

## **ODEL CAN ADDRESS THE REALITY-PROBLEMS OF AGRICULTURISTS' POST GRADUATION IN BANGLADESH**

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### **ABSTRACT**

**A research project was carried out during 2007-08 at the Open University, UK to explore the suitable strategic policy & practices, and partnership possibilities for open, distance and e-learning (ODEL) programme for the postgraduate agricultural education in Bangladesh.**

**The methodology followed was based on the searches on Internet, Journal articles, books, periodicals, brochures, proceedings, reports, attending lectures workshops, seminars, symposia, conferences, contacts, and visits to other Universities/Institution/Organisations for case studies.**

**Under the new millennium context resurgence of global interest in web-based Open, distance and e-learning (ODEL) has been proved to be potentially useful strategy for human development issues, particularly due to the evolution of fast-growing as well as net-working new Information and Communication Technologies (ICT). The study reveals that though ODEL has been found widely used in many reputed and world leading universities in UK for higher studies leading to degrees, diploma and certificates on arts, general & environmental sciences as well the commerce subjects, and trainings for professional developments etc.**

**The application ODEL especially in higher agricultural education and training leading to MScs and PhDs is almost scanty except a few cases of Fisheries and Livestock, the two sections of Agriculture in the Universities like the University of Sterling, University of Edinburgh and the University of London (Royal Veterinary College) etc.**

**But in cases of other major areas of Agricultural subjects such as the crop sciences including Agronomy, Soil science, Crop botany, Horticulture, Plant Pathology, Entomology, Genetics & Pl. Breeding, Agric. Extension Education, Agric. Chemistry, Biochemistry, Agro forestry, Biotechnology, Seed Sci. & Techno. Farm Structure, Farm Power & Machinery, Irrigation & Water Management, Food Tech. & Rural Farm Industry, Agricultural Economics, Agricultural Finance, Agricultural Statistics, Ag. Cooperation & Ag. Marketing, Rural Development etc. the application of ODEL has not yet been found employed in anywhere except, a few recent endeavours under a limited scope in the Asian countries like India (IGNOU).**

**ODEL extends the learning and self-development opportunities to those beyond the access to the conventional system due to professional, familial, economic, geographical etc. restrictions. The scenario is more acute especially in case of the applied science like Agriculture in Agriculture-dependent developing country like Bangladesh where the tool may be potential alternative to address the postgraduate agricultural education, the acute problem of a vast number of target group seeking higher studies. Bangladesh is one of the most thickly populated and agriculture dependent developing countries of the world, and Bangladesh Agricultural University (BAU) established in 1962 is only the premier seat of higher agricultural education and research in the country offering Masters and Doctoral degrees through the conventional face to face class room system. Since its establishment out of the total passed out bachelors (BSc Ag.) so far till July 2007 only 31.29% Masters and 0.64% PhDs have been produced. Bangladesh has recently been connected to the information super-highway through submarine cables.**

**As a result, along with BTTB private companies already could ramify their ICT-based business orientations in different sectors like banking, transportation, administration etc.**

**The use of computer and the long-ranged, portable electronic device with the telephone and the cell phone networks are widely used now a day. Under the circumstances, for better and progressive existence in the competitive global context it should be concentrated on its special attention to the ICT-based ODEL as a pragmatic focal issue with a view to transforming the ever increasing vast population potential into more productive force, so as to solve the higher agricultural education problems and ultimately towards greater awareness and appreciation leading to sustainable agricultural development and alleviating poverty in the country. The study evidences that there is an ample paradigm shift towards ODEL system in providing accessible postgraduate agricultural education in Bangladesh. On the basis of study on ODEL ongoing programmes at different Universities the following policy and practices have been recognised to be recommended to the concerned BAU authority.**

- **The course materials for the students must be bespoke, having been developed for the ODEL mode, and are not simply a course that provides material on the web. It ensures that the students enjoy the same high quality teaching environment and exposure to innovation as the students on campus-based courses.**

- **Development of adequate students' supports and facilities along with valid accreditation of their degrees.**
- **Development of highly skilled special academic as well as administrative expertise for the ODEL-based postgraduate in agricultural education programme.**
- **For high technology and innovation as well as need-based action researches, global partnership development programme should be initiated.**

**Thus BAU can go even beyond the boundary of the country with its high quality ODEL, especially Asian countries and the South Asian neighbourhood in particular but requires a strong need for an international intervention in planting the 'ODEL seed' into the conventional system in Bangladesh.**

**Keywords:** ODEL; Post graduation; Agriculture; Bangladesh.

## **INTRODUCTION**

**The twenty first century has witnessed increasing paradigm shift in the conventional system of imparting knowledge. Indeed, it is no longer absolutely necessary to be physically present in a classroom in order to learn.**

**Modern electronic technology determines the system instruction to be delivered. Students who are unable to enroll in the traditional face to face class room system for any reason but want to have chance for his/her education may be the greatest beneficiary. Everybody now a day can enjoy the benefits of learning through the media and the new information and communication technology around (Heinich et.al., 2002).**

**Bangladesh is one of the most densely populated countries in the world, with 150 million people living in an area of 55,599 square miles (2850 per square mile) in 2007 (Anonymous, 2007). The country has a primarily agrarian economy where Agriculture is the single largest producing sector since it comprises about 30% of its GDP and employing around 60% of the total labour force. The performance of this sector has an overwhelming impact on the major macroeconomic objectives like employment generation, poverty alleviation, human resources development and food security.**

**Most Bangladeshis earn their living from Agriculture (Anonymous, 2008). Agricultural education has therefore, been considered as a priority sector, and thereby the subject is taught in almost all primary level to University branches of educational organisation in the country.**

**Out of more than two dozens of Public Universities, there are about one third are the Agricultural Universities among which Bangladesh Agricultural University (BAU) stands for the only premier seat of higher education and research in the country offering Masters and Doctoral degrees in the field of Agriculture through the face-to-face conventional system, but in a very limited scale to the context of greater need. The vast number of B.Sc. Ag.**

**Degree holders engaged in various institutes/organisations cannot afford to extend their better expert exposure in their respective jobs and assignments due to lack of higher studies leading to M.S. and PhDs.**

Besides, as per service rules, without higher degree(s) they cannot be befitted for the higher positions with desired emolument/scale or incentives, nor they can contribute to the progressive agricultural development and sustainability. On the other hand, including BAU there are almost half a dozen Agric. Univ. in the country which produce several thousands of fresh B.Sc. Ag. every year. And out of them only a few/limited number with excellent result can get the opportunities to peruse their higher studies leading to Masters and PhDs.

The agricultural bachelors with B.Sc. Ag.(Hons.) degree especially those engaged in different organisations/institutes remain unaffordable to continue subsequent higher education through the institution –based conventional system due to their geographical, familial, economic and other disadvantages and also those affordable students who do not get access to high competitive enrolment after passing the bachelor degree, the situation of which is always tormenting.

This is because not only for these sufferers but also for the future plight of the sustainability of agricultural education as well as overall agricultural development on which the progress of GDP and poverty reduction depends to cope with the ever increasing crying need of the country to the context of highly competitive globalization.

Thus due to lack of proper scope and facilities a significant portion of Agriculturists in the country cannot afford to continue their education up to the desired level through the conventional system. In such a way a vast number of other disadvantaged agricultural workers also remain out of the scope of having their requisite post graduation and modern technical know-how. Therefore, it has become an imperative to create alternative opportunities for this vast number of target groups seeking for their higher studies, and only open, distance and e- learning (ODEL) may be the better option. Under the circumstances, a study was carried out on a project– Strategic Policy and Practices of ODEL for Postgraduate Agricultural Education in Bangladesh at the Open University, UK during 2007-2008.

## **OBJECTIVES**

To explore:

- Strategic Policy & Practices
- Partnership Probabilities

## **METHODOLOGY**

### **Bibliography**

Collection of reviews, literature, relevant information and data collections were done during all through the study through the following search.

- Internet search
- Journal articles, books, periodicals, brochures, proceedings.
- Theses/dissertations, reports.
- Attending lectures meetings/seminars/symposia/conferences.
- Contacts/correspondence.
- Visits to other Universities/Institutes/Orgs. for case studies.

### **Training/Practice**

Training and practices are the indispensable part of any fruitful deed. Now a day ODEL is the most popular form of ICT-based education every where of the contemporary developed as well as developing countries. Therefore, it was very important to have clear experience from the ICT-ODEL infrastructure and the ICT-cultured framework some practice cum training oriented programs.

### **Data analysis**

The collected information/data were subjected to analysis and put in the results and discussion. The relevant figures and photographs were also included.

## **RESULTS AND DISCUSSION**

### **What is Open, Distance and E-Learning (ODEL)?**

Teaching and learning today are no longer confined to the classroom or the schooling days only. There have been evolved many technologies that can offer a great deal of flexibility in when, where, and how education is distributed. Open, Distance and E-learning (ODEL) also known as correspondence study or flexible independent study from a distance, is any non-traditional educational process which exists outside the institution-based face to face classroom setting. Courses are taken by students in their own homes or any convenient place using a variety of means such as self-directed print media (modules), electronic media- computer, audio-videos, TV etc. including all other web-based ICT differentiating from traditional pen and paper correspondence. ODEL is characterized by the following:

- Physical separation of students and teachers,
- Organized instructional programme by an educational organization,
- Use of media (books/modules, television, voice, audio-video cassette, radio, computer technology and internet etc.)
- The communication is interactive in that the teacher receives some feedback from the student. The feedback may be immediate or delayed.

Contemporarily the term ODEL is being used to refer to computer-enhanced learning in so many contexts that it is critical to be clear what one means when one speaks of distance education using electronic devices (Bazlur Rashid and Hazel Johnson, 2008). In many respects, it is commonly associated with the field of advanced learning technology which deals with both the technologies and associated methodologies in learning using networked and/or multimedia technologies. E-Learning lessons are generally designed to guide students through information or to help students perform in specific tasks. Information based e-Learning content communicates information to the student (Derek Stockley 2003). Many technologies can be, and are, used in ODEL, including - blogs, classroom response system, collaborative software, computer aided assessment, discussion boards, e-mail, educational animation, electronic performance support system, ePortfolios, games, hypermedia in general, learning management systems, PDA's, podcasts, MP3 Players with multimedia capabilities, multimedia CD-ROMs, screen casts, simulations, text chat, virtual classrooms, web-based teaching materials, web sites and web 2.0 communities, wiki etc. Most eLearning situations use combinations of these techniques. Heinich and et. al. (2002) described similar characteristics of distance education.

The same phenomenon may be applicable in case of higher agricultural education in any where in the world, being the global village.

It is evident that in ODEL, the teacher and students do not need to be at the same place or interact at the same time. There is a separation in distance and time, implying that a student in country can easily study course materials prepared by teachers in another country. Therefore ODEL has become more convenient now a day, because large number of people who ordinarily might have been denied access to formal education is able to have education in their chosen time and place. As an emerging alternative system ODEL even represents veritable means of expanding education without the monumental capital investment required for new structures. Moreover, the present inadequacy of facilities and infrastructural decay in the conventional system as well as the increasing pressure on the available educational resources make the ODEL system relevant to postgraduate agricultural system in BAU. In this regards it has been identified as some of the benefits associated with open and distance learning system:

- ODEL enhances educational environments at less cost than under the traditional resident campus system.
- Greater flexibility in the design and delivery of curriculum content than is normally associated with classroom teaching, enabling distance learning courses to adapt to the specific students' needs or work requirements or greater relevance.
- ODEL accommodates the growing demands for life long learning more easily than do traditional school settings.
- It opens the doors for those otherwise denied opportunities to quality education.

Under the new millennium context resurgence of global interest in web-based ODEL has been proved to be potentially useful strategy for human development issues, particularly due to the evolution of fast-growing as well as net-working new Information and Communication Technologies (ICT). The study reveals though ODEL has been found widely used in many reputed and world leading universities in UK for higher studies offering postgraduate degrees (MSc), Diplomas and Certificates on arts, general & environmental sciences and commerce subjects, and especially the trainings for professional developments etc. its application in higher agricultural education and training leading to MScs and PhDs is almost scanty except a few cases of Fisheries and Livestock, section of Agriculture in the Universities like the University of London (Royal Veterinary College), University of Sterling, University of Edinburgh etc.

#### **Status Of Post Graduations in Agricultural Education In Bangladesh**

There are six Agricultural Universities namely Bangladesh Agricultural University (BAU), Bangabandhu Shaikh Muzibur Rahman Agricultural University (BSMRAU), Shere-Banglanagar Agricultural University (She.AU), Haji Muhammad Danesh University of Science & Technology (HMDUST), and Potuakhali University of Science & Technology (PUST) presented in Table: 1. Among these, only BAU estd. in 1961 is the parent University having the largest capacity of graduate and postgraduate programmes in conventional methods.

It may be mentioned that before 1998 BSMRAU was the Institute of Postgraduate Studies in Agriculture under Bangladesh Agricultural Research Institute (BARI). While the other three- Sher.

AU, HMDUST and PUST had been the BAU-affiliated agricultural colleges dealing with only bachelor degree programme of a single faculty of Agriculture now emerged into independent universities since 2001 and still under incapability of offering the postgraduate programmes.

**Table: 1**  
**Present position of students' enrolment at various**  
**Agricultural Universities in Bangladesh**

University	Est. yr.	Faculty	Number of Teachers	BSc.Ag.(Hon Students)	MSc Students	PhD Students	Remarks
BAU	1961	6	545	4572	1500	274	
BSMRAU	1998	1	65	419	78	-----	IPSA, BARI
Sher. AU	2001	2	131	1276	-----	-----	
HMDUST	2001	6	102	1139	-----	-----	
PUST	2001	8	67	758	-----	-----	
Sylhet Ag. Un.	2006	3	41	350	-----	-----	
Ct.Vet.& Ani. Sc.Un.	2006	1	48	336	-----	-----	
Sylhet Vet.& Ani. Sc. Un.	2007	1	-----	-----	-----	-----	
RU(Ag.Faculty.)	1953	1/8	73/1130	613	0/455	0/201	Since 1998?
Khulna (Ag. Deptt.)	1990	5	16/269	246	0/15?	-----	
BOU(Ag.)	1992	1/7	15/109	1737	-----	-----	B.Ag.Ed.

(Source: UGC of Bangladesh)

Sylhet Ag.Un. and Ct.Vet & Ani.Sc.Uni. are quite new, borne in 2006 each with a single faculty such as Agriculture and Livestock respectively.

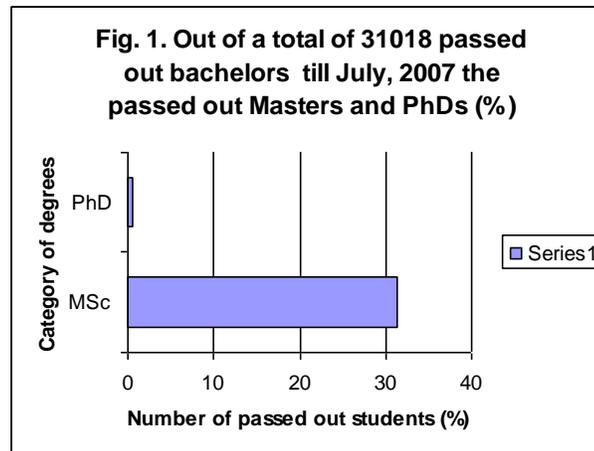
Rajshahi University (RU) and Khulna University are the general public universities having a single faculty of Agriculture and a single department of agriculture respectively offering only the bachelor degrees. Bangladesh Open University (BOU) has a faculty of Agriculture and Rural Development offering the degree of Bachelor of Agricultural Education (B.Ag.Ed.) which is not even equivalent to the BSc.Ag. (Hons.) degree of other universities.

Bangladesh Agricultural University (BAU) stands for the only premier seat of higher education and research in the country offering Masters and Doctoral degrees in the various fields of Agriculture through the conventional system, but in a very limited scale to the context of greater need. Faculty wise passed out graduates from BAU have been illustrated in Table: 2.

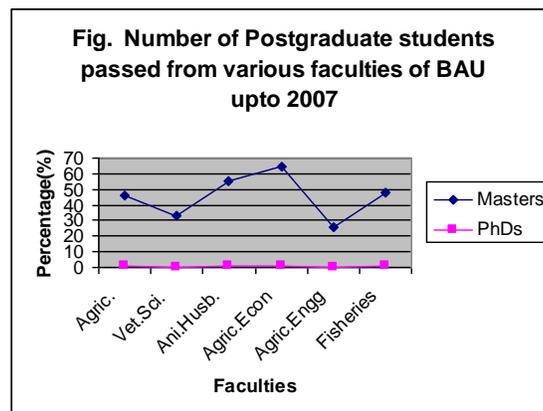
It is revealed that up to July 2007 altogether 31018 students have been graduated out of which 21116 bachelors, 9,705 masters and 197 PhDs from the six faculties. Out of the total of 31018 passed out bachelors (BSc Ag.) till July 2007 only 31.29% masters and 0.64% PhDs have been produced in BAU (Fig. 1). It may be mentioned that the the total number of ongoing Bachelor students in the University is 4572 (UGC, 2008).

**Table: 2**  
**Faculty wise statistics of BAU passed-out graduates**  
**till July, 2007 and existing position.**

Faculty	Bachelors	Masters	PhDs	Total
1. Agriculture	11698	5388	127	17413
2. Veterinary Science	2728	891	11	3630
3. Animal Husbandry	1583	881	15	2479
4. Agricultural Economics & Rural Sociology	1505	974	16	2495
5. Agricultural Engineering & Technology	1569	404	5	1978
6. Fisheries	1833	1167	23	3023
<b>Grand total of the passed-out graduates</b>	<b>21116</b>	<b>9705</b>	<b>197</b>	<b>31018</b>



**Figure: 1**



**Figure: 2**

Education is the fundamental aspect to any effective programme aiming to build quality of human life. It is recognized as the human right for all regardless of gender, race, age; location, socio-economic status, disability etc. and this can not be achieved only through the formal education. The UNESCO (1998) Declaration of the World Conferences on Higher Education (HE), Paris accepted the vision that HE is essential to participate in an advanced economy.

The economy requires an educated workforce and trained individuals who can only profit from such an economy if they are equipped through education and training to respond to its demands (Hope, 2002). The conventional system of education has its own limitations as regards to expansion, access, equity and cost-effectiveness along with lack of sufficient infrastructure and facilities for providing education and training at all levels in Bangladesh. While open and distance learning (ODL) extends learning opportunities to the people of various levels in the society and supports professional development to keep abreast of current topics as well as scientific and technological advancements. This is because of the progress of micro-electronic correspondence, satellite tele-communications, ICTs, computer e-mail and internet system etc. The learners or students remaining at a distance may have already been enabled access to the updated knowledge bank and desired information industries without any delay and setback through such transmission media of communication, or in other words, the academic institutions and the educationists have become easily standby available within the range through the system.

One of the most significant divides between the world's richest and poorest countries relates to the amount of schooling a child can expect to receive. A big part of this difference is due to the provision of tertiary education (The Haves and Have-nots in Tertiary Education, UNESCO 2005). And Without more and better higher education developing countries will find it increasingly difficult to participate in, much less benefit from, the global knowledge-based economy.

There notable exceptions but currently, across most of the developing world, the potential for higher education to promote development is being realized only marginally. There is an urgent need to build capacity in these countries and all of us need to play our part (Brenda Gourley, 2007). However, as regards to the knowledge economy there exist a big gap between developed and developing countries.

The contemporary more efficient, cost and time effective learning models of ICT-based ODEL may have the significant value to bridge the gap.

### **Policy and Practice**

Strengthening the capacity for need-based proper education, research and training through the postgraduate relevant studies, improved policies, technologies and resource management are essential to achieve the appropriate agricultural sustainable growth and food security for ever increasing requirements.

Bangladesh has recently been connected to the information super-highway through submarine cables. As a result, along with BTTB private companies already could ramify their ICT-based business orientations in different sectors like banking, transportation, administration etc. The use of computer and the long-ranged, portable electronic device with the telephone and the cell phone networks are widely used now a day.

**Under the circumstances, for better and progressive existence in the competitive global context it should be concentrated on its special attention to the ICT-based ODEL as a pragmatic focal issue with a view to transforming the increasing vast potential agriculturists into more productive force.**

**The study evidences that there is an ample paradigm shift towards ODEL system in providing accessible postgraduate agricultural education in Bangladesh. On the basis of study on ODEL ongoing programmes at different Universities the following strategic policy and practices have been recognised to be recommended to the concerned authority.**

- **The course materials for the students must be bespoke, having been developed for the ODEL mode, and are not simply a course that provides material on the web. It ensures that the students enjoy the same high quality teaching environment and exposure to innovation as the students on campus-based courses.**
- **Development of highly skilled special academic as well as administrative expertise for the ODEL-based postgraduate programme in agricultural education.**
- **Development of adequate students' supports and facilities along with valid accreditation of their degrees.**
- **For high technology and innovation as well as need-based action researches, global partnership development programme should be initiated. Because, the anticipated deliverables from the developed countries to this ends stand for commendable privilege and incentives for the concerned students as well as professionals to continue their higher agricultural education, research and training leading to post graduation degrees without living their jobs and homes.**

**Thus BAU can go even beyond the boundary of the country with its high quality ODEL, especially Asian countries and the South Asian neighbourhood in particular but requires a strong need for an international intervention in planting the 'ODEL seed' into the conventional system in Bangladesh. It may be mentioned that a collaborative distance education (M.Sc.) programme in the field of Aquatic Resource Development has already been initiated since June, 2006 by the UK Govt.'s Dept. for International Development (DFID) and linked between the Univ. of Sterling, UK and BAU.**

**The world leading universities like The Open University and University of London (Wye) who have their huge logistic supports to many developing and under developed countries, may have a tremendous opportunity to establish such a collaborative programme with BAU.**

**The most strategic entry point under the programme may be towards offering MSc Ag. Degree, the number of which is very significantly insufficient in proportion to the BSc. Ags. (Fig: 1). However, Open, Distance and E-Learning seems to be the most effective ICT-based global mode of imparting contemporary education at all levels especially for those who cannot afford to continue their institution-based face to face conventional system of education due to various constraints. Like other developed countries it is gaining substantial popularity and rapid net-working in the South Asian countries especially in the South Asian Association for Regional Co-operation (SAARC) region.**

For ODEL provides comprehensive learning scopes in general for the need-base personal development as well as upgrading the individual's status in household occupation, agro-industries, transports, storages, communications and other enterprises such as co-operatives, rural development, banking sectors, office management etc. and other professions.

To understand and improve the application of ODL strategies to the challenges of agricultural development and rural poverty reduction a project work was carried out in five institutions in Asia and the Pacific and documented innovative or exemplary practices in open and distance learning for agricultural development and rural poverty reduction. It has been suggested that: ODL should: be undertaken for the right reasons, be sensitive to the context in which it is being applied, make use of existing infrastructure with sustainable cost structures, engage stakeholders in participatory processes and use sound pedagogical and administrative models. (Alexander et al., 2006).

**Acknowledgement:** The authors thankfully acknowledge the Commonwealth Scholarship Commission for providing necessary fund and the Open University authority for providing facilities for carrying out the research project.

## RECOMMENDATIONS

- BAU authority and the concerned policy makers in the country should have a rethink on the current practice of spending virtually all the financial allocation to tertiary institutions for the sustenance of the conventional education system which has not yet been able to meet the needs of candidates seeking admission into the university for the postgraduate agricultural education.
- In order to ensure that the quality of products and service delivery in ODEL are of acceptable standard, there is the need for institutions offering distance programme to have good administration of the learning, assessment, monitoring and evaluation processes to ensure quality control.

**Partnership Needed:** Technical Assistance in Implementing Postgraduate Agricultural Education and development of ODEL Infrastructure with New Instructional Delivery Methods and Materials.

## CONCLUSION

The ODEL system may relieve the enormous pressure on the conventional system especially in the postgraduate level. Besides, ideally for the adult education curricula should be delivered in multiple media, allowing the learner to take advantage of the variable times, media, and learning style options. There may be the inherent problems from different angles such as unrest, natural calamities, disruption of electricity and internet network etc.

But instead of those obstacles ODEL may be followed as the only probable alternative for the said programme at BAU. The distance education may remain as an alternative to and supplement for traditional classroom instruction, not a replacement. In such cases the increased integration of web based in dual mode may occur with traditional learning.

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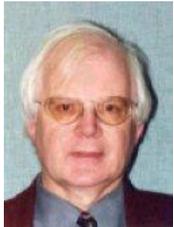


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