

## **Present day Agricultural Education Ecosystem and Assessment on Educational Aspirations of Farm Graduates**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors together collected the data, analysed and prepared the manuscript. All authors read and approved the final manuscript.*

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### **ABSTRACT**

In the global ecosystem, swift changes are happening in the knowledge sphere. The present study aims to find out the aspirations of the agricultural graduates regarding their education and agriculture. The study was conducted in the three Agricultural Colleges of Kerala Agricultural University (KAU) through open online survey. Well-structured questionnaire was prepared using 'Google forms', an online application and data was collected by publishing it online in KAU Student's Community through 'Facebook'. Among the sixty four respondents, all the respondents were B.Sc. Agriculture degree holders from KAU and vast majority of the respondents were girls. Majority of the respondents are having medium level of educational, agricultural aspirations. More than three fifth of the respondents (67.19%) are most interested doing post-graduation in agricultural sciences after completing their graduation. Over one third of respondents (39.10%) were mostly interested to become innovative and progressive farmers, where as less than one-third of the respondents (29.7%) are most interested in starting agricultural subsidiary enterprises.

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## 1. INTRODUCTION

Education is the manifestation of the perfection already in man as quoted by Swami Vivekananda (excerpts from letter to "Kidi" in 1894, from Chicago). The education is meant for the production of enviable changes in the behaviour of the people. It is the production of desirable alterations in knowledge, attitudes and skills either in all of them or in one or more of them. From the Vedic era to post Independence period, Indian education system has seen remarkable transition from Gurukul system to a classless system of learning. While automation and technological advancements reduces the human labour, the need for a skilled workforce is rising in another side. To meet out the job market needs, the curriculum should match with the job demands. For the ever changing societal needs, the syllabus should transform the student in to responsible citizen. For this, education system should be suitably altered based on the growing pressure on teaching learning situation. With a vision to make over the education sector, New Education Policy (NEP) has been introduced. The New Education Policy (NEP) 2020 spotlights on re-orientation of school and higher education in India and inculcation of research-based learning and innovation in coaching. The NEP also aims to provide equitable access to the highest-quality education for all learners regardless of social or economic background.

Being an age old profession, Agriculture is the life line of our country. Apart from development new farm technologies, the assessment, refinement and dissemination to the farming community is equally important. Thus extension education is playing a vital role in transfer of technologies. Even after independence, agricultural education remained as a major national priority. Autonomous rural universities were started in various states of the country following US Land Grant Colleges pattern with integration of education, research and extension education. The agricultural education should help the agri professionals to tackle the issues in national and international scenario of globalization, food insecurity, climate change etc. The present situation demands a renewed focus for enhanced quality and relevance of higher agricultural education where agricultural scholars needed to develop knowledge, skills, ability and entrepreneurship to provide village specific extension services.

## 1.1 Agricultural Education System (AES)

Presently India is having agricultural education system guided by various components of the Indian Council of Agricultural Research (ICAR). With 101 ICAR institutes and 74 agricultural universities spread across the country, ICAR is one of the largest national agricultural systems in the world. After independence, from the state of deficiency, country has reached to the stage of self-sufficiency in food grain production. It has enabled the country to increase production of food grains by 4-fold, horticultural crops by 6-fold, fish by 9-fold (marine 5-fold and inland 17-fold), milk by 6-fold, and eggs by 27-fold since 1950-51; thus making a visible impact on the national food and nutritional security (ICAR Vision-2030). The growth achieved in agricultural sector has been attributed to the concerted efforts of skilled human resource developed through Agricultural Education System. Thus, human resource developed through Agricultural Education System in the country was primarily responsible for enhanced agricultural production and productivity.

As it is estimated that after the reduction in manpower due to superannuation in R&D, by the end of the year 2020, more than 16,000 scientific manpower would be required. For field and lab activities, skilled personnel are needed. For this, polytechnic or diploma education has to grow at a rate of 20% per annum in coming years. The Agricultural Skill Council of India (ASCI) mission aims at imparting skill for the young generation in Agricultural domain. This would help in reducing the techno divide to the tune of one agriculture extension scientist for every 1,000 population as against current availability of one per 10,000. As per the report of a project on Human Capital Requirements in Agriculture and Allied Sectors entrusted by Indian Council of Agricultural Research through National Agricultural Innovation Project (NAIP-2011), about 17,316 graduates and 6,473 postgraduates annually added to AES as agricultural expert. At present there is substantial gap of 50 per cent or more between demand and supply of manpower in agriculture and allied sciences sector. The projections indicate that by 2020, the annual out turn required for Undergraduate and above would be about 54,000 as against the present annual out turn of 24,000 with demand-supply gap of about 30,000. This warrants sincere

efforts to attract more number of students towards Higher Agricultural Education.

## 1.2 ICAR Initiatives in Tune with New Educational Policy (NEP)

ICAR through its network of 74 universities offers degree courses at the undergraduate level in 11 disciplines with emphasis on learning through hands-on-practice sessions and real time field experience training. As desired by the NEP, the postgraduate programmes in 96 disciplines and Ph.D. programmes in 73 disciplines categorically planned with multi-disciplinary approach.

### 1.2.1 New courses

Many new courses have been already introduced by the agricultural universities, in emerging fields like precision farming, Hi-tech cultivation, Artificial Intelligence (AI), Mechatronics, Nanotechnology, Food Storage Engineering, Emerging Food Processing Technologies.

### 1.2.2 Virtual learning

Under financial support of NAIP, e-Courseware on Agricultural Education (e-Krishi Shiksha) was developed. The agricultural universities have developed more than 400 virtual classrooms and e-courses for their undergraduate programmes and post-graduate courses in all the streams of agriculture education and are being supported through a centralised Academic Management System. (For more details on offline courses and online courses: <https://education.icar.gov.in/ecoursesweb.aspx>).

### 1.2.3 MOOC (Massive Open Online Courses)

The content for MOOC courses are offered in text, audio, or video formats and may require certain software or technological components to access. Many National centres viz., MANAGE, NAARM as well as IITs and State Agricultural Universities (SAUs) are conducting MOOC courses in agricultural domain.

### 1.2.4 'Krishi Megh'

The recently-launched The 'Krishi Megh' is aimed at protecting the precious data of the government's premier research body Indian Council of Agricultural Research (ICAR). It has been set up at National Academy of Agricultural Research Management (NAARM) in Hyderabad. Currently, the main data centre of the ICAR is at the Indian Agricultural Statistics Research Institute (IASRI) in the national capital. Krishi

Megh has been set up under the National Agricultural Higher Education Project (NAHEP), funded by both the government and World Bank.

## 1.3 Student READY (Rural Entrepreneurship Awareness Development Yojana)

The agricultural education focuses on preparing students to become world leaders in all dimensions of agricultural and allied sciences. The curriculum is meant for providing a platform to discover one self and apply the acquired knowledge for betterment of the humanity. The agricultural graduates should be trained and transformed as an individual to foster the social, cultural and economic growth. A major, system wide reforms of India's Agricultural Universities (AUs) is aimed for modernizing the infrastructure, update curricula and pedagogical approaches, upgrade teaching materials and laboratories, set new norms and standards for higher agricultural education, and improve human resource through the ICAR scheme "Strengthening and Development of Higher Agricultural Education in India." An one year programme "Student READY (Rural Entrepreneurship Awareness Development Yojana)" for the undergraduate courses in all the disciplines of agricultural and allied sciences. With the support and participation of the Agricultural Universities, Student READY programme was implemented in over 55 Agricultural Universities from academic sessions 2016-17. The students were trained to acquire knowledge in various field of their interest. The Components of the Student READY programme are Experiential Learning - Business Mode, Experiential Learning – Hands on Training (Skill Development), Rural Awareness Work Experience (RAWE), In Plant Training/ Industrial attachment/Internship and Student Projects.

## 1.4 Aspirations of Agricultural Scholars

Aspirations are defined as forward-looking goals or targets [1]. It is a mental image created by people about their future opportunities and regarding when, where and how they can achieve them. For the study the level of aspiration is operationalized as the goal that the individual sets for himself and that he / she strives to achieve. Aspirations play an important role in influencing how young people make life choices, how they think and feel about themselves [2] and ultimately their life outcomes. This aspirations of the agricultural graduates are having greater influence in future development of agriculture in a country. In this context, the

current study aims to find out the educational aspirations and agricultural aspirations of the agricultural graduates.

## 2. METHODOLOGY

The study was conducted in the three Agricultural Colleges namely, College of Agriculture, Vellayani; College of Agriculture, Vellanikkara and College of Agriculture, Padanakkad of Kerala Agricultural University (KAU). Well-structured questionnaire was organised and validated with the help of 'Google forms', an online application provided by Google Platform. The online form was then published in different KAU Student's Community groups existing in through the social networking site Facebook for a period of one month. Facebook was selected for this purpose due to the wider popularity of this site among youth of India as a social networking tool. Among the sixty seven random respondents, sixty four students who pursued their Under Graduation Degree in Agriculture from Kerala Agricultural University in the last ten years were selected based on the objective of the study. Simple percentage analysis was used for analysing the data.

## 3. RESULTS AND DISCUSSION

### 3.1 Educational Aspiration of Agricultural Graduates

Education improves one's capability to cope up with different situations and also helps in taking correct decisions [3]. In India students depend their parents financially to carry out their education. The parents are ready to support their children for getting higher education unlike the situation prevailing in European countries where youth stay independent both financially and from parent's supervision.

The educational aspiration is the aspiration of the agricultural towards continuing education after completing graduation in agricultural education. From the Table 1 it is evident that, more than three fifth of the respondents (67.19%) are most interested doing post-graduation in agricultural sciences after completing their graduation. Among the aspirants of higher education 31.25 per cent desire to do their doctoral studies outside India. Only 15.63% of the agricultural graduates are interested to go for management courses under agriculture, followed by 23.44 per cent who are moderately interested. More than

three-fifth of the respondents (60.94%) are not interested to study agriculture business management courses. Similarly, more than three-fifth of the respondent are not interested in either discontinuing education (68.75%) or do higher education (62.50%) outside agriculture science. The gender plays a role in higher education as more women interested in pursuing post graduate studies then men counterparts [4].

### 3.2 Agricultural Aspiration of Agricultural Graduates

Agricultural aspiration determines the real attitude of the agricultural graduates towards farming activities and to serve the farming community [5]. Interest and aspiration of the agriculture graduates to engage in agriculture and related activities are studied and presented in Table 2. Over one third of respondents (39.10%) were mostly interested to indulge in innovative and progressive farming, whereas 42.20 per cent is moderately and 18.8 per cent of the respondents are not interested in becoming a progressive farmers. Nearly three-fourth of the farmers were interested in only maintaining a kitchen garden. More than half of the respondents are interested to do farming or allied sectors along with your job at small scale only. It shows that the agricultural graduates are not fascinated with the idea of being a full time participator of agricultural activities. Rather they wanted to carry out farming activities along with their job [6]. About one-fifth of the agricultural graduates are most interested in getting engaged with Agro Service or consultancy centers. Over one-third of the respondents were moderately interested (39.10%) and not interested (34.40%). Around half of the respondents (51.60%) were not interested in any of the livestock rearing activities followed by 32.80 percent of the farmers not interested in starting any subsidiary enterprise like mushroom, beekeeping, fish rearing etc. Only less than one-third of the respondents (29.7%) are most interested in starting agricultural subsidiary enterprises.

### 3.3 Over all Aspiration Levels of Agricultural Graduates

It was observed from Table 3 and Fig. 1. that more than three-fifth of the respondents (65.25%) had overall medium level of aspiration. Only 17.19 per cent of the respondents had high level of overall aspiration and 17.19 falls in low level of aspiration. Agricultural scholars fall in the category of medium level for educational

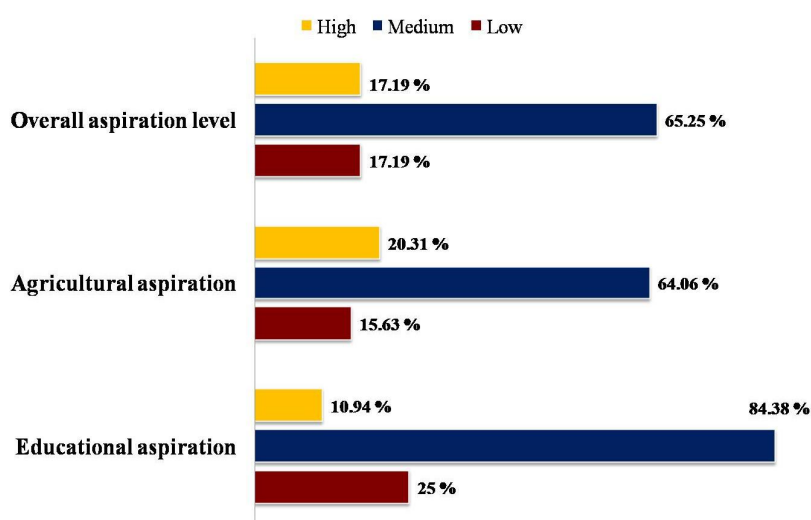
aspiration (84.38%) and agricultural aspiration (64.06%). Thus it should be mandatory for every agricultural academia in our country to develop superior agricultural aspiration among agricultural scholars so that it ultimately good to farming community.

**Table 1. Educational aspiration of agricultural graduates (n=64)**

Sl. no	Educational aspiration	Most interested		Moderately interested		Not interested	
		No.	(%)	No.	(%)	No.	(%)
1.	Continue with M.Sc. / Ph.D. in Agricultural Sciences after the present studies.	43	67.19	13	20.31	8	12.5
2.	Complete doctoral studies in foreign country	20	31.25	19	29.69	25	39.06
3.	Studying agriculture business Management courses.	10	15.63	15	23.44	39	60.93
4.	Other degree courses instead of Agricultural courses.	7	10.94	20	31.25	37	57.81
5.	Discontinuing education after this course	8	12.5	12	18.8	44	68.75

**Table 2. Agricultural aspiration of agricultural graduates (n=64)**

Sl. no	Agricultural Aspiration	Most interested		Moderately interested		Not interested	
		No.	(%)	No.	(%)	No.	(%)
1.	Innovative and progressive farmer	25	39.06	27	42.19	12	18.75
2.	Promote Agro Service/ consultancy Centre.	17	26.56	25	39.06	22	34.38
3.	Start livestock rearing (dairy and poultry) business	10	15.63	21	32.81	33	51.56
4.	Start subsidiary enterprise (Mushroom, beekeeping/fish rearing)	19	29.69	24	37.5	21	32.81
5.	Do farming or allied sectors along with your job at small scale	34	53.13	22	34.37	8	12.50
6.	Maintaining a kitchen garden alone	47	73.44	12	18.75	5	7.81



**Fig. 1. Distribution of respondents according to their aspiration levels (N= 64)**

**Table 3. Distribution of respondents according to their aspiration levels (n=64)**

Sl. no	Categories	Low Level		Medium		High	
		No.	(%)	No.	(%)	No.	(%)
1	Educational aspiration	3	4.7	54	84.4	7	10.9
2	Agricultural aspiration	10	15.63	41	64.06	13	20.31
3	Overall aspiration level	9	14.06	43	67.19	12	18.75

#### 4. CONCLUSION

From the above discussions it is clear that the majority of the students had medium level of educational, agricultural and overall aspiration. Recent studies cited that most of the farm graduates are either taking jobs in the government, or financial institutions, or in private sector industry aiming at less risk and moderate financial returns [7]. They are seldom taking to farming as a profession. Therefore efforts should be made to change the medium level of aspiration to high level of aspiration so that the farming community of the India got benefitted. The girls are consistently found to have higher educational and career aspirations than boys, in spite of the reality that men continue to achieve higher occupational status, career enhancement and financial rewards [8]. Another conclusion of the study is that students coming from the farm families had higher agricultural aspiration.

The complex life and work environments in the globally competitive situation requires students to pay rigorous attention to develop necessary Digital skills [9]. The post pandemic COVID 19, the new normal life warrants suitable modification in the curriculum of the college level education with ICT integration. The teachers are the real key persons in transforming the students. Hence a proper orientation and training should be given for the tutors to teach students with latest, modern communication gadgets. The rural entrepreneurship is the major thrust area to concentrate in near future for the up liftment of farming community [10]. More concrete efforts should be initiated to add more agri business management concepts during the under graduate programme. The syllabi should be of practical oriented and induce farm graduate for higher level of aspiration which could be possible only by eliminating the educational gaps in the present educational system.

#### DISCLAIMER

The products used for this research are commonly and predominantly use products in our

area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

#### CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline participant consent and ethical approval has been collected and preserved by the authors.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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