

3DForMod

Combining remote sensing and 3D forest modelling to improve tropical forests monitoring of greenhouse gases emissions

Newsletter 2: March 2019

<http://3dformod.free.fr>
Twitter: @3DForMod

Project mid-term.

3DForMod project was selected under theme 1 "Improving national GHG inventories and monitoring, reporting and verification of emissions" of the 2016 FACCE ERA-GAS call on Monitoring & Mitigation of Greenhouse Gases from Agri- and Silvi-Culture (<http://www.eragas.eu/research-projects>). The project officially started on 1st October 2017, so that it reaches its mid-term by March 2019. This second newsletter focuses on an important event of late 2018, i.e. an interaction meeting with operational partners in charge of REDD+ program implementation in Cameroon. A second section recall last year news related to project activities.

Mbalmayo interaction meeting: Which research for monitoring forest GHG emissions in Cameroon?

Organized within the framework of 3ForMod WP5 "Up-take by REDD+ activities", Mbalmayo interaction meeting was chaired by Prof. Joseph Armathé Amougou, Director of the National Observatory on Climate Change (ONACC) at the Ministry of Environment, Nature Protection and Sustainable Development (MINEPDED) in Cameroon. Participants from official bodies (REDD+ Technical Secretary, Ministry of Forests and Fauna), operational services (National Institute of Cartography), cooperation services, NGOs, research and teaching institutions from Europe and Central Africa met for two days at Saint André Hotel in Mbalmayo, Cameroon on 21-22 November 2018. On first day, project objectives and first results were presented by 3DForMod team members and discussed with respect to local partners expectations in terms of outputs and outcomes for REDD+ program development in Cameroon. On second day, these points were translated into recommendations for further project development, which should take care of:

- 1) Non-carbon benefits and socio-economic development;
- 2) Carbon stocks monitoring related to land use changes;
- 3) Monitoring of reforestation in the dry areas and of cocoa agroforestry at the forest margin;
- 4) Capacity building on technological tools such as terrestrial LiDAR for the development of allometric equations;
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- 6) Capacity building on technological tools such as terrestrial LiDAR for the development of allometric equations;
- 7) Capacity building on satellite image analysis methods for monitoring forest degradation;
- 8) Development of national pilot studies based on airborne LiDAR data;
- 9) Development of concrete projects to transfer methodological tools from research to operational services.



For more information: <http://3dformod.free.fr/Mbalmayo.html>

Project acronym	3DForMod
Project duration	01/10/2017 – 30/09/2020
Total requested budget	€ 702,000
Project Coordinator Research Institute for Development (IRD) – France Dr. Raphaël Pélissier (AMAP Lab) E Raphaël.Pelissier@ird.fr T +33 4 67 61 65 79	
Other project participants	
CM	Yaoundé University I (YUI) Prof. Bonaventure Sonké
FI	Tampere University of Technology (TUT) Dr. Pasi Raunonen
NL	Wageningen University and Research (WUR) Prof. Martin Herold



MONITORING & MITIGATION OF GREENHOUSE GASES
FROM AGRICULTURE AND SILVICULTURE



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Project news

- **1 Apr. 2018** – Pierre Ploton joined the project as a 2-y post-doctoral fellow working on remote sensing-based tropical forest biomass estimations in relation to WP3.

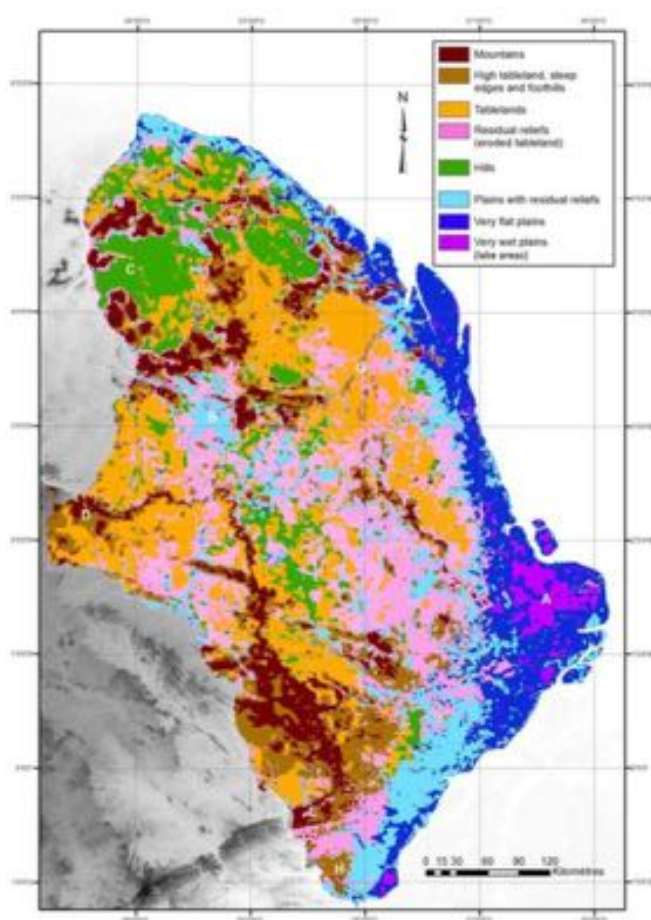
For information: https://www.researchgate.net/profile/Pierre_Ploton

- **11 Apr. 2018** – Publication on Dryad repository of a dataset of 61 big tropical trees including Terrestrial Lidar scans along with destructive tree volume data for control.

For more information:

<https://datadryad.org/resource/doi:10.5061/dryad.10hq7>

- **25 Apr. 2018** – Online publication of a digital geomorphology map of eastern Guiana Shield.



For more information:

https://zenodo.org/record/1226381#.XHVt_89KgSl

- **13-14 Jun. 2018** – Nicolas Barbier (IRD-AMAP) attended Theia workshop on “Sentinel-2 L2A MAJA products” in Toulouse, where he gave the following talk:

Barbier, N. 2018. An observatory for water, forest and biogeochemical cycles in South East Cameroon

For more information: <https://theia-maja.sciencesconf.org/>

- **25-26 Sept. 2018** – Martin Herold (WUR) attended the 1st Biomass User Workshop of the ESA Climate Change Initiative in Paris, where he gave the following talk:

Herold, M. 2018. "Review of Experiences and User Requirements for Biomass Mapping"

For more information:

<https://trello.com/c/TPz1D2ji/28-presentations-day1>

- **30 Oct. 2018** – Martin Herold (WUR) organized a workshop on “Lasers and Forest Ecology” at Wageningen, where Nicolas Barbier (IRD AMAP) gave the following talk

Barbier, N. 2018. Quantifying leaf phenology in tropical forests to help improve climate-vegetation models: from laser to (nano)satellites.

For more information:

<https://www.wur.nl/en/activity/Lasers-and-Forest-Ecology.htm>

- **30 Oct. 2018** – Alvaro Lau Sarmiento (WUR) successfully defended his PhD thesis on: *Assessing biomass and architecture of tropical trees with terrestrial laser scanning*

For more information:

<https://www.wur.nl/en/activity/Assessing-biomass-and-architecture-of-tropical-trees-with-terrestrial-laser-scanning-1.htm>

- **12 Dec. 2018** – Martin Herold (WUR) attended a side event at the COP24 in Katowice, where he gave the following talk:

Herold, M. 2018. Data and transparency to support REDD+

For more information:

<https://www.slideshare.net/CIFOR/data-and-transparency-to-support-redd>

Latest publications

- Jackson, T., Shenkin, A., Wellpott, A., Calders, K., Origo, N., Disney, M., Burt, A., Raunonen, P., Gardiner, B., Herold, M., Fourcaud, T. & Malhi, Y. 2018. Finite element analysis of trees in the wind based on terrestrial laser scanning data. *Agricultural of Forest Meteorology*, 265: 137-144.
- Lau, A., Bentley, L. P., Martius, C., Shenkin, A., Bartholomeus, H., Raunonen, P., Malhi, Y., Jackson, T., Herold, M. 2018. Quantifying branch architecture of tropical trees using terrestrial LiDAR and 3D modelling. *Trees*, 32: 1219–1231.
- Bugnicourt, P., Guitet, S., Santos, V. F., Blanc, L., Sotta, E. D., Barbier, N. & Coutron, P. 2018. Using textural analysis for regional landscape mapping, Eastern Guiana Shield. *Geomorphology*, 317: 23-44.

For more information about 3DForMod go to

- Project web site: <http://3dformod.free.fr>
- Twitter account: [@3DForMod](https://twitter.com/3DForMod)