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Subject: Re: LTEO proposal (Soil Theme)

Hello all,

Hope you are all keeping healthy and safe.

I have a few more updates:

1- Soil theme has been sanctioned **Rs. 3.19 Cr** for five years. So, our initial budget has not been cut. This is good news, but please read on.

2- MoEFCC conducted an expert-committee meeting (online) a few days ago, and there were no major comments about the soil theme from the expert panel.

3- MoEFCC instructions are for one financial statement (UC/SoE etc.) per site. e.g., NW Himalaya = WII, NE-Himalaya = Tezpur, **Central Indian Forest = Dr. H. S. Gour Central University**, IIFM, NW Arid Zone = GEER, W Ghats = IISc. Participants who are not in these nodal institutes will have to work with them for settling consumables/travel bills.

4- Financial statements will require to adhere to the new framework implemented by Min. Finance. These are called PFMS and EAT. IISc is already compliant with these new requirements and has agreed to it. Hopefully your institute is also on its way to be ready for PFMS and EAT. Personnel/staff from each institute will receive training about this directly from MoEFCC (like a tutorial).

There are some major hurdles and obstacles and I am working with other PIs to iron things out. Here are some pending issues:

5- Due to changing foreign-exchange rates, the cost of equipment (e.g., Elemental CHN analyzer) has gone up about 25-40%. Salaries for postdocs and JRF/SRF have been revised and they have nearly double compared to 2015-16. No additional funds are approved for these differences. I am working with other PIs to make these fit within the budget.

6- Soil and Grassland theme will share three JRFs. e.g., The same person will collect samples of grassland and soil themes. Fieldwork for soil collection is about 3-4 days per season, per site. Lab-work for soil analysis is about 30-40 days per season per site. I am working out details of sharing the load with the Grassland PI for fieldwork. Soils can have one JRF and postdoc for labwork.

7- Fortunately, I have received funds for Elemental CHN Analyser separately through IISc, and this equipment will be used for LTEO as well. With the LTEO budget, soil theme will buy one multi-gas analyzer, and 20 CO₂ sensors for the sites. Plus, we'll try and buy one very basic Gas Chromatograph, preferably a portable unit, for routine calibrations and quality control. We will have to share equipment with other institutes (e.g., ICP-MS/OES is available at NCBS-Bangalore for estimating cations). I am hopeful that we will manage the main pieces of equipment, but it will be a struggle to cover manpower expenses.

8- There are no funds to buy all the individual gas sensors we had in the initial proposal, and I am preparing new proposals for them for other.

9- I will share the revised budget soon.

10- I will set up a virtual/online meeting next week for all of us. Monday, 1 June, around 3:00 pm. I will send the details soon. I request you to attend this meeting and discuss the next steps. Especially, how to get off the ground in the post-COVID era. And, what funding options to explore for more specific research with the infrastructure created by LTEO. The funds we save in travel can buffer some of the other costs I have listed above!

More soon.

Regards,

-Sumanta

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MINUTES OF MEETING: LTEO SOIL GROUP

Date: 1-6-2020.

Venue: Microsoft Teams (online)

Time: 3:00 pm to 4:20 pm

Members present:	Members who could not attend:
BS Adhikari, WII	Ashalata Devi, Tezpur Univ ¹
S Bagchi, IISc	Jayanti Ray Mukherjee, APU ¹
Sumit Dookia, GGSIU	Deepak Barua, IISER-P ²
Advait Edgaonkar, IIFM	Sabyasachi Dasgupta, Tripura Univ ³
Ankila Hiremath, ATREE	
Pramod Jha, IISS	¹ Both faced problems logging in to the system
RD Kamboj and Dr. Rajkumar Yadav GEERF	² Had another prior commitment
ML Khan, HSGCU	³ Since the original proposal was submitted, Prof. Dasgupta has moved from HNB Garhwal Univ to Tripura Univ. He will likely be involved with the E-Himalaya sites.
Mahesh Sankaran, NCBS	
SS Singh, NERIST	

1. Members did a brief round of self-introductions.

2. S Bagchi gave a brief overview of the LTEO project, the central coordination cell at IISc, the six sites (W-Himalaya, E-Himalaya, NW Arid Zone, Central India, W-Ghats), and different research themes (forests, grasslands, soils, invertebrates, birds, fishes, and movement ecology). He also gave a brief overview of specific details under the soil theme.

3. S Bagchi gave an overview of tentative sampling plan for the Western Ghats site at Nilgiri Biosphere Reserve. BS Adhikari explained the W-Himalayan sites, starting from low-elevation near Corbett NP, going up to alpine meadows (3600 m) in Uttarakhand and Lahaul-Spiti transect (Himachal, >4200 m). A Edgaonkar gave an overview of potential sites in Central India (Panna, Panchmari, and the teak-sal transition zone). ML Khan and SS Singh gave an overview of sites in the E-Himalaya in Arunachal We can do our sampling planning from Balukpung upto Tawang (Zimithnag) considering the attitudinal gradient and vegetation type(. RD Khamboj and his team members gave an overview of locations in the NW Arid zone, covering Saurashtra and Kutchch).

4. M Sankaran pointed out that NCBS' field station in Panchmari can be used for logistical support, either for grassland-savanna theme, or for soil-theme, or both. ML Khan and SS Singh pointed out that a lot of focus, deservedly, has been on EagleNest. For soil-theme, other sites near Tezpur are more suitable and logistically more feasible. Sites along a transect from Tezpur, to West Kameng, and Tawang, will cover different vegetation types along an elevational gradient, and be complementary to the sites in W-Himalaya. The team decided that this option will be explored, even if the forest plots are established in EagleNest.

5. S Bagchi clarified that the minimum requirement for soil-theme is to sample the plots established by forest-team and grassland-team. There may be 60-80 such plots, or more, across the sites. In addition, soil-theme can also include agro-ecosystems, based on logistics and accessibility of sites. Soil-theme, at present, does not cover Andamans (Kashmir and Sundarbans have not yet been approved).

6. In the first year (2020-21), soil-team can aim for two measurements at each site. One at the peak of dry-season, and another after the monsoon. Many sites would not be accessible, or safe, during the peak monsoon. Some variables, e.g., those related to fluxes, will be measured seasonally. Other variables, e.g., C and N stocks, do not need seasonal measurements. Non-biological variables, such as texture and cations, can be measured only once, or every few years. So, some are variables of 'spatial' interest and others are of 'temporal' interest.

7. Currently, sanctioned funds can support 1 JRF, 1 Lab Assistant and 1 Postdoc. Sampling will require co-ordination between JRFs of forest- and grassland-themes.

8. ML Khan sought clarification on hiring of daily-wage workers (porters, guides, local assistants, etc.). S Bagchi clarified that these costs fall under 'consumables' and not under manpower.

9. S Bagchi will work with smaller groups – site-specific groups – to prepare more detailed concept notes about sampling locations, site-accessibility, proximity to potential field-stations, and other logistics. Another working-group will develop the sampling protocol, both field and laboratory methods. These smaller "working groups" will be:

- a. NW Arid zone: RD Kambhoj, A Hiremath, and Sumit Dookia
- b. W-Himalaya: BS Adhikari, S Dasgupta