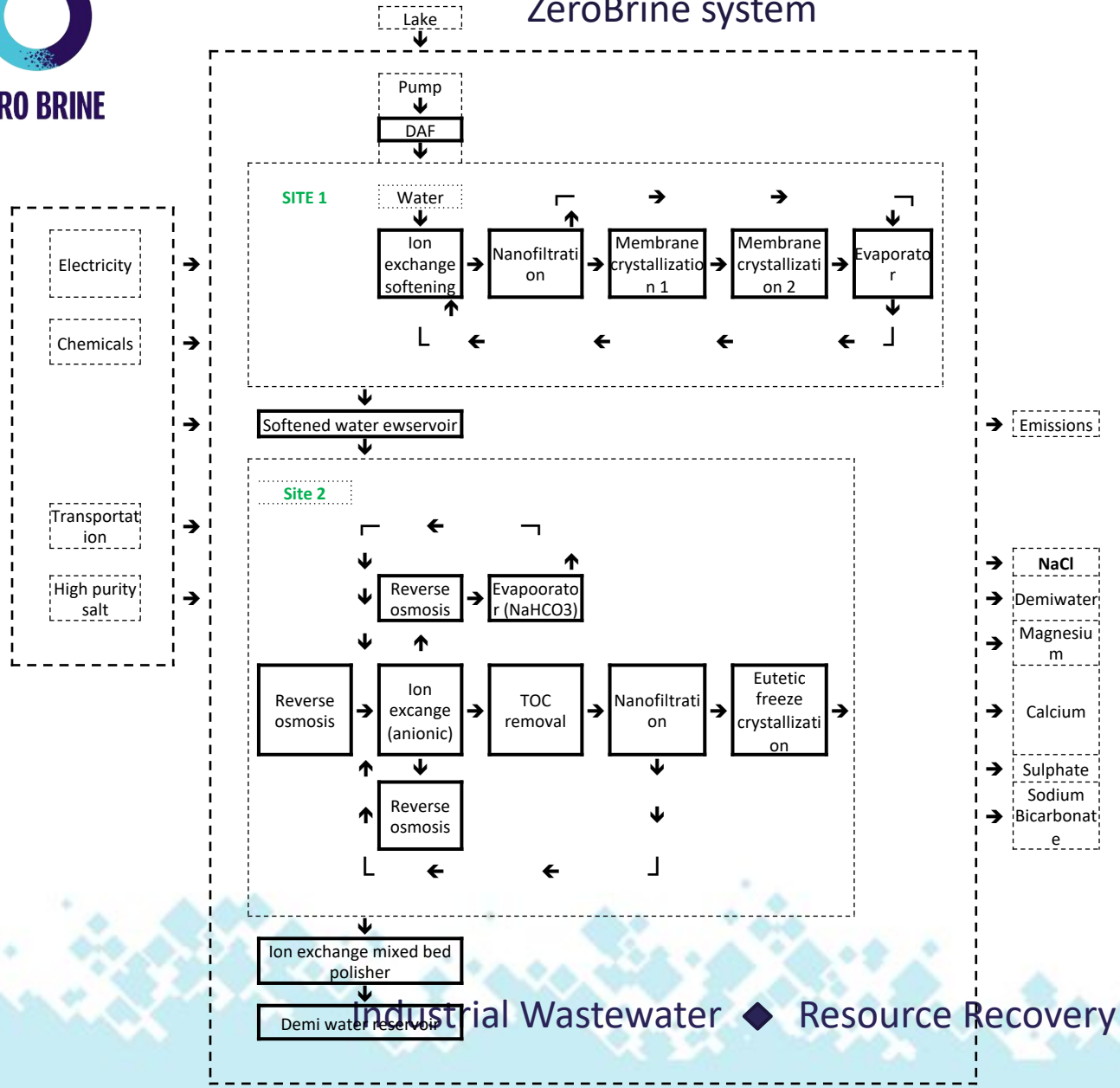
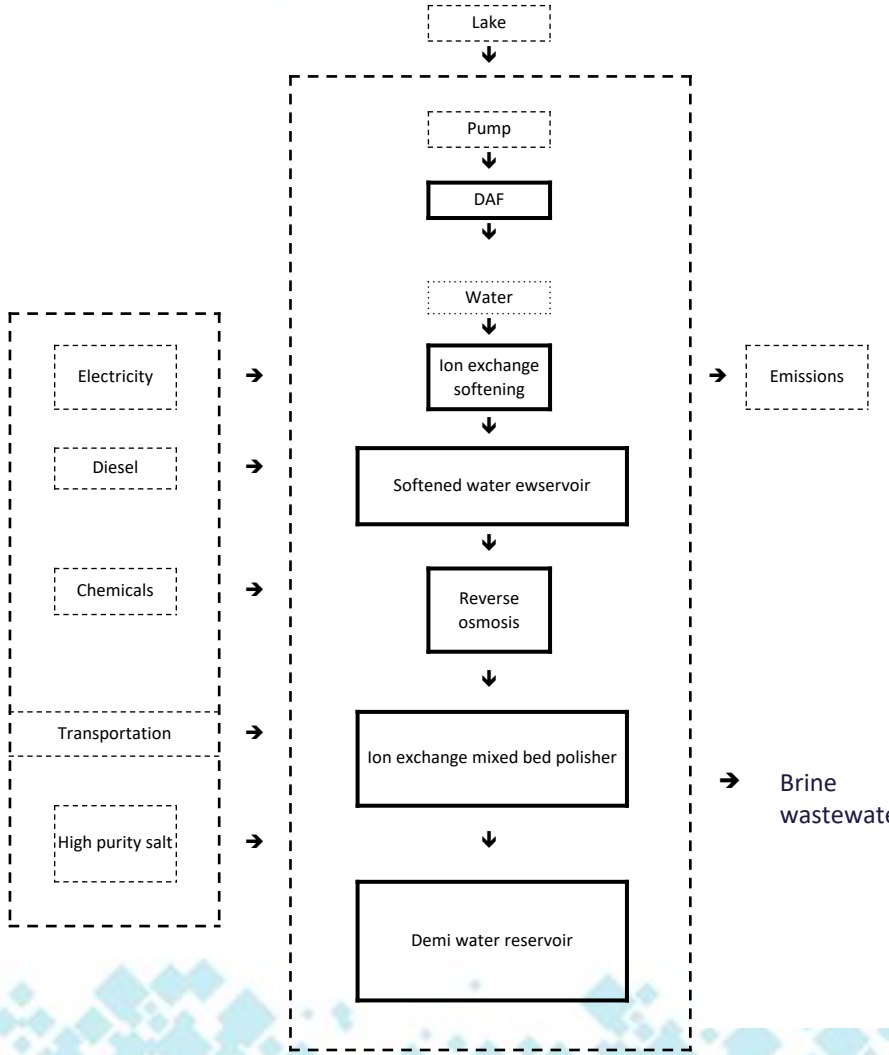
ZeroBrine system

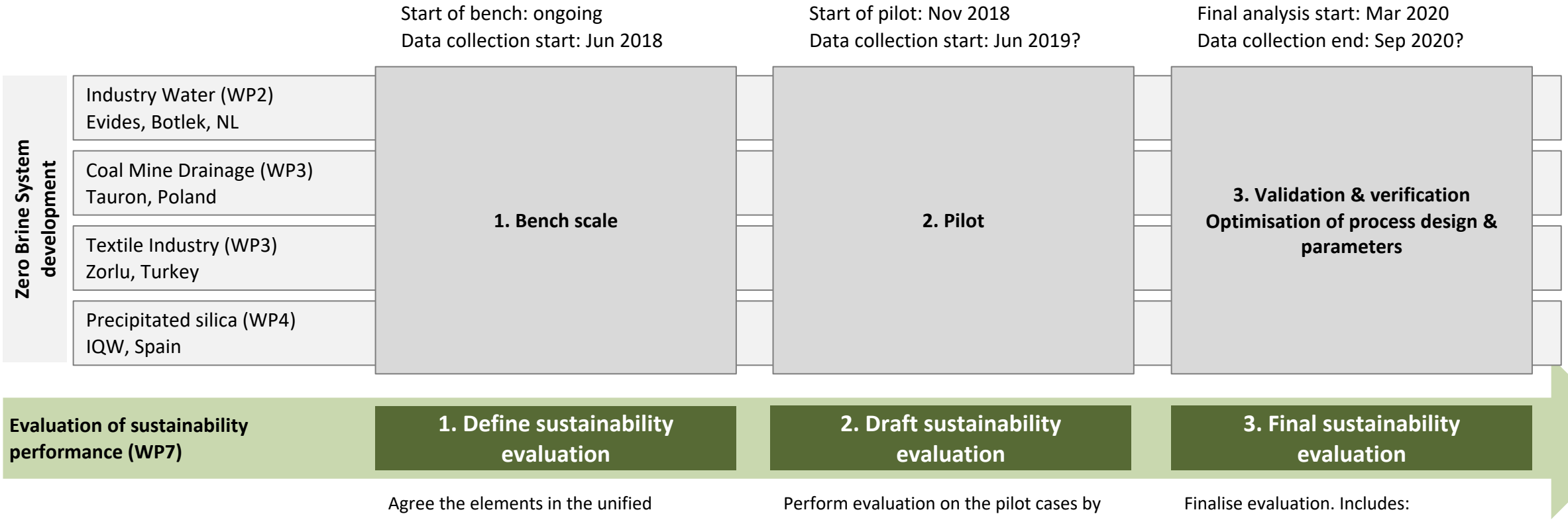


Current system: Evides Industriewater



Industrial Wastewater ◆ Resource Recovery ◆ Circular Economy

Stages in proposed **"Unified Approach for Sustainability Evaluations"** in concert with **demonstration work**



Proactive Life Cycle approach

1. Eco-design principles	• Design for circularity • Low toxicity/ energy/ carbon /material use
2. Life Cycle thinking	• Chemicals / reagents – impact? • Potential life cycle issues? • Early indication of hotspots
3. Identification of data issues	• What is the most critical data? • What might be hard to get LCI datasets on?
4. Other considerations	• Location – building closer or pipeline? • Others?

Data needed for the evaluation

- Define system boundaries for the evaluation: Understanding of WP2-WP4 systems in terms of functionality and process steps
- ENVIRONMENT: Input and output flows to the process steps in the system; e.g. data for energy use, chemical use, emissions to air, water and soil
- SOCIAL: Interviews with stakeholder groups to identify hotspot indicators and site specific indicators
- ECONOMIC: Life cycle costing approach, OPEX (DLR simulation platform), CAPEX (WIT + BOS, TYPSA)

Planning milestones

Task /del.	Milestone	Date
7.1	Understand systems Begin collecting data } in collaboration with WP2-WP4	June 2018
	Meeting to discuss unified approach - in WP7 team (following initial research)	30 September 2018
	Initial bench scale evaluation – initial sustainability input to WP2-WP4	30 December 2018?
	Finalise unified approach - in WP7 team	31 January 2019?
D7.4	Draft initial analysis - individual	1st April 2019
	Draft report for review	1st May 2019
	Report on preliminary LCA/LCC results	(M24) 1 st June 2019
7.2	Start set up of economic model (DLR)	Jan 2019

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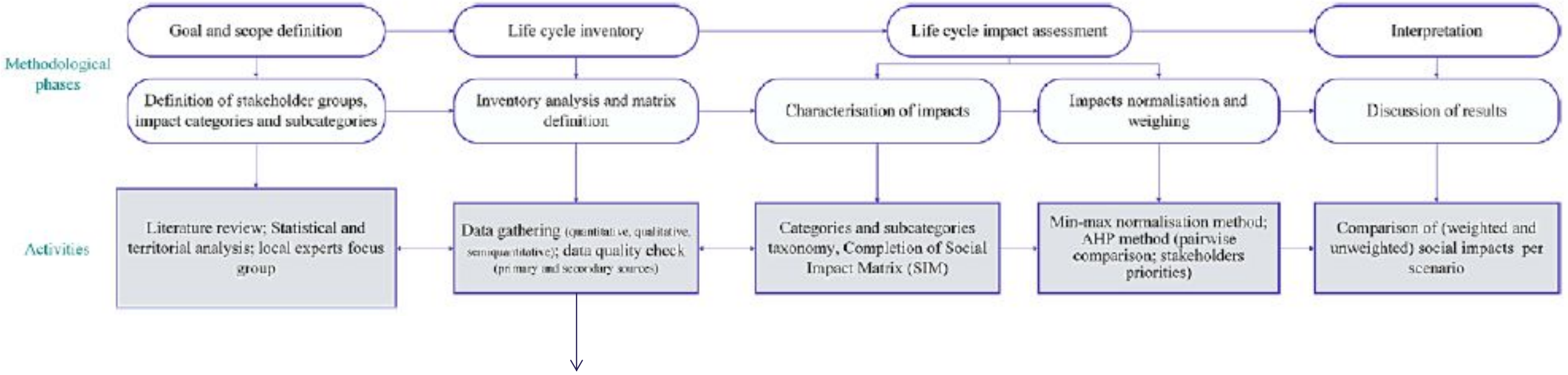
END

S-LCA framework



Primary data sources, secondary data sources

S-LCA stakeholder groups and impacts

- Hotspots Indicators and
- Site specific Indicators