

Mountain Green Cover Index (SDG Indicator 15.4.2)



The “Mountain Green Cover Index” (MGCI) measures changes of the green vegetation in mountain areas - i.e. forest, shrubs, trees, pasture land, crop land – to provide an indication of the status of conservation of their environment

Direct correlation between the green coverage of mountain areas and their state of health, and as a consequence their capacity to deliver ecosystem services.

Data collection

- Mountain Green Cover Index based on remote sensing images used to derive land cover/land use patterns of the world's mountain areas (forests, shrublands, croplands, grasslands)
- Data is analyzed using the FAO Collect Earth software application developed by FAO and Google (<http://www.openforis.org/tools/collect-earth.html>); mountains are defined in accordance with the UNEP-WCMC mountain classification of 6 elevation classes (Kapos et al. 2000).
- The classification adopted for interpreting satellite data in land cover/use classes follows the guidelines on consistent representation of the Intergovernmental Panel on Climate Change (IPCC); forest land has been defined following the definition of the FAO Global Forest Resources Assessments (FRA).

Methodology

- The estimates of the Mountain Green Cover Index take in consideration the distribution of forest, grassland and cropland classes as per the formula below:

$$\text{Mountain Green Cover Index} = (\text{Area cover by Cropland} + \text{Area cover by Forest} + \text{Area cover by Grassland}) / \text{total mountain area}$$

- The index has a range from 0 to 1; 0 = no green vegetation and 1 = entire area is covered by vegetation.
- The amounts of land in km² covered by each of these three land classes are aggregated to calculate the size of the total mountain area that they cover.
- The Mountain Green Cover Index statistics can be disaggregated by mountain elevation classes – both as absolute figures and percentage values.

Results and challenges

- The baseline statistics for the Mountain Green Cover Index are based on the GFS Global Assessment map released in January 2017.
- 76% of world's mountain area covered by a form of green vegetation
- Monitoring mountain vegetation changes over time provides an adequate measure of the status of conservation of mountain ecosystems - however as yet the indicator has no time series.