All India Entrance Examination
for
Admission to Bachelor and Master's Degree Programmes
(AIEEA-UG & PG)
in Agriculture & Allied Sciences and SRF (PGS)

AT A GLANCE

Education Division
Indian Council of Agricultural Research
Krishi Anusandhan Bhawan II
Pusa, New Delhi 110 012

2012

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Compiled By

Dr. M.K. Agnihotri
Dr. N. Rana
Dr. K. Sharma
Dr. Arvind Kumar

Design and Production

Dr. V.K. Bharti and Shri Punit Bhasin

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FOREWORD

AGRICULTURAL Education System (AES) in India is one of the largest national networks of its kind in the world. Concerted efforts of skilled human resource developed through AES have been instrumental in achieving a substantial growth in agricultural sector.

The Indian Council of Agricultural Research (ICAR) perpetually strives to promote talent and merit in the Agricultural Education System. To realize this, the Council has made an arrangement and understanding with Agricultural Universities to set aside 15% seats of Undergraduate (UG) and 25% seats of Post-graduate (PG) programme to be filled through All India Entrance Examination for Admission (AIEEA) conducted annually by Education Division of ICAR. From 2012 onwards, All India Competitive Examination for the award of 202 Senior Research Fellowships (SRF-PGS) for taking admission in PhD degree programmes shall also be conducted by the Education Division.

The Education Division has compiled the trends in UG & PG examination and admissions over the years. An analysis revealed a progressive increase in the number of rural candidates appearing for undergraduate examination. However, SAUs still need to play a greater and more proactive role in creating awareness to attract best talent and generating competent resources for improvement of National Agricultural Research System (NARS).

This document would be of great help in strengthening and development of higher agricultural education in the country by providing a framework and impetus to policy planning, especially to work for achieving uniform performance standards across all Universities of the NARS.

I congratulate the Education Division for bringing out this publication.

(S. Ayyappan)

PREFACE

STRENGTHENING and development of higher agricultural education in the country is one of the important activities of ICAR. To cater to the growing needs of quality manpower for research, teaching and extension activities in the country, ICAR provides development grant for building infrastructure and facilities to State Agricultural Universities to impart quality higher agricultural education. In order to reduce the inbreeding in agricultural education and promote the talent and merit, Council has made an understanding with Agricultural Universities to set aside 15% of Undergraduate and 25% seats of their Post-graduate programmes to be filled up through All India Entrance Examination for Admission (AIEEA) conducted annually by Education Division, ICAR. In 2012, ICAR conducted 17th All India Entrance Examination for filling 2,234 seats in UG and 2,812 seats in PG programme in 62 Agricultural Universities.

During the course of examination process, starting from applications received, candidates appeared and qualified for the counseling and admitted in different courses at various Universities, some useful findings/trends were noticed. The number of applicants for AIEEA (UG) has markedly increased by 90% in comparison to 2010. There are some States that remained unrepresented in the list of admissions finally made for the UG programme. Based on the number of graduates qualified in AIEEA-PG-2012 and JRFs awarded, some universities were noticed to have underperformed.

The present Report is a maiden attempt to document these observations for better understanding and comparison of past and future examinations trends. It is hoped that the Report shall prove very handy to the SAUs, students, planners, agricultural educationists and to those who are engaged in strengthening and development of higher agricultural education. It will also be helpful for the purpose of strategic planning to attract more students, in particular from low represented states, as well as to take corrective

measures to improve the performance of low performing Universities in future Examinations. The encouragement and motivation received from Dr. S. Ayyappan, Secretary (DARE) & DG (ICAR), Dr. Arvind Kumar, DDG (Edn.) and Dr. K. Sharma, ADG (HRD) to bring out this publication is gratefully acknowledged.

(M.K. Agnihotri)
Controller of Examinations (Edn.)

CONTENTS

S. No.	Topic	Page No.
	Foreword	*iii*
	Preface	*v*
1.	Introduction	1
2.	Agricultural Education System (AES) in India	1
3.	Role of agricultural education in achieving food self-sufficiency	2
4.	Emerging challenges in agriculture sector	3
5.	All India Entrance Examinations for Admission (AIEEA)	4
	5.1 17th All India Entrance Examination for Admission (AIEEA) UG-2012	5
	5.1.1 Trends in UG Examination	5
	5.1.2 Trends in UG Admissions	6
	5.2 17th All India Entrance Examination for Admission (AIEEA) PG-2012	8
	5.2.1 Trends in PG Examination	8
	5.2.2 Trends in PG Admissions	10
6.	All India Competitive Examination for ICAR Senior Research Fellowship (SRF-PGS) for Ph D	13
7.	Performance of the Universities and their brand value	13
8.	Steps taken to publicize the All India Entrance Examinations	14
9.	Scope in Higher Agricultural Education	15
10.	Need for greater investment in Agricultural Education to attract and retain talent	16
	Appendix	19

1. Introduction

Education, employment and nutrition hold the key to sustainable human development. The fast changing global scenario on food security and safety, shrinking natural resources (land, energy, water and biodiversity), trade linked issues and the climate change effects poses a major challenge to provide quality, safe, adequate and balanced nutrition to a large human population and keeping the agricultural farming economically rewarding. To meet this challenge, sustained efforts are required towards scientific and knowledge based advancements in agriculture and allied sectors rather than input based. In this endeavour, Indian Council of Agricultural Research (ICAR) and Agricultural Universities (AUs), spread over in various agro-ecological zones of the country, have played a key role in transforming agricultural scenario of the country through sustained research and extension backed by competent human resource generated from these institutions.

Agricultural Universities in partnership with ICAR are striving hard in imparting quality education. Human resource has been developed to meet not only the regional needs but also the states and country's requirements to refurbish the growth rate in agricultural sector. AUs are also pursuing research projects relevant to some of the emerging regional problems being faced by the farmers and striving hard to develop linkages between learning and research for the betterment of life of the farmers in the country.

2. Agricultural Education System (AES) in India

It is one of the largest national networks of AES in the world, comprising 54 State Agricultural Universities (SAUs), 5 Deemed-to-be-Universities, one

Central Agricultural University and four Central Universities having agriculture faculty. ICAR works in a partnership mode with SAUs and has contributed significantly in developing first rate human resource by way of coordinating, supporting and guiding various aspects of higher agricultural education. It provides funds for development and strengthening facilities in vital areas, training to faculty and scholarships/fellowships to the students for quality assurance.

3. Role of agricultural education in achieving food self-sufficiency

The growth achieved in agricultural sector has been attributed to the concerted efforts of skilled human resource developed through AES. After independence, from the state of deficiency, country has reached to the stage of self-sufficiency in foodgrain production. It has enabled the country to increase production of foodgrains 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). Thus, human resource developed through Agricultural Education System in the country was primarily responsible for various agricultural revolutions, viz. green, white, blue, yellow and pink leading to enhanced agricultural production and productivity. Not only this, the scientific expertise developed and research facilities manned by highly skilled and trained persons have been internationally recognised and a number of developing and developed countries have shown keen interest to work together and get mutually benefited through exchange programmes and collaborative research projects.

4. Emerging challenges in agriculture sector

Today, agriculture faces many challenges such as (i) decreasing profitability in farming, (ii) mounting threat to sustainability arising from depleting quality of natural resources, biotic and abiotic stresses and inefficient use of agro-inputs, (iii) rising quality competitiveness under the pressure of globalization, and (iv) a general lack of qualified manpower in the frontier areas to deliver at grassroots level. To properly address these challenges, competent human resource in sufficiently large numbers would be required in the near future and for that a renewed thrust for higher agriculture education is necessary with enhanced financial support to the ICAR-AU system.

It is estimated that by the year 2020, more than 16,000 scientific manpower would be required to cater to the needs of R&D in the country. Country needs diploma: agriculture graduates in the ratio of 10:1. For this, polytechnic education has to grow @ 20% per annum in the next decade. This would satisfy the prescribed norm of one agriculture extension person 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), the existing education system is producing 17,316 graduates and 6,473 post-graduates annually who are eligible to become agriculture scientist. 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 outturn required for Undergraduate and above would be about 54,000 as against the present annual outturn of 24,000. Based on the current supply, the demand-supply gap would be about 30,000. That means sincere efforts are required to attract more number of students towards Higher Agricultural Education.

5. All India Entrance Examinations for Admission (AIEEA)

The Council has made an arrangement with Agricultural Universities to set aside 15 % of their seats for Bachelor's and 25% seats for Master's degree programmes to be filled through All India Entrance Examinations. Accordingly, ICAR conducts two All India Entrance Examinations for Admission (AIEEA)-one for Bachelor's degree and another for Master's degree programme, every year. For the ICAR-Deemed-to-be-Universities such as IARI, IVRI, NDRI and CIFE, 100% seats are filled through the above examinations.

The basic objectives of All India Entrance Examination are to reduce the inbreeding in agricultural education by encouraging mobility amongst students to go for study outside their home states, infuse merit and encourage the talent and national integration and promote uniform examination standards across the AUs leading to improved overall quality of Higher Agricultural Education in the country.

Degree courses in 11 UG disciplines are offered with emphasis on learning through hands on practice sessions and field experience training. The PG programmes are offered in more than 93 disciplines.

As per the provisional figures of HRD ministry (2012), the Gross Enrolment Ratio (GER) for higher education in India has shot up from 12.4 to 20.2 % and if the same trend continues, by 2029, it is expected to achieve the figure of 30-35%. The ratio for developed countries is 35-40%, whereas the world average is 23%. The Gross Enrolment Rate for Agricultural Education, out of the total eligible population in the country is only 0.03%, whereas against the total eligible rural population it is 0.04% which is quite low.

5.1 17th All India Entrance Examination for Admission (AIEEA)-UG-2012

For Admission to 15% seats in 11 Bachelor degree programmes and award of National Talent Scholarship (NTS) for the academic session 2012-13, the examination was conducted on 14th April 2012 at 39 examination city centers, involving 94 venues, across the country to enable a large number of candidates to appear in this examination and the results were declared, both for UG & PG, on 18th May 2012.

5.1.1 Trends in UG Examination

A record number of 57,627 candidates applied (Fig. 1) and 51,939 candidates (90.13%) appeared in the examination which is remarkably higher (17,198 number, 49.50%) than 34,741 candidates appeared during 2011 (Fig. 2). Candidates from all the 35 states and UTs appeared in the examination. Total 5,832 (11.23%) candidates were called for counseling for admission in various Bachelor degree programmes.

The top three states with the highest number of applicants were (i) Rajasthan (10,396) (ii) Kerala (7,532) and (iii) Bihar (7,411), whereas states with the highest number of qualified candidates were (i) Kerala (1,427)

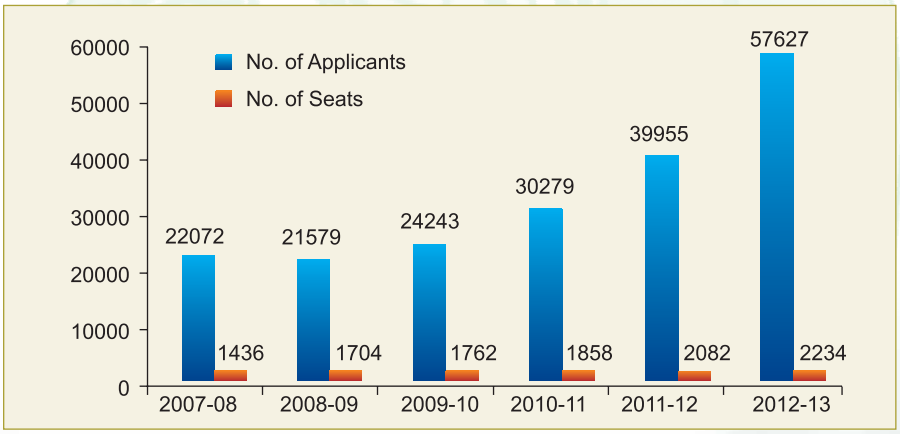

Fig. 1. Temporal Patterns in UG Examinations

(ii) Rajasthan (1,237) and (iii) Bihar (708). The top three centers with the highest % of qualified candidates were (i) Mannuthy – 21.24%, (ii) Cochin – 20.91%, and (iii) Kota – 19.49%.

The average score of marks for Biology/ Agriculture and Mathematics Streams was 191, 136 and 137, respectively. The trends for the last three years, based on the number of seats available and the number of candidates short-listed for counseling and category-wise distribution of applicants for 2012 is depicted in Fig. 2.

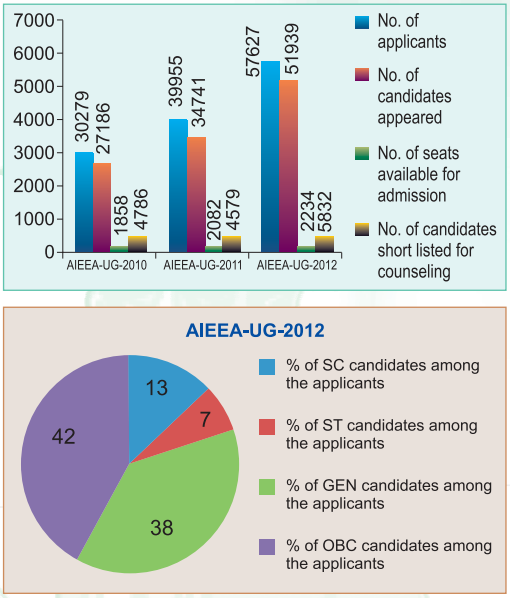

Fig. 2

5.1.2 Trends in UG Admission

A total of 5,832 candidates-3,484 boys (59.74%), 2,348 girls (40.26%) against 2,234 seats were called for the counseling. For Stream-A (Biology/ Agriculture), 4,527 candidates and for Stream-B (Mathematics), 1,305 candidates were invited. As may be seen from the Table 1, the number of seats in Universities is increasing, year after year, indicating more demand amongst the students at state level for pursuing their career in agriculture sector. In comparison to 2011-12, (2,086 seats), the number of seats has increased by 148 during 2012.

A record number of 1,875 seats (84%) were filled up during 2012. During 2011, only 84.6% seats could be filled-up, including 2nd counseling. In the subjects namely Agriculture, Agriculture Engineering, Dairy Technology, more than 90% seats were filled up, whereas in Agricultural Marketing & Cooperation and Biotechnology, 100 % seats were filled up. Like previous years, there were very few takers for Home Science and only 11% seats could be filled up out of

total 148 seats. Excluding Home Science, the percentage of seats filled works out to be about 89%. The possible reasons for lesser interest in Home Science could be the nomenclature of degree programme which appears to be less attractive and the girl candidates prefer to stay in their home states to study 'Home Science'. Some general universities, unlike SAUs, also offer three years B.Sc. Home Science programme thereby saving one year of students. For the PG admissions, the trend was different and 91.50% seats were filled during this year.

Out of 1,875 candidates granted provisional admission, 713 (38%) were the female candidates. The highest number of 281 (76%) female candidates, out of total 372 admitted, was from Kerala State.

The number of candidates who opted for **wait-list** was 267 (91 for Stream B and 176 for Stream A). Therefore, 1,875 admitted + 267 wait listed, total 2,142 candidates (**37.72%**) **turned up for the counseling** against 2,234 seats available for admission.

Table 1. Subject-wise seats filled for UG admissions during 2012 vis-à-vis 2011

Course	Seats in 2011	Seats in 2012	Seats allotted in 2011	Seats allotted in 2012	% filled 2011	% filled 2012
Agriculture	1058	1125	1058	1085	100	96.4
Horticulture	202	244	163	159	80.7	65.2
Forestry	94	95	73	74	77.7	77.9
Fisheries	89	95	56	42	62.9	44.2
Home Science	152	148	21	16	13.8	10.8
Sericulture	9	9	2	4	22.2	44.4
Agricultural Engg.	208	229	188	226	90.4	98.7
Dairy Tech.	117	104	104	101	88.9	97.1
Food Science	75	90	44	73	58.7	81.1
Agri. Mkt. & Coop	36	38	15	38	41.7	100
Biotechnology	42	57	38	57	90.5	100
Total	2082	2234	1762	1875	84.6*	84.00

**Including 2nd counseling*

State-wise number of candidates admitted (UG)

The number-wise top five states from which the candidates were recommended for admissions were Kerala with 372 candidates followed by Rajasthan 361, Bihar 344, M.P. 199 and U.P. 155. From the states like Tamil Nadu (1), Gujarat (1), Asom (1), Arunachal Pradesh (1), A.P. (7), the number of admitted candidates was very low. Out of 35 states/UTs, the nine states/UTs namely Andaman & Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu, Karnataka, Maharashtra, Mizoram, Puducherry, Sikkim and Tripura remained unrepresented.

National Talent Scholarship (NTS) is awarded (₹ 1,000 per month) to all those candidates who take admission outside their state of domicile and would maintain prescribed academic standards.

5.2 17th All India Entrance Examination for Admission (AIEEA)-PG-2012

For admission to Master's degree programmes in 62 Agricultural Universities and award of ICAR-JRF (PGS), the examination was held on 15th April 2012. There were 20 Major subject groups for the examination which was held at 29 Examination City centers (37 venues) across the country.

5.2.1 Trends in PG Examination

Out of total 20,896 candidates (Fig. 3) that applied, 18,693 (89.45%) appeared in the examination (Fig. 4). Against 2,812 seats, 8,321 candidates (males: 5,214, females: 3,107) were short listed for the counseling. In comparision to 2010, there has been only a marginal increase in number of applicants, though the candidates from all 35 states & UTs applied warranting

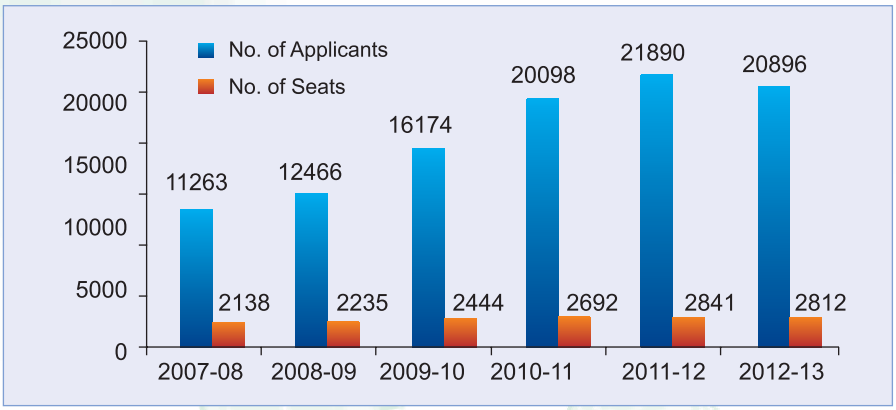

Fig. 3. Temporal Patterns in PG Examinations

sincere efforts to attract more agricultural graduates to go for post-graduation to meet the increasing demand of manpower for teaching, research and extension.

The top ranking three states with the highest number of qualifying candidates were (i) Karnataka (1,021), (ii) Maharashtra (889) and (iii) Uttar Pradesh (883). The examination city centers with the highest % of qualified candidates were (i) Srinagar (81.60), (ii) Thiruvananthapuram (71.35) and (iii) Jammu (68.31). The trends for the last three years, based on the number of seats available and the number of candidates short-listed for counseling, and category-wise distribution of applicants for AIEEA-PG-2012 is depicted below.

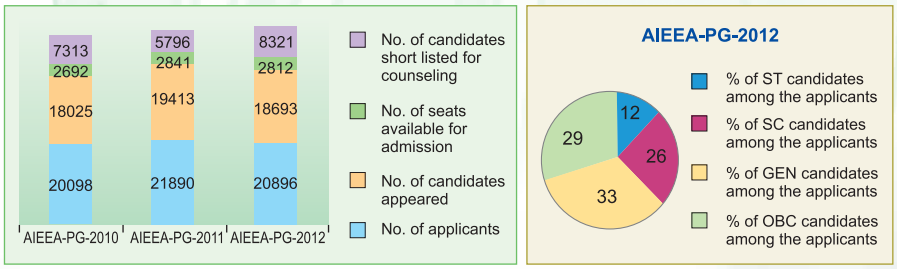

Fig. 4

It is interesting to note that in comparison to UG where percentage of SC and ST applicants was only 12.80, 7.20; in PG, it was almost double being 26 and 12%.

5.2.2 Trends in PG Admissions

A total of 8,321 candidates, against 2,812 seats, were called for the counseling. A record number of 2,404 seats were filled up during this year.

Table 2. Subject-wise seats filled for PG admissions during 2012 vis-à-vis 2011

Subject Code	Subject	Total seats		Seats filled		Vacant seats		% Filled	
		2012	2011	2012	2011	2012	2011	2012	2011
01	Plant Biotechnology	158	153	104	100	54	53	65.82	65.35
02	Plant Sciences	350	333	317	274	33	59	90.57	82.28
03	Physical Science	180	182	125	96	55	86	69.44	52.74
04	Entomology & Nematology	154	162	151	138	3	24	98.05	85.18
05	Agronomy	152	154	146	136	6	18	96.05	88.31
06	Social Sciences	232	215	205	132	27	83	88.36	61.39
07	Statistical Sciences	43	43	28	16	15	27	65.11	37.20
08	Horticulture	203	204	200	194	3	10	98.52	95.09
09	Forestry/Agro-Forestry and Silviculture	54	45	42	24	12	21	77.77	53.33
10	Agril. Engineering & Technology	129	121	120	111	9	10	93.02	91.73
11	Water Science & Technology	2	16	2	2	0	14	100.00	12.50
12	Home Science	106	103	97	62	9	41	91.50	60.19
13	Animal Biotechnology	63	64	34	30	29	34	53.96	46.87
14	Veterinary Science	333	341	304	277	29	64	91.29	81.23
15	Animal Sciences	298	351	239	232	59	119	80.20	66.09
16	Fisheries Science	129	123	123	122	6	1	95.34	99.18
17	Dairy Science	23	31	16	24	7	7	69.56	77.41
18	Dairy Technology	36	40	28	30	8	10	77.77	75.00
19	Food Science Technology	47	45	41	24	6	21	87.23	53.33
20	Agri. Business Management	120	111	82	49	38	62	68.33	44.14
	Total	2812	2841	2404	2073	408	768	85.49	72.96

Out of the total candidates recommended for admissions, 854 (36%) were girl candidates. Amongst the 20 major disciplines, the highest number of 107 female candidates (out of 304) took admission in Veterinary Science followed by 98 in Plant Sciences (out of 317) and 96 in Home Science.

The number of candidates who opted for wait-list was 868 (for 20 major subjects). Therefore, 2,404 admitted + 868 wait listed, total 3,278 candidates **(39.39%) turned up for the counseling** against 2,812 seats available for the admission.

The **ICAR-Junior Research Fellowship** (₹ 12,000 per month for Veterinary graduates and 8,640 per month in other cases plus contingent grant of ₹ 6,000 per year for two years) for post-graduate studies (ICAR-JRF-PGS) was awarded to 472 candidates based on their merit in AIEEA-PG-2012 and taking admission in universities other than from where the candidates had graduated. There are 475 JRFs available for different disciplines.

Rural vs. Urban candidates

Out of the total candidates appeared in UG Examination, 59% were from villages, 23% from towns and remaining from the cities (Fig. 5). In PG, the percentage of candidates appeared from villages was lower than UG being 49%. The percentage of candidates from rural areas is more or less static at least for the last three years.

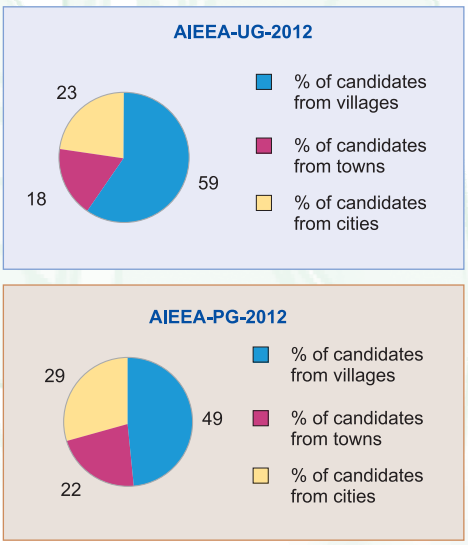

Fig. 5

Gender-wise distribution of applicants

Out of the total number of applicants, 36% were the females in UG and 37% in PG (Fig. 6). In comparison to 2010, the number of female applicants has increased (in UG by 2.50% and PG by 6%) indicating increasing interest of girls towards higher agricultural education. The number of candidates short listed for counselling was in general three times the number of total seats intimated by the universities in a particular subject.

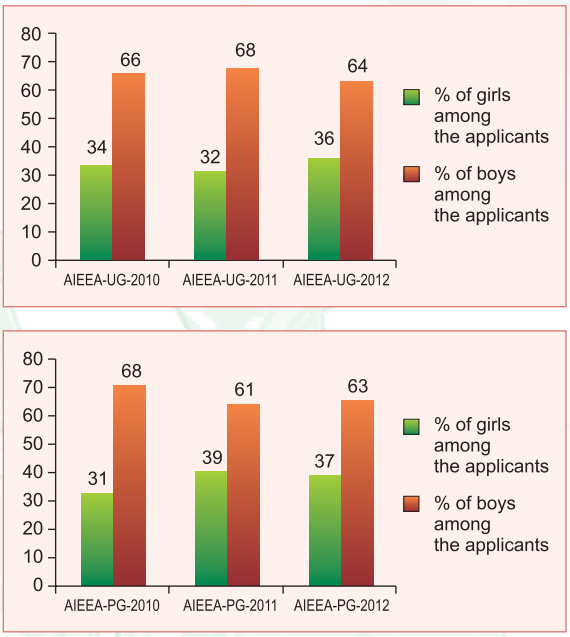

Fig. 6

Examination Board-wise number of candidates qualified and admitted

In UG Examination, the candidates from more than 30 Secondary Education Boards appeared. Out of 5,832 candidates **qualified** from different boards, the highest number (2,201) was from CBSE followed by 1,032 from Rajasthan Board of Secondary Education, 955 from Kerala Board of Public Examinations, 338 from Orissa Council of Higher Secondary Education. The highest number of 701 candidates **admitted** was from CBSE followed by 300 from Rajasthan Board, 243 from Kerala Board, 192 from Bihar Board and 141 from M.P. Board. The candidates from other boards admitted were less in number than these boards.

Preferred Medium of examination

Out of total candidates appeared in UG examination, only 18,034 (35%) opted Hindi as their medium of examination, 1,411 qualified and 463 were admitted in different universities. The preferred language for the UG examination was English.

6. All India Competitive Examination for ICAR Senior Research Fellowship (SRF-PGS) for Ph D

In order to develop quality human resource to meet the requirements of 21st century, the competitive examination for the award of 202 SRF was held on 4th December, 2011 at 11 Examination city centres across the country and the result was declared on 21 February 2012. A total of 189 Senior Research Fellowships were awarded to the qualified candidates. A total of 592 candidates were declared qualified without fellowship for Ph D admission in 13 major subject groups having 56 sub-subjects. For computing the merit, 75% weightage is given for the marks obtained in written examination and 25% weightage for past academic performance. From 2012 onwards, the SRF examination will be conducted by Education Division (ICAR).

7. Performance of the Universities and their brand value

The top five universities, based on the number of their graduates that qualified the AIEEA-PG, are UAS GKVK, Bengaluru with 421 candidates, ANGRAU, Hyderabad 388 candidates, GBPUA&T, Pantnagar 316 candidates, Dr. PDKV, Akola 313 candidates and OUA&T, Bhubaneswar with 311 candidates.

Though the number of candidates qualified from these universities is higher, it was interesting to note that out of 215 total qualified candidates from CAU Imphal, 125 (58%) took admissions, indicating the highest turn out percentage and the rising interest of NE students in higher agricultural education.

One of the yardsticks to measure the performance of Universities could be the number of JRFs produced. In 2012, GBPUA&T Pantnagar with production of 32 JRFs stood first (Table 3) followed by UAS, Bengaluru with 28 JRF, SKUAS&T, Srinagar 27 and CAU, Imphal 25. With 472 candidates admitted with JRF, 70 preferred IVRI, 66 IARI, 45 Pantnagar and 34 NDRI, Karnal indicating the higher "brand value" for ICAR DU's. Amongst the SAUs, both in terms of "brand value" as well as performance in AIEEA-PG, GBPUA&T, Pantnagar stood the best.

Table 3. No. of graduates winning ICAR Research Fellowships vis-à-vis the best performing University in the country

Year	Total No. of fellowships awarded	Highest No. of fellowships won by graduates of one State Agricultural University	Name of the State Agricultural University whose graduates won the highest number of fellowships
ICAR Junior Research Fellowships			
2012	472	32	GBPUA&T, Pantnagar (UK)
2011	472	34	KAU, Thrissur (Kerala)
2010	468	44	KAU, Thrissur (Kerala)
2009	472	33	KAU, Thrissur (Kerala)
ICAR Senior Research Fellowships**			
2012*	-	-	-
2011	189	35	IARI, New Delhi
2010	186	23	IVRI, Izatnagar, Bareilly
2009	174	27	UAS, Bangalore

** The examination shall be conducted on 21-04-2013*
*** Candidates having passed Master's degree are eligible for ICAR- SRF (PGS)*

8. Steps taken to publicize the All India Entrance Examination

The Education Division of ICAR has taken some new initiatives to widely publicize the All India Entrance Examination notification/dates with the help

of ICAR Institute Directors, Zonal Project Directors/KVKs, SAUs, etc and also delivering talks in Inter-colleges, AIR, Doordarshan, etc. about the scope of agricultural education. The observance of **Agricultural Education Day** by the ICAR Institutes has helped in a great way to increase the awareness and the number of applicants. The introduction of "**Online application**" procedure was another reason for increase in the number of applicants.

9. Scope in Higher Agricultural Education

Large number of Master degree holders from agricultural sciences goes for higher education in Indian Universities and abroad. The degrees awarded by the Universities associated with the ICAR are well recognized and accepted for higher education globally. Some of the post-graduates also start their own business units including the Agri-clinics and Agro Service Centres. The RAWE and Experiential Learning programmes funded by ICAR, being the integral part of the degree programmes, make the agricultural graduates more capable and confident in handling the field and industry problems.

The passed out graduates get employment in various sectors such as 33 per cent in government, 44 per cent in private, 10 per cent in financial, 4 per cent in research and academic and 9 per cent in others (NAIP report - 2011). The major shift in the past three decades has seen decline in the share of public sector in employment, which could be due to freezing employment in government sector as well as expansion of opportunities in the private sector.

The following are some of the sectors providing placement to the agricultural graduates/post-graduates:

(i) Development, research and teaching departments/institutions/ universities of Central and State Governments

(ii) Commercial Banks and Insurance Sector

(iii) Area development/watershed development agencies including NGOs

(iv) Industry dealing with fertilizers and plant nutrients

(v) Plant protection chemicals, insecticides and pesticides, veterinary drugs manufacturing and marketing companies

(vi) Organizations dealing in seeds and planting materials

(vii) Industries dealing with agriculture machinery, sericulture, horticulture, marine and fisheries, dairy, poultry, meat and feed etc.

(viii) Manufacturers and suppliers of irrigation systems

(ix) Agricultural and animal products processing industry

(x) Multi-Nationals dealing with production, field evaluation, and marketing of agricultural inputs including export marketing and consultancy services etc.

10. Need for greater investment in agricultural education to attract and retain talent

The lack of qualified manpower in adequate numbers in the frontier areas of agricultural science and technology is one of the major constraints to deliver at grassroots levels for achieving farm prosperity and in taking forward the desired growth rate in agriculture sector. There is a direct relationship between investment in education and poverty elevation as it helps in sustenance of agricultural productivity and profitability. SAUs need to play a greater and more proactive role in attracting best talent by providing enabling environment and facilities at the colleges for the all round development, growth and employment of students. States should provide more funds to the SAUs to

modernize and strengthen the infrastructure facilities to better equip themselves to meet the newer challenges in the sector.

The present average annual growth rate in foodgrain production is only 0.91% and by 2020-21 it is projected to reach 1.93 per cent. To achieve average annual growth of above 4%, allied sectors have to be taken on board as we would require not only food but the balanced diet with adequate nutrition. For increasing production and productivity on sustainable basis, the new technologies developed through concerted R&D efforts are going to hold the key for success. Some bigger initiatives with mega investments would be required to produce the competent human resource, not only for the research and teaching purposes but also to effectively deliver the technologies at the grass root level to give momentum to get the optimum production.

Agriculture as a subject is selected by mediocre students, whereas the meritorious ones opt for medicine, engineering, management courses etc. to pursue their career. Therefore, talent available within the available stuff has to be nurtured by providing excellent teaching environment and facilities. The faculty should be adequately knowledgeable, updated, trained and highly motivated to teach the newer concepts and methodologies. The college campuses ought to be world class to develop 'first sight love' to the institution by students and ultimately to the profession. The frail infrastructure and facilities available in the educational institutions can in no way enthuse to a new entrant about the profession.

In the line of IIMs, IITs, AIIMS, this is the high time to establish world class institution of higher agricultural education in the country mainly focussing PG teaching and related research to attract and nurture the best talent and

also draw more number of foreign students. For globalizing agricultural education, campuses can be set up abroad; more collaborative projects may be initiated along with more student exchange programmes. Public funding in several states to AUs especially to newly created one has to improve. Instead of creating new universities, the existing universities should be strengthened. There should be serious efforts for reduced inbreeding, improving quality and number of faculty. For better employability of students focus may be given for attaining excellence in areas of strategic importance such as IPRs, WTO-related areas, techno-legal specialties, agri-business etc. New centres / Meta universities under emerging cutting edge technologies, viz. biosensors, genomics, biotechnology, nanotechnology, biotic & abiotic stress management etc., may be thought of. There is need for institutional capacity building, and establishing linkages/partnerships with other institutions/stakeholders and faculty and students exchange programmes. The number and scope of fellowships need to be substantially enlarged to attract and retain the young talents.

In 12th Plan, the emphasis is on achieving the growth rate of 4% in agriculture sector. To achieve this target, a large number of technically trained manpower would be required to provide the teaching, research, extension and development backup and support. The Education Division, ICAR is making all out efforts to attract and nurture the talent to provide quality manpower as per emerging need in the coming years.

Appendix

Number of JRF's secured by the graduates of the Universities during AIEEA-PG-2012

Sl. No.	Name of the University	No. of JRF awarded
1.	Acharya NG Ranga Agricultural University, Rajendra Nagar, Hyderabad-500030 (Andhra Pradesh)	12
2.	Anand Agricultural University, Anand –388110 (Gujarat)	5
3.	Assam Agricultural University, Jorhat-785013 (Assam)	6
4.	Bidhan Chandra Krishi Viswa Vidyalaya, Mohanpur, Nadia-741252 (WB)	16
5.	Bihar Agricultural University, Sabour, Distt. Bhagalpur-813210 (Bihar)	2
6.	Central Agricultural University, Imphal, Manipur-795004	25
7.	Ch. Sarwan Kumar Himachal Pradesh Krishi Viswavidyalaya, Palampur- 176062 (Himachal Pradesh)	8
8.	Chandra Shekhar Azad University of Agriculture & Technology, Kanpur- 208002 (Uttar Pradesh)	6
9.	Chaudhary Charan Singh Haryana Agricultural University, Hisar- 125004 (Haryana)	4
10.	Dr. Balasaheb Sawant Kokan Krishi Vidyapeeth, Dapoli, Distt. Ratnagiri-415712 (Maharashtra)	7
11.	Dr. Punjabrao Deshmukh Krishi Vidyapeeth, Krishinagar, Akola – 444104, (Maharashtra)	21
12.	Dr. Y. S. R. Horticultural University, D. C. C. Bank Building, P.B. No. 7, Adepalligudem-534101, West Godawari Distt. (A. P.)	11
13.	Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana- 141004 (Punjab)	1
14.	Govind Ballabh Pant University of Agriculture & Technology, Pantnagar, Distt. Udham Singh Nagar- 263145 (Uttaranchal)	32
15.	Indira Gandhi Krishi Viswa Vidyalaya, Krishak Nagar, Raipur- 492012 (Chhattisgarh)	5
16.	Jawaharlal Nehru Krishi Viswa Vidyalaya, Adhartal, Jabalpur-482004 (Madhya Pradesh)	3
17.	Junagarh Agricultural University, Junagarh-362001 (Gujarat)	2
18.	Karnataka Veterinary, Animal and Fisheries Sciences University, Nandinagar, Bidar – 585401 (Karnataka)	9
19.	Kerala Agricultural University, Vellanikara, Thrissur-680656 (Kerala)	18
20.	Kerala Veterinary and Animal Science University, Pookot, Wayanad-673576, (Kerala)	13
21.	Keraal University of Fisheries and Ocean Studies, Panangad P.O., Kochi-682506	1
22.	Madhya Pradesh Pashuchikitsa Vigyan Vishwa Vidyalaya, Jabalpur (MP)	9
23.	Maharana Pratap University of Agriculture &Technology, Udaipur-313001 (Rajasthan)	11
24.	Maharashtra Animal & Fisheries Sciences University, Seminary Hills, Nagpur-440006 (Maharashtra)	7

Sl. No.	Name of the University	No. of JRF awarded
25.	Mahatma Phule Krishi Vidyapeeth, Rahuri-413722 (Maharashtra)	11
26.	Marathwada Agricultural University, Prabhani-431402 (Maharashtra)	12
27.	Narendra Dev University of Agriculture &Technology, Kumarganj, Faizabad- 224229 (Uttar Pradesh)	4
28.	Navsari Agricultural University, Erucharrasta, Vijalpore, Navsari-396 450 (Gujarat)	2
29.	Orissa University of Agriculture & Technology, Siripur, Bhubaneswar, Khurda- 751003 (Orissa)	21
30.	Punjab Agricultural University, Ludhiana- 141004 (Punjab)	3
31.	Rajendra Agricultural University, Pusa, Samastipur-848125 (Bihar)	2
32.	Rajmata Vijayarje Scindia Krishi Vishwa Vidyalaya, Race Course Road, Gwalior-474002 (M. P.)	2
33.	Sardar Ballabh Bhai Patel University of Agri. &Technology, Modipuram, Meerut – 250110 (U. P.)	4
34.	Swami Keshwanand Rajasthan Agricultural University, Bikaner-334002 (Rajasthan)	6
35.	Sam Higginbottom Institute of Agriculture, Technology & Sciences, (Deemed-to-be-University) Naini, Allahabad-211007 (Uttar Pradesh)	1
36.	Sardar Krushinagar- Dantiwada Agricultural University, Sardar Krushinagar, Dantiwada,Distt. Banaskantha – 385506 (Gujarat).	2
37.	Sher-e-Kashmir University of Agricultural Sciences & Technology, RailwayRoad, Jammu-180004 (Jammu & Kashmir)	7
38.	Sher-e-Kashmir University of Agricultural Sciences & Technology of Kashmir, Shalimar, Srinagar-191121 (Jammu & Kashmir)	27
39.	Sri Venkateswara Veterinary University, Regional Library Building, Tirupati, Chittoor– 517502. (Andhra Pradesh)	3
40.	Tamil Nadu Agricultural University, Coimbatore-641003 (Tamil Nadu)	7
41.	Tamil Nadu Veterinary& Animal Sciences University, Chennai-600051 (TN)	10
42.	University of Agricultural Sciences, Dharwad-580005 (Karnataka)	18
43.	University of Agricultural Sciences, GKVK, Bangalore-560065 (Karnataka)	28
44.	University of Agricultural Sciences, Raichur—584101 (Karnataka)	7
45.	Uttar Bang Krishi Viswa Vidyalaya, P.O.Pundibari, Cooch Behar-736165 (WB)	7
46.	University of Horticulture Sciences, Bagalkot- 587102 (Karnataka)	8
47.	U.P. Pandit Deen Dayal Upadhaya P.C.V.V.V evam Go Anusandhan Sansthan, Mathura – 281001 (Uttar Pradesh)	13
48.	Visva Bharati Palli Siksha Bhavan, Sriniketan-731236 (W.B.)	6
49.	West Bengal University of Animal & Fishery Sciences, 68 K B Sarani, Belgachia, Kolkata-700037 (West Bengal)	2
50.	Institute of Agricultural Sciences, Banaras Hindu University, Varanasi -221005	16
51.	Delhi University	3
52.	Other Universities	6
	Total	472