

Workflows for mapping REDD+ interventions

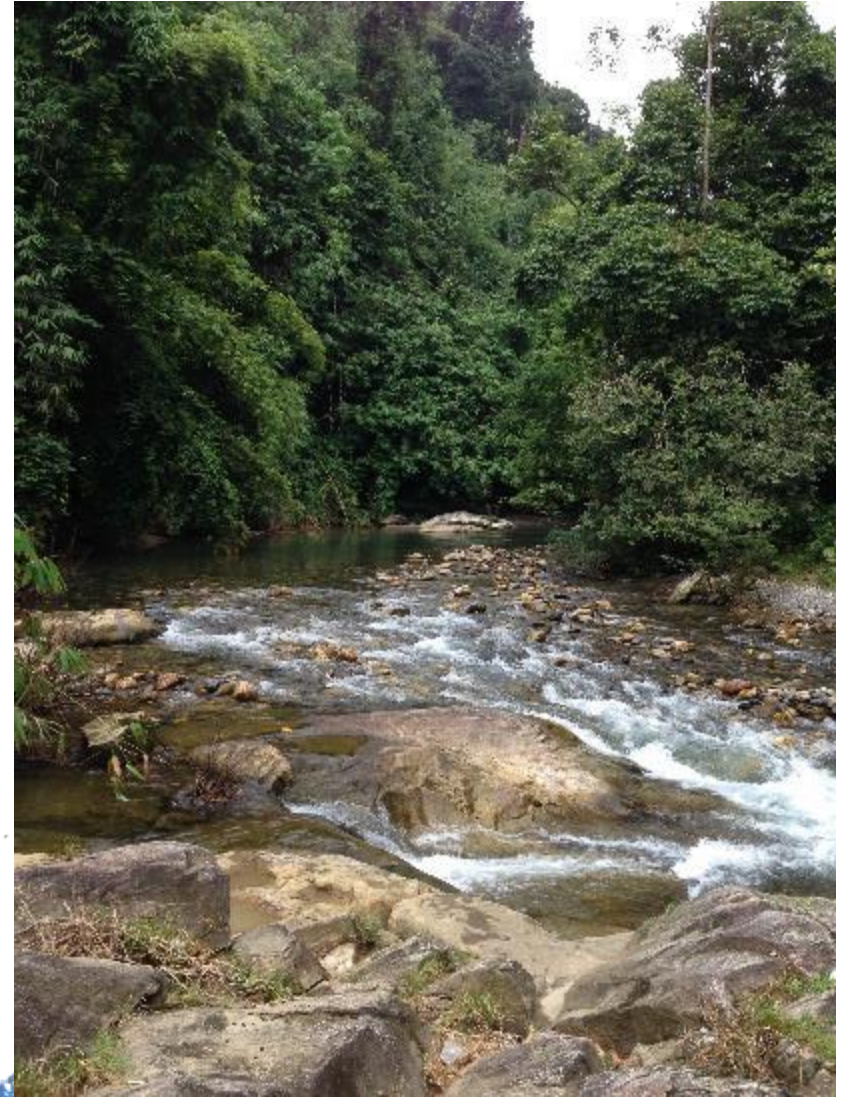
UNEP-WCMC

Monrovia, February 2018



Outline

- Recap: Integrated land use planning, spatial analysis and REDD+
- Planning spatial workflows to identify priority areas for REDD+ activities



An aerial photograph of a vast tropical forest. The forest is dense and green, with numerous white mist clouds rising from the canopy. A wide, muddy brown river flows through the forest on the right side of the image. The sky is clear and blue.

Recap: Integrated land use planning, spatial analysis and REDD+

A silhouette of a forest line against a bright blue sky. The trees are dark and their shapes are clearly visible against the lighter background.

Recap

Integrated land use planning

- Can help to plan for multiple objectives in a landscape
- Planners consider a range of economic, environmental and social goals and land-use activities.
- Stakeholders from multiple sectors and backgrounds are engaged in the process.

Spatial analysis

- The process of examining the locations/attributes/ relationships of features spatially
- Develop analysis using spatial data to answer specific questions (e.g. analysis of changes in forest cover between two periods)

REDD+

- International initiative to combat climate change by reducing deforestation and changing the way forests are used and managed.
- Main aim to reduce GHG emissions and increase carbon sequestration, and can be implemented through a range of actions

Spatial workflows to identify priority areas for REDD+ activities and interventions



REDD+ involves 5 '*activities*' and numerous '*actions*' or '*interventions*'

Activity	Example actions / interventions
Reducing emissions from deforestation	Eg: reduce conversion pressure through improved land-use planning
Reducing emissions from forest degradation	Eg: provide fuelwood alternatives/efficient cookstoves
Conservation of forest carbon stocks	Eg: consolidating management of existing protected areas
Sustainable management of forest	Eg: reduced impact logging; community forestry
Enhancement of forest carbon stocks	Eg: forest rehabilitation; afforestation

Where **can** the intervention be undertaken and where **can't** be undertaken?

What is the driver/problem you want to address?

Is the forest type relevant?

Is the forest condition (degraded, deforested, pristine) relevant?

Are there other geophysical aspects to consider? E.g. slope, soil type

Should the distance to roads or settlements be considered?

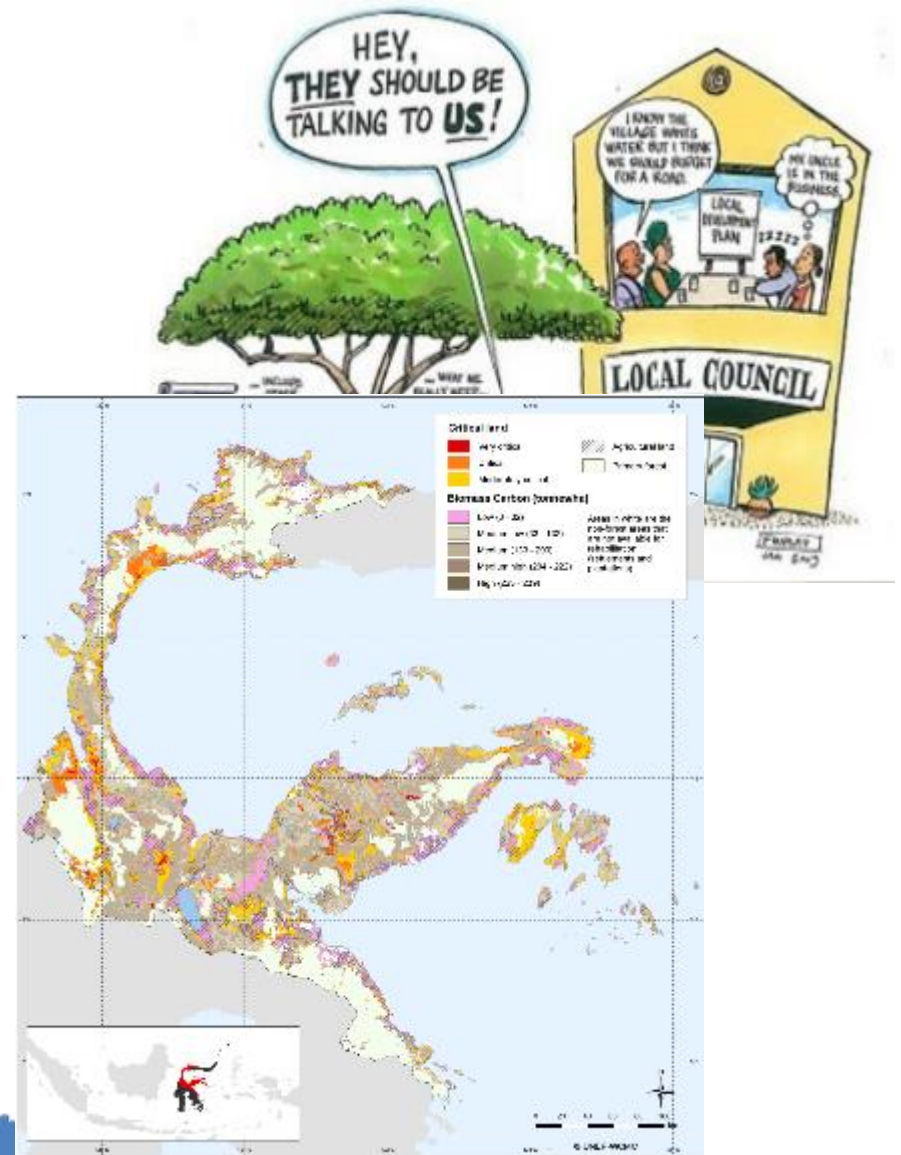
What about other land uses? E.g. should agricultural areas be excluded?

What about social and environmental benefits? E.g. should biodiversity areas and/or poverty areas be prioritised?

Are there risks from the action? E.g. risks to communities? Risks from fires, steep slopes?

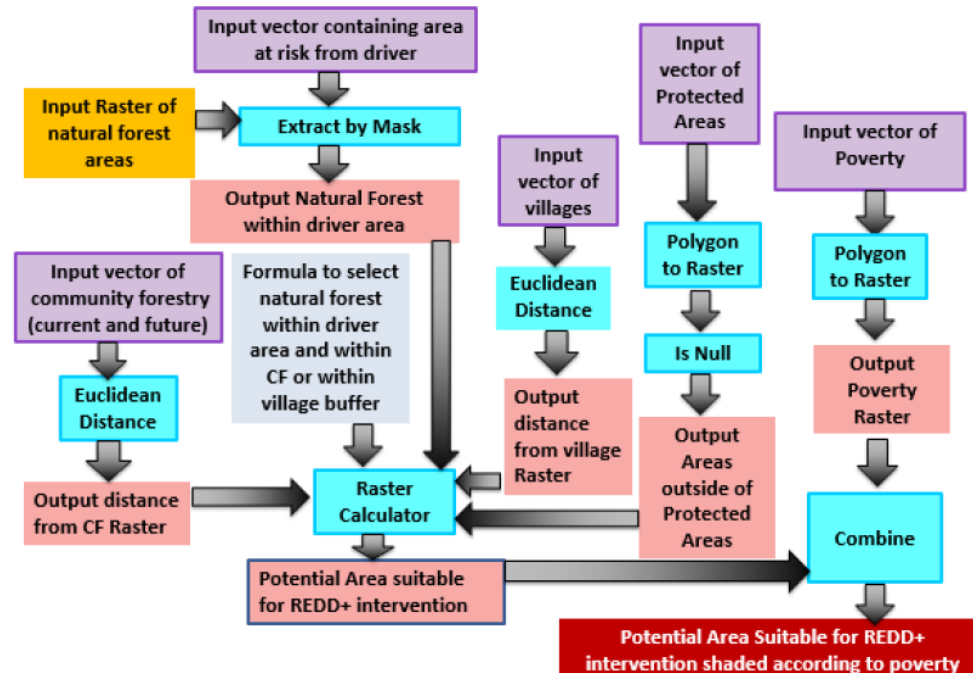
Mapping priority areas for REDD+ Interventions: *Two approaches*

- ✓ Participatory
- +
- ✓ Spatial analysis



What is a workflow?

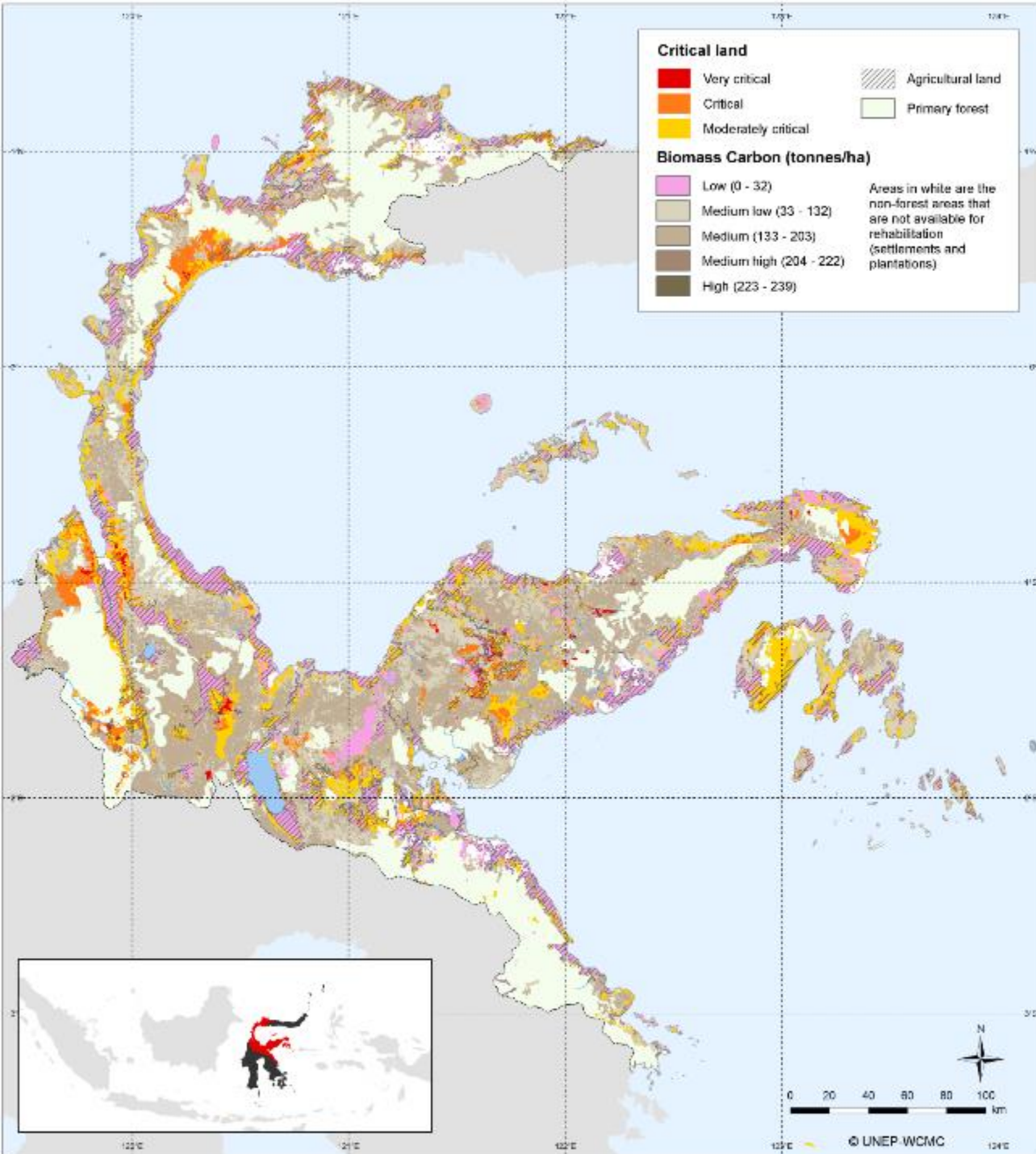
- Defines the **flow of steps** in order to carry out a task or piece of work.
- A **spatial workflow** helps you to decide how to undertake a piece of spatial analysis:
 - ❖ the spatial logic you will use to answer a question
 - ❖ the input layers / data needed
 - ❖ the technical GIS processes / tools
 - ❖ and the sequence or order of steps



A workflow should help clarify

- What is the question that we are trying to help answer?
 - *E.g. Which areas in a landscape should be priorities for sustainable forest management certification?*
- What is the output map that we will create to help answer this question?
 - *E.g. Priority Forest Areas for Expansion of SFM Certification Program*
- What input layers / data needed to develop an output map?
 - *E.g. forest status, forest management units, areas already certified, High Conservation Value Forests*

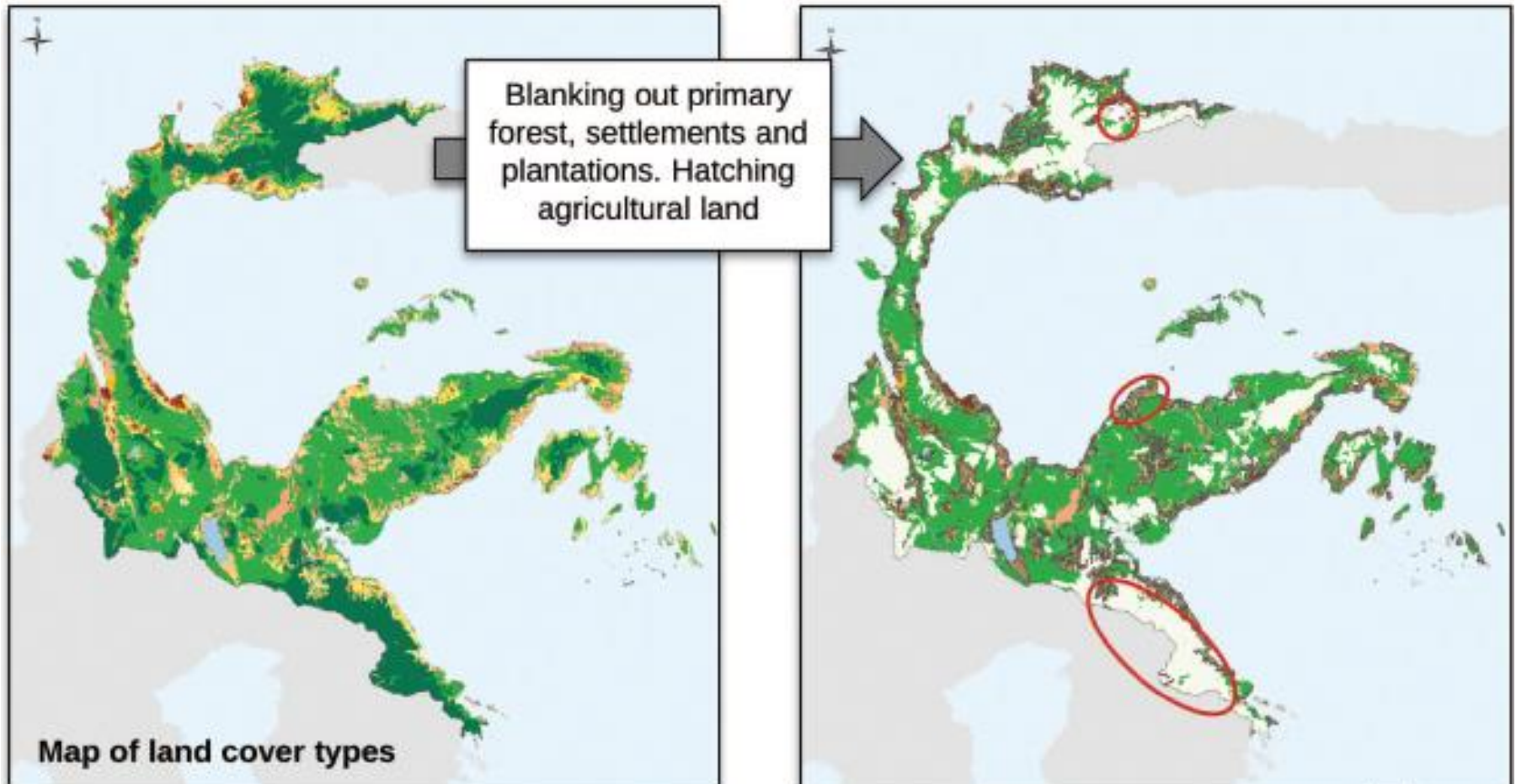
-
- What other goals are priorities for the action?
 - *E.g. protecting biodiversity as well as carbon, contributing to socio-economic development*
 - What assumptions / thresholds do we need to define?
 - *E.g. What kind of SFM certification program is it? What counts as high biodiversity?*
 - What GIS 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*



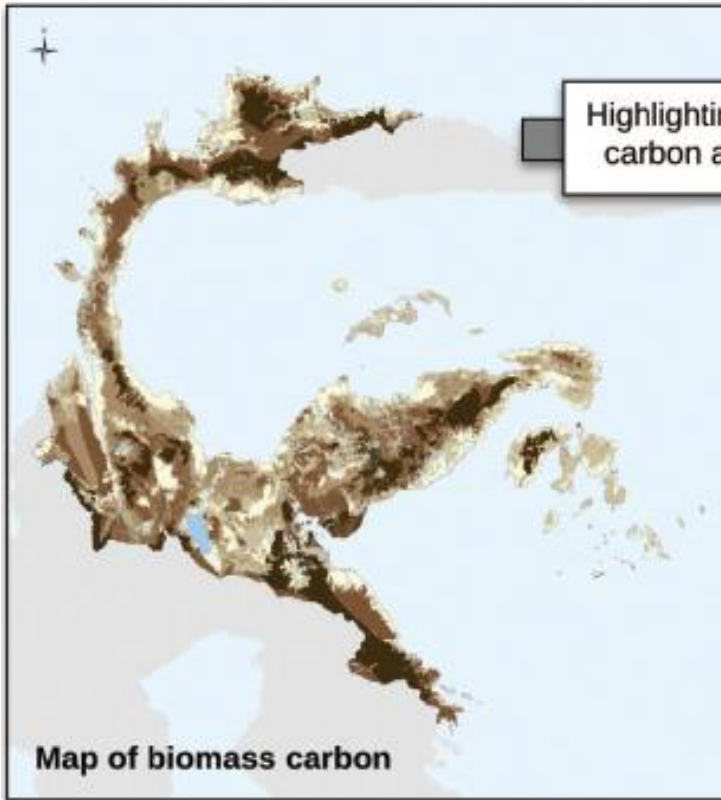
**For example,
a map of
potential
areas for
REDD+
actions to
rehabilitate
forests in
Central
Sulawesi,
Indonesia**

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

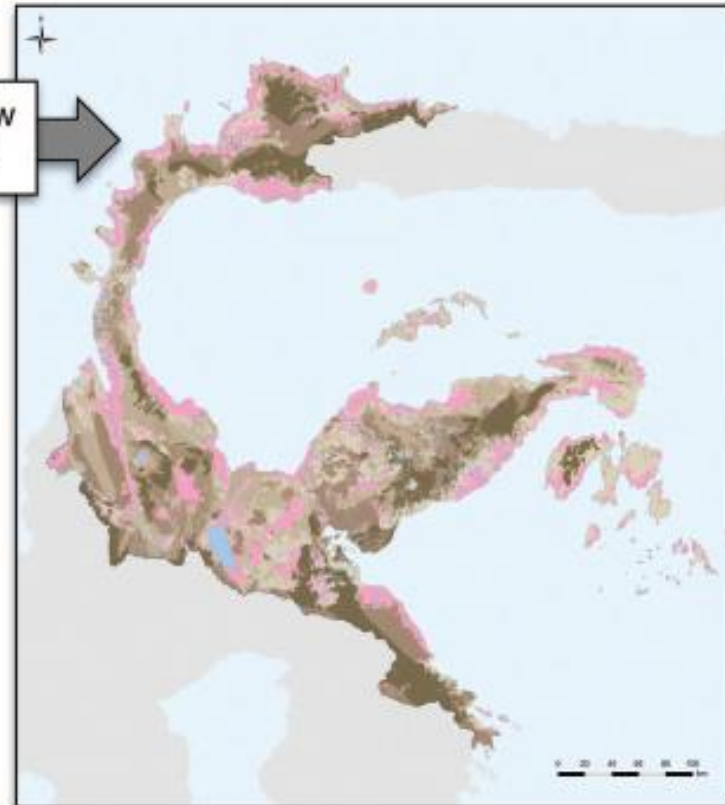
1. Land cover types: where are areas suitable for rehabilitation?



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

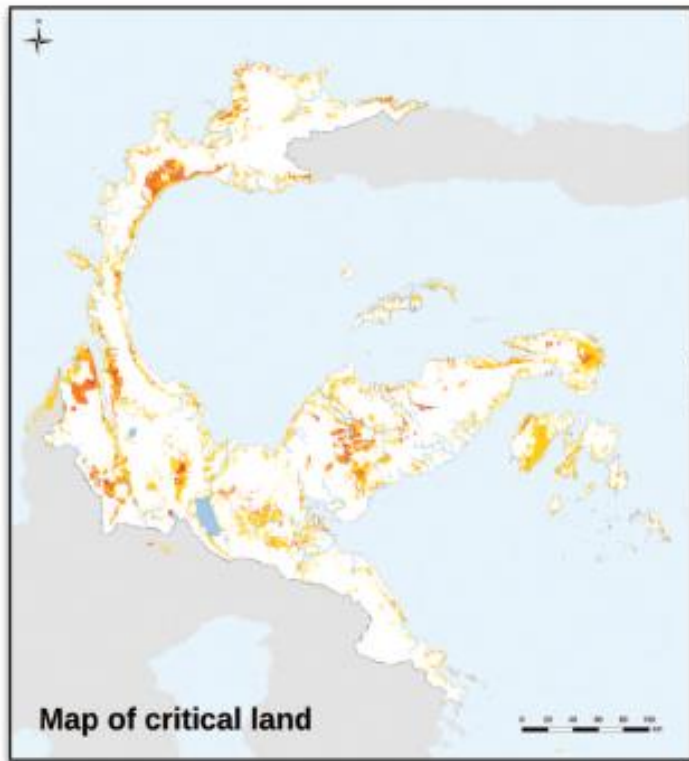


Highlighting low carbon areas

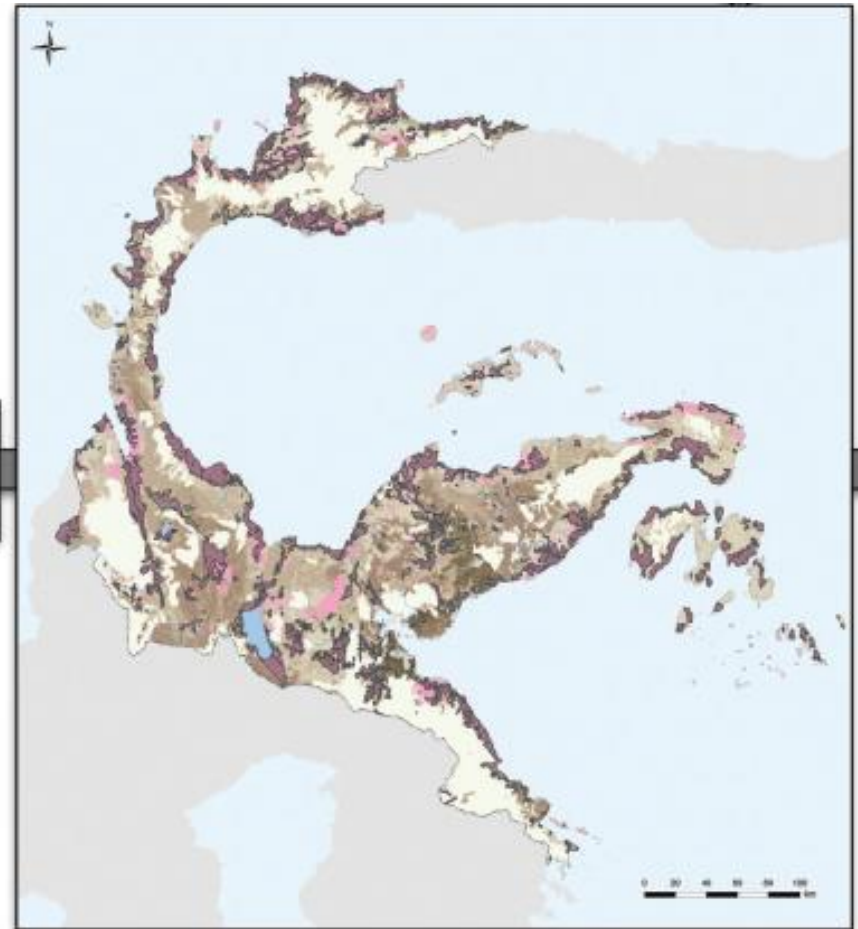


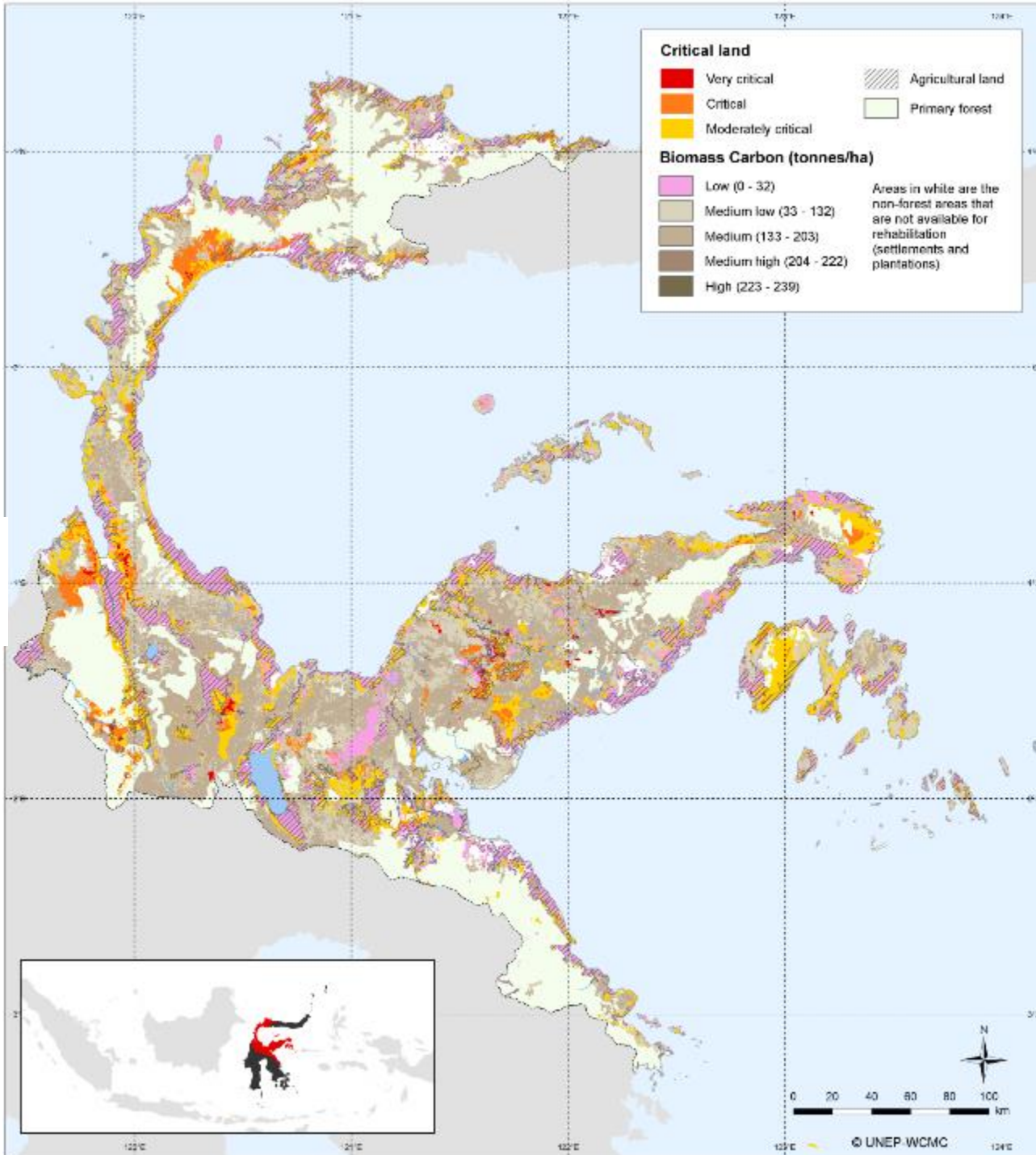
Displaying information on carbon stocks in areas that are not blanked out

3. Overlay: which are the important areas?



Highlighting
critical
land areas





**4. Final map:
potential areas for REDD+ actions to rehabilitate forests**

Activity: Create a workflow for your REDD+ intervention

In your groups identify the intervention to achieve one of the national REDD+ priorities, define the spatial workflow to address your driver/barrier

- **Driver/Barrier**
 - ❖ Which layer you need to map current areas at risk?
 - ❖ Are any other geoprocessing tasks needed to identify potential areas at **future** risk from that driver?
- **Intervention:**
 - ❖ Where can't the REDD+ intervention be undertaken?
*i.e. exclude areas where that REDD+ intervention would not be possible. **List the reasons why you are excluding certain areas***
 - ❖ Where can the REDD+ intervention be undertaken?
*i.e. which areas should be included. **List the reasons why you are highlighting certain areas***
 - ❖ What data you will use to make those exclusions/inclusions?
 - ❖ What geoprocessing tools might you use in QGIS?