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24th March 2018

Professor D. C. Baruah,
Department of Energy,
Tezpur University,
Napaam,
Assam 784 028,
India

Dear Professor Baruah,

Re. BBSRC (UoN) Project: Enhancing Food Security in Rural India

I am happy to confirm that permission is granted for a no cost extension to the project for an additional 12 months. I look forward to our continuing collaboration.

Yours sincerely,

Dr. Helen M. West
Associate Professor

s/c

② Budget
break up

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TU collaborator: Prof D C Baruah, Professor, Department of Energy, Tezpur University India

Summary

This project will engage with smallholders in Assam, India, to encourage sustainable use of organic inputs in order to improve crop nutrient use efficiency and yields. As part of a different project we built a community-scale anaerobic digester to satisfy the energy needs of the villagers. The resulting digested slurry is a vital fertiliser, but without knowledge of the nutrient content, the fertility of the soils and the nutrient requirements of the crops, inappropriate use could result in scorched plants or contaminated water. We aim to work with the community members to develop best agronomic practices so the slurry can be used effectively. This will improve crop yields, thereby benefiting the health and economic welfare of the community. The nitrogen-deficient alluvial soils of the area are typical across India and other parts of the world, as is anaerobic digestion; this project is therefore pertinent to areas outside this model community.

What is the underpinning research?

We aim to enhance crop production efficiency in a rural community in northeast India by initiating a programme of agronomic best practice to improve crop nutrient-use-efficiency. The BBSRC grants underpinning this project are BB/02914X/1, *Implication of enhanced ecological intensification and resilience for smallholder farming in the eastern Amazonia region*, Newton Fund and BB/N013204/1 *NUCLEUS - a virtual joint centre to deliver enhanced Nitrogen Use efficiency via an integrated Soil-plant systems approach for the UK & Brazil*. We will optimise sustainable use of organic residues derived from a community-scale anaerobic digester (AD) that we are installing in the off-grid village of Jawani in collaboration with Professor Debendra Chandra Baruah and his team (Tezpur University) (EP/I06361/1 *Rural Hybrid Energy Enterprise Systems (RHEES)*). The focus of the AD unit is to meet the energy needs of the community. However, a by-product of AD is nutrient-rich slurry. Judicious use of the slurry could result in polluted waters and lost nutrients. It is important that we support the needs of the farmers in managing the slurry and the nutrient requirements of their crops in order that they maximise potential agronomic benefits. The alluvial soils are nitrogen deficient, meaning crops do not reach optimum yields, thus the food security needs of the community are limited. Since alluvial soils are common in Northern India and other delta regions, and use of AD is common, lessons learned here with regard to organic matter inputs and nutrient use efficiency are relevant to large swathes of the world.

How does the project meet ODA requirements?

We are directly addressing poverty alleviation and rural development by enhancing crop production efficiency in a region of northeast India. In so doing, we aim to improve the quality and quantity of farmed food, enable villagers to market the excess produce and assist female members of the community to develop innovative outlets which will help generate steady livelihoods for families.

There is a clear development need addressed by the project, namely, sustainable economic development of a rural community in India. The lessons learned here with regard to improving agronomic practices (e.g. organic matter inputs and nitrogen use efficiency) and consequent economic and social enhancements will directly improve the wealth (financial, dietary and social) of the community members, but are also relevant to large areas of India and also globally. India is listed within the DAC List of ODA Recipients and we already have

TEZPUR UNIVERSITY
Inter office Memo

No. 321
Receipt 03.03.2017

Received by

9

From: Prof. D.C. Baruah, PI Department of Energy	To: Dean, R & D Tezpur University
Ref: TU/DOE/DCB/BBSRC/2017 dated 24.2.2017	Your Ref: DoRD/PR/10-47/211 dated 1.3.2017

With reference to your Inter Office Memo stated above, regarding the information/document required for registration of BBSRC funded project, the following information/documents are provided.

Project title: Enhancing food Security in rural India
Funding Organization: BBSRC (provided by University of Nottingham, UK)
Duration of project: 1 year (12.1.2017-12.1.2018)
Total amount sanctioned: 300127 INR
Date of Receipt of fund: 12.1.2017

- List of enclosure:
Email from project collaborator of Nottingham, University, UK
Approval from Vice chancellor
Approval letter from funding agency
Budget break up


(DC Baruah), Professor

H. Das
For n/a
06/3/2017

Serial No. 597
Date of Receipt 28.04.2017
File No.
Received by

12

Date: 28.4.2017

To
Dean, R & D
Tezpur University

sub: Permission to take research visit under BBSRC funded project

Sir,

I have to visit Guwahati on 1.5.2017 for some research work related to the BBSRC funded project titled "Enhancing food security in rural India". This is put up for your necessary approval. The tour programme is also enclosed. I may be allowed to draw the expenditure from the project fund.

Thank you.

Forwarded
to
28/04/2017
HOD, Energy

(D C Baruah)

Department of Energy

AR
For m/a
28/4/2017