THEME 2

Enhancement on estimates of organic carbon in Mexican soils

***Cuevas-Corona Rosa*, Saynes-Santillán V., Cruz-Gaistardo C., Etchevers-Barra J., Leyva-Reyes J., García-Carreón S., Báez-Pérez A., Cueto-Wong J., González-Acuña I., Guerrero-Peña A., Hidalgo-Moreno C, Padilla-Cuevas J., Jarquín-Sánchez A., López-Anaya M., Vargas-Rojas R., Martínez-Vargas M., Marín I.**
INEGI; CONAFOR; INIFAP; REDLABs; COLPOS; ECOSUR; FAO

INTRODUCTION

At world level, the improvement of GHG estimates and soil carbon stocks, and uncertainty estimates represents a challenge.

Despite of the existence in México of efforts to amalgamate the research related to the carbon cycle, there was an absence of a national coordinated effort focused on carbon standardized laboratory analysis and also on the reduction of uncertainty associated to said analyses;

In observance of the provisions of the General Law of Sustainable Forest Development, the National Forestry Commission (CONAFOR) designed and implemented a transparent, exhaustive, comparable and accurate National MRV System to estimate GHG emission;

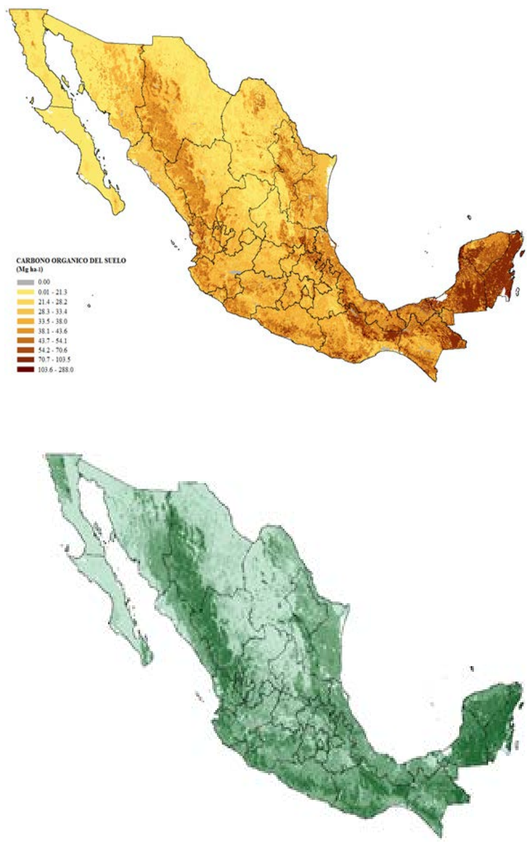
Within the framework of this system and as part of the enhancements designed to reduce the uncertainty associated to GHG emissions, the National Network of Laboratories for the Analysis, Use, Conservation & Soil Management (REDLABS)was established in 2014;

REDLABS is focused on enhancing the assessment of SOC from the samples gathered by the National Forestry and Soil Inventory of CONAFOR through harmonization of the different measurement approaches (i.e., Sampling, processing and analysis);

OBJECTIVES

- To work in the reduction of uncertainty associated to stocks of carbon in soils of Mexican ecosystems aimed at a transition into a sustainable use and preservation of this non-renewable resource.

- To become an advisory body with a leadership position in the analysis and measurement of soils aimed at contributing to the establishment of national information systems.



Map 1 (a+b): National Map (2017) of Organic Soil Carbon and litter

Fig.1: National Network of Research, Development of Forestry Technology Transfer of the National Forestry Commission of México

MAIN RESULTS

Method harmonization

REDLABS generated a standardized consensual manual providing access to analytical methodologies associated to carbon. The scope of this manual contemplates ability-oriented courses and is addressed to the Central American and Caribbean countries in the subjects of SOC and standardization analytical processes.

National Research Networks

REDLABS was recognized in 2016 as a Research Network within the framework of the Institutional Strategy of National Networks of Research, Development of Forestry Technology Transfer of the National Forestry Commission of México. Among its activities is the establishment of monitoring sites in the field, aimed at the assessment of soil quality indicators as well as technology transfer processes associated to the forestry sector.

In addition, we have been recognized as Thematic Research Networks of the National Council for Science and Technology (CONACyT) of México, engaged in the enhancement of soil carbon stocks measurements at national level through an academy, government and society association.

Internationalization of REDLABS

Contribution by REDLABS to Pillars of Action for the Global Soil Partnership (GSP) Pillars (*i.e.*, Soil Management; Awareness raising; Research; Information and data; Harmonization).

REDLABS
RED NACIONAL DE LABORATORIOS PARA EL ANÁLISIS, USO, CONSERVACIÓN, Y MANEJO DEL SUELO.

Soil Organic Carbon Map

REDLABS prepared a national SOC and litter Map which was presented at the second workshop of the International Network of Soil Information Institutions (INSII) of FAO.

CONCLUSION

The cartographic products and data generated are national interest issues aimed at enhancing the planning, sustainable management and preservation of soils in México. These products also contribute to the generation of national and international reports (FRA, UNFCCC) and the generation of national SOC maps that serve as input in the creation of the SOC world map within the framework of the GSP.

Fig.2: Photo group