



**Sustainable Soil Management Component (SSMC) of
OCP Foundation's Agricultural Development Project in
Bangladesh – Stage 1**



Monthly Report (March 2017)

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Acronyms and Abbreviations

APS	Ammonium, Phosphorus, and Sulfur
BADC	Bangladesh Agricultural Development Corporation
BARI	Bangladesh Agricultural Research Institute
BRRI	Bangladesh Rice Research Institute
DAE	Department of Agricultural Extension
FC	Field Coordinator
GAP	Good Agricultural Practice
GOB	Government of Bangladesh
ICARDA	International Center for Agricultural Research in the Dry Areas
IFDC	International Fertilizer Development Center
kg	kilogram
NPS	Nitrogen, Phosphate, and Sulfur
OCP	Office Chérifien des Phosphates
SRDI	Soil Resource Development Institute
SSMC	Sustainable Soil Management Component
TSP	Triple Superphosphate
UAO	Upazila Agriculture Officer

Sustainable Soil Management Component (SSMC) of OCP Foundation’s Agricultural Development Project in Bangladesh – Stage 1

Monthly Report (March 2017)

Introduction

The Office Chérien des Phosphates (OCP) Foundation signed an agreement with the International Fertilizer Development Center (IFDC) for implementation of the Sustainable Soil Management Component (SSMC) of OCP Foundation’s Agricultural Development Project in Bangladesh – Stage 1 for a period of three years, from January 2017 to December 2019. SSMC will address many of the increasing, serious soil fertility concerns of the northern districts of Bangladesh while also helping farmers enhance crop productivity and profitability through the implementation of improved soil management methods in the overall context of market-sensitive good agricultural practices (GAPs).

The **goal** of SSMC Stage 1 is **sustainable management of soil to enhance yields and farmers’ incomes under resilient production systems**, which contributes to the overall goal of OCP Foundation’s Agricultural Development Project in Bangladesh.

The **objectives** of the proposed project are to:

1. Evaluate the role of secondary and micronutrients, including the application of different compound fertilizers, on crop productivity as affected by soil acidity.
2. Promote balanced plant nutrient and good agricultural practice solutions for improving crop productivity, crop profitability, and soil fertility through extension workers and agro-input retailers.

OCP Foundation’s comprehensive project also includes input from OCP Foundation and the International Center for Agricultural Research in the Dry Areas (ICARDA). The overall objective of this agricultural development project is “sustainable management of soil to enhance yields and farmers’ incomes under resilient production system in Bangladesh,

resulting in food and nutrition security, improved health and livelihoods.” The project includes the SSMC in addition to monitoring and capacity building inputs by OCP Foundation and work related to the promotion of GAPs, entrepreneurship, and farmer organization by ICARDA. The project will target rice, maize, potato, pulses, and to a lesser extent, wheat crops.

SSMC will be implemented together with the Government of Bangladesh (GOB) counterparts – Bangladesh Agricultural Research Institute (BARI), Bangladesh Rice Research Institute (BRRI), Department of Agricultural Extension (DAE), and Soil Resource Development Institute (SRDI). Additionally, agro-input retailers will be involved to promote balanced plant nutrient and GAP solutions for improving crop productivity, crop profitability, and soil fertility. The primary approach of the project will be for IFDC to conduct trials with BRRI and BARI and field extension activities with DAE.

SSMC is being implemented in 12 *upazilas* (sub-districts) of the targeted districts of Kurigram, Nilphamari, and Dinajpur in the Rangpur division and the districts of Bogra, Chapai Noawabganj, and Natore in the Rajshahi division (Figure 1).¹ The contract was signed and SSMC activities began in January 2017. This monthly report shows the progress achieved in March 2017.

¹ The upazilas were selected based on certain criteria: (1) a higher percentage of cultivable land; (2) growth of at least two major crops; (3) a relatively low soil pH level; (4) more progressive farmers; and (5) ease of access to the upazilas for project activity implementation.

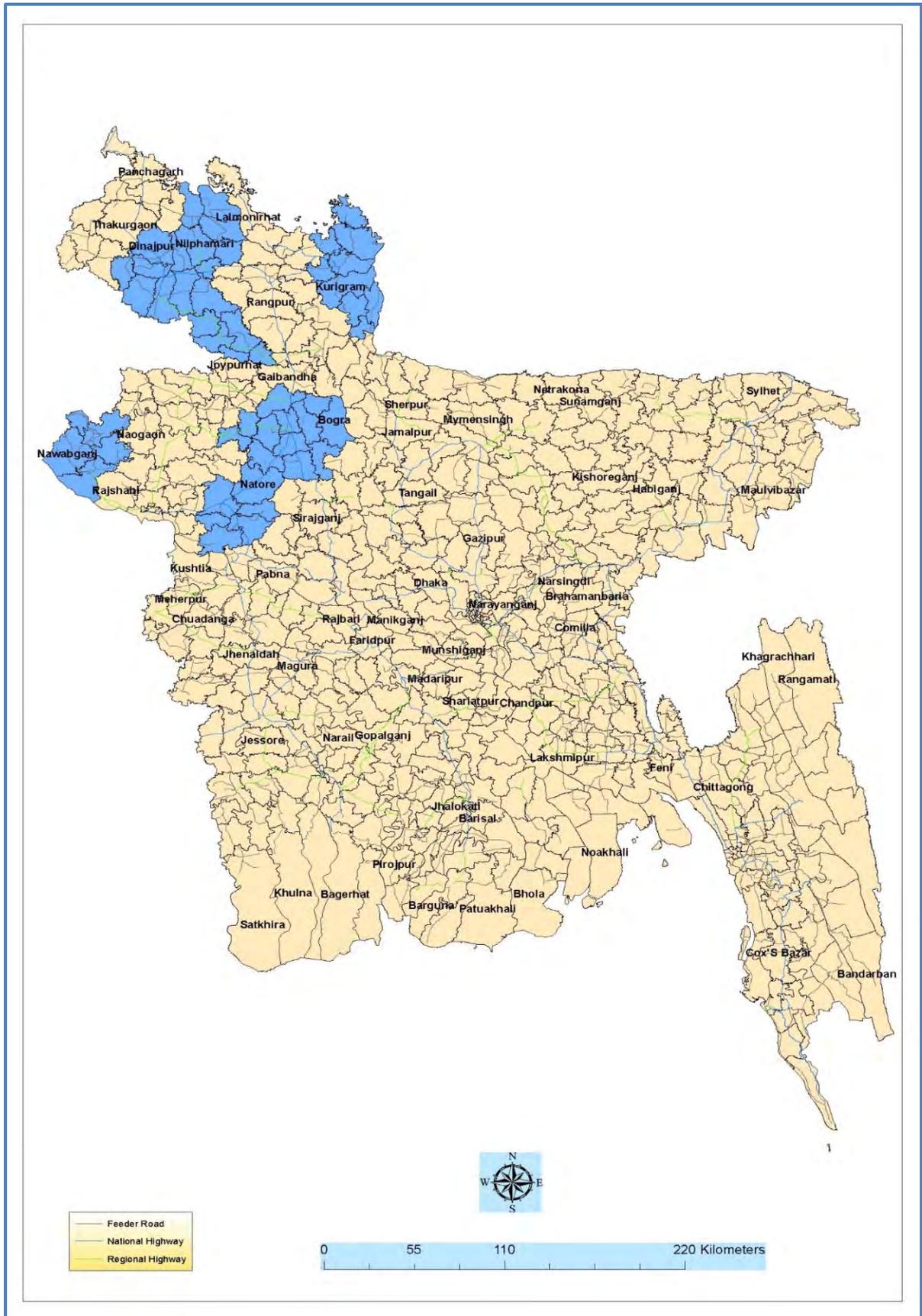


Figure 1. SSMC Project Locations

Technical Program Activities

As per the annual Work Plan, major technical activities conducted during the reporting month included the following, which are linked to cropping season and deliverable and aimed at achieving the project goal.

Baseline Survey

During the reporting month, the SSMC activity focused on the baseline survey for collection of data on farmers' agronomic practices and soil and fertilizer management in the project locations. The following activities were conducted on the baseline survey during the reporting month.

- All 12 enumerators successfully completed data collection as per a structured questionnaire. A short brief on the questionnaire is attached in Appendix 1. The questionnaire mainly focused data collection on the farmer's profile, current soil fertility management practices, cropping systems, farmer concerns and willingness to pay for inputs, and market requirements and gaps for selected crops from all 400 selected farmers. Of the 400 sample farmers, 196 samples were from the Rangpur region and another 204 samples were from the Rajshahi region. Twenty-eight, or 7 percent of the total respondents, were women farmers.
- To ensure collection of quality data, two field coordinators (FCs) continually monitored interviews conducted by the enumerators for the baseline survey. They visited all 12 upazilas of Dinajpur, Nilphamari, Kurigram, Bogra, Natore, and Chapai Noawabganj districts. Three senior staff members also checked the quality of data collection and made spontaneous visits. They visited 11 upazilas (Shahjahanpur, Gabtali, Nageswari, Kurigram Sadar, Dinajpur Sadar, Chirirbandar, Saidpur, Nilphamari Sadar, Natore Sadar, Chapai Noawabganj Sadar, and Nachole) of Bogra, Kurigram, Dinajpur, Nilphamari, Natore, and Chapai Noawabganj districts. While visiting various locations, the senior staff advised the enumerators to maintain the quality of data collection and to strictly follow the survey guidelines.

- During the baseline survey, it was found that farmers of Nageswari upazila under Kurigram district grow only rice. Therefore, after discussion with the short-term consultant, one sample block was changed to follow the selection criteria of baseline survey farmers. The new block selected was adjacent to the earlier block.
- After collecting, editing, and compiling the baseline information from field enumerators, the two FCs sent the completed questionnaires to IFDC's Data Management Unit.
- SSMC Agriculture Specialist discussed the progress of baseline survey and upcoming *Aman* activities with the DAE liaison in Khamaribari, Dhaka.
- Two data analysts have entered all the baseline survey data into a database for analysis. After inputting the data, it was compiled, processed, and analyzed by the Data Management Unit.

OCP Company Fertilizer

The Ministry of Agriculture informed IFDC that OCP Group provided 5,160 kilograms (kg) of three categories of compound fertilizers to the Government of Bangladesh. These are currently stored in Bangladesh Agricultural Development Corporation (BADC) warehouses. IFDC will need about 800 kg of these compound fertilizers to conduct on-farm and on-station trials through BRRI, BARI, and DAE for six crops (*Aman* rice, *Boro* rice, maize, wheat, potato, and lentil) in SSMC project areas of Bangladesh. IFDC requested that BADC provide the required amount (800 kg) of the following grades of compound fertilizer for IFDC's SSMC project.

1. TSP (TSP-Zn) 250 kg (five bags)
2. APS (19N-38P₂O₅-0-6S-1B) 300 kg (six bags)
3. NPS (12N-45P₂O₅-0-5S-1Zn) 250 kg (five bags)

Trials and Demonstrations

- Trials: Based on the different grades of the OCP Group compound fertilizers that were supplied, necessary modifications to various fertilizer treatments were made to balanced fertilization, macro- and micronutrient omission-related trial plots with rice, maize, potato, lentil, and wheat.

- Demonstration: The SSMC FC is maintaining liaison with DAE officials, particularly the 10 upazila agriculture officers (UAOs), regarding transplanted *Aman* demonstration site selection.
- SSMC senior staff discussed with the district heads of Dinajpur and Nilphamari DAE offices and UAOs of the Dinajpur Sadar, Saidpur, Gabtali, and Nageswari upazilas about SSMC activities in detail. They highlighted the role of DAE field staff in successfully establishing demonstration plots, organizing farmer training programs, and expanding the message of GAPs among farmers during the 2017 *Aman* season.

Farmer Training

- The field coordinator has visited DAE field offices regularly for identification of demonstration sites as well as progressive farmers for *Aman* rice demonstration and farmer training programs.
- A farmer training module has been prepared in Bangla, and an English version is being prepared.
- A draft budget breakdown of the 120-farmer training program was prepared.

Other Activities

IFDC's director of Global Field Programs, J.J. Robert (Rob) Groot, visited Bangladesh to oversee project activities and interact with project staff. The SSMC staff held a meeting with him on March 15, 2017. He discussed the current vision and role of IFDC. He emphasized quality of output of all activities, including technical data. He also showed a keen interest in future SSMC project activities in Bangladesh as work continues with innovations in the fertilizer sector to address food security. Ishrat Jahan, IFDC deputy director of Asia, and Abdul Aziz Boly, IFDC deputy director of Operations, Administration, and Finance, were also present at the meeting.

Photographs of SSMC Activities



A meeting was held with IFDC's director of Global Field Programs on March 15, 2017



Participants at the meeting with IFDC's director of Global Field Programs on March 15, 2017



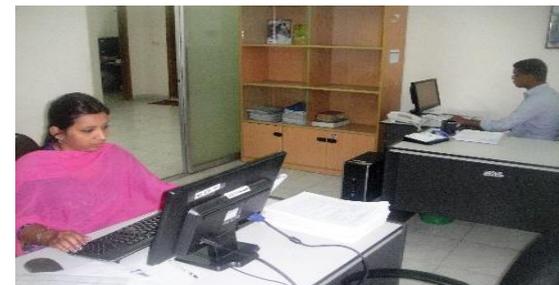
SSMC enumerators interviewing a sample woman farmer at Nageswari in March 2017



SSMC enumerators interviewing sample farmers at Shahjahanpur in March 2017



SSMC enumerators interviewing a sample farmer of Dinajpur Sadar in March 2017



Data analysts entering the baseline survey data in March 2017

Appendix 1. Brief Note on the Information Collected Through the Baseline Survey

Farm Household Survey

1. **Sample Respondent (Farmer) Profile:** Identify farmer's house through GPS coordinates, name, age, gender, whether household head, detailed address, cellphone number, and level of education.
2. **Family Composition:** Family size, dependency ratio, and occupation of the members.
3. **Assets and Liabilities:** Land assets including cultivable land, homestead, fish pond, houses and types of houses, agricultural assets such as power tillers, tractors, agricultural machinery, irrigation pumps, live animals, etc.
4. **Yearly Income:** Both farm and off-farm incomes.
5. **Yearly Expenses:** Food, education, and other expenses.
6. **Source of Drinking Water:** What are the sources?
7. **Liabilities (if any):** Types of liabilities.

Soil Fertility Management

1. **Use of Fertilizer:** Types of fertilizer being used (organic, inorganic, or both), awareness of soil health or its quality, measures taken to improve soil health, sources of information on soil and fertilizer management, whether the recommended dose of fertilizers advised by extension officials is used, how soil health is managed, which variety of fertilizer is used most, etc. Sources of fertilizer procurement, whether fertilizer is purchased in cash or in kind.
2. **Use of Mixed Fertilizer:** Whether mixed fertilizer is used, sources of mixed fertilizer, whether any benefit is gained using mixed fertilizer. Farmers' willingness to purchase mixed fertilizer, whether farmer is willing to purchase mixed fertilizer if additional yield is obtained.

3. **Use of Micronutrients:** Reasons for using micronutrients, knowledge of the quality of micronutrients, awareness of acidity in soil, steps taken to improve soil acidity or productivity, frequency of using lime.
4. **Soil Organic Matter:** Whether organic fertilizer is used, types of organic fertilizer used, sources of organic fertilizers, whether aware of the quality of organic fertilizer.
5. Detailed information on all types of fertilizers used in 2016 by selected crops (six SSMC crops).
6. Quantity used as basal and as topdressing.

Crop Management

1. **Crops Grown in 2016:** What types of crops grown by name of crop and variety used. Detailed information on the area under selected crops, quantity of crop sold, sale price, sources of seed, and planting and plant spacing practices by crop.
2. Land preparation and intercultural practices being followed with SSMC crops.
3. When is harvest of the crops (month) done and what are the harvesting operations followed for each SSMC crop in 2016?
4. If machinery is used for crop cultivation, then name the sources of purchasing or renting machinery.
5. Perception of agricultural machinery use.

Marketing of Outputs

1. To whom or to which crops are sold.
2. Crops are sold at what time.
3. How rice straw is used.

Cost of Production of SSMC Selected Crops

1. All costs, starting from seed cost, land preparation, and transplantation through harvesting, carrying, and threshing.
2. Whether farmers receive a fair price for their products. Perception of fair price.

Community Approach

1. Any farmer group working in the locality.
2. Types of farmer groups in operation.
3. Whether the respondent is a member of which group.
4. What is the role as a member of the group?
5. Awareness of the Union Agriculture Information Centre (UAIC).
6. How frequently farmers visit UAIC.
7. Whether they receive any information on soil management-related issues from UAIC.

In addition to the sample household survey, data will be collected on most of the items from secondary sources to compare the results of the survey with national-level data.