

Workshop Report #2

Assessing the Needs for Open and Distance Learning (ODL) for Postgraduate Education in Agriculture

New Delhi, India

March 29, 2004

Organized by:

Indira Gandhi National Open University, ICRISAT, and IFPRI¹

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South Asia has made impressive progress in agricultural growth, food security, and rural poverty reduction since the mid-1960s. Most South Asian countries have adequate food supplies although many people still do not have an adequate diet. But these favorable trends are stalling, and therefore, new approaches are needed. Knowledge and skills play a key role in sustaining development, thus education is recognized as the most essential prerequisite to maintain these trends. However, accessibility and affordability of education are as important as knowledge creation and delivery. An open and distance learning (ODL) system meets this requirement and is widely recognized as the most cost-effective system with a massive outreach capacity for delivering quality education.

Currently, it is not possible for the formal education system to meet industry's needs for trained human resources in the age of rapid technological changes. The Global Open Food and Agriculture University can help solve the problems of humanity on the agriculture front through poverty alleviation by strengthening capacity. This university intends to establish communication among the Consultative Group on International Agricultural Research (CGIAR) Centers, national systems, and stakeholders to fully mobilize science and technology. It is envisioned that it will go beyond the existing e-learning paradigm to emerge as a global initiative, which will develop partnerships, be internationally recognized, cost efficient, high quality, and strengthen global distance education in agriculture.

The Global Open Food and Agriculture University would facilitate international collaboration to help improve the quality of postgraduate education at regional and national universities especially in Asia, Africa, and Latin America.

The initiative will:

- Develop modules, form a global repository of learning objects, and deliver collaborative degree programs of good quality;
- Create mechanisms that allow national partners and stakeholders to access the vast repository of learning objects and adapt them to local needs; and
- Organize and develop postgraduates throughout the CGIAR and developing countries.

This workshop on *Assessing the Needs for Open and Distance Learning (ODL) for Postgraduate Education in Agriculture* is the first formal client consultation meeting jointly organized by the Indira Gandhi National Open University (IGNOU), the International Crops

Research Institute for the Semi-Arid Tropics (ICRISAT), and the International Food Policy Research Institute (IFPRI).

This consultation meeting will help ensure a strong foundation and ownership of this initiative by national, regional, and international partners. The list of participants is given in Annex-I. The consultation is intended to:

- Assess the need for distant learning in postgraduate agriculture education;
- Develop partnerships with national and regional institutions; and
- Identify strengths and weaknesses in the current postgraduate agricultural education.

Initial deliberations focused on five issues:

1. The Status of the Postgraduate Agriculture Education System in India

The annual intake of masters and doctoral students in agriculture is 6,000 and 1,500, respectively, compared to an annual intake of 13,500 undergraduate agricultural students. In India, there are 90 masters degree programs and 80 doctoral degree programs in postgraduate agriculture and allied disciplines. As of 2000, the State Agriculture Universities (SAUs) and other institutions had produced 166,200 graduates; 78,200 postgraduates; and 11,400 doctorates. Fifty percent of undergraduates earn a postgraduate degree and 23 percent of postgraduates were unemployed after completing their degree program between 1999 and 2000.

Growth has also taken place in conventional disciplines, and the number of students enrolling in emerging and applied courses such as agribusiness management, agro-processing, biotechnology, marketing and storage, environmental science, journalism, and information technology (IT) is limited by the available sitting space. In general, there has been an over-specialization at the expense of general knowledge. Although specialization is needed for jobs in the research and education sector, less than 15 percent (on average 12 percent) of all agriculture graduates (undergraduate and postgraduate) are employed in the research and education sector. The National Agriculture Resource Services (NARS) employs around 5,000 research assistants and research fellows, at least 50 percent of whom remain in that position for more than three years.

The overall analysis shows that postgraduate agricultural education needs to be restructured to meet the occupational demand and the economy's absorptive capacity.

2. The Scope of Postgraduate Education under Open & Distance Learning (ODL)

ODL's potential for continuing education programs in the life-long learning paradigm is supported by the following observations:

- The growth of trained human resources in agriculture is predicted to be 2.5 percent per annum.
- The gap between current admission capacity and graduate matriculation, the backlog of graduates who would like to upgrade to postgraduate qualification, and their excess supply need to be addressed.

- About 50 percent of agricultural graduates are employed in the public sector. These graduates may wish to join applied postgraduate programs (such as policy, extension, entrepreneurship, and marketing) instead of a specialty or laboratory-oriented postgraduate program. An ODL system can develop and implement continuing education programs at the postgraduate level without disrupting the personal life of students.
- The philosophy and operating principles of ODL are close to those of the continuing education program.
- The potential to harness information technology amplifies the scope of ODL, and increases its advantages.
- An ODL system can integrate the agriculture education system from the secondary level to postgraduate level by introducing modular and multi-entry and exit, credit-based programs.
- ODL can develop and implement a qualification framework for the agriculture sector.

3. Collaboration and Partnership Issues:

Internationalization has introduced many new issues, hence the need for distance educators and policymakers to review and modify their current practices. In doing so, they need to learn from the experience of other institutions and agencies that faced similar issues in the past. In formulating their new practices they have to address questions such as:

- What type of collaboration is needed to develop distance education? What are the accreditation and certification issues in distance education?
- Are there cross-cultural issues involved in the internationalization of distance education?
- What jurisdictional issues are involved in the international delivery of distance education programs?
- How should international agencies and donors be involved in developing distance education?
- What new issues will evolve from innovations in international distance education?

4. Areas for Collaboration:

- The creation of knowledge networks. Providing access to information; extension and development of multimedia educational packages and online educational packages that address different aspects of productivity, entrepreneurship, marketing, good practices, and quality.
- The development of postgraduate level educational programs for implementation (global, regional, or country level) through ODL.

- The sharing of infrastructures, resources, and monitoring of educational programs and courses (with emphasis on vocational and entrepreneurial skills) for the agriculture system. Use of program study centers and their counselors.
- In-service training packages for scientists, extension personnel, administrative officers, and managers.
- The development of computer- aided software and programs in emerging areas.
- The development of a community agri-information center for creation of data banks, establishment of information centers at the village level, and hardware and software support for a TV channel.
- Research projects: the development of a qualification framework for technology transfer.
- Networking of conventional and open agricultural research and education systems, international agricultural research agencies, and the formation of an agriculture issue-oriented consortium (e.g. hill areas and trade practices).

5. The Role and Functions of Participating Partners

- Establish consortium and networks at the global and regional level;
- Identify lead roles of institutions in national, regional, and global scenario;
- Identify potential areas and opportunities;
- Develop network at national, regional, and global levels;
- Select participating partners at global, regional, and national levels e.g., CGIAR Resource Center, IGNOU, and National Resource Centers;
- Create a network of CGIAR Resource Centers at the country level (through the CGIAR Resource Center) followed by a delivery network at the state level (a network of State Open Universities with SUs and SAUs);
- Assess mechanisms for and the legality of exchanging materials and information across borders;
- Form regional groups and bodies;
- Identify the necessary infrastructure and funding support;
- Ensure social, cultural, political, legal, and administrative support for operations;
- Assess the accreditation and equivalence of programs in countries in different disciplines and subjects;

- Establish a modus operandi for educational entrepreneurial exchange programs by the consortium and networks;
- Monitor and evaluate;
- Establish core expert groups at regional and global levels for monitoring and coordinating activities and programs;
- Evolve a mechanism for sharing expertise and good practices; and
- Evaluate funding approaches, such as the promotion of a consortium approach.

TECHNICAL SESSIONS

The following issues were raised during the discussion:

Session – I: ODL for Postgraduate Education in Agriculture – Scope and Objectivity

- ODL is a revolution in providing dynamic and cost-effective access and equality in education. It can meet the requirement of different educational levels – from awareness to highly specialized advanced degree levels.
- People’s perception of the distance education system has changed. Initially people asked, “What is Distance Education?” then the question was “Why distance education?” and today it is “What else but distance education.” ODL is no longer an option but a compulsion.
- The ODL system is projected as the educational pedagogy of the future. Some predict that in time the traditional face-to-face system may disappear.
- A major question is how the absence of face-to-face contact will impact learning and students perception of learning. Also, an issue is how research, which dominates postgraduate education, can be guided and conducted through ODL. Keeping these issues in mind, the effectiveness of ODL methodology has to be researched before being adopted for postgraduate education in agriculture.
- ODL seems less suited for research. It may, however, be effectively used while planning midway improvements.
- ODL definitely saves costs and has more outreach than traditional education. The technology used for ODL must be accessible in any area.
- A central point to remember is that the learner should not be isolated. The learner has to be reached and this contact may be achieved by different methods. The emphasis should

be on interactivity by whatever means possible. ODL should be used only if it adds value to the conventional education system.

- The Global Open Food and Agriculture University initiative aims to address the issue of the *declining quality of higher education*. In many agricultural universities, syllabi and curriculums have not changed for many years and do not touch upon globalization issues, such as the World Trade Organization (WTO) and sanitary and phytosanitary (SPS) regulations. The initiative aims to improve communication and knowledge sharing so universities can update their curricula.
- The cost of postgraduate education has increased while funding has decreased. The challenge is to provide high quality education at a low cost and prevent the brain drain of trained capacity. This will not be possible unless we have adequate mechanism to harness capacity locally.
- A budgetary study of the CGIAR distance learning initiative has shown it is financially viable. To undertake a Masters in Science (M.Sc.) degree through this system, the student tuition will be U.S. \$2,000, a competitive figure worldwide. A breakdown of the cost shows that the program will only cost U.S. \$800 per student and roughly U.S. \$1,000 per student would go to the partner institution as long as quality education was being provided. Therefore, taking a conservative figure of 8,000 students per year at the global level, *the initiative would be financially viable*.
- In India, the Indian Council of Agricultural Research (ICAR) along with the SAUs have developed model academic regulations, curricula, and syllabi, which are being implemented from 2002 onwards. The M. S. Swaminathan Committee report on education for ICAR has recommended setting up a distance education cell in each agriculture university and at five Agriculture Education Media Development Centers. The Planning Commission of India has set a goal of reorienting agriculture education by 2020 and has outlined the strategies and activity roadmap to reach this goal. To achieve this end, a mix of educational delivery systems is needed.
- A study of India's postgraduate education shows that India owns one of the largest networks of higher agricultural education systems in the world. In India, the postgraduate student to faculty ratio in agriculture programs was almost 1:1. This ratio is much higher for undergraduate students; therefore, when the student- to- faculty ratios of postgraduate and undergraduate students in various disciplines are compared, it is seen that more emphasis is given to postgraduate education in agriculture.
- The *Green Revolution* in India, which could be described as “from begging to bagging,” could not have happened without capacity development. Currently, higher agricultural education is hard-pressed to keep pace with technology and a changing economic and social environment. Calls for reorganizing the system include providing a proper place for ODL.

- The employment pattern among agriculture and veterinary postgraduates reflects that only 2 percent are self-employed. This indicates that our present agricultural education system equips people only for government jobs. The decline in state-supported employment has contributed to an unemployment rate of 43 percent among agriculture undergraduates and 23 percent among agricultural postgraduates in India.
- If agricultural education continues to follow the present model, there will be enormous gaps in the future. At present, there is a disparity between the human resources needed by the emerging agricultural sector and those being produced by our universities.
- The financial crunch in the universities, the poor quality of graduates and faculty, higher unemployment among agriculture graduates, lack of accountability, and faulty policy on faculty development in agricultural universities are some of the weaknesses in the present agricultural education system in India.
- Serious gaps prevail in our education system and there is a crisis of quality employment and professionalism. Agriculture education today has to be of high quality and should be relevant, dynamic, and provide livelihood security.
- The quality of students and teachers is an issue that needs to be kept in mind. Because, teachers and students are the most valuable assets to a higher learning institution. Partnerships for utilizing resources, especially with CGIAR centers and other global and regional organizations are important.
- The aspirations of postgraduate students often contrast with what the institution offers. Most postgraduate students feel that agro-industry employers perceive that the present system of education does not give students a wide knowledge of agriculture, its emerging challenges, and necessary decisionmaking skills. Graduates are also reluctant to start careers in rural areas.
- Whether educational shortcomings result from inadequate investments to strengthen facilities and faculty competence or the rising tendency to expand without needs assessment, it has become more necessary than ever to infuse quality and build excellence in agricultural education. Harnessing multiple delivery systems of teaching and learning can address quality indices such as employability, economic growth, environment security, and excellence indices such as relevance, utility, and application.

Recommendations

- *There has been a visible paradigm shift in the educational system. The reality of globalization has to be recognized and the higher education systems in agriculture need to be open to change.*

- *The government education policy has to cater to the changing environment. If the present policy does not foster change that offers education to all by using new techniques, the policies will need to be reframed.*
- *A range of teaching techniques, including face-to-face, group-based, independent, mediated, or a combination may be offered to learners in order to achieve the best teaching.*
- *Content development for ODL is resource demanding. Therefore, for ODL to be effective, teamwork from the initial stages to facilitate content development is imperative.*
- *Mixed delivery mode (blended-learning) institutions are more likely to maximize excellence in teaching. It is proposed that the CGIAR centers consider a sandwich model for their education program in distance learning.*
- *Intelligent application of knowledge management tools is necessary from the initial stages of setting up the Global Open Food and Agriculture University.*
- *It is perceived that although ODL was less suited for research, it would be useful for planning and midway improvements.*
- *ODL modules could be included with regular agricultural university courses.*
- *While an excellent overview of the agricultural education scenario in India was presented in this workshop, the scenario in other countries to be involved in the Global Open Food and Agriculture University initiative should also be ascertained. A South Asian workshop on ODL should be organized after the establishment of this initiative.*
- *While the importance of information and communication technology (ICT) in ODL is recognized, there are apprehensions about the accessibility of technology at locations where agriculture education has to be delivered. This factor has to be kept in mind while planning the delivery mechanism.*
- *Embedded very firmly in the new digital technologies and executed collectively by many institutions of the CGIAR in association with NARS, postgraduate education in agriculture is doable and will give great efficiencies and economics.*

Session – II: Needs Assessment, Strength, and Weaknesses, and the Future of ODL

- Demand for education in general in India is growing at 15 percent.
- There is a need to enrich current agriculture course curricula by balancing employment generation, the country's economic growth, and international commitments to biodiversity conservation, moderating global warming, and preserving the quality of soil, water, and vegetation.

- To infuse excellence in science and technology output emphasis has to be on: (1) practical applications and practices, (2) basic and upstream research in frontier areas and upcoming sciences, and (3) applied downstream research built on strategic research extension plans and studies (SREP) that are embedded into a system-based platform and multidisciplinary format.
- ODL is required to improve the fate of 60 percent of India's population, to face the challenge of globalization and privatization of agriculture, and to overcome the problem of regional disparity.
- The emergence of a vibrant private agriculture sector is providing new opportunities for employment and expanding the need for trained human resources in agricultural sectors. In India, the capability to export education is also one of the emerging trends of the agricultural education scenario.
- Today, there is a need for education to produce agribusiness management experts, who will become job creators rather than job seekers. Unless agriculture professionals take up this challenge, non-agriculture business professionals will step in and benefit from this opportunity.
- To achieve these objectives, distance education initiatives in agriculture will need to cater to people with different local demands. Organizations such as the FAO and the CGIAR have enormous knowledge, much of which is locally relevant.
- The effectiveness and success of any education program depend on its relevance to local needs and issues. For example, a computer literacy school program of the government of Madhya Pradesh, India succeeded only when policymakers addressed the local issues and promoted capacity development at local levels. Similarly, a reproductive child health project of the Indian government changed its focus from training doctors to training midwives in rural areas when local issues were reviewed and placed before the policymakers. The focus of the project was changed.
- IGNOU's strength lies in its ability to assess the target group's needs at the local level and then apply this information to the local program. In IGNOU, the courses being offered are redrafted every five years such that only relevant dynamic modules are changed without changing the core content.
- Areas in which ODL has to be promoted need to be identified and prioritized. Some postgraduate programs that may be feasible for delivery through distance mode could be Agricultural Economics, Agricultural Statistics, Agribusiness Management, Agri Informatics, Computer Applications in Agriculture, Food and Nutrition, Human Development and Family Studies, and Family Resource Management.
- ODL is a viable option for reaching out to women farmers. More than 60 percent of farm hands are women, but less than 5 percent of women are agriculture extension workers in India. This situation is similar to that in other South Asian countries. ODL would help

empower existing professionals with knowledge and also produce more paraprofessionals by imparting job-led designed programs in agriculture.

- The Global Open Food and Agriculture University Task Force members feedback has generated issues that need to be addressed in order to move this initiative forward:
 - CGIAR has a number of centers with more than one thousand researchers. There is a need to assess the capacity of these centers to offer an open distance leaning university. It has to be kept in mind that CGIAR researchers may not necessarily be good teachers.
 - There is a need to learn what course material is available within the CGIAR system and how it can be converted into ODL mode. Also, there is a need to find out if the knowledge produced by CG IAR is well suited for university education.
 - To succeed in course delivery, the following issues must be addressed:
 - Accessibility to students and availability of new technology at remote/rural locations
 - The type of module
 - The mix of delivery mode
 - Language
 - Technology to be used, partners, and IT policies
 - Field experimentations
 - Information management
 - The issues related to course content must address the following questions: how to ensure the course content is relevant? what courses should be developed? how they can be adapted to the regional needs? and what other support courses are required?
 - There has to be synergy in the policies among national and regional partners in credit recognizability and exchange. The policies and clearance procedures of partner institutions developing the courses may differ.
- Experiences of IGNOU, U.K. Open University, IWMI, VASAT, University of Phoenix – India, University of Perdue, and the Africa Virtual University need to be considered while planning the operations of the Global Open Food and Agriculture University.
- The perceived strengths of ODL are:
 - No geographical and state boundaries
 - Uniformity in content delivered
 - Low cost for the participants
 - Time saving/time flexibility
 - No classroom boundaries for learning
 - State of the art information

- No age bar
- The perceived weaknesses of ODL are:
 - Lack of face-to-face interaction
 - Uncontrolled situations
 - Dependence on necessary hardware and software
 - Missing feedback
 - Difficulties in conducting practicals
 - Most employees feel that the formal education system is better and more acceptable than ODL, but this attitude is changing fast.
 - System not yet perfected.
- Selection of a program by a candidate depends on:
 - Eligibility
 - Monetary affordability/cost
 - Time affordability
 - Physical distance
 - Motivation
 - Perceived rewards
 - Perceived risks
 - Program quality
 - Availability of information

Recommendations:

- *The immediate need is to assess the need for postgraduate education in agriculture through ODL in the South Asian region, and prioritize the courses according to the assessment output. A study needs to be commissioned to undertake this important exercise on priority.*
- *Some courses being offered by different institutions have widely varying contents and cross-fertilization among them would produce good results. Adoption of course content will have to be based on needs assessment. A good mix of old and new is recommended.*
- *Another study needs to be done on the policies among national and regional partners on credit recognition and exchange, and a uniform mechanism developed.*
- *All courses and programs offered should be target-oriented and should either promote self-employment or increase the capacity of mid-career professionals. Therefore, not only postgraduate but also entrepreneurship development programs are important in reversing the present scenario of low job opportunities prevailing in India.*
- *ODL will aim to enhance North-South collaboration and should be a tool to empower women and make cost-effective quality education available to all.*

Session – III: Partnership and Networking of Institutions

- The Global Open Food and Agriculture University envisages creating effective partnerships with existing open distance universities that have the requisite resources and respectability in the region; and networking within the CGIAR, United Nations, and other agricultural institutions and organizations for creating the knowledge base.
- IGNOU has been selected for this purpose in the Asian region. IGNOU is well equipped and staffed to undertake this responsibility. Other institutes in the region will be considered as partners.
- Partner institutions in the region will have to be carefully identified for collaboration depending upon the type of courses to be offered and the respective areas of strengths and expertise of the collaborating institutes.
- Technology would have to be firmly embedded. The CGIAR system should review its current technology platforms and how they can best be used. CGIAR knowledge and capacity of updating knowledge should be shared.
- Collaboration should be the guiding principle for the successful operation of the Global Open Agriculture and Food University. It should become the culture and ethos of distance education offered under the banner of this initiative. No single institute can be expected to take on all the functions necessary to overcome the quality crisis in distance education.
- A system for sharing teaching materials and knowledge should be developed that incorporates quality control. Organizations such as IGNOU would have a major role to play in assuring quality through a team of experts. IGNOU has the same role to play for distance education as the University Grants Commission (UGC) in India plays for conventional education and is responsible for ensuring quality in distance education.
- The role of the Distance Education Council (DEC) of IGNOU is recognized for its quality assurance. As such structures for quality control are already in place in this region, they should be used by the Global Open Food and Agriculture University initiative.
- The common perception was that distance education does not succeed due to poor delivery systems. In India, a number of private agencies have mushroomed which have shown distance education in a poor light. A new policy has been developed that requires every distance education program to be certified by the Distance Education Council (DEC), IGNOU.
- The agriculture policy course being developed by IGNOU could be offered as a pioneering course in the ODL system for agriculture.

- IGNOU, the premier distance learning institution in India has been in the forefront in collaborating and offering quality education. In the recent past, IGNOU has signed memorandums of understanding (MOU) with various organizations. A MOU was signed with the Indian government's External Affairs Ministry to train mid-level diplomats. In collaboration with the World Health Organization (WHO), IGNOU developed courses in hospital waste management for 10 countries. It is also proposed that the Secretariat for the SAARC countries be established in IGNOU.
- Collaboration may be built into and encouraged in the following areas:
 - Identification of target learners and preparation of their profile. For postgraduate education in agriculture, the target groups could be agricultural graduates who are already on the job and wish to better their career prospects. Fresh agricultural graduates who want to work in newer and promising agricultural fields are among other categories of potential learners.
 - Assessment of the information and skill needs of each of the different target groups should be undertaken. The array of needs should be prioritized to help determine the proper selection of subject matter. Once the target groups are identified, agencies and institutions with the appropriate experience and capability can be called upon to collaborate.
 - Another area where the collaborative approach may pay rich dividends would be content development based on needs assessment and its modular structure. It also involves deciding which media and what combinations would be used depending upon the criteria of accessibility, novelty, and cost-effectiveness so that each medium supplements the other and does not duplicate it. This is a painstaking job that involves close collaboration and teamwork among different people with different specialization areas for its successful implementation.
 - It is envisaged that the knowledge repositories created in the United Nations, CGIAR, and other institutions would be shared across the system.
 - Since no single institution may have the capacity to develop different media components, a consortium of institutions that develop material in different modes should be established.
 - At times, it may be necessary to outsource the production of materials such as development of multi-media packages to private initiatives.
 - Testing of materials in the field before their final release.
 - Continuous monitoring and collection of feedback from the learners, which should become the basis for revision of course content and materials. Revisions should occur on a regular cycle of two to three years depending upon the duration of a particular course.

- It is often argued that a collaborative approach delays progress and proves counterproductive. It need not be so. It depends upon the initial effort we put into designing the framework and assigning clearly defined specific responsibilities with deadlines for each collaborating unit. System management skills are needed.
- When we collaborate and cooperate with institutions and organizations across regions, it is essential to make every course locally relevant.
- In partnerships with many NARES and some CGIAR centers, the Commonwealth of Learning (COL) is developing educational programs where the learning technologies can be utilized to achieve greater effectiveness and efficiencies. Participating centers include ICRISAT, the International Institute of Tropical Agriculture, the International Plant Genetic Resources Institute, International Rice Research Institute, IFPRI, World Agroforestry Centre (WAFC), and the West Africa Rice Development Association. The competencies developed by COL would complement the Global Open Food and Agriculture University initiative.
- CGIAR centers may consider developing sandwich postgraduate programs with NARES. ODL facilitates such arrangements. COL has shown interest in partnering with the development of postgraduate education in agriculture.

Recommendations

- *The concept of the Global Open Food and Agriculture University is based on good commonality and the willingness of different organizations to work together.*
- *The Global Open Food and Agriculture University needs to complement and must not attempt to replace the existing postgraduate educational system in South Asia*
- *Institutions need to be identified to forge partnerships and the responsibility of each partner institution defined.*
- *A level playing field should be given to all the partners.*
- *All partners should be involved in order to provide a sense of ownership and ensure its sustainability.*
- *The CGIAR system must define what it will bring to the table in terms of partnerships and what it will offer to partners.*
- *The enormous repository of knowledge stored in the CGIAR institutions should be shared seamlessly across the system to train farmers, extension workers, agricultural technicians, scientists, and administrators of national institutions through the intelligent application of knowledge management tools.*

- *Working together, CGIAR institutions should set minimum standards and provide training to their staff to enhance their teaching skills. (ODL Institutions can contribute to this activity.)*

Conclusions

The workshop was a platform to share information and concepts, and to discuss the views of different potential partner organizations. As the Global Open Food and Agriculture University is in its initial stages, the processes that are used to evolve it are of utmost important for efficacy and future sustainability of the global initiative. The challenge before us is to devise modalities to effectively harvest the global resources. Appropriate institutional arrangements will have to be put in place to develop courses identified as priorities. Enormous human resources and skills will be needed to undertake this task. ODL gives us the ability to harness the best talents and knowledge across institutions and regions for course development and delivery. While the use of ICT would give the power of connectivity, there will be a need to synchronize the communications technology with local agroecological and sociocultural conditions. The output from this first client consultative meeting, along with other such meetings, will go further in making the Global Open Food and Agriculture University a powerful tool for alleviating poverty and for ensuring sustainable ecological, food, and nutrition security. A further detailed study needs to be commissioned to work out details on each of the aspects discussed through visits and online consultations with stakeholders in South Asia.

Annex - 1

List of Invitees

Indira Gandhi National Open University (IGNOU)

1. Prof. H. P. Dikshit, Vice-Chancellor, IGNOU, Maidan Garhi, New Delhi - 110068
2. Prof. Panjab Singh, Director, Center for Extension Education, School of Agriculture, IGNOU, Maidan Garhi, New Delhi-110 068.
3. Dr. M. C. Nair, Deputy Director, SOA, IGNOU, New Delhi – 110 068.
4. Dr. M.K. Salooja, Deputy Director, SOA, IGNOU, New Delhi - 110 068.
5. Dr. Indrani Lahiri, Asstt. Director, Center for Extension Education, School of Agriculture, IGNOU, Maidan Garhi, New Delhi-110068.

International Food Policy Research Institute (IFPRI)

6. Dr. Suresh Babu, IFPRI, Washington D.C., USA.
7. Ms. Valerie Rhoe, IFPRI, Washington D.C., USA.
8. Dr. P. K. Joshi, IFPRI, New Delhi.

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)

9. Dr. Rex L. Navarro, Head, IRMO, ICRISAT, Patancheru - 502 324, Andhra Pradesh.
10. Dr. V. Balaji, ICRISAT-Patancheru 502 324, Andhra Pradesh.

International Plant Genetic Resources Institute (IPOSTGRADUATE RI)

11. Dr. Bhag Mal, IPOSTGRADUATE RI, National Agriculture Science Center, DSP Marg, Pusa Campus, New Delhi – 110012, India.

International Center for Research in Agroforestry (ICRAF)

12. Dr. V. Pal Singh, ICRAF, NASC Complex, DPS Marg, Pusa, New Delhi-110 012

International Rice Research Institute (IRRI)

13. Dr. R.K. Singh, Resident Scientific Officer, IRRI, NASC Complex, DPS Marg, Pusa, New Delhi-110 012

International Maize & Wheat Improvement Center (CIMMYT)

14. Dr. R.K. Gupta, Regional Facilitator, International Maize & Wheat Improvement Center (CIMMYT), NASC Complex, DPS Marg, Pusa, New Delhi-110 012

International Potato Center (CIP)

15. Dr. Sarath Illangan Tileke, Director, International Potato Center (CIP), South & West Asia Regional Office, NASC Complex, DPS Marg, Pusa, New Delhi-110 012

Center for Agriculture and Biosciences International (CABI)

16. Mr. Lalit Saini, Administrative Officer for India, Center for Agriculture and Biosciences International (CABI), CG Block, NASC Complex, DPS Marg, Pusa, New Delhi-110 012

International Water Management Institute (IWMI)

17. Dr. B.R. Sharma, Liaison Officer, International Water Management Institute (IWMI), CG Block, NASC Complex, DPS Marg, Pusa, New Delhi-110 012 , (M-9810700348)

Commonwealth of Learning (COL)

18. Dr. Krishna Aluri, COL, Canada.
19. Dr. Jagdish Singh, Commonwealth Educational Media Center for Asia (CEMCA), COL, 52, Tughlakabad Institutional Area, New Delhi – 110062, India.

ICAR

20. Dr. S. Nagarajan, Director, Indian Agricultural Research Institute (IARI), New Delhi - 110 012.
21. Dr. J.C. Katyay, Dy. Director General, ICAR, Krishi Anusandhan Bhavan, IARI, Pusa, New Delhi-110 012.
22. Dr. B.S. Bisht, Asst. Director General (HRD), ICAR, Krishi Anusandhan Bhavan, IARI, Pusa, New Delhi-110 012

SAU / SOU

23. Dr. S. P. Gupta, GB Pant University of Agriculture and Technology, Pantnagar-263 145 (Uttaranchal)
24. Sh. S.P. Gaur, National Institute of Open Schooling, Delhi.
25. Prof. Shyam Menon, Rector, Delhi University, Delhi-110 007
26. Prof. Anita Dighe, Director, Center for Open Learning, Delhi University.

MOA

27. Dr. R.B. Singh, Member, Finance Commission, New Delhi

Embassies

28. Mr. Mitiko Berecha, Counselor, Embassy of Ethiopia.