

## MONTHLY REPORT

Month Covered in this Report: September 2017 (Period: 1<sup>st</sup> – 30<sup>st</sup> September 2017)  
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Title: GIS – SLM expert for the project “*Impact evaluation of SLM options to achieve land degradation neutrality in Tunisia*”.

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### A. OVERVIEW OF THE OBJECTIVES COMPLETED FOR LAST MONTH

This writing material reports the key tasks accomplished during the period 1<sup>st</sup> – 30<sup>st</sup> September 2017 in the context of the project “*Impact evaluation of SLM options to achieve land degradation neutrality in Tunisia*”. Based on the planned objectives, the following are the aspects planned for the reporting month:

- **Review of SLM datasets from the Tunisian Partners**  
To improve the quality of their data in line with the SLM template requirements (data format and contents).
- **SLM data migration to the updated SLM template and test submission to the GeOC system**  
The SLM datasets (both reviewed data from Tunisian partners and data produced by the project consultant) needed to be migrated in the latest version of the SLM template in order to allow easy data import in the GeOC system
- **Harmonisation of the different SLM database and raster data extraction**  
This activity aimed at producing a unique database from the three datasets produced for the two pilot sites of the project in Tunisia.

In addition to the abovementioned planned activities, other tasks were additionally performed. These activities are basically part of the unplanned but carried out during the reporting period. They are mainly related to the enhancement of the GeOC system.

## **B. DETAILS OF THE ACCOMPLISHED TASKS DURING THE MONTH**

### **B1. Finalise the review of datasets from national consultants in Tunisia**

The data on SLM options submitted by the Tunisian Consultants have been fully reviewed during constant interactions with them. In total, 11 SLM practices representing 15 SLM OxC were reviewed for the Governorate of Zaghuan (i.e. the data from the Consultant Dr Taoufik Hermassi, INRGREF Tunis). In the other pilot site (i.e. Medenine), the partner Dr Mohamed Ouassar (IRA Medenine) produced a total of 13 SLM technologies representing 14 SLM OxC datasets. The 24 SLM techniques were reviewed thoroughly and requests for improving were sent to the partners. The final datasets were then reorganized into SLM OxC datasets which were then sent back to the authors for their approval. In total, the produced 29 SLM OxC were approved by the consultants. It is important to mention that the datasets were documented in older versions of the SLM templates, and therefore needed to be migrated in updated versions prior to submission to the GeOC system.

### **B2. SLM data migration to the updated SLM form and test submission to the GeOC system**

Data from both consultants in Tunisia (as mentioned in Section B1 above) and those produced by Badabate (as mentioned in previous monthly reports) are migrated into an update Excel SLM OC template, since most of them were documented in older versions. This migration process is important in order to facilitate the data submission to GeOC.

The three databases were prepared and synthesised to be uploaded to the GeOC system. But, the constant changes occurring in during the GeOC tool enhancement implies that the data will surely be migrated into newer versions.

The import of the data is being tested and feedbacks sent to the programmers for necessary actions addressing the issues. Therefore, the data loading is still pending with the hope to be accomplished during October.

### **B3. Harmonisation of the different SLM database and raster data extraction**

The datasets on SLM OxC from the three different documenters needed to be harmonised in order to produce a single and consolidated database for the GeOC.

After an appraisal of the different datasets (i.e. provided by the Tunisian Consultants (Dr Taoufik Hermassi and Dr. Mohamed Ouassar) and the project cartographer (Badabate), they were harmonized and synthetized into one database. The process of harmonization and synthesis mainly concerned the removal of duplicates within the datasets based on SLM name matching and overlaid geo-boundaries defining the same SLM. The synthetized data are available [here](#) in their Excel format, and ESRI shapefiles.

In total, the SLM database prepared for submission is composed of 51 SLM OxC for 29 SLM technologies across the two pilot sites in Tunisia.

#### **B4. Other activities**

In addition to planned key activities, additional activities were also carried out during this reporting period. They cover three main aspects as follows:

- ***Revising the SLM OxC template in line with the SLM Web form***

The SLM template in production is still under improvement, requiring continuous reviews. Till the end of September, the enhancements were not yet effective as some bugs and revisions need to be fixed, probably during October. Constant interactions and follow-ups were made with the programmers involved in the development of the tool. These issues are mostly due to the fact that the coding of the functions for “import SLM”, “Export SLM” and “Download template” should reflect a unique and correct format, with the same level of agreement between information fields. Laterly, the change of the Excel format from “.xlsm” to “.xls” made the SLM template to be more user-friendly and easier for the programmer to code the tool in a rapid way. However, the back side of this situation is it increase the work load for migrating data when new version will be produced.

- ***Updating the WebGIS***

The GIS database of the localhost WebGIS were updated with the recently produced or revised raster datasets. In total, ten (10) raster data, namely the 7 rasters defining the soil quality constraints (SQC), 1 raster defining the food security index (FOOD-SEC), 1 showing the tenure security level (TENURE-SEC), and 1 showing the protected areas (PROTECTED AREAS) have been updated or added in the standalone versions of the WebGIS installed in the laptops of iMAP and ICARDA. The main changes were the reclassification of the SQC layers from 7 classes to 4 ordinal classes with appropriate legends. The rasters of land tenure security “TENURE-SEC” and global food security “FOOD-SEC” have been added to the WebGIS data domain with their appropriate legends and value ranges.

In the meanwhile, the final SLM data, specially the geo-boundaries as final and aggregated are loaded and visualized in the WebGIS. They will be updated by their metadata once the SLM web form and its functionalities (import SLM, SLM approval) are sufficiently working to secure that submitted data are stored and can be visualized.

- ***Assisting the programmers to the enhancement tasks***

Through voice calls (Skype and Phone), visits and mail exchanges, several interactions held in order to provide some clarifications to the programmers implementing the enhancement tasks on the GeOC tool. It has become apparent that some closer collaborations were necessary in order to make effective the enhancement needed. Thus, the clarifications are directly provided when needed, rather than producing writing

documents that might not be understood by the programmers in the way written. This allowed better management of issues.

### **C. ASSOCIATED CHALLENGES**

Some challenges emerged from the parallel works with the enhancement processes going on in the web-based GeOC system. These enhancements need that we continuously update our database according to the revisions made and do not allow to finalise some progress made. For instance, the latest version of the online SLM form had been only ready and available for usage at the end of September 2017 after several requests for improvement. It still needs some minor corrections, even though it has been at an advanced stage. But the important worries are that any minor change (done by CodeObia) intervenes in the online SLM form structure and require new data migration which is a time-consuming process.

In terms of collaboration with programmers for successful implementation of the desired enhancements, there was sometimes a lack of correct understanding of the request, making lost of time in addressing some points.

Furthermore, it is important to mention that it is still difficult to replicate the updates made on local to the WebGIS on production as the access to the server and the process for effecting the changes are a bit tricky that I resigned to accomplish that. In attempt to to solve this issue, the main programmer of the WebGIS (Jim) is being consulted for providing remote support in order to avoiding breaking the server as he himself mentioned before.

### **D. NARRATIVE & LESSONS LEARNED**

Regarding the review of the SLM data form national consultants, it was quite fine and easy to perform, as I already had an overview knowledge of the study sites in terms of landscape conditions, environments and SLM diversity. This made easier the understanding and judgement of some aspects of the provided information. This review process enhanced my understanding of some challenges related to SLM technologies that were not easy to capture prior the interactions with the national partners. It is therefore important to consider the integration of national stakeholders in such kind of activities regarding data generation and quality ensuring to the benefit of all involved partners. In general, this conspired in making it easier the process of database harmonization.

Regarding the SLM data migration to the updated SLM template and testing the submission to the GeOC system, it was quite difficult given that the tool was still under constant development and small changes require data migration and re-input. In order to avoid endless and useless data migration, I opted for waiting until the last and final version is

ready for updating all the SLM data to be uploaded to GeOC. Regarding the collaboration with the IT programmers, an attempt to reduce waste of time, it was important to increase direct interactions among all involved people at different levels.

Many remain to be done, it is true, but hopefully to be fulfilled during October in order to allow the achievement of other aspects of the project, especially the impact assessment based on the use of the data in the GeOC system.

The reported issues could have been communicated to supervisors through written emails, even though they were orally reported in some cases. In the follow up steps, care will be given in order to ensure effective communication through emails.

#### **E. OBJECTIVES PROJECTED FOR NEXT MONTH**

Over the course of the month of October 2017, in collaboration with other project team members and the programmers when needed, the following activities are planned:

- Finalise the data submission and use cases analysis, in case the enhancements are advanced enough.
- Prepare for the closing workshop of the project in Tunisia
- Technical report on the impact assessment at landscape level using relevant tools

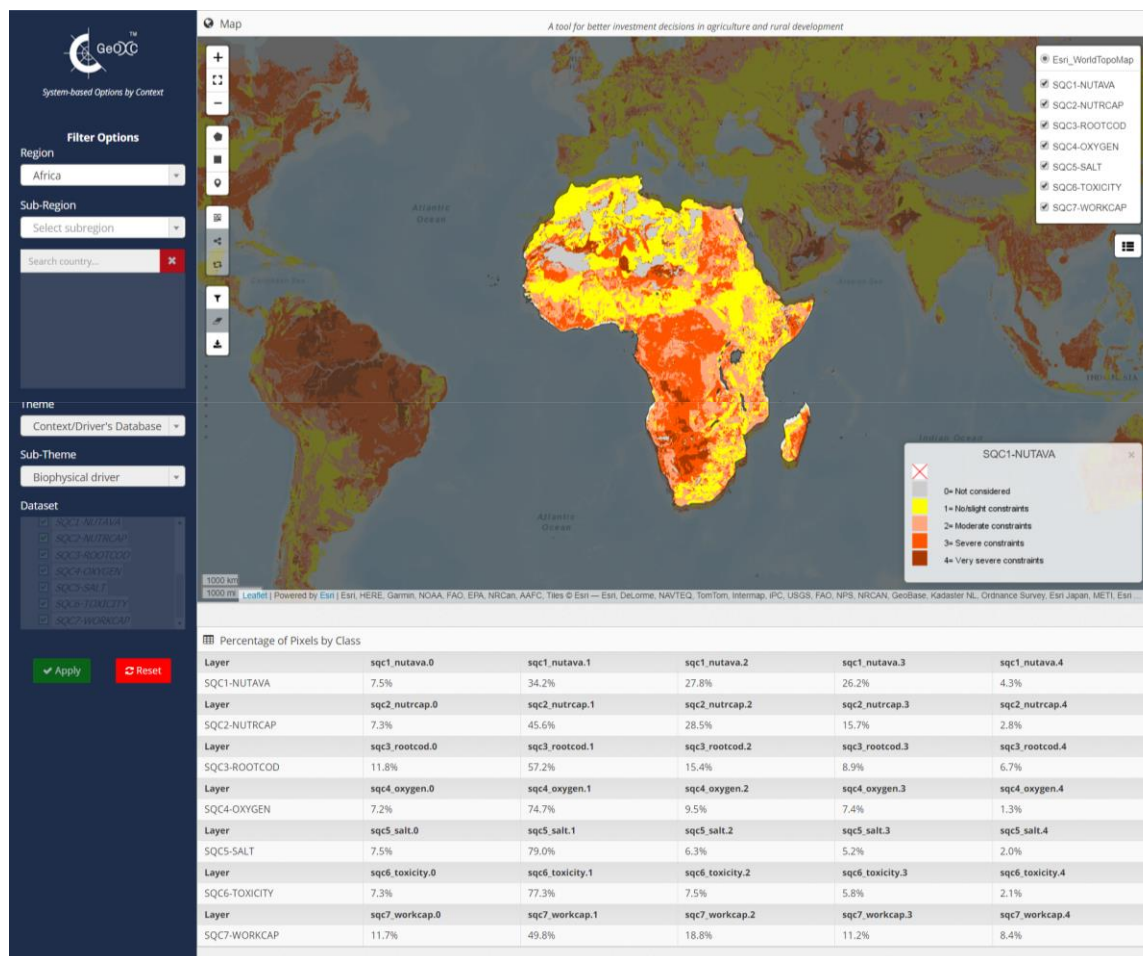
## LIST OF ANNEXES

**Annex 1. Links to the GeOC platform for viewing recent progress regarding the SLM submission** (Note: the status might have changed after the reporting period)

<https://mel.cgiar.org/slm/index>

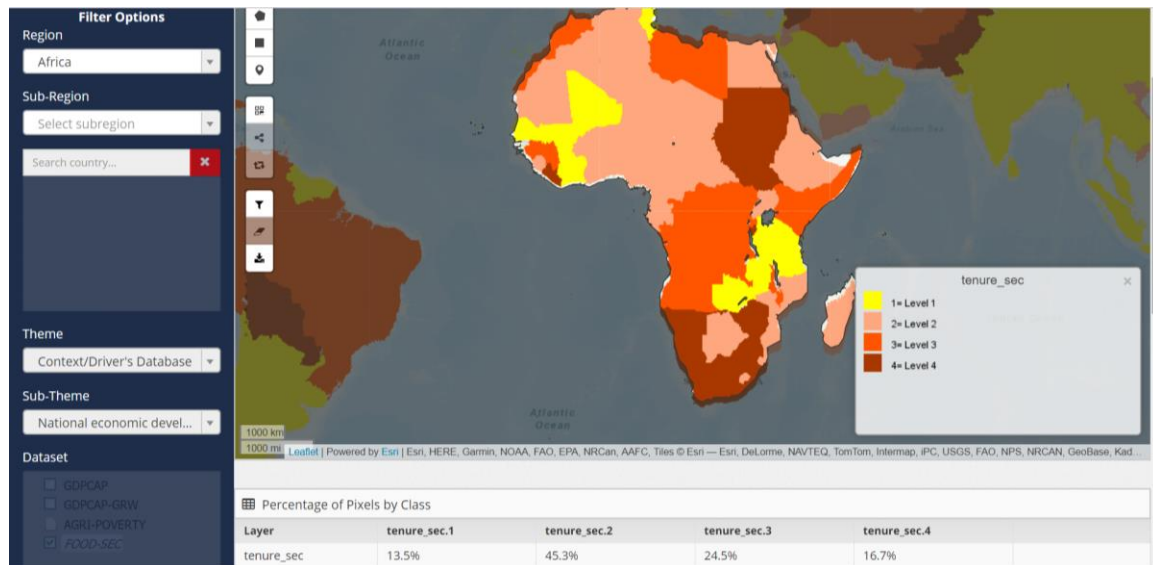
## Annex 2. Screenshots of the updated database in the local WebGIS.

A. Example of the soil quality constraint (SQC) and their legends (4 classes) displayed in the WebGIS interface.



### Annex 3. Updates in the WebGIS.

#### B. Added and activated tenure security layer in the GIS database of the WebGIS



### Annex 3. Updates in the WebGIS.

#### C- Added and activated food security layer in the GIS database of the WebGIS

