7 - Project - Scientific Recursion

Back to the Future

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Purpose

This memo enforces the **scientific recursion** of your project.

At this stage, technical exploration and template workflows are no longer sufficient.
You are required to **re-enter the scientific literature** and use it actively to **justify, refine, or revise** your project design. Course examples — including the instructor's project logic — must be treated as **contextual references**, not as directions to follow. They may inform your reasoning, but they must **not constrain or replace your own argumentation**.

Your task is to **continue and sharpen your existing project exposé**: - align methods with your conceptual intent, - justify design decisions with literature and reasoning, - and explicitly state where your approach converges with or diverges from established designs.

The memo may exceed up to 3 pages if required for a coherent argument. In addition, include a short **appendix** that documents: - remaining technical gaps, - unresolved conceptual questions, - and -most important- **constraints** that currently limit your design.

These gaps are **not a deficit**. Making them explicit is part of scientific control over the project.

Format & Scope

- **Length:** up to 2000 words.
  (*only* if argumentatively necessary no listings and placeholders…).
- **Style:** scientific, technical, precise, and argumentative — no **narrative padding**.
- **Figures:** optional, only if they support an argument.
- **References: mandatory**
  (inline citations + reference list).

Instructor note

Again: This is the point where **argument replaces execution**.

Required Structure

1. Original Design Intent (1 paragraph)

State clearly:

- the **conceptual objective** of your rainfall network design,
- the **dominant design logic**
  (physiographic, information-gain, hydrological),
- the **key assumptions** that initially guided your project.

Focus strictly on **intent and rationale**, not on methods or tools.

2. What Changed During the Workflow (2–3 paragraphs)

Document **decisions**, not impressions:

- which workflow components were **adapted, simplified, or removed**,
- which assumptions were **confirmed, revised, or abandoned**,
- where the course workflow or examples influenced your thinking —
  and where you deliberately **departed** from them.

Instructor note

Use the following question as a **reflection frame**, not as a reset instruction:
If you had to justify your current design **from scratch**,
which decisions would you now argue differently — and **why**?

3. Scientific Justification (2-5 paragraphs)

This is the **core section**. You are required to **re-enter the literature seriously** and use it to **argue** your design.

- Introduce **new or re-read sources** that became relevant *because of* your results.
- Explain how specific references:
  - support your current design,
  - contradict earlier assumptions,
  - or point to alternative, equally valid approaches.

You must explicitly link **papers to decisions**, e.g.:

- choice of stratification logic,
- use (or non-use) of landforms or catchments,
- rejection of optimisation strategies,
- prioritisation of certain processes over others.

4. Scope, Limits, and Open Questions (2-3 paragraphs)

State plainly:

- which processes your design captures **robustly**,
- which are represented **only indirectly**,
- which remain **unresolved or unaddressed**.

Lack of clarity here indicates missing literature or weak reasoning.
Clarity about limits indicates **scientific control**.

Appendix

Add a short appendix, listing:

- remaining **technical gaps**,
- unresolved **conceptual questions**,
- constraints (data, scale, feasibility) that currently limit your design.

Do **not** hide these gaps in the main text.
Making them explicit is part of the task.

Submission

- **File name:** `NAME_Module5_ScientificRecursion.pdf`
- **Upload:** ILIAS folder `project_revisited`.

Note

This memo marks the point where your project stops being a pure technical exercise and becomes a **scientifically argued design**.