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Review Paper

# Reorienting Agricultural Education System in India

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## ABSTRACT

In order to revitalize Indian education system, the Government of India has recently approved National Education Policy-2020 (NEP-2020) and proposed sweeping changes including opening up of Indian higher education to foreign universities, dismantling of the UGC and the AICTE, introduction of a 4-year multidisciplinary undergraduate program with multiple exit options, and discontinuation of the M Phil program. It aims at making 'India a global knowledge superpower'. In the light of National Education Policy-2020, agricultural education system needs to be redefined in India as it increases knowledge or information and farmer's capacity to learn. As the level of agricultural education increases, farmers will become more and more self-reliant and will depend more on their self-studies dealing with farming. It is suggested that reorientation of agricultural higher education in context of globalization, food security, diversification, sustainability of ecosystems, and agribusiness is necessary. The curriculum of agricultural higher education needs to be made more broad based and manpower has to be trained scientifically in topics such as biotechnology, genetic engineering, agro-meteorology, environmental science, agro-ecology, computer application, information technology, conservation of natural and human resources, specialized job-oriented courses, and trade and export in agribusiness. Finally, adequate emphasis should be placed on practical skills and entrepreneurial capabilities among the students to achieve excellence. To properly address the challenges faced by today's Indian agriculture, competent human resource in sufficiently large numbers would be required in the near future. There is a vast scope for young graduates to undertake agriculture as their profession which is directly or indirectly contributing to the economic and social development of the country.

*KEYWORDS*

Agricultural Education, Research, Reorientation, Food Security, Sustainability, Globalizationy

## INTRODUCTION

Globally, education, research, and extension systems, particularly in agriculture have been instrumental in bringing transformational changes to ensure food and livelihood security. Agricultural education when transferred to farmers; he imbibes new ideas and become more and more self-reliant on their self-studies dealing with farming. In the field of agriculture, the nation has become self-sufficient and exporter of some crops. The first green revolution in India could serve as role model for many developing countries. Prior to Green Revolution, India had to regularly import food grains from USA under PL480 agreement and therefore, was described as a nation 'living from ship to mouth'. Some of the bold and imaginative steps taken by the then Indian government were: i) revising pay scales of agricultural scientists; ii) introducing price incentive for farmers; iii) encouraged adoption of new scientific technology; iv) a technocrat be made the Director General of the ICAR; v) establishing Agriculture Research Service (ARS), similar to Indian Administrative Service (IAS); and vi) organizing Indo-US teams to develop the establishment of Land Grant pattern Universities throughout India. All these revolutionary steps contributed to first green revolution. However, during last so many decades, the agriculture in general and higher education system, in particular has been neglected. The growth rate in agriculture has lagged behind; on an average less than 2 per cent (Naik and Sankaram, 1972; Mehta and Mathur, 1999).

In order to achieve the national goal, it is necessary to revitalize the higher education system. The real challenge is to increase the productivity per unit of land and at the same time maintain natural resource base and to address the challenge, a strong team of well trained and qualified scientists was needed. The SAUs were given responsibility to revitalize the higher education system and produce such manpower. It was also felt that i) the Prime Minister of India takes over as the President of ICAR Society for bringing greater integration between economic and agricultural research policies, and bring parity with other scientific organizations, such as Space, Atomic Energy, Council of Scientific and Industrial Research (CSIR), etc., where PM is at the apex (recommendation of RA Mashelkar Committee-2005); ii) restructuring organization and management of ICAR; iii) giving academic autonomy to the Vice Chancellors'; iv) involving Vice Chancellors in the budget planning and allocation process at the Planning Commission (now NITI Aayog) to ensure regular and adequate flow of funds to the universities; v) setting up a central regulatory authority for quality assurance of higher agricultural education; and vi) improving state and centre relationship *vis a vis* state universities and transferring extension responsibilities to state universities/state line departments to have effective integration of teaching, research, and extension (true land grant pattern system in USA). Currently, the Rainbow Revolution notwithstanding, India's agrarian progress during the past few years has slackened and serious asymmetries exist in science-led growth of agriculture, farmers' income, and food and nutrition securities. These asymmetries are aggravated due to decline in quality of agricultural education, viz, erosion of basic sciences from agricultural curricula, extensive inbreeding, serious skill gaps, and poor employability of agriculture graduates. Also, a very big problem of public universities in India having affiliation with 700-800 colleges and enrolment of 7-8 lakh students. Regulatory bodies (UGC, AICTE), have failed miserably to re-invent themselves according to the needs of Indian economy and society in the 21st Century. Problems of higher education in

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India are serious and endemic which cannot be redressed by tinkering, piece meal reforms or cosmetic changes. The agricultural education system needs to be redefined and rejuvenated in India. Thus, bridging these gaps in the availability of quality human resources must be a high national priority. Recently approved National Education Policy-2020 (NEP-2020) and proposed sweeping changes seems to be the answer of these problems, and making 'India a global knowledge superpower'.

**Gaps and Constraints**

The gaps identified and constraints in India's agricultural education system include: i) low priority to agricultural education as a career option, consequently the gross enrolment was only 0.03 per cent; rising unemployment and poor employability of the graduates (43% of undergraduates and 25% of post-graduates) being unemployed; ii) declining quality of students, poor quality of education due to obsolete laboratory, farm, library leading to knowledge deficit all along the value-chain; iii) depleting number and quality of faculty, their competence in frontier and emerging areas, limited refresher training, faculty improvement etc.; iv) disconnect among agricultural education, employment, and industries' requirements; v) lack of adequate skill, entrepreneurship and experiential learning; vi) outdated curriculum and its delivery mechanisms; vii) poor inclusion of basic sciences in agricultural curricula; viii) low appreciation of transforming STEM (Science, Technology, Engineering and Mathematics) into STEAM, where A stands for Agriculture; ix) extensive inbreeding and associated depressions; x) low access of rural students, especially to the tribal and socially-deprived communities; xi) inadequate academic rigour in existing curricula and lack in sensitizing the students and faculty about the seriousness of the stubbornly high incidences of hunger, under-nutrition, poverty, inequality, fast degrading natural resources and market instabilities; xii) inadequate and declining investment and financial resources in agricultural universities/ colleges; xiii) opening of new universities without matching resources; unmindful splitting of agricultural universities, and poor resources planning; xiv) indifference to the needs especially women students, scientists and farmers, and increasing irrelevance of home science colleges and curricula; xv) poor governance, system's inability to take full advantage of modern tools of management for efficient governance (e-governance); xvi) widening disconnect amongst education, research and extension; xvii) isolation from international exposure and poor internalization of relevant international trends and developments; and xviii) lack of evaluation, monitoring, impact assessment, accountability and incentive systems (Challa *et al*., 2010). The ICAR is acutely conscious of the fact that agriculture is no longer a preferred professional destination for school pass outs as employment in the public sector shrinks, and the private sector is more concerned with packaging, processing and value addition and competing in the global market place than with production-oriented agriculture. There is an urgent need for re-orienting agricultural education and equipping graduates with skills and abilities. The NEP 2020 proposes to address some of these problems.

In many cases, recruitments are manipulated with very little accountability. Although women farmers account for more than 50 per cent of the agriculture workforce in India, women recruitment to the system found wanting for more. There is no inter-departmental coordination between agricultural universities and institutes in India. Sometimes the research done by National Agricultural Research System (NARS) is repeated by the private institutions/companies resulting in both intellectual property loss and monetary loss preventing the institutions to tread on a path of self-financing. Also, NARS have strong bias towards field crops and horticulture at the cost of animal husbandry neglecting the importance of animals to some extent in making the farmers self-sustainable. The reforms needed to make it more productive by giving NARS autonomous status and report directly to the Prime Minister. Research institution's functions should be limited to farm research and education and oversight over non-ICAR institutions and farm extension should be left to state government. Line departments in the States need strict monitoring.

**Students' Perception and Imaging Agricultural Education**

Students' concern included depletion in faculty strength in frontier areas, inadequate hands-on skills, lack of research experience, and serious problem of inbreeding (nearly 51% of faculty drawn from the same university). On quality of teaching, they opined to make improvement, particularly in curricula and teaching. Accordingly, the ICAR has taken several initiatives to address the concerns. As India is changing, today we need skills, not just degrees, with the ability to assimilate, adapt, apply and develop new technologies. We also need high quality agricultural graduates equipped with problem solving and creative skills and ability to think and improve productivity of agricultural sector. Apart from the technical and generic skills, our graduates need leadership and entrepreneurial skills to build leading teams, and put innovations into practice and respond to competitive environments (Varma, 2014). The theme of the XI Agricultural Science Congress- 2013 emphasized the need for creation of a world-class agricultural system (Singh, 2014). The ICAR Vision 2030 also emphasized the need to strengthen and streamline higher agricultural education system to enhance quality of human resource in agri-supply chain to meet the future challenges through cutting-edge science and technology (ICAR, 2016). There is need to maintain high quality which guaranties the quality of Ph.D. research and teaching, and also faculty performance. India has experimented with semester and trimester system wherein trimester system seems to be better than the semester system. The Modular System of Teaching helps in improving learning through hands-on experience, based on the concept of one credit for one week of teaching where the students are attached to the teacher for full time. This system resolves most of the issues raised by the students. There is a need to build Centres of Excellence (CoE) for agricultural education and research. The country needs multiple IARIs across the country. Already one such IARI has been established in eastern India at Barhi-Hazaribagh (Jharkhand) and another is expected to be established in north-eastern region. The villages which are adopted by the Members of Parliament

across the country could provide a good opportunity for students, if a formal system of attachment is put in place, to not only apply the latest technologies in field situations but also to learn the practical difficulties for which they could find solutions. At the 'post graduate' level, international exposure of 4 to 6 months will provide valuable experience of working in advanced laboratories and developing long-term interactions. This will also help in developing leadership to be able to lead changes and build capacity to address the emerging challenges. The path for rejuvenation is obvious. Let us hope for a more vibrant agricultural education system in the coming years. In order to make agriculture education useful, the recommendations of the 5th Dean Committee have been implemented in all the Agricultural Universities (AUs) under which amendment of agricultural degree courses has been done to include biotechnology, information technology, bioinformatics, remote sensing, organic farming, agriculture business management etc. (ICAR, 2016). Emphasis has been given on experiential learning, skill and entrepreneurship development. Along with this, four new programs, B. Tech (Biotechnology), B.Sc. (Community Science), B.Sc. (Food Nutrition and Dietetics) and B.Sc. (Sericulture) have also been included (Varma, 2014).

**Challenges and Opportunities**

The agricultural education is deteriorating in India due to: i) mushrooming of over 1,000 unregulated private agriculture colleges which have sprouted across the nation churning out degrees like street food. Many are without proper labs, infrastructure or farm land; ii) as agriculture is a State subject, central government jurisdiction doesn't apply to these proliferating private profiteers, which thrive due to inadequate regulatory framework; iii) technology transfer or farm extension is shared with the States and currently, this is the biggest disappointment for all; iv) constant paucity of funds, and SAUs are forced to augment their resources by seeking research grants irrespective of the state's priorities. The major challenges are: i) to ensure academic excellence by making, agricultural universities completely autonomous coupled with accountability; ii) to review recruitment policy, and policy of freezing new recruitment(s); iii) centralized planning of agricultural education system addressing the local needs; and iv) need for establishing more Central Agricultural Universities like IIT's. Around 716 *Krishi Vigyan Kendras* (KVKs), funded by the ICAR for capacity building and technology refinement and transfer, are neither fully staffed nor equipped. Practically, state governments barely manage to fund the SAUs, thereby constant paucity of funds, forcing SAUs to augment resources by seeking research grants. ICAR/SAUs cannot escape its share of culpability-recruitments are many a time manipulated, inbreeding and nepotism are sometimes rampant, also score system in recruitment process is not able to catch real talent. Suitable modification is needed to capture really talented people. Because of faulty procedure, even with good salary structures, and time-bound promotion do not many a times recognize good research output and thus, talent is ignored. Most farm hands are women, but women are not even recruited in sufficient numbers. Inter-departmental coordination is also lacking within the 74 AUs/SAUs/CAUs/DUs/CUs etc. and the whopping 113 ICAR institutes across India.

IPR registrations and internal resource generation like that in the developed world universities is improbable. For India to compete globally both in terms of agricultural production and marketing and in rendering of professional agricultural services, it has become imperative that higher education in agriculture attains an international level of quality and that Indian qualifications become acceptable globally (Singh *et al*., 2020). The new challenges can thus be summarized as need for i) developing internationally accepted levels of quality of trained agricultural professionals; ii) training all agricultural graduates to acquire high levels of skills in using biotechnology tools, with adequate knowledge of bio-safety and bio-ethics; iii) using modern IT tools in the educational process and equipping all graduates with competence in using them for information search and exchange, system modeling and optimization, and software development for agricultural production, storage and marketing activities; and iv) developing a holistic approach to sustainable development, including awareness of sustainable resource management practices.

**Key Pillars of Reforms in Higher Education**

To transform the agricultural higher education into a demand-driven, forward looking and efficient system requires: i) an enabling environment which would foster the desired academic environment in all institutions that commit to promoting innovation and creativity; ii) strengthening human resource planning in the National Agricultural Research and Education System (NARES) to help match supply with demand; iii) strengthening quality assurance mechanisms to ensure that the education, research and extension are at internationally accepted levels of quality; iv) promoting well performing institutions to develop centers of excellence of the highest international levels; v) removing regional imbalances in physical facilities, faculty competence, and standards of educational and research achievements through pro-active support to weaker institutions; vi) developing active partnership with all stakeholders including policy planners, farmers, agricultural industrialists, and community leaders; vii) exploiting India's strength in accelerating use of knowledge tools in agricultural production and processing industry; viii) orienting research and extension activities towards increasing production and productivity, earning capacity of urban and rural poor, and improving the quality of life of the people; ix) attracting students and scientists from other countries based on a reputation for quality at relatively low cost and encouraging export of agricultural technologies developed in India and Indian expertise to other countries; and x) strengthening the newly established Board of Accreditation, giving it due authority for regulating standards of education in the entire agriculture higher education, and helping it to develop output-oriented criteria for accreditation. (Challa *et al*., 2010).

Reforming and rejuvenating the Indian higher education have been a matter of intense debate and deliberations among all

stakeholders' viz. policy makers, recruiters, faculty, academic leaders and private sector educational services providers. Committees appointed by the Ministry of Human Resource Development (MoHRD), GoI during 2004-2014 (UPA I&II) and current NDA Governments viz. i) National Knowledge Commission, 2006 (Sam Pitroda); ii) Committee to advise on renovation and rejuvenation of higher education, 2009 (Yashpal); iii) UGC Review Committee, 2015 (Hari Gautam); and AICTE Review Committee, 2015 (MK Kaw) have given various recommendations on these important issues. All these Committees have given their recommendations to the MoHRD. On the basis of the exhaustive recommendations of the Committee, some common key pillars of reforms in Indian higher education can be identified, viz., i) innovation research and entrepreneurship, ii) autonomy, iii) accountability and transparency, iv) social responsibility; and v) employability. Based on above, the GoI has recently approved National Education Policy-2020.

**Quality Assurance, Accreditation and Support**

Accreditation and ranking help in assuring quality of an education system. From the perspective of the institutions, it is important that the higher education institutions are intimated through the accreditation process how they fare and help them in identifying gaps in their delivery mechanism. It encourages the higher educational institutions to put in an extra effort and improve their ranking. The government has to reconcile its pursuit for enhancement of quality with 'massification' of the higher education system in India. On one hand, it produces a modest number of highly competent graduates who readily find employment in the nation's high-tech industry and are also competent in the international market and on the other hand, the large number of India's colleges and universities are well below international standards, even Indian employers don't absorb such graduates, including those in engineering and management (Tamboli and Nene, 2011).Two important agencies that monitor quality are the National Assessment and Accreditation Council (NAAC) under the UGC and the National Board of Accreditation (NBA) under the AICTE. While NAAC does institutional assessment of mainly the conventional universities and colleges, NBA is involved in program assessment in the professional institutions. Both of these institution's performance over two decades has been inadequate. The NAAC has been able to accredit only 170 of the 700 universities (25.57%) and 5156 of the over 37,000 colleges (14%) (ToI, 2013). The performance of NBA has been no better. It is significant that the Indian institutions do not figure amongst the top 100 in any of the world rankings. Having realized the situation, the Education Promotion Society for India (EPSI) is of the opinion that there should be multiple agencies for accreditation which should be independent and pragmatic in their approach. Accreditation of Agricultural Universities is a continuous process. In order to infuse better accountability and intense monitoring for educational quality improvement in agricultural universities, the GoI has taken a decision to link accreditation of agricultural universities by National Agricultural Education Accreditation Board (NAEAB) with the Grant-in- Aid from ICAR, New Delhi.

India-Afghanistan Fellowship Program for pursuing Master's and Ph.D. in Indian AUs supports the agricultural HRD in Afghanistan through formal education in India. The scheme has been implemented through the DARE as per the norms of ICAR. The Netaji Subhash-ICAR International Fellowships are also available to support Indian/ overseas nationals for pursuing doctoral degree in agriculture and allied sciences, in the identified priority areas, to the Indian candidates for study abroad in the identified overseas universities/institutions having strong research and teaching capabilities and overseas candidates for study in the best Indian AUs in the ICAR-AUs system. Educational planning program strives to develop, coordinate, implement and monitors plans and policies including reforms in higher agricultural education in the country leading to quality HRD. It also aims for maintaining and upgrading quality through partnership with 74 AUs comprising SAUs (63), ICAR Deemed-to-be-Universities (4), CAUs (3) and CUs with agriculture faculties (4). The ICAR provides financial supports for establishment of infrastructure facilities including faculties and students' amenities viz. student hostels, examination halls, educational museums, sports and recreational facilities, placement cells, and modernization of educational farms and library facilities. In the EKTA (*Eakikrit Krishishiksha Takniki Ayaam*) initiative, it has been decided to assign Unique Student ID (USID) for all the students enrolled in universities of NARES. Unique Student Id will ensure the uniqueness corresponding to the student records in various academic processes and associated online systems.

**Possible Solutions**

To cope up with changed global scenario, agricultural education and extension would have to be redefined. The budget allocations for agriculture R&D must be pegged as 2 per cent of the GDP. There is a need to provide a curricula reorientation to create an environment sensitive faculty to help bring attitudinal changes among rural communities. Steps needed to promote such rural students as urban-based agricultural graduates in rural environment. Specialized courses in educational technology should be developed to upgrade the teaching skills. A Teachers Training Institute in agriculture at the national level would help. The NARES needs an independent regulatory body like the UGC to streamline and give direction to the system. The agricultural education system needs to be redefined so as to equip the new graduates with subject competency, self-motivation, positive attitude, and agri-business skills, knowledge of computer and information technology, and communication skills. The Model Act of the ICAR should reflect in the functioning of the SAUs/DUs. The involvement of PPP is the need of the hour to strengthen the present system of education, research and extension in India. ICAR needs to play a more pro-active role in initiating, implementing, reviewing and monitoring reforms in education system. Further, GoI has facilitated better education in agriculture to create favorable economic conditions for : i) education on role of private investment in agriculture; ii) education and awareness on credit facilities to farmers; iii) education on use of water resources; iv) education on strong marketing system; v) education on the role of effective agro-processing techniques; vi) education on

laws and regulations in agriculture; vii) agri-price support; and viii) other steps taken by the government for agriculture education. The GoI established a full-fledged Department of Agricultural Research and Education (DARE) in 1973 to strengthen the linkage between the centre and State governments enabling the ICAR to deal with international agencies. ICAR established *Krishi Vigyan Kendras* (KVKs) for vocational training of farmers and fishermen.

The ICAR has recently launched Rs. 1100 crore (USD 165 million) an ambitious National Agricultural Higher Education Project (NAHEP), funded by the World Bank and the Indian Government on a 50:50 basis, which aims to develop resources and mechanism for supporting infrastructure, faculty and student advancement and providing means for better governance and management of AUs, so that a holistic model can be developed to raise the standard of current agriculture education system that provides more jobs and is entrepreneurship oriented and on par with global standards. The NAHEP will further strengthen linkage of the national system with global knowledge economy, and also help undertake International Experiential Learning. Suitable twinning arrangements with foreign universities could also be explored. In addition, a four-year degree in Agriculture, Horticulture, Fisheries and Forestry has been declared a professional degree. Dr Rajendra Prasad Central Agricultural University has been strengthened to bring green revolution in Eastern India including North East. At the same time, two more IARIs were set up, one in Barhi (Jharkhand) and another to be located in Assam. In order to promote the participation of students in agricultural business, Student READY (Rural Entrepreneurship Awareness Development Yojana) scheme is being run, under which practical experience of agriculture and entrepreneurship is provided to undergraduate students. A MoU has been signed between the Ministry of Agriculture and Farmers' Welfare (MoA&FW) and the Ministry of Skill Development and Entrepreneurship (MoSD&E) to promote skill development in the field of agriculture through KVKs across the country.

Market oriented agricultural education and extension along with changes in agricultural marketing policy for the national and international markets is the need of hour. ICAR should function as an autonomous body reporting directly to the PM like the Atomic Energy Commission/CSIR. Its functions should be restricted to farm research and education. State governments should be geared up strictly for already delegated farm extension services, which currently look almost defunct. There is no universal recipe or magic formula for 'making' a world-class centre of higher learning. National contexts and institutional models vary widely. Therefore, we should choose, from among the various possible pathways, a strategy that plays to its strengths and resources. Further, the transformation of the university system cannot take place in isolation. A long-term vision for creating world-class universities/institutions and its implementation should be closely articulated with a) the country's overall economic and social development strategy, and b) ongoing changes and planned reforms at the lower levels of the education system.

**National Education Policy, 2020**

A National Education Policy (NEP)-2020 is a comprehensive framework to guide the development of education in the country. It aims to introduce several changes in the Indian education system - from the school to college level, making "India a global knowledge superpower". The NEP-2020 is the third major revamp of the framework of education in India since independence. The two earlier education policies were brought in 1968 and 1986. It proposes sweeping changes including opening up of Indian higher education to foreign universities, dismantling of the UGC and the All India Council for Technical Education (AICTE), introduction of a 4-year multidisciplinary undergraduate program with multiple exit options, discontinuation of the M Phil program, and renaming MoHRD to Ministry of Education (MoE). It only provides a broad direction and but is not mandatory. Since education is a concurrent subject, both the Centre and the State governments can make laws on it, the reforms proposed can only be implemented collaboratively by the Centre and the States. This may not happen immediately. The incumbent government has set a target of 2040 to implement the entire policy. Sufficient funding is also crucial. The government plans to set up subject-wise committees with members from relevant ministries at both the central and state levels to develop implementation plans for each aspect of the NEP, which will list out actions to be taken by multiple bodies, including the HRD Ministry, state Education Departments, school Boards, NCERT, Central Advisory Board of Education and National Testing Agency, among others. Planning will be followed by a yearly joint review of progress against targets set.

In school education, the policy focuses on overhauling the curriculum, "easier" Board exams, a reduction in the syllabus to retain "core essentials" and thrust on "experiential learning and critical thinking". There will be universalization of education from pre-school to secondary level with 100 per cent Gross Enrolment Ratio (GER) in school education by 2030. There is need to bring 2 crores out of school children back into the mainstream through an open schooling system. In a significant shift from the 1986 policy, which pushed for a 10+2 structure of school education, the new NEP pitches for a "5+3+3+4" design corresponding to the age groups 3-8 years (foundational stage), 8-11 (preparatory), 11-14 (middle), and 14-18 (secondary). This brings early childhood education (also known as pre-school education for children of ages 3 to 5) under the ambit of formal schooling. The mid-day meal program will be extended to pre-school children. The students until Class 5 should be taught in their mother tongue or regional language. It will bring the uncovered age group of 3-6 years under school curriculum, which has been recognized globally as the crucial stage for development of mental faculties of a child. It will also have 12 years of schooling with three years of Anganwadi/ pre schooling. Class 10 and 12 board examinations has been made easier, to test core competencies rather than memorized facts, with all students allowed to take the exam twice. School governance is

set to change, with a new accreditation framework and an independent authority to regulate both public and private schools. Emphasis has been given on Foundational Literacy and Numeracy, no rigid separation between academic streams, extra-curricular, vocational streams in schools. Vocational Education would start from Class 6 with internships. Assessment reforms would be done with 360-degree Holistic Progress Card, tracking Student Progress for achieving Learning Outcomes. A new and comprehensive National Curriculum Framework for Teacher Education (NCFTE) 2021, will be formulated by the National Council for Teacher Education (NCTE) in consultation with the National Council of Educational Research and Training (NCERT). By 2030, the minimum degree qualification for teaching will be a 4-year integrated B.Ed. degree. The policy also proposes phasing out of all institutions offering single streams and that all universities and colleges must aim to become multidisciplinary by 2040.

GER in higher education has been raised to 50 per cent by 2035 against 26.3 per cent currently. Also, 3.5 crore seats added in higher education. Holistic undergraduate education with a flexible curriculum can be of 3 or 4 years with multiple exit options and appropriate certification within this period. M. Phil. courses would be discontinued and all the courses at undergraduate, postgraduate and Ph.D. level will now be interdisciplinary. Multidisciplinary Education and Research Universities (MERUs), at par with IITs, IIMs, will to be set up as models of the best multidisciplinary education of global standards in the country. The National Research Foundation (NRF) will be created as an apex body for fostering a strong research culture and building research capacity across higher education. Higher Education Commission of India (HECI) will be set up as a single umbrella body for the entire higher education, excluding medical and legal education. Public and private higher education institutions will be governed by the same set of norms for regulation, accreditation and academic standards. Also, HECI will be having four independent verticals namely, i) National Higher Education Regulatory Council (NHERC) for regulation, ii) General Education Council (GEC) for standard setting, iii) Higher Education Grants Council (HEGC) for funding, and iv) National Accreditation Council (NAC) for accreditation. Affiliation of colleges is to be phased out in 15 years and a stage-wise mechanism to be established for granting graded autonomy to colleges. Over a period of time, every college is expected to develop into either an autonomous degree-granting College, or a constituent college of a university.

An autonomous body, the National Educational Technology Forum (NETF), will be created to provide a platform for the free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration. National Assessment Centre- 'PARAKH' has been created to assess the students. It also paves the way for foreign universities to set up campuses in India. It emphasizes setting up of Gender Inclusion Fund, Special Education Zones for disadvantaged regions and groups. National Institute for Pali, Persian and Prakrit, Indian Institute of Translation and Interpretation (IITI) will also to be set up. Public investment in the Education sector will be increased to 6 per cent against current 4.6 per cent of its total GDP on education. Universities from among the top 100 in the world would set up campuses in India. However, none of this can start unless the Ministry of Human Resource Development (to be designated as Ministry of Education under NEP) brings in a new law that includes details of how foreign universities will operate in India. It is not clear if a new law would enthuse the best universities abroad to set up campuses in India. In 2013, the UPA-II was trying to push a similar proposal to bring top 20 global universities, including Yale, Cambridge, MIT and Stanford, University of Edinburgh and Bristol, but they have not shown any interest. Participation of foreign universities in India is currently limited in collaborative twinning programs, sharing faculty with partnering institutions and offering distance education. Over 650 foreign education providers have such arrangements in India.

**Way Forward**

India's system of agricultural education continues to face serious problems. This is the consequence of lack of political will. Immediate and drastic action is required, which include :

- The MoA&FW and the ICAR in coordination with State authorities should take leadership role in improving overall governance of the SAUs by ensuring adherence to the provisions of the Model Act.
- Review, develop, and adhere to clear responsibilities and relationships for the center, state, governing bodies, and Vice Chancellors (VCs) and ensure appointment/ nomination of qualified members to the governing boards and as VCs. Grant autonomy and authority to SAUs to make crucial management, academic, student admission and staff appointment, promotion decisions; and establish clear criteria for interventions and avoid political interference.
- Central Government/ICAR may consider providing block grants to SAUs to improve teaching, research facilities, and for starting new departments. Most of the state universities are starved for funds
- At the central level, initiate a learning forum to bring together concerned state and institutional leaders to discuss the changing skills needs, challenges facing SAUs, strategies for effective governance, deliverables and its quality through sharing of knowledge, experience, good practices, and study visits.
- Boards of Governors should ensure good governance by prudent approaches and accept their collective and individual responsibilities. They should ensure and respect institution's autonomy and accountability.
- A central regulatory authority should be established, which would accredit universities for maintaining high standards in agriculture teaching, research, and extension, and monitor system delivery and quality. Establish an institution-level committee including external experts to monitor and evaluate performance of teaching, research, and extension activities. The institute should also monitor student learning skills and employment outcomes of its recent graduates. Strengthen links with industry and farm community.

- Provide adequate faculty staff. The number of vacancies is very high; some 43% of the approved positions are filled and no significant recruitment has taken place in recent years. Large numbers of faculty members are retiring in 2–3 years period.
- The faculty should be given plenty of opportunities to attend national and international seminars and workshops; and to take sabbatical leave to improve and update their knowledge and be well informed about the global development in their respective fields. The number of research papers published in peer reviewed journals should be a criterion for promotion, and not just the seniority.
- A New Education Policy 2020 aims to facilitate an inclusive, participatory and holistic approach, which takes into consideration field experiences, empirical research, stakeholder feedback, as well as lessons learned from best practices.
- The New Education Policy 2020 includes progressive shift towards a more scientific approach to education. The prescribed structure will help to cater the ability of the child – stages of cognitive development as well as social and physical awareness. If implemented in its true vision, the new structure can bring India at par with the leading countries of the world.

**REFERENCES**

Challa J, Tamboli PM and Joshi PK. 2010. Revitalizing Higher Agricultural Education in India. Base Paper presented, National Workshop at National Academy of Agricultural Research Management, Hyderabad, India. February 24-25, 2010.

Chaudhary SK. 2008. Higher Education in India: A Socio-historical Journey from the Ancient Period to 2006–07. *Journal of Educational Enquiry* 8(1): 50-72.

https://www.drishtiias.com/daily-updates/daily-news-analysis/national-education-policy-2020; 30 July 2020.

ICAR. 2016. Fifth Deans' Committee Report (Chaired by R.B. Singh). Agricultural Education Division, Indian Council of Agricultural Research, Ministry of Agriculture and Farmers Welfare (MoA&FW), New Delhi.

Mehta SL and Mathur BN (Eds.). 1999. 50 years of Agricultural Education in India, ICAR, New Delhi.

Naik KC and Sankaram A. 1972. A History of Agricultural Universities, Oxford & IBH publishing Co., New Delhi. p. 1–13, 23, 27.

Singh AK, Upadhyaya A, Kumari S, Sundaram PK and Pawan Jeet. 2020. Role of agriculture in making India $5 trillion economy under corona pandemic circumstance. *Journal of AgriSearch* 7(2):54-58.

Singh RB. 2014. Transforming Agricultural Education for Reshaping India's Future. Presidential Address. XIth Agricultural Science Congress- 2013, Bhubaneswar.

Tamboli PM and Nene YL. 2011. Revitalizing Higher Agricultural Education in India: Journey towards Excellence. Asian Agri-History Foundation, Secunderabad. India. 316 p.

ToI. 2013. National Assessment and Accreditation Council Accreditation. The Times of India 2nd January 2013. http://timesofindia.indiatimes.com/articleshow/17850516.

Varma A. 2014. Agricultural Education in India: Imaging Possibilities to Meet Challenges in the Changing World, National Agricultural Education Day Lecture, IARI, New Delhi. November 13, 2014. p 1-11.

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