

**AGRICULTURAL EDUCATION IN INDIA: CHALLENGES AND PROSPECTS****Voice of Research**

Vol. 2, Issue 3

December 2013

ISSN No. 2277-7733

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Abstract

India is an agricultural country. At the time of independence our country faced food shortages. Later on due to green revolution we became self sufficient in food grain production despite population increase. One of the important factors in success of green revolution is the role played by agricultural graduates. After independence, state agricultural universities were established in all the states to impart education in the field of agriculture. Indian Council of Agricultural Research, New Delhi regulates and ensures effective dissemination of agricultural education. At the same time, as agricultural universities are established by respective state governments, they are controlled by them. Although agricultural universities have done commendable job but in present liberalized and globalized era of World Trade Organization and General Agreement on Trade in Services, they face certain challenges viz financial constraints, lack of autonomy, inbreeding, lack of faculty competence in newer areas of agricultural sciences etc. Agricultural education being a professional education, it is necessary to take remedial measures so as to ensure food sufficiency for our growing population. In this context this paper describes the status of agricultural education in India highlighting challenges and suggesting strategies to overcome them.

Key words: Agricultural education, State Agricultural University, Indian Council of Agricultural Research

Education is the ability to meet life's situation, it is a character building process, enhancing one's personality and making him/her rational, capable, responsive and intelligent. Twenty first century is characterized by the emergence of multiculturalism due to industrialization, urbanization, globalization and disintegration in the family system. It is described as the century of stress and strain. Since, education is viewed as an instrument to develop the cognitive qualities, tolerance and understanding of people, it should prepare the younger generation to understand and face the realities of globalization (Kulshrestha, A.K and Pandey, K. 2013). Globalization has many meanings depending on the context and on the person who is talking about. "The term globalization refers to the integration of economies of the world through uninhibited trade and financial flows, as also through mutual exchange of technology and knowledge (Singh, L.2013)

Education is as old as the human race. It is a never-ending process of inner growth and development and its period stretchers from the cradle to the grave. Education, in real sense, is to humanize humanity, and to make life progressive, cultured, and civilized. It is very important for the progress of Individual and society. It is through Education that man develops his thinking and reasoning, problem solving and creativity, intelligence and aptitude, positive sentiments and skills and good values and attitudes. It is through Education that the Individual is become a well balanced personality, aesthetically rich, culturally sound, emotionally stable, mentally alert, morally upright, physically strong and healthy, socially efficient, spiritually enlightened, vocationally self sufficient and internationally liberal. The entire life is Education as it is continuous and dynamic process forever growing man and

society (Singh,T.S.2012).

India is an agricultural country. Agriculture and its allied activities act as main source of livelihood for more than 80% population of rural India. It provides employment to approximately 52% of labour. Its contribution to Gross Domestic product (GDP) is between 14 to 15%. At the time of Independence, India faced food grain shortage. India achieved spectacular growth in agriculture sector since 1966. India today is self sufficient in most of the food grain despite population increase. The food grain production in India increased from 51 million tons in 1950 to about 245 million tons in 2011-12. This growth in itself represents a remarkable achievement in the history of world agriculture. India has achieved significant growth in agriculture, milk, fish, oilseeds and fruits and vegetables owing to green, white, blue and yellow revolutions. All these revolutions have brought prosperity for the farmers. Many factors are responsible for these achievement viz conducive government policies, receptivity of the farmers and also establishment of higher agricultural education institutions. The new breed of skilled human resources were instrumental in generating new technologies, and in its assessment, refinement and finally its dissemination to the farming community through extension methods.

In order to sustain, diversify and realize the potential of agriculture sectors, it is necessary to develop skilled human resources. Agricultural human resource development is a continuous process undertaken by agricultural universities. Agricultural universities impart education in the various disciplines of agriculture viz Agriculture, Agricultural Engineering, Forestry, Horticulture, Veterinary and Animal Husbandry, Dairy Science, Food Technology, Fisheries Science, Agriculture



Information Technology, Agri Business Management etc. It imparts education at the level of diploma, degree, masters and doctoral level. At present there are 53 state agricultural universities (SAUs), five deemed to be universities, one central agricultural university and four central universities with agricultural faculty. All these educational institutions get financial and technical support from Indian Council of Agricultural Research (ICAR), New Delhi.

Table No 1: Landmarks of Agricultural Education

Year	Landmark
1952	Indian Council of Agricultural Education (ICAE) set up (worked up to 1964 under ICAR).
1958	First 'Deemed University' status bestowed on Indian Agricultural Research Institute (IARI).
1959	Chief of Agricultural Education and ex-officio Secretary to ICAE appointed.
1960	Emergence of SAUs, starting with Pantnagar, based on the recommendations of Joint Indo-American Teams.
1965	Standing Committee on Agricultural Education replaced the Education Panel.
1965	ICAR reorganization with four Divisions including Agricultural Education.
1966	ICAR developed Model Act for Agricultural Universities in India.
1973	Second reorganization of ICAR with the establishment of Department of Agricultural Research and Education (DARE) to provide greater autonomy to ICAR, and Regional Committees to take care of regional needs, and creation of Agricultural Research Services (ARS) and Agricultural Scientists Recruitment Board (ASRB).
1974	Norms and Accreditation Committee (NAC) replaced Standing Committee on Agricultural Education.
1988	G.V.K. Rao Committee recommendations to revamp the functioning of ICAR including its role in Agricultural Education.
1995	Agricultural Human Resource Development (AHRD) project, with World Bank Support, launched (ended in 2001).
1996	Accreditation Board established replacing NAC.
2007	IV Deans Committee revised UG course curricula and syllabi, and norms, standards and academic regulation.
2009	National Core Group revised PG (Master's and PhD) course curricula and syllabi and the common academic regulations.

Source: Draft Document of National Agricultural Education Project, ICAR

In India, agricultural universities were established on 'land grant' pattern of USA which helped incorporation of a number of diverse subjects in the courses as also provision of hands-on practical exposure to the student. All disciplines of education have witnessed dramatic changes and so is the case of agricultural education also. Agricultural education is now required to evolve in tune with rapidly changing national and international scenario. Present and future agriculture practices are characterized by stagnating/declining productivity and profitability, degradation and depletion of natural resources, increased risks associated with climate changes, unsafe livelihoods for millions of small and marginal farmers, regional imbalances in agricultural productivity, rising input costs, vulnerable markets, unsound profits, changing food habits, increased quality consciousness, higher post harvest losses, fragmented processing industry, globalization of trade and commerce, inefficient technology transfer system, poorly coordinated natural disaster management system, etc.

Present and future situation necessitate a renewed thrust for better quality and relevance of higher agricultural education which should facilitate and carryout function of human resource development to prepare self motivated

professionals and agri entrepreneurs in the light of changed higher educational scenario in general and higher agricultural education in particular. The higher educational scenario in present times is influenced by forces of globalization, emergences of new areas of specialization such as Intellectual property rights (IPRs), World Trade Organization (WTO) and General Agreement on Trade in Services (GATS) related areas, use of cutting edge new beneficial technologies like biotechnology, nanotechnology etc. Therefore the agricultural graduates on completion of their studies must possess knowledge about all such new techniques. They must be able to handle the new challenges posed by globalized environment. They must also possess required professional capabilities to deal with the concerns of sustainable development of agriculture in all its aspects. The most important thing is that agricultural education should address the requirement of major stake holder i.e. Indian farmer. In spite of the significant contribution carried out by the ICAR and agricultural universities for human resources development for the agricultural sector, the present Indian higher agricultural education sector face challenges of low access, not meeting quality standards, lack of financial support, gender inequality, inbreeding, inability to update the course curriculum at right time, lack of faculty competence in cutting edge technologies etc.

The SAUs are established through the legislative acts of the respective states and with major financial support from them leading to administrative and policy controls. It has been observed that pace and quality of technology generation and human resource development in many of the SAUS has gone down. The reason for this slackening are inadequate state funding, reduced faculty strength, inadequate faculty development programmes, lack of modern infrastructure for education and research etc. Establishment of new state agricultural universities and new faculties/colleges without providing necessary financial and faculty support has aggrieved the problem.

In spite of finalization of academic regulations for under graduate (UG) and post graduate (PG) programmes after third and fourth dean's committee report and the initiatives under the agricultural human resource development project (AHRDP), wide variation in quality and performance were observed on review of present agricultural education system.

(A) Directly visible aspects/issues

Not a first option: In general, agricultural education at graduate level is not a first and preferred choice for students. Generally the bright students opt first for medicine and engineering as the case may be. Barring few exceptions, only those who do not get admission in these preferred branches seek admission in agricultural colleges.



India is an agricultural country and agricultural education is directly and totally responsible to meet the most important need of human being i.e. food. Therefore some effectual action needs to be taken up by the government to attract bright students in the field of agriculture.

Financial difficulties: Agriculture is a state subject. Therefore the statutory responsibility for agriculture vests with the state governments. The SAUs receive their annual budget from the state government. It is seen that the major portion of budget grant is utilized to meet the salary component of the university and thereby only limited grant for other operational expenses remains. The portion of budget grant for salaries is 85% leaving only approximately 15% for operational expenses. Therefore SAUs face difficulties in maintaining buildings, practical laboratories, infrastructure etc. This ultimately affects the quality of agricultural education. This situation needs to be overcome by providing sufficient budget to meet all kind of necessary expenses to the SAUs. Ideally the budget grant for salaries and operational expenses should be 60:40.

Unfilled vacancies: In most of the SAUs significant numbers of faculty positions are vacant. The vacant positions arise due to recruitment ban, and retirements. Many of such vacant positions are also abolished by respective state governments. This leads to heavy work load on existing faculties which may lead to poor performance in teaching and no time left for research or extension activities. To overcome the problem, the SAUs should take initiative in terms of recruitment process at appropriate time. Agricultural education being a professional discipline, the state government should also provide adequate financial support to fill up the vacant positions on priority basis.

Inbreeding: There is very high inbreeding in the staff recruitment. Moreover staff turnover in academics is also very low which reduces opportunity to introduce new blood in the faculty.

Lack of autonomy: Agricultural universities are established by state governments. Thus although they are autonomous but they do not enjoy any kind of autonomy in real sense. For all major decisions SAUs are required to obtain permission/clearance from state government. There is also considerable political interference even in day to day activities. This lack of autonomy ultimately affects the quality of education. In order to prepare the first quality agricultural graduates real autonomy should be provided to all the SAUs by respective state governments.

Poor center- state relationships : SAUs being established by the state government, it tries to retain its control over them. At the same time ICAR also helps SAUs by providing development grant. ICAR also monitors the utilization of its grant. Sometimes it creates administrative

issues/problems in SAUs with regard to certain policy decisions. In order to have uniformity throughout India, and overcome such administrative problems arising due to two bosses, the agricultural education and research may be appended to the concurrent list of the constitution and leaving agriculture with the state thereby placing SAUs under direct control of ICAR.

(B) Indirect aspects/ issues

The main aim of agricultural education is to prepare human resources for agriculture sector. In addition to above mentioned direct issues, the agriculture education also faces some of the following indirect issues.

Poverty unemployment and malnutrition among agricultural dependant population: Global food demand is expected to be doubled by 2050 and at the same time natural resources are continuously reducing and deteriorating. Inadequate attention to agriculture has led to increase in prices of food products and thus making it inaccessible to poor people. Poverty is closely associated with malnutrition. India has large number of poor people (250 million out of approximately 1000 million worldwide). Approximately 75% of poor people reside in villages. Most of them are small and marginal landholders and landless labourers. They over crowd agriculture for their livelihoods with limited or marginal productivity. Moreover they over exploit natural resources for their subsistence. Harmonizing science and technological (S&T) inputs is probably the only solution to nurture rural livelihood without degrading natural resources. Education and training for capacity building to gain access to employment will be essential. Therefore to overcome this challenge, in addition to awarding formal degrees, SAUs will be required to initiate job driven vocational programmes to build avenues of off farm activities.

Integration of agricultural education and job creation: In India almost every graduate desire for a white caller job preferably in government sector. But due to financial crunch and governments resolve to phase out nonperforming assets, job opportunities in this sector have also reduced. Therefore it is essential to prepare graduates and post graduates who create their own work and provide work to others. Agriculture education being a professional discipline it can satisfy these conditions. Although the present course curricula of agriculture and allied faculties as suggested by ICAR do satisfy this need but still there is scope for reorienting them to address stakeholders concerns and needs.

Demand of stakeholders: Farmers and consumers as major stakeholders of agricultural system would be more aware on usefulness and relevance of S & T findings. Their expectations and concern would form an integral part of agricultural S & T activities and programmes. Sound monitoring and evaluation system would be required to be



set up to review the relevance, utility and impact of different agricultural education programmes.

Global forces: WTO has not only influenced the trade but the education sector also. Agricultural education needs to be harmonized with existing and emerging issues related to WTO and free market economies.

Throughout the world, agriculture is becoming competitive in terms of price and quality of its produce. Price and brand equity have become most important aspect in globalized era. Therefore it is essential to lay more emphasis on new frontier science subjects like biotechnology, nanotechnology, precision agriculture and information and communication technology, legal aspects, good trade practices, ethics of IPR, market intelligence etc. in present agriculture education curriculum.

Distances & disconnects: With time and space, inter as well as intra university dialogues and cooperation have reduced. Even faculty of different departments in a college do not sit together to address the academic issues, lest the inter college interactions. Further, such interactions/linkages/ collaborations with the general universities, ICAR organizations and other reputed organizations like IIMs and IITs are almost nil. This affects the teaching-learning process as well as the academic environment in the institutions which needs to be overcome by taking proactive approach.

Recommendations

Education is a dynamic process. To say something final on it is not possible, particularly in the modern era. Education in the emerging Indian Society in its totality, changes with the changing situation and developing circumstances. The educational expansion, universalisation of elementary education, higher and professional education and overall quality of education are major challenges before the country. It has to conform to certain ideologies and adopt itself to various condition rapid growths of population, political, social, economic growths and the like. Therefore, there is need to review, reconsider and rearrange educational theory and practice. In the changing context of globalization, liberalization and advances in telecommunications teachers and teacher educators need to become conversant with International trends, Internationalism, multiculturalism, multi-racialism and other pluralities (Thokchom, A. 2012).

Many proposals to improve state of agricultural education have been put forward by eminent persons and discussed at relevant forums also. Some progress is evident due to such efforts but still further actions are required to make it responsive to the present needs. Improving the quality and relevance of agricultural education requires a fundamental change of approach in governance and control, financial sustainability, accountability, autonomy, transparency and meritocracy. Following recommendations

can be implemented to make agricultural education in tune with present needs.

At the centre state level

ICAR guidelines should be binding on state authorities to have uniformity in all the agricultural universities in different states throughout India. ICAR should play leadership role in improving overall governance of the SAUs by ensuring adherence to the provisions of model act for agricultural universities.

ICAR has implemented accreditation process. The developmental grant should be associated with performance and grades obtained in accreditation process. Ensuring appointments/nomination of qualified members to the governing boards of universities.

Provision of adequate funds from state governments as well as ICAR. Agricultural universities should be encouraged to be self sufficient.

Grant full autonomy and avoid political interference.

Functioning of any university is influenced to a great extent on Vice-chancellor. Selection of each Vice chancellor should be by a committee of eminent scientists who are also known for their impeccable integrity. The recommendation of selection committee should go directly to chancellor for action.

Establishment of learning forum at the central level comprising of state and institutional leaders to discuss the changing skill requirements, challenges faced by SAUs, strategies for effective governance, deliverables and its quality through sharing of knowledge, experiences, good practices and study visits.

Formation of international review committee to put Indian higher agricultural education at par with world class universities. Eminent educators, scientists, researchers from India and abroad should be included in international review committee. The main task of such a committee should be to recommend specific and detailed action plan to modernize Indian agricultural education system.

At the University level

Highest decision making body in agricultural university is Board of Management or Board of Governors in collective form. Thus Board of Management/ Board of Governor should ensure good governance by prudent means and accept their collective and individual responsibilities. They must ensure and respect universities autonomy and accountability.

Establishment of college level committees including external experts to monitor and evaluate performance of teaching, research and extension activities undertaken by faculty members.

Maintaining adequate faculty strength: Each SAU should have their short and long term master plan for their human resource development and human resource planning.



Meaningful learning: Every child/student follows its own unique way to learn and process information. They learn material in different ways. Some learn by oral repetition, some may learn by writing it out, while others may learn through practical work. Individuals thus differ in the way they learn. Some students are visual learners, while others are auditory or kinesthetic learners. Visual learners learn visually by means of charts, graphs, and pictures. Auditory learners learn by listening to lectures and reading. Kinesthetic learners learn by doing. Students can prefer one, two, or three learning styles. Because of these different learning styles, it is important for teachers to incorporate in their curriculum activities related to each of these learning styles so that all students are able to succeed in their classes. Therefore implement extensive use of latest computer based and audio visual methods for interactive teaching learning process (Vaishnav, R.S.2013)

Conclusion : Concerted efforts would be required to transform Indian agricultural education system to make it more sensitive and responsive to the need of stakeholders. ICAR is making concerted efforts to improve the agricultural education. India is not short of talent. With aggressive but sensible political will and commitment of all stakeholders, Indian agricultural education system will definitely achieve excellence and help the country to see

second green revolution.

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