

Template: Facilitated discussion on selecting and using data

What kinds of data from different sectors can help us to map pressures on forests?

Different data layers can be used to create maps showing the area likely to be affected by drivers of deforestation and degradation now and in the future. This template is for use in identifying the input layers needed and how they should be used.

Step 1: discuss and list the input layers or data that are needed to understand which areas in the province will likely be affected by a driver. Any number of layers can be included, but the more layers you have, the more complicated the analysis. What are the most important factors? Are there any factors that can't be mapped?

Step 2: Discuss and document how you would use each input layer. How will the forest cover change dataset help you determine future threatened areas? E.g. proximity to past deforestation? If your driver is expansion of agriculture? Are there data showing existing crop suitability? Or what new layers might you want to create? Are you using a layer to exclude certain areas?

Step 3: Discuss and document where you may obtain this type of data: Do we have access to the dataset? If so, where/who has it? Is it in the form we need? For example, we may have a land-cover dataset but lack information on crop types. Are there any international datasets that we could use in conjunction with the provincial or national level data? For example, can we use provincial level data to downscale data for a larger area?

Step 4: Discuss and fill in any values or thresholds we need to be aware of. This refers to numbers that affect how the dataset is used. For example, if wish to figure out which areas have high population density, then how will we define 'high density'?

Template: Overlay of spatial information on pressures

Work in pairs to overlay forest cover change data with different sectoral layers (transport, hydropower, mining, plantation concessions etc.).

The aim of the exercise is to help understand where different drivers are occurring now and in the future and where there may be barriers to implementing a policy or measure for conservation, sustainable management and forest enhancement.

Choose an example to create a map of current pressures and potential future threats. You can choose from the examples below or for another example for which there is data.

Step 1: For a chosen driver think about the questions you need to consider.

Step 2: Think about the questions in more detail. Use the workflow template to think about and write down the sequence of technical steps you will undertake to develop the maps.

Step 3: Try to undertake the technical steps in ArcGIS. You may find that you need to modify the steps you have in your planned workflow.

Step 4: Create a map which clearly shows the relationship between forest cover change and your chosen driver.

Additional step (if you have time): Calculate statistics of the areas currently under threat and the areas under potential threat in the future.

Example 1: Roads and infrastructure

We might want to consider the following questions:

Is there a relationship between the locations of past forest cover change and the distance to roads and infrastructure? i.e. where does deforestation occur in relation to roads? E.g. is there a threshold distance of areas impacted.

Where do planned infrastructural developments provide improved access to the existing forest cover? E.g. can you use the thresholds from the current pressures to determine where future pressures may be

Example 2: Population density and poverty

We might want to consider the following questions:

Is there a relationship between the locations of past forest cover change and the population density in these areas?

How is the population expected to change (rate of change), and how may this affect forest cover?

Example 3: Local practices and political decisions (land-use plans)

We might want to consider the following questions:

How do the locations of the current drivers of deforestation relate to the level of forest cover change observed in an area?

How will a proposed land-use plan change the extent to which a driver changes forest cover in these areas?

Example 4: Hydropower

We might want to consider the following questions:

Where are planned dams?

How large are these, and what area of forest would be flooded? Can a topographical map be used to model this?

What other infrastructure development would be required to access the dam?

Example 5: Mining

We might want to consider the following questions:

Where are mineral concessions? Which of these are for exploration and could be active in the future? Which of these are active already?

Is there a history of forest cover loss within concessions?

Do concessions include obligations to identify and retain high-carbon stock forests?

Example 6: Plantation concessions

We might want to consider the following questions:

Where is natural forest, and what is its aboveground carbon stocks?

Are there any plantation concessions within this natural forest that mean that it is at risk of conversion to planted forest? Is there a plan to expand the area of planted forest, and how specific is it?

What type of planted forest is prevalent? What is its carbon stock?

Is there a history of forest cover loss within concessions?

Do concessions include obligations to identify and retain high-carbon stock forests?

What would the immediate release of aboveground carbon stocks be on felling the natural forest, and what would the eventual carbon stock of the planted forest be?

The REDD+ safeguards are intended to prevent the conversion of natural to planted forest as part of REDD+

Template for workflow. Think about how you are going to generate layers if they do not exist. Think about what ArcGIS geoprocessing tools you could use and in what order? What are the inputs and outputs to these tools? Use the boxes on the left hand side to create your workflows.

For example, part of the workflow may be to look at proximity to roads your input layer might be “vector layer of roads”, the geoprocessing tool might be “buffer”, there might be an Input value of “1000” (E.g. for a 1km buffer around roads) and the output would be a vector layer of 1km buffer from roads.

**Input Values
(numbers or text)**

Input Vectors

Input Rasters

Geoprocessing

Output Vectors

Output Rasters

