

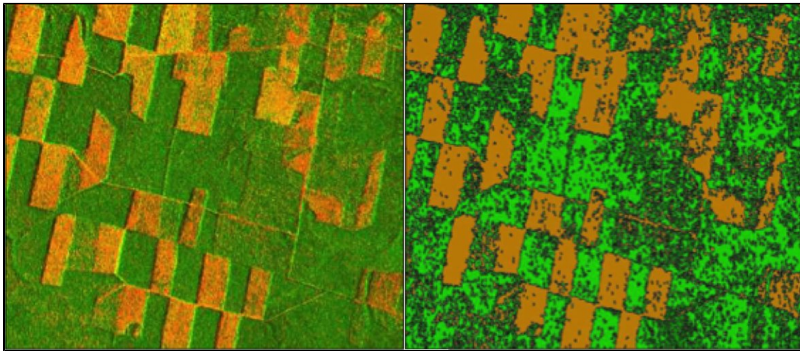
Detect illegal forest activities

Applications

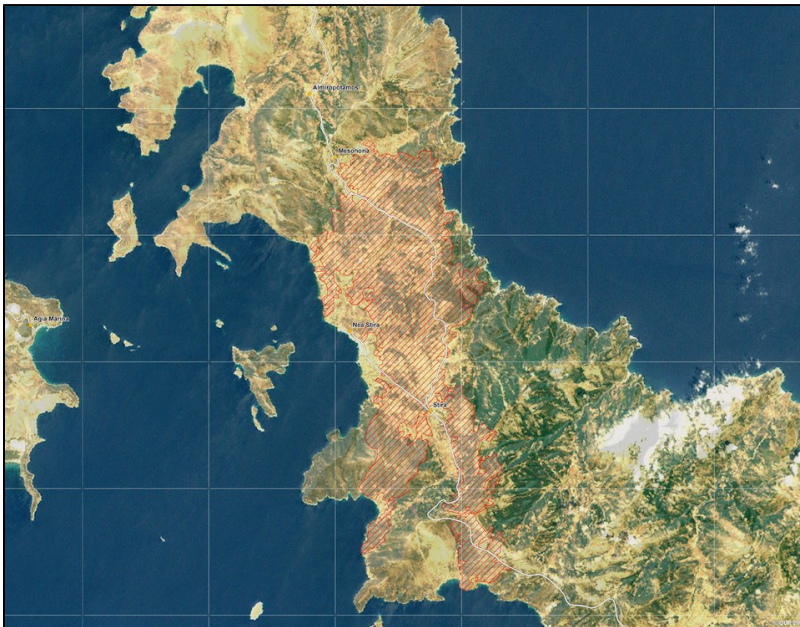
Clear Cut Maps/Burnt Area Maps

Clear Cut Maps / Burnt Area Maps provide up to date information on afforestation, deforestation and reforestation. Minimum two time periods are analysed to track changes in the forests and derive information on clear cutting caused by burning, selective logging or storm damage. It is also possible to do similar analysis to identify canopy gaps, logging roads and log landings. This is a very established EO technology and many providers offer this service.

Clear cut mapping can be done frequently and on an operational basis depending on needs. The spatial resolution of this is typically of the scale of 10-20m. In tropical rain forest areas frequent cloud cover can be an issue for the production of the maps but may be mitigated by combining radar and optical satellite images.



Clear cut product from CosmoSkyMed Radar, MondisYK, Russia - 3m resolution. Orange patches are clear cuts with green seed trees visible.
Credits: Sarmap



Greece Stira Burnt Areas. Credits: DLR ZKI; ESA; International Charter; RISK EOS

The accuracy of the maps are approx. 75-90% depending on cloud cover, seasonal fluctuations, topography and data availability. The geometric accuracy is less than 1 pixel which is on the order of 10-20 m and typically accuracies of 70-90% are reached for the classifications.

Clear Cut Maps / Burnt Area Maps can be used to monitor: canopy gaps, clear cuts, illegal logging, Log landings, burnt areas and regrowth. Considering the long term availability of historical data and the fact that aerial surveys can be expensive and difficult there is no other reasonable alternative to assess forest changes and logging patterns on larger spatial scales over time.

Sentinel 1 and 2 will provide high-resolution optical and radar images of all global forests with a very high frequency (days to weeks). The fact that clear cut mapping is possible both from radar and optical images will allow to map clear cuts and logging activities with high frequency, high thematic accuracy, high precision (down to 10m) at a lower cost due to the foreseen free data price.


References:

ESA 2013, Earth Observation for Green Growth: An overview of European and Canadian Industrial Capability

Products

Products	Ext. Source	Descriptions	Product Standards	Ref. Project

Success Stories

DeforestAction in Borneo			
			

References

Topic	Description	Key words	References
Awareness article	Astrosat fights back against illegal logging	illegal logging, timber, FMAP	eomag