UN-REDD PROGRAMME

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Workflows for spatial analysis

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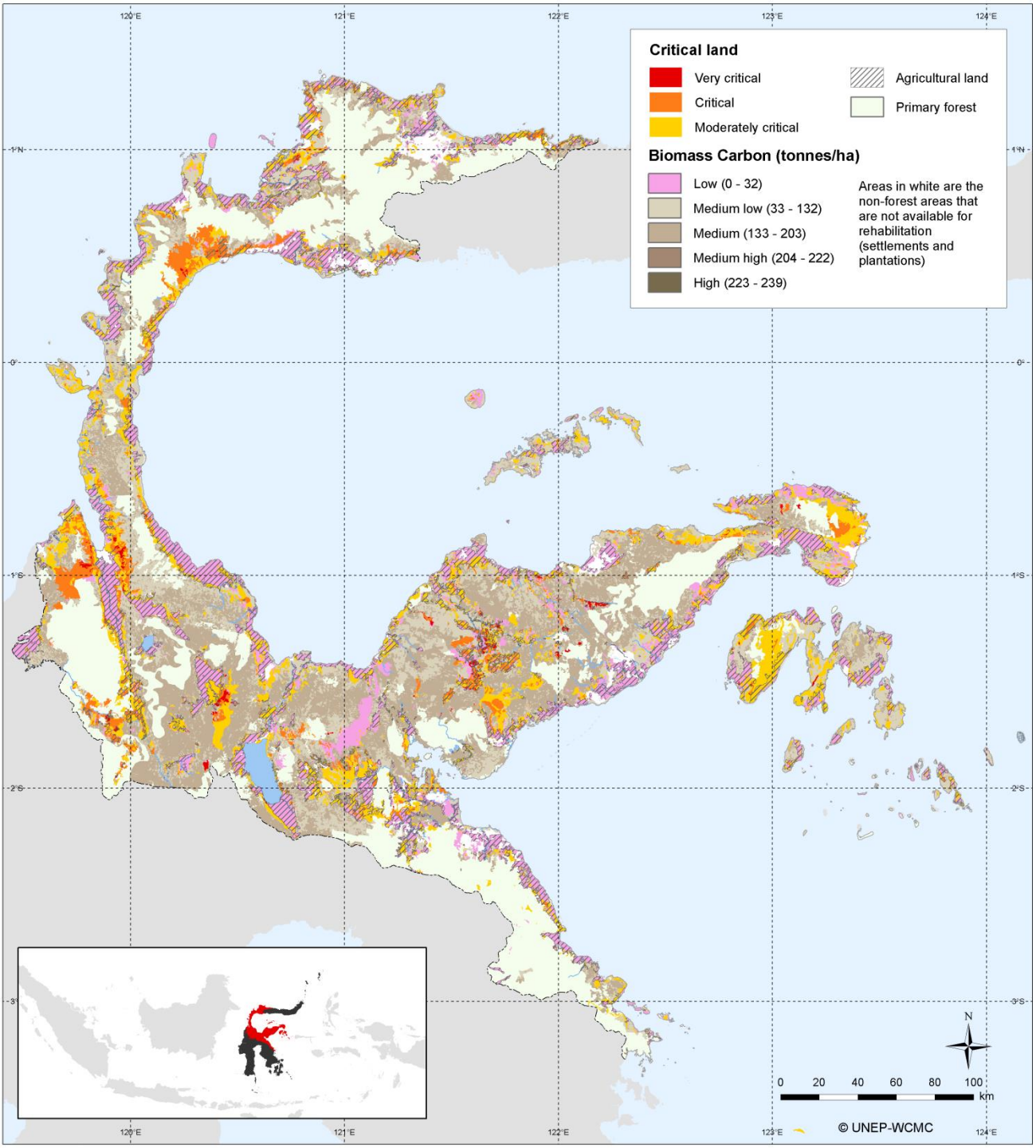
What is a spatial workflow?

A workflow defines the **flow of work** in order to carry out a task or piece of work.

A **spatial workflow** helps you to think about how you are going to undertake a piece of spatial analysis:

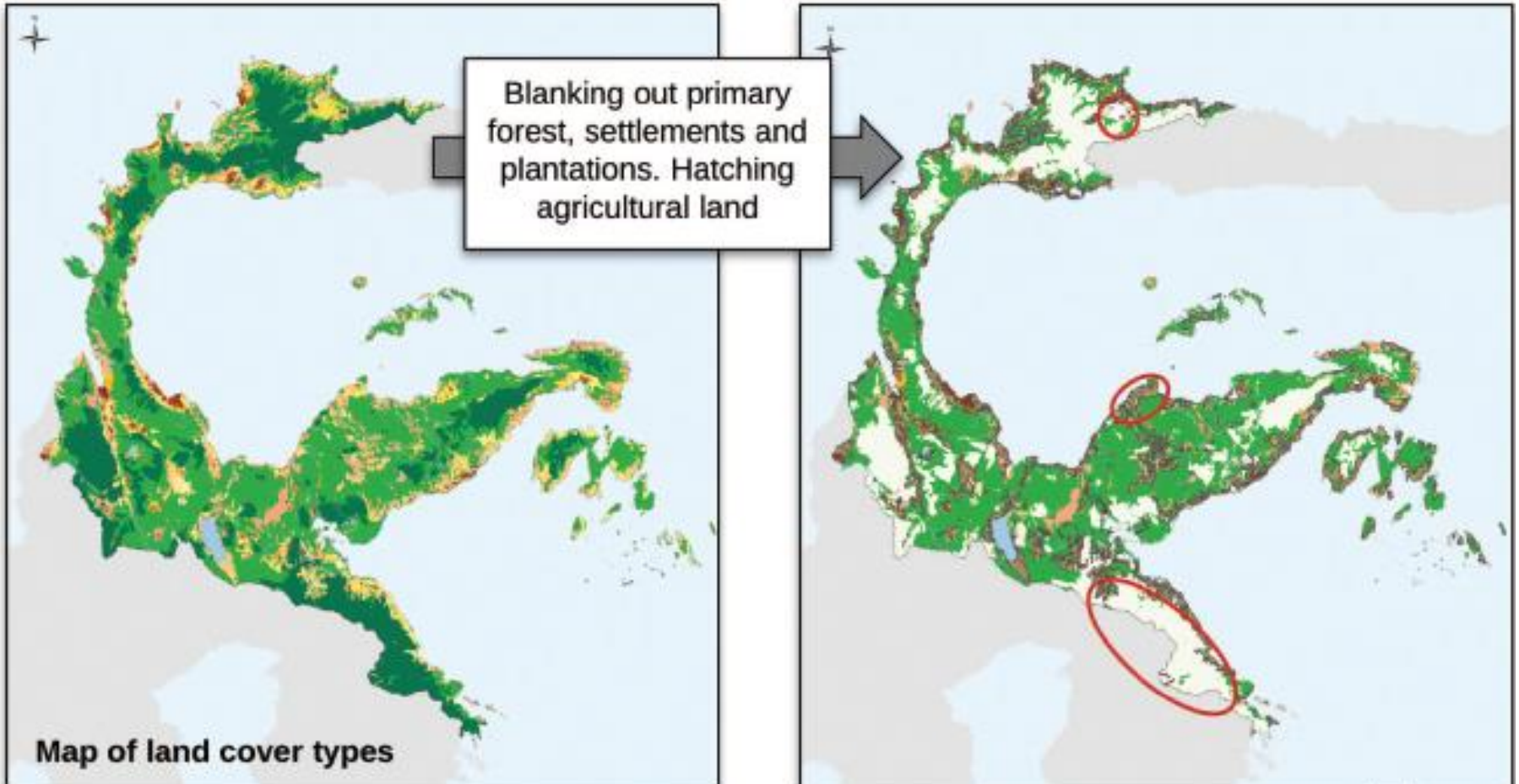
- the **spatial logic** you will use to answer a question
- The **input layers / data** needed
- the technical **GIS processes / tools**
- and the **sequence or order of steps**



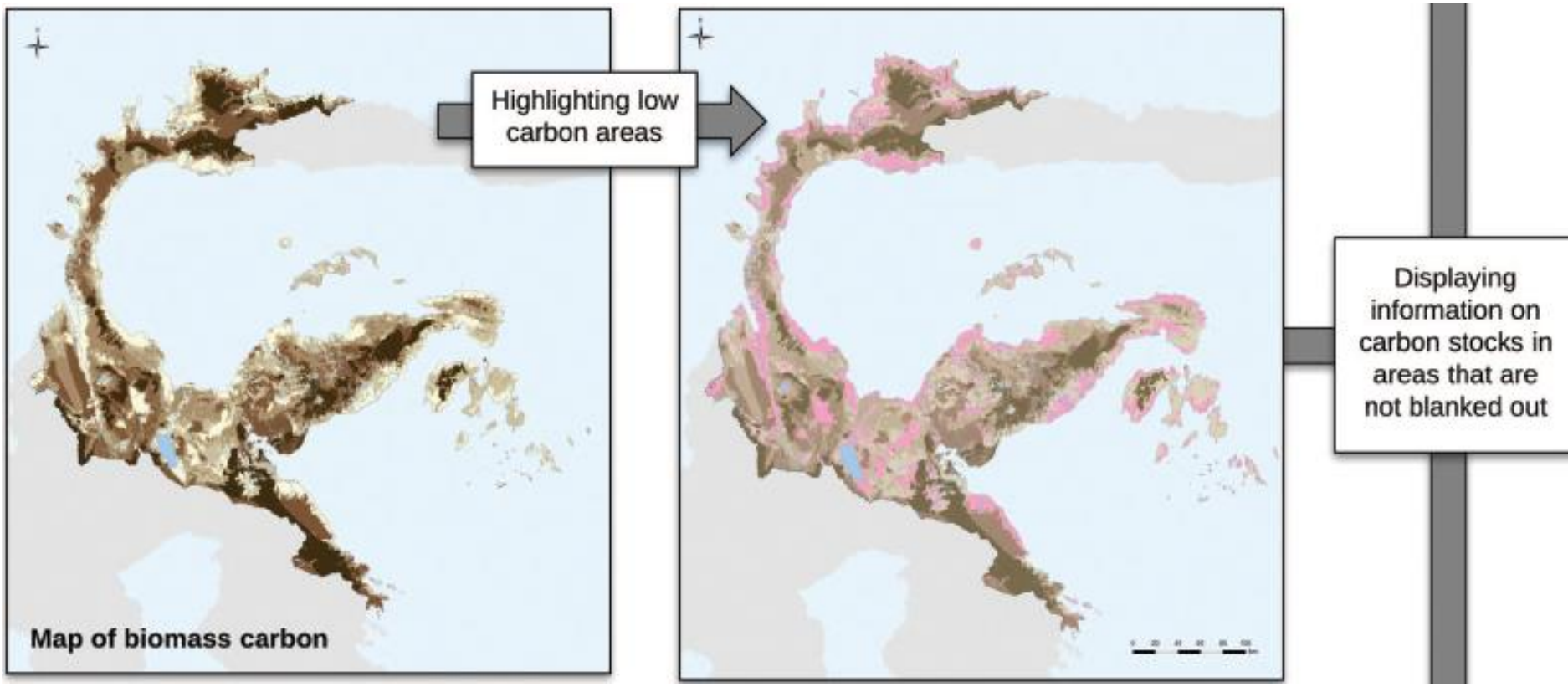
For example, a final map: potential areas for REDD+ actions to rehabilitate forests in Central Sulawesi, Indonesia

How was this map created? There is a spatial logic or workflow behind it

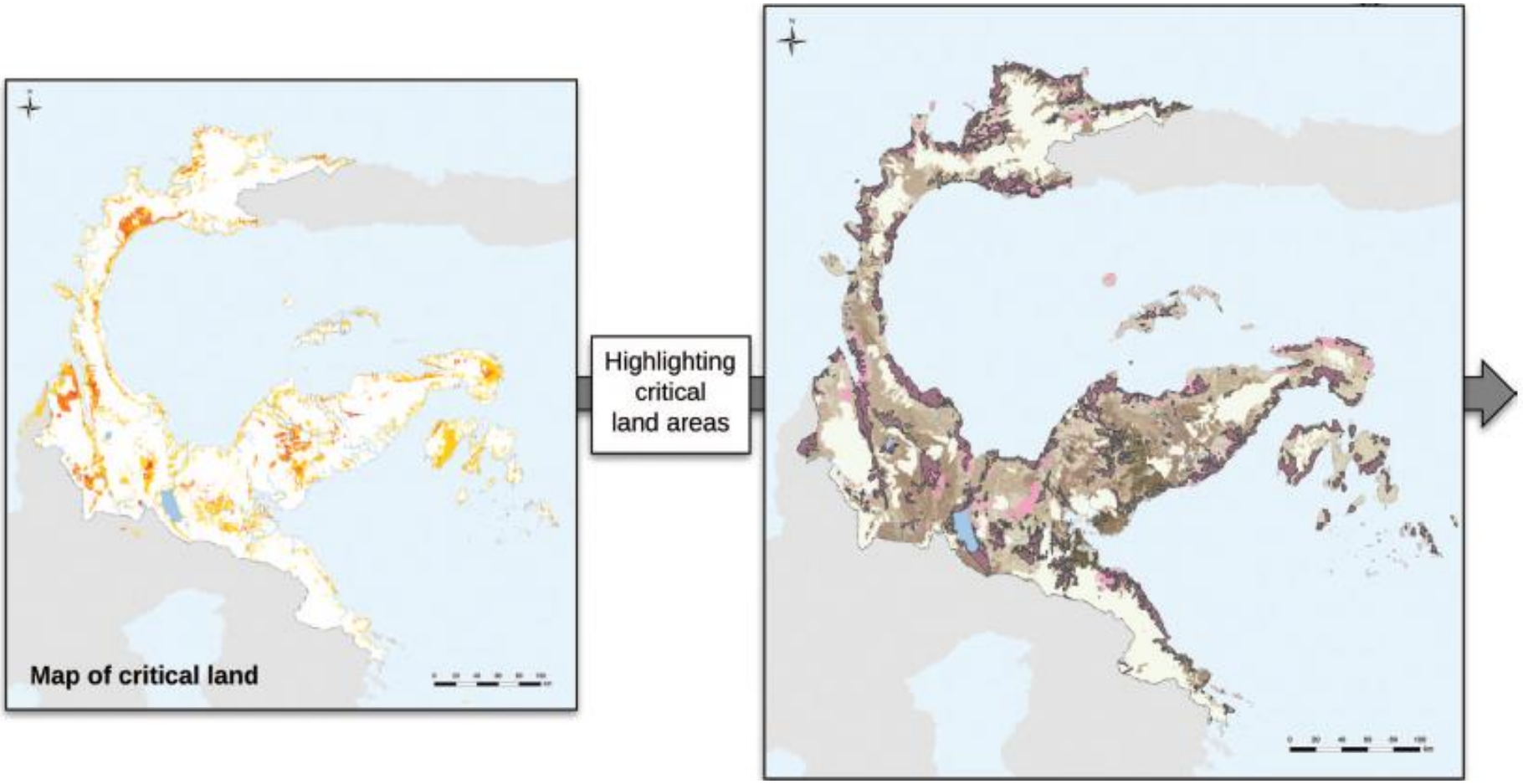
1. Land cover types: where are areas suitable for rehabilitation?

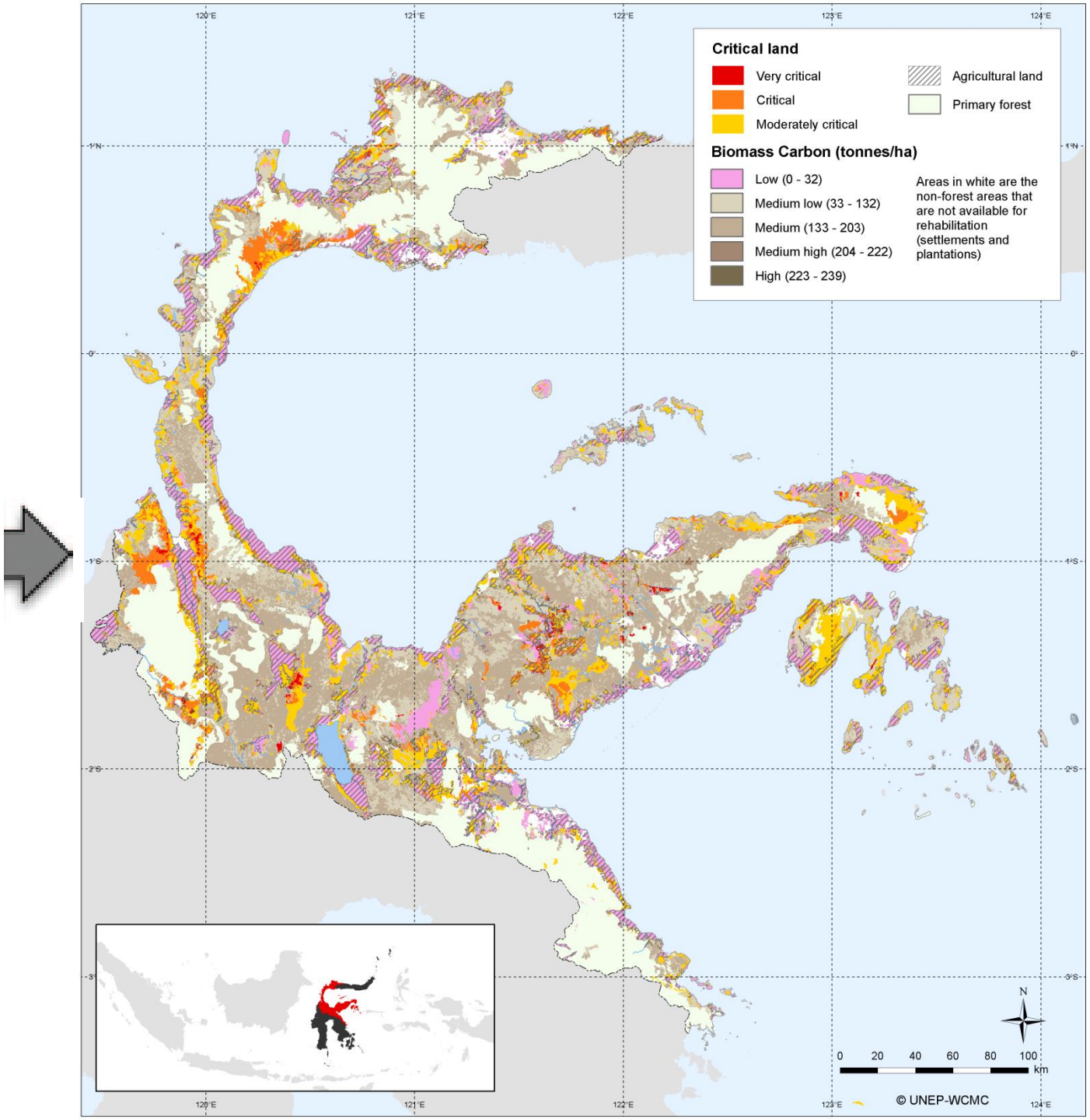


2. Biomass carbon: what are the carbon stocks in those areas?



3. Overlay: which are the important areas?





4. Final map:

potential areas for REDD+ actions to rehabilitate forests

So why use workflows? Forward planning!

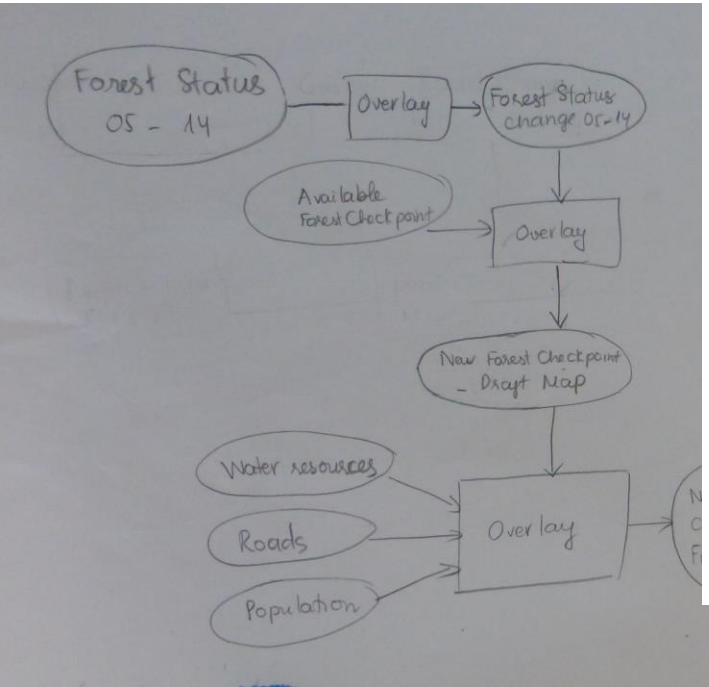
A spatial workflow should help clarify the following:

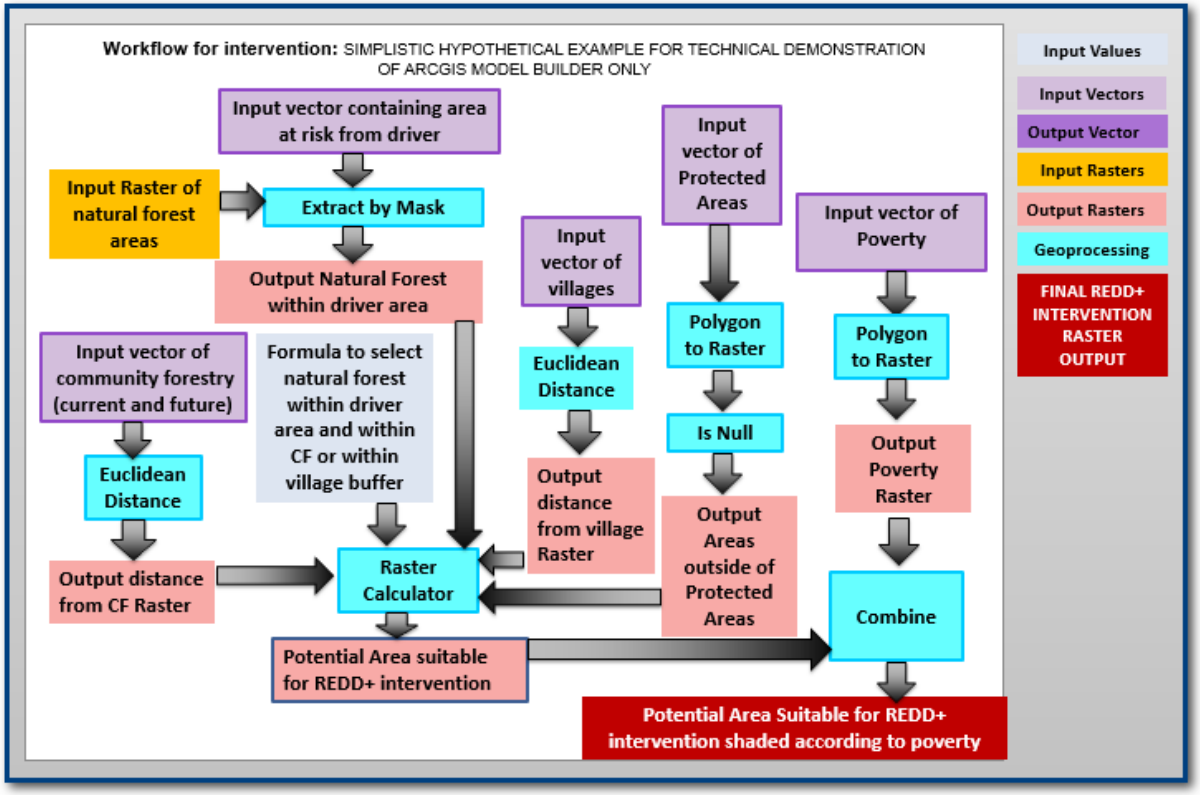
- What is the question that we are trying to help answer?
  - *E.g. Which areas in a landscape should be priorities for biodiversity conservation?*
- What output map will we create to help answer this question?
  - *E.g. Areas considered important for biodiversity conservation*
- What input layers / data needed to develop an output map
  - *E.g. IUCN species richness, protected areas, wildlife corridors, local species data*

- What assumptions / thresholds do we need to define?
  - *E.g. What kind of biodiversity? Which species to include? How are corridors identified?*
- What processes or tools will we use to process and combine the input layers?
  - *E.g. overlay, raster analysis, buffers….*
- How will we validate or check the output map?
  - *E.g. consultation with experts / stakeholders*

What do spatial workflows look like?

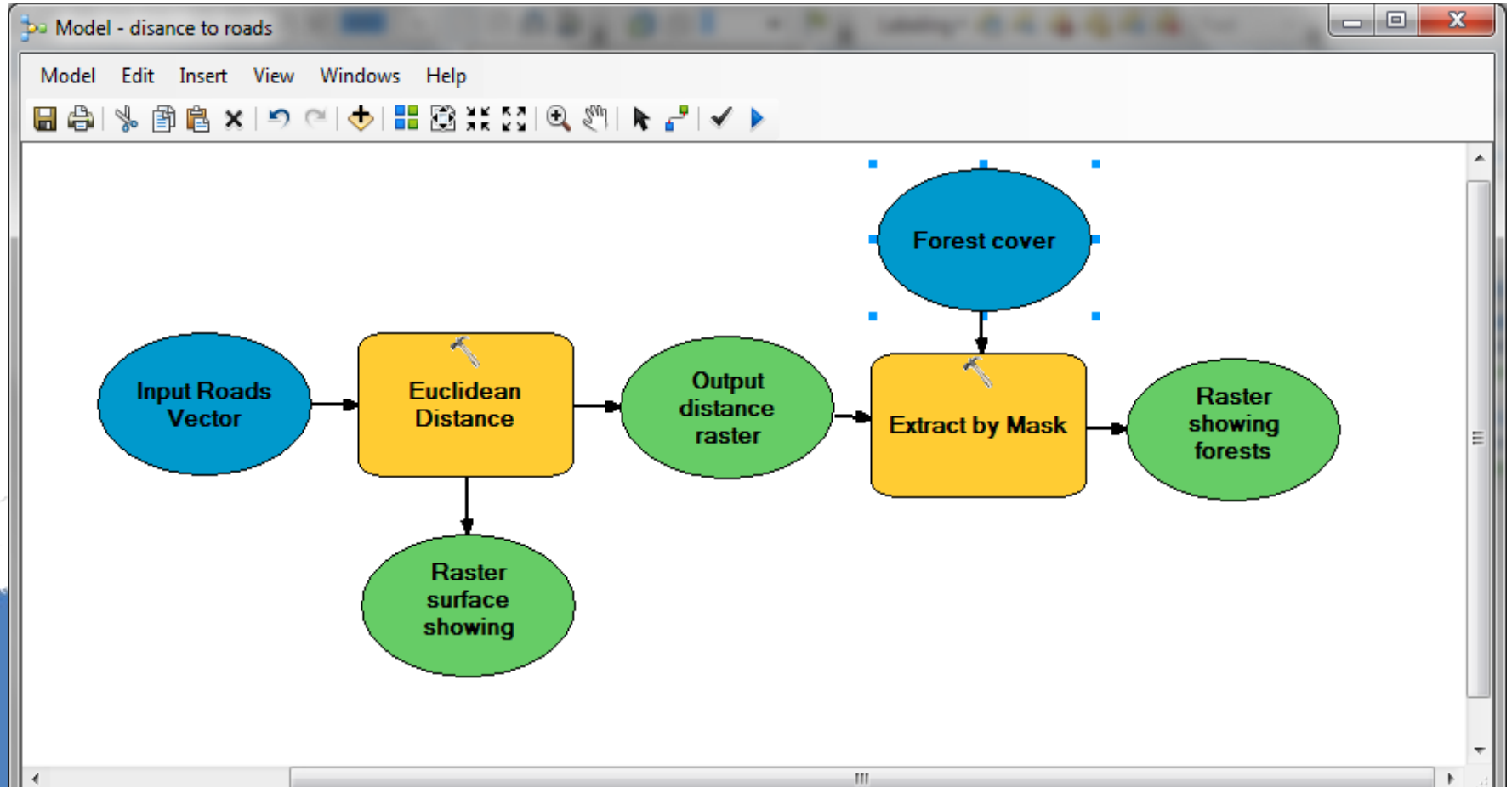
- Workflows can be simple or complex
- They can be created on paper, in a flow chart, or in QGIS / Arc ModelBuilder





For example

The workflow below has been put into a simple ArcGIS model: for generating a layer that shows forest classified according to distance from roads



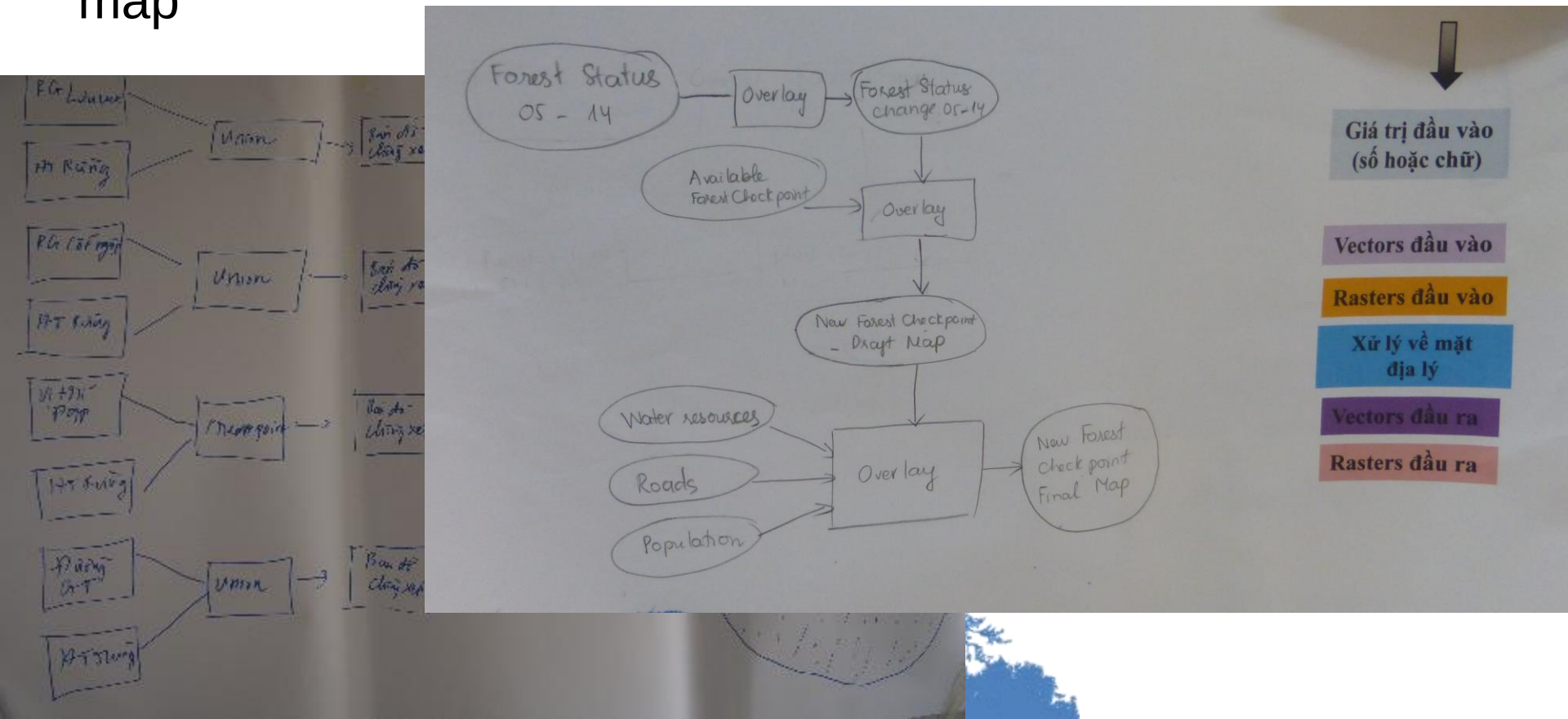
Group exercise: develop a workflow

- **Split into 2 groups**; one for Khovsgol and one for Tov
- **Output map**: Importance of forest for tourism and recreation in Khovsgol / Tov
- **Part 1: Identify input layers**
  - **Define concepts**
  - **List input layers**
  - **Decide how they will be used**
  - **Check availability**
  - **Identify thresholds / values**

Part 2: Develop workflow

To begin with, we will develop a workflow on paper, using a flowchart.

Use large paper to draw a chart showing processes and steps for using/ combining input layers, in order to make the output map



Thank you!

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