

RESTORATION & PROTECTION PLANNING TOOL



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In light of climate change and potential shifts in production, understanding opportunities for improved land management in coffee landscapes is key. However, conservation prioritization data and maps are complex and often difficult for local stakeholders to use. Through funding from the Walmart Foundation, together with the Center for Tropical Agriculture (CIAT), The Sustainability Consortium (TSC) and Rainforest Alliance, Conservation International developed a tool in Google Earth Engine that allows non-technical users to develop customized prioritization scenarios for coffee areas in Colombia and Indonesia.

One tool was developed for Indonesia and one for Colombia that highlights active restoration opportunities such as tree planting, and passive restoration opportunities such as setting aside areas for natural regeneration. CI worked across teams to identify the key considerations for active and passive restoration prioritization within each country and to collect the most authoritative and relevant geospatial data available representing these themes. Data was compiled and organized around both biophysical (e.g. forest, biodiversity, water bodies) and socio-economic (e.g. protected areas, IPLC lands) variables. Where available, government priorities for both restoration and coffee production were also incorporated.

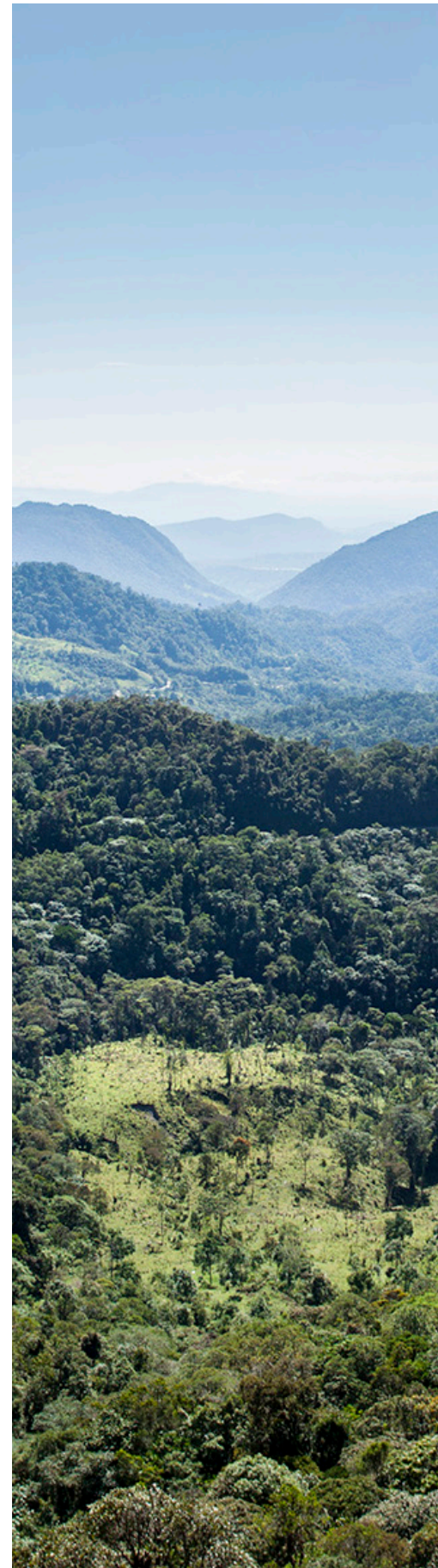
What does the tool do?

- Allows users to identify areas suitable for restoration based on user specifications
- Calculates area in hectares for land available for restoration
- Enables prioritization of restorable areas by weighting pre-selected variables based on expert opinion and displays this on the map for a given region of interest
- Displays high-risk forests in areas suitable for coffee cultivation to highlight forests in need of protection
- Allows users to download a TIF and PNG of three data outputs: available areas for restoration, prioritized areas for restoration, and forests in need of protection.

How can the tool be used?

This tool can be utilized by different types of users for the purpose of stakeholder engagement, program planning or adaptive management of projects. Specifically, the tool:

- Enables local organizations in a landscape to visualize, prioritize and socialize challenges and opportunities.
- Provides science-backed data that supports project developers in prioritizing areas for intervention
- Can support discussions on where to expand or adapt current efforts to achieve the maximum environmental and social impacts.



NAVIGATING THE RESTORATION & PROTECTION PLANNING TOOL

The main goal of the Restoration & Protection Planning Tool is to help prioritize landscapes for restoration and protection efforts based on unique user needs. The tool incorporates a coffee map layer developed by CIAT, as well as a hotspot analysis developed by TSC, in addition to biophysical and socioeconomic data.

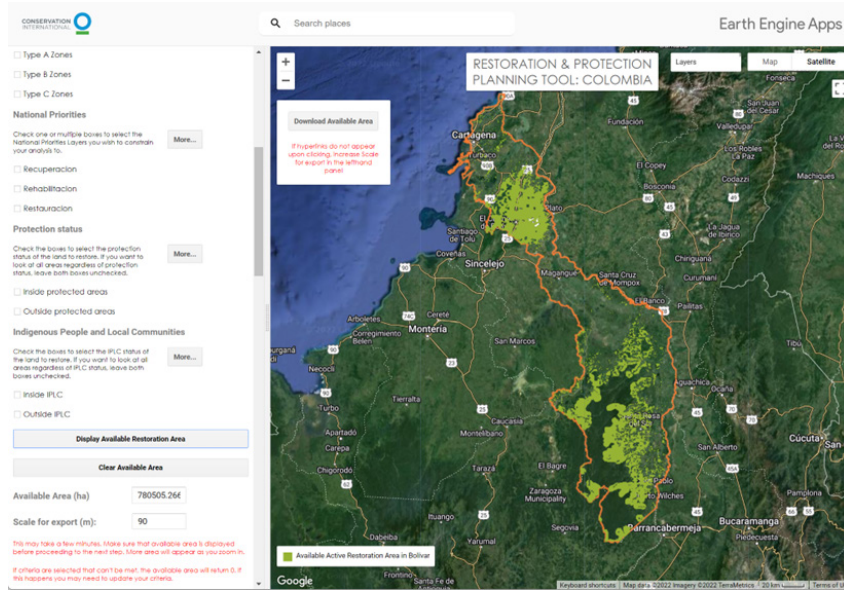


Figure 1. Available Area for Active Restoration in Bolívar with default parameters.

Part 1: Applying criteria for restoration

1. Users should choose Active vs. Passive restoration
2. If users are interested in only restoring specific landscapes, i.e., only coffee suitable landscapes, users can check the relevant boxes for these different landscapes.
3. Click “Display Available Area” on the left panel; to download data, click “Download Available Area” on the map.
4. Calculated hectares will show up in the “Available Area (ha)” textbox
5. Click “Clear Available Area” to reset and apply new restoration criteria

Part 2: Applying prioritization weights

1. Users can choose from 3 scenarios (Hydrological, Carbon, Default) that have weights already assigned to prioritize each type of landscape
2. If users want to manually set weights for the following variables, they can do so with values 0 to 5, with 5 being most important:
 - a. Proximity to forests
 - b. Carbon sequestration potential
 - c. Species range rarity
 - d. Fire frequency
 - e. Slope
 - f. Watershed
 - g. Coffee coincident deforestation
 - h. Impervious surfaces (Indonesia only)
 - i. Peatlands (Indonesia only)
3. Click “Run Analysis” on the left panel; to download data, click “Download Restoration Priority” on the map
 - a. This layer can help guide stakeholders as to where to focus restoration efforts

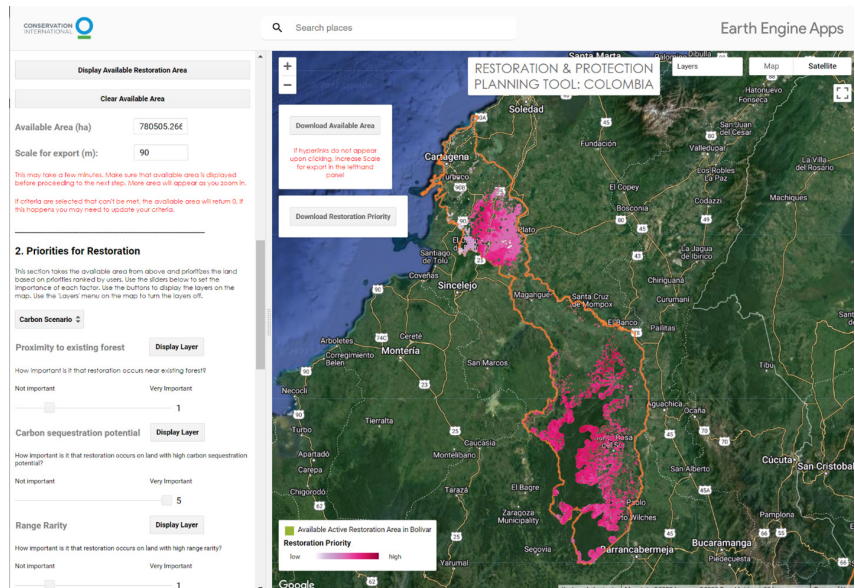


Figure 2. Restoration priority for a Carbon Scenario in Bolívar.

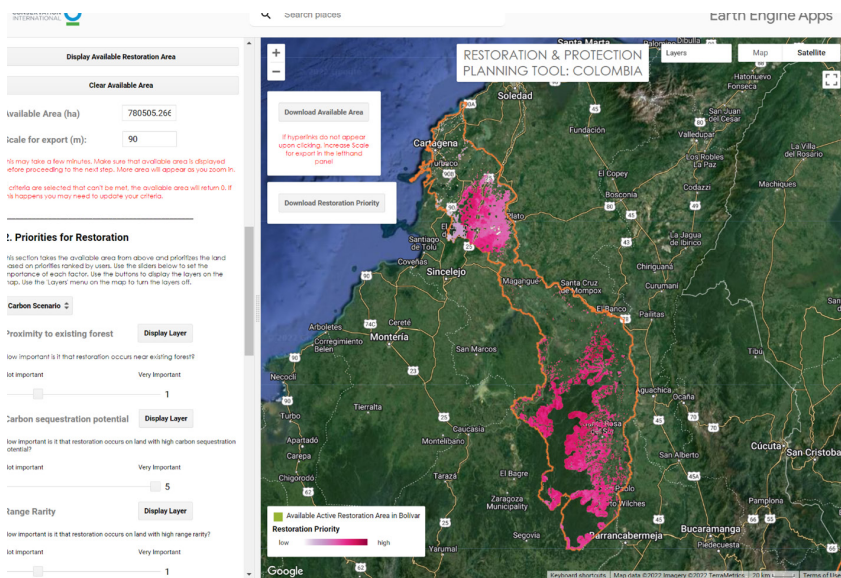


Figure 3. Forest protection displayed alongside restoration priority in Bolívar

Part 3: Forest protection

1. Click “Display Forest At Risk + Irrecoverable Carbon” to see forests to protect within the selected jurisdiction
2. Select different coffee layers to overlay this forest protection layer with coffee landscapes and click “Display Coffee + Forests to Protect” to see this data on the map
3. Users can also add a country-wide reforestation score to the map

For more information on the data layers utilized in the tool or questions about use, contact the Sustainable Coffee Challenge team at scc@conservation.org

Visit the [Colombia](#) or [Indonesia](#) tool to explore on your own



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