Introduction

Forest degradation is a global phenomenon and significant indicator in forest monitoring and a precursor to further forest loss. Carbon emissions due to degradation should be accounted for in national reporting within the frame of the REDD+ mechanism of the UNFCCC and other international reporting frameworks (e.g., FRA). FAO Forestry is working on the development of a methodology for forest degradation and deforestation monitoring using satellite data to help REDD+ countries. The ForMosa project was developed with two partner organizations, i.e., Planet and Wageningen University. Satellite data from different sensors, namely Landsat, Sentinel-2, and TerraSAR-X, along with high resolution data was used in this project to enhance the temporal coverage of AOI.

Research Methodology/Methodology

Forest degradation and deforestation product was developed using BFAST [3] approach of the Wageningen university. A project based algorithm for forest disturbance was developed and this is applied on a forest mask to produce a forest dynamic model using historical data. This serves as a base for assessing disturbances during the monitoring period. The methodology is tested by Open Foris [1] accuracy assessment application to ensure the target accuracy. The methodology is tested at three selected test sites (Kafa Tura in Ethiopia, Madre de Dios in Peru, and Bac Kan in Vietnam). Results of one site are selected for discussion in this poster.

Accuracy Assessment

- Sample design: Core, Periphery, buffer
- Reference Data Collection

Results

- Degradation Class, Peru
- Deforestation Class, Peru

Way Forward

The project concluded with some recommendations to be incorporated in the algorithm to make it more suitable for different landscapes/conditions. An updated version of code is available under STEF package of R[4]. FAO/REDD+ Team had also developed a BFAST user interface in collaboration with Wageningen University on the FAO cloud platform SEPAL[5].

Conclusion

- The algorithm captured well changes over large areas and deforestation over small areas, but assessment of degradation was quite scarce.
- In-situ data input based on country conditions to train algorithm are needed.

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