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The work group focused on discussing the reviewer comments received on the proposal, "LACAf-II: GEOSPATIAL ANALYSIS AND MODELLING RELEVANT TO BIOENERGY – A CONTRIBUTION TO THE GLOBAL SUSTAINABLE BIOENERGY PROJECT." This project addresses the need to evaluate opportunities for pasture intensification, develop and apply energy crop models in conjunction with analysis of pasture intensification, and to develop and apply improved remote sensing and geospatial analysis.

The group considered all major reviewer comments, agreed on what changes to make in a revised proposal, and agreed on some strategies related to a way forward that further strengthens the research plan.

<u>Summary of changes in response to reviewer comments:</u>

1. The major changes were to reduce the scope and address issue of conflict of interest:

   a) The task with Taube has been removed from this proposal.

   b) Scope of work was reduced and reorganized under two tasks rather than three.

   c) One less paper is proposed (six rather than seven).

   d) Post-docs were reduced from 6 to 3. The post-docs are justified in the proposal to focus on three distinct research areas: Remote Sensing (with Rocha), crop models (with Long) and pasture intensification (with Sheehan).

2. Graduate students (5) are now contemplated to compliment the rest of the team and expand learning opportunities.

3. The budget was reduced by approximately 25%. A revised budget will clarify the justifications for proposed travel due to collaborations with international research centers in this proposal and in-country travel necessary to collect data from field sources for analysis, ground-truthing, and model verification and validation.

The restructured project is organized under two tasks and will address at least the six objectives reflected by the tentative titles of papers to be submitted for publication, as shown below.

Project Tasks and Objectives/Tentative Paper Titles.

Task I. Pasture Land use and Intensification.

I.1. Understanding and evaluation of pasture intensification in Brazil, 1980 to the present.

I.2. Ground truth analysis of pasture performance gap estimation using climate binning.

I.3. The impact of soil, seasonal variability of precipitation, and climate change on pasture performance gap estimation using climate binning.

Task II.   Geospatial Analysis and Remote Sensing.

III.1. Geospatial analysis of pasture-based livestock productivity increases in Brazil

III.2. Mixed crop-livestock detection/mapping using remote sensing.

III.3. Development and preliminary application of a multi-crop global energy crop yield model on pasture land.

Additional notes from the discussions:

The team hopes to explore options to integrate geospatial work, ground truthing and modeling, with Embrapa and industry contacts in Brazil – to involve more Brazilian researchers in the project activities. Also to explore collaborations with FAO GeoGLAM-RAPP. This may involve an additional paper or be integrated with current ones. The team has contacted Mario Herrera and colleagues with idea of working together on common goals to map and estimate pasture productivity at global levels.

It was suggested that the primary goal remain focused on producing internationally recognized publications. Need to further clarify link of biophysical analysis (geospatial and modeling) with economic and social aspects of project.

The importance of socio-econ environment drivers for pasture management – which may outweigh biophysical and environmental drivers – was discussed.

The extension of time to third year was discussed at length and the team agreed to reduce scope and maintain a 2-year time-frame with explicit plan to expand with new proposal, based on results.

The need to actively recruit post-docs and students in advance of proposal approval was discussed. Herrera may be able to help.

Relevant upcoming meetings were discussed (e.g., Geraldo: 30 Sept and 01 October, meetings in Brasilia with FAO LAC livestock program on intensification. And GeoGLAM would like to hold a s meeting in Brazil in Q1 2015.)

Arranging for peer-reviews and discussion of pasture analysis led by Geraldo was discussed. Potential meetings to be hosted in UK and the US – with the US meeting hosted at CSU.

The revised proposal will clarify that in-country travel is not just for "meetings/discussions" but will support data collection and ground-truthing.

Discussion of livestock, food security etc. There is much evidence to question the common and simple assumption that if cattle appear on land after it was cleared of forest, that means the land was cleared for cattle production.

How to design proper baseline and reference case scenarios for modeling was also discussed. The overall goal of identifying and promoting land-sparing technologies was also discussed.

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