

# KRISHI GOBESHONA FOUNDATION

## ANNUAL REPORT (January - December 2015)

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## Message

I am delighted to know that the Annual Report 2015 of Krishi Gobeshona Foundation (KGF) is going to be published. KGF since its start of functioning felt necessary of documenting yearly accomplishments through its annual report, and as I have come to know, this is the 6th annual report of KGF.

It is of course the mammoth task to achieve self-sufficiency in food and nutrition for a highly populated country like Bangladesh. But what was a dream even in 2 or 3 decades ago is the reality that Bangladesh has achieved self-reliance in food. Remarkable attainments in all the sub-sectors of agriculture, such as Fisheries, Livestock, Forestry, Horticulture, etc. are now very much visible. All these could have been made possible through the collective initiatives and efforts of research, extension and farming community as well as agro-friendly government policies and steps. However, this success leaves no room for us to be self complacent rather it makes us alert and vigil as to how to face the newer emerging challenges to feed the ever increasing population from gradually diminishing arable land area when threats due to climate change are heading on the way toward further progress in agriculture. Sophisticated and quality research for demand-driven technologies and its proper extension mechanism along with very strong linkage among research, extension, NGOs, and private sectors will be required to address the issues.

KGF, a government sponsored autonomous grant making organization, has been addressing the challenges contributing to agricultural production subce uts start in 2007. KGF has rightly put thrust on quality research by creating a competitive envrionment among the scientists working in the relevant fields with the invitation of research proposals on target oriented demand driven issues. In addition, KGF fosters unique pluralistic approach of providing a common platform for people coming from private and public secotrs having different strength and facilities but requiring cooperation to work together for common goals. It also fosters research works by removing the bottlenecks those remain in the existing systems.

KGF had its start with the financial support from National Agricultural Technology Project (NATP) phase-I. After ending the NATP (phase-1) in 2014, KGF started running with its own source of Bangladesh Krishi Gobeshona Endowment Trust (BKGET) fund. The activities and projects running with the BKGET fund have been incorporated in this volume. Altogether 36 CGP projects (1st Call: 14 and 2nd Call: 22) were awarded under BKGET fund of which 14 projects have passed more than two years of its duration, 16 about six months, while the rests are yet to be awarded.

I believe and hope, that the collective initiatives and efforts of KGF experts under the able leadership of its Executive Director will certainly create positive impact in the field of agricultural research in Bangladesh.

**Dr. Abul Kalam Azad**  
**Chairman**  
**Board of Directors, KGF**  
**&**  
**Executive Chairman, BARC**

## Preface

Krishi Gobeshona Foundation (KGF), a new grant making organization, started implementation of Competitive Grant Programs (CGP) from 2009 having financial support from World Bank Project NATP (Phase I). The establishment of KGF creating facilities, manpower and providing other relevant management support activities with NATP fund continued upto 2014. However, the foundation started receiving fund from its own sustainable fund source, such as Bangladesh Krishi Gobeshona Endowment Trust (BKGET) from the end of 2012. The activities utilizing the BKGET fund started from 2013 with the announcement of CGP activities (BKGET 1st Call) and with the ending of NATP in 2014, KGF started running with BKGET fund.

Availability of BKGET fund widened the horizon of KGF activities. Along with short term CGP activities, the foundation got itself involved with (a) Commissioned Research program (CRP) (b) Capacity Enhancement Program (CEP) (c) International Collaborative Program (ICP). Besides, implementation of the pilot projects selected on the basis of potentiality and merits from the completed CGP projects is being continued for upscaling of proven technologies.

The year 2015 had been a remarkable year for KGF with the exit of NATP in 2014 and supporting its activities solely from KGF's core trust funding. Under the guidance of KGF Board and based on recommendation of an expert team, KGF had its regular organogram approved in 2015 with 47 manpower provisions in 4 categories of staff, viz. Technical, managerial, GSS and support workers. However, with transition from NATP to its core funding from BKGET, the major issue cropped up as non-filling of vital technical positions. Three senior level technical experts and virtually the ED had to leave KGF due to contractual condition related to age bar of 65 years. For some obvious reasons and lack of efforts, recruitment process had not been initiated. Consequently, KGF had to face serious challenges to implement its technical activities. Another challenging issue was of legal nature encompassing KGF registration by Joint Stock Company (JSC) and vetting of amendments of its Articles of Association. Vetting process could not be completed mainly due to a wrong registration number provided by the JSC. This was an inadvertent mistake by the JSC. Also, there had been weakness on the part of KGF administration for taking proper initiative for solving the issues with JSC. It is hoped that KGF will be able to overcome these issues and successfully implement its programs for achieving desirable output useful for the end users.

KGF would like to thank and express its gratitude to the NARS scientists whose active participation and cooperation made KGF's endeavors a success. Along with them, the foundation acknowledges the contribution of all the experts of KGF whose painstaking efforts has made it possible. Above all, KGF is grateful to BKGET for funding support, and the KGF Board members for their thoughtful decision and directives that led the foundation to reach this height.

I congratulate and thank those who worked hard to compile and edit this report. I hope this report will be of use to the scientists, extensions, policy makers, teachers and students, and all other stakeholders.

Dr. M. Nurul Alam  
Executive Director, KGF

## Executive Summary

This is the 6th Annual Report of Krishi Gobeshona Foundation. It covers the activities performed during the period from January to December 2015. As the NATP ended in 2014 and the Annual Report 2015 covers the period from January to December 2015, the activities funded only by BKGET are reported here. The gist of each section are as follows:

**Section I:** The chapter contains a little background information about KGF and its previous and current research activities. As KGF started with the implementation of CGP projects funded by NATP (phase-I), a brief accounts of those activities has been given here. The details of the projects completed under NATP Phase-I fund are found in the "Annual Report" prepared for the year 2014.

**Section II:** Aside from the execution of the planned programs taken up by the foundation, different other activities in connection with the development of new programs, developing policies, Execution, Implementation, evaluation of the Running projects, a number of meetings, consultative discussions, review workshops etc. had to be arranged by the foundation throughout the year. In addition to AGM, EGM, KGF Board meetings, TAC meetings, BKGET Trustee Board meetings, KGF had to participate and attend different other meetings arranged at different Organizations at different places as well as at MoA as and when necessary. KGF arranged several workshops in connection with the preparation of proposals for the development of charlands, drought prone areas of North Bengal, salinity affected southern region, strengthening sugarcane research and development in the hill areas and conducting adoptive trials for seaweeds.

**Section III** describes the four types of programs which have been taken up by KGF and are being implemented currently. At the beginning of the section, the highlights of the activities performed under CGP programs (BKGET 1st call) are given in very short form. The project-wise implementation progress of the CGP programs (BKGET 1st and 2nd calls) achieved during the reporting period followed the highlights. A vivid description of the two CRP programs with the component wise achievements and activities carried out under CEP and ICP are also given in the section. The progress of the Pilot/Upscaling programs is added at the end of the section. Aside from the research activities (Project/Programs), the other activities carried out by the foundation in order to facilitate and running the foundation smoothly are also provided in the section separately under (g), (h) and (i) sub-sections.

Section IV contains a brief accounts of governance, budget, expenditure and audit aspects of KGF. Although NATP phase-I ended in 2014 but auditing of NATP fund was completed in the reporting year, so the audit report has been included in the report. In 2015, KGF received fund from BKGET only, so a brief report of the budget, financial progress and a SoE have been provided in the chapter.

## ABBREVIATIONS AND ACRONYMS

ACIAR	Australian Center for International Agricultural Research
ADP	Annual Development Program
AIS	Agriculture Information Service
APR	Annual Progress report
ARF	Agrarian Research Foundation
ARMIS	Agricultural Research Management Information System
AZE	Agricultural Ecological Zone
BADC	Bangladesh Agricultural Development Corporation
BARC	Bangladesh Agricultural Research Council
BARI	Bangladesh Agricultural Research Institute
BAU DF	BAU Dairy Farm
BAU	Bangladesh Agricultural University
BAURES	Bangladesh Agricultural University Research System
BCAS	Bangladesh Centre for Advanced Studies
BCR	Benefit Cost Ratio
BIDS	Bangladesh Institute of Development Studies
BINA	Bangladesh Institute of Nuclear Agriculture
BJRI	Bangladesh Jute Research Institute
BKGET	Bangladesh Krish Gobeshona Endowment Trust
BMD	Bangladesh Meteorological Department
BODs	Board of Directors
BRAC	Bangladesh Rural Advancement Committee
BRAC-CDM	Center for Development Management
BRRRI	Bangladesh Rice Research Institute
BSMRAU	Bangabandhu Sheik Mujibur Rahman Agricultural University
BSRI	Bangladesh Sugarcane Research Institute
BUET	Bangladesh University of Engineering and Technology
BWDB	Bangladesh Water Development Board
CASEED	Center for Agri-research and Sustainable Environment & Entrepreneurship Development
CDB	Cotton Development Board
CEGIS	Centre for Environment and Geographical Information System
CGP	Competitive Grant Program
CHT	Chittagong Hill Tract
CIG	Common Interest Group
CRP	Commissioned Research Program
CSIRO	Commonwealth Scientific and Industrial Research Organization
CVASU	Chittagong Veterinary and Animal Science University
DAE	Department of Agriculture Extension (MOA)
DBM	Data Base Management
DBMS	Data Base Management System
DDS	Dry Direct Seeded
DG	Director General
DLS	Department of Livestock Services (MOFL)
DoF	Department of Fisheries (MOFL)
DPP	Development Project Proposal
DSSAT	Decision Support System for Agro technology Transfer - an application software for crop simulation model
ED	Executive Director
EGM	Extra Ordinary General Meeting
ERD	External Resource Division
FMD	Foot and Mouth Disease
GIS	Geographical Information System
GnB	General Body

GO	Government Organization
GoB	Government of Bangladesh
GSS	General Support Staff
HRC	Horticulture Research Centre
HYV	High Yielding Variety
IARI	Indian Agricultural Research Institute
ICAR	Indian Council for Agricultural Research
ICM	Integrated Crop Management
IDA	International Development Association (WB Group)
IFAD	International Fund for Agricultural Development
IPM	Integrated Pest Management
IRRI	International Rice Research Institute
JSC	Joint Stock Company
KGF	Krishi Gobeshona Foundation
M&E	Monitoring and Evaluation
MIS	Management Information System
MoA	Ministry of Agriculture
MoU	Memorandum of Understanding
NAIP	National Agricultural Innovation Project
NARS	National Agricultural Research System
NATP	National Agricultural Technology Project
NCAP	National Centre for Agricultural Economics and Policy Research
NCCA	Network on Climate Change in Agriculture
NGO	Non Government Organization
NSB	National Seed Board
NUFIC	Netherlands organization for international cooperation in higher education.
OM	Operational Manual
OP	Open Pollinated
PAD	Project Appraisal Document
PAM	Policy Analysis Matrix
PCR	Project Completion Report
PCU	Project Coordination Unit
PHKS	Pathahara Kalyan Somgtha
PIs	Principal Investigators
PWDS	Pipe Water Distribution System
R&D	Research and Development
RADP	Revised Annual Development Program
RDA	Rural Development Academy
RDRS	Rangpur Dinajpur Rural Service
RM	Research Management
RPATC	Regional Public Administration Training Center
SAARC	South Asian Association for Regional Cooperation
SAU	Sher-e-Bangla Agricultural University
SCA	Seed Certification Agency
SPGR	Sponsored Public Goods Research
SRDI	Soil Resource Development Institute
SSURDA	Society for Sustainable Development for the Rural and Urban Area
STW	Shallow Tube Well
TAC	Technical Advisory Committee
TBS	Trap Barrier System
TTMU	Technology Transfer Monitoring Unit
USAID	United States Agency for International Development
USAID-RPA	Revised Project Aid.
VEA	Vegetable Export Association
VRDS	Voluntary Rural Development Society
YMV	Yellow Mosaic Virus

**KRISHI GOBESHONA FOUNDATION**  
**Annual Report**  
**(January - December 2015)**

**I. INTRODUCTION**

KGF started functioning having fund from NATP and the activities supported by that fund were completed by the end of 2014 along with the ending of NATP phase I. However, BKGET, the sustainable fund source of KGF, released fund for the first time in 2012 and practically, KGF activities with BKGET fund began from 2013. Activities supported by NATP and BKGET continued simultaneously though out the two consecutive years, 2013 and 2014 and the KGF activities supported only by BKGET fund, are being continued now.

Krishi Gobeshona Foundation (KGF) a government sponsored non profit organization established in 2007 under the companies Act. of 1994 started functioning from 2008. The objective of the Foundation is the development of Agriculture through quality research in the field of Agriculture providing sustainable fund for research activities and common platform for concerned public and private organizations enabling them to work together in real needs. The foundation spent it's first two years establishing the necessary infrastructure and procuring necessary man power for running its regular activities. However, during the same period, simultaneously, it made its first announcement stating availability of fund for research activities to be conducted in some specific fields/areas, set by BARC on the basis of priorities and demand, under the name Competitive Grants Program (CGP). The first call was made public at the beginning of 2009 and the second in 2011. Undergoing a rigorous selection process 93 (one special on Canker disease) sub-projects complying the desired criteria and having merits as per the consideration of the relevant reviewers, were selected for awarding grants.

Most of the CGP sub projects awarded in the first call were for 2 years and those in second call (under NATP phase-I), were of 3 years and were completed in 2011 and 2014, respectively.

All together 93 (Including one special project taken up on Canker disease) CGP sub-projects were implemented by KGF during the period (2009-2014) as component of NATP: Phase-I, financed jointly by the World Bank, IFAD and GoB. Out of these 84 sub projects were completed successfully which ended with fruitful outcomes. The rest of the sub projects (9) were either terminated, abandoned or with held due to poor or unsatisfactory performance or for some other undesirable reasons.

While the CGP projects financed by NATP fund were in progress and proceeding forward an end, KGF started receiving fund from Bangladesh Krishi Gobeshona Endowment Trust (BKGET), a sustainable funding source of KGF from the end of 2012. KGF started implementing 4 types of programs, (a) Competitive Grants Program (CGP), (b) Commissioned Research Program (CRP), (c) Capacity Enhancement Program (CEP) and (d) International Collaborative Program (ICP). At present, 36 CGP Projects having the financial support from BKGET are being implemented.

Most of these BKGET-CGP projects are of 3 years and at their different stages of progress. In addition to these BKGET-CGP projects, activities related to CRP, CEP and ICP having financial support of BKGET are in progress.

This is the 6th Annual Progress Report which covers the activities, carried out by KGF from January- December, 2015. In addition to the regular activities like management of on going programs, monitoring, reviewing and evaluation, KGF also made arrangement for the meetings of the Board, General body and other interested consultative groups. Besides, KGF had to respond to different quarries preparing reports for Parliamentary standing committee, MoA, IMED, PCU/ERD/Planning Commission, BARC. World Bank. KGF also facilitated Auditing by different organizations.

## II. PROGRESS SUMMARY OF KGF ACTIVITIES

Aside from the implementation and supervision of the research activities, KGF has to get involved many other activities and arrange different types of workshops, review workshops, meeting, consultative discussion, training programs, policy meetings AGM, EGM, Board meetings, etc. to facilitate and enrich KGF - activities, some of these are given below:

- Meeting with Cornell University, USA and KGF team was held in KGF office on 6 January 2015 on TEEAL KGF/Cornell partnership program.
- A luncheon meeting was held on 6 January 2015 to discuss about KGF and ACIAR R&D collaboration program. Discussed Some points on technical priorities, capacity building, etc.
- For rationalization of CGP (2nd call) projects a series of discussion meetings were held during January-April 2015 with PIs/research teams. As per decision of the Board, out of 22 CGP projects (2nd call proposals), successful rationalization of technical and financial content of 19 project documents were completed. So far, MoU of 12 CGP projects were signed and 1st installment fund had been released.
- KGF arranged an annual progress report (APR) review workshop on CGP project code no. TF-13-F being implemented under 1st call CGP project, PI Dr. A. K. M. Nowshad Alam, Professor, Department of Fisheries Technology, BAU presented progress report in the workshop.
- Several meetings were held with the different study groups on agricultural production strategies during the last three months.
- KGF organized the 8th annual general meeting on 20 February 2015.
- KGF organized consultation meetings on formulating CRP research proposal on Coastal Agriculture in March 2015 at BARC. About 35 participants attended the meeting from BARC, BARI, BRRI, BJRI, BSRI, SRDI and CDB with KGF Experts.
- The 3 member study team headed by Dr. Syed Samsuzzaman, former member of KGF Board and Executive Director, North Bengal Institute of Development Studies (NBIDS), had several meetings for preparation of a proposal on char land agriculture. A workshop was held in Rangpur in March 2015.
- National Climate Change Network Group meeting on Modeling Climate Change project was held on 7 March 2015 in BARC Training Building. KGF also arranged a review meeting under CRP project on Modeling Climate Change for rationalization of budget with BARI, BRRI, BSMRAU and the KGF team. The meeting was held on 19.04.2015 in KGF office.
- A meeting with BSRI team was held on 22 March 2015 on sugarcane R&D program in CHT for finalization of the CRP project.
- KGF arranged a workshop on sustaining production of sugarcane & gur industries in Bangladesh. The 2- member study team presented their draft report and recommendations in the workshop held on 24 March 2015 at BARC. Forty-five participants with KGF experts/officers attended the workshop. Incorporating the acceptable suggestions and upon discussion with BSFIC and BSRI, the report was being finalized.
- Coordination and progress review meeting of CRP hill agriculture was held on 9 April 2015 in at RARS, Hathazari, Chittagong. All the CRP hill project component leaders, PLs/CIs and relevant scientists were present.

- Experts of KGF and ED attended several meetings with MoA (ADP & RADP allocation, audit meetings etc.), BARC, BKGET, Hortex and SARC. KGF team prepared annual report 2014 of KGF.
- Project Completion Report (PCR) for NATP Phase-1 project, KGF unit was prepared and submitted to PCU.
- Financial progress of KGF BKGET funding was more than 76% from June 2014 to 20 April 2015 against the 2nd installment budget of Tk. 1000 lakh (for the year of 2014-15) (KGF BKGET funded line item-wise SoE up to April 2015). The program cost sub-item research grants program needed incremental budget which would be revised/adjusted by the ED keeping the total budget unchanged.
- KGF BKGET funded proposed budget of Tk. 4000 lakh with tentative workplan & implementation schedule (approved by General Body of KGF) for 2015-2016 was submitted to BKGET Chairman on 02 May 2015.
- KGF arranged a workshop on improving farming system of drought-prone north-west region of Bangladesh. The workshop was held on 12 May 2015. About 57 participants attended the meeting from BARC, BARI, BRRI, BJRI, BSRI, SRDI and CDB along with KGF Experts. Dr. Zainul Abedin, an international FRS expert and former IRRI representative in Bangladesh was the lead presenter of the CRP project proposal on the occasion. Based on recommendations of the workshop a CRP project proposal is being formulated in consultation with relevant implementing partners.
- KGF and CDB jointly organized a workshop on “বাংলাদেশের স্বল্প উৎপাদনশীল কৃষি অঞ্চলে তুলা চাষের সমস্যা ও সম্ভাবনা” for two days from 13 to 14 May 2015. Secretary, MoA Mr. Shyamal Kanti Ghosh was present in the workshop as the chief guest. The inaugural session was held on 13 May 2015 at BARC Conference Room-1. About 70 participants attended the meeting from MoA, BARC, DAE, BARI, BRRI, BJRI, BSRI, SRDI, the cotton industry and Ginners representatives, and CDB with KGF Experts. CDB had been working for developing and designing proposals for validation and up-scaling appropriate technologies for the unfavorable ecosystem.
- A coordination meeting was held on 14 May 2015 for reviewing the progress & work plan of two CGP projects on TF-11-C and FT-12-L under 1<sup>st</sup> call BKGET funded projects.
- Prof. Dr. Md. Jafarullah, Dept. of Agronomy, Sher-e-Bangla Agriculture University (SAU), coordinator of TF-16-C: Collection, Evaluation and introduction of White Maize for Human Consumption in Bangladesh, organized an inception workshop on 20.05.2015 under 2<sup>nd</sup> call BKGET funded CGP project. Vice Chancellor, SAU was present as the Chief Guest along with representatives of BARI/BAU/CDB, DAE and KGF Experts. Based on comments and suggestions the project inception report (PIR) had been finalized.
- A coordination meeting was held on 17.05.2015 at KGF office with study team of Charland and KGF Team. The team headed by Dr. Syed Samsuzzaman, Executive Director, North Bengal Institute of Development Studies (NBIDS) presented the progress on the preparation for a workshop on char land agriculture.
- A coordination meeting was held on 22.05.2015 in the KGF office with all team leaders of CRP-2: Modeling Climate Change (MCC) program along with international expert of MCC Dr. Naveen Kalra and Prof. Dr. Abdul Hamid, Director (P&E), KGF.
- KGF arranged an orientation workshop on Modeling climate change Impact on agriculture and developing mitigation and adaptation strategies for sustaining agricultural production in

Bangladesh under CRP-2 project. The workshop was held on 29-30 May 2015 at BRAC CDM, Savar. About 26 participants from BARI, BRRI, BJRI, BSRI, SRDI, BSMRAU, CDB attended the workshop. Dr. Naveen Kalra, international expert of MCC was present as a resource person of the workshop.

- KGF also organized a 4-day training workshop on GIS-RS and modeling climate change program in BRAC CDM, Savar during 20-23 June 2015.
- A meeting was held on 25 May 2015 with IFDC Team for a possible partnership program on assessment of climate change impact in agriculture related to Greenhouse Gas (GHG) Emissions Mitigation Research Project. Following that a proposal was submitted for possible partnership program with BRRI and IFDC under KGF support.
- A meeting was also held on 25.05.2015 with Chairman, Bangladesh Sugar & Food Industries Corporation (BSFIC) and ED, KGF and Study team of Sugarcane in the BSFIC office for finalization of the study team report.
- KGF team attended a presentation workshop in CVASU at Chittagong on 4 June 2015 with VC, CVASU in the Chair. The objective was to initiate a study in the CHT on livestock and fisheries issues.
- The KGF team also attended the 4<sup>th</sup> coordination meeting during 5-7 June 2015 of CRP-1: Hill Agriculture program with Coordinator, all component leaders/PIs. About 40 participants attended the meeting at HARS Campus, Khagrachari. The KGF team also attended a training workshop of Supply Chain (Component-IV) under CRP-1: Hill Agriculture program during 7-8 June 2015.
- An orientation workshop was held in Rangpur with the study team preparing for a Charland Agriculture project in March 2015. As a follow up, KGF arranged a workshop on Charland Agriculture in Rangpur on 14 June 2015. Dr. Syed Samsuzzaman, Executive Director, NBIDS and team leader of 3-member study team presented the final proposal on char land agriculture. About 35 participants were present in the workshop.
- Experts of KGF and ED attended several meetings with MoA, BARC, SAU, BKGET, BRAC, BCAS, CDB, IFDC, etc.
- ED, KGF participated and presented KGF activities/progress and budget in the BoT meeting held on 10 June 2015 in the KGF Board room with Secretary, MoA and Chairman, BoT in the Chair. The Secretary, MoA and other members of the BoT showed interest to visit KGF project sites in CHT.
- A progress review workshop and field visit program was held on 26 and 27 June 2015 in Rangamati. Secretary, MoA was the chief guest in the workshop while Executive Chairman, BARC chaired the workshop session. There were field visit programs in Rangamati (Sukursari and Ghagra) and RARS Hathazari Chittagong on 27 June 2015.
- The tenure of two KGF experts viz. Prof. Dr. Abdul Hamid, Director (P&E) and Dr. Rahim Uddin Ahmed, Program Director (T&TT) completed in June 2015 attaining the age of 65 years.
- Financial progress of KGF BKGET funding is more than 75.25% from July 2014 to 30 June 2015 against the 2<sup>nd</sup> installment budget of Tk. 1000 lakh (for the year of 2014-15). KGF BKGET funded line item wise SoE up to June 2015 was placed in the meeting.
- KGF BKGET funded proposed budget of Tk. 4000 lakh with tentative workplan & implementation schedule (approved by General Body of KGF) for 2015-2016 was submitted to Chairman, BKGET on 02 March 2015. But BKGET Board of Trustees (BoT) on 10 June

2015 approved Tk. 3000 lakh in two installments for KGF for FY 2015-16. KGF received fund (1<sup>st</sup> installment) from BKGET on 08 July 2015 of Tk. 1500 lakh.

- Several meetings were held in July 2015 with IFDC/BRRI team for a possible partnership program on assessment of climate change impact in agriculture related to Greenhouse Gas (GHG) Emissions Mitigation Research Project. Following that a proposal was approved by KGF Board for partnership program with BRRI and IFDC under KGF support. KGF signed an MoU for Tk.88.00 lakh with BRRI in September 2015 and released 1<sup>st</sup> installment fund.
- Upon concurrence of the Chairman, KGF two Board meetings (43<sup>rd</sup> and 44<sup>th</sup>), and one Extraordinary General Meeting (EGM) were held for approval of KGF Organogram (with 47 positions) and salary structure. Based on KGF Board meetings (43<sup>rd</sup> and 44<sup>th</sup>) decisions of agenda item-4, an EGM was held on 5 October 2015 with the special resolution on agenda item-4, and KGF organogram and salary structure were unanimously approved and reconfirmed by all the members of the KGF General Body.
- KGF arranged the 2<sup>nd</sup> annual review and planning workshop on 10 CGP projects under 1<sup>st</sup> call BKGET fund. Workshop was held during 29-30 July at BARC Training Building. All CGP project PIs presented the progress activities of CGP projects and subject matter reviewers assessed the progress.
- For reviewing the progress and work plan of two CGP projects (TF-11-C and TF-12-L), which stated later under 1<sup>st</sup> call BKGET funding, KGF arranged a review workshop on expert evaluation of 2<sup>nd</sup> annual progress report held on 12 November 2015.
- KGF team attended the Field Days Nilphamary and Gaibandha on Aus rice of KGF funded pilot project on Validation and scaling up of T-Aman-Potato/Mustrad-Mugbean-T.Aus cropping system in northern districts. It was organized by BSMRAU/RDRS during 1-3 August 2015.
- KGF team also visited Bandarban for attending the field orientation workshop on BSRI project under CRP-1: Hill Agriculture project during 5-8 August 2015.
- KGF arranged a meeting with ACIAR team (Dr. Mainuddin with his team) on 10 August 2015 at 11:00 am in KGF Office. Next meeting with ACIAR team will be held on 14 December 2015 for implementation of the KGF Board approved southern Bangladesh project with BARI/BRRI/ ACIAR partnership.
- KGF arranged a pre-inception project implementation workshop on modeling climate change impact in agriculture under CRP-2 project. The workshop was held on 12-13 September 2015 at BRAC CDM, Savar. About 26 participants from BARC, BARI, BRRI, BJRI, SRDI, BSMRAU, CDB attended the workshop. Dr. Abul Kalam Azad, Chairman of KGF Board, and Executive Chairman, BARC was present as the chief guest in the workshop.
- As per decision of the 44<sup>th</sup> Board meeting, one special policy meeting of the reorganized Technical Advisory Committee (TAC) was held on 21 September 2015. It was a consultative policy meeting of TAC with Dr. Mahabub Hussain as the chair and Dr. Z. Karim as the co-chair. About 40 participants from BARC, DAE, BARI, BRRI, BJRI, SRDI, BSMRAU, CDB, BRAC, private sector, and KGF Board and General Body members attended the meeting and took part in the policy discussion. Chairman of the KGF Board Dr. Abul Kalam Azad was present as the chief guest.
- KGF team attended the workshop held on 9 November 2015, on ARMIS: a tool for informed decision making in agricultural R&D organized by BARC. Executive Chairman, BARC was present as the chief guest and Member Director (P&E), BARC chaired the workshop.

- KGF team attended progress review workshop and field visit programs during 28 October to 1<sup>st</sup> November 2015 at Khagrachori. Mr. Shyamal Kanti Ghosh, Secretary, MoA was the chief guest in the workshop under pilot project on upscaling and campaigning rice-cotton intercropping in Khagrachori district. The Secretary and the KGF team along with BARI/CDB scientists made extensive monitoring visits in the hill agriculture project locations. They also visited the HARC of BARI watershed facilities in Khagrachori.
- Experts of KGF and ED attended several workshops and meetings on ADP in MoA, BARC, SAU, BKGET trustee Board meeting/AGM, BRAC, BSRI, CDB, IRRI, ACIAR, IFDC etc.
- Under KGF BKGET funded proposed budget (Tk. 4000 lakh), BKGET Board of Trustees (BoT) approved Tk. 3000 lakh in two installments for KGF for FY 2015-16. KGF received Tk. 1500 lakh (1<sup>st</sup> installment) from BKGET in July, 2015.
- Financial progress of KGF BKGET funding was more than 78.38% from July to November 2015 against the 1<sup>st</sup> installment budget of Tk. 1500 lakh (for the FY 2015-16). KGF BKGET funded line item wise SoE up to November 2015 was submitted.
- The 10th meeting of Technical Advisory Committee (TAC) was held on 11 November 2015. Based on recommendation of the 10th meeting of TAC, KGF Board, among other things, gave decisions that basic research on important priority issues/areas should be initiated immediately. For that matter, based on institutional capacity, proposal in the form of concept note would be invited from institutions on priority research issues with expected output and results which has immediate application in the field level for the benefit of the end users. Initially, KGF requested DG-BARI and DG-BRRI for submission of proposals on basic research. It was informed that both the ARIs initiated the process for submitting concept notes.
- For reviewing the progress and work plan of two CGP projects (TF-11-C and TF-12-L), which started later under 1<sup>st</sup> call BKGET funding, KGF arranged a review workshop on expert evaluation of 2<sup>nd</sup> annual progress report held on 12 November 2015.
- ED, KGF attended the Executive Council meeting of BARC held on 23 November 2015 at BARC conference room.
- KGF team attended the AGM and BoT meeting of BKGET held on 17 November 2015. Following the AGM, a power point presentation was made on the progress of KGF programs by the ED, KGF.
- KGF team attended the workshop on the independent review report of CRP hill agriculture project at Rangamati. They also attended the discussion meeting on the progress and issues with coordinator/component leaders/Pis of hill agricultural project during 4-8 December 2015.
- It was observed from the comments of the program leaders that the objectives and activities of the hill agriculture project were over ambitious and would not be possible to complete during the next 2-3 years of the project period. In order to make it doable, it was suggested to rationalize and downsize the program and budget for rest of the period.
- KGF team attended the seminar on 31<sup>st</sup> SAARC Charter Day & International Year of Soils 2015 held on 8 December 2015 at BARC auditorium. Prof. Dr. M S Swaminathan, Emeritus Chairman, MSSRF, India presented the keynote paper in the seminar.
- KGF team jointly organized a training workshop on TEEAL database orientation for KGF & SAC participants on 6 December 2015.

- Based on decision of BARC, KGF formed a 6-member team for preparing a proposal on ‘Capacity building for conducting adaptive trials on seaweed cultivation in Bangladesh’. KGF arranged 3 meetings (held on 26 November, 1<sup>st</sup> & 7<sup>th</sup> December, 2015) of the project preparation team. Based on decision of the meeting (1<sup>st</sup> December 2015) on seaweed, BARC submitted a proposal for pre-proposal training on seaweed cultivation for one day (12 December 2015) and 5-day field visit program (19-23 December 2015) in Cox’s Bazar. KGF has funded the programs.
- KGF received a project proposal from BARC on 20 December 2015 on ‘Capacity Building for Conducting Adaptive Trails on Seaweed Cultivation in Coastal Areas’ for KGF funding, which was placed for the consideration of the Board.
- KGF arranged one coordination meeting/workshop on 20 December 2015 for two projects, one of them was 1<sup>st</sup> half yearly implementation progress reports of the CRP hill agriculture: sugarcane R&D project. Another one was 2<sup>nd</sup> half yearly implementation progress reports of the CGP project on Mango pest management under KGF BKGET 1<sup>st</sup> call.
- KGF jointly arranged a meeting with ACIAR team headed by Dr. Mainuddin on 14 December 2015 for implementation of the KGF Board approved southern Bangladesh project with BARI/BRRI/ACIAR partnership. Upon consent of BARI/BRRI/ACIAR, the partnership project had been under implementation.
- Financial progress of KGF BKGET funding was more than 98.22% up to 31 December, 2015 against the released 1<sup>st</sup> installment fund of Tk. 1500 lakh (for FY 2015-16). KGF BKGET funded line item wise SoE up to December 2015 was placed for information and approval of the Board.
- In the 44<sup>th</sup> meeting (held on 30 August 2015) of the Board, a 6-member Search Committee headed by Dr. Motlebur Rahman was formed for selection of Executive Director and Director of KGF as per provision in the KGF Memorandum and Articles of Association. It was indicated that the committee will start working upon verbal concurrence of MoA to the Chairman, KGF. But the concurrence had not yet been received. The tenure of the existing ED will be completed in mid-January 2016. So it was expected that the Board should provide guidance and decision on this matter. It was informed that the selection process would be initiated as soon as the concurrence is obtained.
- Current status of audit: One observation has been given by the FAPAD for 2013-14 NATP Audit for KGF, which is under process for settlement.
- Part-A: Loss of Government revenue amounting Tk.11,14,483.30 was not deducted as VAT from consultant’s payment.

### III. PROGRESS OF KGF BKGET FUNDED PROJECTS AND ACTIVITIES:

KGF started receiving fund from Bangladesh Krishi Gobeshona Endowment Trust (BKGET), a sustainable funding source of KGF from August, 2012. Since then KGF planned for four types of programs for implementation under different modes. These are follows:

- (i) Competitive Grants Program (CGP)-short to medium term
- (ii) Commissioned Research Program (CRP)-medium to long term
- (iii) Capacity Enhancement Program (CEP)-short to medium term
- (iv) International Collaborative Program (ICP)-short to medium term.

The annual plan of activities for 2014-15 is attached in Annex-1: Progresses made during January to December 2015 under BKGET funding are summarized in the following section.

#### a) Highlights of Progress:

- High value crops like sweet pepper and broccoli have been introduced in Sylhet area. Highest yield (1.117 kg/plant) of sweet pepper was found under fine net and polythene protected system. The broccoli genotype Imperial had the highest individual curd weight (608.3 g) with the maximum curd length of 16.87 cm and curd diameter of 16.61 cm. The genotype Imperial produced the maximum curd yield (110.2 kg/decimal) followed by Green magic (62.11 kg/decimal). The technologies have been reported to be well accepted by the farmers of Sylhet region as evidenced by the production of the vegetables in the field of general farmers.
- To increase cropping intensity the alternative cropping pattern rice- soybean- fallow was found to be well accepted by the farmers in the polder areas of Patuakhali and Barguna districts in place of farmer's traditional pattern rice-fallow-fallow. It was suggested that the cropping pattern may be disseminated quickly to other polder areas of coastal region of Bangladesh to maximize crop production.
- Through the study for increasing year round production of some selected HYV and hybrid vegetable varieties, BARI developed varieties of tomato and bottle gourd showed better performance compared to those available in the market. The yield was recorded as 9.78 and 36.56 t/ha for tomato and bottle gourd, respectively, in Bandarban district. In Patuakhali district, yields of BARI varieties of tomato, brinjal, garden pea, french bean and bottle gourd were 55.50, 30.51, 12.36, 12.45 and 47.50 mt/ha respectively, which were higher compared to those of the company or local varieties.
- In an adaptation trial of newly released HYV oil seeds (mustard, groundnut, soybean and sesame) in Charland of Padma the seed yield of HYV sesame (BARI Till-4, BARI Till-3 and BINA Till-2) ranged between 1093-1407 kg/ha. The pod yield of HYV groundnut was found ranging between 1763-2575 kg/ha. BARI sarisha-11, BINA sarisha-8, BARI soybean-5 and BINA soybean-5 exhibited better performance in respect of yield. Yield of mustard and soybean ranged between 1665-1917 and 1598 and 2380 kg/ha, respectively.
- Tricho-products (Tricho-compost and Tricho-leachate), coming from the fungus *Trichoderma harzianum* were used for soil borne disease management in vegetable crops in Jessore and Bogra areas. In spite of locations, *Phytophthora* causing fruit rot in pointed gourd was reduced by

54.98 to 68.13% and the yield of the crop increased with a range of 30.69 to 49.76%. The products showed efficacy in reducing diseases caused by alternaria, fusarium, anthracnose and bacteria in different vegetables and thereby increased yield and consequently the respective BCRs.

- For improving productivity in the drought prone areas through Resource Conservation Technologies (RTC), low water requiring and heat tolerant crop varieties like wheat, chickpea, maize, lentil, mungbean, sesame and T. Aman were used for the trials. Through RTC practice land utilization use efficiency was increased by 33%, cropping intensity was increased by 100%, production cost was reduced by 45% and irrigation water saving was 35% with the water use efficiency of about 19%. The overall yield increase of crops under RTC practice was also found to be around 15-20% over farmers' practice.
- Community Enterprise Approach (CEA) was adopted for intensification of floodplain fish production in Chalan Beel. Fish production in Sirajgonj was 245.88 kg/ha before intervention and that increased to 545.45 kg/ha after. CEA approach of fish production helped increasing fish production and thereby increasing income of the farmers by two folds. A three fold increase in fish production (from 320.25 to 1149 kg/ha) was observed in Singra and Natore districts.
- A better yield of off-season jute seed was found in Patuakhali than in Barisal however, both the locations were found suitable for off season jute seed production. Jute seed was produced as intercropping system with tomato, red amaranthus, brinjal, radish, etc.
- A faster growth rate (600g in 4.5 month) of monosex tilapia was found when stocked, with 700 individuals/cage in an trial conducted in "Haor" areas of Karimganj

A stocking rate of 700 individuals/cage of monosex tilapia showed the highest growth rate in a trial conducted in the "Haor" area of Karimganj.

Lower was the stocking rate higher was the growth performances observed. This has been claimed to be a new record by the author in Bangladesh. It is particularly significant that the survival rate was quite satisfactory all along the study period, keeping it on or above 90% at the initiation of stocking, and then almost no mortality occurred till the end of experiment.

- To develop an appropriate control measure an investigation on livestock diseases is being conducted in the hilly areas. The highest diseases prevalence was found to be for FMD 6.4%, PPR 12.02% and Indigestion 12.24% in cattle, goats and pigs, respectively. Confirmatory laboratory tests indicated that more than 50% of the diagnosis made by the field veterinarians were incorrect or inaccurate unit of the tentative diagnosis done by field veterinarians more than 50% were not correct/accurate which is thought to be due to lack of proper diagnostic tools in the hilly areas. Improvement of hygienic management through the intervention of the project reduced mortality rate of hill livestock from 24.47% to 13.49% with an overall increase in the treatment rate from 21.47% to 27.38%.
- Spraying of *Beauveria bassiana* (bio-pesticide) within 10 days of flowering and spraying of Bioneem plus (Azadiractin) + Indofil M 45 at pea stage of mango was found most effective for the control of both nymph and adult population of mango leaf hopper.
- In hilly areas 20 watersheds were identified. Different treatments were being implemented surrounding the watersheds. Fruits and vegetables were grown and market chains were initiated in the Chittagong Hill districts.

## **b) Competitive Grants Program (CGP):**

KGF invited short term CGP project proposals based on BARC research priority under BKGET fund in August 2012 in the daily newspapers and KGF website. Proposals (128) received from researchers of NARS institutes and Universities were screened and reviewed by the expert reviewers and overviewed by TAC members. Based on TAC recommendations the KGF Board approved 14 projects that are being implemented in different locations at a total cost of Tk. 1019 lakh for 3 years. In April 2014, KGF made a second public call for submission of research proposal on 13 researchable issues identified by TAC and approved by the Board. In total 225 research proposals were received. Upon review 22 projects were provisionally awarded following the selection process of KGF through TAC and the Board. Primary screening and review was done by TAC. Technical & Financial review was done by Expert Reviewers followed by TAC overview and final selection by TAC for KGF Board approval. For implementation of the 2nd call CGP projects a total estimated cost of Tk. 2932 lakh will be required for three years.

Besides these CGP projects seven Technology up scaling Pilot Projects are being implemented in the field requiring to Tk. 668 lakh.

A number of GO, NGO, Research Institutes and Universities are involved with the above mentioned projects, they are as follows: BARI, BRRI, BJRI, BAU, BSMRAU, Sylhet Agricultural University, DoF and NGOs. Project Coordinator/PIs prepared their project brief and inception reports following a prescribed format.

Lists of the On-going CGP projects (Call I, Call II) are provided in the Annex-

### **i) Progress of BKGET funded 1st Call CGP projects:**

BKGET funded 1st call CGP projects have been started from May 2013. A total of 14 CGP projects were awarded in 1st call with the duration of 3 years except one. At present these projects are at different stages of implementation. One of these projects has been completed by June 2015. Out of 14 projects 1 (one) project has been completed and submitted report in KGF, 9 projects have completed their 2nd year activities, 3 projects have completed their one and half year and another one has completed its 1st year activities. All these projects have made progress in line with the objectives and work plan of the projects. Project briefs of all the projects have been published and Project inception workshops have been organized for all the projects separately to make all relevant stakeholders aware of the project activities and expected outputs. For the completed project 'Projecti Barta' and 'Technical Buletin' has been prepared as per plan.

A brief progress of these projects are given below:

- 1. Project code & Title:** TF 01-C: Validation and Up-scaling of High Value Vegetable Crops production in Sylhet region.

**Implementing Organization:** Sylhet Agricultural University, Sylhet

**PI:** Dr. Md. Shahidul Islam, Associate Professor and Chairman, Dept. of Horticulture,  
Mobile no. 01916662421

**Main objective of the project:** To popularize the selected best varieties and production technology of high value vegetable crops in Sylhet region.

**Location:** Habiganj sadar, Bahubal, Nabiganj under Habiganj district, Biswanath , South Surma, Sylhet sadar under Sylhet district

**Budget:** BDT 37.67 Lakh

**Background:** Sylhet is a special agricultural zone in Bangladesh. Various kinds of vegetable are also grown in Sylhet region but in a limited scale. Demand of the high value vegetable crops like sweet pepper (Capsicum), broccoli, tomato and summer bean is increasing in the country. This demand in Sylhet region is met from other districts of the country. Cultivation of high value vegetable crops can be increased in this region through intervention with high yielding variety(s) and technologies. The project was implemented in Sylhet to popularize the selected varieties & production technologies of high value vegetable crops.

**Progress:** In this study the highest number of sweet pepper per plant was recorded to be 11 from the plants grown under “fine net with polythene” protected system followed by “coarse net with polythene” protected system (n=10) while it was the lowest for the plants grown in for open condition (n=5). In terms of yield per plant, highest was 1.117 kg/plant when the crops grown under “fine net with polythene” protection followed by “coarse net with polythene” protection, which was 0.902 kg/plant. Significant variations were observed among the broccoli genotypes in respect of curd yield and yield attributes. Days to first curd initiation (68.33) and days to first harvest (84.22) were the minimum for the genotype Green magic while both of these were the maximum for Imperial. The genotype Imperial had the highest individual curd weight (608.3 gm) since the curd length (16.87 cm) and curd diameter (16.61 cm) were the maximum for this genotype. The genotype Imperial produced the maximum curd yield (110.2 kg/decimal) followed by Green magic (62.11 kg/decimal).



One field day on production of sweet pepper and broccoli was organized with 30 participants including farmers, SAAO and NGO workers. One farmers training on “Production technology of high value vegetable crops” for 25 participants from different Upazilas of Sylhet and Habiganj districts was organized at the Conference room of Sylhet Agricultural University.

**2. Project code & Title:** TF-02-C: Development/ validation and up-scaling of dry direct seeded boro rice system for improving crop productivity in areas with limited water supply

**Implementing Organization:** Bangladesh Agricultural University (BAU), Mymensingh

**PI:** Dr. Md. Moshir Rahman, Professor, Department of Agronomy  
Mobile: 01711-072561

**Main objective of the project:** To adapt dry direct seeded (DDS) Boro rice and to improve system productivity of T. Aman-Mustard/Potato/Bushbean-DDS Boro rice with less irrigation water.

**Location:** Godagari under Rajshahi district & Rangpur sadar under Rangpur district

**Budget:** BDT 67.78 Lakh

**Background:** Rice (*Oryza sativa*) is the staple food that contributes to about 97% of the food grains consumed in Bangladesh. Among the three rice growing seasons (*Aus, Aman and Boro*), *Boro* season contributes about 56% of the total production in the country. *Boro* rice is normally grown by transplanting rice seedlings in puddled land having continuous standing water to hinder weed growth and encourage crop establishment. The system requires huge amount of irrigation water. In recent years, the irrigation water has become scarce in many parts of the country and the sustainability of Boro rice production has become critical. A number of soil and environmental problems have been emerged due to recession of water table because of regular uplifting of huge irrigation water. Dry direct seeding method could save 50-60% irrigation water and give higher yield and economic return than conventional system. Thus dry direct seeding could be considered as the best option to sustain boro rice production with less water.

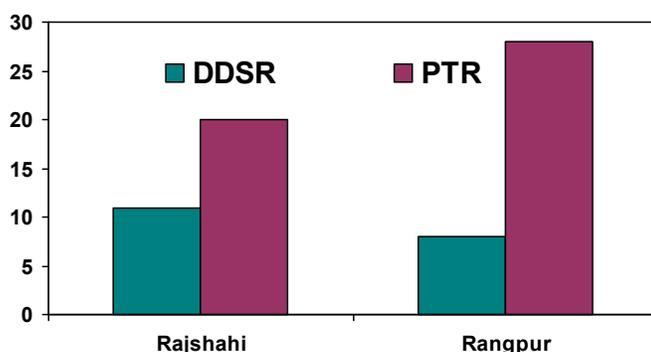
**Progress:** High temperature during flowering of BRRI dhan28 caused spikelet sterility and reduced grain yield during 2013-14 but this problem was not found in 2014-15. The yield of BRRI dhan28 or BRRI dhan58 under DDSR was comparable with that of puddle transplanted rice. Cultivation of BINA dhan7, a short duration T. Aman rice variety allowed timely sowing of mustard. This variety has been introduced in the project area for the first time especially in Godagari, Rajshahi. T. Aman - Mustard - DDSR boro cropping system could give high productivity and economic benefit. Dry direct seeding allowed the cultivation of Boro rice using 45 and 70% less irrigation water in comparison to that required in conventional puddle transplanted flood irrigated rice in Rajshahi and Rangpur sites respectively.

**Table-1: Cost and benefit found from BRRI dhan28 produced in boro season under DDS and PTR system at Rajshahi and Rangpur sites.**

System	DDS			PTR		
	Total cost	Total Income	BCR	Total cost	Total Income	BCR
Rajshahi	72.12	101.57	1.41	79.88	103.87	1.30
Rangpur	72.73	95.01	1.31	83.16	99.44	1.20

Note: There were 6 farmers at each location. Cost and benefit is shown in 'ppp' Taka.

**Fig-1: Irrigation frequency in DDSR and PTR system-2014**



**3. Project code & Title:** TF 03-C: Adaptation of high yielding soybean in polder areas in Barguna and Patuakhali districts

**Implementing Organization:** Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Salna, Gaziapur

**PI:** Dr. Md. A. Mannan, Associate Professor, Department of Agronomy  
Mobile No.: 01816020290

**Main objective of the project:** To select/ identify high yielding soybean varieties suitable for polder areas of Barguna and Patuakhali districts and increase cropping intensity and system productivity.

**Location:** Amtali under Barguna district & Kalapara under Patuakhali district

**Budget:** BDT 31.00 Lakh

**Background:** Out of 2.85 million hectares of the coastal and off-shore areas of Bangladesh about 0.828 million hectares of the arable lands, constitutes about 52.5 percent of the net cultivable area in 64 upazilas of 13 districts. Agricultural land use in these areas is very poor, which is roughly 50% of the country's average (Petersen & Shireen, 2001). About 30-50 % of net cultivable area remains fallow in rabi and Kharif-I seasons due to soil wetness/water stagnancy, tidal surges, late harvest of T.Aman, drought and increased salinity, expansion of shrimp culture etc. Consequently the land use efficiency is considerably low about only 50% of the country's average. Polders built from the early 1960s and onwards to protect residents from tidal flooding and intrusion of salinity, created opportunity for growing salinity tolerant crops.

At this perspective an attempt to increase the productivity of the area was taken through the introduction of suitable variety of soybean along with improved cultural practices in the existing cropping pattern.

On the otherhand, decreasing oil crop area is a great concern of the country. Government has to import oil and oilseed, particularly soybean at the expense of foreign exchange every year. Considering the issues an attempt to explore the possibility of introducing soybean in the areas was taken through this project.

**Progress:** Results of the research indicated that soybean variety "Shohag" was suitable for growing in polder areas of southern coastal Bangladesh. Mid (15) December was the best time for sowing soybean. Tillage played important role for soybean cultivation. Fertilizer dose at the rate of 75-190-135-130 kg/ha of urea, TSP, MoP, gypsum, respectively was found the best for soybean cultivation in polder areas of Bangladesh. Short duration T. Aman rice, BRRI dhan49, could be accommodated in the suggested cropping pattern. Soil health improved (OM and total N increased by 4-5%) in rice based cropping system in polder areas. The Cropping intensity increased by 18% with the incorporation of soybean in the cropping pattern which in turn increased farmers' income and improved their livelihood.

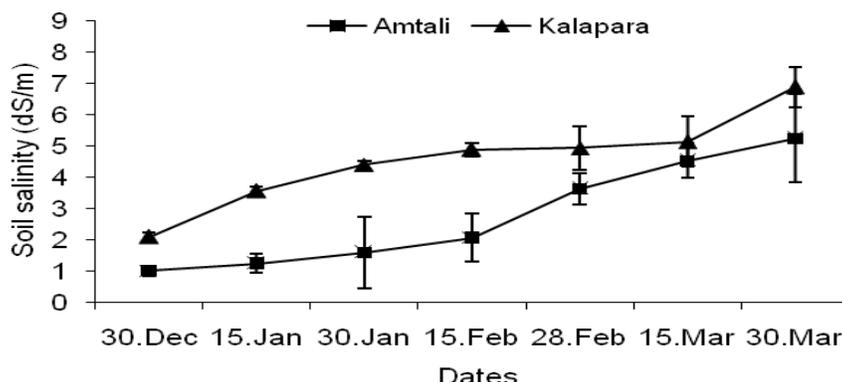
The alternative cropping pattern rice- soybean- fallow instead of farmers cropping pattern rice-fallow- fallow may be disseminated quickly to other polder areas of the coastal region of Bangladesh to maximize the productivity of the area.

**Table-2: Yield performance of soybean varieties at different fertilizer doses in polder areas.**

Varieties	Pod number/plant			Seed number/pod			Grain yield (g) /plant			Yield (t/ha)		
	F1	F2	F3	F1	F2	F3	F1	F2	F3	F1	F2	F3
BINA soybean 1	24.55	25.54	25.23	1.65	1.49	1.79	3.24	3.55	3.83	1.66	1.80	1.91
Shohag	33.11	34.63	36.29	1.34	1.25	1.48	3.79	3.78	4.30	1.92	1.98	2.34
BARI soybean 5	23.35	23.49	24.36	1.58	1.61	1.63	3.26	3.45	3.76	1.91	1.80	1.97
AGS 313	16.62	15.38	16.69	1.77	1.94	1.89	3.32	3.25	3.45	1.71	1.66	1.73
SE	1.44			0.1			0.22			0.14		

F1: 45-145-95-75 F2: 60-175-120-115, F3: 75-190-135-130 kg/ha (Urea-TSP-MoP-Gypsum)

**Fig-2: Soil salinity level observed at 15 days interval from sowing to maturity**



**4. Project code & Title:** TF 04-C: Screening and testing of Improved Aus Rice Varieties/ Genotypes Suitable for Rainfed Aerobic Soil Condition of Bangladesh

**Implementing Organization:** Bangladesh Rice Research Institute (BRRI), Gazipur

**PI:** Dr. A S M Masuduzzaman, Principal Scientific Officer, Plant Breeding Div.  
Mobile no. 01721964002

**Main objective of the project:** To select improved Aus rice varieties/genotypes having high yield, shorter growth duration for growing under aerobic soil condition.

**Location:** Manda under Naogaon district, Mohonpur under Rajshahi district, Habiganj sadar, Chunarughat under Habiganj district, Fenchuganj under Sylhet district, Rajnagar under Moulvibazar district

**Budget:** BDT 69.98 Lakh

**Background:** The project has been designed to develop improved Aus rice varieties having higher yield and shorter growth duration suitable for aerobic direct seeded conditions. Rapid generation

advancing of aerobic rice lines will be done under water stress condition for developing varieties within minimum time. Identified known markers for high yield under direct seeding condition will be used in Marker assisted selection. This project will also standardize direct seeded rice cultivation techniques to save labour for seedling transplanting as well to save irrigation cost of T. Aus rice. Moreover, Participatory Varietal Selection (PVS) trials in farmer's field will be implemented by BRRI and collaborating organizations - which will allow the selection of right varieties and the capacity building of farmers in direct seeded rice cultivation. Improved Aus rice seeds and associated aerobic rice production technologies will be available. Thus, the project will help to increase rice yield and farmer's income with reduced cost of cultivation in Rainfed Aus areas of Bangladesh.

**Progress:** Evaluation of 103 IRRI genotypes has been completed. Among the tested 103 test entries, two materials, IR87529-0-1-2-1 and IR91051-122-1-2-3 having the potential of higher yield (4.27-4.62 t/ha) and short growth duration were selected. Rice Genotypes having deep rooting ability have been identified through Molecular analysis using marker assisted selection process. The root and shoot growth studies identified IR90228-1-3-3-3-2 and IR91006-88-1-3-1 to be the best aerobic rice genotypes with higher root length (55-58) and higher root/ root-shoot (0.44-0.46) ratio. Application of irrigation after 3 days of disappearance of water proved to be the best options of water management in rice field. About 27.64% of water was saved in comparison to that required in traditional irrigation practices.

**Table-3: Marker and phenotypic data for deep rooting ability in rice.**

Sl	Designation	Root length (cm)	Short rooted band	Long rooted band
1	BR7182-2B-1-Hr4	55	-	present
2	BR7178-2B-19	48	present	
3	BR6855-3B-12	49	present	
4	BR6848-3B-12	42	present	
5	IR84788-40-3-3-1-1	46	present	
6	IR90228-1-3-3-3-2	59	-	present
7	IR91006-88-1-3-1	57	-	present
8	IR92240-40-2-2-1	45	present	-
9	BIdhan5	57	-	present
10	BR1	30	-	present

**5. Project code & Title:** TF 05-C: Year-round Production of Some Selected HYV and Hybrid Vegetable Varieties in Southern and Hilly Regions of Bangladesh

**Implementing Organization:** Bangladesh Agricultural Research Institute (BARI), Gazipur

**PI:** Dr. G M A Halim, Chief Scientific Officer, Horticulture Division, HRC  
Mobile: 01715 179366.

**Main objective of the project:** To adapt HYV and hybrid vegetable varieties with package of production practices in winter and summer season for increasing year round production in Bandarban

and Patuakhali districts and thereby increasing household consumption level of vegetables and cash income of the farmers of the project areas as well.

**Location:** Bauphal, Dashmina, Galachipa under Patuakhali district and Bandarban sadar under Bandarban district

**Budget:** BDT 70.00 Lakh

**Background:** Large proportion of the land resources remains fallow in the southern (Patuakhali district) and hilly (Bandarban district) region of Bangladesh where vegetable production can be increased. In Patuakhali district, cropping intensity and productivity of agricultural land is low compared to that of the other parts of the country. Salinity causes unfavorable environment that restricts the normal crop production throughout the year. The dominant crop grown in the saline areas is local transplanted Aman rice with low yield. The cropping patterns followed in the coastal areas are mainly Fallow-Fallow-Fallow-Transplanted Aman rice (Uddin, et al., 2011). Ali et.al (2008) reported that vegetables, to some extent, are being cultivated following “Lebukhali model” at homestead level but its commercial production have not started yet which should be explored immediately.

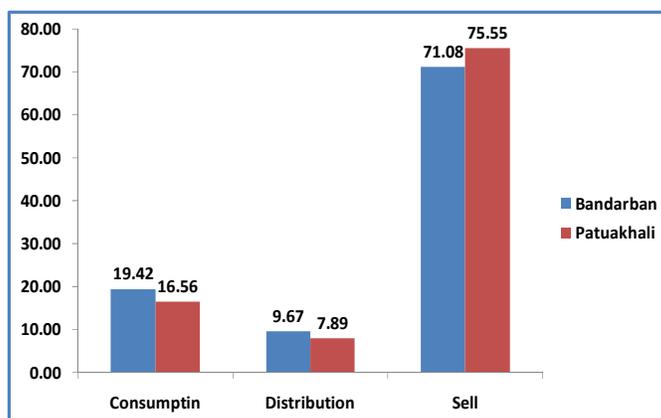
On the other hand, hilly region like Bandarban district suffers from traditional cropping pattern, low cropping intensity along with degrading soil fertility resulting low productivity. About 52% land is used for Jhum cultivation and fruit plantation. Crops like paddy, maize, cotton and tobacco are being cultivated in the hilly region (Banglapedia, 2013). Little efforts have been made to produce vegetables at homestead level under a model called “Khagrachori Model” At this context, the project has been undertaken to explore the possibility of HYV vegetable production.

**Progress:** A total of 120 farmers, each having 200 sqm of land, were selected throughout the year and thereby to increase vegetable consumption level and income of the farmers of four upazilas (one from Bandarban and three Patuakhali) for the study. Four farmers training programs were conducted with 120 farmers. BARI released varieties used in the study were BARI Tomato-4 (F<sub>1</sub>), BARI Chichingga-1, BARI Jhinga-1, BARI Borboti-1 and BARI Lau-4, while the company or local varieties were Mintoo (F<sub>1</sub>) Dhaka Green, Prince, Kegornatoki, and Khetlau (local). Under Model/package-I, BARI varieties of tomato and bottle gourd varieties, performed better in Kharif season of 2015 than those grown from seeds available in the local market. The yields of BARI tomato and bottle gourd were 9.78 and 36.56 t/ha, respectively. The other vegetable varieties like snake gourd, ridge gourd and yard long bean released by BARI showed no significant difference in yield while compared to those of the market available varieties. However, the benefit cost ratio (BCR) found for all the BARI varieties. The average BCR was 2.22. The winter vegetables grown in 2014-15 season, however, showed significant difference in the yield of BARI and company or local vegetables varieties. All BARI varieties produced higher yield compared to those of company or local variety. Yield of BARI varieties of tomato, brinjal, garden pea, french bean and bottle gourd was recorded to be 55.50, 30.51, 12.36, 12.45 and 47.50 mt/ha, respectively. In all the trials conducted in late winter/early summer, 2015 BARI developed all the vegetable varieties performed better than all other commercial varieties in terms of yield. The yield differences were found statistically significant. Yields of BARI varieties of tomato, brinjal, garden pea, french bean and bottle gourd were recorded as 55.50, 30.51, 12.36, 12.45, and 47.50 t/ha, respectively. In all the trials

conducted in late winter/early summer 2015. BARI developed all the vegetable varieties performed better than all other commercial varieties in terms of yield. The yield differences were found statistically significant. Yields of BARI developed red amaranth, kangkong, stem amaranth and Indian spinach were 3.96, 15.62, 20.71 and 15.63 t/ha, respectively.

BARI released vegetable varieties of tomato, snake gourd, ridge gourd, yard long bean were observed to yield higher than those of the local or company in three Upazillas of Patuakhali district as well. In the Kharif season, tomato yielded higher than 28 t/ha in Bauphol and Dasmina, while it was 27.33 in Galachipa. Bottle gourd yields were found 43.52 in both Bauphol and Dasmina when it was 42.08 t/ha in Galachipa. In Rabi, yields of tomato were found 54.29 and 58.79 t/ha in Bauphol and Dasmina, respectively. In Galachipa, yield of bottle gourd was 51.58 t/ha. On the contrary, the local or company varieties could give yield up to 34.43 and 36.44 t/ha, while that in Galachipa were much lower.

**Fig-3: Trend of consumption, distribution and sell of produced vegetables (%).**



**6. Project code & Title:** TF 06-C: Validation and up scaling of HYV brinjal, tomato, bottle gourd, ash gourd and pointed gourd in hilly areas of Moulvibazar

**Implementing Organization:** Bangladesh Agricultural Research Institute (BARI), RARS, Moulvibazar

**PI:** Dr. Md. Zashim Uddin, Chief Scientific Officer  
Mobile: 01554330576

**Main objective of the project:** To increase production of diversified vegetable crops in hillocks/hilly areas of Moulvibazar district.

**Location:** Moulvibazar sadar, Sreemongal & Kamolganj under Moulvibazar district

**Budget:** BDT 34.93 Lakh



**Background:** There is about 129135 ha of land in Moulavibazar of which 45164 ha (35%) in rabi, 60150 ha (47.12%) in kharif-1 and 4392 ha (3-4%) in kharif-II remain fallow. Some vegetables, mainly in rabi season, like radish, potato, yardlong bean and ‘mukhi kachu’ are being cultivated at present in the area. Possibility of growing hybrid vegetables along hillock/hill slopes cannot be ruled out. BARI has developed some HYV and hybrid vegetables such as tomato (BARI Hybrid tomato 3 & 4 for summer, BARI Hybrid tomato-5, BARI Hybrid tomato-6), brinjal (Var. BARI Begun 8 &10), Okra (Var, BARI Dheros-1) and cucurbits such as bottle gourd (Var. BARILau-2 &4), ash gourd (Var.BARI Ashgourd-1) and bitter gourd (Var. BARIKorolla-1) which are suitable for cultivation in different parts of the country and can also be grown in the hillocks/hill slopes of Moulavibazar. In this context, the project was designed to validate and up scale the production of the mentioned vegetables in the proposed areas.

**Progress:** Twenty farmers selected from 3 upazillas, each having 1000m<sup>2</sup> of land, cultivated summer tomato and 40 farmers, having 10000m<sup>2</sup> of land, cultivated ash gourd and pointed gourd. The average BCRs obtained for the cultivation of tomato and brinjal were 1.68 and 2.31, respectively. The highest BCR (2.76) was found for BARI Lau-4. A total of 260 farmers were trained on vegetable production technologies (140 farmers on summer vegetable and 120 on winter vegetable).

**7. Project code & Title:** TF 07-C: Adaptation of newly released HYV oil seeds (Mustard, Groundnut, Soybean and Sesame) in Charland of Padma

**Implementing Organization:** Bangladesh Agricultural Research Institute (BARI), RARS, Ishurdi

**PI:** Dr. Md. Abul Khayer Mian, Senior Scientific Officer (Agronomy)  
Mobile: 01914-661301

**Main objective of the project:** To select/identify HYV oil seed crop varieties suitable for growing in the Charland of Padma and develop best management practices (BMP) for maximizing yield of selected oilseed crop varieties.

**Location:** Ishwardi under Pabna district, Veramara, Daulatpur under Kushtia district

**Budget:** BDT 38.82 Lakh

**Background:** There is a great scope of growing crops in adverse ecosystem like charland. HYV oilseeds can be introduced in the charland of Padma for improving productivity. Crop production in charland mainly depends on precipitation. The crops suffer from soil moisture stress. So suitable crop varieties, tolerant to moisture stress, are needed to be identified. It is also a nutrient deficit area. Although the farmers of charland grow some crops but they do not use improved varieties and production technologies and consequently get low yield of crops. It is now imperative to increase productivity of charlands adopting newly developed HYVs of oil seed crops along with their improved production technologies.



**Progress:** A number of trials on sesame and ground nut varieties were established at four locations of charlands of Padma. BARI Till-4, BARI Till-3 and BINA Till-2; among sesame and BARI Badam-8 and Jhinga Badam, two groundnut varieties were found better in terms of yield and economic returns while compared to those of local varieties at all the four locations. Seed yield of the HYV sesame varieties ranged between 1093-1407 kg/ha and pod yield of the HYV groundnut varieties ranged between 1763-2575 kg/ha. Again, BARI sarisha-11 and BINA sarisha-8 among the mustard varieties and BARI soybean-5 and BINA soybean-5, two soybean varieties showed better yield which ranged from 1665-1917 and 1598-2380 kg/ha, respectively at different locations. The BCR, found for mustard and soybean ranged from 1.87-2.28 and 2.16-3.21, respectively, for different locations. Farmers were found interested to grow all the HYVs except soybean. A total 140 farmers, in four batches, were trained. Two field days on mustard and soybean were organized.

**8. Project code & Title:** TF 08-NR: Evaluation and Up scaling of Resource Conservation Technologies (RCTs) for Improving Productivity in the Drought Prone Areas

**Implementing Organization:** Bangladesh Agricultural Research Institute (BARI), RWRC, Rajshahi

**PI:** Dr. Md. Ilias Hossain, Principal Scientific Officer  
Mobile no. 01712632167

**Main objective of the project:** To increase cropping intensity & system productivity under drought prone areas and to create awareness among the farmers of the project sites on RCTs in crop production.

**Location:** Godagari of Rajshahi district and Nachole under Chapai Nawabganj district

**Budget:** BDT 34.99 Lakh

**Background:** Climatic variations have a profound effect on agriculture and livelihoods of rural communities. The effect of climatic variation is more pronounced in the drought prone areas of Bangladesh. In Bangladesh the north-west part of Rajshahi division is different from other parts of the country due to its undulating topography having compact and low fertile soils. The region experiences high temperature with limited soil moisture storage along with low and erratic rainfall (BMDA, 2011). Crop production in this region is challenging and productivity and cropping intensity are low in comparison to those of the other parts of the country. At this context, an endeavor has been taken to increase productivity and cropping intensity utilizing resource, conservation technologies to overcome the problem of existing water scarcity and thereby to improve farmers' livelihood of the drought prone area.

**Progress:** Yield and yield components of T. Aman rice positively responded to different tillage options. Rice cultivation under raised bed system proved to be more profitable than that under traditional system. BIRRI dhan 56 and BIRRI dhan 57 grown under raised bed system showed higher yield, 4.41 and 4.11 mt/ha respectively, on the contrary, both the varieties produced 3.87 and 3.89 mt/ha respectively, while grown under traditional system. About 8-0.9% yield advantage was

achieved for the technology over the traditional practice in T.Aman trials. A higher BCR was also obtained (2.03) for raised bed system.

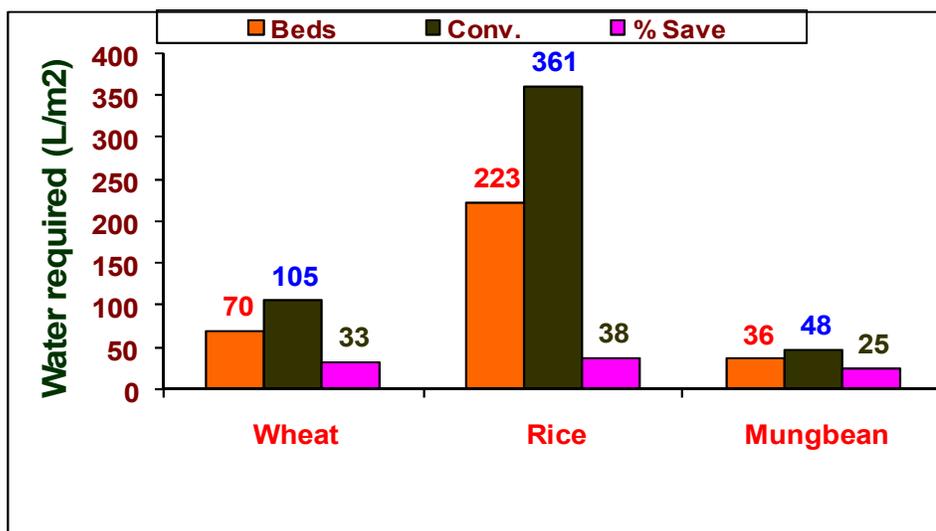
Similar yield advantage was also obtained for wheat while cultivated under raised bed system. All the yield parameters considered for wheat yield were found positive when grown under raised bed system and consequently, about 25.7% higher yield of wheat was found when compared to that of wheat grown under farmers' (traditional) practice, in two trails conducted in 2014 & 2015.

Chickpea, grown with strip tillage produced the highest yield (2.63 mt/ha) when compared to that grown under farmers' practice. About 15.6% yield advantage of chickpea was obtained growing the crop under strip tillage system.

In general, through RCT the land use efficiency was increased and cropping intensity increased by 33 and 100%, respectively. The crop production cost reduced by 45%. Saving of 35% of irrigation water increased water use efficiency by about 19%. The overall yield increase of crops under RTC practice was around 15-20% over farmers practice.

Farmers were found interested having higher yield and hence higher income from raised bed method

**Fig-4: Amount of Irrigation water required and saved in rice-wheat-mungbean cropping pattern.**



**9. Project code & Title:** TF 09-NR: Validation and up-scaling of Tricho-products for soil borne disease management in vegetable Crops

**Implementing Organization:** Bangladesh Agricultural Research Institute (BARI), HRC, Gazipur

**PI:** Dr. Mossammat Shamsunnahar, Principal Scientific Officer  
Cell: 01674876252

**Main objective of the project:** To control/reduce soil borne diseases and to increase yield of vegetable crops by using Tricho-products

**Location:** Jessore Sadar under Jessore district and Sherpur under Bogra district

**Budget:** BDT 40.99 Lakh

**Background:** The use and production of Tricho-compost using *Trichoderma* has been started in Bangladesh recently (Anon. 2009). A definite concentration of spore suspension of a *Trichoderma harzianum* strain acting on a measured amount of processed organic materials develops *Trichoderma*-based compost fertilizer named Tricho-compost (Nahar *et al.* 2010a). The composting process produces drainage enriched with *Trichoderma*, called Tricho-leachate (Anon. 2009) are collected and used. Both the products, Tricho-compost and leachate, suppress soil borne fungal pathogens (*Sclerotium*, *Fusarium* and *Rhizoctonia*), root-knot nematode (*Meloidogyne* spp.) and bacteria (*Ralstonia solanacearum*) (Faruk *et al.*, 1999, Sultana, 2012, Nahar *et al.*, 2010a). Moreover, Tricho-compost, rich in various nutrient elements help increasing soil fertility and provide nutrition to the crops (Nahar *et al.*, 2012). At this context the project was undertaken to reduce pesticide-dependency in vegetable cultivation and improve soil health adding OM to soil.

**Progress:** A total of 27.72 mt of Tricho-compost and 804 litre of Tricho-leachate were produced during the project period and used in vegetable fields. Tricho-compost and leachate helped increasing crop yield and reducing diseases at all the test sites.

A number of adaptive trials were established in two vegetable growing areas, Jessore and Bogra, of Bangladesh for vegetable production using the products during the project period. Tricho products were found effective against a number of vegetable diseases irrespective of crop, season and sites/locations. Infestation levels of various diseases of crops were found to be reduced with the application of the products. Fruit rot vegetable of pointed gourd caused by phytophthora reduced by 54.98 - 08.18% and consequently the yield increased by 30.69- 49.76%. Similarly, Anthracnose of bottle gourd reduced by 44.63% and yield increased by 24.26%. Higher level of suppression of disease was observed incase of country bean.

Here the anthracnose reduced by 51.96 - 53.57% and the yield increased by 18.07 - 25.11%. Similar results were also found for Fusarium, Bacteria and Alternasia leaf spot of cauliflower and brinjal and tomato. Fusarium of cauli flower reduced by 17.59 - 84.88% Bacterial wilt of brinjal reduced by 82.5-87.93% Alternaria leaf spot of cabbage and tomato reduced by 55 and 44.74%, respectively. Management of the disease helped increase the yield of cauli flower, brinjal, cabbage and tomato by 15.43 - 19.30, 20.25 - 30.43, 15.66 and 26.23% respectively. The BCR obtained for different vegetables ranged from 17.11 - 45.12%.

**Table-4: Effect of Tricho-compost and –leachate on disease and yield of pointed gourd at Jessore farmers (n=4) fields during 2015**

Treat	Rotten fruit (t/ha)	% Rotten fruits	% Fruit rotten reduced over control	Total yield (t/ha)	Market-able yield (t/ha)	Marketable yield increased over control (%)
Tricho-compost	0.84 ± 0.09	2.96	37.78	28.52 ±2.19	27.68 ±2.19	20.74
Control	1.36 ± 0.07	5.67		23.93 ±1.72	22.08 ±1.74	
't' test	0.018			0.020	0.002	

**10. Project code & Title:** TF 10-F: Adaptation of Community Enterprise Approach for Intensification of floodplain fish production in Chalan beel

**Implementing Organization:** SHISUK. 16/D, Modhubag Mog bazaar, Dhaka 1217, Bangladesh & Department of Fisheries (DoF),

**PI:** Sakiul Millat Morshed, Executive Director,  
Mobile: 01713037796

**Main objective of the project:** To Enhance capacity of the community members & catalyts of potential communities for intensification of fish production in floodplain through Community enterprise initiatives

**Location:** Tarash of Sirajganj district, Bhangura under Pabna district & Singra under Natore district

**Budget:** BDT 84.39 Lakh

**Background:** Chalan Beel is one of the largest floodplain ecosystems in Bangladesh comprising of parts of Sirajgonj, Pabna and Natore districts. A larger portion of land remains flooded for 5-6 months. The depth of standing water varies from 4-6 feet even more. The *beel* spreads over 18 upazilas of six districts. The livelihood and food security of the people of Chalan Beel area is now vulnerable. Despite the influence of affluent middlemen, the short-term nature of leases favours extractive management practices that are not consistent with sustainable maintenance of biodiversity and fisheries productivity. Many have resorted to indiscriminate harvesting of eggs, spawns, fry, undersized fish and brood-stocks and thereby further depleting the fish stocks of the *beel* area. At this scenario, for the sustainable management of this vast water body and intensification of fish production a community based approach has been undertaken through this project.

**Progress:** The project activity succeeded to bring about 4.5 and 2.25 fold increase in the total fish production of the two project sites, Barmitola beel of Natore and Kasherbul of Sirajganj, respectively, in comparison to those of non experimental sites. Poor dike management at Kasherbeel hindered the total fish production. However, the project approach indicated a bright prospect and potential of fish production in Chalan beel.

**Table-7: Fish Production Data of Raninagar Community Enterprise, Singra, Natore for 2015 (up to 26/11/15)**

Species	Data on Fingerlings			Harvesting Data for 2015 ( up to 26 November 2015)				
	Weight / fingerling (gm)	Total Fingerlings Released in 2015 (No.)	Weight of Fingerlings Released in 2015 (kg)	Total No.	Total weight (kg)	Average weight (kg)	Total value	Average rate/kg
Katal	500	2743	1,372	863	1,179	1.37	174,658	148.16
Silver Carp	50	9911	496	7,074	8,179	1.16	851,538	104.12
Ruhu	300	14648	4,394	2,718	2,185	0.80	344,585	157.69
Bighead	3000	20	60	68	258	3.80	37,596	145.61
Mrigel	300	9573	2,872	822	697	0.85	81,021	116.26
Kalibaush	300	2327	698	56	44	0.79	8,097	183.19
Grass carp	750	151	113	25	98	3.92	18,471	188.48
Black carp	750	142	107					
chital	750	27	20	2	5		2,000	400.00
Ayre	1500	15	23					
Common Miror carp	40	11349	454	1,232	1,351	1.10	155,572	115.17
hungry				1,817	1,856	1.02	209,347	112.82
Telapia (Monosex)	65	5000	325	2,240	794	0.35	85,916	108.21
Small Indigenous Species(SIS)					926		55,066	59.45
<b>Total</b>		<b>55,906</b>	<b>10,933</b>	<b>16,917</b>	<b>17,572</b>		<b>2,023,867</b>	

**11. Project code & Title:** TF 11-C: Validation and up scaling of off-season jute seed production Technologies in different jute growing areas of Bangladesh

**Implementing Organization:** Bangladesh Jute Research Institute (BJRI), Dhaka

**PI:** Md. Abdul Alim, Principal Scientific Officer, Agronomy Division,  
Mobile: 01911395624

**Main objective of the project:** To validate and up-scale the off-season jute seed advanced technologies at farm levels and increase quality seed and fibre production

**Location:** Babuganj under Barisal district & Patuakhali sadar under Patuakhali district

**Budget:** BDT 67.30 Lakh

**Background:** The jute cultivation covers about 6.00-6.50 lakh hectares of land in Bangladesh and that needs about 5000-5500 mt jute seeds every year but only 700-800 mt of HYV jute seed is produced in our country and that leaves a huge gap. Existing demands is met from growers' own production and imported seeds expending valuable foreign currencies. There exists many problems and constraints in raw jute sector, such as: (i) Production per acre is low; (ii) Lack of knowledge about modern method and technique in cultivation of jute; (iii) Shortage of scarcity of HYV jute seeds; (iv) Intrusion of low quality jute seeds from other countries at a cheap price; (v) Lack of knowledge about modern jute retting technology; (vi) Lack of knowledge about grading of jute and

other incidental information at farmers' level. To overcome these problems and also for increasing the quality jute fibre and seeds, BJRI has developed many modern varieties as well as several technologies related to production. In this context, the project has been promulgated for up-scaling the developed technologies for more and better quality seed and fibre production at farm level.

**Progress:** Jute seed production with winter vegetables is always remunerative especially when tomato is intercropped which recorded the BCR of 2.73 when cultivated in the order of two lines jute then two lines tomato and red amaranthus in between the two crop lines and brinjal at the borders. Intercropping of turnip instead of tomato was the 2<sup>nd</sup> choice of farmers in jute seed production. Good quality jute seeds were produced with winter vegetables in the off-season as the seeds showed a germination percentage  $\geq 88.5$ , 1000 seed weight of  $\geq 2.00$  g and vigour of  $\geq 70.15$ . Patuakhali Sadar Upazilla was found better than that of Babuganj for production of jute seeds in late season (up to end of September) and the variety, O-795 was found promising for producing seeds whether cultivated as single or in combination with winter vegetables.

Thirty eight farmers from each location participated with this experiment. The soil salinity of the experimental plots was non saline to slightly saline. The treatments of the study were T<sub>1</sub>: Jute in 40 cm apart line; T<sub>2</sub>: Jute in 40 cm apart line and red amaranthus in between two jute lines and tomato in border; T<sub>3</sub>: Jute in 40 cm apart line two line jute then one line tomato and red amaranthus in between two crop lines and radish in border; T<sub>4</sub>: Jute in 40 cm apart line and then two line jute then two line brinjal and red amaranthus in between two crop lines and tomato in border. T<sub>5</sub>: Jute in 40 cm apart line and two line jute then two line turnip and red amaranthus in between two crop lines and brinjal in border. T<sub>6</sub>: Jute in 40 cm apart line and two line jute then two line tomato and red amaranthus in between two crop lines and radish in border. The maximum jute seed production was achieved in T<sub>1</sub> treatment (jute in 40 cm apart line) in both the location but it was not economic as its BCR was estimated to be only 0.51 and 0.55 at Patuakhali Sadar and Babuganj respectively. The maximum BCR of 2.47 and 2.73 were achieved in T<sub>4</sub> treatment at Patuakhali Sadar and Babuganj respectively where the combinations of crops were two lines of jute then two lines of tomato and red amaranthus in between two crop lines and the brinjal was established at the border.

**Table 6: Off-season jute seed quality as influenced by different production methods**

Location	Production method	Seed moisture (%)	1000 seed weight (g)	Germination (%)	Vigour
Sadar Upazilla (Patuakhali)	Broad casting	9.13	2.15	90.5 h	76.33 ab
	Line sowing	9.25	2.19	97.5 ab	72.33 cd
	Top Cutting	9.20	2.23	99.0 a	80.33 a
	Seedling transplanting	9.15	2.09	97.5 b	76.33 ab
Babuganj (Barisal)	Broad casting	9.20	2.13	90.5 h	73.50 bc
	Line sowing	9.19	2.00	96.5 bc	70.33 cd
	Top Cutting	9.17	2.20	98.5 ab	79.83 ab
	Seedling transplanting	9.18	2.16	95.3 cd	72.50 cd
Means within column followed by common /without letters are not significantly different at 5% level of DMRT					

**Table-7: Yield and income in jute seed production in inter cropping with winter vegetables**

Location	Treat.	Area (deci)	Red Amaranthus (kg/ha)	Radish (kg/ha)	Tomato (kg/ha)	Turnip (kg/ha)	Brinjal (kg/ha)	Jute seed (kg/ha)	Gross Return (Tk/ha)	Cost (Tk/ha)	BCR
Patuakhali Sadar Upazilla	T <sub>1</sub>	70	-	-	-	-	-	213.00 a	37210.00 gh	67095.00 d	0.55 fg
	T <sub>2</sub>	70	2890.00	-	3455.00	-	-	164.00 bc	103516.00 ef	74600.00 cd	1.39 de
	T <sub>3</sub>	70	2795.00	3538.00	5390.00	-	-	127.00 cd	151424.00 d	81380.00 bcd	1.93 c
	T <sub>4</sub>	70	2700.00	-	9180.00	-	3250.00	109.00 d	249950.00 bc	101250.00 bc	2.47 ab
	T <sub>5</sub>	70	2820.00	-	-	7500.00	3350.00	112.00 cd	197240.00 cd	101250.00 bc	1.95 bc
	T <sub>6</sub>	70	2798.00	-	35560.00	-	6790.00	107.00 de	217280.00 bc	101250.00 bc	2.15 bc
	Total:	420	Total jute seeds production was 200 kg								
Babuganj Upazilla	T <sub>1</sub>	52						196.00 ab	34320.00 h	67145.00 d	0.51 g
	T <sub>2</sub>	52	2895.00	-	4707.00	-	-	159.00 bc	126585.00 e	75340.00 cd	1.68 cd
	T <sub>3</sub>	52	2845.00	3460.00	7018.00	-	-	105.00 d	179250.00 cd	97150.00 bc	1.94 c
	T <sub>4</sub>	52	2911.00	-	13018.00	-	5390.00	89.00 e	347310.00 a	127240.00 a	2.73 a
	T <sub>5</sub>	52	2880.00	-	-	11600.00	5420.00	101.00 de	253200.00 bc	127240.00 a	1.99 bc
	T <sub>6</sub>	52	2780.00	-	5200.00	-	8290.00	99.00 de	288700.00 b	127240.00 a	2.27 bc
	Total:	312	Total jute seeds production was 138.00 kg								
Means within column followed by common/without letters are not significantly different at 5% level of DMRT											

**12. Project code & Title:** TF 12-L: Investigation on livestock diseases and development of appropriate control measures in hilly areas

**Implementing Organization:** Bangladesh Agricultural University (BAU), Department of Veterinary Science, Mymensingh

**PI:** Dr. Shonkor Kumar Das, Associate Professor, Cell phone: 01716-855186

**Main objective of the project:** Investigation on livestock disease, listing of the prime diseases with their etiology and development of appropriate methods for control of the diseases.

**Location:** Bandarban sadar, Lama & Rowanchari of Bandarban district

**Budget:** BDT 69.76 Lakh

**Background:** Livestock population in Bangladesh in 2007-2008 was cattle 23 million, Buffalo 1.3 million, Goat 21.6 million, Pig 0.2 million (Livestock Album, Bandarban-2010), but these

populations are not evenly distributed. Chittagong, Rangamati, Khagrachori, Bandarban and Sylhet districts are the hilly areas of Bangladesh. Owing to the tribal habitants and hilly communications, the livestock population is neglected although they have a high number of livestock here (Samad et al., 1996). The cattle, goat, pig and buffalo population of the Bandarban sadar, Lama and Rowangchhari are 15770, 11378 & 9377; 8182, 6617 & 5505; 124, 322 & 131 and 65, 128 & 95, respectively (BBS, 2008 & DLS, Bandarban); among which cattle population is always high in each area. In addition, these tribal people are chiefly dependent on these livestock. However, a large number of small-scale farmers are facing several disease related problems and their production is being hindered. In fact, they need problem related solutions that is only possible by providing them training, building up capacity, awareness and an appropriate disease control methods.

**Progress:** The highest diseases prevalence in the hilly areas (average) was for FMD 6.4% in cattle, PPR 12.02% in goat and Indigestion 12.24% in pig. Confirmatory laboratory tests indicated that more than 50%



tentative diagnosis made by field veterinarians were not correct/accurate which was thought to be due to lack of proper diagnostic tools and other facilities in the hilly areas. Improvement of hygienic management helped reducing the mortality rate of hill livestock from 24.47 to 13.49% with an overall increase in the treatment rate from 21.47 to 27.38%.

### **13. Project code & Title:** TF 13-F: Production enhancement of aquaculture through innovative technologies in cage culture system in haor areas of Karimganj, Kishoreganj

**Implementing Organization:** Bangladesh Agricultural University (BAU), Department of Fisheries, Mymensingh

**PI:** Professor Dr. A.K.M. Nowsad Alam, Dept. of Fisheries Technology, Mobile: 01711446315

**Main objective of the project:** Empowering and developing skill of *Ujandhanu Nadi Jolmohal* fishery stakeholders on innovative floodplain aquaculture based on cage culture system and promoting business entrepreneurs of cage culture, improved fish handling and marketing and up-scaling of technologies.

**Location:** Karimganj (Hoar area) under Kishoreganj district

**Budget:** BDT 106.36 Lakh

**Background:** Increasing pressure of population over the natural resources, over exploitation, killing of gravid females, destroying stock by dewatering of the pits at dry season site ration and water pollution by industries and agriculture are causing decline in the natural fish stock in Bangladesh critically, while demand of fish is increasing rapidly. Fish culture in rivers is often

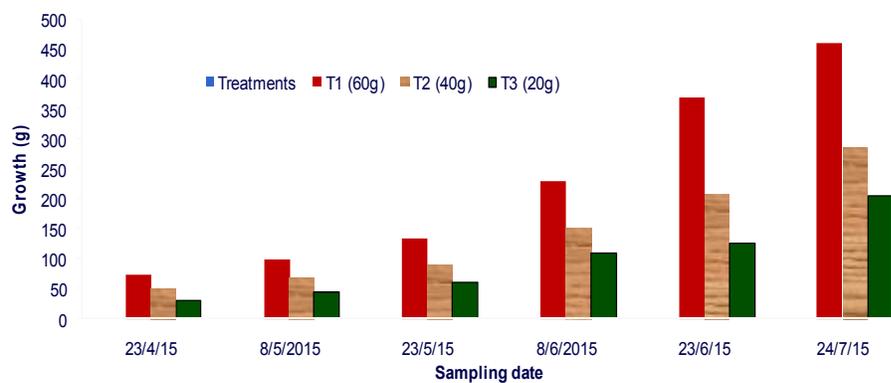
difficult because of multipurpose sharing of waters or other reasons but the floodplains, characterized with inundation for 5-6 months by seasonal water and deep narrow pit or canal in dry season can be comfortably managed for boosting up fish production. Wise use of the potential vast floodplain waters by culturing fish could assist fulfilling the demand of national protein intake as in other Asian countries. Cage culture could be the most suitable aquaculture technique to optimally utilize the productivity of floodplains in monsoon and rainy season (Beverage, 1987). Cage culture has been successfully practiced by many South Asian countries like China, Vietnam, Thailand, and Kampuchea for boosting their aquaculture production (ATA, 2010). Present average fish production in the floodplains in Bangladesh is extremely low, only 150 kg /ha (Begum, 2011), which can easily be increased to 2 to 3 mt/ha by community based operation of cages with fast growing popular species (DoF, 2010).

The present study envisages that the innovative aquaculture approach for fish production round the year based on monosex tilapia cage culture in seasonal floodplains, followed by nursing, rearing and over-wintering of spawn, fries and fingerlings in *hapas*, pens and cages to supply seed can increase the production, improve the livelihood of the poor fishers and can be used as a model system to replicate in extended floodplain areas for boosting up aquaculture production of the country.

**Progress:** An innovative fry nursing and over-wintering technique has been developed, where fish fries were nursed in *hapas* set inside the cages in haors, due to the scarcity of ponds in those areas. This new technique will open a new avenue of improved aquaculture to raise fish in low-lying flood plains. Common carp, although an omnivorous scavenger and bottom feeder having ventral mouth, has been adapted to floating feed and found to grow well in cages.

A study on growth of tilapia in cages under different stocking densities was carried out. The fishes were stocked in mid-July with an average size of 7 cm and weight of 30 g. After 4.5 months of a growth period, fish showed highest growth of 610.45 ±2.0 g in cages stocked with a 700 individual/cage<sup>-1</sup>. Lower the number of stocking, higher was the growth performances observed. The survival rate was quite satisfactory all along the study period, keeping it on or above 90% of the initiation of stocking, and then almost no mortality occurred till the end of experiment.

**Fig -5. Growth performance of over-wintered monosex tilapia in cages (monoculture)**



Another experiment was carried out on the growth performance of tilapia in cages under different fingerling sizes. Tilapia fingerlings with average sizes of 20, 25, 30 and 40 g were stocked under 4 treatments. The initial length of the fingerlings was 6.5, 6.8, 7.0 and 7.5 cm respectively. After 4.5 month of growing period the fingerlings attained a size of 26.4, 27.5, 28.8 and 26.3 cm and 420, 550, 620 and 435g, respectively. The highest growth was recorded in bigger individuals, where 30 g sizes were stocked. Survival rate was above 90% during initial stocking, but stabilized thereafter, as shown almost 100% survivability in all the treatments. The FCR values were significantly less (1.2) in cages where 40 g size individuals were stocked. The growth of tilapia in cages in haor waters within 4.5 months was found to be very very significant and encouraging. The fish attained an average weight gain of 600 g against an FCR of 1.1. It was the first published record of highest growth performance so far in Bangladesh in tilapia cage culture venture.

**14. Project code & Title:** TF 14-C: Sustainable management of flower and fruit dropping of mango.

**Implementing Organization:** Bangladesh Agricultural Research Institute (BARI), Entomology Division, Gazipur

**PI:** Dr. Syed Nurul Alam, CSO & Head, Entomology Division, Mobile: 01711907886

**Main objective of the project-** To develop integrated crop management (ICM) technologies against flower and fruit dropping caused by different biotic and abiotic stresses of mango.

**Location:** Chapai Nawabganj sadar, Shibgonj & Bholahat under C.N.Ganj, Sadar, Chorghat & Bagha under Rajshahi district, Natore sadar under Natore district, Naogaon sadar under Naogaon, Mithapukur under Rangpur, Dinajpur sadar under Dinajpur, Thakurgaon sadar under Thakurgaon, Chaugasa under Jessore, Bheramara under Kushtia, Mujibnagar under Meherpur, Tala under Satkhira, Chuadanga sadar under Chuadanga, Mymensingh sadar under Mymensingh and Gazipur sadar under Gazipur district.

**Budget:** BDT 264.82 Lakh

**Background:** Mango is one of the most popular fruit in Bangladesh due to its delicate, sweet flavour and nutritive value. However, despite adequate flowering and initial fruit set severe fruit drop contributes low fruit yield of mango and causes great economic losses in the country. Fruit drop in mango may happen during mustard, pea, marble and pre-harvest stages. Different biotic and abiotic factors are responsible for fruit dropping. Among the biotic factors, infestation of insect pests and disease are the most important ones, while deficiencies of different major and minor nutrients and water during the flower and fruit setting stages are the major abiotic causes. Different insect pests & diseases are the major contributor and 25-60% fruit dropping may happen due to their severe infestation. On the other hand absence of balanced fertilizers and deficiencies of several micronutrients can also be the major causes of flower and fruit dropping. Fruit dropping as well as the size and quality of fruits are influenced by irrigation from the time of fruit-set till the monsoons.

**Progress:** Eighteen training programs were arranged on the different aspects of mango production and protection for flower and fruit drop reduction. Four TOT at Chapai Nawabganj, Kushtia, Thakurgaon and Rajshahi and 14 Farmers training programs, one at each targeted district, were

arranged, where 140 trainers (SAAO of DAE, SA, SSA of BARI etc.) and 490 leading mango growers participated.

**Table-8: Details of several developed new ICM packages Bio-rational pest management studies at two locations.**

Treatments	Mean number of fruits/20 tagged inflorescences/tree at			Percent fruit retention over untreated control at		
	Pea stage	Marble stage	Mature stage	Pea stage	Marble stage	Mature stage
Application of <i>B. bassiana</i> 1 <sup>st</sup> and 2 <sup>nd</sup> spray	119.33	48.33	14.67	280.9	145.7	158.7
1 <sup>st</sup> spray Bioneem plus + Indofil M 45 2 <sup>nd</sup> spray)	124.67	53.67	16.33	297.9	172.9	188.0
1 <sup>st</sup> spray <i>B. bassiana</i> and Bioneem plus + Indofil M 45 2 <sup>nd</sup> spray	132.33	56.33	18.33	322.4	186.4	223.3
<i>B. bassiana</i> + Bioneem plus 1st and 2nd spray	129.67	54.33	17.67	313.9	176.2	211.6
Untreated control	31.33	19.67	5.67	-	-	-

Microbial pesticide, *Beauveria basiana* within 10 days of flowering and spraying of Bioneem plus (Azadiractin) + Indofil M 45 at pea stage of Fruit.

Following results were found from different experiments conducted during the reporting period:

1. Spraying of microbial pesticide, *Beauveria bassiana* within 10 days of flowering and spraying of Bioneem plus (Azadiractin) + Indofil M 45 at pea stage of fruit growth was found to be most effective for the control of both nymph and adult population of mango leaf hopper.
2. The tested insecticides (except Actara 25 WG) were very much effective in reducing adult and nymph of mango hoppers. In respect of increased percentage of fruit retention, insecticides found effective, showing higher to lower efficacy, are arranged as follows: Confidor 70 WG > Ripcord 10 EC > Karate 2.5 EC > Actara 25 WG. All those are recently registered new insecticides.
3. Urea applied at 4% exhibited the highest fruit retention per inflorescence (1.87) closely followed by 2, 4-D 12 ppm + urea at 4% (1.67). The highest but identical yields were noted in the treatments with urea at 4% (69.26 kg/plant) and 2, 4-D 12 ppm + urea at 4% (64.95 kg/plant) at harvest.
4. Six irrigations at an interval of 10 days from the pea stage of mango exhibited higher fruit retention per panicle, number of fruits as well as yield per plant over control.
5. Six isolates of fungi were collected from diseased plant parts (fruits and inflorescence of Baromashi Aam).

#### ii) Progress of BKGET funded 2nd Call CGP projects:

BKGET funded 2nd call CGP projects have been started from March 2015. A total of 16 CGP projects were awarded in 2nd call with the duration of 3 years. At present these projects are at initial stages of implementation. Another 6 projects are being processed to be awarded. Only 9 projects have completed their 1st 6 months and submitted their 1st half yearly progress reports. Project brief of these projects have been developed, printed and distributed among the stakeholders.

A brief progress of these projects

- 1. Project code & Title:** TF 15-SF: Improvement of Soil Fertility and Crop Yield through adoption of conservation agriculture in Mustard -Boro-T.Aman cropping pattern.

**Implementing Organization:** Bangladesh Agricultural University (BAU), Mymensingh

**PI:** Dr. Md. Jahiruddin, Professor, Dept of Soil Science, BAU.

Cell:01718813889, Email: [m\\_jahiruddin@yahoo.com](mailto:m_jahiruddin@yahoo.com)

**Main Objectives:** To improve/maintain soil fertility status under intensive cropping system through nutrient management and conservation agriculture practice and to increase yield and system productivity of T.Aman-wheat-mungbean and T.Aman-mustard-Boro cropping patterns.

**Location:** i) BAU Farm, Mymensingh, ii) Muktagacha Upazilla, Mymensingh (3 sites for 3 blocks), iii) Dhanbari Upazilla, Tangail (3 sites for 3 blocks)

**Budget:** BDT 49.72 Lakh

**Background:** Rice-rice is the dominant cropping pattern in many parts of Bangladesh. Scope exists to fit mustard crop in-between two rice. The farmers use 3-4 passing (tilling) by power tiller for rice and many other crop cultivation. There is a new approach in the name of Conservation Agriculture (CA) which involves minimum tillage accompanied with crop residue retention and suitable crop rotation. It has both economic and environment benefits. Considering the above stated perspectives, the present project was undertaken with an objective to improve soil fertility and crop yield in the T. Aman-Mustard-Boro pattern through adoption of conservation agriculture and good nutrient management. The work is in progress at BAU farm and at farmers' fields of Muktagacha upazila under Mymensingh district and farmers' fields of Dhanbari upazila under Tangail district.



**Progress:** Field trials of T. Aman rice on CA and NM practices established at BAU farm and farmers fields of Muktagacha and Dhanbari upazilas were completed. Initial soil samples were collected and analyzed. Fertilizer rates for T.Aman rice were calculated on the basis of soil test reports. Farmers training and field days were conducted at Dhanbari and Muktagacha Upazilas.

- 2. Project code & Title:** TF 16-WM- Collection, Evaluation and Introduction of White Maize for Human Consumption in Bangladesh.

**Implementing Organization:** Sher-e-Bangla Agricultural University, Dhaka

**PI:** Prof. Dr. Md. Jafarullah, Dept of Agronomy, SAU, Dhaka, Cell:01552331605, Email: [jafarullahsau@gmail.com](mailto:jafarullahsau@gmail.com)

**Main Objectives:** To collect, evaluate and select white maize variety/varieties for production in Bangladesh and to develop agronomic practices for growing white maize in the hills and plain land;

**Location:** Dhaka, Barisal, Rangpur, Dinajpur, Nilphamari, Bandarban, Rangamati and Khagrachari districts

**Budget:** BDT 198.1 Lakh

**Background:** Maize currently grown in Bangladesh is yellow which is hard and not so tasty; and although contains carotenoid is mostly used for livestock feeds. Maize varieties grown for human consumption is known as white maize. White maize is popular for its softness of flour, taste and more versatile use compared to that of the yellow ones. Given the current food production trend, Bangladesh will not have enough production to feed the population by 2050. The country will require to increase food production at least by 50%. Growing more food with decreasing land remains a challenge. Additional food must come from raising 'yield ceiling' or changing food habit or both. At this context, the project was undertaken to explore the possibility of other food crop source.



**Progress:** More than twenty varieties of white maize were collected from home and abroad. An observational trial with white maize (two Chinese and one of BARI Suvra) and some local edible varieties was established at SAU campus. Data of SAU campus have been collected. Trials with five Chinese hybrids, two BRAC and two Indian white maize varieties were established in 14 farmer's plots in the hill tracts in the kharif 2015 season. However, flood damaged the crops at Bandarban and Mohalchori. The trial was reestablished in 6 farmers' fields of Bandarban in November.

**3. Project code & Title:** TF 17- ARI Refining and Validation of BAU-Bro chickens.

**Implementing Organization:** Bangladesh Agricultural University, Mymensingh

**PI:** Professor Dr. Md. Ashraf Ali, Cell: 01675145096, Email: [md.mashraf@gmail.com](mailto:md.mashraf@gmail.com)

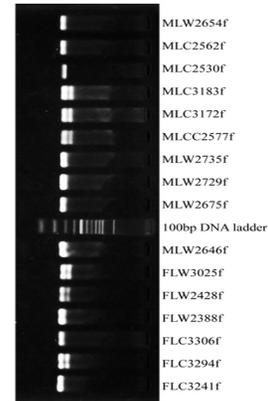
**Main Objectives:** Molecular characterization of sire and dam lines of BAU-Bro strains with microsatellite markers and refinement of growth and reproductive traits of BAU-Bro sire and dam lines through marker assisted selection.

**Location:** BAU Poultry Farm and Poultry Biotechnology and Genomics Laboratory, Bangladesh Agricultural University, Mymensingh

**Budget:** BDT 161.0761 Lakh

**Background:** Two broiler strains, BAU-Bro white and BAU-Bro color, developed from broiler sire and dam lines collected from locally available genetic resources were released previously. Findings of the previous study indicated that the two broiler strains had colossal potential and required upscaling for commercial production and popularization among farmers. Thus, a marker assisted selection study is proposed for upscaling and refinement, whereas a field study is proposed to disseminate and popularize the developed strains among farmers.

**Progress:** In the current study, a total of 1744 chicks were hatched from pure lines and parents. The chicks were brooded with electric brooder separately on the basis of genotypes up to 5 weeks of age on littered floor. They were then transferred to individual cages at 16 weeks of age. The breeding females were screened for salmonella through blood test. Birds showing negative were used for the production of next generation chicks. The pure lines were reared in individual cages up to 35 weeks to record their sexual maturity, egg production and egg number. The following parameters were recorded during the study, body weight, feed consumption, meat yield, breast width and length etc. Blood samples from individual birds at generation 5 (G5) were collected. Genomic DNA was isolated by phenol: chloroform: isoamyl method. The quality of the isolated DNA was assessed by spectrophotometer and 1% agarose gel. Screening of microsatellite markers using polymerase chain reaction was going on. By this time 20 polymorphic markers were identified. In total 400 blood samples were taken from generation 5 (G5), DNA was isolated from all the collected samples. Total 25 polymorphic markers in the sire and dam lines have been screened. A representative microsatellite profile generated by primer MCW0183 from four lines of chicken. For dissemination of BAU-Bro chicks 25 farmers were selected from Mymensingh district. Base line data on chicken production and management by the farmers were collected. Three days training of farmers on BAU-Bro chicken rearing was scheduled to be held in December.



A representative microsatellite profile generated by primer MCW0183 from

**4. Project code & Title:** TF 18-EM- Exploring epidemiology, anthelmintic resistance and genetic diversity of some common gastrointestinal nematodes of small ruminants in Bangladesh

**Implementing Organization:** Bangladesh Agricultural University, Mymensingh

**PI:** Prof. Dr. Mohammad Zahangir Alam, Dept. of Parasitology, Faculty of Vet. Science,  
Cell: 01746611162, Email: [mzislam74@yahoo.com](mailto:mzislam74@yahoo.com)

**Main Objectives:** Investigation of common GI nematodes of small ruminants in targeting detailed epidemiological information of the parasites, anthelmintic resistance of GI nematodes of small ruminants and Molecular characterization of blood feeding GI nematode *Haemonchus contortus* to find out genetic variability, parasite transmission patterns and drug resistance genes

**Location:** Department of Parasitology, Faculty of Veterinary Science, Bangladesh Agricultural University, Mymensingh.

**Budget:** BDT 66.8 Lakh

**Background:** Gastrointestinal (GI) parasitic nematodes of small ruminants have major economic impacts in Bangladesh. Despite the impact of diseases caused by these GI nematodes, there has been limited study on epidemiology and the information available is scarce. Therefore, the present study was aimed to investigate the level of the GI nematode infection and the associated risk factors that make sheep and goats susceptible to the infection.



**Progress:** A cross sectional epidemiological study is being conducted for the duration of one year to determine the overall prevalence of GI nematodes in small ruminants. Seven regions from different topographic zones of Bangladesh have been selected to conduct this study. Results/outputs of incomplete data sets are available at this moment. In the mean time, fecal samples were collected from 975 animals and processed for parasitological examination (qualitative and quantitative technique) to identify nematode eggs. It seemed that the host factors (species, age, sex, breed, physiological condition, body condition of animal), environmental factors (origin of animals), farm related factors (farming system, flock size, housing and anthelmintic used) and farmer factors (socio-economic status, knowledge about GI nematode and education level) had effects on the prevalence and intensity of GI nematode parasites.

**5. Project code & Title:** TF 19-EM: Community engagement in biosecurity (CEB) for the prevention of infectious diseases of poultry based on epidemiological risk analysis'

**Implementing Organization:** Bangladesh Agricultural University (BAU), Mymensingh

**PI:** Dr. Rafiqul Islam, Professor, Department of Pathology, Faculty of Veterinary Science  
Cell: 01759674267, Email: [mrislam\\_bau@yahoo.com](mailto:mrislam_bau@yahoo.com)

**Main Objectives:** Identification of risk factors for poultry diseases and gaps in biosecurity practices, Designation community engagement in biosecurity (CEB) approach based on epidemiological risk analysis and Fine tuning and finalization of CEB model through field trial.

**Location:** Department of Parasitology, Faculty of Veterinary Science, Bangladesh Agricultural University, Mymensingh.

**Budget:** BDT 99.23 Lakh

**Background:** Poultry is an important means of livelihood and a substantial contributor to food supply in Bangladesh. Development of commercial poultry farming has generated considerable employment. Outbreaks of different infectious diseases have been a major constraint to the growth of poultry industry. Biosecurity is considered as the most important tool for the prevention of infectious poultry diseases. Biosecurity campaign is often one-way, top-down communication. A shift from communication programs to participatory programs with the engagement of community

could make biosecurity more effective, long lasting and self-sustaining. The present project is aimed at the development of a model for community engagement in biosecurity (CEB) based on epidemiological risk analysis. The study will involve an epidemiological survey on the risk factors, a KAP study on biosecurity, PRA workshops and expert consultations for mapping disease transmission risk pathways and development of CEB approach and finally its field trial and impact assessment.

**Progress:** Total 20 villages from 4 unions of Bhaluka upazila and 20 villages from 3 unions of Sakhipur upazila have been selected as project sites. A part-time Office Secretary cum Accountant and a full-time Laboratory Assistant have been recruited. A Research Associate also has been recruited. He is an Upazila Livestock Officer of DLS.



## 6. Project code & Title: TF 20-EM: Studies of pigeon diseases in northern Bangladesh

**Implementing Organization:** University of Rajshahi, Rajshahi

**PI:** Dr. Md. Jalal Uddin Sarder, Professor, Department of Animal Husbandry & Veterinary Science, Cell: 01556308564, Email: [jalalnusa@yahoo.com](mailto:jalalnusa@yahoo.com)

**Main Objectives:** To determine the prevalence of pigeon diseases in relation to breed, age, sex, size, season, housing, feeding, breeding, farm type and to develop appropriate control strategies for pigeon diseases.

**Location:** Some Upazila of Rajshahi Division, Rajshahi, Natore and Pabna

**Budget:** BDT 20 Lakh

**Background:** The aim of the project was to evaluate the prevalence of pigeon diseases, causes of the diseases, clinico-histopathological changes and to recognize the effective drugs (medicine and vaccine) against the diseases in northern Bangladesh. The findings of the study will be disseminated and handover to the respective authority to recommend the suitable control strategies of pigeon diseases for sustainable pigeon farming in Bangladesh.

**Progress:** The study was conducted on the both backyard and commercial pigeon farms at 3 districts of Rajshahi division in collaboration with Dept. of Animal Husbandry & Veterinary Science, Institute of Biological Sciences, University of Rajshahi and Department of Livestock Services (DLS) Bangladesh. At least 1200 pigeons were selected from 3 districts (10 farms from each district and each farm having >20 pair pigeon). Selected pigeon were classified into different group on the basis of breed, age, sex, size, housing, feeding, breeding, biosecurity, health



care, farm type and so on. The information were collected from the pigeon farmer using the structured questionnaire and specimen was collected from the diseased pigeon and carried out laboratory tests to identify the respective causal agents and their effective drugs. The prevalence of pigeon diseases was confirmed by the retrospective and cross sectional study. The study also find out the clinco-histopathological changes of pigeon diseases. Organism will be isolated using the culture media, biochemical test. PCR, RT-PCR will be done to confirm the respective agents. Comparisons of drugs (medicine) and immune status of the bird before and after vaccination will be determined using ELISA. Training for the selected pigeon farmers were in progress arranging to make them aware of modern secured pigeon rearing technologies.

A total 39 pigeon farms having a total of 1936 pigeons, have been selected from Rajshahi (n=17), Natore (n=10) and Pabna (n= 12) districts. The Incidence of pigeon diseases was 22.67% and Pigeon mortality rate was 17.45% out of 1936 pigeon. The Pigeon diseases- Ranikhet, Pox, Fowl cholera, Mycoplasma, Canker, Tape worm, lice, mites infestation have been identified.

**7. Project code & Title:** TF 21-EM: Use of Probiotic to Improve Nutritional Value of Rice Straw and Its Impact of Dairy Cow Production

**Implementing Organization:** Bangabandhu Sheikh Mujibur Rahman Agricultural University, Gazipur

**PI:** Dr. Abu Sadeque Md. Selim, Associate Professor, Dept of Animal Sc. & Nutrition, Cell:01718370722, Email: [anima\\_l2002@yahoo.com](mailto:anima_l2002@yahoo.com)

**Main Objectives:** To improve the nutritional values of rice straw using probiotics, determine the in vivo digestibility of probiotic treated rice straw in crossbred dairy cows, and to evaluate the effect of treated rice straw on milk yield, milk composition and health status of cross bred dairy cows.

**Location:** Department of Animal Science and Nutrition, Faculty of Veterinary Medicine and Animal Science (FVMAS), Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Salna, Gazipur

**Budget:** BDT 80 lakh

**Background:** The demand for animal protein and milk increases in conjunction with the increase of human population. Livestock is the major source of protein of animal origin. Therefore, livestock production should be improved by providing the animals with adequate feed. Rice straw alone contributes 87% of the roughage feed of animals in Bangladesh. However, the value of such rice straw is limited by low voluntary intake, slow rate of digestion and low content of available energy, protein, minerals and vitamins. The use of probiotics (viable beneficial microbes) to increase the biological values of several kinds of feed stuffs including forages has been reviewed by several researchers. Some



studies have found advantages in treating rice straw with simple biofermentation processes using probiotics. Probiotics have been reported to increase the crude protein level of rice straw and improve fiber digestion in the rumen, reduce the number of pathogenic microbes in the digestive tract and help in balancing the microbial consortium by optimizing the fermentation process.

**Progress:** Total viable count was done for all samples. Growth of microbes was done using selective media MRS for lactobacillus and PDA for Saccharomyces spp. Gram staining for all seven probiotics were done. Biochemical tests Grams test, Catalase test, MR-VP test have been done. In the current study, seven commercial probiotic products were referred as Pro-1, Pro-2, Pro-3, Pro-4, Pro-5, Pro-6 and Pro-7 collected from the local market. Then total viable bacteria using Plate Count Agar (PCA) incubating 24 h at 37 °C was determined. Ten fold serial dilution was performed for the total viable count. The plates of serial dilution were used as a source plates for isolation of single colony. The colony was isolated using streaking method. Streaking was done using a sterile tool such as inoculation loop. However, presence of Lactobacillus spp. and Saccharomyces spp. were investigated after growing on a specific growth media MRS (Man Rogosa and Sharpe agar) and PDA (Potato Dextrose Agar) at 37°C overnight, respectively. Then previously isolated colony was gone through for morphological identification and biochemical test for further identification of probiotic composition.

**8. Project code & Title:** ‘TF 22 – PS: Productivity Enhancement of Goor and Chewing type Sugarcane through management of Major Diseases in Non-mill Zones’

**Implementing Organization:** Bangladesh Sugar crops Research Institute (BSRI), Ishurdi, Pabna

**PI:** Dr. Md. Shamsur Rahman, Principal Scientific Officer & Head, Pathology Division,  
Cell: 01716165669, Email: msrahmanbsri@gmail.com

**Main Objectives:** Development of management practices against major diseases of sugarcane and increase the productivity of sugarcane especially in the goor and chewing cane zones

**Location:** BSRI on station Ishurdi, Pabna, Shibgonj, Chapai Nobabgonj (Goor Zone), Sadar-Sjirajgonj (Goor Zone), Vowal Mirjapur, Gazipur (Chewing Zone), Sadar Khagrachari (Chewing & Goor Zone), Sadar- Bandarban (Chewing Zone).

**Budget:** BDT 123.44 Lakh

**Progress:** The inception workshop was organized at SAU. Improvement of SAU apiary was in progress- Poly bee hive; Wooden Hive with Super; Wooden hive single; Frame; Healthy colony; Healthy queen; Artificial bee food; Hive tool; Cover all; Smoker; Bee brush; Swarm catcher; Honey extractor; Gray box; Nuc box; Honey container; Gunny bag; Polythene; Nail; Tool box; Veil; Uncapping fork; Feeder pot; Foundation wax sheet; Frame wire; Queen catcher clip; Queen marker; Bee box bed; Handgloves; Petriplates; Vials; Parafilm; Chemical; Weight gauge; Data book, and Tent were procured and collected. Bee stock collection was done and dearth period management was in progress. SAU apiary was transferred to Sirajganj.

**9. Project code & Title:** TF 27 – SF ‘Adaptation of Improved Soil Fertility Management Practices for Variable Soil Conditions under Intensively Cropping Systems’

**Implementing Organization:** Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Salna, Gazipur

**PI:** Dr. G K Mustafizur Rahman, Professor, Dept of Soil Sc, BSMRAU, Gazipur  
Cell: 01718186642, Email: [mustafiz@bsmrau.edu.bd](mailto:mustafiz@bsmrau.edu.bd)

**Main objective of the project-** Evaluate and focus on soil and crop management options which are appropriate and available to farmers in the selected study areas and adaptation of suitable and location specific technologies for conserving soil and improving its fertility.

**Location:** Calcareous soils ( Charchat & Baga, Rajshahi; Bheramara & Kumarkhali, Kushtia), Strongly acidic soils and low organic matter charland (Madhupur, Tangail; Kapashia, Gazipur; Ulipur & Chilmari, Kurigram; Nageswari & Bhurungamari, Lalmonirhat), arsenic polluted soils (Faridpur Sadar & Sadarpur, Faridpur; Matlab & Shahrasti, Chandpur), industrial polluted areas (Monirampur & Bhagarpara, Jessore; Chandian & Daudkandi, Comilla)

**Budget:** 114.88 Lakh Taka

**Background:** Soil is degraded day by day due to different natural and anthropogenic activities.

Greater dependency on inorganic fertilizers without replenishment of organic matter in intensive crop cultivation using high yielding crop varieties has lead to deterioration of soil health and fertility and impaired the productivity of soils in Bangladesh (Jahiruddin, 2006; Islam *et al.*, 2008; Rahman, 2012; Rahman, 2013). Use of As contaminated irrigation water increasing arsenic contamination in soils, which also creating soil toxicity results soil degradation (Rahman *et al.*, 2005; Panauallah *et al.*, 2003). Soil acidity is another important issue that degrades the soil fertility



(especially P) and hinders crop production. Application of PM can increase soil pH and nutrient availability in soil. The addition of Si and biochar/peat can significantly decrease As uptake by rice plants through binding toxic cations and also increases soil fertility by accumulating carbon as well enhancing microbial activities. Sporadic adaptive researches have been conducted by different organizations in the aforesaid areas. However, insufficient and inconsistent research findings open the avenues for a holistic and systematic adaptive research to upgrade farmers' knowledge for proper understanding of soil and crop management practices that will help to sustain soil health and crop productivity.

**Progress:** Five farmers training cum inception workshop were conducted with about 250 participants including relevant stakeholders like DAE personnel, school teachers, local leaders etc. at five selected sites on soil management practices to improve and sustain soil fertility. A total of 200 farmers from 20 blocks of 5 upazilas, having about one bigha of land each, were selected. One Research Fellow, one Field Assistants and one Laboratory Technician were recruited for the implementing institute (BSMRAU). Three Field Assistant were also recruited for the collaborative

institute (SSURDA). A total 10 field days were conducted at 5 selected sites prior to harvest of T.Aman rice. Forty (40) farmers (50% participatory farmer and 50% new farmers) were present in each field day training from adjacent two blocks thus a total of 400 farmers participated in these field days.

**c. Commissioned Research Program (CRP)**

CRP is generally designed and developed through consultative process. KGF organized a series of consultative meetings with Heads of different research organizations and other relevant stakeholders and identified a few vulnerable areas of national importance like-CHT, Coastal ecosystem, Drought Prone environment for undertaking R&D activities and Climate change impact on agriculture. KGF prepared concept notes on these areas and placed before KGF Board for consideration. KGF Board approved the Concept Notes (CN) and suggested to include “Haor” areas to be addressed.

KGF then organized consultative meetings with the Heads of different research institutes and other stakeholders who prioritized the research topics and research agenda. These were placed again before the KGF Board as concept notes. The following two projects were finally approved by the KGF Board.

- (a) Harnessing the potential of hill agriculture: enhancing crop production through sustainable management of natural resources
- (b) Modeling climate change impact on agriculture and developing mitigation and adaptation strategies for sustaining agricultural production in Bangladesh

KGF Board approved Tk. 4000 lac for implementing the five components of CRP: Hill Agriculture for a period of 5 years. In addition Tk. 1026.86 lakh was also approved by KGF Board for implementing Strengthening Sugarcane R&D in CHT for the period of 4 years.

KGF board approved Tk. 200 lakh for pre proposal activities of Modeling climate change on agriculture and developing mitigation and adaptation strategies for sustaining agricultural production in Bangladesh and Tk. 1997.07 lakh for the climate change main project.

**(a) CRP-1: Hill Agriculture: Harnessing the Potential of Hill Agriculture: Enhancing Crop Production Through Sustainable Management of Natural Resources**

With the recommendation of TAC, KGF Board approved CRP-1 Hill Agriculture Project consisting of components and 14 implementing units of multi-organization & multi-disciplines in nature. The project started its activities from October 2013 for a period of years at a cost of about Tk. 4000 lakh. The following organizations are involved for implementing CRP Hill Agriculture: (a) BARI, (b) BSMRAU, (c) SAU & CDB.



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During this reporting period the project has completed its 1st year's activities and the component leaders of each of 4 implementing components submitted their 1st year progress reports. The Coordination unit compiled the progress reports and submitted to KGF. On June 26, 2015 KGF organized a *'Review Workshop on CRP Hill Agriculture Project'* at the conference room, Parjatan Motel of Rangamati where secretary of MoA was the chief guest and Executive Chairman of BARC was the Chairperson. Md. Hemayet Hussain, Joint Secretary, MoA and Additional Director, DAE, Rangamati were the special guests of the workshop. Secretary, MoA along with Executive Chairman of BARC visited the field activities at different areas of Rangamati district. Secretary talked to the farmers at workshop venue and in the field and expressed his satisfaction saying that for the mitigation of food security this project would play a vital role in hill tracts. Secretary expressed that he would do everything for the improvement of such project and advised implementer to do more for the poor people in the hills.

A brief progress of these five components is given below:

### **1. Component-I: Watershed Management for Sustainable Agricultural Production**

**Implementing Organization:** HARS, Khagrachari, Bangladesh Agricultural Research Institute (BARI).

**Component Leader:** Dr. Monoranjan Dhar, Chief Scientific Officer, HARS, Khagrachari, BARI.  
Mobile: 01756847957

**Main objective of the project-** Infrastructure development and management of watersheds for augmenting surface water for developing irrigation facility and domestic uses

**Location:** Selected watersheds in Bandarban Sadar, Rwangchari and Thanchi upazila of Bandarban district, Khagrachari Sadar, Dighinala, Mahalchari, Ramgarh and Manikchari upazila of Khagrachari district and Rangamati Sadar, Longodu and Kawkhali upazila of Rangamati district

**Budget:** BDT 707.00 Lakh

**Progress:** In total 20 watersheds were primarily selected. Three trainings were provided to the scientists for understating, developing, delineating and characterizing watersheds. Major features of the 4 watersheds were identified and present land use maps produced. Detailed characterization of watershed has been planned which will be followed by field survey. Three rain water harvesting reservoirs have been constructed.



### **2. Component-II: Sustainable Land Management**

**Implementing Organization:** Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Salna, Gazipur

**Component Leader:** Prof. Dr. A J M Sirajul Karim, Soil Science Dpt., BSMRAU.  
Mobile: 01552601070

**Main objective of the project-** Development and delivery of land management technologies for sustainable crop production in the hills and to restore/maintain and enhance soil fertility for sustainable agriculture in the uplands.

**Location:** Bandarban Sadar, Rwangchari and Thanchi upazila of Bandarban district, Khagrachari Sadar, Dighinala, Mahalchari, Ramgarh and Manikchari upazila of Khagrachari district and Rangamati Sadar, Longodu and Kawkhali upazila of Rangamati district

**Budget:** BDT 801.00 Lakh

**Progress:** In total 98 soil samples were collected. Analysis of chemical properties (pH, P, K, S, Zn, Ca, Mg, B,) of 42 samples were completed. Analysis of physical and hydrological properties and rest of the chemical properties (N) are going on. Three on station experiments were conducted at HARS, Khagrachari. Soil loss estimated under different surface condition were: 123.5t/ha from the well tilled + cropped field (maize), 59.0t/ha from untilled fallow (grass cover ) fields, 28.86 - 42.34 t/ha from different crop cover without mulch, 12.23- 21.70 t/ha from different crop cover with mulch. Jhum (no till) accounted for 52.5 t/ha soil loss. Cotton-rice intercropping accounted for 109 t/ha soil loss. Crops grown under strip cropping system during kharif II season were harvested and the data were under process of analysis. Stem amaranth 45 kg/m<sup>2</sup>, Indian spinach 1.47 kg/m<sup>2</sup> and 1.31 kg/m<sup>2</sup> of kang kong were harvested from fields grown under strip cropping system during kharif season. Crops grown under strip cropping system during winter season are harvested. Tomato 75.73 t/ha, broccoli 19.26 t/ha, brinjal 22.22 t/ha, radish 31.03 t/ha and chilli 0.9 t/ha were harvested from crops grown under strip cropping system during winter season. All the jhum crops have been harvested. Highest yield of rice (3.34 t/ha), pumpkin 2555 kg/ha, sesame 235 kg/ha, maize 960 kg/ha and marpha 910 kg/ha were obtained from the treatment N<sub>120</sub>P<sub>75</sub> K<sub>90</sub> kg/ha applied fertilizer. Two Field days were organized on the “fertilizer management of jhum crop” and “Fertilizer management in Rice- cotton intercropping” at the experimental site of HARS, Khagrachari, There were about 50 participants present at each field day.



### **3. Component-III: Development and Delivery of Intensive Crop Production Technologies for Hill Agriculture**

**Implementing Organization:** Bangladesh Agricultural Research Institute (BARI), RARS, Hathazari, Chittagong

**Component Leader:** Dr. Mohammad Amin, Chief Scientific Officer, RARS, Hathazari, BARI.  
Mobile: 01819803229

**Main objective of the project-** Improve Jhum system for enhancing production and reducing environmental degradation and to conduct strategic and applied research for developing appropriate crop production technologies suitable for upland and valleys.

**Location:** Different upazilla of Bandarban, Khagrachari and Rangamati districts, and research stations in Bandarban, Khagrachari, Ramgarh and Hathazari

**Budget:** BDT 1490.00 Lakh

**Progress:** The trials were being carried out at 60 locations with 60 farmers. The highest number of mango was obtained from improved management practices (323.8/plant) compared to farmer's practices (232.0/plant). Number of fruits/plant increased by 39.5% in improved management practices over farmer's practice. The yield of mango /plant was higher under improved management practices, yield was also much higher in this practice (14.43 t/ha) compared to farmer's practices (8.93 t/ha). Under improved management practices, yield increased by 61.59%. Marketable yield was also higher in the same treatment. Fruit borer infestation was higher in farmer's practice (23.5%).

The total area of litchi orchard in Bangladesh is about 22384 ha and national average yield is 2.90 mt/ha. The yield of litchi, observed at 3 locations in two hill districts ranged from 2.55-3.90 t/ha. The average yield was 3.33 mt/ha which is 15% higher than the national average. However, the yield was 39% higher in the total hilly areas compared to control. Yield of litchi increased due to improved management practices like irrigation, fertilization, inter cultural operation and insecticide application. The insect infestation was 33% in the farmer's fields whereas due to insecticide application it reduced to 12%. As a result marketable yield was higher under improved management practice.



#### **4. Component-IV: Entrepreneurship and Value Chain Development for Linking Farmers with Market.**

**Implementing Organization:** Bangladesh Agricultural Research Institute (BARI), RARS, Hathazari, Chittagong

**Component Leader:** Dr. Md. Jamal Uddin, SSO

Mobile: 01815425857

**Main objective of the project-** To promote and develop entrepreneurship in agri-business for generating income and reduction of poverty in CHT

**Location:** Different upazilla of Bandarban, Khagrachari and Rangamati districts, and markets in Chittagong Feni, Keranirhat and Dhaka

**Budget:** BDT 143.00 Lakh

**Progress:** A rapid survey was conducted for identifying potential entrepreneurs on selected enterprise in the project areas during March 2014 to June 2014. Thirty eight potential entrepreneurs as (fruit growers: Mango, Jackfruit and Litchi) were identified from 112 fruit growers, found from a survey conducted in Khagrachari and Dighinala Upazilas. A baseline study was undertaken to provide a ‘snap shot’ of the existing situation in the private nursery business, their conditions and the characteristics of the households at the point of reference. Out of 152 nursery in three hill districts, a total of 66 (43.4%) nursery growers were selected taking 33 (64.7%) from Khagrachari, 15 (33.3%) from Rangamati and 18 (32.1%) from Bandarban districts. A study was carried out on analyzing existing supply chain and value chain of mango, litchi and jackfruit covering 130 fruit growers and 84 market intermediaries in the selected areas of Khagrachari Sadar and Dighinala. Traders in 4 local markets in Khagrachari and two for wholesale market in Chittagong were also covered in the study. Results revealed that existing supply chain of mango was found to be 9 types, and 6 for both litchi and jackfruit. Out of these, the highest 34.83% mango supplied by the chain of grower to local consumers and that of almost applicable for litchi and jackfruit. Two students of the Department of Agribusiness and Marketing and Department of Development and Poverty Studies at Sher-e-Bangla Agricultural University, Dhaka has been completed MS work under the Assistantship of Component-IV.



**5. Component-V: Project Coordination and Management Support Unit (Capacity enhancement, knowledge management and awareness building)**

**Coordinator:** Dr. Md. Jalal Uddin Sarker, KGF and former Director, Training, BARI,  
Mobile: 01762010797

**Main objective of the project-** To facilitate and coordinate the implementation of activities of four components of the project providing technical assistance, financial assistance, developing human resources, concurrent monitoring and evaluation as well as improving knowledge and skill of farmers.

**Location:** Different upazilla of Bandarban, Khagrachari and Rangamati districts

**Budget:** BDT 763.00 Lakh



**Progress:** One Project inception workshop and one orientation training workshop were organized. Seventy nine personnel of different stakeholders were made aware of the project and 53 scientists were trained. Three coordination meeting / workshops were completed during the period. Ten watershed sites and 5 fields were visited during the reporting period.

(b) **CRP-2: Climate change:** Modeling climate change impact on agriculture and developing mitigation and adaptation strategies for sustaining agricultural production in Bangladesh

**Implementing Organization:** Bangladesh Agricultural Research Institute (BARI) & Bangladesh Rice Research Institute (BRRI), Gazipur

**Principal Investigator:** Dr. Jatish C Biswas, CSO, BRRI

**Co-Principal Investigator:** Dr Apurba Kanti Choudhury, PSO, BARI



**Location:** Gazipur, Dinajpur, Rajshahi, Jessore and Barisal

**Budget:** BDT 1997.07 Lakh

Climate change has been increasingly impacting on agricultural production as well as in other sectors in Bangladesh. During this reporting period pre-proposal activities of this climate change project were done successfully and the progress are as follows-

- Collection and analysis of long term weather data for evaluation of seasonal, intra-annual and inter-annual climatic variability and their relation with crop yields were made completed.
- Training of Scientists: 68 NARS Scientist were trained in 5 batches.
- Holding of consultation meeting on Climate Change and Agriculture production: consultation meeting was held in July, 2014 where 40 scientists participated
- A short term focal expert on soil profile characterization was made involved for a month to facilitate the members of the Soils group of the project team
- A renowned Indian Modeller was engaged for the training and capacity building activities for preparation of the MCCA scientist group during the pre-proposal activities.
- The planning and execution of pre-proposal activity of Climate Change modelling project was directed and monitored by the KGF expert in association with the Project Coordinator
- A group of trained Scientists from BARI, BRRI and BSMRAU resubmitted the proposal 'Modeling Climate Change Impact on Agriculture and developing mitigation and adaption strategies for sustaining agricultural production in Bangladesh' for KGF funding.

(c) **CRP-3: Char land Agriculture:** The concept of this project was initiated by the Minister, Ministry of Agriculture. Receiving the direction from MoA, KGF started to develop a project on Char land Agriculture. A three-member study team headed by Dr. M. Shamsuzzaman (former Director, RDRS and former KGF Board member) was formed to assess the feasibility of the project and site selection. The team visited about 12 charland sites of north-west, south-west and central part of the country. The project will promote crop



diversification and increasing cropping intensity by integrating farming system that will better use land resources and the homestead improvement and increase food security of farmers of char land. Specifically the project will be promoting NARS Institutes, proven technologies and enhance knowledge/skills, innovative approaches and extension practices. The main objectives of the project are (i) improvement of farming systems through interactive cropping pattern, livestock management and open water fish culture; (ii) validation demonstration of appropriate and innovative practices, along with improved crops and cropping system, including high value crops, and the use of good quality of seeds/seedlings and increase and stabilize crop production; (iii) establishment of effective marketing of agricultural products through improved supply and value chain of inputs, processing, preservation and prices of product.

In this reporting period two regional consultation meetings were organized with the scientist of different NARS institutes, researchers of different Universities, upazila and district level DAE, Livestock and Fisheries personnel of that region. Executive Chairman, BARC was present as a chief guest in one regional consultation workshop held at Dhaka. He urged the study team to establish a resourceful char land data sheet which could be used as reference data.

#### **d. Capacity Enhancement Program (CEP)**

**a) Training:** A total of 75 scientists from different NARS institutes, in 5 batches, attended the following two training programs organized by KGF:

- Research Project preparation and report writing, Climate Change, Modeling Climate Change Impact on Bangladesh Agriculture
- Application of GIS & remote sensing in Crop Production & Natural Resource Management; Hands on training on IDRISI and GIS and Agro-ecology /production zones.

**b) Capacity enhancement of NARS through Agricultural Research Management Information System (ARMIS):**

KGF provided fund and technical support to Computer and GIS Unit of Bangladesh Agricultural Research Council (BARC) for implementing the project ‘Capacity Enhancement of NARS through ICT-based Agricultural Research Management Information System (ARMIS). The following progresses were made during the reporting period.

- A total of 8,813 entries, collected from 139 sources, have been completed in this reporting period that enriched the ARMIS database with a total of 17,673 entries so far.
- Considering the sustainability issues, version 2 of the ARMIS software is at migration stage and will be installed soon.
- A number of training-Workshop and special seminars on ARMIS software have been conducted in different organizations to stimulate the (previously) and the newly listed individuals of different agencies.
- The project brochure ‘ARMIS@BARC’ has been published and distributed among all concerned.

#### **e. International Collaborative Program (ICP)**

- KGF explores the avenues for undertaking collaborative programs with Universities/Organizations of developed countries like Cornell University, USA; ACIAR/CSIRO, Australia; NUFIC, Netherland etc. A meeting with members of ACIAR/CSIRO, Australia was held at KGF to develop a collaborative R&D program in agriculture.
- SARRC coconut mite Regional Workshop: KGF as a major sponsor participated in this workshop jointly organized by BARI/BARC/SAC and KGF. This was held on 10-11 August 2014 and 45 participants attended from SARRC countries.
- Several meetings were organized with TEEAL of Cornell University, USA for collaborating Agricultural Research in Bangladesh

#### **f) Pilot Projects:**

Some of the technologies developed from the implemented CGP projects are of immense importance. The technologies have the potentials to bring change in the livelihood and Economy of the farmers, but they need faster dissemination and wider adoption among the stake holders. Piloting enhances the process of transfer and adoption of technologies. Considering the facts KGF executed pilot projects in 2015. The progress of the projects are given in brief.

**Project Code and Title:** P-7: Up-scaling and Validation of a proven technology on management of the major diseases of Brinjal and Tomato.

**Implementing Organization:** Bangladesh Agricultural Research Institute (BARI), Gazipur

**PI:** Dr. Biresh Kumar Goswami, Chief Scientific Officer, BARI.

**Location:** Jamalpur Sadar, Melandah, Islampur, Dewanganj and Madarganj of Jamalpur district; Sherpur Sadar, Nokla, Sribordi and Jhinaigati of Sherpur district; Manirampur of Jessore and Godagari of Rajshahi district.

**Budget:** BDT 50.00 Lakh

Farmers of some specific area like Jamalpur, Sherpur, Jessore and Rajshahi mostly produce Brinjal and Tomato as these two vegetables give better yields at those areas. But some of the most harmful diseases cause devastating loss up to 35-40% every year. Farmers have very little or no knowledge to identify the diseases and can not control them. As a result, yield of these crops reduce drastically due to wrong pest control practices.

Considering the above facts, a CGP project namely "C-8.14" was implemented for 2 years (2011-2013) by BARI. On farm trials were conducted in Islampur and Melandah (Jamalpur) and Sadar (Sherpur) upzila for Brinjal and Jamalpur sadar and Sherpur sadar for Tomato. Two years of on station and on-farm trials demonstrated that disease incidence was reduced upto 85% by the improved practices. The project completed successfully with the recommendation of an effective control measures of Brinjal and Tomato diseases. On the basis of success of the above mentioned project this pilot project (P-7) has been undertaken for up-scaling the technology in Sherpur and

Jamalpur districts and for validation in Jessore and Rajshahi districts. Under upscaling program 5 upazilas i.e. Jamalpur Sadar, Melandah, Islampur, Dewanganj and Madarganj of Jamalpur district and 4 upazilas i.e. Sherpur Sadar, Nokla, Sribordi and Jhinaigati of Sherpur district were selected for block demonstration. Based on potentialities Manirampur of Jessore and Godagari of Rajshahi was selected for validation trials on Brinjal and Tomato, respectively. Two blocks from each upazila with 10 farmers from each block having 30 decimal land per farmer were selected. Half of the land was used for disease management technology and the remaining half for farmers' practice (control). Selected farmers were trained on the technology package.

Soil, seeds and seedlings treatment with appropriate and accurate doses of chemicals, use of healthy seedlings, seedling age and proper pest management measures have proved the notable success of the technology resulting better yields compared to normal farmers practices.

In the training programme 760 farmers and 35 local extension officers participated and acquired knowledge on Brinjal and Tomato diseases management. Within the project period 7 field days and 4 workshops were organized where more than 2000 farmers participated. As outcome of these field days & workshops about 2000 farmers of Jamalpur and Sherpur district adopted the technology and became economically benefited.

In Jessore and Rajshahi district Brinjal and Tomato diseases have been effectively controlled through validation trials. Farmers got better yields with less pest management cost. The cost-benefit ratio for Brinjal and Tomato was 4.05 and 3.57, respectively.

**Table-09: Yield difference of Tomato and Brinjal between treated and untreated plots under up-scaling program**

Sl. No.	Name of District	Name of Crop	Treated Plots Yield (ton/ha)	Untreated Plots Yield (ton/ha)	Increased yield (%)
1.	Sherpur	Tomato	91.79	67.635	35.71
	Do	Brinjal	60.60	40.340	50.22
2.	Jamalpur	Tomato	93.38	75.505	23.67
	Do	Brinjal	61.25	40.550	51.05

**Difference of yield under validation program**

Sl. No.	Name of District	Name of Crop	Treated Plot yield (t/ha)	Untreated plots yield (t/ha)	Increased yield (%)
1.	Rajshahi	Tomato	58.280	43.430	34.19
2.	Jessore	Brinjal	45.125	32.105	40.55

**Project Code with Title:** P-8: Validation and piloting of improved production technologies in Gopalganj Basin.

**Implementing Organization:** Bangladesh Agricultural Research Institute ( BARI), Joydebpur, Gazipur

**PI:** Dr. Ashraf Hossain, PSO, Pulses Research Sub-station,  
Mobile: 01712948871

**Location:** Gopalganj (Sadar, Tungipara, Kotalipara and Kashiani), Madaripur (Sadar & Kalkini) Barisal (Agailjhara)

**Budget:** BDT 149.49 Lakh

Gopalganj Basin, occupies extensive low lying areas of Gopalganj, Madaripur and Barisal districts. Lands remain under water for a prolonged period (5-6 months). Land type of this basin viz. high land 5%, medium high land 15%, medium low land 41% and remaining 39% is low to very low. Cropping intensity of Gopalganj and Madaripur districts are low (176%).

Vast area of the basin comprises newly developed charlands as well as old established chars. Jute is the pre dominant crop followed by broadcast aman and boro rice. Grass pea, lentil and chickpea are widely cultivated in dry season. Coconut mite is reported to have caused damage to coconut orchards extensively.

With a view to increase productivity, cropping intensity and farmers income BARI implemented 3 CGP projects with financial and technical support of KGF. The projects recommended appropriate technologies for production of lentil, chickpea, mungbean and T.Aman rice crop as well as management practices for controlling coconut mites. The projects identified best varieties and management practices for these crops. Recommended varieties are BARI masur 3 and BARI masur 6, BARI Chola 9, BARI mung-6 and BRRI dhan 57 for lentil, chickpea, mungbean and T.Aman rice, respectively.



To create an effective impact for adoption of new technologies, validation of technologies in larger area involving large number of farmers this pilot project (P-8) has been undertaken.

Project activities started in November 2014 with lentil (325 bigha), mustard (225 bigha) and chickpea (125 bigha) as first crop against 3 cropping patterns, viz lentil-mungbean-T.Aman/mustard-mungbean-T.Aman and chickpea - T.Aman, respectively. Seeds of latest developed high yielding varieties of these crops was ensured. Recorded average yield of lentil mustard and chickpea was 1.68, 1.81 and 1.98 mt/ha, respectively against the average yield of 0.99, 0.98 and 1.09 in the farmers field. Thus yield increase in the project area is 69.70, 84.70 and 81.65 percent over the farmer's yield.

In kharif-1 season mungbean was cultivated as a new crop in 82.44 hectares (611 bigha) with BARI mung-6. The average yield of BARI Mung-6 was 1.25 mt/ha in the project area but that obtained from farmers' field was 0.91 mt/ha only.

As 3rd crop of the sequence T.Aman rice was planted in 94.47 hectares (700 bigha) with short duration and high yielding varieties (BRRI dhan 39, BRRI dhan 57 & BRRI dhan 62). Average yield from T.Aman were 4.19, 3.90 and 3.85 t/ha., respectively.

Training on "management of coconut mite" has been provided to 480 farmers of Sadar (Gopalganj), Sadar and Kalkini (Madaripur), and Agailjhara (Barisal) upazillas.

Introduction of new crop (Mungbean), replacement of crop varieties and improvement of knowledge and skill of participating farmers will contribute in increasing cropping intensity, productivity and farmers' income.

**Project Code with Title: P-9:** "Validation of up-scaling of Improved Rice Based Cropping Systems incorporating Mustard and Potato in Northern Districts".

**Implementing Organization:** Bangladesh Agricultural Research Institute (BARI), Gazipur

**PI:** Dr. ASM Mahbubur Rahman Khan, CSO, OFRD

**Location:** Gabtali & Shibgonj upazila of Bogra district (Tech., up-scaling) Rangpur Sadar & Mithapukur upazila of Rangpur dist. (Tech. validation) Wlipur & Chilmari upazila of Kurigram dist.(Tech. validation)

**Budget:** BDT 79.40 Lakh

Major cropping pattern of Shibgonj (Bogra) upazila is Mustard-Boro-T.Aman and that of both Mithapukur (Rangpur) and Ulipur (Kurigram) upazila is Potato-Boro-T.Aman. The farmers used to follow traditional practices for growing these crops using low yielding varieties and without or with minimum inputs. As a result, productivity of these crops was low.

Considering the above stated situation a project on "Minimizing yield gap in rice based cropping systems in three northern districts" was implemented by BARI for 3 years with the financial and technical support provided by KGF. After 3 years of on farm trials yield increase of 15-20% in rice, 30-35% in potato and 40-45% in mustard was obtained over the farmers' practices. Significant outcome of the project was the development of Mustard-Boro-T.Aman cropping pattern which included the use of 25-30 days old seedlings of rice, sowing of mustard by the 2nd week of November and use of improved management practices (fertilizer, pesticides, irrigation etc.) and modern varieties of mustard and rice.

In order to disseminate the developed technology to wider areas of 3 districts involving large number of farmers this pilot project, (P-9) has been undertaken.

Up-scaling of Mustard-Boro-T.Aman rice technology involving 400 farmers was implemented in Bogra district. On the other hand, On-Farm participatory validation trial was implemented in Rangpur & Kurigram districts for introduction of short duration mustard varieties in between Boro-T.Aman rice cropping pattern. Number of farmers involved for technology validation trial was 600.



Project activities started in October 2014 with mustard (BARI sarisha-14) as the 1st crop in the 3 crops sequence- Mustard-Boro-T.Aman. Recorded average yield of mustard was 1.53 mt/ha. The yield performance of mustard has created a positive impact to the participating farmers. Yield of Potato (Cardinal) and Boro (BRRI dhan 28) was also increased considerably under better

management practices. The recorded yield of potato and Boro under the project was 27.95 and 5.49 t/ha, respectively which were 42.68 and 17.30 percent higher than the yield obtained in the farmers' field.

T.Aman (BRRI dhan 49) was planted, in time. As a new variety (new to the farmers of the project area) BRRI dhan 49 performed very well with an average yield 5.16 mt/ha which was 16.67% higher than the average yield of farmers' used varieties.

Replacement of varieties, farmers training on improved production technologies and involvement of DAE's field level officers will contribute for increasing productivity and income of the participatory farmers. Besides, spill over effect of field days, visits, etc. will inspire thousands of neighboring farmers towards adoption of new technologies.

**Project Code with Title: P-10: "Up-Scaling and validation of Rhizome Rot Disease Management".**

**Implementing Organization:** Bangladesh Agricultural Research Institute (BARI), Gazipur

**PI:** Dr. Atika Ayub, CSO, Plant Pathology Division,  
Mobile: 01716549366

**Location:** For technology Up-scaling 8 Upazilas of Nilphamari, Rangpur, Bogra & Tangail District. Technology validation 2 Upazilas of Lalmonirhat & 2 upazilas of Mymensingh districts  
Upscaling program: 1. Nilphamari Sadar, 2. Kishorgonj, 3. Badargonj, 4. Taraganj, 5. Shibgonj, 6. Shajahanpur, 7. Ghatail, 8. Modhupur, and for Validation program: 1. Lalmonirhat Sadar, 2. Aditmari, 3. Mukhtagacla, 4. Bhaluka

**Budget:** BDT 55.00 Lakh

Ginger is one of the essential spices in Bangladesh. The useful parts of this crop are rhizome. It is an important ingredient of curry and also used in medicine.

Bangladesh produces only 43,000 metric tons of ginger against the requirement of 96,000 metric tons per year. Average yield of this crop is only 5.54 mt/ha. So every year a good quantity of ginger is imported in exchange of foreign currency. A number of diseases are responsible for this poor yield of which rhizome rot is the most harmful. Yield loss due to this disease may be to the extent of 50% or more.

In order to find out appropriate control measures against rhizome rot disease, a CGP project entitled "Rhizome Rot Disease of Ginger and its Management" was implemented by BARI for 3 years which ended in mid 2014. After 3 years of on station and on farm trials the technology package developed was "Seed treatment with chlorax (10%) one day before sowing + soil treatment with Stable Bleaching Powder (20 kg/ha) in furrow during sowing + soil drenching with chlorax and Ridomil Gold alternately for 5 times from 60 days of sowing.

In order to promote the recommended technology package to the ginger growers of Nilphamari, Rangpur, Bogra and Tangail districts and for validation of technology package to new ginger growing area (Lalmonirhat & Mymensingh), this pilot project (P-10) is being implemented by BARI with financial and technical support of Krishi Gobeshona Foundation (KGF).

The project is being implemented on participatory approach with cost sharing basis. Hands on training has been provided to 608 farmers and 96 field level officers of DAE. Six hundred eight trial plots (20 decimal each) have been established in the farmer's field for which chemicals used for seed and soil treatment was ensured as project support. Crop condition of trial plots was found better than that of the control plots. Farmers were found happy with the crop and awaiting a good harvest in January/February, 2016.

**Table-10: Infestation levels of Rhizome rot disease in demonstration and control plots of Rhizome..**

Sl. No.	Name of Upazila	Infestation % of disease after 80 days of plantation		Infestation % of disease after 150 days of plantation	
		Demonstration plot	Control plot	Demonstration plot	Control plot
1.	Sadar Nilphamari	13.0	17.5	20.5	46.5
2.	Kishoregonj	8.5	13	19.94	39.5
3.	Taraganj	7.5	14	30.2	45.78
4.	Badarganj	7.0	15.0	19.3	42.7
5.	Shibganj	9.0	14.0	4.62	9.6
6.	Shahjahanpur	7.0	14.0	23.4	44.2
7.	Madhupur	10.0	16.0	17.3	41.2
8.	Ghatail	11.0	15.5	18.6	39.4
9.	Sadar Lalmonirhat	8.55	13.5	20.2	41.6
10.	Aditmari	5.0	13.0	23.4	38.84
11.	Bhaluka	8.5	13.0	25.2	42.6
12.	Muktagacha	8.5	12.5	21.41	40.12

**Project Code with Title: P-11:** Validation and scaling up of T.Aman - Potato/Mustard - Mungbean -T.Aus Cropping System in Northern districts of Bangladesh.

**Implementing Organization:** Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Gazipur

**PI:** Prof. Dr. Md. Moynul Haque, Dept. of Agronomy  
Mobile: 01711908640

**Location:** Birgonj upazila of Dinazpur district, Sadar & Kishoregong upazila of Nilphamari & Sadar & Saghata upazila of Gaibandha district.

**Budget:** BDT 123.86 Lakh

System productivity of the prevalent cropping system transplanted Aman (Loag duration Swarna) - Potato - Boro rice was not sustainable because of withdrawal of huge quantity of ground water for irrigating Boro rice during dry season. In order to increase cropping intensity, system productivity and income of the farmers of northern districts BSMRAU implemented a project entitled" Crop-intensification in northern region of Bangladesh through up scaling the production of short duration

rice and mungbean". Duration of the project was 3 years (May 2011- May 2014) and financed by Krishi Gobeshona Foundation (KGF). Through this project a new and intensive cropping pattern (early maturing Aman rice - potato/mustard - early maturing mungbean -short duration Aus rice) was developed. For its further validation and upscaling the project has been undertaken to conduct on farm trials in large areas. Another important area of the pilot project is to study the soil nutrient balance for ascertaining the future sustainability of soil fertility which was not considered in the previous project.

The project started in November 2014 with mustard/Potato depending upon the choice of the farmers. Number of farmers involved in the project are 1000 (400 in Dinajpur and 300 each from Gaibandha and Nilphamari districts). After the winter crops (mustard and potato), mungbean (BARI mung-6) was sown and harvested, in time. As 3rd crop in the sequence Aus rice (Pariza) was planted and harvested accordingly. Fourth & last crop of the pattern is T.Aman (BRRI dhan 49 and BU dhan-1) harvesting of which has already been completed.

Mustard was introduced in some fields instead of potato as over production of potato sometimes create problem in agricultural production system. Yield of mustard was encouraging in all the three districts. Recorded yield of mustard (BARI Sarisha 14) ranged from 1.39 to 1.88 in Nilphamari, 1.31



to 2.35 in Gaibandha and 1.28 to 2.09 mt/ha in Dinajpur district. The results indicated that the mustard could be cultivated successfully in northern districts. Another winter crop in the sequence was potato which also performed very well under good management practices. Mean yield of Ppotato was 21.18, 24.86 and 23.53 mt/ha in Nilphamari, Gaibandha and Dinajpur districts, respectively. In Kharif-1 short duration mungbean (BARI mung-6) was sown which produced a moderate yield of 0.55 to 1.39 and 0.86 to 1.27 mt/ha in Nilphamari and Gaibandha districts, respectively.

Yield of mungbean was not satisfactory in Dinajpur which yielded only from 0.17 to 0.62 mt/ha. Some farmers did not get any yield because of excessive vegetative growth of the crop. This might happen due to late sowing where rainfall at post flowering stage dropped the flower and favoured vegetative growth. Aus rice (Pariza) performed well at most of the sites. Recorded average yield from project sites of 3 districts was 3.07 t/ha. T.Aman crop (BRRI dhan 56 and BU dhan-1) already harvested and the collected data were being processed. Moderate yield from both the varieties were expected.

Farmers (1000) selected under the project were trained on mungbean and rice production technologies well ahead of sowing/plantation. Field days on mustard, mungbean and Aus rice were organized for wider adaptation of the new cropping system.

**Project Code With Title: P-12** : Upscaling of cost effective formula feeds and improved management practices for increasing milk and meat production from buffaloes.

**Implementing Organization:** Bangladesh Agricultural University (BAU), Mymensingh

**PI:** Prof. Dr. Md. Ruhul Amin, Department of Animal Science. Mobile: 01714217157

**Location:** Under BAU: Trishal (Mymensingh), Subornochar (Noakhali), New Locations: Haluaghat (Mymensingh)  
Companigonj (Noakhali), Under Bittohin Chasi Somaj Kallyan Sangstha (BCSKS)

**Budget:** BDT 30.00 Lakh

Buffalo is an important animal in Bangladesh particularly to the farmers of different charlands. Buffalo production increased during 1977 to 2000. But this trend did not continue due to lack of improved production and husbandry practices. Production of milk and growth rate of buffaloes are poor due to feeding very low quality feeds, poor management, inferior genotypes and poor health care measures.

Department of Animal Science, BAU implemented a research project funded by KGF for 3 years (June 2011 to May 2014) and developed two cost affective feed formulae for increasing milk production and body weight gain of buffalo bull calves. Milk and meat production was increased by 2.46 liter and 347.22gm/ day, respectively during 6 months trial period. Moreover, average birth weight of buffalo calves after feeding supplemented concentrate formula diets was recorded to be 32 kg, with 4 kg increase.

In order to train up the buffalo farmers on preparation techniques of formula diets this pilot project (P-12) has been undertaken. Through this project 1040 farmers have been trained in 53 batches (20 farmers in each batch). Trainees were introduced with the ingredients of formula feed and given practical demonstration on procedure of preparation of the formula feeds. Then every participant prepared the formula feed individually.

At the end of each training event the participating farmers were provided with two packets (one kilogram each) of diets, one for milking buffalo and one for buffalo bull calves. Moreover, technology leaflets (1500) and handouts (1200) were provided to the trainees. Besides, 13,260 dose of vacines and 17,680 de-warming tablets were distributed among the buffalo farmers.

It is expected that through this training the buffalo farmers will be motivated to feed the formula diets. As a result both qualitative and improvement production of milk and meat will be enhanced. The reproductive potentialities will be improved due to reduction of post partum heat period (PPHP) and number of service per conception. Besides, mortality of buffalo and buffalo calves will be reduced considerably due to improved husbandry practices.

**Table-11: District wise number of farmers trained**

Sl. No.	Name of district	Name of Upazila	Number of farmers
1.	Mymensingh	Trishal and Haluaghat	380
2.	Noakhali	Subarnachar and Companiganj	280
3.	Natore	Lalpur	180
4.	Rajshahi	Bagha	200
		<b>Total</b>	<b>1040</b>

**Project Code with Title: P-13:** Adaptation of Community Enterprise Approach in Tidal Floodplains for crop-fish culture - Jhalokathi Model.

**Implementing Organization:** SHISUK, 16/D, Modhubagh, Moghbazar, Dhaka-1217.

**PI:** Mr. Md. Zillur Rahman, Project coordinator

**Location:** Jhalakathi, Gopalganj, Barisal, Patuakhali and Pirojpur District

**Budget:** BDT 148.98 Lakh

Cropping intensity and productivity is very low in the tidal flood plains of Jhalokathi, Pirojpur, Gopalganj and other coastal areas. Vast area remains under water for 5- 6 months in rainy season which does not suit for HYV Aman cultivation. Most of the farmers grow only one T.Aman crop in a year using local varieties (Lalmota, Sadamota, Moulata etc.) and obtain an average yield of only 2-2.5 t/ha. On the other hand, in dry season major area remains fallow due to lack of irrigation and late harvest (January) of T.Aman prevent timely sowing of Rabi crops.



To overcome this problem and to increase cropping intensity, system productivity and farmers' income Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Gazipur implemented a CGP project (CC-25-2) with the technical & financial support of KGF. The project ended with an appropriate technology package which was further replicated to 20 units through a pilot project (p-6) entitled: 'Integrating crops and Fish culture through land conversion into Ditch-Dyke system'. On an average 33 dec. land/farmer was converted into ditch and dyke system. Thus the average area under ditch & dyke was 12 & 9 decimal respectively. Ditch was used for rearing Monosex Tilapia and vegetables were grown on dykes round the year. Recorded net profit was Tk. 41,000.00 per unit/year.

Gaining experience from the aforesaid project and based on the excellent performance of the on-going CGP project TF-10 in the Chalan Beel areas, this project has been undertaken for its potential impact on farmer's income and livelihood improvement.

Project activities started in February, 2015 with the mobilization of members of the community in the project areas. Several group meetings were arranged to motivate the land owners as well as other people of the project area on 'Community Enterprise Approach Concept. After continuous motivational process 451 share holders have been selected from different categories of people of the community. A sum of Tk. 21,17,429.00 has been collected by selling shares to the beneficiaries. Project implementation committee has been formed at 3 projects sites. Fish fries has been released in

nursery ponds and fingerlings in the main field of two sites. Farmers of Gopalgonj site has been trained on modern production technologies of Boro rice. Construction of physical infrastructure is in progress.

**Project Code with Title: P-14:** Pilot Project on "Up-scaling and Campaigning of Rice-Cotton intercropping in Bandarban and Khagrachari districts".

**Implementing Organization:** Cotton Development Board, Khamarbari, Farmgate, Dhaka

**PI:** Dr. Md. Farid Uddin, Executive Director,

**Location:** Bandarban Sadar, Rowangchari, Thanchi and Roma of Bandarban district Khagrachari Sadar & Matiranga of Khagrachari district.

**Budget:** BDT 81.09 Lakh

Most of the hill farmers of Chittagong Hill Tracts (CHT) are dependent on traditional jhum system of crop production for their livelihood. The farmers sow seeds of several crops like rice, cotton, marpha, sesame, pumpkin, maize, Chilli etc. in the same hole at hill slopes and harvest them one after another, Traditional jhum farming is a way of subsistence farming with marginal return. Jhum farming is generally associated with low productivity of the component crops and soil degradation. With the objective of improving jhum cropping system in hill districts, scientists CDB implemented a project in 2012-2014 with the financial and technical support of Krishi Gobeshona Foundation (KGF). Through this project intercropping of rice with upland cotton was compared with traditional jhum cultivation.

After two years of on-farm trial, the scientists recommended a technology of rice-cotton intercropping which provided 40% higher profit than that found from traditional jhum system.



In order to show the results of generated technology to a large number of farmers covering wider areas, an up-scaling program was implemented in 2014. Four

upazilas of Bandarban district (Sadar, Thanchi, Ruma and Rowangchari), Rangamati Sadar upazila and two upazilas of Khagrachari district (Sadar and Matiranga) were selected for the up-scaling program involving 700 hill farmers. The results revealed that yield of rice and cotton were nearly 1500 and 900 kg/ha, respectively. This yield increase is 50% and 66% higher for rice and cotton respectively as compared to normal jhum practices.

The up-scaling program covered only a small segment of hill farmers. Moreover, due to many reasons such as poverty, illiteracy, language problem, lack of understanding of hill farmers, etc. the objectives of the up-scaling program could not be achieved.

Considering the limitations of hill farmers, their socio-economic condition etc. a pilot project entitled "Up-scaling and campaigning rice-cotton intercropping in Bandarban and Khagrachari hill districts" was undertaken for 2015-16 crop season. Through this project 700 farmers (33 decimal per farmer) have been brought under rice-cotton inter-cropping.

Sowing of both rice and cotton seeds was done between May-July 2015. The crops suffered due to unusual heavy rains during the months of July and August. However, most of the affected plots recovered later on, through better management. Besides, training for farmers, field staff and officers; input support to the farmers, miking, printing of leaflet, booklet, organizing field days etc. were included in the work plan. Rice crop was harvested between September-October 2015. Average yield under the project was 3.03 t/ha as against 1.72 mt/ha in the farmer field, cotton harvesting will be started in January 2016.

**g) Other Activities:**

**i) Workshop/Trainings/Coordination Meetings and Reviews.**

A number meeting, review and planning workshops coordination meetings etc. were organized by KGF for successful implementation and management of the projects and other activities. These meeting/workshops/consultative group discussions etc. were held at different places of the country considering the necessity, relevance and realities. All these activities were supported by BKGET funds.

In total 10 training programs, two review workshops and one half yearly coordination meeting were organized by KGF in the year 2014. The two review workshops were held in connection with the submission of Project Completion Report. One 3rd half yearly coordination meeting was held for the CGP 2nd call projects which were supposed to be completed by the end of 2014. Relevant people from NARS Institutes, DAE, DLS, DoF, BWDB, BADC, Universities and NGOs along with the respective PIs and or Coordinators participated in the above mentioned occasions. The respective expert reviewers participating in the half yearly coordination meeting made their valuable comments and suggestions for the improvement of the respective projects.

During the year 2014 KGF organized 5 training workshops for the scientists of the NARS. These programs mostly addressed different issues developing in the country in connection with climate change. The trainees were trained on crop modeling and handling IDRISI and GIS programs. In addition to this, they were also trained on research planning and research proposal writing. All together 85 scientists of different research organizations had these opportunities of getting themselves prepared for future research works.

### List of Workshops/Trainings/Meetings organized under KGF

Sl. No.	Name of training	Duration	Venue	No. of Participants
1.	First annual review workshop of the project "Production enhancement of aquaculture through innovative technologies in case culture system in Haor areas of Karimganj, Kishorganj (TF-13F)"	26th June 2015	KGF	10
2.	Training workshop on Soil profile characterization for using in Modeling Climate change impacts on Bangladesh Agriculture.	12-13th Mar, 2015	BARI	
3.	Expert Consultation workshop on Agricultural Production in Central Coastal Region.	14th Mar. 2015	BARC	42
4.	ইক্ষু উৎপাদন এবং চিনি ও গুঁড় শিল্প সম্পর্কিত কর্মশালা	24th May, 2015	BARC	34
5.	Consultation Workshop on Improving farming systems drought prone North west region of Bangladesh	12th May, 2015	RDA, Bogra	56
6.	Orientation workshop on Modeling climate change and Impact on Agriculture & Development of Mitigation and Adaptation strategies for sustaining Agricultural Production in Bangladesh	29-30 th May 2015	BARC-CDM Savar	
7.	Regional Expert Consultation Workshop on Charlands of Bangladesh	14th June 2015	NID, Rangpur	24
8.	Training workshop on GIS and Remote Sensing	20-23rd June 2015	BRAC-CDM Savar	
9.	Review workshop on CRP Hill Agriculture Project.	26th June 2015	Parjatan Model Rangamati	45
10.	Second Annual Progress Review and Planning Workshop for CGP 1st Call projects	29-30th July 2015	BARC	47
11.	Regional Expert Consultation Workshop on Charland in Bangladesh	12th Aug. 2015	BARC	47
12.	Preinception workshop on modeling climate change impact on Agriculture Project & Developing Mitigation & Adaptation Strategies for Sustaining Agricultural Production in Bangladesh.	12-13th Sept. 2015	BRAC CDM Savar	35
13.	Consultation Meeting of Technical Advisory Committee (TAC.)	21 Sept 2015	BARC	44
14.	Second Annual Report Presentation on the project "Investigation on Livestock diseases and development of appropriate control measures in hilly areas (TF-12L)"	12th Nov. 2015	KGF BR	11
15.	Workshop on the Monitoring and Evaluation team's Review Report of CRP Hill project	5th Dec. 2015	BARC	20
16.	Workshop on CRP Hill Agriculture	24th Dec. 2015	BARC	25
17.	Program Implementation Workshop on Strengthening Sugarcane R&D CHT CRP	15-17 Sept. 2015	Bandarban	20
18.	Network for Climate change in Agriculture	7 Mar. 2015	BARC	17
19.	Expert consultation Meeting on Agriculture Production in Central Coastal Region	23 Mar. 2015	KGF	15

20	Expert Consultation on Agriculture, Productivity and Livelihood of Charland in Rangpur, Nilphamari and Kurigram District.	28 Mar. 2015	RDRS Rangpur	5
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## ii. Monitoring and Evaluation:

KGF professionals regularly monitor ongoing projects in two ways- (i) Desk Monitoring and (ii) Field Monitoring. KGF also evaluated these ongoing projects by hiring an external team consisted of 6-7 members. In this reporting period a six member individual monitoring team headed by Dr. N.I. Bhuiyan, former Director General, BRRI, Gazipur monitored the 14 BKGET 1st Call CGP projects. According to their report all project were rated satisfactory excepting one. The team also reported the farmer's reaction to be very



good; in some areas farmers showed their interest to adopt the technologies and started to practice in their own field. KGF professionals provided technical support to projects for better performance. Another 8 member-team headed by Dr. Hamizuddin Ahmed, Former Director (Research), BARI reviewed the CRP-1: Hill Agriculture project. The team reorganized the component activities of the project. It was decided that the rest 3 years of the project would run according to the recommendation of the review team.

## h. Challenges:

KGF faced the following challenges implementing the project activities:

- Geographical location based proper monitoring is difficult by limited KGF professionals
- Regular monitoring of all the projects, lying through out the country, was found difficult by the limited KGF professionals.
- Setting reporting period for the cropping season based projects appeared some problems
- Preparation and submission of reports were found problematic as the cropping season did not comply with reporting period.
- Collaborative partners' fund distribution sometimes creates some complications

## i. GOVERNANCE, FINANCE AND AUDIT

### A. Governance

A general body and a board of directors consisting of 15 and seven members, respectively, govern KGF. The members of the general body of KGF comes from both public and private sectors having vast experience and knowledge in the field of Agriculture. However, the number of the members for the general body does not exceed 15. The members of the board of directors of the foundation are elected from the members of the general body and has the authority of taking decisions and

developing policies for the successful operation and management of KGF, although, the general body provides the overall guidance and over see the activities of KGF.

The Members of the KGF Board of directors for the year 2015 are as follows:

01. Dr. Abul Kalam Azad  
Chairman, Board of Directors of KGF and Executive Chairman,  
BARC, Farmgate, Dhaka-1215
02. Dr. Mahabub Hossain,  
Former Member of BoDs & GoB member of KGF and Advisor to ED,  
BRAC, and former Director General, BIDS, and former Head of Social Science Division,  
IRRI, BRAC Centre, 75, Mohakhali, Dhaka-1212
03. Dr. Md. Rafiqul Islam Mondal  
Director General, BARI, Joydebpur, Gazipur-1701
04. Dr. Jiban Krishna Biswas  
Director General, BRRI, Joydebpur, Gazipur-1701
05. Prof. Dr. Md. Hazrat Ali,  
Treasurer, and former Dean and Professor, Department of Agronomy  
Sher-e-Bangla Agricultural University(SAU), Sher-e-Bangla Nagar, Dhaka-1207
06. Dr. Md. Rafiqul Islam Molla  
Former DD, DAE, and Director, Social Upliftment Society (SUS),  
76/A, Uttara, Saver, Dhaka-1340
07. Dr. Shaikh Abdul Quader  
Managing Director, Agriconcern Ltd. 67, Purana Paltan Line, Dhaka-1000

In 2015, two board meetings, one AGM and one EGM were held to provide strategic policy and directives for the operational and management activities of KGF. The Annual report, Annual Budget, financial expenditure and Audit reports of KGF were placed in the general meeting and were approved.

A list of the members of general body of KGF is provided in Annex.....

## **B. Financial Progress of KGF:**

### **i) KGF NATP Fund.**

NATP phase-I ended in 2014. The budget and expenditure for the year 2013-2014 were reported in the Annual Report 2014 of KGF. However the Audit report of NATP fund for the financial year 2013-2014, prepared by Ahmed Zakir & Co. is given in the Annex 11.

ii) Bangladesh Krishi Gobeshona Endowment Trust (BKGET) fund.

Financial progress: Budget and Expenditure for the year 2014-15 and 2015-16:

This is in reference to the KGF Memorandum and Articles of Association clause no. 18 (page no. 11) and clause no. 78-89 (page no. 20). It was interalia indicated that the General Body approved the annual budget with expenditure. A brief on the budget and financial progress is given below:

The Annual Budget for the year 2014-2015 of KGF, approved by the board was Tk. 2000 lacs and that for the year 2015-2016 was Tk. 3000 lacs. The 2nd installment, Tk. 1000 lac, of the budget for the year 2014-2015 and the 1st installment Tk. 1500 lack, of the budget for the year 2015-2016 were received in the early and mid part of the year, respectively, which supported the expenditure of KGF for the year 2015 (January- December).

### **C. Audit:**

Accounts and audit function of the foundation is regulated in accordance with clause no. 78-89 of Memorandum and Articles of Association of KGF. As per function of the foundation, the General Body approved balance sheet for FY. 2013-2014 and was audited by Ahmed Zaker and Co. The report is given in Annex 11.

## **VI. LIST OF THE ANNEXES:**

- Annex-1 List of BKGET funded CGP projects (1st Call)**
- Annex-2 List of BKGET funded CGP projects (2nd Call)**
- Annex-3 Pilot Project List**
- Annex-4 KGF BKGET funded CRP Hill Agriculture (Component List)**
- Annex-5 Project Coordination Component (PCC)**
- Annex-6 KGF Organogram**
- Annex-7 List of Members of General Body and Board of Directors of KGF**
- Annex-8 List of KGF Expert Professionals**

## List of BKGET funded CGP projects (1st Call)

SL.#	Project title, Code No., and commencement date	Coordinator/ PI/CI	Locations
1	TF 01-C: Validation and Up-scaling of High Value Vegetable Crops production in Sylhet region. <b>Date of commencement:</b> 20 May 2013	<b>PI:</b> Dr. Md. Shahidul Islam Address: Associate Professor and Chairman, Dept. of Horticulture, Sylhet Agricultural University, Sylhet-3100 Mobile no. 01916662421 Email: shahidulhrt@gmail.com	Sylhet Agricultural University campus, Two upzillas of each district of Sylhet, Moulavibazar, Hobigonj and Sunamgonj
2	TF-02-C: Development/ validation and up-scaling of dry direct seeded boro rice system for improving crop productivity in areas with limited water supply <b>Date of commencement:</b> 20 May 2013	<b>PI:</b> Dr. Md. Moshir Rahman Professor, Department of Agronomy Bangladesh Agricultural University Mymensingh, Bangladesh Mobile: 01711-072561 Email: rahmanag63@yahoo.com	<b>Locations:</b> • Godagari Upazilla of Rajshahi district • Rangpur Sadar Upazilla of Rangpur district
3	TF 03-C: Adaptation of high yielding soybean in polder areas in Barguna and Patuakhali districts <b>Date of commencement:</b> 20 May 2013	<b>PI:</b> Dr. Md. A. Mannan Associate Professor, Department of Agronomy Bangabandhu Sheikh Mujibur Rahman Agricultural University, Gazipur-1706 Tel. No: (02) 9205310-14- 2114 Mobile No.: 01816020290 E-mail: mannanbsmrau@yahoo.com	• Amtali Upazila under Barguna district • Kalapara Upazila under Patuakhali district
4	TF 04-C: Screening and testing of Improved Aus Rice Varieties/Genotypes Suitable for Rainfed Aerobic Soil Condition of Bangladesh <b>Date of commencement:</b> 20 May 2013	<b>Coordinator:</b> Dr. A S M Masuduzzaman Principal Scientific Officer, Plant Breeding Div. BRRI, Gazipur. Tel. No.9257405 ext 559 Mobile no. 01721964002 E-mail: masudbrri@gmail.com	Rajshahi, Gazipur, Moulvi Bazar
5	TF 05-C: Year-round Production of Some Selected HYVs and Hybrid Vegetable Varieties in Southern and Hilly Regions of Bangladesh <b>Date of commencement:</b> 20 May 2013	<b>Coordinator:</b> Dr. G M A Halim CSO, Olericulture Division HRC, BARI, Gazipur-1701 Mobile: 01715 179366. Dr. G M A Halim CSO, Olericulture Division HRC, BARI, Gazipur-1701 Mobile: 01715 179366. Email: gmahalimbari@gmail.com	• Bandarban Sadar Upazila of Bandarban District • Golachipa, Dashmina and Bauphol upazilas of Patuakhali District
6	TF 06-C: Validation and up scaling of HYVs of brinjal, tomato, bottle gourd, as gourd and pointed gourd in hilly areas of Moulvibazar <b>Date of commencement:</b>	<b>PI:</b> Dr. Reaz Uddin Shamim Chief Scientific Officer Bangladesh Agricultural Research Institute (BARI) Regional Agricultural Research Station, Akborpur, Moulvibazar Mobile: 01711-459104 E-mail: reaz-shamim@yahoo.com	• Sreemangal, Kamolgonj, Moulvibazar Sadar and Rajnagar of Moulvibazar District • Sreemangal, Kamolgonj, Moulvibazar Sadar and Rajnagar of Moulvibazar

SL.#	Project title, Code No., and commencement date	Coordinator/ PI/CI	Locations
	20 May 2013		District covering 5 selected unions of each upazila.
7	TF 07-C: Adaptation of newly released HYV oil seeds (Mustard, Groundnut, Soybean and Sesame) in Charland of Padma  <b>Date of commencement:</b> 20 May 2013	<b>PI:</b> Dr. Md. Abul Khayer Mian Senior Scientific Officer (Agronomy) Bangladesh Agricultural Research Institute (BARI) Ishurdi-6620, Pabna, Mobile: 01914-661301 E-mail: <a href="mailto:mianmd.abulkhayer@yahoo.com">mianmd.abulkhayer@yahoo.com</a>	<ul style="list-style-type: none"> <li>• BBC Bazar and Lokhikunda of Ishurdi, Pabna</li> <li>• Golapnagar of Kushtiasadar</li> <li>• Philipnagar of Veramera of Kushtia</li> </ul>
8	TF 08-NR: Evaluation and Up scaling of Resource Conservation Technologies (RCTs) for Improving Productivity in the Drought Prone Areas  <b>Date of commencement:</b> 20 May 2013	<b>PI:</b> Dr. Md. Ilias Hossain Senior Scientific Officer Regional Wheat Research Centre, BARI, Rajshahi Tel. No. 0721-750462 Office, Mobile no. 01712632167 E-mail: <a href="mailto:iliasrwc@gmail.com">iliasrwc@gmail.com</a>	Charghat, Paba and Godagariupazila under Rajshahi district.
9	TF 09-NR: Validation and up-scaling of Tricho-products for soil borne disease management in vegetable Crops  <b>Date of commencement:</b> 20 May 2013	<b>PI:</b> Dr. Mossammat Shamsunnahar Principal Scientific Officer Plant Pathology Section, HRC, BARI, Gazipur 1701 Cell: 01674876252 Email: <a href="mailto:nahar321@yahoo.com">nahar321@yahoo.com</a>	<ul style="list-style-type: none"> <li>• Bagdanga village of Churamonkathi union in Jessore district</li> <li>• Vatra village of Khanpur union in Bogra district.</li> </ul>
10	TF 10-F: Adaptation of Community Enterprise Approach for Intensification of floodplain fish production in Chalanbeel  <b>Date of commencement:</b> 20 May 2013	<b>Coordinator:</b> Sakiul Millat Morshed Executive Director, SHISUK. 16/D, Modhubag Mog bazaar, Dhaka 1217, Bangladesh Cell phone: 01713 037796 Email: <a href="mailto:ed.shisuk@gmail.com">ed.shisuk@gmail.com</a>	ChalanBeel area (Sirajgonj, Pabna and Natoredistricts)
11	TF 11-C: Validation and up-scaling of Off-season jute seed production technologies in different jute growing areas of Bangladesh.  <b>Date of commencement:</b> 25 August 2013	<b>PI:</b> Md. Abdul Alim, Principal Scientific Officer, Agronomy Division, Bangladesh Jute research Institute (BJRI). Cell phone: 01911395624, E-mail: <a href="mailto:alimbd1968@yahoo.com">alimbd1968@yahoo.com</a>	Barishal (Ujirpur, Babuganj and Muladi) and Patualhali (Kalapara, PatuakhaliSadar and Dumki)
12	TF 12-L: Investigation on livestock diseases and development of appropriate control measures in hilly areas  <b>Date of commencement:</b> 05 September 2013	<b>PI:</b> Dr. Shonkor Kumar Das Associate Professor, Department of Anatomy and Histology, BAU, Mymensingh Cell phone: 01716-855186 E-mail: <a href="mailto:skdas76@yahoo.com">skdas76@yahoo.com</a>	Bandarbansadar, Lama and Rowangchari in Bandarban

SL.#	Project title, Code No., and commencement date	Coordinator/ PI/CI	Locations
13	<p>TF 13-F: Production enhancement of aquaculture through innovative technologies in cage culture system in haor areas of Karimganj, Kishoreganj</p> <p><b>Date of commencement:</b> 29 December 2013</p>	<p><b>Coordinator cum PI:</b> Professor Dr. A.K.M. NowsadAlam, Dept. of Fisheries Technology, Bangladesh Agricultural University, Mymensingh-2202; Mobile: 01711446315 E-mail: <a href="mailto:nowsad12@yahoo.com">nowsad12@yahoo.com</a></p>	<p>RaijanidaiJolmohal of Uttar Sutarpara, Sutarpara Union, Upazila: Karimganj, Dist: Kishoreganj</p>
14	<p>TF 14-C: Sustainable management of flower and fruit dropping of mango.</p> <p><b>Date of commencement:</b> 20 April 2014</p>	<p><b>Coordinator:</b> Dr. Syed NurulAlam, CSO &amp; Head, Entomology Division, BARI, Gazipur Mobile: 01711-907886 E-mail: <a href="mailto:alamsn09@gmail.com">alamsn09@gmail.com</a></p>	<p>Major mango growing 14 (fourteen) districts, ChapaiNawabgonj, Rajshahi, Natore, Naogaon, Rangpur, Dinajpur, Thakurgaon, Jessore, Kustia, Meherpur, Sathkhira, Chudanga, Mymensingh and Gazipur.</p>

### List of BKGET funded CGP projects (2nd Call)

SL. #	Project title, Code No., and commencement date	Coordinator/ PI/CI	Locations
1	TF 15-SF/15: Improvement of Soil Fertility and Crop Yield through adoption of conservation agriculture in Mustard -Boro-T.Aman cropping pattern. <b>Date of commencement:</b> March 12, 2015	PI: Dr. Md. Jahiruddin, Professor, Dept of Soil Sc, BAU, Mymensingh Cell:01718813889 Email: m_jahiruddin@yahoo.com	i) BAU Farm, Mymensingh) ii) MuktagachaUpazilla,Mymensingh (3 sites for 3 blocks) iii) Dhanbari Upazilla, Tangail (3 sites for 3 blocks)
2	TF 16-WM/15: Collection, Evaluation and Introduction of White Maize for Human Consumption in Bangladesh. <b>Date of commencement:</b> March 25, 2015	PI: Prof. Dr. Md. Jafarullah, Dept of Agronomy, SAU, Dhaka Cell:01552331605 Email: jafarullahsau@gmail.com	Dhaka, Barisal, Rangpur, Dinajpur, Nilphamari, Bandarban, Rangamati and Khagrachari districts
3	TF 17-ARI/15: Refining and Validation of BAU-Bro chickens. <b>Date of commencement:</b> March 11, 2015	PI: Professor Dr. Md. Ashraf Ali, Dept of Poultry Sc., BAU, Mymensingh Cell: 01675145096 Email:md.mashraf@gmail.com	BAU Poultry Farm and Poultry Biotechnology and Genomics Laboratory, Bangladesh Agricultural University, Mymensingh
4	TF 18-EM/15: Exploring epidemiology, anthelmintic resistance and genetic diversity of some common gastrointestinal nematodes of small ruminants in Bangladesh <b>Date of commencement:</b> April 23, 2015	PI: Prof. Dr. Mohammad Zahangir Alam, Dept. of Parasitology, Faculty of Vet. Science, BAU, Mymensingh Cell:01746611162 Email: mzislam74@yahoo.com	Department of Parasitology, Faculty of Veterinary Science, Bangladesh Agricultural University, Mymensingh.
5	TF 19-EM/15: Community engagement in biosecurity (CEB) for the prevention of infectious diseases of poultry based on epidemiological risk analysis' <b>Date of commencement:</b> March 22, 2015	PI: Dr. Rafiqul Islam, Professor, Department of Pathology, Faculty of Veterinary Science, BAU, Mymensingh Cell:01759674267 Email: mrislam_bau@yahoo.com  CI of Associated organization: Md Anwarul Azim, Deputy Director,(Livestock Programme), PRISHIKA Manobik Unnayan Kendra, 1/1-GA, Mirpur 2, Dhaka-1216	Department of Parasitology, Faculty of Veterinary Science, Bangladesh Agricultural University, Mymensingh.

SL. #	Project title, Code No., and commencement date	Coordinator/ PI/CI	Locations
6	TF 20-EM/15: Studies of pigeon diseases in northern Bangladesh  <b>Date of commencement:</b> April 07, 2015	PI: Dr. Md. Jalal Uddin Sarder, Professor, Department of Animal Husbandry & Veterinary Science, University of Rajshahi, Rajshahi Cell: 01556308564 Email: jalalnusa@yahoo.com	Northern part of Bangladesh Some Upazila of Rajshahi Division Rajshahi, Natore and Pabna
7	TF 21-EM/15: Use of Probiotic to Improve Nutritional Value of Rice Straw and Its Impact of Dairy Cow Production  <b>Date of commencement:</b> April 15, 2015	PI: Dr. Abu Sadeque Md. Selim, Associate Professor, Dept of Animal Sc. & Nutrition, BSMRAU, Gazipur Cell:01718370722 Email:anima_l2002@yahoo.com	Department of Animal Science and Nutrition, Faculty of Veterinary Medicine and Animal Science (FVMAS), Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Salna, Gazipur
8	‘TF 22 – PS /15’ ‘Productivity Enhancement of Goor and Chewing type Sugarcane through management of Major Diseases in Non-mill Zones’  <b>Date of commencement:</b> August 10, 2015	Coordinator: Dr. Md. Shamsur Rahman, Principal Scientific Officer & Head, Pathology Division, BSRI, Ishurdi Cell: 01716165669 Email: msrahmanbsri@gmail.com PI of Associated organization: Dr. Md Ibrahim Talukder, Research Coordinator, Krishibid Somobay Society Ltd.Ground Floor,3rd Building, Khamarbari, Farmgate, Dhaka	BSRI on station Ishurdi, Pabna, Shibgonj, Chapai Nobabgonj (Goor Zone), Sadar- Sjarajgonj(Goor Zone), Vowal Mirjapur, Gazipur(Chewing Zone), Sadar Khagrachari (Chewing & Goor Zone), Sadar- Bandarban (Chewing Zone).
9	TF 24-EM/15: Epidemiological and patho-biological investigation of repeat breeding syndrome and development of strategies for improvement of strategies for improving the fertility of repeat breeder dairy cattle  <b>Date of commencement:</b> August 04, 2015	PI: Dr. Nasrin Sultana Juyena, Dept of Surgery and Obstetrics, Faculty of VeterinarySc, BAU, Mymensingh Cell:01759674267 Email: juyenahabib@gmail.com CI: Dr. Md Siddikur Rahman Professor, Dept of Surgery and Obstetrics, Faculty of VeterinarySc ,BAU, Mymensingh	Trishal, Mymensingh, Sahjadpur, Sirajganj, Potya, Chittagong
10	TF 26 – ARI /15’ Validation and Up-scaling of Bee Keeping Practices for Improving Yield and Quality of Bee Products’  <b>Date of commencement:</b> May 31, 2015	PI: Dr. Mohammad Sakhawat Hossain, Dept of Entomology, SAU, Dhaka Cell: 01716092747 Email: sakhawat_sau@yahoo.com	Costal Areas Coastal area of Satkhira, plain land of Shirajgonj and Gazipur district of Bangladesh
11	TF 27 – SF /15’ ‘Adaptation of Improved Soil Fertility Management Practices for Variable Soil Conditions under Intensively Cropping	Coordinator: Dr. G K Mustafizur Rahman, Professor, Dept of Soil Sc, BSMRAU, Gazipur Cell: 01718186642 Email: mustafiz@bsmrau.edu.bd	Calcareous soils (Charghat & Baga, Rajshahi; Bheramara & Kumarkhali, Kushtia), Strongly acidic soils and low organic matter charland (Madhupur,

SL. #	Project title, Code No., and commencement date	Coordinator/ PI/CI	Locations
	Systems'  <b>Date of commencement:</b> June 10, 2015	PI: Dr. Md Mizanur Rahman, Associate Professor, Dept of Soil Sc, BSMRAU, Gazipur	Tangail; Kapashia, Gazipur; Ulipur & Chilmari, Kurigram; Nageswari & Bhurungamari, Lalmonirhat), arsenic polluted soils(Faridpur Sadar & Sadarpur, Faridpur; Matlab & Shahrasti, Chandpur), industrial polluted areas(Monirampur & Bhagarpara, Jessore; Chandian & Daudkandi, Comilla)
12	TF 30- AP/15: 'Sustainable Development of Aquaculture in the North-West Region of Bangladesh under Climate Changes scenario'  <b>Commencement date:</b> August 25, 2015	PI: Dr. MdIstiaque Hossain, Associate Professor , Dept of Fisheries, University of Rajshahi, Rajshahi Cell:01726514232 Email: bitanrubd@yahoo.com	Rajshahi (Poba, Chorghat & Puthia Upazilla) and Bogra(Sadar Upazilla)
13	TF 32- SF/15: 'Integrated Nutrient Management for Intensive cropping in coastal and charland areas of Bhola District'  <b>Commencement date:</b> August 19, 2015	PI: Md. Shahidul Islam, SSO, OFRD, BARI, Bhola Cell:01718638771 Emailshahid75bari@gmail.com	Sadar, Daulatkhan, Charfashion and Monpura of Bogra District
14	'TF 33 -ARI/15: 'Farm Productivity Improvement in Haor Areas through Integrated Farming Systems Approach'  <b>Commencement date:</b> August 17, 2015	Coordinator and PI: Professor Dr. Md. Abul Kashem, Dept. of Soil Science, Faculty of Agriculture, Sylhet Agricultural University, Sylhet-3100 Cell:01712213707 Email: makashem.agri@gmail.com	Haor Areas Haors of Sunamganj District (one site and three sub-sites to be selected through PRA)
15	'TF 35 - SF/15: Integrated Nutrient management for sustaining soil fertility and crop productivity under intensive cropping system'  <b>Commencement date:</b> November 22, 2015	Coordinator: Dr. A S M Mahbubur Rahman Khan, CSO, OFRD, BARI, Gazipur, Cell: 01712598035 Email: mahbubur.bio@bari.gov.bd	11 Upazilas: JamalpurSadar, Sherpur Sadar, Nalitabari, Mymensingh Sadar, Kishoreganj(Pakundia), (Shibganj), Joypurhat Sadar, Mithapukur & Pirganj (Rangpur), Godabari & Puthia (Rajshahi)

SL. #	Project title, Code No., and commencement date	Coordinator/ PI/CI	Locations
16	TF 36 - FP/15: 'Maximizing forage production in saline prone areas of south -west coastal belt through improved management practices'  <b>Commencement date:</b> December 13, 2015	PI: Prof Khan Golam Kuddus, Agrotechnology Discipline, Khulna University, Khulna, Cell: 01711482656 Email: gquddus03@yahoo.com  CI: A.B.M.Khaleduzzaman ULO(equivalent to SSO in BLRI) Livestock research Institute (LRI),Department of Livestock Services(DLS), Mohakhali, Dhaka Cell:01716001137 Email: abmk5566@gmail.com	Paikgacha of Khulna, Mollahat of Bagerhat, Tala of Satkhira
	<b>Sub-total of awarded projects</b>		
17	AM 2-121: Up-scaling and fine tuning of BARI seeder for direct seeded rice and non-rice crops in Sourthern and Barind areas of Bangladesh  <b>Date of commencement:</b> Yet not finalized	PI: Dr. Md. Ayub Hossain, PSO, Farm Machinery and Post Harvest Process Engeneering Division, BARI, Gazipur Cell : 01716979034 Cell:01777131518(no of Matin Sir) Email: ayub.fmpe@bari.gov.bd Associated organization: R.K. Metal (Farm Machinery Manufacturing Company),Mujib Sarak, Tepakhola, Faridpur-7800 (BARI-OFRD-Patuakhali)	Barguna, Patuakhali, Rajshahi, Chapai Nawabganj, and Gazipur
18	AM 2-108 : Investigation and Implementation of two stage Drying, strategy using fluidified bed Dryer followed by sun Drying, LSU and fixed bed Dryer for Drying of high moisture paddy and maize  <b>Date of commencement:</b> Yet not finalized	PI:Md. Sazzat HossainSarker , Associate Professor and Chairman, Dept of Food Engg. and Technology, Faculty of Engg., Hajee Mohammad Danesh Science and Technology University, Dinajpur, Cell:01713163347 Email: mshsarker_hstu@yahoo.com  Coordinator: Md Sultan Mahmud, Assistant Professor,Department of Food Engineering and Technology, HSTU,Dinajpur, Cell:01722313690 Email: mahomud@gmail.com	HSTU, Dinajpur
19	AM 2-88: Efficient utilization of solar energy in irrigation, farm machinery operation and electricity supply to household: A sustainable support to Agricultural Development	PI: Dr. AKM Saiful Islam, PSO, Farm Machinery and Post-Harvest Technology Division, BRRI, Gazipur, Cell: 01552360229 Email: akmsaiful68@yahoo.com	BRRI H/Q, Gazipur, Madhuhathi, Jhinaidaha

<b>SL. #</b>	<b>Project title, Code No., and commencement date</b>	<b>Coordinator/ PI/CI</b>	<b>Locations</b>
20	AM 2-122: Study on Development and diffusion of primary tillage implements assembly of riding power tiller for better method and quality land preparation	PI: Md. Shoeb Hassan, CSO and Head, Farm Machinery and Postharvest process Engineering Division, BARI, Joydebpur, Gazipur Cell: 01711101524 Email: cso.fmpe@bari.gov.bd	FMPE, BARI, Gazipur and MAWTS, Mirpur, Dhaka
21	VC 3-167 :Market and value Chain Studies of Major Fruits and Vegetables with Special References to Post Harvest Losses and Food Safety in Bangladesh	Team Leader: Dr. Md. Abdul Matin, PSO, Agricultural Economics Division, BARI, Joydebpur, Gazipur Cell:01725694481 Email: matinecon61@yahoo.com	Exact locations (Upazilas) of the project will be determined through stakeholder consultation prior to taking up the work
22	VC 3-130: Marketing and value Chain Analysis of Major Fruits and Vegetables in Relation to post-harvest loss and Food Safety in Bangladesh	Team Leader: PI: Dr. M. Serajul Islam, Professor, Dept. of Agricultural Economics, BAU, Mymensingh Cell: 01715028792 Email: serajulbau@yahoo.com	Rajshahi, Nawabganj, Dinajpur, Narshingdi, Tangail, Bogra, Gazipur, Mymensingh, Rangamati, Bandarban, Munshigonj, Jamalpur, Jessore, Pabna, Comilla, and Kishoregonj (16 Districts).

## Pilot Project List

Sl. No.	Project Code and Title	Name of the PI
1.	C-HF-103: Validation of improved agricultural technologies at farmer's field in hill farming system	Dr. Md. Mohabbat Ullah, Principal Scientific Officer, Hill Agril. Research Station, Bangladesh Agricultural Research Institute, Khagrachhari Mobile: 01550605727
2.	C-PHT-179: Increasing storability of potato in natural storage and income generation through small scale processing of potato	Dr. Md Azizul Haque, Former in charge, Tuber Crops Research Sub-center, BARI Munshiganj-1500. Currently Professor, BSMRAU. Mobile: 01711488619
3.	C-CA-113: Adaptation of improved Sesame varieties in Khulna District optimizing sowing time and Nitrogenous fertilizer management	Dr. Md. Sarwar Jahan, Professor, Agrotechnology Discipline, Khulna University, Khulna-9208. Mobile: 01712813106
4.	C-S-161: Water management practices for increasing cropping intensity in Chapai Nawabganj District of Bangladesh.	Dr. Md. Asgar Ali Sarker, CSO (cc), Agriculture Engineering Division, BINA, P.O. Box-04, Mymensingh-2202. Mobile: 01715998145
5.	<b>P-1:</b> Crop intensification in Barind area through effective drought management	Dr. Md. Abdus Salam, Senior Scientific Officer On-Farm Research Division, Bangladesh Agricultural Research Institute, Rajshahi Mobile: 01712092122
6.	P-2: Management and control of mites in coconut through farmers' capacity enhancement	Dr. Md. Nazirul Islam, Principal Scientific Officer Regional Horticultural Research Station, Shibpur, Narshingdi. Mobile: 01715855239
7.	P-3: Increasing rice production adopting improved production technologies in the tidal floodplain.	Professor Dr. Md. Jafar Ullah, Department of Agronomy, Sher-E-Bangla Agricultural University, Dhaka. Mobile: 01552331605
8.	P-4: Upscaling of mubgbean-rice pattern in the Charlands of Kurigram.	Professor Dr. Md. Abdul Karim, Department of Agronomy Bangabandhu Sheikh Mujibur Rahman Agricultural University, Gazipur-1706 Mobile: 01716752414
9.	P-5: Upscaling improved jhum cultivation introducing intercropping rice with cotton	Prof. Dr. Md. Farid Uddin, Additional Director Cotton Development Board Khamarbari. Mobile: 01711020798
10.	P-6: Integrating crops and fish culture through land conversion into-ditch-dyke system	Professor Dr. Md. Mofazzal Hossain, Department of Horticulture, Bangabandhu Sheikh Mujibur Rahman Agricultural University, Gazipur-1706. Mobile: 01819433225
11.	P-7: Upscaling and validation of a proven technology on management of the major diseases of Brinjal and Tomato.	Dr. Biresh Kumar Goswami, CSO, TCRC, BARI, Gazipur-1701. Mobile: 01716519187

**KGF BKGET funded CRP Hill Agriculture (Component List)****Project:** Harnessing the Potential of Hill Agriculture**Project Location:** Bandarban, Khagrachari and Rangmati**Duration 5 years:** July 2013 to June 2018

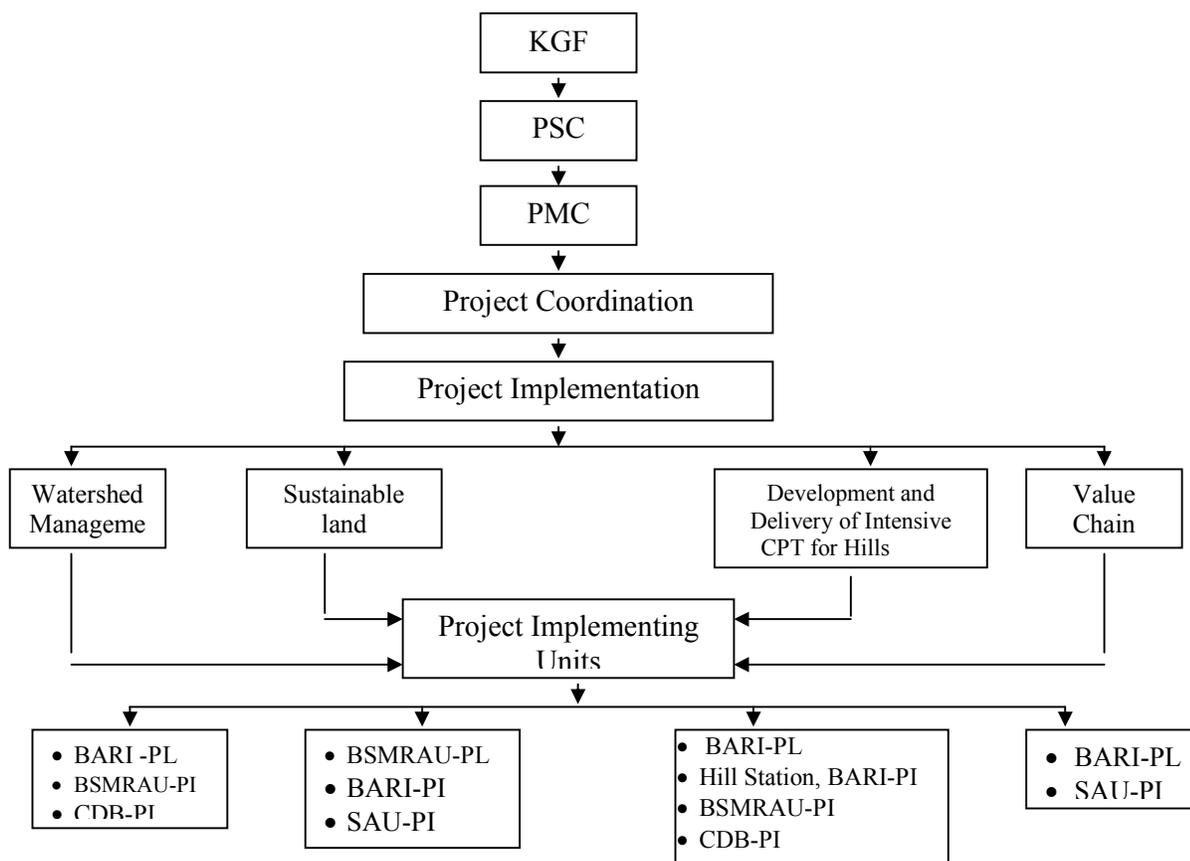
Component with Implementing Institute	Objectives	Coordinator, Component Leader (CL) & Principal Investigator (PI)	Approved Budget	
			Total	1 <sup>st</sup> year
<b>I:</b> Watershed Management for Sustainable Agricultural Production  <b>Implementing Institute:</b> BARI, Joydebpur, Gazipur 1701	<ol style="list-style-type: none"> <li>1. Selection, delination and characterization of watersheds in selected locations of Bandarban, Rangamati and Khagrchhari districts for increasing crop production through crop intensification</li> <li>2. Development and management of watersheds for augmenting surface water for developing irrigation facility and domestic uses</li> </ol>	<b>CL: Dr. Md. Mohabbat Ullah</b> , PSO, HARS, Khagrachari <b>PI:</b> 1. Prof. Dr. Md. Rafiqul Islam, BSMRAU 2. Mr. Mong Sanue Marma, SSO, Cotton Research Station, Balaghata, Bandarban	Total Tk. 707 lakh	Total Tk. 333.41 lakh
<b>II:</b> Sustainable Land Management  <b>Implementing Institute:</b> BSMRAU, Salna, Gazipur 1706	<ol style="list-style-type: none"> <li>1. To study the soil properties (Physical, chemical and hydrological) of selected watersheds to gain understanding of and make decision tool for developing sustainable soil management strategies</li> <li>2. To manage and enhance soil fertility for sustainable agriculture in the uplands</li> <li>3. To create awareness among the farmers and adoption of sustainable land management in the hills and valleys</li> </ol>	<b>CL: Prof. Dr. AJM Sirajul Karim</b> , Soil Science Dpt., BSMRAU, Gazipur <b>PI:</b> 1. Prof. Dr. Alok Kumar Paul, Department of Soil Science, SAU, Sher e Bangla Nagar, Dhaka-1207 2. Dr. Monoranjan Dhar, PSO, RARS, Hathazari, Chittagong	Total Tk. 801 lakh	Total Tk. 168.14 lakh
<b>III:</b> Development and Delivery of Intensive Crop Production Technologies for Hill Agriculture  <b>Implementing Institute:</b> BARI, Joydebpur, Gazipur 1701	<ol style="list-style-type: none"> <li>1. Validating and up scaling of improved technologies for production enhancement</li> <li>2. To improve jhum system for enhancing production and reducing environmental degradation</li> <li>3. To conduct strategic and applied research for developing appropriate crop production technologies suitable for upland and valleys</li> <li>4. Adoption of improved cropping systems and management practices for sustainable production in the hills</li> </ol>	<b>CL: Dr. Mohammad Amin</b> , CSO, RARS, BARI, Hathazari, Chittagong <b>PI:</b> 1. Prof. Nasimul Bari, Agronomy Department, BSMRAU, Salna, Gazipur 2. Dr. Zulfiquir Ali Firoz PSO, Hill Agricultural Station, Ramgarh, Khagrachari 3. Dr. Md. Farid Uddin, Additional Director, CDB, Khamarbari, Dhaka 4. Dr. M.A. Rouf SSO, Hill Agricultural	Total Tk. 1490 lakh	Total Tk. 284.19 lakh

Component with Implementing Institute	Objectives	Coordinator, Component Leader (CL) & Principal Investigator (PI)	Approved Budget	
			Total	1 <sup>st</sup> year
		Research Station, Khagrachari		
<b>IV:</b> Entrepreneurship and Value Chain Development for linking farmers with market  <b>Implementing Institute:</b> BARI, Joydebpur, Gazipur 1701	1. To develop value added products and entrepreneurs for income generation and poverty reduction 2. To develop market/ value chain and linking hill farmers with markets 3. To develop value-chain of selected vegetables and fruits grown in the hills 4. To identify and promote quality product and preservation of vegetables and fruits through local technology 5. To produce manure and high value crops as business enterprise for raising farm income 6. To follow-up action for entrepreneurs and impact assessment of their business enterprises	<b>CL: Dr. Md. Jamal Uddin</b> , SSO, RARS, BARI, Hathazari, Chittagong <b>PI: Prof. M. Mizanul Haque Kazal</b> , Department of Rural Development Economics, SAU, Sher e Bangla Nagar, Dhaka-1207	Total Tk. 143 lakh	Total Tk. 36.56 lakh
<b>V: Program Coordination</b>  <b>Implementing Institute:</b> KGF, Dhaka	To coordinate implementation of activities of four components of the project providing financial assistance, developing human resources and improving knowledge and skill of farmers	<b>Coordinator:</b> Dr. Md. Abdul Jalil Bhuyan, Coordinator, KGF and former DG, BRRI	Total Tk. 763 lakh	Total Tk. 155.28 lakh
<b>Total</b>			Tk. 3904 lakh	Tk. 977.58 lakh

**Project Coordination Component (PCC)**

Out of five (5) components of this Hill Research Project under the Commissioned Research Program (CRP), the first four will be directly involved in project implementation and the 5<sup>th</sup> one (PCC) will be involved in providing management and coordination support for other four components. This 5<sup>th</sup> component (PCC) will be under direct administrative control of KGF and will act as bridge between KGF and Project Implementation Units (PIUs) of other four components. Four public sector organizations (BARI, BSMRAU, SAU and CDB), 4 component leaders, 12 principal investigators (PIs) including 4 component leaders, several scientific and support staff will be involved in the implementation of project activities. Under this component, KGF will establish and operationalize a Project Coordination Unit (PCU) at Khagrachari, CHT to support, coordinate and facilitate implementation of this project through four components and 12 Project Implementation Units (PIUs) of four organizations under the guidance of the Project Steering Committee (PSC) and Project Management Committee (PMC). KGF will also hire on contractual basis a full time Project Coordinator for running the PCU. The PCU would, with input from different components and implementing units consolidated Project Annual Work Plan and Budget for approval by PMC/PSC. Besides, holding regular coordination meeting, project inception workshop, conducting concurrent M&E, providing technical support through contractual expert services, organizing training programs and compiling half yearly, annual implementation progress and completion report of the project, documentation, communication and awareness building on key findings of the project are some of the key functions of PCU.

**A. Organizational and Management Structure of the Commissioned Research Program (CRP):  
Harnessing the Potentials of Hills: *Enhancing Crop Production through Sustainable  
Management of Natural Resources.***



**B. Management Structure of the Commissioned Research Program (CRP)**

**(I) Project Management Committee (PMC) Composition**

- |                               |                  |
|-------------------------------|------------------|
| 1. Director (RM)/ (P&E), KGF  | Chairman         |
| 2. Project Component Leaders  | Member           |
| 3. Project Sub- Component PIs | Member           |
| 4. Project Coordinator        | Member Secretary |

**ToR**

1. Review implementation Progress of the Project
2. Suggest solutions of problems encounter by the implementing organization.
3. Committee will meet once in every three/six months.

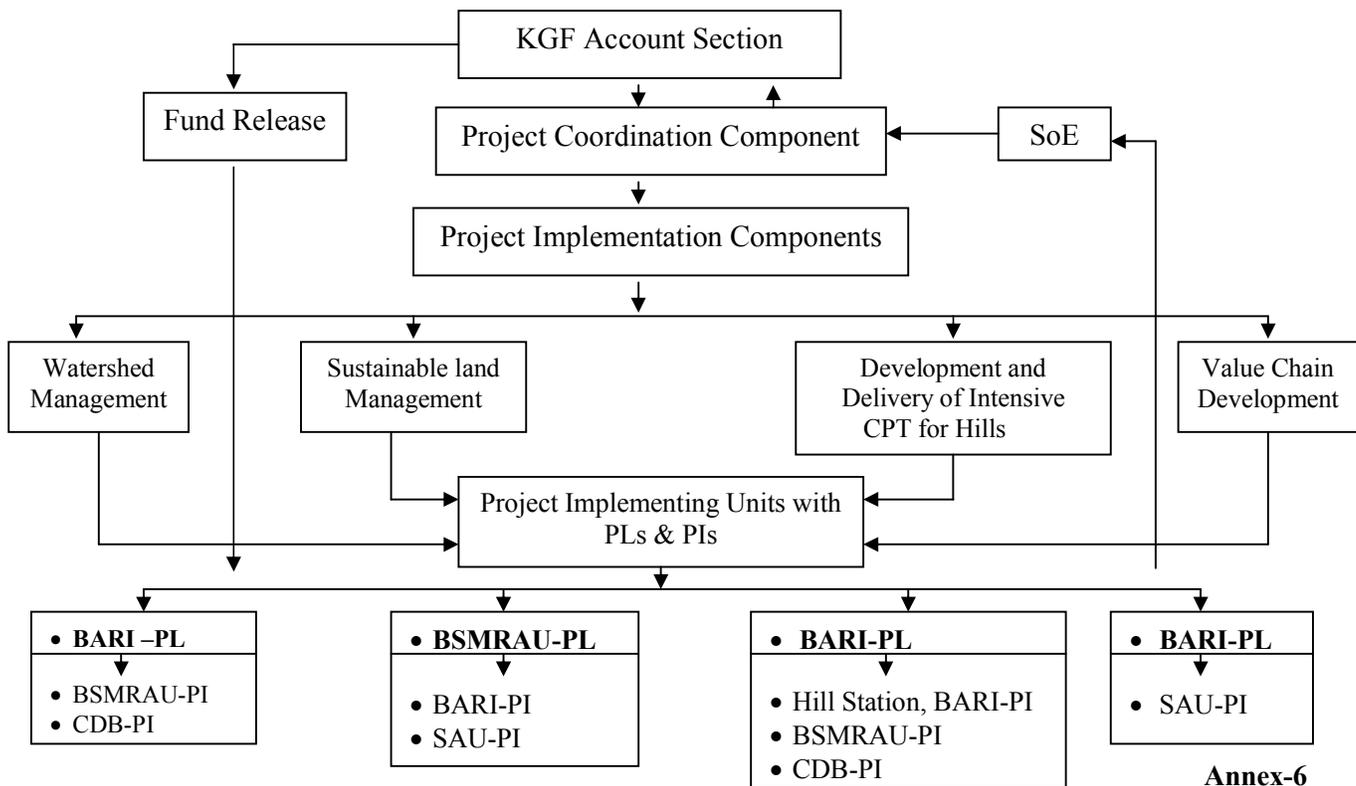
**(II) Project Steering Committee (PSC) Composition**

- |   |                  |
|---|------------------|
| 1. Executive Director, KGF                                      | Chairman         |
| 2. Head/Authorized representative of implementing organizations | Member           |
| 3. Director (RM)/ (P&E), KGF                                    | Member           |
| 4. Project Component Leaders                                    | Member           |
| 5. <b>Project Sub- Component PIs</b>                            | <b>Member</b>    |
| 6. Project Coordinator  | Member Secretary |

**ToR**

1. Provide technical and management guidance for proper implementation of project activities.
2. Provide appropriate solutions to technical and financial problems encountered by any implementing organization.
3. Committee will meet at least once in each project year.

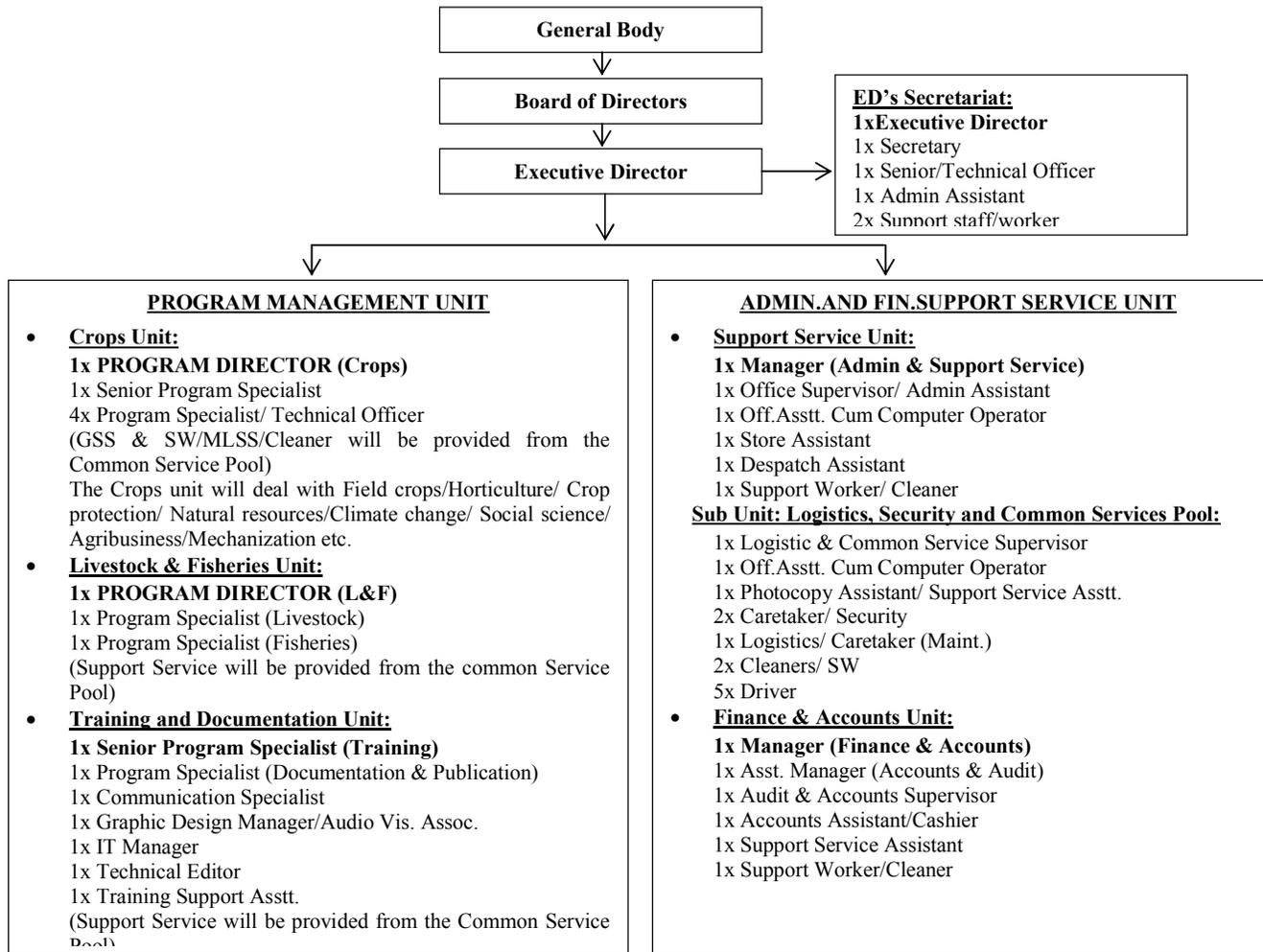
**C. Fund Management for Hill Research under CRP**



**Annex-6**

**Organogram and Staff Provision of KGF**  
(Approved by the 43<sup>rd</sup> & 44<sup>th</sup> Board and 6<sup>th</sup> EGM of KGF)

Annex-7



**List of Members of General Body and Board of Directors of KGF  
(As per provisions in the KGF Memorandum and Articles of Association)**

<b>Sl. No.</b>	<b>List of the Board of Directors</b>	<b>Member list of the General Body</b>
01.	Dr. Abul Kalam Azad Chairman, Board of Directors of KGF and Executive Chairman, BARC, Farmgate, Dhaka-1215	Dr. Abul Kalam Azad Chairman, General Body of KGF and, Executive Chairman, BARC, Farmgate, Dhaka-1215
02.	Dr. Mahabub Hossain, Former Member of BoDs & GoB member of KGF and Advisor to ED, BRAC, and former Director General, BIDS, and former Head of Social Science Division, IRRI, BRAC Centre, 75, Mohakhali, Dhaka-1212	Dr. Mahabub Hossain, Former Member of BoDs & GoB member of KGF and Advisor to ED, BRAC, and former Director General, BIDS, and former Head of Social Science Division, IRRI, BRAC Centre, 75, Mohakhali, Dhaka-1212
03.	Dr. Md. Rafiqul Islam Mondal Director General, BARI, Joydebpur, Gazipur-1701	Dr. Md. Rafiqul Islam Mondal Director General, BARI, Joydebpur, Gazipur-1701
04.	Dr. Jiban Krishna Biswas Director General, BRRI, Joydebpur, Gazipur-1701	Dr. Jiban Krishna Biswas Director General, BRRI, Joydebpur, Gazipur-1701
05.	Prof. Dr. Md. Hazrat Ali, Treasurer, and former Dean and Professor, Department of Agronomy Sher-e-Bangla Agricultural University(SAU), Sher-e-Bangla Nagar, Dhaka-1207	Prof. Dr. Shah-e-Alam Former VC, Sher-e-Bangla Agricultural University, and Professor of Plant Breeding and Genetics Department, BAU, Mymenshingh-2202
06.	Dr. Md. Rafiqul Islam Molla Former DD, DAE, and Director, Social Upliftment Society (SUS), 76/A, Uttara para, Saver, Dhaka-1340	Prof. Dr. Md. Hazrat Ali, Treasurer, and former Dean and Professor, Department of Agronomy Sher-e-Bangla Agricultural University(SAU), Sher-e-Bangla Nagar, Dhaka-1207
07.	Dr. Shaikh Abdul Quader Managing Director, Agriconcern Ltd. 67, Purana Paltan Line, Dhaka-1000	Dr. Md. Rafiqul Islam Molla Former DD, DAE, and Director, Social Upliftment Society (SUS), 76/A, Uttara para, Saver, Dhaka-1340
08.		Dr. Shaikh Abdul Quader Managing Director, Agriconcern Ltd. 67, Purana Paltan Line, Dhaka-1000
09.		Mr. Md. Hamidur Rahman Director General, DAE, Khamarbari, Farmgate, Dhaka-1215
10.		Dr. Nowsad Alam Professor of Post-harvest, Fisheries and Quality Control, Department of Fisheries Technology, BAU, Mymenshingh-2202
11.		Dr. Md. Abdur Razzaque Former DG, BARI and Executive Director Lalteer, Anchor Tower, Uttam C.R. Road Dhaka

Sl. No.	List of the Board of Directors	Member list of the General Body
12.		Kbd. Ajoy Kumar Roy DG and Director (in-charge) Animal Health and Admin Animal Health and Admin, DLS, Khamarbari, Dhaka-2015
13.		Dr. Kshirode Chandra Roy Former DG-BRRI House-247 (2 <sup>nd</sup> Floor) Block-K, West Joydebpur, Gazipur-1700
14.		Dr. Craig A. Meisner Country Director, WorldFish Centre Bangladesh and South Asia Bangladesh Office, House-22B, Road-7, Block-F, Banani, Dhaka-1213

**List of KGF Expert Professionals**

 **Chief Executive: Dr. M. Nurul Alam, Executive Director (ED), KGF.**

<b><u>Sl. No.</u></b>	<b><u>Name of Experts &amp; Designation (Technical and Financial Management)</u></b>
01.	Prof. Dr. Abdul Hamid, Director (Planning & Evaluation).
02.	Dr. Rahim Uddin Ahmed, Sr. Program Officer (Planning & Evaluation).
03.	Dr. Kazi M. Kamaruddin, Programme Director (Livestock & Fisheries)
04.	Dr. Md. Abdur Razzaque, Sr. Program Officer (Research Management).
05.	Dr. Mohibul Hasan, Sr. Technical Expert (Monitoring & Evaluation).
06.	Mr. Suvash Chandra Halder, Technical Expert (Monitoring & Evaluation).
07.	Ms. Shahrina Akhatar, Program Officer
08.	Mr. Md. Salat Ahmed, Deputy Manager (Finance).
09.	Mr. Mehedi Hasan, Administrative Officer.

**Annual Budget and Financial Progress for the Financial Year 2015**

Statement of Expenditure (SOE) January to December under KGF BKGET Fund

**Budget:**

Source of Fund/Head of Income:	Financial Year	Approved Budget	Fund Received	Receiving Date
Grants from BKGET Trust Fund*	2014-2015	2,000.00	2nd inst. 1000	12-Jan-15
	2015-2016	3,000.00	1st inst. 1500	8-Jul-15

**SoE**

Sl. No.	Line Items / Head of Expenditures	Approved Budget		Received January 2015 to December 2015	Expenditure January 2015 to December 2015
		2014-2015	2015-2016		
<b>1</b>	<b>Programs Cost:</b>				
1.1	(a) (i) CGP ( 1st Call) -14 Projects		700	670	652.25
	(ii) CGP ( 2nd Call) -22 Projects	960.00			
	(b) (i) Commissioned Research Program (CRP) Hill Agricultural - 5 Components		450	435	430.42
	(ii) CRP Sugarcane	-	260	180	159.64
	(iii) CRP- 2 Modeling Climate Change Impact on Agricultural and Developing Mitigation and Adaptation Strategies for Sustaining Agricultural Production in Bangladesh	-	100	60	56.06
	(c) Technology up scaling - Short term Pilot Project -8	-	391	391	389.45
	(d) preparation of the documents, management, reviews, TA/DA, M&E cost, etc. included in the a,b,c above	-	-	-	-
1.2	<b>Capacity Building Program (CBP):</b>				
	(a) <b>Human capacity (HRD Program):</b> Skill enhancement of scientists and R&D partners; National/International training / workshops/ meetings/ visits, etc.; National/International resource person/ consultant/ experts per diem, remuneration, fees, airfare, lodging and others cost; National/International linkage development program with KGF and R&D partners	200.00	150.00	150.00	144.85
	(b) <b>Institutional capacity enhancement:</b> i) Strengthening/ creation of research facilities/renovation, etc. for NARS institute; ii) KGF capacity improvement: Office rent, procurement of KGF equipment, computer, vehicles, goods and logistics support and services, hiring of services and facilities, etc. for KGF.	200.00	174.00	74.00	62.67
	(iii) ICT-ARMIS Project	-	75.00	75.00	75.00
	(c) i) <b>Preparation of plan &amp; other documents:</b> National/ International experts/ consultants/resource persons fees for different studies / publications / books, etc.; including logistics support and printing, publication, documents & video production cost, etc.	100.00	40.00	40.00	38.86
	ii) <b>Technical &amp; Financial Performance:</b> Monitoring/Review/Evaluation, etc.	40.00	0.00	0.00	-
	iii) <b>Southern Tidal Flood Plane, Preparation of Plan &amp; other documents (studies), ACIAR/ International collaboration</b>	-	50.00	0.00	-
	<b>1. Sub-total of Program Cost</b>	<b>1,500.00</b>	<b>2,390.00</b>	<b>2,075.00</b>	<b>2,009.19</b>
	<b>Progress Programs Cost</b>				<b>80.37%</b>
<b>2</b>	<b>Operational Support Cost:</b>				
2.1	(a) <b>Salaries:</b> i) Salaries of KGF experts/fellows/managers/ advisors and support services staff fees, ii) Remuneration of contractual services & other staff, etc.	265.00	365.00	250.00	244.32
	(b) <b>Allowances:</b> Allowances, services benefits, TAX/VAT, payments, etc. of KGF experts / staff fellows / advisors.	125.00	100.00	70.00	58.35
2.2	(a) <b>General Operating Cost:</b> Utilities, hiring of vehicles, repair & maintenance/ renovation, supply & services, TA/DA and other costs, etc., Audit fees/ financial/ technical services, etc.	90.00	125.00	90.00	87.29
	(b) Contingency/ Any other misc. cost (as per need)	20.00	20.00	15.00	0.25
	<b>2. Sub-total of Operational Support Cost</b>	<b>500.00</b>	<b>610.00</b>	<b>425.00</b>	<b>390.21</b>
	<b>Total Budget for 2015 (Taka in lakh)</b>	<b>2,000.00</b>	<b>3,000.00</b>	<b>2,500.00</b>	<b>2,399.40</b>
	<b>Progress Operational Support Cost</b>				<b>15.61%</b>
	<b>Total Progress, Jan'2015 to Dec' 2015 against received Tk.2500/- lac</b>				<b>95.98%</b>

(As per need, line-item costs may be adjusted by the ED, KGF within the Total)

\*Trust fund grants (Tk.3000 lakh) will be utilized as per objectives of the BKGET Clause iv no.7 (page-10) and the provisions of the Memorandum of KGF.

**AUDITORS' REPORT**

And

**FINANCIAL STATEMENTS**

OF

**KRISHI GOBESHONA FOUNDATION (KGF)**

For

**Bangladesh Krishi Gobeshona Endowment Trust (BKGET) Fund**

BARC Campus, Farmgate,  
Dhaka-1215

For the year ended December 31, 2014

**AUDITOR:**

**AHMED ZAKER & CO, Chartered Accountants**

45, Shaheed Nazrul Islam Sarani, Saiham Sky View Tower (2<sup>nd</sup> floor), Bijoy Nagar, Kakrail, Dhaka-1000,  
Bangladesh. Tel: 8391440-3, Fax: 880-2-8391011,  
E-mail: [azcbangladesh@gmail.com](mailto:azcbangladesh@gmail.com) Web: [www.ahmedzaker.com](http://www.ahmedzaker.com)



# AHMED ZAKER & Co.

## CHARTERED ACCOUNTANTS



A MEMBER FIRM OF KINGSTON SOREL INTERNATIONAL, DEVONSHIRE HOUSE, 60 GOSWELL ROAD, LONDON EC1M 7AD

### Auditors' Report

We have audited the accompanying financial statements of **Bangladesh Krishi Gobeshona Endowment Trust (BKGET) fund of Krishi Gobeshona Foundation**, which comprise the Statement of Financial Position as at December 31, 2014 and the Statement of Profit or Loss and other Comprehensive Income, Statement of Cash flows for the year then ended and a summary of significant accounting policies and other explanatory notes.

#### Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with **Bangladesh Financial Reporting Standards (BFRS)**. This responsibility includes designing, implementing and maintaining internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

#### Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with **Bangladesh Standards on Auditing (BSA)**, those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

#### Opinion

In our opinion, based on our audit, the financial statements give a true and fair view of the financial position of **Bangladesh Krishi Gobeshona Endowment Trust (BKGET) fund of Krishi Gobeshona Foundation** as on December 31, 2014 and of its financial performance for the year then ended in accordance with **Bangladesh Financial Reporting Standards (BFRS)** and other applicable laws and regulations.

#### Report on Other Legal and Regulatory Requirements

We also report that;

- a) we have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit and made due verification thereof;
- b) in our opinion proper books of account as required by law have been kept by KGF for the **Bangladesh Krishi Gobeshona Endowment Trust (BKGET) fund** so far as it appeared from our examination of those books;
- c) The Statement of Financial Position and Statement of Profit or Loss and other Comprehensive Income and Statement of Cash flows dealt with by the report are in agreement with the books of accounts.

Place: Dhaka  
January 03, 2016

  
Ahmed Zaker & Co.  
Chartered Accountants

HEAD OFFICE : ● 45, Shaheed Syed Nazrul Islam Sarani, Bijoyagar, Saiham Tower (2nd Floor), Dhaka-1000, Bangladesh.

TEL:880-2-8391440-3, Fax : 880-2-8391011, E-mail : azcbangladesh@gmail.com, web : www.ahmed-zaker.com

BRANCH OFFICE : ● 204, St. Mujib Road, Arahad CA, Chittagong, TEL:880-24-749959-799999

**Krishi Gobeshona Foundation ( KGF )**  
**Bangladesh Krishi Gobeshona Endowment Trust (BKGET) Fund**  
 Statement of Financial Position  
 As at December 31, 2014

Particulars	Notes	Amount in Taka	
		Dec 31, 2014	Dec 31, 2013
<b>Assets:</b>			
<b>Non-Current assets</b>			
Property, Plant and Equipment	4.00	10,122,744	5,293,367
<b>Current assets</b>			
Cash & Cash equivalents	5.00	17,390,274	36,802,997
Loans & advance	6.00	10,215,210	-
Security deposit	7.00	1,080,000	-
<b>Total Property &amp; Assets</b>		<b>38,808,228</b>	<b>42,096,364</b>
<b>Fund and Liabilities</b>			
<b>Liabilities:</b>			
Security deposit against vehicle purchase		-	379,457
<b>Fund Account:</b>			
BKGET Fund	8.00	38,808,228	41,716,907
<b>Total Fund and Liabilities</b>		<b>38,808,228</b>	<b>42,096,364</b>

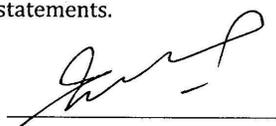
The annexed notes (1 to 14) form an integral part of these financial statements.

  
**Manager ( Finance & Accounts )**

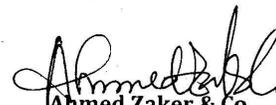
**Salat Ahmed**

Manager (Finance & Accounts)  
 Signed as per our report of same date.  
 Krishi Gobeshona Foundation  
 BARC Campus, Farmgate, Dhaka-1215

Place: Dhaka  
 January 03, 2016

  
**Executive Director**

Dr. M. Nurul Alam  
 Executive Director  
 Krishi Gobeshona Foundation  
 BARC Campus, Farmgate, Dhaka-1215.

  
**Ahmed Zaker & Co.**  
 Chartered Accountants

**Krishi Gobeshona Foundation ( KGF )**  
**Bangladesh Krishi Gobeshona Endowment Trust (BKGET) Fund**  
Statement of Profit or Loss And other Comprehensive Income  
For the year ended December 31, 2014

Particulars	Notes	Amount in Taka	
		Jan 01- Dec 31, 2014	Jan 01- Dec 31, 2013
<b>Income:</b>			
Grant	8.00	102,908,679	56,271,432
Interest Received	-	2,120,172	2,035,447
Other Income	-	25,634	-
<b>Total Income:</b>		<b>105,054,485</b>	<b>58,306,879</b>
<b>Expenditure:</b>			
Services	9.00	9,283,022	9,060,028
Training, Workshop & CGP Related Expenses	10.00	15,442,125	15,277,592
Operational Cost	11.00	11,933,219	8,961,992
Competitive Grant Program CGP	12.00	30,737,295	12,256,467
Commissioned Research Project CRP-1	13.00	28,258,924	12,450,800
Pilot Project	14.00	9,399,900	-
<b>Total Expenditure:</b>		<b>105,054,485</b>	<b>58,006,879</b>

The annexed notes (1 to 14) form an integral part of these financial statements.

  
\_\_\_\_\_  
**Manager ( Finance & Accounts )**  
Salat Ahmed  
Signed as per our report of same date.  
Krishi Gobeshona Foundation  
BARC Campus, Farmgate, Dhaka-1215

  
\_\_\_\_\_  
**Executive Director**  
Dr. M. Nurul Alam  
Executive Director  
Krishi Gobeshona Foundation  
BARC Campus, Farmgate, Dhaka-1215

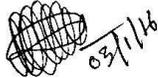
**Place: Dhaka**  
January 03, 2016

  
\_\_\_\_\_  
**Ahmed Zaker & Co.**  
Chartered Accountants

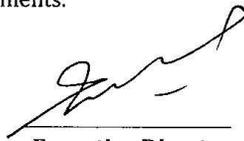
**Krishi Gobeshona Foundation ( KGF )**  
**Bangladesh Krishi Gobeshona Endowment Trust (BKGET) Fund**  
 Statement of Cash Flows  
 For the year ended December 31, 2014

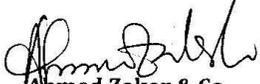
Particulars	Amount in Taka	
	Jan 01- Dec 31, 2014	Jan 01- Dec 31, 2013
<b>A. Cash flows from operating activities</b>		
Fund Received during the year	100,000,000	50,000,000
Interest Received	2,120,172	2,035,447
Other Received	25,634	379,457
Other Payment	(1,459,457)	-
Grants and other operating expenses paid	(105,054,485)	(58,306,879)
<b>Net cash provided by operating activities</b>	<b>(4,368,136)</b>	<b>(5,891,975)</b>
<b>B. Cash flows from Investing activities</b>		
Acquisition of property, plant and equipment	(4,829,377)	(5,126,367)
<b>Net cash used in Investing activities</b>	<b>(4,829,377)</b>	<b>(5,126,367)</b>
<b>C. Cash flows from financing activities</b>		
Loans and advance	(10,215,210)	-
<b>Net loans &amp; advance activities</b>	<b>(10,215,210)</b>	<b>-</b>
<b>D. Net Cash and cash equivalents ( A+B+C)</b>	<b>(19,412,723)</b>	<b>(11,018,342)</b>
Cash and cash equivalents at the beginning of the year	36,802,997	47,821,339
<b>Cash and cash equivalents at the end of the year</b>	<b>17,390,274</b>	<b>36,802,997</b>

The annexed notes (1 to 14) form an integral part of these financial statements.

  
**Manager ( Finance & Accounts )**  
 Salat Ahmed  
 Manager (Finance & Accounts)  
 Signed as per our report of same date.  
 BARC Campus, Farmgate, Dhaka-1215

Place: Dhaka  
 January 03, 2016

  
**Executive Director**  
 Dr. M. Nurul Alam  
 Executive Director  
 Krishi Gobeshona Foundation  
 BARC Campus, Farmgate, Dhaka-1215.

  
**Ahmed Zaker & Co.**  
 Chartered Accountants

**Krishi Gobeshona Foundation**  
**Farmgate, Dhaka**  
Notes to the Financial Statements  
For the year ended December 31, 2014

**1.0 Reporting Entity**

**i) Organizations Profile:**

The **Krishi Gobeshona Foundation (KGF)** was established by the Govt. of the People's Republic of Bangladesh in 2007 under the Companies Act 1994 having Reg. No. E-684(05)07 dated September 19, 2007. The Foundation is an Association not for profit within the meaning of the section 28 of the said Act.

The Foundation is set with its own General Body to manage the Competitive Grants Program CGP under the **Bangladesh Krishi Gobeshona Endowment Trust (BKGET)** with independence, objectivity and transparency. The General Body and the board of Directors have representative members from Government, Bangladesh Agricultural Research Council (**BRAC**), eminent persons of Agricultural Research and Development under National Agricultural Research System (**NARS**), Consultative Group on International Agricultural Research (**CGIAR**), Agricultural Extension Service and Agricultural University/Academic Institutes, NGO's Relevant Foundations/Financial Institutions, Economists/Rural Development Practitioners, Agribusiness Entrepreneurs and Private Sectors or Individuals.

**ii) Objective and Activities:**

**KGF** is responsible for management and implementation of the Competitive Grants Program (**CGP**) with objectivity and transparency. **CGP** is a sub-component of the research Component of the **Bangladesh Krishi Gobeshona Endowment Trust (BKGET)**, Phase- 1 finance by the World Bank and IFAD. **KGF** through its **CGP** seeks to develop a more Pluralistic research system by opening the **CGP** to the **NARS** institutes, universities, other research institutes, NGO's and private sectors organizations. Agricultural research and development projects funded under **CGP** require having location-specific, pre-identified high priority area, multi-disciplinary approach short or medium term duration, demand driven, immediate benefit and problem- solving criteria. **KGF** funds the **CGP** projects that are crucial to bridge the yield gaps, respond to pre-identified problems and address other demand- based issues for improving productivity and farm income. Major focus is on- farm applied and adaptive research, including marketing, socio-economic aspects and value addition.

**2.00 Basis of Presentation of Financial Statements**

**i) Basis of Accounting:**

The financial statements have been prepared under historical cost convention and **Bangladesh Accounting Standards (BAS)** and Provisions of the Companies Act 1994 and other applicable laws and rules of Bangladesh.



**ii) Basis of Measurement:**

The financial statements have been prepared on the historical cost convention and therefore do not take into consideration the effect of inflation.

**iii) Accounting records:**

Income has been recognized at the time when it was received and an expense has been recognized when it was paid.

**iv) Compliance with International Accounting Standards:**

The financial statements have been prepared in accordance with requirements of the **International Accounting Standard (IAS)** approved by the **International Accounting Standards Committee (IASC)** and as adopted by the **Institute of Chartered Accountants of Bangladesh (ICAB)** as applicable.

**v) Compliance with Local Laws:**

The financial statements have been prepared in accordance with **Bangladesh Financial Reporting Standards (BFRS)** and other applicable laws and regulations.

**vi) Fixed assets and Depreciation:**

No depreciation has been charged on fixed assets during the Financial Year 2014.

**vii) Reporting Currencies and Level of Precision:**

Transactions in foreign currencies are converted into Bangladeshi Taka at the exchange rate ruling on the date of transaction and rounded off to nearest Taka.

**3.00 Additional information on financial statements:**

**i) Components of the Financial Statements:**

According to **IAS-1 "Presentation of Financial Statements"** the complete set of financial statements include the following:

- i) Statement of Financial Position as on December 31, 2014
- ii) Statement of Statement of Profit or Loss And other Comprehensive Income for the year ended December 31, 2014
- iii) Statement of Cash Flows for the year ended December 31, 2014
- iv) Notes to the Financial Statements for the year ended December 31, 2014.



**iii) Comparative:**

Comparative information have been disclosed in respect of the previous year for all numerical information in the financial statements and also the narrative and descriptive information when it is relevant for understanding of the current year financial statements.

Previous year's figure has been re-arranged whenever considered necessary to ensure comparability with the current year's presentation as per **BAS-8** Accounting Policies, Changes in Accounting estimates and Errors.

**iii) Reporting Period:**

Financial statements of the company cover one year from January 01, 2014 to December 31, 2014 consistently.

**iv) General:**

Figures appearing in the Financial Statements have been rounded off to the nearest Taka.

*AZ*

**Krishi Gobeshona Foundation ( KGF )**  
**Bangladesh Krishi Gobeshona Endowment Trust (BKGET) Fund**  
Notes to the Financial Statements  
For the year ended December 31, 2014

Amount in Taka	
Jan 01- Dec 31, 2014	Jan 01- Dec 31, 2013

**4.00 Property plant and Equipments : Tk. 10,122,744.00**

This is made up as follows

Particulars

Opening balance at cost	5,293,367	167,000
Add: Addition during the year	4,829,377	5,126,367
	<b>10,122,744</b>	<b>5,293,367</b>
Less: Adjustment during the year	-	-
	<b>10,122,744</b>	<b>5,293,367</b>
Less: Accumulated depreciation	-	-
Written down value (WDV)	<b>10,122,744</b>	<b>5,293,367</b>

Detail have been shown in **Annexure - A**

**5.00 Cash and Cash Equivalents: Tk. 17,390,274.00**

This is made up as follows

Particulars

Pubali bank Ltd.Farmgate br A/C No-1820102000522	8,025,732	35,173,017
Agrani Bank Ltd.Firmgate brA/C No-0200001661367	1,341,640	1,629,980
Agrani Bank Ltd. Firmgate brA/C No-0200002807701	8,022,902	-
<b>Total</b>	<b>17,390,274</b>	<b>36,802,997</b>

We obtained bank statement and necessary bank reconciliation statement.

**6.00 Loans and Advance: Tk. 10,215,210.00**

This is made up as follows

Particulars

Loan to NATP (RPA)	3,756,539	-
Advance to Mr. Golam Rebbani	9,868	-
Advance to Mrs. Ranu Akter	50,000	-
Advance to Mr. Nurmohol Begum	114,850	-
Advance to Md. ATM Jasim Uddain	13,953	-
Advance to Dr. Abdul Aziz	5,800,000	-
Advance to Mr. Kabel Hossain	470,000	-
<b>Total</b>	<b>10,215,210</b>	<b>-</b>



Amount in Taka	
Jan 01- Dec 31, 2014	Jan 01- Dec 31, 2013

**7.00 Security Deposit: Tk. 1,080,000.00**

This is made up as follows

Particulars

Deposit against office rent	1,080,000	-
<b>Total</b>	<b>1,080,000</b>	<b>-</b>

**8.00 Fund Account: Tk. 38,808,228.00**

This is made up as follows

Particulars

Opening Balance	41,716,907	47,988,339
Add: Fund Received during the year	100,000,000	50,000,000
	<b>141,716,907</b>	<b>97,988,339</b>
Less: Transferred to grant income	102,908,679	56,271,432
<b>Total</b>	<b>38,808,228</b>	<b>41,716,907</b>

**9.00 Service: Tk. 9,283,022.00**

This is made up as follows

Particulars

Expert salary	8,089,562	9,060,028
Expert salary vat	1,193,460	-
<b>Total</b>	<b>9,283,022</b>	<b>9,060,028</b>

**10.00 Training/Workshop & CGP Related Expense: Tk. 15,442,125.00**

This is made up as follows

Particulars

International Training/Foreign	1,625,000	-
CGP meeting ,training fees & other	72,576	2,131,792
Hiring of Vehicles	153,984	-
CGP TA/ DA	1,535,876	14,000
CGP meeting review & evaluation fees	442,733	4,629,887
TAC Fees	16,672	80,000
Travel & Tour	591,873	-
Honorioum	804,270	587,120
Skill enhancement & scientist	378,000	-
CGP Air ticket	391,400	-
CGP Training Workshop	8,129,206	7,834,793
Resource person honorioum(International)	1,300,535	-
<b>Total</b>	<b>15,442,125</b>	<b>15,277,592</b>

*AZ*

Amount in Taka	
Jan 01- Dec 31, 2014	Jan 01- Dec 31, 2013

**11.00 Operational Cost: Tk. 11,933,219.00**

This is made up as follows

Particulars

Pay of Support/ Contractual Core Staff	5,614,458	1,560,846
Allowance/Bonus	573,792	288,072
Conveyance TA/ DA	6,700	491,641
Promotion & Advertisement	203,580	161,939
Sitting Allowance	25,500	10,000
Entertainment	181,989	105,048
Hiring Of Vehicles	-	145,954
Miscellaneous Operational Cost	73,359	230,959
Board Meeting Expense	201,010	196,909
Office Repair & Maintenance	29,748	107,757
Car Repair & Maintenance	207,792	48,700
Other Repair & Maintenance	46,250	75,500
Travel & Tour	37,005	847,589
Bank Charge	87,085	164,234
Electricity Bill	-	725,145
AGM expenses	233,268	157,184
Audit fee	-	124,000
Printing and Publication	423,074	332,520
Books & Periodicals	8,000	5,600
Miscellaneous Expenses	-	1,066,918
T/W on Climate Change	-	2,115,477
Gas, Fuel & Oil etc	425,855	-
Promotional advertisement	80,000	-
Air Fair & loading	117,586	-
Car Insurance Premium	241,725	-
Telephone /Mobile bill, Curier, Inrernet & website	192,846	-
Office Supply & stationary	424,042	-
Resource person honorioum	2,131,000	-
Linkage program with KGF & RND	276,455	-
Staff Facilities	91,100	-
<b>Total</b>	<b>11,933,219</b>	<b>8,961,992</b>

*AZC*

Amount in Taka	
Jan 01- Dec 31, 2014	Jan 01- Dec 31, 2013

**12.00 Competitive Grant Program CGP: Tk. 30,737,295.00**

This is made up as follows

Particulars

1. TF 01-C	885,850	512,500
2. TF 02-C	1,786,450	1,397,750
3. TF 03-C	1,825,800	860,500
4. TF 04-C	2,978,300	1,497,500
5. TF 05-C	2,821,400	1,238,000
6. TF 06-C	1,444,300	608,500
7. TF 07-C	1,297,500	738,500
8. TF 08-NR	1,035,330	681,500
9. TF 09-NR	1,089,810	688,800
10. TF 10-F	2,314,599	1,513,167
11. TF 11-C	1,946,976	1,208,700
12. TF 12-L	1,982,180	1,311,050
13. TF 13-F	3,978,000	-
14. TF 14-C	5,350,800	-
<b>Total</b>	<b>30,737,295</b>	<b>12,256,467</b>

**13.00 Commissioned Research Project CRP-1: Tk. 28,258,924.00**

This is made up as follows

Particulars

1. Components - I	-	3,334,100
2. Components - II	10,031,000	1,681,400
3. Components - III	5,683,800	2,816,900
4. Components - IV	731,200	365,600
5. Components - V	5,000,000	1,252,800
6. ARMIS	6,812,924	3,000,000
<b>Total</b>	<b>28,258,924</b>	<b>12,450,800</b>

**14.00 Pilot Project: Tk. 9,399,900.00**

This is made up as follows

Particulars

Pilot Project-4	1,160,000	-
Pilot Project-7	2,000,000	-
Pilot Project-8	2,000,000	-
Pilot Project-9	2,000,000	-
Pilot Project-10	600,000	-
Pilot Project-11	1,000,000	-
Pilot Project CCA113	139,900	-
Honorarium of Mr. Baren	500,000	-
<b>Total</b>	<b>9,399,900</b>	<b>-</b>



**Krishi Gobeshona Foundation ( KGF )**  
**Bangladesh Krishi Gobeshona Endowment Trust (BKGET) Fund**  
 Schedule of Property plant and Equipments  
 As at December 31, 2014

**Annexure - A**  
(Figures all in Taka)

Particulars	Cost		Rate %	Depreciation			Written down value as on 31.12.2014
	Opening balance as on 01.01.2014	Addition during the year		Closing balance as on 31.12.2014	Opening balance as on 01.01.2014	Charge during the year	
Vehicles ( Micro Bus-2)	3,794,565	3,970,000	0%	7,764,565	-	-	7,764,565
CGP Equipment	17,034	-	0%	17,034	-	-	17,034
Computer Accessories	703,380	-	0%	703,380	-	-	703,380
Multimedia Projector	95,680	-	0%	95,680	-	-	95,680
Office Equipments	56,400	740,800	0%	797,200	-	-	797,200
Furniture & Fixtures	59,039	93,877	0%	152,916	-	-	152,916
Electric Equipments	567,269	24,700	0%	591,969	-	-	591,969
Misc. Materials & Equipments	-	-	0%	-	-	-	-
<b>Total</b>	<b>5,293,367</b>	<b>4,829,377</b>	<b>0%</b>	<b>10,122,744</b>	<b>-</b>	<b>-</b>	<b>10,122,744</b>

*AZ*

*Private & Confidential*

**AUDITORS' REPORT**

And

**FINANCIAL STATEMENTS**

OF

**KRISHI GOBESHONA FOUNDATION (KGF)**

For

**National Agricultural Technology Project (NATP) Fund**

BARC Campus, Farmgate,  
Dhaka-1215

For the year ended June 30, 2014

**AUDITOR:**

**AHMED ZAKER & CO, Chartered Accountants**

45, Shaheed Nazrul Islam Sarani, Saibam Sky View Tower (2<sup>nd</sup> floor), Bijoy Nagar, Kakrail, Dhaka-1000,  
Bangladesh. Tel: 8391440-3, Fax: 880-2-8391011,

E-mail : [azcbangladesh@gmail.com](mailto:azcbangladesh@gmail.com) Web: [www.ahmedzaker.com](http://www.ahmedzaker.com)



# AHMED ZAKER & Co. CHARTERED ACCOUNTANTS



A MEMBER FIRM OF KINGSTON SOREL INTERNATIONAL, DEVONSHIRE HOUSE, 60 GOSWELL ROAD, LONDON EC1M 7AD

## Auditors' Report

We have audited the accompanying financial statements of **National Agricultural Technology Project (NATP) fund of Krishi Gobeshona Foundation**, which comprise the Statement of Financial Position as at June 30, 2014, and the Statement of Profit or Loss and other Comprehensive Income, Statement of Cash flows for the year then ended and a summary of significant accounting policies and other explanatory notes.

### Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with **Bangladesh Financial Reporting Standards (BFRS)**. This responsibility includes designing, implementing and maintaining internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

### Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with **Bangladesh Standards on Auditing (BSA)**, those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### Opinion

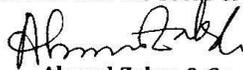
In our opinion, based on our audit, the financial statements give a true and fair view of the financial position of **National Agricultural Technology Project (NATP) fund of Krishi Gobeshona Foundation** as on June 30, 2014 and of its financial performance for the year then ended in accordance with **Bangladesh Financial Reporting Standards (BFRS)** and other applicable laws and regulations.

### Report on Other Legal and Regulatory Requirements

We also report that;

- a) we have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit and made due verification thereof;
- b) in our opinion proper books of account as required by law have been kept by KGF for the **National Agricultural Technology Project (NATP) fund** so far as it appeared from our examination of those books;
- c) The Statement of Financial Position and Statement of Profit or Loss and other Comprehensive Income and Statement of Cash flows dealt with by the report are in agreement with the books of accounts.

Place: Dhaka  
January 03, 2016

  
**Ahmed Zaker & Co.**  
Chartered Accountants

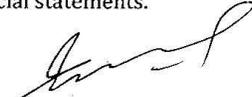
**HEAD OFFICE :** ● 45, Shaheed Syed Nazrul Islam Sarani, Bijoy Nagar, Saiham Tower (2nd Floor), Dhaka-1000, Bangladesh.  
TEL: 880-2-8391440-3, Fax: 880-2-8391011, E-mail: azcbangladesh@gmail.com, web: www.ahmed-zaker.com  
**BRANCH OFFICE :** ● 304, Sk. Mujib Road, Agrabad C/A, Chittagong. Tel: 880-31-712258, 728332

**Krishi Gobeshona Foundation ( KGF )**  
**National Agricultural Technology Project ( NATP )**  
 Project ID : 084078, IDA Credit No: 4386-BD ( KGF UNIT )  
 Statement of Financial Position  
 As at June 30, 2014

Particulars	Notes	Amount in Taka	
		June 30, 2014	June 30, 2013
<b>Non-Current assets</b>		<b>18,103,106</b>	<b>17,347,822</b>
Property, Plant and Equipment	4.00	18,103,106	17,347,822
<b>Current assets</b>		<b>1,713,808</b>	<b>2,797,429</b>
Cash & Cash equivalents	5.00	1,713,808	2,797,429
<b>Total Property &amp; Assets</b>		<b>19,816,914</b>	<b>20,145,251</b>
<b>Capital and Liabilities</b>		<b>19,816,914</b>	<b>20,145,251</b>
Fund Account	6.00	19,816,914	20,145,251
<b>Total Capitals and Liabilities</b>		<b>19,816,914</b>	<b>20,145,251</b>

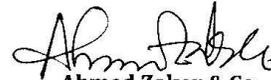
The annexed notes (1 to 10) form an integral part of these financial statements.

  
**Manager ( Finance & Accounts )**  
**Salat Ahmed**  
 Manager (Finance & Accounts)  
 Krishi Gobeshona Foundation  
 BARC Campus, Farmgate, Dhaka-1215

  
**Executive Director ( KGF )**  
 Dr. M. Nurul Alam  
 Executive Director  
 Krishi Gobeshona Foundation  
 BARC Campus, Farmgate, Dhaka-1215.

Signed as per our report of same date.

Place: Dhaka  
 January 03, 2016

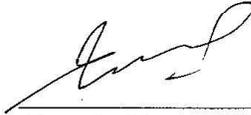
  
**Ahmed Zaker & Co.**  
 Chartered Accountants

**Krishi Gobeshona Foundation ( KGF )**  
**National Agricultural Technology Project ( NATP )**  
 Project ID : 084078, IDA Credit No: 4386-BD ( KGF UNIT )  
 Statement of Profit or Loss and other Comprehensive Income  
 For the year ended June 30, 2014

Particulars	Notes	Amount in Taka	
		2013-2014	2012-2013
<b>Income:</b>			
Grant:	6.00	111,386,083	96,485,961
<b>Total Income:</b>		<b>111,386,083</b>	<b>96,485,961</b>
<b>Expenditure:</b>			
Service	7.00	3,896,668	8,261,550
Training, Workshop & CGP Related Exp.	8.00	5,139,845	4,731,357
Operating Cost	9.00	17,100,678	18,127,955
Funding of CGP	10.00	85,248,892	65,365,099
<b>Total Expenditure:</b>		<b>111,386,083</b>	<b>96,485,961</b>

The annexed notes (1 to 10) form an integral part of these financial statements.

  
**Manager ( Finance & Accounts )**  
 Manager,  
 Krishi Gobeshona Foundation  
 BARC Campus, Farmgate, Dhaka-1215

  
**Executive Director ( KGF )**  
 Dr. M. Nurul Alam  
 Executive Director  
 Krishi Gobeshona Foundation  
 BARC Campus, Farmgate, Dhaka-1215

Signed as per our report of same date.

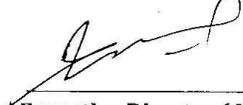
Place: Dhaka  
 January 03, 2016

  
**Ahmed Zaker & Co.**  
 Chartered Accountants

**Krishi Gobeshona Foundation ( KGF )**  
**National Agricultural Technology Project ( NATP )**  
 Project ID : 084078, IDA Credit No: 4386-BD ( KGF UNIT )  
 Statement Of Cash Flows  
 For the year ended June 30, 2014

Particulars	Amount in Taka	
	2013-2014	2012-2013
<b>A. Cash flows from operating activities</b>		
Fund Received during the year	111,057,746	96,098,940
Grants and other operating expenses paid	(111,386,083)	(96,485,961)
<b>Net cash provided by operating activities</b>	<b>(328,337)</b>	<b>(387,021)</b>
<b>B. Cash flows from Investing activities</b>		
Acquisition of property, plant and equipment	(755,284)	(1,121,525)
<b>Net cash used in Investing activities</b>	<b>(755,284)</b>	<b>(1,121,525)</b>
<b>C. Cash flows from financing activities</b>		
	-	-
<b>D. Net Cash and cash equivalents ( A+B+C)</b>	<b>(1,083,621)</b>	<b>(1,508,546)</b>
Cash and cash equivalents at the beginning of the year	2,797,429	4,305,975
<b>Cash and cash equivalents at the end of the year</b>	<b>1,713,808</b>	<b>2,797,429</b>

  
**Manager ( Finance & Accounts )**  
 Safat Ahmed  
 Manager (Finance & Accounts)  
 Krishi Gobeshona Foundation  
 BARC Campus, Farm gate, Dhaka-1215  
 Signed as per our report of same date.

  
**Executive Director ( KGF)**  
 Dr. M. Nurul Alam  
 Executive Director  
 Krishi Gobeshona Foundation  
 BARC Campus, Farm gate, Dhaka-1215

Place: Dhaka  
 January 03, 2016

  
**Ahmed Zaker & Co.**  
 Chartered Accountants

**Krishi Gobeshona Foundation**  
**Farmgate, Dhaka**  
Notes to the Financial Statements  
For the year ended June 30, 2014

**1.0 Reporting Entity**

**i) Organizations Profile:**

The **Krishi Gobeshona Foundation (KGF)** was established by the Govt. of the People's Republic of Bangladesh in 2007 under the Companies Act 1994 having Reg. No. E-684(05)07 dated September 19, 2007. The Foundation is an Association not for profit within the meaning of the section 28 of the said Act.

The Foundation is set with its own General Body to manage the Competitive Grants Program CGP under the **National Agricultural Technology Project (NATP)** with independence, objectivity and transparency. The General Body and the board of Directors have representative members from Government, Bangladesh Agricultural Research Council (BRAC), eminent persons of Agricultural Research and Development under National Agricultural Research System (NARS), Consultative Group on International Agricultural Research (CGIAR), Agricultural Extension Service and Agricultural University/Academic Institutes, NGO's Relevant Foundations/Financial Institutions, Economists/Rural Development Practitioners, Agribusiness Entrepreneurs and Private Sectors or Individuals.

**ii) Objective and Activities:**

KGF is responsible for management and implementation of the Competitive Grants Program (CGP) with objectivity and transparency. CGP is a sub-component of the research Component of the **National Agricultural Technology Project (NATP)**, Phase- 1 finance by the World Bank and IFAD. KGF through its CGP seeks to develop a more Pluralistic research system by opening the CGP to the NARS institutes, universities, other research institutes, NGO's and private sectors organizations. Agricultural research and development projects funded under CGP require having location-specific, pre-identified high priority area, multi-disciplinary approach short or medium term duration, demand driven, immediate benefit and problem-solving criteria. KGF funds the CGP projects that are crucial to bridge the yield gaps, respond to pre-identified problems and address other demand-based issues for improving productivity and farm income. Major focus is on-farm applied and adaptive research, including marketing, socio-economic aspects and value addition.

**2.00 Basis of Presentation of Financial Statements**

**i) Basis of Accounting:**

The financial statements have been prepared under historical cost convention and **Bangladesh Accounting Standards (BAS)** and Provisions of the Companies Act 1994 and other applicable laws and rules of Bangladesh.

**ii) Basis of Measurement:**

The financial statements have been prepared on the historical cost convention and therefore do not take into consideration the effect of inflation.

**iii) Accounting records:**

Income has been recognized at the time when it was received and an expense has been recognized when it was paid.



**iv) Compliance with International Accounting Standards:**

The financial statements have been prepared in accordance with requirements of the **International Accounting Standard (IAS)** approved by the **International Accounting Standards Committee (IASC)** and as adopted by the **Institute of Chartered Accountants of Bangladesh (ICAB)** as applicable.

**v) Compliance with Local Laws:**

The financial statements have been prepared in accordance with **Bangladesh Financial Reporting Standards (BFRS)** and other applicable laws and regulations.

**vi) Fixed assets and Depreciation:**

No depreciation has been charged on fixed assets during the Financial Year 2013 -2014.

**vii) Reporting Currencies and Level of Precision:**

Transactions in foreign currencies are converted into Bangladeshi Taka at the exchange rate ruling on the date of transaction and rounded off to nearest Taka.

**3.00 Additional information on financial statements:**

**i) Components of the Financial Statements:**

According to **IAS-1 "Presentation of Financial Statements"** the complete set of financial statements include the following:

- i) Statement of Financial Position as on June 30, 2014
- ii) Statement of Profit or Loss And other Comprehensive Income for the year ended June 30, 2014
- iii) Statement of Cash Flows for the year ended June 30, 2014
- iv) Notes to the Financial Statements for the year ended June 30, 2014.

**iii) Comparative:**

Comparative information have been disclosed in respect of the previous year for all numerical information in the financial statements and also the narrative and descriptive information when it is relevant for understanding of the current year financial statements.

Previous year's figure has been re-arranged whenever considered necessary to ensure comparability with the current year's presentation as per **BAS-8 Accounting Policies, Changes in Accounting estimates and Errors.**

**iii) Reporting Period:**

Financial statements of the company cover one year from July 01, 2013 to June 30, 2014 consistently.

**iv) General:**

Figures appearing in the Financial Statements have been rounded off to the nearest Taka.



**Krishi Gobeshona Foundation ( KGF )**  
Notes to the Financial Statements  
For the year ended June 30, 2014

	Amount in Taka	
	30.06.2014	30.06.2013
<b>4.00 Property plant and Equipments: Tk. 18,103,106</b>		
This is made up as follows		
<u>Particulars</u>		
Opening balance at cost	17,347,822	16,226,297
<b>Add:</b> Addition during the year	755,284	1,121,525
	<b>18,103,106</b>	<b>17,347,822</b>
<b>Less:</b> Adjustment during the period	-	-
	<b>18,103,106</b>	<b>17,347,822</b>
<b>Less:</b> Accumulated depreciation	-	-
<b>Total</b>	<b>18,103,106</b>	<b>17,347,822</b>

Detail have been shown in **Annexure - A**

<b>5.00 Cash and Cash Equivalents: Tk. 1,713,808</b>		
This is made up as follows		
<u>Particulars</u>		
Pubali bank Ltd. Firmgate br. A/C No - 1820901028529	-	-
Pubali bank Ltd. Firmgate br. A/C No - 1820901028514	1,713,808	2,797,429
<b>Total</b>	<b>1,713,808</b>	<b>2,797,429</b>

<b>6.00 Fund Account: Tk. 19,816,914</b>		
This is made up as follows		
<u>Particulars</u>		
Opening Balance	20,145,251	20,532,272
<b>Add:</b> Fund Received during the year	6.1 111,057,746	96,098,940
	<b>131,202,997</b>	<b>116,631,212</b>
<b>Less:</b> Grant dispersed and Other operating expenses	111,386,083	96,485,961
<b>Total</b>	<b>19,816,914</b>	<b>20,145,251</b>



Amount in Taka	
30.06.2014	30.06.2013

**6.1 Fund Received: Tk. 111,057,746**

This is made up as follows

Particulars

Received From GOB	6.1.1	857,746	1,098,940
Received From RPA	6.1.2	110,200,000	95,000,000
<b>Total</b>		<b>111,057,746</b>	<b>96,098,940</b>

**6.1.1 Received From GOB: Tk. 857,746**

This is made up as follows

Particulars

Revenue	1,400,000	1,500,000
Capital	-	-
Sub Total	<b>1,400,000</b>	<b>1,500,000</b>
Less: Refund to GOB	542,254	401,060
<b>Total</b>	<b>857,746</b>	<b>1,098,940</b>

**6.1.2 Received From RPA: Tk. 110,200,000**

This is made up as follows

Particulars

Received during the year	110,200,000	95,000,000
Other Source	-	-
<b>Total</b>	<b>110,200,000</b>	<b>95,000,000</b>

Details have been shown **Annexure - B**

**7.00 Service: Tk. 3,896,668**

This is made up as follows

Particulars

Expert Salary	-	8,261,550
RPA	3,740,801	-
GOB	155,867	-
<b>Total</b>	<b>3,896,668</b>	<b>8,261,550</b>



	Amount in Taka	
	30.06.2014	30.06.2013
<b>8.00 Training/Workshop &amp; CGP Related Expense: Tk. 5,139,845</b>		
This is made up as follows		
<u>Particulars</u>		
CGP Sitting / Meeting/ Entertainment	-	-
CGP Workshop/Seminar/Conference	3,191,905	2,042,103
CGP Review expense	186,342	157,868
CGP Honorarium	1,761,598	2,531,386
<b>Total</b>	<b>5,139,845</b>	<b>4,731,357</b>

**9.00 Operational Cost: Tk. 17,100,678**

This is made up as follows

Particulars

Pay of Support/ Contractual Core Staff	8,954,164	8,242,951
Allowance/Bonus	498,472	746,786
Conveyance/TA/DA	516,098	855,564
Gas, Fuel & Oil etc	818,133	671,813
Office Supplies & Consumable Stationery	388,211	699,726
Promotion & Advertisement	45,000	251,882
Sitting Allowance	32,500	79,000
Entertainment	258,875	275,328
Hiring Of vehicles for CGP	466,565	541,879
Computer Accessories	164,282	146,864
Miscellaneous Operational Cost	1,111,629	1,319,121
Board Meeting Expense	68,543	-
Telephone /Mobile bill	108,800	116,140
Office Repair & Maintenance	52,655	544,945
Car Repair & Maintenance	630,780	305,577
Other Repair & Maintenance	167,230	145,413
Postage	43,129	36,351
Travel & Tour	471,949	412,361
Overtime	550,509	689,832
Internet Bill	162,374	113,936
Retaliation/Remuneration/Fees	348,000	278,900
Bank Charge	4,175	3,688
Insurance Premium	199,699	184,066
Electricity Bill	675,486	1,134,005
Security Service	330,302	305,877
Audit Fee	-	-
Printing and Publication	32,750	-
Books & Periodicals	368	25,950
<b>Total</b>	<b>17,100,678</b>	<b>18,127,955</b>

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Amount in Taka	
30.06.2014	30.06.2013

**10.00 Grants paid during the period: Tk. 85,248,892**

This is made up as follows

Particulars

First Round 1st phase:	10.01	291,200	335,676
First Round 2nd phase:	10.02	-	596,500
Second Round 1st phase:	10.03	36,331,847	37,752,430
Second Round 2nd phase:	10.04	16,531,714	26,770,440
Pilot Project	10.05	28,855,000	-
CGP Honorarium		2,664,131	-
Office Maintenance/ Salary Pilot Project		575,000	-
		<b>85,248,892</b>	<b>65,455,046</b>
<b>Less: Grants Refund during the year</b>		-	<b>(89,947)</b>
<b>Total</b>		<b>85,248,892</b>	<b>65,365,099</b>

**10.01 First Round 1st phase: Tk. 291,200**

This is made up as follows

Particulars

L-HM-214	-	335,676
C-PHT-179	291,200	-
<b>Total</b>	<b>291,200</b>	<b>335,676</b>

**10.02 First Round 2nd phase: Tk. Nil**

This is made up as follows

Particulars

C-VI-010	-	292,900
C-CA-109	-	303,600
<b>Total</b>	<b>-</b>	<b>596,500</b>

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Amount in Taka	
30.06.2014	30.06.2013

**10.03 Second Round 1st phase: Tk. 36,331,847**

This is made up as follows

Particulars

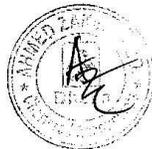
C-7.12	1,685,947	2,399,200
C-6.9	2,861,600	4,369,600
C-5.5	852,400	639,300
C-2.20	2,786,030	2,583,200
CC-25.1	992,900	2,049,400
C-11.1	392,000	906,500
C-6.8	5,260,400	1,921,200
C-13.2	1,058,200	1,100,500
C-3.1	980,800	609,000
NR-15.22	521,600	1,047,200
NR-16.15	1,044,000	522,000
C-4.9	986,400	1,124,800
C-4.1	1,655,500	2,128,500
L-17.4	2,019,120	1,356,990
C-1.12	3,613,750	2,878,400
C-9.6	1,792,800	1,208,400
L-20.4	2,105,400	2,150,400
C-2.11	2,704,000	3,797,000
C-1.21	3,019,000	2,320,800
L-19.2	-	1,339,040
F.22.1	-	1,301,000
<b>Total</b>	<b>36,331,847</b>	<b>37,752,430</b>

**10.04 Second Round 2nd phase: Tk. 16,531,714**

This is made up as follows

Particulars

C-12.1	457,300	2,050,550
C-7.9	682,640	678,760
C-1.11	1,812,000	1,836,000
C-8.14	114,000	1,164,500
C-5.2	1,058,600	1,458,800
F-21.20	2,343,900	2,637,100



	Amount in Taka	
	30.06.2014	30.06.2013
L-17.1	684,500	1,185,900
L-19.7	1,866,500	2,193,900
C-1.26	2,324,500	1,626,500
CC-25.2	606,000	1,603,000
C-1.26	541,900	1,395,800
C-1.27	1,156,874	1,164,600
C-2.19	1,686,300	1,897,800
C-4.5	816,600	847,700
C-CA-113	220,100	1,640,000
C-HF-103	-	1,284,230
E-PC-179	-	853,900
C-S-161	-	951,400
C-VI-006	160,000	300,000
<b>Total</b>	<b>16,531,714</b>	<b>26,770,440</b>

**10.05 Pilot project paid during the period: Tk. 28,855,000**

This is made up as follows

Particulars

Pilot project - 1	4,930,000	-
Pilot project - 2	3,000,000	-
Pilot project - 3	5,225,000	-
Pilot project - 4	6,875,000	-
Pilot project - 5	3,950,000	-
Pilot project - 6	2,875,000	-
Pilot project - 7	2,000,000	-
<b>Total</b>	<b>28,855,000</b>	<b>-</b>



**Krishi Gobeshona Foundation (KGF)**  
**National Agricultural Technology Project (NATP)**  
 Schedule of Property plant and Equipments  
 For the year ended June 30, 2014

**Annexure - A**  
(Figures all in Taka)

Particulars	Cost		Rate %	Depreciation		Written down value as on 30.06.2014
	Opening balance as on 01.07.2013	Addition during the year		Opening balance as on 01.07.2013	Charge during the year	
Vehicles (Jeep-1, Micro Bus-2)	11,172,795	-	0%	-	-	11,172,795
CGP Equipment	257,742	309,000	0%	-	-	566,742
Computer Accessories	2,226,468	4,475	0%	-	-	2,230,943
Multimedia Projector	143,190	-	0%	-	-	143,190
Office Equipments	462,978	-	0%	-	-	462,978
Furniture & Fixtures	798,009	263,777	0%	-	-	1,061,786
Electric Equipments	1,045,206	178,032	0%	-	-	1,223,238
Misc. Materials & Equipments	1,241,434	-	0%	-	-	1,241,434
<b>Total</b>	<b>17,347,822</b>	<b>755,284</b>	<b>0%</b>	<b>-</b>	<b>-</b>	<b>18,103,106</b>

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