



# North South University

## NSU-KGF RESEARCH PROJECT

Assessing Adoption and Diffusion of Agricultural Innovations in Bangladesh  
Department of Economics, North South University

Expression of Interest issued on: October 5, 2022, in The Daily Sun and NSU Website:  
<http://www.northsouth.edu/newassets/images/5-9327.EOI%20ad%20DS.pdf>

### Terms of Reference (TOR)

**For a consulting firm to be procured to conduct field Survey of sample respondents**

#### **Background:**

North South University was awarded a research grant from the Krishi Gobeshona Foundation (KGF) to implement the research project titled, "Assessing Adoption and Diffusion of Agricultural Innovations in Bangladesh." This project is being implemented by North South University (NSU) and Bangladesh Agricultural University (BAU) in collaboration with Curtin University (CU) as well as the University of Western Australia (UWA) in Australia.

The Government of Bangladesh (GOB) has invested several billion dollars over the last five decades in the development of agricultural innovations. The primary intention of the GOB for committing large-scale public investment in developing agricultural innovations was to improve the production of crops, fisheries, and livestock through funding innovative research. Such innovation research has been conducted via several public research organizations such as BARC, BARI, BRRI, BLRI and BFRI.

In recent years, the development and adoption of new technologies, such as innovative farm machinery, crop-based mixed-balanced fertilizers, high-yielding crop types, vegetables, and fruits, has been very strong, and productivity has increased. Rice output has increased due to several agricultural improvements, including adopting a better irrigation system, increasing use of other agricultural inputs, and increased coverage of high-yielding and modern rice varieties. However, the long-term viability of domestic food is a concern. In addition, anecdotal evidence and opportunistic observations imply that the technology and ideas used by farmers are not always those backed by Bangladesh's government. On the other hand, anecdotal information from industry professionals and important stakeholders reveals that the technologies and innovations used in the country's farming systems are frequently imported from neighboring countries. Farm machinery from China and rice seed trafficked from India are two examples. Unfortunately, there is no in-depth study of whether local (home-grown) or imported agricultural innovation are adopted by the rural farmers of

Bangladesh. Furthermore, the primary issues causing the acceptance of agricultural innovation and how to address them remained unknown. This study attempts to find answers to these research questions.

**Objective:**

The **Key objectives** of the project are to identify the adoption characteristics of agricultural technology users in the agricultural value chain of Bangladesh and to explicate the attitudes and values of the users with specific reference to adopting local versus foreign agricultural technologies. These behavioral elements will then be used to explore the facilitating and hindering factors that influence the adoption and diffusion the homegrown agricultural innovations in Bangladesh. Finally, optimal policy recommendations will be formulated to promote the adoption of local homegrown agricultural technologies and innovations.

**Specific Objectives:**

The specific objectives of this research are outlined below:

- Identify the adoption characteristics of agricultural technology users in the agricultural value chain of Bangladesh.
- Identify attitudes of agricultural technology users in the agricultural value chain of Bangladesh with specific reference to attitudes towards adopting local and foreign agricultural technologies
- Evaluate the level of adoption and diffusion of home-grown agricultural innovations among the farmers of rural Bangladesh in terms of specifying the high-adopted and low-adopted agricultural innovations.
- Explore the factors (both facilitating and hindering factors) that influence the adoption and diffusion of home-grown agricultural innovations in rural Bangladesh.
- Propose strategy recommendations in support of dealing with the identified barriers and thus ensure smooth adoption and diffusion of home-grown agricultural innovations in rural Bangladesh.
- Investigate factors that influence and determine the intensity of the adoption of innovations
- Investigate the factors that influence the speed of adoption of innovations and the impact of the adoption of innovations on the welfare of farmers.

**Sampling Design:**

- Data on attitudes and beliefs will be collected from various agricultural value chain stakeholders via a questionnaire-based survey.
- It is to be noted that a purposive random sampling process should be employed to select the NARS officials, farmers, retailers, and agents.
- The planned sample sizes by the types of stakeholders are: NARS officials (n=50), farmers (n=960), sales/retailers (n=480), and importers' agents/producers (n=200). The tables below show the location and distribution of samples.

**Table-1: Sampling distribution of farmers**

<b>Division</b>	<b>District</b>	<b>Upazilla</b>	<b>Number of Farmers Per Upazilla</b>
Eight	Two Districts per Division (2x8)	Two Upazillas per District (2x16)	30 Farmers per Upazilla (30x32)
<b>Total</b>	<b>16</b>	<b>32</b>	<b>960</b>

**Table-2: Sampling distribution of sales/retailers and agents/producers**

<b>Division</b>	<b>District</b>	<b>Number of retailers per district</b>	<b>Number of agents (or producers) per district</b>
Eight	Two Districts per Division (2x8)	30 retailers per District (30x16)	15 agents per District (15x16)
<b>Total</b>	<b>16</b>	<b>480</b>	<b>240</b>

**Task Specification:**

- The consulting firm shall propose a detailed work plan for the survey complying with the objectives and sampling design of the project.
- The consulting firm shall be responsible for conducting a primary survey.
- The selected consulting firm will collect primary information through a questionnaire-based survey of farmers and key agricultural value chain participants such as Personnel of NARS, Sales/retailers, and importers' agents or producers.
- The selected consulting firm will perform all activities related to the primary survey including data cleaning and processing following the project sampling design.

**Piloting and Finalization of the Questionnaire**

Before the training and the surveys are launched, draft questionnaires will be provided for piloting of the questionnaires on a few selected respondents, using CAPI (Computer-Assisted Personal Interviews) that will also test the data entry system and the CAPI script. In addition, these interviews must be timed to ascertain the length of implementing the questionnaire. Questionnaire will be revised and finalized as necessary based on the pilot survey results, where the need for further revisions and adaptation will transpire, in agreement with the project authority.

**Reporting Requirements:**

- The written report is expected to respond to all the tasks specified in this ToR and follow as standard reporting format;
- The consulting firm shall submit the inception report including the data collection plan so that NSU project authority can accommodate and be present in the surveys and KIIs (Key Informant Interviews);
- The reports must be submitted to the NSU project coordinator (hard copy and soft copy) at the stipulated timeframe;
- The consulting firm shall finalize the report by incorporating the opinion of the Project Authority.
- All type of coordination shall take place between the consulting firm's authorized representative and an authorized official of NSU project authority (progress sharing, meeting with NSU, and workshop preparation);
- The consulting firm shall present the findings in a primary experience-sharing meeting for reviewing the plan;
- Necessary amendments, updates, and changes shall be done for the finalization of reports by the consulting firm in consultation with NSU Project authority.