

Competitive Research Grant
Sub-Project Completion Report

On

**Development and upgradation of digital contents
of National Agricultural Display Center (NADC)
at BARC**

Project Duration
May 2017 to September 2018

Computer & GIS Unit
Bangladesh Agricultural Research Council (BARC), Dhaka.

Submitted to



Project Implementation Unit-BARC, NATP 2
Bangladesh Agricultural Research Council
Farmgate, Dhaka-1215

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Citation:

Development and upgradation of digital contents of National Agricultural Display Center (NADC) at BARC

Project Implementation Unit

National Agricultural Technology Program-Phase II Project (NATP-2)
Bangladesh Agricultural Research Council (BARC)
New Airport Road, Farmgate, Dhaka-1215
Bangladesh

Edited and Published by :

Project Implementation Unit
National Agricultural Technology Program-Phase II Project (NATP-2)
Bangladesh Agricultural research Council (BARC)
New Airport Road, Farmgate, Dhaka-1215
Bangladesh

Acknowledgement

The execution of CRG sub-project has successfully been completed by Computer and GIS Unit of BARC using the research grant of USAID Trust Fund and Govt. through Ministry of Agriculture. We would like to offer thank to the World Bank for arranging the grand fund and supervising the CRGs by BARC. It is worthwhile to mention the cooperation and quick responses of PIU-BARC, NATP 2, in respect of field implementation of the sub-project in multiple sites. Preparing the project completion report required to contact a number of persons for collection of information and processing of research data. Without the help of those persons, the preparation of this document could not be made possible. All of them, who made it possible, deserve thanks. Our thanks are due to the Director PIU-BARC, NATP 2 and his team who given their whole hearted support to prepare this document. We hope this publication would be helpful to the agricultural scientists of the country for designing their future research projects in the field of technology generation as well as increasing production and productivity for sustainable food and nutrition security in Bangladesh. It would also assist the policy makers of the agricultural sub-sectors for setting their future research directions.

Published in: September 2018

Printed by: Priyanka printing and publication,76/E nayapalton, Dhaka 1000 Phone: 9333184,
e mail: priyankaprinting@gmail.com

Acronyms

NADC	=	National Agricultural Display Centre
BARC	=	Bangladesh Agricultural Research Council
BARI	=	Bangladesh Agricultural Research Institute
BIRRI	=	Bangladesh Rice Research Institute
BJRI	=	Bangladesh Jute Research Institute
BFRI	=	Bangladesh Fisheries Research Institute
BFRI	=	Bangladesh Forest Research Institute
BSRI	=	Bangladesh Sugar Crop Research Institute
SRDI	=	Soil Resource Development Institute
CDB	=	Cotton Development Board
BTRI	=	Bangladesh Tea Research Institute
DAE	=	Directorate of Agriculture Extension
DAM	=	Department of Agriculture Marketing
DFD	=	Data Flow Diagram
SQL	=	Structured Query Language
RIA	=	Rich internet application
WYSIWYG	=	What you see is what you get
W3C	=	World wide web consortium
IETF	=	Internet engineering task force
HTTP	=	Hypertext transfer protocol
HTTPS	=	HTTP over Secured Socket layer
TCP	=	Transmission control protocol
Firewall	=	A logical barrier designed to prevent unauthorized or undesired communication between sections of a computer network
UDP	=	User datagram protocol
RFC		Request for Comments
POX		Plain Old XML
WWW		World Wide Web
HTML		Hypertext Transport protocol
PHP		Hypertext Preprocessor
CSS		Cascading Style Sheets

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Executive Summary

Transforming the country technologically into “Digital Bangladesh” by the year 2021 is the vision of Government of the Peoples' Republic of Bangladesh. The government has put special importance on the use of ICT as an instrument for national/ agricultural development and its sustainability.

As part of fulfillment of the vision, and for speedy delivery of the Agricultural technology to all users, including developed content text image and audio-visual format etc. with minimal cost and time, the National Agricultural Display Center (NADC) was established at BARC in 2015. The center aimed at displaying the glorious history, achievements and success of Bangladesh agriculture. This is being done through display of various crop varieties, seeds, and pleasant pictures, samples/specimen etc. in physical and in digital format that are collected from different NARS institute on continuous basis.

The purpose of the present study is to collect detailed information on newly developed technologies with missing information of displayed items at NADC and to digitalize and/or develop contents through text, image and audio-visual format using a suitable web application.

An Inception workshop was arranged on 12 February 2018. All together, 45 participants attended the workshop. Participants were the focal points, Research Director of the NARS institutes and BARC senior level scientists/officers. The Participants gave their opinion on design of the web application and Database format of the fact sheet for collection of agriculture technology. An Online web application developed and tested as part of the sub-project activity. These required close collaboration between the focal point and project people of BARC with the NARS institutes. A consultation workshop in presence of the previously nominated focal points /representatives of each NARS institute was also organized where detailed data format for displayed contents (text, image and video) developed in the initial stage of the project period.

Further, updated technological information along with related documents were collected from the 12 NARS institutes. Collection were BARI-17, BRRI- 30, BJRI-6, BINA-21, BSRI-15, FRI (Fisheries)-6, BFRI-(Forest-9, CDB-9, SRDI-3, BLRI-21, BTRI-18 and BSTRI-7. In total 162 technological information collected, processed and incorporate with Web Application. First version of the Web based application software were developed & feedback from NARS institutes focal points based on and evaluated. Renovation activities of the NADC as planned computed.

The web application as mentioned has two parts. One for Admin and other for the users. Admin part have several functions. Like new technology insert, edit, update and delete. All participating institutes have different login access and can input own institutes latest technology using uniformly.

By now databases on agricultural technologies/varieties have been developed with detailed information of displayed items at NADC. The content of the web application available both in Bengali and English language through LAN and Internet.

It is expected that the software under the study will benefit the researchers, extension workers, policy makers, educationists, development partners, NGOs etc. In utilize the of technologies/information and thus assist in increasing the production and productivity. Farmers will get the benefit through enhanced production and at the national level self sufficiency in agricultural production will be ensured with sustained food security.

CRG Sub-Project Completion Report (PCR)

A. Sub-project Description

1. Title of the CRG sub-project:

Development and upgradation of digital contents of National Agricultural Display Center (NADC) at BARC

2. Implementing organization:

Bangladesh Agricultural Research Council (BARC)

3. Name and full address with phone, cell and E-mail of PI/Co-PI (s):

Principal Investigator:

Position, Full Address, Phone and E-mail

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Fax : 88 02 9128061
Email : parvin.su1980@gmail.com

4. Sub-project budget (Tk):

4.1 Total: 50,00,000/-

4.2 Revised (if any): N/A

5. Duration of the sub-project:

5.1 Start date (based on LoA signed): 23 July 2017

5.2 End date: 30 September 2018

6. Justification of undertaking the sub-project:

National Agricultural Display Center (NADC) was established at BARC in the year 2015 with an aim to display the glorious history, achievements and success of Bangladesh agriculture. This is being through display of various crop varieties, seeds, products, implements pictures, samples/specimen etc. in physical and digital format that were collected from different NARS institutes. The center has opened a new window for the researchers, policy makers, extension workers, educationists, development partners, NGOs and interested others. to have greater in-depth idea of agricultural science and technology under a single umbrella. More than one thousand local and foreign visitors have already visited the NADC since establishment and highly appreciated the initiative of BARC.

However, it has been observed from different dignitaries/professionals comments/feedbacks that there remains a still a lot of scope to enrich the display center. Nobody among them are development/update of digital content of all displayed items, development of various audio visual contents on specific subjects/matters and making them available through online. They have emphasized on availability of all display contents both in Bengali and English language for the sake of local and foreign visitors. It was thus important to take initiative for further development and up gradation of the digital contents of NADC at BARC and facilitate use by making them available through BARC local area network (LAN) and online.

7. Sub-project goal:

Introduce NARS achievement to the stakeholder/target people (beneficiaries) through web application

8. Sub-project objective (s):

- a. To collect detail information of displayed items in NADC including developed agricultural technologies by NARS institutes.
- b. To digitalize and/or develop contents through text, image and audio-visual format.
- c. To develop a user friendly web application and make the contents available through LAN and Internet.

9. Implementing location (s):

Bangladesh Agricultural Research Council (BARC), Farmgate, Dhaka.

10. Methodology in brief:

BARC as the lead agency of this CRG Project, was responsible for collection of detailed information for the NADC on agricultural technologies generated by the NARS institute, to incorporate those and to develop a user friendly web application the order make the contents available through LAN and internet.

For successful execution of this study, the systematic approaches/steps were a. Develop a user friendly web application b. Need assessment c. Staff appointment d. Inception Workshop e. Visit NARS institutes to collect detailed information f. Verification the data and upload the application software.

At the very beginning of the work an initial planning meeting was organized with focal point of NARS institutes and the officials of BARC to understand the specific requirements of the project. Detailed information request for the web application developed agricultural technologies by the NARS institutes made to finalize digitalized develop content comprising text image and audio visual format. Also prepared a schedule to visit NARS institute for information collection during the project period through discussion with NADC focal points of all institutes. Arranged meetings with focal point of NARS institutes regarding the analysis and design of the application part of the software. Identifying the main entities, their attributes, relationships and constraints, commences the design of a database application.



Display materials/items in NADC were mainly collected from 13 NARS institutes including BARC, through the focal points of respective institutes who were nominated by the head of each organization. With collaboration of focal point and project personnel's of BARC, series of meetings were held with different levels of officials/scientists of the stakeholder of NARS institutes and formed a number of committees with TORs to perform the activities.

By frequent visit to the NARS institutes technology information viz; video, text & images were collected. The Collected 162 technological information on agricultural were processed and incorporated with the web application. First version of web based application software developed and feedback obtained from the NARS institutes from focal points were evaluated.

The software for the development of this agricultural information system was decided based on the CRG Project objectives. As such, PHP (Laravel) was chosen to create the front-end for the system and MySQL for the back-end database. The graphical user interfaces of the front-end to use HTML, CSS and to access the back-end MySQL database using embedded Laravel queries for retrieval and update. The front-end and back-end to be connected using an Laravel Framework. The information of the system could be viewed using a web browser and presented as hypertext documents containing PHP.



Since the database will require updating by non-computing personals at the respective research institutes, the system provides easy access to the database for all types of data manipulation. Security of the database is ensured by the use of a password for updating purposes and given to the all participating research institutes.

The web application has two parts; one for admin and the other for users. Admin part has several functions, new technology insert, Edit, update and delete. Each institutes having different login access could input own institutes latest or popular technology in fix format.

Manual of web application

Admin part:

- ✓ Open URL with /admin and see admin panel for login.
- ✓ Put the user and Password for login Admin panel.
- ✓ After login find the Admin panel home page for the desired institute. to add new technology and find it.
- ✓ Use edit, update and delete button for input a new technology.
- ✓ On the right corner find some basic setting for your admin panel as like change password, edit and log out.
- ✓ Also you find two tabs in admin panel; one for English and another for Bangla.
- ✓ To add new technology click desired language tab and add button from right corner. After click the button pop a window and give information as a factsheet press save button.
- ✓ After add technology you see the technology in admin panel. Also find edit, update and delete button for edit delete of the technology.

Users part:

- ✓ Select any browser and go to URL. Look at below screen and select preferred language Bangla and English from right corner both language.
- ✓ Choose the institute from web page body or Menu bar.
- ✓ Find the institute name with short description and latest technology with image.
- ✓ Also find image gallery and video about the technology.
- ✓ Click an a technology of interest and see details about the technology.
- ✓ Find image gallaery about this technology.
- ✓ Also two videos about the Institute.

An authorized person can update the database through the web browser by specifying the username and password.

11. Results and discussion:

As per work plan of the project is described from the perspective of the goal and objectives set in the beginning of the project. Newly developed technologies with missing information of displayed items at NADC and to digitalize and/or develop contents through text, image and audio-visual format using a suitable web application. A databases on agricultural technologies/varieties have been developed with detailed information of displayed items at NADC. Information from 12 NARS institutes video, text & images were verified and necessary post processing and edit were done. Collected 162 technological information processed and incorporated with the web application. Necessary procedures for post processing of collected information and video text image have been completed. Through the web application to fill up the NADC visit application form, stakeholder/target people could visit the NADC. Existing display centre renovation activities such as switch room up gradation, replacement of 4 circuit breakers, maintenance of Digital touch screen, Kiosk, Replacement of LED Bulb in two floor, Installation of 6 UPS have been completed.

In utilize the technologies/information which will help us assist in increasing the production and productivity. Farmers will get the benefit through enhanced production and at the national level for self sufficiency in agricultural production which ensured with sustained food security

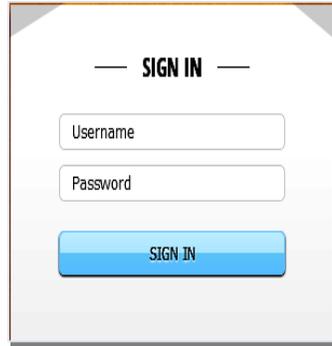
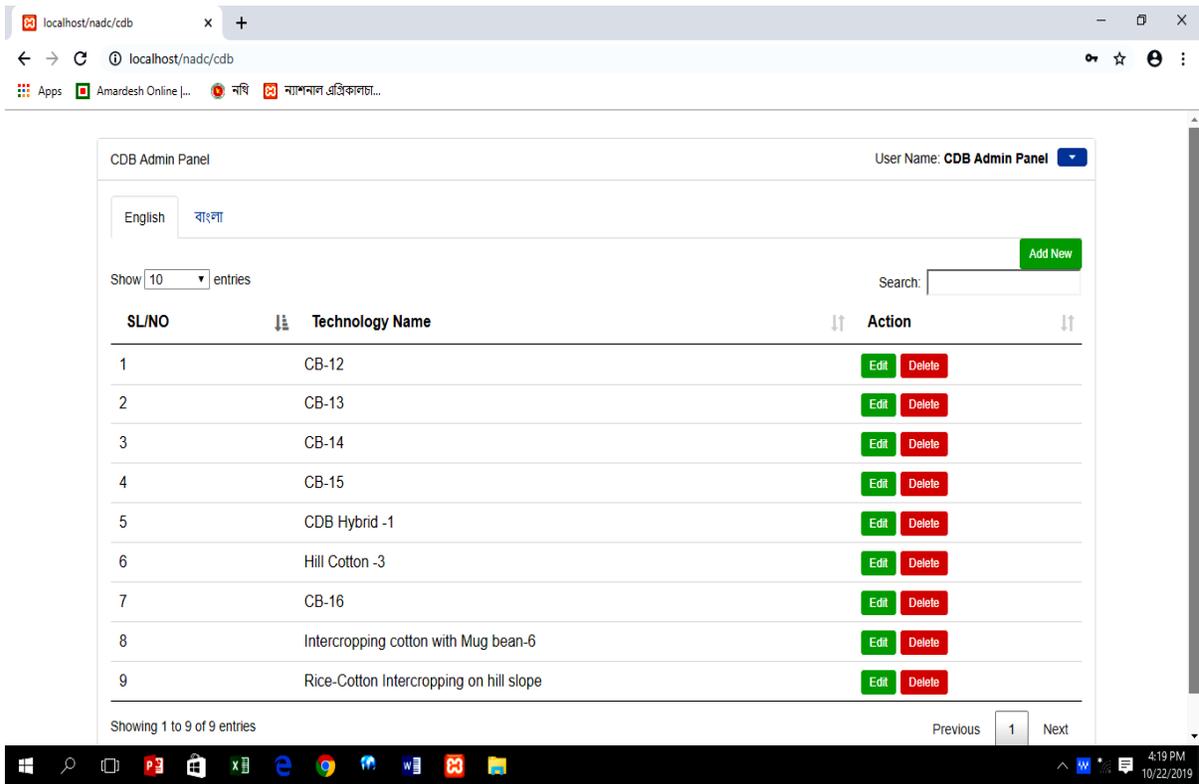


Figure-1



(Figure-2).

- ✓ And see the right corner you find some basic setting for your admin panel as like change password, edit and log out from admin panel.
- ✓ Also you find 2 tab in admin panel one for English and another for bangla.
- ✓ For add new technology click your language tab and add button form right corner. After click the button pop a window and give information as a factsheet and save the button (Figure-3).
- ✓ After add technology you see the technology in admin panel. Also you find edit and delete button for edit delete technology.

Add New Technology ×

Name Of the Variety:*

Characteristic Of the Veriety :*

Appriateness Of Technology :

Field Operation :

Benefit / Cost:

Attached Image File : No file selected.

(Figure-3)

National Agricultural Display Centre

BARC, Farmget, Dhaka

বাংলা



[Home](#) [About Us](#) [NARS Institute -](#) [Our Team](#) [Request for visit](#) [Contact Us](#)

<p>Bangladesh Agricultural Research Council (BARC)</p> <p>The Bangladesh Agricultural Research Council (BARC) under the Ministry of Agriculture is at the ...</p> <p style="text-align: right;">Read More</p>	<p>Bangladesh Agricultural Research Institute (BARI)</p> <p>Bangladesh Agricultural Research Institute (BARI) is the largest multi-crop research institute conducting ...</p> <p style="text-align: right;">Read More</p>	<p>Bangladesh Rice Research Institute (BIRRI)</p> <p>BIRRI is a major component of the National Agricultural Research System (NARS) of Bangladesh,</p> <p style="text-align: right;">Read More</p>	<p style="background-color: #008000; color: white; padding: 2px; border-radius: 5px; text-align: center;">Internal E-Services</p> <ul style="list-style-type: none"> Climate Database Personal Data Sheet (PDS) ARMIS
<p>Bangladesh Jute Research Institute (BJRI)</p> <p>The Bangladesh Jute Research Institute is the oldest mono-crop research institute of the country...</p> <p style="text-align: right;">Read More</p>	<p>Bangladesh Livestock Research Institute (BLRI)</p> <p>Bangladesh Livestock Research Institute (BLRI), a state-run national research organization under the Ministry of ...</p> <p style="text-align: right;">Read More</p>	<p>Bangladesh Institute of Nuclear Agriculture (BINA)</p> <p>Started in a small radio-tracer laboratory (RAGENE) in 1961 under the Atomic Energy Commission ...</p> <p style="text-align: right;">Read More</p>	<p style="background-color: #008000; color: white; padding: 2px; border-radius: 5px; text-align: center;">Important Link</p> <ul style="list-style-type: none"> Bangladesh Government Ministry of Agriculture BARC Aechive
<p>The Bangladesh Forest Research Institute (BFRI)</p> <p>The Bangladesh Forest Research Institute (BFRI) was set up as a Forest Products Research Laboratory ...</p> <p style="text-align: right;">Read More</p>	<p>Bangladesh Tea Research Institute (BTRI)</p> <p>Tea is an important cash crop of Bangladesh. It is one of the largest agro-based industries in the country ...</p> <p style="text-align: right;">Read More</p>	<p>BANGLADESH FISHERIES RESEARCH INSTITUTE (BFRI)</p> <p>রাজধানী ঢাকা থেকে ১২০ কিলোমিটার উত্তরে ময়মনসিংহে বাংলাদেশ কৃষি বিশ্ববিদ্যালয় সংলগ্ন এলাকায়</p> <p style="text-align: right;">Read More</p>	<p style="background-color: #008000; color: white; padding: 2px; border-radius: 5px; text-align: center;">Central E-</p> <ul style="list-style-type: none"> Online Application Nothi ARMIS
<p>Cotton Development Board (CDB)</p> <p>Bangladesh has a glorious tradition in cotton and textile production. In medieval age Bengal was famous ...</p> <p style="text-align: right;">Read More</p>	<p>Soil Resource Development Institute (SRDI)</p> <p>SRDI is a government organization under the administrative control of Ministry of Agriculture. ...</p> <p style="text-align: right;">Read More</p>	<p>Bangladesh Sugarcrop Research Institute (BSRI)</p> <p>Bangladesh Sugarcrop Research Institute (BSRI) is one of the oldest research institutes of ...</p> <p style="text-align: right;">Read More</p>	
<p>Bangladesh Sericulture Research and Training Institute (BSRTI)</p> <p>The Institute was established on 3 January 1962 comprising two units.</p>			

Figure -4

- ✓ Choose any institute form web page body or Menu bar.
- ✓ You see this institute name and short description with latest technology with image.
- ✓ Also you find image gallery and video about this technology (Figure -5)

BSRI Information [Gallery](#) [Videos](#) বাংলা English

BSRI Important Technology : (15)

<p>Isd 32</p>  <p>Tolerant to flood. sugar content. Mid maturing.....</p>	<p>Isd 33</p>  <p>High sugar content (10.99-13.81%) Early maturing. Suitable for rationing.....</p>	<p>Isd 34</p>  <p>Tolerant to flood and waterlog . Medium sugar content (9.34-13.18%) Mid maturing. Suitable for rationing. Suitable High quality goor.....</p>	<p>Isd 35</p>  <p>High sugar content (11.95-13.52%) Early maturing. Suitable High quality goor.....</p>
<p>Isd 36</p>  <p>High sugar content (12.84-13.99%) Early maturing. Suitable High quality goor.....</p>	<p>Isd 37</p>  <p>Tolerant to flood, drought and waterlogged. High sugar content (11.80-14.42%) Early maturing. Suitable for marginal land. Suitable High quality goor.....</p>	<p>Isd 38</p>  <p>High sugar content (12.21-14.63%) Early maturing. Resistant to red rot disease. Suitable High quality goor.....</p>	<p>Isd 39</p>  <p>Tolerant to drought, flood, waterlogged and salinity. High sugar content (11.29-14.23%) Early maturing. Resistant to red rot disease. Suitable for ratooning. Suitable High quality goor.....</p>
<p>BSRI Akh 40</p>  <p>Tolerant to drought, flood, waterlogged and salinity. High sugar content (11.14-14.86%) Early maturing. Resistant to red rot disease. Suitable for Char land. High quality goor.....</p>	<p>BSRI Akh 41</p>  <p>Medium sugar content (10.36-12.97%) Mid maturing. Resistant to red rot disease. Suitable for chewing.....</p>	<p>BSRI Akh 42</p>  <p>Medium sugar content (11.04-11.21%) Early maturing. Resistant to red rot disease. Suitable for chewing and juice purpose.....</p>	<p>BSRI Akh 43</p>  <p>Tolerant to drought, flood and waterlogged. High sugar content (10.92-13.72%) Early maturing. Resistant to red rot disease. Suitable for rationing.....</p>
<p>BSRI Akh 44</p>  <p>Tolerant to drought, flood, waterlog and salinity. High sugar content (11.17-13.35%) Early maturing. Resistant to red rot disease.....</p>	<p>BSRI Akh 45</p>  <p>Tolerant to drought, flood, waterlogged and salinity. High sugar content (11.32-15.41%) Early maturing. Resistant to red rot disease. Suitable for ratooning. High quality goor can be produced.....</p>	<p>BSRI Akh 46</p>  <p>Tolerant to flood and waterlogged. High sugar content (11.42-14.61%, Average 12.91%). Resistant to red rot and pine apple disease. Suitable for ratooning.....</p>	

Figure -5

- ✓ Click any technology and see details about this technology (Figure -6).
- ✓ Also found one image gallery about this technology (Figure -7).
- ✓ and found video about this Institute (Figure -8).

Name Of the Variety: CB-14	
Name Of the Variety:	CB-14
Characteristic Of the Variety :	<ul style="list-style-type: none"> ☞ Disease resistant. ☞ Can also protect jassid and aphid due to thickness of leaf blade. ☞ Cluster fruit bearing ☞ No. of boll per plant-40-45. ☞ Single boll weight 5.6 g ☞ GOT-42% 
Appriateness Of Technology (Location/Region):	Cotton growing zone of Bangladesh.
Field Operation to be Done:	<ul style="list-style-type: none"> ☞ Seeds sowing mid June to mid August at a spacing 100 m × 60 m. ☞ Balance fertilizer should be use in proper time. ☞ N-175 kg ha⁻¹ , P-60 kg ha⁻¹, K-175-200 kg ha⁻¹ and S-30 kg ha⁻¹ will be applied ☞ MoP fertilizer should be applied to protect excessive growth of the plant. ☞ Use 1 USG as basal, 2USG at 25 DAS, 45 DAS and 65 DAS. ☞ IPM should be follow to protect Insect and Diseases. ☞ After boll splitting keep the boll on be plant for well drying and well busting boll should collect by hand ☞ Dry harvested seed cotton to be dried in the sun light and keep in gunny bags for storage.

Figure -6

Gallaery



কলার আত বারি কলা - ৪ (টিনু কলা) (2০০৬)



আমের আতঃ বারি আম-১১



কাঁঠালের আত বারি কাঁঠাল-৩



কুলের আত বারি কুল-৪



শীমের আতঃ বারি শীম-৮



শিষ্টি মরিচের আতঃ বারি শিষ্টিমরিচ-২(২০১৫)



টেডসের আত বারি টেডস-২



পটলের আত বারি হাইব্রিড পটল-১



আলুর আত : বারি আলু-৭০ (ডেনসিটি)(২০১৬)



টমেটোর আত : বারি হাইব্রিড টমেটো ৯
AD DMIC



ব্রকলির আত : বারি ব্রকলি-১



চিনাবাদামের আত : বারি চিনাবাদাম-১০ (২০১৬)



ত্রি ধান ৬৩



ত্রি ধান ৬১



ত্রি ধান ৬০



ত্রি ধান ৫৯



আমন ধানের জাত ত্রি ধান ৭৬



আমন ধানের জাত ত্রি ধান ৭৫

Figure -7

Video



Figure - 8

The image shows a screenshot of a web browser displaying a form titled "NADC visit Application Form". The browser's address bar shows "localhost/nadc/en/form". The form contains several fields for user input, each with a red asterisk indicating it is required. The fields are: "Start Date and Time", "End Date and Time", "Type of Visitor" (a dropdown menu with "Select One" selected), "Number of Visitors", "Team/Organisation Name", "Address", "Team Leader Name", "Team Leader Designation", and "Team Leader Contact Address". The form is displayed on a white background with a light gray border.

Figure -9

12. Research highlight/findings:

Applicability of the digital content of NADC is enormous:

- ✓ A well organized and informative online platform could be established at the NADC. It will be helpful for the users to be accumulated on the enriched digital content of NADC, derive the required information and make use of it.
- ✓ The online as system will save time cost and spot visit hassle etc. of different users such as researchers, extension workers, teachers, students, and interested offices
- ✓ It's one step forward towards making available of agricultural information at the door step of the citizens and fulfill the right to information (RTI)
- ✓ As updated Latest agricultural R & D information will be easily available, greater access and use of the information will help to contribute towards production and productivity.
- ✓ It's easy and simple. This is because of the narration in English/Bangla supported by audio, video etc

B. Implementation Position

1. Procurement:

Description of equipment and capital items	PP Target		Achievement		Remarks
	Phy (#)	Fin (Tk)	Phy (#)	Fin (Tk)	
(a) Office equipment	Desktop-2	120,000	Desktop-2	120,000	
	Laptop-1	120,000	Laptop-1	120,000	
	Mobile-1	20,000	Mobile-1	20,000	
	Computer Table-1	5,000	Computer Table-1	5,000	
	Executive Table-1	20,000	Executive Table-1	20,000	
	Visitor chair-5	20,000	Visitor chair-5	20,000	
(b) Lab &field equipment	Not Applicable				
(c) Other capital items	Not Applicable				

2. Establishment/renovation facilities:

Description of facilities	Newly established		Upgraded/refurbished		Remarks
	PP Target	Achievement	PP Target	Achievement	
Up gradation of Switch room			Renovation	Yes	
Rep. of 4 circuit breaker				Yes (4)	
Maintenance of digital touch screen				Yes (2)	
Maintenance of Kiosk				Yes (2)	
Repl. Of LED Bulb in two floor				Yes (48)	
Installation of 6 UPS				Yes (6)	

3. Training/study tour/ seminar/workshop/conference organized:

Description	Number of participant			Duration (Days/weeks/ months)	Remarks
	Male	Female	Total		
(a) Training					
(b) Workshop	40	5	45	1 day	
(c) Meeting	22	1	23	1 day	

C. Financial and physical progress

Fig in Tk

Items of expenditure/ activities	Total approved budget	Fund received	Actual expenditure	Balance/ unspent	Physical progress (%)	Reasons for deviation
A. Contractual staff salary	1106158	1070000	953870	116130	89.15	
B. Field research/ lab expenses and supplies	1938842	1869790	97147	1772643	5.196	Short duration of the Project
C. Operating expenses	560000	448149	214598	233551	47.89	
D. Vehicle hire and fuel, oil & maintenance	430000	284500	19527	264973	6.864	Short duration of the Project
E. Training/ workshop/ seminar etc.	250000	220275	167475	52800	76.03	
F. Publications and printing	110000	109456	3000	106456	2.741	Short duration of the Project
G. Miscellaneous	300000	298982	151417	147565	50.64	
H. Capital expenses	305000	290000	288697	1303	99.55	
Total	5000000	4591152	1895731	2695421		

D. Achievement of Sub-project by objectives:

Specific objectives of the sub-project	Major technical activities performed in respect of the set objectives	Output(i.e. product obtained, visible, measurable)	Outcome(short term effect of the research)
<p>a. To collect detail information of displayed items in NADC including developed agricultural technologies by NARS institutes.</p> <p>b. To digitalize and/or develop contents through text, image and audio-visual format.</p> <p>c. To develop a user friendly web application and make the contents available through LAN and Internet.</p>	<p>Data collection and information generation, Text preparation, Still picture and video clip prepared,</p>	<ul style="list-style-type: none"> ▪ Gathered/Collected the detailed information of displayed items in NADC including developed Agricultural technologies by NARS institutes and digitalize and/or developed contents through text, image & audio-visual format. ▪ Collected 162 technological information processed and incorporated with the web application. ▪ Compiled NARS technological achievement for uploading the Software. ▪ Existing display center renovation activities is done, Such as switch room up-gradation, replacement of 4 circuit breaker, Maintenance of Digital touch screen, Kiosk, Service Nine AC & replacement of LED Bulb in two floor, Installation of 6 UPS ▪ First version of web based application software developed & feedback from NARS institutes 	<p>The developed methodologies, framework, and the software under the study will benefit the researchers, policy makers, extension workers, educationists, development partners, NGOs etc. for optimizing the utilization of technologies thereby increasing the production and maximizing the benefits keeping the productivity and farmers will be the ultimate beneficiaries from the findings of the project.</p>

E. Materials Development/Publication made under the Sub-project: N/A

Publication	Number of publication		Remarks (e.g. paper title, name of journal, conference name, etc.)
	Under preparation	Completed and published	

F. Technology/Knowledge generation/Policy Support (as applied):

i. Generation of technology (Commodity & Non-commodity)

- ✓ Gathered/Collected the detailed information of displayed items in NADC including developed Agricultural technologies by NARS institutes and digitalize and/or developed contents through text, image & audio-visual format.
- ✓ Collected 162 technological information processed and incorporated with the web application.
- ✓ First version of web based application software developed & feedback from NARS institutes.
- ✓ Compiled NARS technological achievement for uploading the Software.
- ✓ Existing display center renovation activities is done, Such as switch room up-gradation, replacement of 4 circuit breaker, Maintenance of Digital touch screen, Kiosk, Service Nine AC & Replacement of LED Bulb in two floor, Installation of 6 UPS

ii. **Generation of new knowledge that help in developing more technology in future**

A databases on agricultural technologies/varieties have been developed.

iii. **Technology transferred that help increased agricultural productivity and farmers' income**

However, it has been observed from different dignitaries/professionals comments/feedbacks that there remains a still a lot of scope to enrich the display center. Nobody among them are development/update of digital content of all displayed items, development of various audio visual contents on specific subjects/matters and making them available through online. They have emphasized on availability of all contents both in Bengali and English language for the sake of local and foreign visitors. It was thus important to take initiative for further development and up gradation of the digital contents of NADC at BARC and facilitate use

iv. **Policy Support**

Yes

G. Information regarding Desk and Field Monitoring

i) **Desk Monitoring (description & output of consultation meeting, monitoring workshops/seminars etc.):**

Desk Monitoring: Planning and Evaluation Division of BARC have conducted desk/Internal monitoring of the Project and expressed their satisfaction. The Team members were Dr. Paresh Chandra Golder, Member Ddirector, Dr. Md. Abdul Awal, Chief Scientific Officer and Dr. Kabir Uddin Ahmed, Principal Scientific Officer of the Planning and Evaluation. They made valuable comments on various activities and expenditure incurred so far. During the implementation period their comments were taken as a guideline in improving the project performance.



ii) **Field Monitoring (time& No. of visit, Team visit and output):**

Time	No. of Visit	Team	Outout
May, June 2018	4 (BARI, BJRI, BINA,BSRI)	1. Md. Shohid Uddin Bhuyan 2. Md. Saffaet Hossain	Collected the technologies/varieties information of text, image and video

H. Lesson Learned/Challenges (if any)

- i) Process of continuous flow of materials and information from the NARS institutes to be strengthened.
- ii) Dedicated personnel needed for NADC.
- iii) There needs to allocate separate fund for NADC from core programme

I. Challenges (if any)

- i) Integration among different NARS Institutes regarding supply and dissemination of technological information to be given priority
- ii) The overall process of up gradation is consuming.
- iii) Fund should be made available timely basis.
- iv) Project period was too short

Signature of the Principal Investigator

Date:

Seal

Counter signature of the Head of the organization/authorized representative

Date:

Seal