

# Bangladesh Agricultural Research Council Marching Towards Digital Bangladesh

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## Abstract

*The Bangladesh Agricultural Research Council, in collaboration with other national agricultural research institutes, is working tirelessly to make Bangabandhu's Sonar Bangla an upper-middle-income country by 2030 and a developed country by 2041 by achieving the Sustainable Development Goals. This paper presents the activities of the Bangladesh Agricultural Research Council, which are following the vision of Digital Bangladesh in opening up all the data and information related to agricultural research outputs for all the farmers and the stakeholders of the National Agricultural Research System of Bangladesh.*

**Keywords:** Agriculture, Knowledge Management, Digital Library

## Introduction

Established in 1973 by the Father of Nation, Bangabandhu Sheikh Mujibur Rahman, the Bangladesh Agricultural Research Council (BARC) had transformed into an Apex body of the National Agricultural Research System (NARS). It is working for the nutritional security of the nation with active collaboration of constituents of NARS, the national agricultural research institutes in the country viz., Bangladesh Agricultural Research Institute, Bangladesh Rice Research Institute, Bangladesh Sugar crop Research Institute, Bangladesh Jute Research Institute, Bangladesh Atomic Agriculture Research Institute, Soil Resources Development Institute, Bangladesh Livestock Research Institute, Bangladesh Fisheries Research Institute, Bangladesh Forest Research Institute, Bangladesh Tea Research

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Institute, Cotton Development Board and Silk Research Institute, Bangladesh Wheat and Maize Research Institute. The agricultural research in Bangladesh transformed from subsistence agriculture to commercial agriculture. The Bangladesh Agricultural Research Council, in collaboration with other national agricultural research institutes, is working tirelessly to make Bangabandhu's Sonar Bangla an upper-middle-income country by 2030 and a developed country by 2041 by achieving the Sustainable Development Goals.

### **Strength to Bangladesh Agriculture**

The country is on the path of development under Hon'ble Prime Minister Sheikh Hasina, the worthy daughter of Bangabandhu. In a speech on the occasion of Krishibid Diwas on February 12, 2021, Prime Minister Sheikh Hasina said, "The present government's policy on agriculture is conducive to agriculture and agronomists".

It is a matter of pride to the BARC that the Independence Award 2021 was awarded to BARC in the research and training category for its continuous success in agricultural research and training. This achievement in the 50th anniversary of Bangladesh's Independence has set the BARC in a different direction in a great height. This achievement of the Council under the dynamic leadership of the present Executive Chairman, Dr Shaikh Mohammad Bakhtiar, is highly appreciated at home and abroad.

### **Digital Bangladesh**

The foundation for Digital Bangladesh was laid in 2008 and had defined various goals for 2021, the year marking the 50th anniversary of Bangladesh's Independence. The vision of Digital Bangladesh is to be ready with Technology Driven Talents to meet the global demands. Moreover, to be one of the top 10 growth markets for tech devices offering rapid technology adoption, consumer base has been built on Four Pillars which are as follows:

1. Digital Government,
2. Human Resource Development,
3. IT Industry Promotion and
4. Connecting Citizen

### **Access to Data, Information and Knowledge in the NARS**

The new knowledge needs real-time or immediate access to the data and information. The prominent research outputs are the publications made by various researchers in peer-reviewed publications. The constitutes of NARS are publishing various research journals in agriculture and allied sciences.

### **Open Access Journals in NARS of Bangladesh**

The Bangladesh Journals Online (BanglaJOL) was established by the INASP in 2007 and managed by the Bangladesh Academy of Sciences to provide online publications of Bangladeshi journals. There are about 19 journals related to agriculture and allied sciences published by the universities or by scholarly societies (Table 1). Some of these journals and others are indexed in the Directory of Open Access Journals (DOAJ), a quality-controlled authoritative Open Access journals indexing platform (Table 2.) The journals indexed in DOAJ explicitly make all the articles under Creative Commons licensing.

**Table 1. Agricultural Journals hosted by BanglaJOL**

<b>S.No.</b>	<b>Name of the Journal</b>	<b>Name of the Publisher</b>
1.	Annals of Bangladesh Agriculture	Bangabandhu Sheikh Mujibur Rahman Agricultural University
2.	Bangladesh Agronomy Journal	Bangladesh Society of Agronomy
3.	Bangladesh Journal of Agricultural Research	Bangladesh Agricultural Research Institutes
4.	Bangladesh Journal of Animal Science	Bangladesh Animal Husbandry Association, Bangladesh Agricultural University

5.	Bangladesh Journal of Livestock Research	Bangladesh Livestock Research Institute
6.	Bangladesh Journal of Plant Breeding and Genetics	Plant Breeding and Genetics Society of Bangladesh
7.	Bangladesh Journal of Veterinary Medicine	Bangladesh Society for Veterinary Medicine
8.	Bangladesh Rice Journal	Bangladesh Rice Research Institute
9.	Bangladesh Veterinarian	Bangladesh Animal Health Society
10.	International Journal of Agricultural Research, Innovation and Technology	IJARIT Research Foundation
11.	Journal of Advanced Veterinary and Animal Research	Network for the Veterinarians of Bangladesh
12.	Journal of the Bangladesh Agricultural University	Bangladesh Agricultural University Research System, Bangladesh Agricultural University
13.	Microbes and Health	Bangladesh Society for Veterinary Microbiology and Public Health
14.	Progressive Agriculture	Progressive Agriculturists
15.	Rajshahi University Journal of Life & Earth and Agricultural Sciences	Rajshahi University
16.	Research in Agriculture Livestock and Fisheries	AgroAID Foundation
17.	SAARC Journal of Agriculture	SAARC Agriculture Centre, Bangladesh
18.	South Asian Journal of Agriculture	Agrotechnology Discipline, Khulna University, Khulna
19.	The Agriculturists	Krishi Foundation

Source: <https://www.banglajol.info/>

**Table-2 Agricultural Journals indexed in DOAJ**

Sl. No.	Journal	Publisher	APCs	Creative Commons License
1.	Bangladesh Agronomy Journal	Bangladesh Society of Agronomy	APCs: 20 (USD), 500 (BDT)	CC BY-NC-ND
2.	Bangladesh Journal of Scientific and Industrial Research	Bangladesh Council of Scientific and Industrial	No charges	CC BY-NC
3.	Fundamental and Applied Agriculture	Farm to Fork Foundation	APCs: 4000 (BDT)	CC BY-NC
4.	International Journal of Agricultural Research, Innovation and Technology	IJARIT Research Foundation	APCs: 100 (USD)	CC BY
5.	Journal of Advanced Veterinary and Animal Research	Network for the Veterinarians of Bangladesh	APCs: 12000 (BDT), 250 (USD)	CC BY
6.	Journal of Fisheries	BdFISH, University of Rajshahi	No charges	CC BY-NC-SA
7.	Journal of the Bangladesh Agricultural University	Bangladesh Agricultural University Research	APCs: 1500 (BDT)	CC BY
8.	Research in Agriculture, Livestock and Fisheries	AgroAid Foundation	APCs: 100 (USD)	CC BY

Source: <https://doaj.org/>

## **Digital Services of the BARC**

Going forward with the vision of Digital Bangladesh, the BARC has built various websites for agriculture. Some of the unique websites offering digital agricultural services (data, information and knowledge) are as follows:

### **Agri-advisory Portal <http://cropzoning.gov.bd:82/>**

The Agri-advisory portal developed under the Crop Zoning Project of BARC is an on-demand information portal available bi-lingual. Through the portal, advisory services in agriculture and allied disciplines viz., crop suitability, soil health & fertility status, climate, crop economics information etc., are shared to all stakeholders of NARS.

### **Mobile Applications - Khamari**

The BARC had developed a mobile app called "Khamari" for sustainable agricultural development. The app is available at Google Play Store. Furthermore, it provides information on crop season-wise land specific suitable crop, crop-wise fertiliser recommendation based on the soil fertility status, crop varieties, yield & duration of the crop, good cropping pattern, and crop production technology.

### **Agricultural Research Management Information System (ARMIS)**

Nearly 37600 project information records are being made available via ARMIS <http://armis.barcapps.gov.bd/>. All the possible search facilities to learn about the ongoing and completed projects as per the organisation, subject/theme or funders can be searched and accessed. When the project related information and its outputs are publicly shared, work duplication can be avoided, and resource optimisation can be achieved.

### **Land Suitability Assessment and Crop Zoning of Bangladesh**

Another flagship project of the BARC is the 'Land Suitability Assessment and Crop Zoning of Bangladesh <http://cropzoning.barcapps.gov.bd/>.

Using the Geo-Information System software, the data and information are visualised to know if their regions (lands) are suitable for a particular crop. The suitability information is available for the cereals, pulses, oilseeds, spices, tuber crops, fibres and sugarcane.

**Climate Information Management System (CIMS) <http://climate.barcapps.gov.bd/>**

Access to climate information is crucial as the entire operations of agriculture are linked with the weather. When the historical data is available, forecasts can be made, and management practices can be adopted. The CIMS makes the data available for the following parameters to all the registered users.

- Cloud Coverage
- Humidity
- Moisture Regime
- PET
- Rainfall
- Solar Radiation
- Sunshine
- Temperature
- Thermal Regime
- Wind Speed

In addition to this, The Govt. of Bangladesh, made services for the citizens, are on the doorstep as e-services <https://bangladesh.gov.bd/>. Some of the e-Service lists available for agriculture, fisheries and livestock are as follows:

- Agriculture Call Center
- Agriculture Information Service
- Bangladesh Rice Knowledge Bank

- BARC Archive Database
- Climate Database/Weather information
- E-Livestock
- E-marketing
- Fish Advise System
- Fisheries Food License
- Jute Seed Management Software
- Land Resource Database
- Livestock SMS service
- Online Crop Calendar
- Online training registration
- PGRFA Database
- PMIS (BADC)
- Seed storage and distribution software
- Venue Booking Database

## **Conclusion**

The country of Bangladesh is marching rapidly towards Digital Bangladesh, and all the citizen services and all the information services related to agriculture and allied sciences are available at doorsteps (view mobile SMS, apps and websites). It is envisaged that shortly the Digital Agriculture in Digital Bangladesh will bring more efficiency by providing the correct information at the right time to the end-users.

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