Carbon sequestration potential in Latin America and the Caribbean: A proposal

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Proposal: Aim & Funding

• Aims
  Provide information needed for countries to:
  . Report Soil Organic Carbon (SOC) stocks with TIER2
  . Identify opportunities for C sequestration

• Funding by
  1.0 to 1.2 Mill USD
  FONTAGRO 25 % (250 – 300k USD)
  NZ Ministry for Primary Industries 25 % (250 – 300k USD)
  plus, in kind resources from Partners 50 % (500 – 600k USD)
Proposal: Component 1

Component 1: SOC stocks

- Consolidate existing SOC stocks data (including current sampling projects)
- SOC stocks associated with (i) soil type, (ii) climate, (iii) land-use and management
- Insure data was taken with a protocol that complies with LEAP guidelines (or better)

- Review updated default SOC stock tables IPCC (TIER1), and propose locally adapted SOC stock tables (TIER2)

- Generate new data for land-uses and management without data
  - from Long-Term Experiments (LTE)
  - from LTE-proxies (e.g. paired sites with long term documented management)

- Generate estimates of Primary Productivity and Carbon inputs to soil

- Model GEOGLAM
Proposal: Component 2

Component 2: SOC stocks and Land-Use report

- Review country specific schemes already in place for (i) SOC stocks accounting and (ii) land-use monitoring

  - Design and implementation of pilot improved schemes for land-use monitoring
    - Remote sensing + verification
    - Sampling of randomized segments (+ remote sensing tools to extrapolate)
    - Improved census data
  - Design and implementation of pilot improved schemes for SOC accounting
    - Model
    - "Direct measurement"
Proposal: Component 3

Component 3: Potential for SOC sequestration

- Quantify Potential SOC sequestration
  - Upper limit for %SOC (saturation)
  - SOC stocks found under well managed perennial grasslands
  - Range (highest-lowest) SOC measured under a given land-use (and soil type, etc.)
  - Potential for Cseq: differences between these alternative levels

- Estimate the "size of the opportunity" for SOC sequestration per country
  - Potential change in SOC stocks * area (has)

- Design a strategy to monitor, report and verify the realization of the opportunity

- Impact of land-use and management change on net GHG emissions

- Perform Life Cycle Assessment (LCA) of opportunities identified in Component 3.
Proposal: Component 4

Component 4: Capacity Building

- SOC stock determination protocol
- SOC stocks and land-use and management monitoring
- High throughput SOC stock measurement
- Life Cycle Assessment

Remote sensing
Statistics for monitoring & scaling up
MIR NIRS calibration for Organic Carbon content determination
Apparent density determination
Proposal: Products

- Matrix of SOC stock for land-use and land-management options
- Estimate/Identified major opportunities for SOCseq each country (depends on Potential/ha * area of land-use)
- Adjusted sampling protocol for SOC stocks (LEAP+)
- Archive of shared soil samples
- (Regional) MIR / NIRS calibration based on common base of samples
- Protocol (method/guidelines) for direct monitoring & accounting