
Full deforestation methodology

for Global Witness report “The Price of Beauty”

According to the UN’s Food and Agriculture Organization (FAO), [deforestation](#) is defined as “the conversion of forested areas to non-forest land use such as arable land, urban use, logged area or wasteland. Deforestation is the conversion of forest to another land use or the long-term reduction of tree canopy cover below the 10% threshold.”

In this report, Global Witness uses the FAO’s definition of deforestation, whereby numerical figures for deforestation were calculated using satellite imagery. Global Witness acknowledges, however, that using satellite imagery is not infallible and that resulting calculations contain small but unavoidable margins of error. The figures are inferences based on satellite imagery, rather than built on extensive evidence of every hectare of deforestation on the ground. Ultimately, this means where Global Witness identifies deforestation, Global Witness assesses that there is a high degree of likelihood of deforestation in that area, rather than deforestation being a certainty.

For this report’s analysis, Global Witness identified both the boundaries of the cattle farms and their deforestation via a range of sources. These included satellite data, Paraguay government data, Paraguay land registry information, local sources in Paraguay and online tools including Google Maps.

Global Witness also visited a sample of these farms in August 2024. During each visit, sources corroborated the information on farm ownership identified through desk research. Each farm appeared to show clear evidence of deforestation, and at two farms local contractors stated that they were present to carry out further deforestation.

For the figure of 75,000 hectares of deforestation, Global Witness used Hansen et al’s 2013 Global Forest Cover Loss dataset for the years 2021-2023 to calculate deforestation on individual farms and to calculate the total deforestation number in hectares for this time period. A conservative approach was used of only identifying forest areas with a 20% tree cover – rather than the FAO’s 10% cover definition – in order to have a margin of safety when using satellite detection methods.

Some technical concerns have been raised over using Hansen’s Tree Cover Loss dataset for deforestation analysis, which largely centres on instances where different types of deforestation are not clearly distinguished – for example whether for human-led for agriculture or via natural occurrences of land change.

For this report’s analysis, however, the vast majority of farms have land use change permits to clear forest for cattle, which Global Witness reviewed. This suggests that any deforestation flagged via satellite imagery was indeed carried out by the farm for agriculture.

The patterns of deforestation seen on the satellite images reviewed for this report also follow well recognised patterns of forest clearance or deforestation for cattle pasture – whereby green forested areas give way suddenly to large, angular white blocks of clearing.

For the years available (2021-2022), Global Witness also conducted an equivalent analysis using the separate MapBiomas’ Paraguay Collection 1.0 database, which uses the same 20% tree cover

threshold. The reanalysis returned a larger total deforestation number for the years available. Global Witness has used Hansen's dataset to carry out the final analysis as it contains more recent data for 2023.

Despite this corroboration of our findings across two datasets, MapBiomas also contains a small margin of error, as all such datasets do.