

Digital archive on agricultural theses and journals (DAATJ) of Bangladesh: an overview

Mohammad Shakaought Hossain Bhuiyan

Deputy Librarian, Faculty of Fine Art Library

University of Dhaka, Dhaka-1000, Bangladesh.

shakaought_bhuiyan@yahoo.com

Abstract

The purpose of this paper is to investigate the current status, potential benefits and challenges of digital archiving of agricultural theses and journals in Bangladesh with a focus on the lesson learnt from a World Bank financed project titled as 'Digital Archive on Agricultural Theses and Journals of Bangladesh'. That project worked on the three Bangladeshi Agricultural Universities for five years with an aim to convert all the printed Master of Science (MS) and Doctoral theses to digital format. Following a qualitative methodology, this study was conducted through an intensive review of project documents as well as consultation with educators and students. Results of the study reveals the prospect and challenges of establishing ETD repositories for agricultural universities in Bangladesh. The analysis indicate the value of project experiences for introducing a model of ETD repositories. With a policy implication, the findings reveals that academicians, researchers, librarians, students, policy makers, extension providers and farmers would get immense benefit from such archive. Observing the success, it is recommended to adopt similar model for other agricultural universities in Bangladesh. The findings may be are of values for establishing ETDs in other developing countries for disseminating knowledge.

Keywords: Digital Archive, ETDs, Agricultural theses and dissertations, BdREN, Agricultural Journals, Bangladesh.

Introduction

Bangladesh is an agricultural country. Agricultural is the key contributor to the national Gross Domestic Product (GDP) of Bangladesh. At present Bangladesh is full-fledged with food

and export the Agricultural product due to development of agricultural research. The main aim of the present government of Bangladesh is to digitization of information. Presently, there are eight agricultural university in Bangladesh including 07 public and 01 private. The Electronic Theses and Dissertations (ETDs) in Agriculture are the valuable research documents that are generated from the various experiments by the research scholars and scientists of the National Agricultural Research System (NARS) of the Bangladesh.

This study defined the term ETD as a master's thesis or doctoral dissertation that is archived and circulated electronically rather than archived and circulated in print. Moreover, ETDs are an important and valuable tool for the university and the researcher in all areas of scholarship. It is expressed in a form that is simultaneously suitable for machine archiving and worldwide retrieval. More and more universities are becoming to embrace the idea of creating maintaining a repository of electronic theses and dissertations (Mostafa, 2018).

The study is significant as to identify the present status of the *Digital Archive on Agricultural Theses and Journals of Bangladesh* (DAATJ). There is no such study ever conducted in Bangladesh to understand the cons and pros of ETDs in the context of Bangladesh university education. Therefore, it is expected that the study will have various policy implications and at the time may provide future direction of researching ETD in Bangladesh.

Study context: Overview of DAATJ in Bangladesh

The study considered Bangladesh context of three specialized agricultural universities. Here, all the Master of Science (MS) and Doctoral (Ph. D) students of *Bangladesh Agricultural University* (BAU), *Bangabandhu Sheikh Mujibur Rahman Agricultural University* (BSMRAU) and *Sher-e-Bangla Agricultural University* (SAU) are to conduct individual research on different agricultural topics as a part of their degree. Teachers also conduct research and publish their articles in journals. Researchers and academicians of agricultural disciplines generally review past studies from the hard copies theses/dissertation and journals which is very difficult, time consuming and costly. Digitization of information is an important goal of the present government of Bangladesh. On the other hand, development of highly skilled technical and scientific personnel in different fields of agricultural science in order to conduct research, to provide higher education and disseminate research findings is the major goal of the Agricultural University of Bangladesh. On these considerations, the management team of this sub-Project decided to establish a Digital Archive on Agricultural Theses and Journals of Bangladesh (DAATJ) by covering mainly the theses and journals of Bangladesh Agricultural University (BAU), Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU) and Sher-e-Bangla Agricultural University (SAU).

Reviewing web resources indicates that *Digital archive on agricultural theses and journals of Bangladesh* (DAATJ) has established in 2012, November 21. This project was established by *Professor Dr. Md. Sekender Ali* of *Sher-e-Bangla Agricultural University* is a milestone for making digital Bangladesh in higher education and research. Higher education

Quality Enhancement Project (HEQEP) under Bangladesh *University Grants Commission* (UGC) have provided financial support for making this digital archive. Theses and journals from *Bangladesh Agricultural University* (BAU), *Bangabandhu Sheikh Mujibur Rahman Agricultural University* (BSMRAU) and *Sher-e-Bangla Agricultural University* (SAU) are included in this digital archive. This archive is called as *Digital Archive on Agricultural Theses and Journals* which is linked with the websites of Bangladesh Research Education Network (BdREN) and respective universities, and located at <http://www.saulibrary.edu.bd/daatj/public/> that built on Joomla which is a *Content Management System software*. The following image shows a screenshot of DAATJ web page that may be supportive to provide a glimpse of Bangladesh DAATJ.

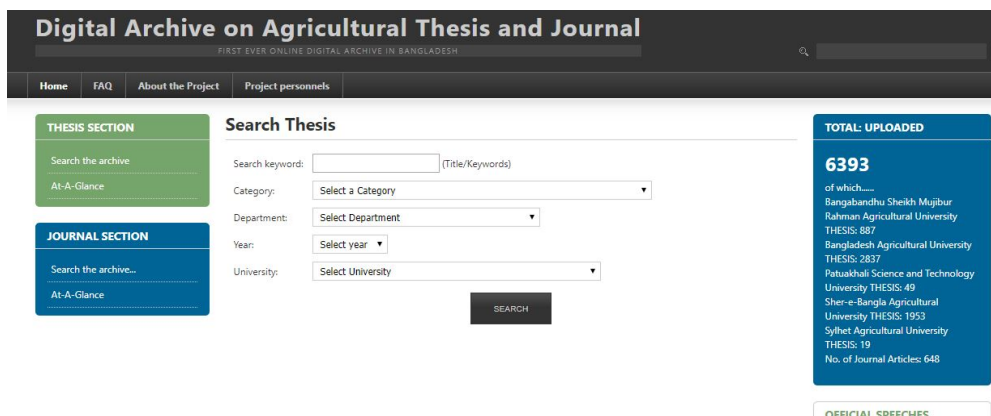


Figure 1
Screenshot of DAATJ

The initiative of DAATJ is expected to support the Government of Bangladesh in attaining her goal to be digitized country by including all theses and journals of the Bangladesh universities as well as all completed research reports from various research organizations in Bangladesh with a cooperation from BdREN. In future, the theses and journals of another six public universities of Bangladesh like Sylhet Agricultural University (SAU), Patuakhali Science and Technology University (PSTU), Haji Mohammad Danesh Science and Technology University (HMDSTU), School of agriculture of Khulna University (KU) and Faculty of Agriculture of Rajshahi University (RU) will be included in this digital archive in near future.

Review of related literature

The following section focuses on literature to provide an understanding regarding the ETDs in Bangladesh. The author reviewed relevant articles and determined that significant research was previously undertaken on the topic in Bangladesh. A relatively few numbers of research articles have been found related to ETDs in agriculture in Bangladesh and India.

Perera (2016) stated that it is evident that ETD can play a significant role in repositories and it may lead to a result-oriented approach by way of improving data skills of research scholars. It is, therefore, extremely important to provide accurate data sets to fulfill the information gap and at the same time supporting to accomplish their novel research by

providing required ETDs in time. Susmita, Lalitha and Sridhar (2015) stated that the *KrishiPrabha* is the largest collection of the ETDs in *Agriculture Repository* in India. In addition to this, the University System in India has the *Shodhganga*¹. The largest collection housed in the *KrishiKosh* has the collections of previous *KrishiPrabha* and the thesis submitted till date. The *KrishiKosh*, Institutional Repository of Indian National Agricultural Research System is built by *DSpace* and Apache Tomcat. Sengupta (2015) found that the ETD contributions of the top 05 Indian universities in *Shodhganga*, the total contribution of 19 universities of *Maharashtra* is far less than the individual contributions of Jawaharlal Nehru University, Gujrat University and Anna University. Susmita, Lalitha and Sridhar (2015) in their study on ETDs titled as *Agriculture status and way forward with case studies from India and Bangladesh and they found that in Bangladesh* and found a tradition of making available online by Digital Archive on Agricultural Theses and Journals (DAATJ) for the academicians and research community. Owing to the importance of ETDs, they assert that there is a need to create more awareness among the researchers and the research managers in making ETDs publicly available. In another study, Gupta and Gupta (2014) explore that the India University Grants Commission (UGC [India], 2005) and other government bodies have issued guidelines for ETD submission. Afterwards, Indian University Grants Commission (in 2009) made it mandatory for all the universities to deposit a copy of the submitted thesis to the National ETD repository (i.e. *Shodhganga*). However, Gupta and Gupta (2014) claims that the universities do not seem very serious yet about this issue so far.

Subirats et.al. (2008) in their study addressed the issues related to accessibility, availability and interoperability of exchanging agricultural research by means of *AGRIS application profile*. They found that the lack of adequate information exchange mechanism among researchers in food and agricultural sciences was a significant weakness that limiting the research outcomes to properly address the issues of agricultural development. Cayabyab (2015) reviewed literature on ETDs and compared practices between developed and developing countries in these regards. She found that while the ETDs mushroomed swiftly in developed countries, whereas the initiatives in developing countries were isolated and still was at the infancy stage. *Intellectual Property Rights* are major problem of concern for the integration and collaboration of ETD projects that were designed and developed individually. In another study on ETD services in the three public university libraries of Bangladesh, Mostafa (2018) described the general an overview of the ETD services. Moreover, he explored that a few university libraries in Bangladesh had started ETD services. However, there were no existed national level policy on institutional repositories (IRs) development in Bangladesh. According to him, the problems were interrelated of three components in nature, such as a) lack of familiarities with ETDs information; b) lack of awareness of ETDs information; and c) lack of guidance from the university authority. He has also mentioned that no wide scale activity has been initiated by the university authority in terms of the storage and dissemination of these

¹ Web location: <http://shodhganga.inflibnet.ac.in/>

materials. In another study, Rahman and Mezbah-ul-Islam (2014) explored the existing status of practices of IRs in Bangladesh and identified the trends at national and global level of IRs. They found that a very few institutions established their repositories in Bangladesh using DSpace, and few universities also using Greenstone and EPrints.

Perera and Rahman (2017) conducted a study on bridging information disparities through ETDs in academic libraries. For comparing the situation between from Sri Lanka and Bangladesh, they applied a Case Study methodology. They found that a closed access system for the institutional members were maintained by most of the IRs and Archives of university libraries in Bangladesh and RCSS Library in Sri Lanka. However, researchers from outside might request to have particular thesis and dissertation to the respective library. The study also identified that the *Digital Archive on Agricultural Theses and Journals (DAATJ)* was the only collaborative network on ETD initiatives in the Agricultural sector of Bangladesh.

The above literature review explored a gap regarding the status, benefits and usages of ETDs in the agricultural sector in Bangladesh. Thus, this study would be an initiative to reduce such research gap and may create few evidences for Bangladeshi researcher and academics.

Objectives of the Study

The objectives of the study are given below:

1. To identify the present status of the Digital Archive on Agricultural Theses and Journals of Bangladesh (DAATJ);
2. To identify how the users can be benefited from this archive; and
3. To identify the challenges of this archive.

Research Methodology

A qualitative methodology has been followed to develop this article. Interview and participant observation were the major study methods, whereas the personal experiences of the researcher were also utilized as a tool for this study. Moreover, review of available online resources and websites of three agricultural universities were conducted. In this respect, three websites of the respective agricultural university were browsed and searched to collect the data. All the three university libraries were visited and consulted with respective library staff about total collection of ETD, its status and services. In fact, I was involved with the project. During my job as an Assistant Librarian at Sher-e-Bangla Agricultural University, I observed deeply regarding the status and usability of the Digital Archive on Agricultural Theses and Journals of Bangladesh (DAATJ). I often found that the users were in challenges to working with this archive. However, I interviewed users regarding the benefits and their challenges for using this archive. As, it was the first initiative in Bangladesh to create a digital agricultural repository, this study was noteworthy for understanding such initiatives in Bangladesh.

Results

The following section represents the results and major findings of the study. The findings from the collected data were compiled electronically and presented under four general themes. These are:

- a) Existing Situation of Usability of DAATJ;
- b) Benefits of DAATJ;
- c) Functional Mechanism of DAATJ; and
- d) Pitfalls and challenges of DAATJ.

a) Existing Situation of Usability of DAATJ

Table 1 shows a statistics of university wise number of ETD and software platform for the development of respective websites. A total 6354 theses and journals has been uploaded in this digital archive. If we divided university wise then we can see that 1914 theses from Sher-e-Bangla Agricultural University, 2837 theses from Bangladesh Agricultural University, 887 theses from Bangabandhu Sheikh Mujibur Rahman Agricultural University, 19 theses from Sylhet Agricultural University and 49 theses from Haji Mohammad Danesh Agricultural University already digitized from this project. The teachers, researchers, doctoral students and Master of Science (MS) students easily access the project website and can get help for their research support.

SL. No.	Name of the University	Number of theses	Platform
01.	Bangabandhu Sheikh Mujibur Rahman Agricultural University	887	Joomla
02.	Bangladesh Agricultural University	2837	Joomla/DSpace
03.	Sher-e-Bangla Agricultural University	1914	Joomla
04.	Sylhet Agricultural University	19	Joomla
05.	Patuakhali Science and Technology University	49	Joomla

Table 1
ETDs pf DAATJ

b) Benefits of DAATJ

The interview data explores the potential benefits of DAATJ for academicians, researchers, librarians, students, policy makers, extension providers, and farmers. The analysis confirmed that they might get the following benefits from this archive:

- Nationwide digitization aim of the present government will be benefited;
- The future researchers will be able to review past studies quickly in an easiest way by visiting websites. They will be able to know about all the past agricultural theses and journals of Bangladesh, as a result duplication/manipulation of research will be controlled;
- The supervisors of the Master of Science (MS) and Doctoral students will be able to stop their students from copying/manipulating past theses;

- Knowledge of students, teachers and future researchers will be increased and researchers will be able to search new research ideas/problems;
- Results of Master of Science (MS) and Doctoral research will be disseminated world-wide.
- Institutional and academic quality of the universities as well as agricultural research organizations of Bangladesh will be improved;
- Reviewing cost of past studies for researchers will be drastically reduced as they will get all the previous information from websites in a systemic way; and
- The proposed digital archive will be a milestone for other universities to prepare such type of digital archive that will be ultimately helpful to the national development related to research activities.

c) Functional Mechanism of DAATJ

In this study, I was deeply looking for the working procedure of this archive. Participant observation, websites' data analysis and my experiences support me of coming up with a diagram indicating the functional mechanism of DAATJ. By analyzing data, the following of functional mechanism (fig. 2) of has been formulated, so that the interested researchers, academics and others could easily understand the ETDs system in Bangladesh.

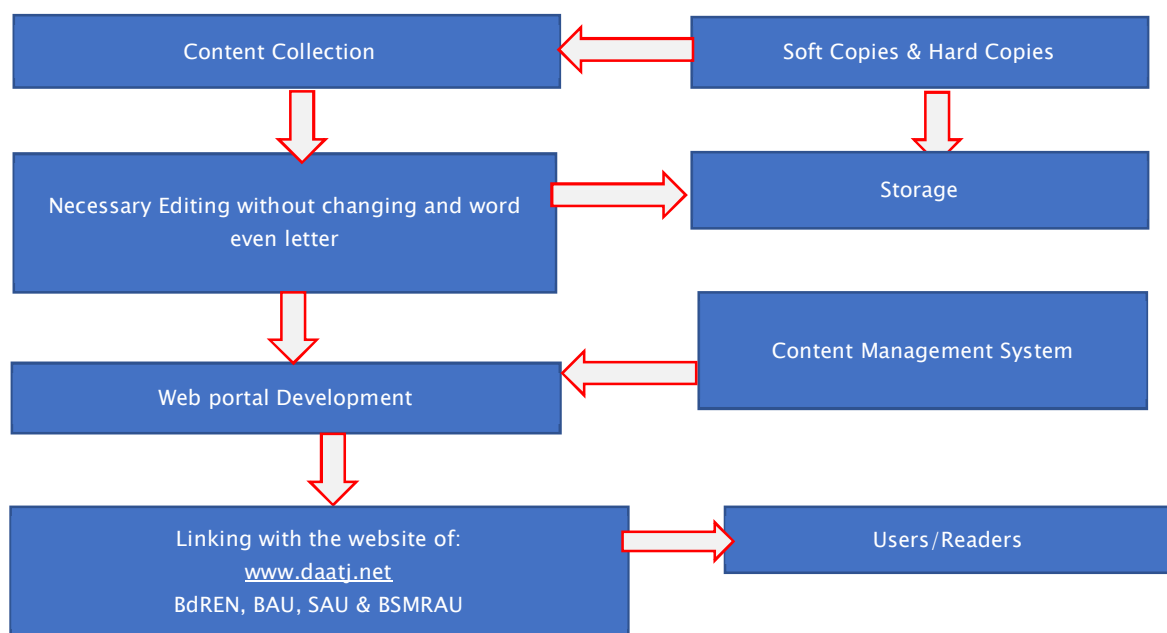


Figure 2
Working procedures of DAATJ

d) Pitfalls and Challenges of DAATJ

From observation of different sites, the following pitfalls of this project have been identified:

1. Selection of the software in at the repository was wrong. The software is made on the Content Management System (SMS), rather than any digital library software;
2. Though all the materials are being distributed on the base of the Creative Common Licensing. But the site (<http://daatj.saulibrary.edu.bd>) does not provide any OAI-PMH services; and
3. The scanned copies of most of the theses (except the theses of Sher-e-Bangla Agricultural University, the theses have been replaced by the corrected scanned copies) are hazy and converted the theses from picture to PDF. And it is another great pitfall.

Conclusion

The findings of the study identified the key benefit of ETD as a mechanism for enhancing access to the latest research in all the fields of knowledge. Research scholars can locate, and study online papers/articles written in their area of interest. This would be possible only if every university makes it compulsory for all the research scholars to submit a copy of the thesis in digital format and post on their respective website. For enhancement of agricultural economy, it is essential to create new knowledge in this field, as Bangladesh is called as a land of agriculture. Digital Archive on Agricultural Theses and Journals of Bangladesh (DAATJ) can help to provide vital services to the researchers in the field of agriculture. Besides, this archive may play a vital role in building the digital Bangladesh in aligning with the main goal of the present government of Bangladesh. The findings revealed that such uploading of theses and journals should not be confined among three agricultural universities, rather it should be expended to other universities in Bangladesh. In this respect, the findings would be significant for policy makers, academics and researchers to understand the dynamics of ETDs in Bangladesh. Thus, the study recommends including other agricultural universities and agricultural institutes in this archive. So that the DAATJ get the scopes of ensuring outstanding contributions in the field of agriculture in Bangladesh. The findings may also be useful for other developing countries to introduce ETDs.

References

- Bangabandhu Sheikh Mujibur Rahman Agricultural University website* (2019). <http://www.bsmrau.edu.bd>
- Bangladesh Agricultural University official website* (2019). <http://www.bau.edu.bd>
- Cayabyab, T.A.C. (2015). A review of emerging ETD initiatives: Challenges and future developments. *International Journal of Information and Education Technology*, 5 (10):772–777. Doi: <http://doi.org/10.7763/IJJET.2015.V5.609>
- Gupta, D. & Gupta, N. (2014). Analytical study of the ETD repositories and government initiatives for depositing ETDs in India. *Library Management*. 35 (4/5): 308–319. DOI: 10.1108/LM-09-2013-0092
- HEQEP (2010). Higher education quality enhancement project (HEQAP): A project of University Grants Commission. Dhaka, Bangladesh: Ministry of Education. Retrieved at January 03,

- 2018 from <http://www.heqep-ugc.gov.bd>
- Mostafa, M. G. (2018). Status of electronic theses and dissertations (ETD) services in the three public university libraries of Bangladesh: An overview. *ETD 2018 Taiwan: 21st International Symposium on Electronic these and Dissertations, Taiwan*.
- Perera, K. & Rahman, M.Z. (2017). Bridging international disparities through ETDs in academic libraries: Case studies from Sri Lanka and Bangladesh. *20th International Symposium on Electronic Theses and Dissertations by NDLTD* on 07–09 August 2017, at Embassy Suites Hotel, Washington DC, USA.
- Perera, K. (2016). An evaluation of the use of ETDs by the PhD students in library of regional centre for strategic studies (RCSS), Sri Lanka. *19th International Symposium on Electronic Theses and Dissertations*, 11–13 July, 2016, Lille, France.
- Rahman, M. M. & Mezbah-ul-Islam, M. (2014). Issues and strategy of institutional repositories (IR) in Bangladesh: A paradigm shift. *The Electronic Library*, 32 (1): 47–61. Doi: <http://doi.org/10.1108/EL-02-2012-0020>
- Sengupta, S. (2015). ETD contributions in Shodhganga: A status report of universities of Maharashtra (India). *Knowledge Librarian [An international peer reviewed bilingual e-journal of Library and Information Science]*. 02 (06): 50–76.
- Sher-e-Bangla Agricultural University official website* (2019). <http://www.sau.edu.bd>
- Susmita, D, Lalita, P. & Sridhar, G. (2015). ETDs in agriculture: Status and way forward with case studies from India and Bangladesh. *ETD 2015 India: 18th International Symposium on Electronic Theses and Dissertations*, New Delhi, India. DOI: 10.13140/RG.2.1.3674.0881
- UGC Website* (2019). List of public and private universities in Bangladesh. <http://www.ugc.gov.bd>