

Satellite Monitoring for Forest Management (SMFM) Project

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Main progress:

1 Project planning and analysis

Main focus during the month of April 2019 was set on the preparation and organisation of a SMFM-specific side event at the GFOI plenary in Maputo, Mozambique. Missions from the World Bank and from the consultant consortium attended the plenary and presented the SMFM project and its tools to plenary participants. This included a live demo of some of the SMFM tools. This required substantial preparation and consequently there was no major tool development during this month. Instead, the tool code has been rewritten using Python 3¹. Examples of work done with the tools by SMFM partner countries were also presented at GFOI plenary.

An important decision was taken in April 2019 on the selection of a 3rd project partner country. After initial discussions held already in March 2019, Namibia was finally confirmed as the 3rd project partner country. Further discussions were held with a representative from Namibia Directorate of Forestry on the side-lines of the GFOI plenary.

Subsequently, a first tentative work plan was prepared for the Namibia team and circulated for comments and inputs.

Technical update:

2.1 Design new or enhanced satellite EO methods to address requirements and gaps

During the month of April, all SMFM tools were rewritten using Python 3. Previously, all tools were written using Python 2, for which support will be discontinued in 2020. Consequently, the switch to Python 3 is a major move towards making the SMFM tools future-proof.

SMFM Tool 1a / b:

During the rewrite of SMFM tools 1a and 1b in Python 3, significant re-structuring has been done to generally improve usability and to make tool maintenance easier. As the SMFM tools partly build upon each other, this also improved usability of SMFM tool 3.

SMFM Tool 2:

Development of SMFM Tool 2 (Biota) has basically been completed with the focus now being on finalising the graphic user interface (GUI).

¹ Previously, tools were written using Python 2



SMFM Tool 3:

Towards late April, rewriting of SMFM tool 3 also started. Once completed, there will be a major update and a prototype version of SMFM tool 3 made available for testing in May 2019.

SMFM Tool 4:

After initial testing of an early prototype of SMFM tool 4, a detailed programme for further development has been prepared and is under implementation. Development will continue well into May 2019.

4 Global knowledge products for tropical dry forest monitoring and forest degradation assessment

As a first step in addressing the global level and in presenting the SMFM project and tools to the wider community of practice, the SMFM project² attended the annual GFOI plenary held in Maputo, Mozambique between April 8 and 11, 2019. During the GFOI open forum, the team attended various sessions and participated in group works, making use of opportunities to mention the SMFM project and the upcoming side event.

The project organised a side event on the final day of the plenary / open forum (11 April), during which the team presented the project and showcased the SMFM tools and their use on the F-TEP platform.

The event started with an overview of the World Bank's objectives with regard to forests, technology and knowledge, which outlined how the SMFM project contributes to the achievement of the Bank's global development goals and how technology may help development partners to better monitor forest changes and to improve forest management and decision making.

An overview of the SMFM project was given including objectives, expected results, overall work plan and how project partners and partner countries collaborate under the project. Brief descriptions of each tool and how the tools could work together as a set were provided, followed by a summary of capacity building activities and an overview on access to documents and tools on the SMFM project web site.

The main part of the side event was the presentation of the SMFM tools and their application for the assessment and monitoring of tropical dry forests. Demonstration of the tools included off-line as well as live, online operations using pre-selected, sufficiently small areas of interest in order to keep processing time relatively short. An example of the use of SMFM tool 1 for a rapid assessment of flooding after the recent tropical cyclone "Idai" in Mozambique highlighted how quickly the tool can produce actionable information, in this case for disaster response management.

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An example of how to use SMFM tool 2 to identify annual changes in dry forest cover caused by intense charcoal burning for an area near Maputo was given as a live demo, underlining again how quickly the tools can produce results.



Figure 1: Live demo of SMFM tools at the GFOI side event

Tools 3 and 4 were presented using cases of recent and ongoing forest change in Mozambique and in Zambia.

SMFM partner country Mozambique presented work done with the SMFM tools on annual deforestation in combination with validation data from more than 600 sampling sites country-wide. Mozambique developed a methodology that builds upon SMFM tool 2 ultimately leading to the identification of deforestation probability classes.



Figure 2: SMFM country partner “FNDS” presenting at the GFOI side event

About 25 GFOI plenary participants registered for the SMFM side event including representatives from other tropical dry forest countries, such as Brazil, Mexico, Namibia and Cameroon, and institutions and organisations such as the FAO, GFOI organisers, and ESA³.

The presentations were followed by a lively Q/A and discussion session that revealed appreciation of the methodologies and tools developed and great interest in accessing and testing the tools.

A brief presentation of the NASA Servir SAR handbook was also given during the side event.

Posters with work from Zambia and Mozambique that was produced during the last regional SMFM tool training at the RCMRD in Kenya in March were on display and SMFM flyers were distributed among plenary participants.

The SMFM project is also mentioned in an abstract produced by the F-TEP team⁴. Title of the abstract was “Forestry TEP Enables EO Service Providers to Boost Their Operations”, where the SMFM project and its tools were mentioned as one of the early adopters of F-TEP platform services. The abstract was submitted at the ESA phi-week under the research infrastructure topic. ESA phi-week will take place in September 2019

³ as a SMFM project partner

⁴ VTT Finland

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4.3 Implement at least two training events; including SSKE

After the successful conduct of the regional training workshop during the previous month, the project team has started planning for the 2nd regional training event, which will focus on the use of SMFM tools 3 and 4.

Taking ongoing work in the SMFM project partner countries into account and given the fact that with Namibia a 3rd partner country has been added, the training is likely to be rescheduled to find a period suitable for participants from all three countries. Communication with the partner countries has been initiated.

Issues and potential bottlenecks:

With new partner country Namibia coming on board overall project planning will need to be adjusted. This may not only affect upcoming training events, but also overall project activities. Initial discussions with the World Bank are pointing towards an extension of the project implementation phase beyond mid-2019, by still keeping end of 2019 as date for project completion.

