

Talent for Responsive Agriculture



Education Division

Indian Council of Agricultural Research
Krishi Anusandhan Bhavan II, Pusa, New Delhi-110 012

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Foreword

Globalization has brought in substantial changes to the character and function of education worldwide. The complexities of and interactions between local, regional and global forces are exerting a profound influence on education policies. In agriculture education sector, such complexities have created unending demand for agricultural knowledge, skill and attitude in rural youth.

Development of quality human resources is one of the crucial parameters for sustainable development of agriculture across diversified agro-ecological regions of India. To realize the ever increasing targets of growth rate for agriculture sector, adequate trained manpower to provide teaching, research, extension and development in NARS (National Agricultural Research System) is required for technical backstopping. In order to address the challenges for manpower development in agriculture, ICAR has fostered a countrywide arrangement with the universities under ICAR-AU system to set aside 15% and 25% of their seats for Bachelor and Master's degree programmes to be filled through All India Entrance Examination for Admission (AIEEA) conducted annually by Education Division. All India Competitive Examination to award 202 Senior Research Fellowships for pursuing Doctoral degree programmes is also annually conducted by the Education Division.

The Education Division has brought out "Talent for Responsive Agriculture" a utilitarian compilation of the trends in UG, PG and SRF(PGS) examination over the years. In-depth analysis of trends related to talent getting attracted towards higher agricultural education and comparative performance-based ranking of different universities throws light on a more proactive role required on part of SAUs for creating the awareness to attract best talent and generation of competent human resources to address the new and emerging challenges in Agricultural Sector.

Systematic capacity building in agriculture requires a supportive and enabling policy environment and a realistic investment in both formal and non-formal agricultural education. This document is expected to provide insights into the dynamics of talent requirements



for Agricultural Education System (AES) for policy planning and working towards achieving uniform performance standards across the board in all Universities.

I congratulate the Education Division for bringing out this publication.

A handwritten signature in blue ink, appearing to read 'S. Ayyappan', is positioned above the printed name.

(S. Ayyappan)

Dated the 16th December, 2013
New Delhi

Preface

Strengthening and streamlining of higher agricultural education system to enhance the quality of human resource in agri-supply chain is one of the important requirements to meet future challenges in agriculture sector in the country. This calls for regular manpower planning with focus on research and development system.

The Education Division of ICAR annually conducts All India Entrance Examination for Admission (AIEEA) to undergraduate (AIEEA-UG) and postgraduate (AIEEA-PG) programmes along with the All India Competitive Examination for the award of Senior Research Fellowships for pursuing Doctoral degree programmes in Agriculture and Allied Sciences in the universities under ICAR-AU system. The basic objective of these examinations is to reduce inbreeding in agricultural education by encouraging mobility amongst students, infuse merit, encourage talent and national integration and promote uniform examination standards across the universities, thereby leading to an overall improvement in the quality of Higher Agricultural Education in the country. In 2013, ICAR conducted 18th All India Entrance Examination for filling 2,285 seats in UG and 2,851 seats in PG programme in 65 Agricultural Universities along with All India Competitive Examination to award 202 Senior Research Fellowships in different disciplines of Agriculture and Allied Sciences. The number of applicants for AIEEA-UG-2013 has remarkably increased by 66.70% vis-à-vis AIEEA-UG-2012. The percentage of candidates from rural areas is more or less static at least for the last three years that warrants aggressive campaigning to popularize agricultural education amongst the rural youths/students. There was 13.82% increase in the number of applicants for AIEEA-PG-2013 in comparison to last year. In comparison to 2010, the number of female applicants has increased to the tune of 6% in UG and 7% in PG, reflecting gradually increasing interest of girls towards higher agricultural education in the country. About 28% increase in the number of female awardees without SRF was registered in 2013 vis-à-vis 2011 indicating an encouraging picture in terms of the total number of females qualifying this examination.



The present report “Talent for Responsive Agriculture” containing an assessment of the past examination trends and providing insights into future examination trends is expected to be beneficial to the SAUs, students, academicians, policy planners and agricultural educationists directly or indirectly working for strengthening and development of higher agricultural education in the country. This publication is also intended to provide clues to the low performing universities so that they can take required corrective measures to be in line and offer competition to the universities with better performance.

The inspiration and motivation received from Dr. S. Ayyappan, Secretary (DARE) & DG (ICAR), Dr. Arvind Kumar, DDG (Edn.) and Dr. K. Sharma, ADG (HRD) is gratefully acknowledged.

A handwritten signature in blue ink, appearing to read 'M.K. Agnihotri', is positioned above the name.

(M.K. Agnihotri)

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Talent for Responsive Agriculture

1.0 Introduction

The history of agricultural education in India can be traced back to medieval period when study of agriculture was included in the curricula of Nalanda and Takshashila Universities as an important subject. However, formalized courses in agricultural education began only at the beginning of 20th Century when six agricultural colleges were established at Kanpur, Lyalpur, Coimbatore, and Nagpur in 1905, at Pune in 1907 and at Sabour in 1908 under the General Universities. After independence in 1947, the Government of India initiated an extensive planning process. To ensure orderly growth, the ICAR took the lead and drafted a Model Act, and encouraged the setting up of exclusive



Protected Cultivation

State Agricultural Universities for research and education support.

The first Agriculture University in the country was set up in 1960 at Pantnagar (now in Uttarakhand State), which paved the way for establishment of agricultural universities in other states. By the year 1978-79, 21 SAUs were established which at present has gone up to 56. The intake capacity of students, which was less than 5,000 in 1960, has now gone up to 37,000. With about 317 constituent colleges, these AUs enroll, on annual basis, about 15,230 students at UG level, over 11,400 at Masters' level and 1,000 in Ph.D. programmes. In addition to this, there are 158 private affiliated



colleges and 41 colleges under general universities enrolling around 10,000 students annually. Degree courses at undergraduate level are offered with an emphasis on learning through hands on practice sessions and rural work experience.

Sixty six years ago, Pt. Jawahar Lal Nehru, the first Prime Minister of India, said that –*‘Everything else can wait but not agriculture’* which holds true even today, agriculture being a driver of country’s economic growth. One of the prime focuses of the nation is to ensure food and nutritional security for its burgeoning population.

After independence, from the state of deficiency, the country has reached the stage of self-sufficiency in foodgrain production thereby making a visible impact on the national food and nutritional security. The Growth rate in agriculture sector during 2012-13 was 1.91% as against 3.65% in 2011-12. Contribution of Agriculture & Allied sector to GDP is 13.69 % for Agriculture as against 59.57% for Service sector and 26.75% for the Industry.

The key to success has been the establishment of institutions of higher agricultural education under ICAR-AU system leading to development of new breed of quality human resource for generating new technologies. Still India’s food security situation continues to rank as “alarming”(IFPRI, 2011). India ranks 67th out of 81 countries with extremely “Alarming” food security status. The disparity in per worker GDP in agriculture and non-agriculture sector during the past 20 years has widened from 1:3 to 1:5.

2.0 Emerging Challenges in Agriculture Sector

Today, agriculture faces many challenges such as stagnating/ declining productivity and profitability, depleting quality of natural resources, biotic and abiotic stresses, inefficient use of agro-inputs, unsafe livelihoods for millions of small and marginal farmers, regional imbalances in agricultural productivity, a general lack of qualified manpower in the frontier areas to deliver at grassroots level, rising input costs, changing food habits and quality concerns, high post-harvest losses, lack of value addition and processing, fossil fuel crisis and growing emphasis on biofuels, rising quality competitiveness under the pressure of globalization, etc. To address these challenges, some extraordinary efforts are required to be made especially for development of quality human resource that is critical



for sustaining, diversifying and realizing the potential of agriculture. High-tech Agriculture could be one of the options and for that high-end research is needed and to achieve this highly motivated world class human resource and



Scientific way of crop protection

facilities are required that can flow from world class agricultural institutions and AUs which at present is lacking in the country.

It is estimated that by the year 2020, to cater to the needs of R&D in the country, more than 16,000 scientific manpower would be required. 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), 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. This implies that we need to attract more number of students towards Higher Agricultural Education. There is a vast scope for young graduates to undertake agriculture as a profession which is directly or indirectly contributing to the economic and social development of the country.

3.0 Agricultural Education System (AES) in India

It is one of the largest national networks of AES in the world, comprising 56 State Agricultural Universities (SAUs), 5 Deemed-to-be-Universities, one Central Agricultural University and four Central



Secy. DARE & DG, ICAR addressing the candidates

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 co-ordinating, 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. To reduce the inbreeding in agricultural education, students are being encouraged to go to other states for pursuing their higher studies by providing them National Talent Scholarship, Junior Research Fellowships and SRF (PGS).

4.0 Critical Gaps and Concerns in Higher Agricultural Education

The Gross Enrolment Ratio for Agricultural Education, out of the total eligible population in the country is only 0.03% and against the total eligible rural population, it is 0.04% which is quite low. Low access of agricultural education to rural students, non-contemporary course curricula and delivery methods, inadequate state funding, unplanned proliferation of SAUs and colleges, regional imbalances in agricultural education facilities, lecture methods still dominating the teaching, lack of brand value for most of SAUs, complete disconnect between the requirements of industry and the education being imparted, poor quality education imparted in 158 private colleges and 41 colleges under 15 general universities admitting about 10,000 students, gender inequality, mismatch of infrastructure for quality education, research & extension, extensive inbreeding in faculty recruitment, poor faculty strength, poor governance, lack of environment for nurturing and retaining talent, lack of faculty-competence in cutting edge technologies, low priority to agricultural education as career option & declining quality of students admitted, growing unemployment (43% graduates, 25% post graduates), shifting employment opportunities from public to private sector are some of the issues that need to be tackled to



make the agricultural education more vibrant and attractive. Instead of being the world's largest ICAR-AU system, the country needs to have the world's finest ICAR-AU system.

5.0 Role of Agricultural Education in Food and Nutritional Security

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 moved to the stage of self-sufficiency in foodgrain 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. Thus, human resource developed through Agricultural Education System in the country was primarily responsible for various agricultural revolutions, viz. green, white, blue, yellow, 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 recognized 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. Due to shrinking resources, there is a need to shift from input-based to knowledge-based increase in agricultural production to produce "**More from Less for More**". Though the country has achieved self-sufficiency in cereal (starch) production, there is need to shift from starch to protein and fat (oil) self-sufficiency to combat the widely prevalent hidden hunger and malnutrition in rural women and children.

6.0 New Initiatives in Agricultural Education

To tackle these issues and emerging challenges and make the agricultural education more need-based, multi-pronged efforts are required. The efforts are underway to revise the course curricula at undergraduate level to cover education related to cutting edge technologies such as biosensors, genomics, biotechnology, alternative sources of energy, nanotechnology, diagnostics and vaccine, conservation agriculture, processing, value addition, food



Students undergoing experiential learning

safety & quality and information technology and the IPR issues.

In addition to various other proposed new initiatives, to improve the course curriculum further, a one-year composite programme has been recommended under

XII Plan with the name 'Rural Entrepreneurship and Awareness Development Yojana' (READY). Student READY will have three components: Experiential learning (EL), Rural Agricultural Work Experience (RAWEX) and in-plant training/industrial attachment. Experiential learning will thus, provide the students an excellent opportunity to develop analytical and entrepreneurial skills and knowledge and confidence in their ability to design and execute the project work through meaningful hands.

It is also proposed to initiate a programme "Attracting and Retaining Youth in Agriculture" (ARYA). The initiative aims at analysing the current policy and identifying supporting policies that can check the rate of migration of youth from rural areas. The ARYA will identify such mechanisms and models that would encourage youth to avail the quantum of opportunities in allied sectors. It is expected that the youth educated in agriculture and allied enterprises will be able to earn a dignified livelihood from farming and other related pursuits. Educated youth in urban areas can also take up urban and peri-urban agriculture in which ample opportunities exist. These initiatives in co-ordination with other programmes of both Central and State Governments would empower the youth with knowledge, skills and enthusiasm to pursue agriculture with new vigour (DARE Report, 2012).

7.0 Globalization of Indian Agricultural Education

Capacity and competence of ICAR-AU system has now been recognised world over. Students from number of developing countries are being attracted and benefited from research and teaching facilities developed in Agricultural Universities by pursuing



their higher studies. To support their higher studies in India, number of new programmes/fellowships have been initiated, viz. India-Africa fellowship Programme, Indo-Afghan fellowship. Council has also initiated ICAR International Fellowships with dual objectives of facilitating education of Indian nationals abroad, and facilitating admission of foreign students in Indian Agricultural Universities to help demonstrate the strengths of Indian Agricultural system. DARE/ICAR also provides admission to foreign students on regular basis and over 250 foreign students of more than 20 countries are admitted every year.

8.0 All India Entrance Examinations for Admission (AIEEA)

With an aim 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, Council 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 programme started in the year 1996-97 and so far, Education Division has conducted 18 All India Entrance Examinations for Admission (AIEEA) to various UG and PG Degree programmes. 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 about 95 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 Ratio for Agricultural Education, out of the total eligible population in the country, is below 1% which is abysmally low. In the recent past, the number of applicants especially for UG admissions has increased significantly showing growing

interest towards higher agricultural education. This year, for each seat in UG, there were around 42 applicants and for PG there were eight. For UG, in comparison to AIEEA-2010, when the number of applicants per seat was only 16, though the competition has increased, still in comparison to medical courses where for each seat there are about 50,000 candidates, we need to go a long way.

8.1 All India Entrance Examination for UG Admissions (AIEEA-UG)

The examination is conducted at 42 examination city centers, involving 136 venues, across the country to enable a large number of candidates to appear in this examination. A record number of 96,069 candidates applied (Fig.1) and



Candidates critically looking at fee structure of Universities

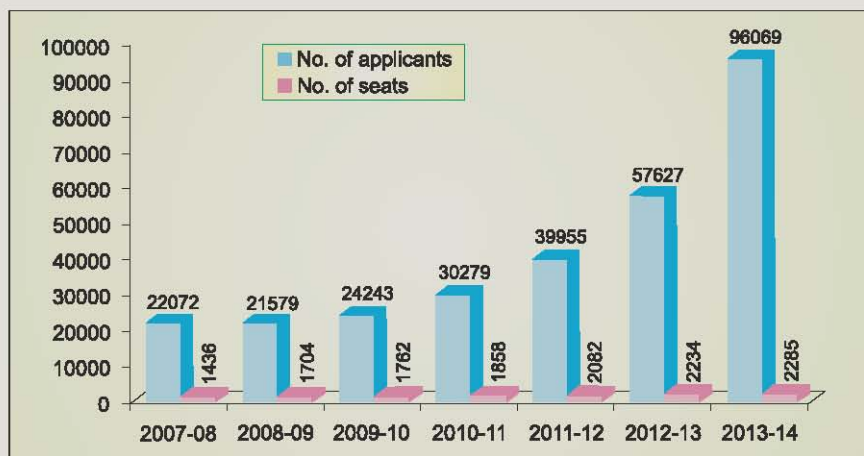


Fig.1 Temporal Pattern of Applications received for UG Examinations

86,661 (90.21%) appeared in the 18th AIEEA-UG-2013 which is remarkably higher (34,722 number, 66.85%) than 51,939 candidates appeared during 2012 (Fig. 2). Candidates from 33 states/UTs appeared in the examination. A total of 6,784 (7.82%) candidates

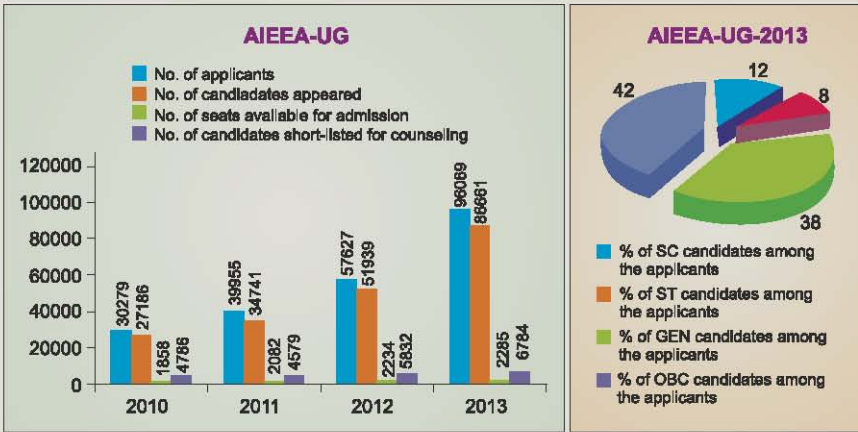


Fig. 2

from 27 states/UTs qualified for counseling and admission in various Bachelor degree programmes.

The top three states with the highest number of applicants were (i) Rajasthan (15,724) (ii) Kerala (14,922) and (iii) Bihar (11,414) whereas states with the highest number of qualified candidates were (i) Kerala (2,205) (ii) Rajasthan (1,418) and (iii) Bihar (599) (Table 1). The top three centers with highest % of qualified candidates were (i) Cochin – 18.08%, (ii) Thiruvananthapuram–15.72%, and (iii) Mannuthy–15.57%.

The average score of marks for Biology, Agriculture, and Mathematics groups was 208.36, 127.72, and 155.55, respectively. Frequency distribution of marks secured by the candidates (Table 2) indicates that there were 4,745 candidates in Stream-A, who scored above 60 % marks whereas for Stream-B, only 377 candidates could achieve this which could be either due to the reason that Mathematics paper was relatively tougher than Bio/Agriculture paper, or more talented & meritorious candidates did not opt for Stream-B subjects for the admissions.

The trend for the last four 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-UG-2013 is depicted in Fig.2.

8.1.1 Trends in UG Admissions

A total of 6,784 candidates-3,838 boys (56.57%), 2,946 girls (43.43%) were called for the counseling against 2,285 seats. For

Stream-A (Biology/Agriculture), 5,418 candidates and for Stream-B (Mathematics), 1,366 candidates were invited. As may be seen from Table 3, the number of seats in Universities is increasing, year after year, indicating rising demand amongst the students at state level



Candidates busy in filling counselling form

for pursuing their career in agriculture sector. In comparison to 2012-13 (2,234 seats), the number of seats has increased by 51 during 2013.

During this year (2013-14), 1,847 seats (80.83%) were filled up. During 2012, 84% 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 Biotechnology, 100% seats were filled up reflecting preference for these subjects. Like previous years, there were very few takers for Home Science and out of total 149 seats, only 7% seats could be filled up. Excluding Home Science, the percentage of seats filled works out to be about 86%. The possible reasons for lesser interest in Home Science could either be due to the nomenclature of degree programme that appears to be less attractive or that 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. However, for the PG admissions in Home science, the trend was encouraging as 71% seats were filled up.

Out of total 1,847 candidates granted provisional admission, 749 (40.60%) were the female candidates. Out of 427 candidates admitted from Kerala, the highest number of 311 (72.83%) were girls. For none of the other states, the girls outnumbered the boys admitted.

The number of candidates who opted for wait- list was 238



(90 for Stream B and 148 for Stream A). Therefore, 1,847 admitted + 238 wait listed, total 2,085 candidates (30.73%) turned up for counseling against 2,285 seats available for admission. The turnout was lower by 7% in comparison to 2012 which could be due to increased number of candidates with higher merits who might have opted for other courses for the admission.

State-wise number of candidates admitted

The top five states from which the candidates were recommended for admissions were Kerala with 427 candidates, followed by Rajasthan (379), Bihar (287), U.P. (155) and M.P. (141). From the states like Assam (1), Tamil Nadu (1), Arunachal Pradesh (3), Maharashtra (4), A.P. (6), Jammu & Kashmir (7), the number of admitted candidates was very low. Out of 35 states/UTs, the twelve states/UTs namely Gujarat, Karnataka, Mizoram, Puducherry, Sikkim, Tripura, Meghalaya, Nagaland, Goa, Lakshadweep, Dadra & Nagar Haveli, and Daman & Diu, remained unrepresented. National Talent Scholarship (NTS) will be awarded (₹ 1000 per month) to all those candidates who took admission outside their state of domicile and would maintain prescribed academic standards. To attract and retain the talent, there is a need to increase the amount of scholarship.

Table 1 Domicile State-wise distribution of candidates appeared and qualified for AIEEA-UG-2013 counseling

Sl. No.	Domicile State name	Number appeared	Number qualified	Percent qualified
1.	Andaman and Nicobar	39	2	5.13
2.	Andhra Pradesh	4241	39	0.92
3.	Arunachal Pradesh	257	9	3.50
4.	Assam	624	7	1.12
5.	Bihar	10421	599	5.75
6.	Chandigarh	47	5	10.64
7.	Chhattisgarh	3495	101	2.89
8.	Dadra & Nagar Haveli	0	0	0.00
9.	Daman & Diu	0	0	0.00
10.	Delhi	1054	123	11.67
11.	Goa	12	0	0.00
12.	Gujarat	76	7	9.21
13.	Haryana	4454	385	8.64

Table 1 Contd.

**Table 1** (Concluded)

Sl. No.	DomicileState name	Number appeared	Number qualified	Percent qualified
14.	Himachal Pradesh	2043	94	4.60
15.	Jammu & Kashmir	473	16	3.38
16.	Jharkhand	1747	79	4.52
17.	Karnataka	547	1	0.18
18.	Kerala	13643	2205	16.16
19.	Lakshadweep	14	3	21.43
20.	Madhya Pradesh	6802	360	5.29
21.	Maharashtra	1108	14	1.26
22.	Manipur	1186	86	7.25
23.	Meghalaya	110	2	1.82
24.	Mizoram	10	0	0.00
25.	Nagaland	79	0	0.00
26.	Odisha	5855	511	8.73
27.	Puducherry	16	0	0.00
28.	Punjab	1619	89	5.50
29.	Rajasthan	14554	1418	9.74
30.	Sikkim	13	0	0.00
31.	Tamil Nadu	271	15	5.54
32.	Tripura	40	0	0.00
33.	Uttarakhand	1609	83	5.16
34.	Uttar Pradesh	8174	420	5.14
35.	West Bengal	1844	104	5.64
36.	Not specified	184	7	3.80
Total		86,661	6,784	7.82%

Table-2 Frequency distribution of marks secured by the candidates appeared in AIEEA-UG-2013

% marks secured	Marks secured	No. of candidates in Stream-A	No. of candidates in Stream-B
< 10	≤ 72	10068	4972
10-20	73-144	18161	8468
21-30	145-216	12562	4959
31-40	217-288	7928	2897
41-50	289-360	7928	2897
51-60	361-432	3758	753
61-70	433-504	2838	300
71-80	505-576	1568	67
81-90	577-648	337	10
>90	>648	2	0

Note : Maximum Marks: 720; Highest secured in Stream-A : 651; Highest secured in Stream-B: 615



Table 3 Subject-wise seats filled for UG admissions during last three years

Course	Total seats			Seats allotted			Seats filled (%)		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
Agriculture	1058	1125	1161	1058	1085	1085	100	96.4	93.5
Horticulture	202	244	247	163	159	154	80.7	65.2	62.4
Forestry	94	95	87	73	74	60	77.7	77.9	69.0
Fisheries	89	95	94	56	42	46	62.9	44.2	49.0
Home Science	152	148	149	21	16	11	13.8	10.8	7.4
Sericulture	9	9	14	2	4	7	22.2	44.4	50.0
Agricultural Engg.	208	229	233	188	226	229	90.4	98.7	98.3
Dairy Tech.	117	104	106	104	101	102	88.9	97.1	96.2
Food Science	75	90	94	44	73	61	58.7	81.1	65.0
Agri. Mkt. & Coop	36	38	41	15	38	33	41.7	100	80.5
Biotechnology	42	57	59	38	57	59	90.5	100	100
Total	2082	2234	2285	1762	1875	1847	84.6*	84.00	80.83

*Including 2nd counseling

8.2 All India Entrance Examination for PG Admissions (AIEEA-PG)

For admission to Master’s degree programmes in 65 Agricultural Universities and award of ICAR-JRF (PGS), the examination is conducted for 20 Major subject groups at 30 Examination City centers (35 venues) across the country.

Out of total 23,785 candidates (Fig. 3) that applied, 21,294 (89.52%) appeared in the examination (Fig. 4). Against 2,851 seats, 7,623 candidates- 4,748 males (62.28%) and 2875 females

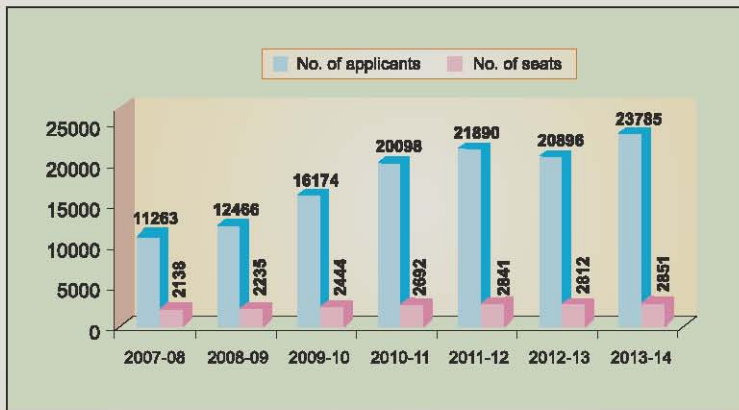


Fig. 3 Temporal Pattern of Applications received for PG Examinations



(37.72%) were short-listed for the counseling in 2013. In comparison to 2010, there has been a significant increase in the number of applicants. Still there is scope to attract more agricultural graduates to go for post-graduation to meet the increasing demand of manpower for teaching, research, and extension by increasing the number and amount of fellowships.

The top ranking three states with the highest number of qualifying candidates were (i) Karnataka (1195) (ii) Maharashtra (706) and (iii) Uttar Pradesh (704) (Table 4).

Table 4 Domicile State-wise distribution of qualified candidates for AIEEA-PG-2013 counseling

Sl. No.	Domicile State name	Number appeared	Number qualified	Percent qualified
1.	Andaman and Nicobar	9	1	11.11
2.	Andhra Pradesh	1263	471	37.29
3.	Arunachal Pradesh	70	31	44.29
4.	Assam	197	73	37.06
5.	Bihar	1168	565	48.37
6.	Chandigarh	6	0	0
7.	Chhattisgarh	1029	158	15.35
8.	Dadra and Nagar Haveli	1	0	0
9.	Daman & Diu	0	0	0
10.	Delhi	433	104	24.02
11.	Goa	13	7	53.85
12.	Gujarat	260	145	55.77
13.	Haryana	401	129	32.17
14.	Himachal Pradesh	303	161	53.14
15.	Jammu & Kashmir	305	213	69.84
16.	Jharkhand	264	123	46.59
17.	Karnataka	2542	1195	47.01
18.	Kerala	605	306	50.58
19.	Lakshadweep	6	4	66.67
20.	Madhya Pradesh	968	383	39.57
21.	Maharashtra	3534	706	19.98
22.	Manipur	235	97	41.28
23.	Meghalaya	98	37	37.76
24.	Mizoram	40	24	60.00
25.	Nagaland	80	13	16.25
26.	Odisha	588	323	54.93
27.	Puducherry	48	19	39.58
28.	Punjab	297	97	32.66
29.	Rajasthan	1556	699	44.92
30.	Sikkim	40	22	55.00
31.	Tamil Nadu	978	254	25.97
32.	Tripura	154	76	49.35
33.	Uttarakhand	476	260	54.62
34.	Uttar Pradesh	2860	704	24.62
35.	West Bengal	424	210	49.53
36.	Not specified	43	13	25.00
Total		21294	7623	35.80



The examination city centers with the highest % of qualified candidates were (i) Srinagar (76.37), (ii) Jammu (65.45), and (iii) Anand (59.60). The trends for the last four 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-2013 is depicted in Fig. 4.

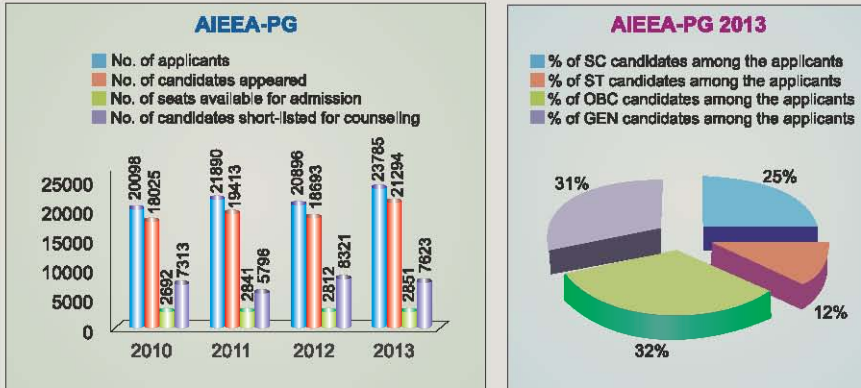


Fig. 4

It is interesting to note that in comparison to UG where percentage of SC and ST applicants was only 12 and 8; in PG, it was almost double being 25 and 12%, respectively.

8.2.1 Trends in PG Admissions

A total of 7,623 candidates, against 2,851 seats, were called for the counseling. A record number of 2,408 seats were filled up during this year. Out of the total candidates recommended for admissions, 854 (35.46%) were girl candidates. Unlike UG, in PG, the highest number of candidates admitted were from the states like Maharashtra and Karnataka (Table 5) where there are more number of SAUs indicating that for UG programme, since the candidates from within the states had enough seats, therefore, they did not want to go outside state but for PG willing to go to other states to have their degree from outside the state.

Amongst the 20 major disciplines, there were 13 major disciplines which could attract below 1,000 candidates only for appearing in the examination. Only in 7 disciplines the number of candidates appeared in the examination was above one thousand (Table 6), the top three major subjects being Plant Sciences (3,452), Agronomy (3,190) and Horticulture (2,751).

**Table 5** Number of candidates admitted during AIEEA-PG-2013-14 who graduated from the agricultural universities

Sl No.	State	No. of SAU's, CAU Central Universities with Agriculture Faculty & DUs	No. admitted
1.	Andhra Pradesh	3	170
2.	Chhattisgarh	2	57
3.	Maharashtra	5	359
4.	Himachal Pradesh	2	46
5.	Punjab	2	27
6.	Uttarakhand	2	74
7.	Madhya Pradesh	2	97
8.	Gujarat	4	65
9.	Karnataka	6	340
10.	Kerala	3	100
11.	Haryana	1+1	26
12.	Rajasthan	2	152
13.	Uttar Pradesh	5+1	165
14.	Odisha	1	93
15.	Bihar	2	27
16.	Jammu & Kashmir	2	100
17.	Assam	1	48
18.	Tamil Nadu	3	72
19.	West Bengal	3+1	87
20.	Manipur (CAU)	1	116
21.	Nagaland (CU)	1	3
22.	Jharkhand	1	5
23.	Delhi (CU)	1	18
24.	Others		161
Total			2408

Table 6 Subject-wise distribution of candidates appeared and qualified for PG admissions

Code	Major Subject	Applied	Appeared	Qualified
01	Plant Biotechnology	1635	1435	402
02	Plant Sciences	3757	3452	1192
03	Physical Science	875	793	369
04	Entomology and Nematology	1635	1507	474
05	Agronomy	3496	3190	480
06	Social Sciences	1374	1248	591
07	Statistical Sciences	205	178	38
08	Horticulture	2962	2751	739
09	Forestry/Agroforestry and Silviculture	471	412	191
10	Agricultural Engineering and Technology	1155	975	325
11	Water Science and Technology	21	17	5
12	Home Science	602	547	247
13	Animal Biotechnology	870	722	198
14	Veterinary Science	1328	1134	900
15	Animal Sciences	981	843	545
16	Fisheries Science	553	501	370
17	Dairy Science	211	181	67
18	Dairy Technology	334	287	109
19	Food Science Technology	784	647	141
20	Agri Business Management	536	474	240
Total		23,785	21,294	7,623



The number of candidates who opted for wait-list was 846 (for 20 major subjects). Therefore, 2,408 admitted + 846 wait listed, total 3,254 candidates (42.68%) turned up for the counseling against 2,851 seats available for the admission. In comparison to UG, the turnout was almost 12% higher.

For the subjects like Plant Sciences, Entomology & Nematology, Agronomy, Horticulture, and Water Science & Technology, 100% seats while for Fisheries Science, Dairy Technology, Agricultural Engineering & Technology, and Social Sciences above 90% seats were filled up. For the subjects namely Animal Biotechnology, Statistical Sciences, and Agribusiness Management, there were only very few takers as almost half of the seats remained unfilled (Table 7).

The highest number of 110 female candidates (out of 349 candidates admitted) took admission in Plant Sciences followed by 106 (out of 272) in Veterinary Science, 86 (out of 218) in Social Science and 75 (out of 77) in Home Science.

The ICAR-Junior Research Fellowship (₹ 12,600 per month for Veterinary graduates and ₹ 8,640 per month in other cases plus contingent grant of ₹ 6000/ per year for two years) for post-graduate studies (ICAR-JRF-PGS) was awarded to 474 candidates, out of 475 JRFs available, based on their merit in AIEEA-PG-2013 and taking admissions in universities other than from where the candidates had graduated. For Veterinary, and Animal Sciences courses, with higher fellowship amount some seats could be filled up but still 49% seats in Animal Biotechnology, 27% in Animal Sciences and 21% seats in Veterinary Science remained unfilled (Table 7). Trend of seats filled for the last three years indicates decrease interest of students towards animal production side subjects. Under 8 Major subjects, there were 9 sub-subjects in which less than 50% seats were filled (Table 8) which is a matter of concern considering their need for teaching and research in these areas.

Rural vs. Urban candidates

Out of the total candidates that applied for UG Examination, 59% were from villages, 20% from towns and remaining 21% from the cities (Fig.5). In PG, the percentage of candidates appeared from villages was lower than UG being 51%. The percentage of candidates from rural areas is more or less static at least for the



Table 7 Subject-wise seats filled for PG admissions during last three years

Code	Subject	Total seats			Seats filled			Vacant seats			Seats filled (%)		
		2013	2012	2011	2013	2012	2011	2013	2012	2011	2013	2012	2011
01	Plant Biotechnology	159	158	153	99	104	100	60	54	53	62.00	65.82	65.35
02	Plant Sciences	349	350	333	349	317	274	0	33	59	100	90.57	82.28
03	Physical Science	183	180	182	162	125	96	21	55	86	89.00	69.44	52.74
04	Entomology & Nematology	149	154	162	149	151	138	0	3	24	100	98.05	85.18
05	Agronomy	152	152	154	152	146	136	0	6	18	100	96.05	88.31
06	Social Sciences	232	232	215	218	205	132	14	27	83	94.00	88.36	61.39
07	Statistical Sciences	41	43	43	21	28	16	20	15	27	51.00	65.11	37.20
08	Horticulture	208	203	204	208	200	194	0	3	10	100	98.52	95.09
09	Forestry/Agro-Forestry and Silviculture	51	54	45	32	42	24	19	12	21	63.00	77.77	53.33
10	Agri. Engineering & Technology	128	129	121	116	120	111	12	9	10	91.00	93.02	91.73
11	Water Science & Technology	3	2	16	3	2	2	0	0	14	100	100.00	12.50
12	Home Science	109	106	103	77	97	62	32	9	41	71.00	91.50	60.19
13	Animal Biotechnology	69	63	64	35	34	30	34	29	34	51.00	53.96	46.87
14	Veterinary Science	344	333	341	272	304	277	72	29	64	79.00	91.29	81.23
15	Animal Sciences	309	298	351	227	239	232	82	59	119	73.00	80.20	66.09
16	Fisheries Science	130	129	123	124	123	122	6	6	1	95.00	95.34	99.18
17	Dairy Science	23	23	31	19	16	24	4	7	7	83.00	69.56	77.41
18	Dairy Technology	34	36	40	31	28	30	3	8	10	91.00	77.77	75.00
19	Food Science Technology	47	47	45	41	41	24	6	6	21	87.00	87.23	53.33
20	Agri. Business Management	131	120	111	73	82	49	58	38	62	56.00	68.33	44.14
Total		2,851	2,812	2,841	2,408	2,404	2,073	443	408	768	84.46	85.49	72.96



Table 8 Major subjects/ sub-subjects in which less than 50% seats were filled up during PG counseling

Sl. No.	Major subject with code	Sub-subject with code	Total No. of seats	Seats filled (%)
1.	Statistical Science (07)	7.1 Agricultural Statistics	28	36
2.	Forestry (09)	9.1 Forest Products	5	20
3.	Home Science (12)	12.2 Human Development and Family Studies/ Child development	21	48
		12.3 Home Mgmt. /Family Resources Mgmt.	18	44
4.	Animal Bio-technology (13)	13.2 Veterinary/Animal Bio-Chemistry	36	44
5.	Veterinary Science (14)	14.1 Veterinary Anatomy (& Histology)	26	46
6.	Animal Science (15)	15.1 Animal Husbandry/Animal Science/Dairy Science	36	44
7.	Fisheries Science (16)	16.1 Fisheries Sciences/Fish Hydro/ Fish Env./ Fish Indus. Tech.	3	33
8.	Agribusiness Management (20)	20.2 Agri. Marketing & Cooperation etc.	4	40
Total			177	

last three years warranting aggressive campaigning to popularise agricultural education amongst the rural youths/students.

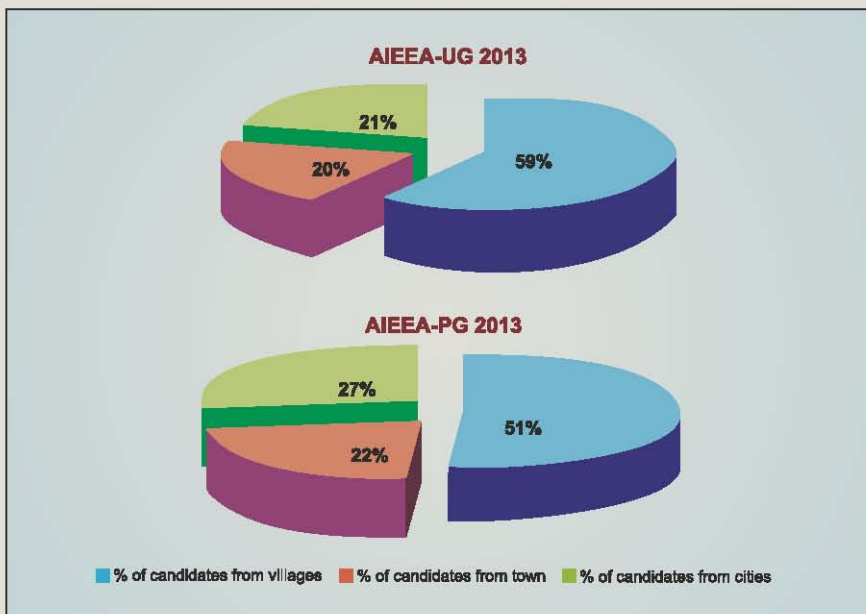


Fig. 5 Area-wise distribution of applicants

Gender-wise distribution of applicants

Out of the total number of applicants, 40% were females in UG and 38% in PG (Fig. 6). In comparison to 2010, the number of female applicants has increased (in UG by 6 % and PG by 7%) indicating increasing interest of girls towards higher agricultural education.

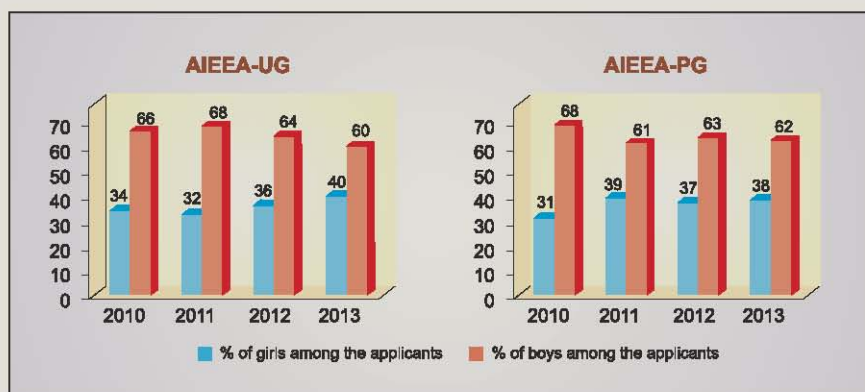


Fig. 6

Examination Board-wise number of candidates qualified and admitted

In UG Examination, the candidates from more than 30 Secondary Education Boards appeared. Out of 6,784 candidates qualified from different boards, the highest 2,894 number (42.65%) was from CBSE followed by 1,414 (20.84%) from Kerala Board of Public Examinations, 1,117 (16.46%) from Rajasthan Board of Secondary Education. The highest number of 847 candidates admitted was from CBSE followed by 288 from Rajasthan Board, 263 from Kerala Board, 132 from Bihar Board (Table 9) indicating wider representation of talented candidates admitted.

Table 9 Board-wise distribution of candidates appeared in AIEEA-UG-2013 and short listed for the counseling

Sl. No.	Name of the Examination Board in XII class	Appeared	Qualified	Admitted
1	Andhra Pradesh Board of Intermediate Education	4136	35	4
2	Assam Higher Secondary Education Council	409	4	1
3	Bihar Intermediate Education Council	6652	235	132
4	Central Board of Secondary Education	22560	2894	847

Table 9 Contd.

**Table 9** (Concluded)

Sl. No. in XII class	Name of the Examination Board	Appeared	Qualified	Admitted
5	Chhattisgarh Madhyamik Siksha Mandal	2711	31	10
6	Council for the Indian School Certificate Examinations	959	105	33
7	Goa Board of Secondary and Higher Secondary Education	9	0	0
8	Gujarat Secondary Education Board	39	3	0
9	Haryana Board of Education	1584	43	15
10	H.P. Board of School Education	1339	33	18
11	J & K State Board of School Education	307	4	2
12	Jharkhand Academic Council	593	14	6
13	Karnataka Board of School Education	524	4	0
14	Kerala Board of Public Examinations	10273	1414	263
15	Madhya Pradesh Board of Secondary Education	5698	197	72
16	Maharashtra State Board of Secondary and Higher Secondary Education	1044	7	2
17	Manipur Council of Higher Secondary Education	835	59	24
18	Meghalaya Board of Secondary Education	96	8	4
19	Mizoram Board of School Education	7	0	0
20	Nagaland Board of School Education	93	2	0
21	Orissa Council of Higher Secondary Education	4595	354	55
22	Punjab School Education Board	611	11	1
23	Rajasthan Board of Secondary Education	12970	1117	288
24	Tamil Nadu Board of Higher Secondary Education	228	6	1
25	Tripura Board of Secondary Education	18	0	0
26	U.P. Board of High School & Intermediate Education	5485	102	31
27	Uttarakhand Board of High School & Intermediate Education	501	7	3
28	West Bengal Council of Higher Secondary Education	1245	49	10
29	National Open School	348	10	10
30	Other Boards (Not specified above)	792	36	15
Total		86,661	6,784	1,847

Preferred Medium of examination

Out of total candidates appeared in UG examination, about 33% opted Hindi as their medium of examination. The preferred language for the UG examination was English.



9.0 All India Competitive Examination for the Award of ICAR's 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 in different disciplines of Agriculture and Allied Sciences is annually conducted by the Education Division of ICAR. After conducting of SRF (PGS) examination by NAARM, Hyderabad from 2008 to 2011, the council decided to get this examination conducted by Education Division from 2012 onwards. Therefore, after the last examination held by NAARM in 2011, the next SRF (PGS) examination was conducted along with AIEEA-UG and AIEEA-PG in April, 2013 at 16 Examination city centres across the country. The value and tenure of the fellowship is as under:

Qualification	Amount	Duration
Postgraduate other than in Veterinary Science	₹ 12,000/- p.m. (fixed) ₹ 14,000/- p.m. (fixed)	I and II year III year
Postgraduate in Veterinary Science	₹ 14,000/- p.m. (fixed) ₹ 15,000/- p.m. (fixed)	I and II year III year
Uniform Contingent grant @ ₹ 10,000/- p.a. for procurement of essential chemicals, books and travel connected with research work		

During 2013, 2,249 candidates applied which were 6% higher than 2011 and about 69 % appeared in the examination. About 36% were female applicants, out of which 19% qualified for the award of SRF (PGS). A 30 % increase was observed in the number of female awardees with SRF in 2010 vis-à-vis 2009. Thereafter, a

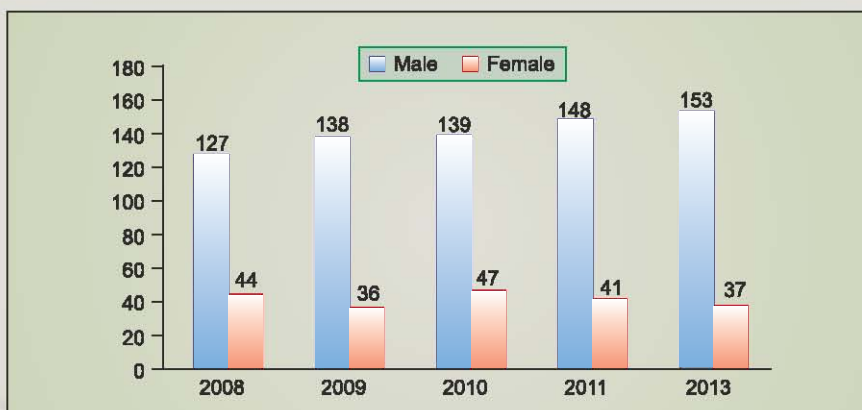


Fig. 7 Gender-wise distribution of candidates with SRF



declining trend is apparent until 2013. However, about 28% increase in the number of female awardees without SRF was registered in 2013 vis-à-vis 2011 which reflects an encouraging picture in terms of the total number of females qualifying this examination. Gender-wise distribution of the candidates qualified with or without Senior Research Fellowship (SRF) is illustrated in Fig. 7 and 8, respectively.

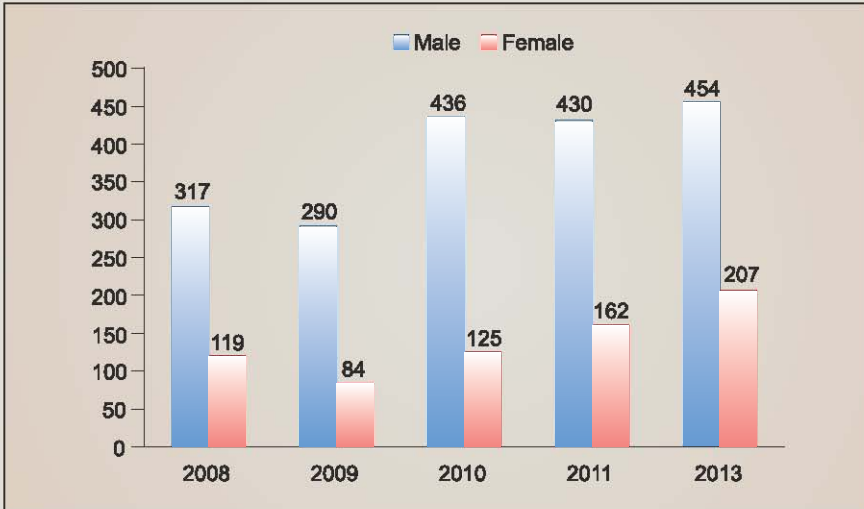


Fig. 8 Gender-wise distribution of candidates without SRF

Though the number of General & OBC and PC candidates securing SRF has almost remained constant, the number of SC and ST candidates securing SRF in 2013 has increased by > 40% and > 50%, respectively in comparison to SRF (PGS)- 2008 examination.

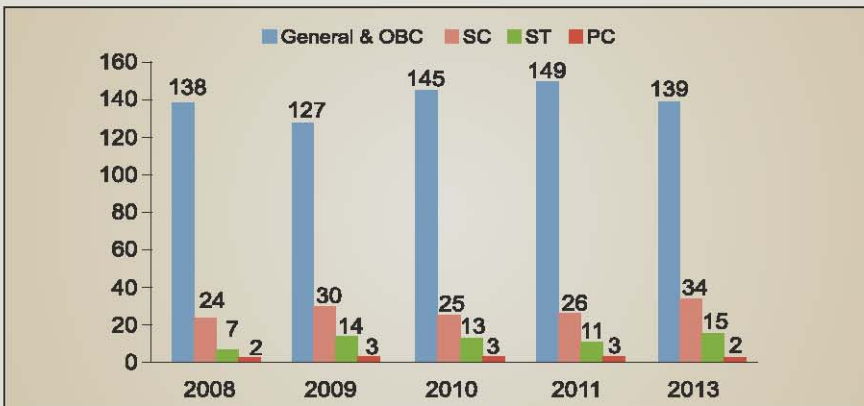


Fig. 9 Category-wise distribution of candidates with SRF

Two candidates from PC category qualified with SRF in 2013. There has been progressive increase from 2009 onwards in the number of candidates belonging to all categories qualifying without SRF. However, no PC candidate could find place in the list of candidates qualifying without SRF in 2013. Category-wise distribution of candidates qualified with and without SRF has been presented in Fig. 9 and 10, respectively.

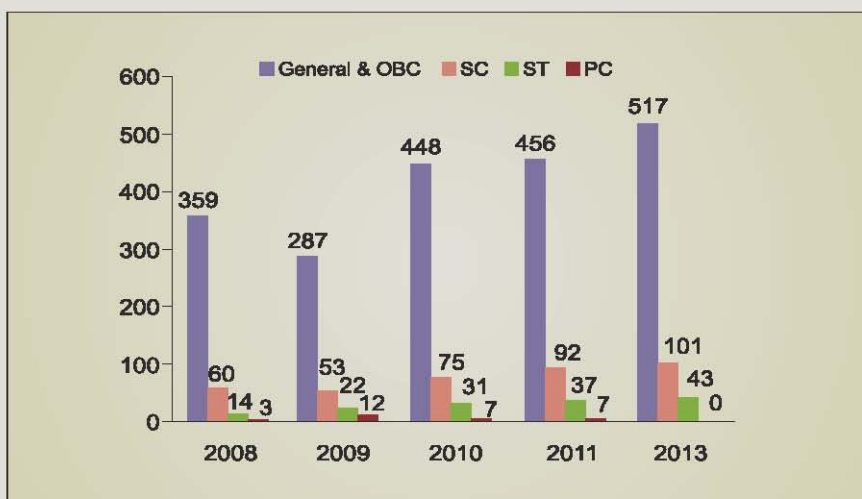


Fig. 10 Category-wise distribution of candidates without SRF

Apart from one composite paper on General Knowledge, which is common to all the subjects, the SRF(PGS) examination was conducted in 14 major subject groups comprising 56 sub-subjects. For computing the merit, 75% weightage was given for the marks obtained in written examination while 25% weightage was given to the past academic performance of the candidates for UG (10%) and PG (15%).

With the number of fellowship slots remaining constant for different disciplines, an increase in the number of candidates securing SRF in 2013 vis-a-vis 2011 was observed in the disciplines belonging to Major Subject Groups of Plant Sciences, Biochemistry & Biotechnology, Veterinary & Animal Sciences-III and Agricultural Engineering. A decrease in the number of students qualifying without fellowship was recorded only for the disciplines of Plant Protection & Related Sciences, Dairy Science, Dairy Technology & Food Science and Agricultural Engineering. Discipline-wise number

of candidates selected with and without fellowship has been presented in Figs. 11 and 12, respectively.

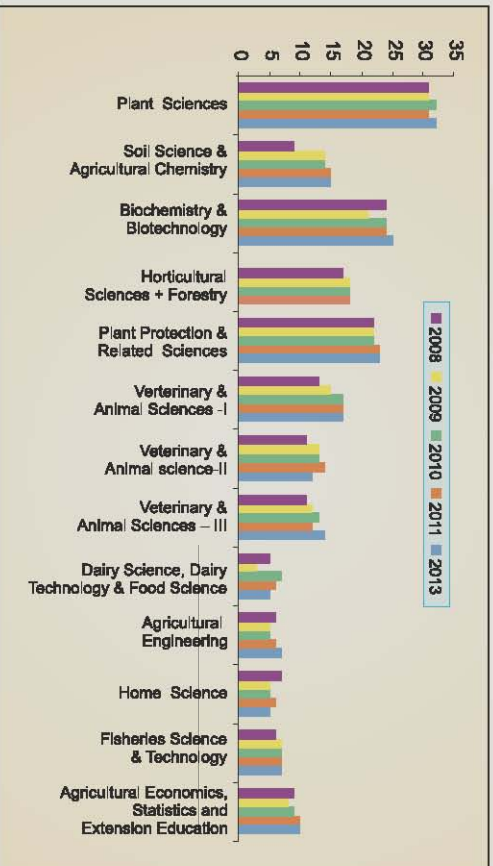


Fig. 11 Discipline-wise number of candidates selected with fellowship (Horticultural Sciences and Forestry were separate disciplines for SRF-PGS-2013 examination)

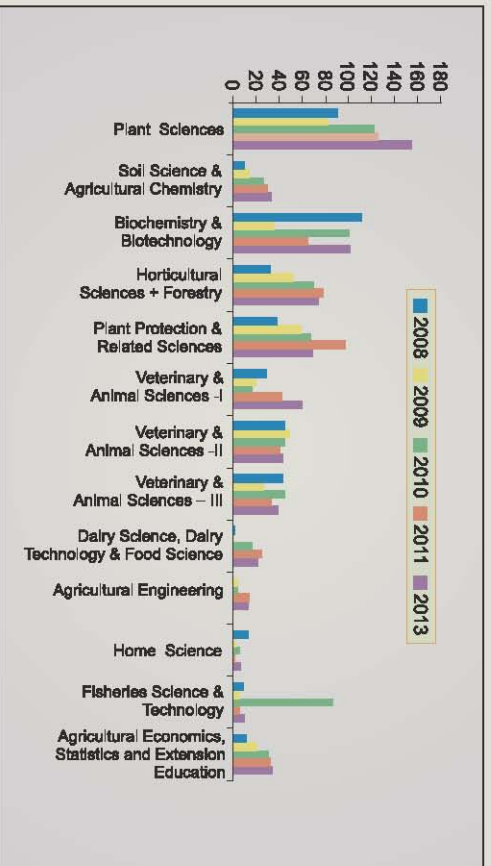


Fig. 12 Discipline-wise number of candidates selected without fellowship (Horticultural Sciences and Forestry were separate disciplines for SRF-PGS-2013 examination)

A total of 190 Senior Research Fellowships were awarded during 2013 to the qualified candidates. A total of 661 candidates were declared qualified without fellowship to be considered for Ph.D admission against 25% quota of ICAR. Temporal distribution of awardees (with/without SRF) is depicted in Fig. 13.

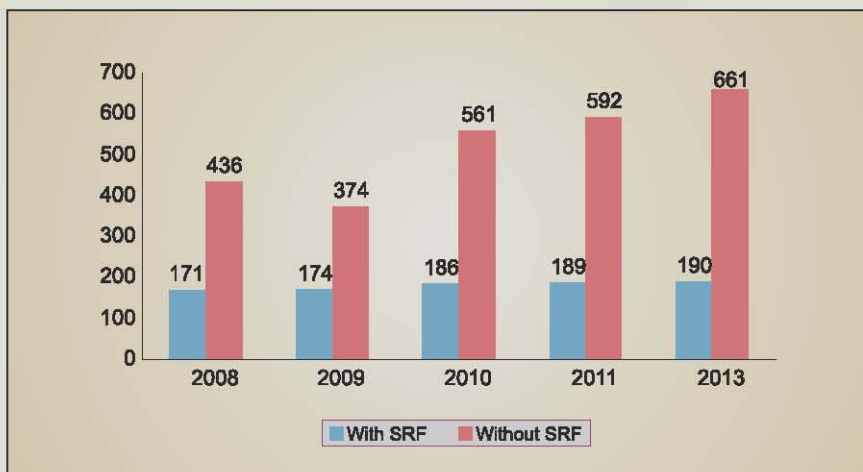


Fig. 13 Temporal distribution of awardees (with/without SRF)

Based on the SRF (PGS) secured by the postgraduates of various universities, the three top ranking universities in 2013 were IARI, New Delhi; IVRI, Izatnagar, Bareilly; and UAS, Bangalore (Table 11). Out of the total 12 SRF(PGS) which could not be awarded on account of lack of qualified candidates, maximum five slots each in Dairy Science/Dairy Technology & Food Science, and Home Science remained vacant followed by one each in Plant Biochemistry & Biotechnology, and Veterinary & Animal Sciences-I.

A Committee was recently constituted by ICAR in 2013 to review the existing pattern/system and modification/updation of syllabus of SRF(PGS) examination. The recommendations made by the Committee as approved by the Competent Authority in ICAR are available at <http://www.icar.org.in/en/node/978> on the ICAR website. Briefly, eligibility qualifications for SRF(PGS) have been harmonized with NET/ARS for different subjects at all the universities under ICAR-AU system. The revised format of the examination consists of a single paper of 3 hrs duration and the existing practice of awarding weightage of past academic performance (UG and PG) to the candidates for ICAR SRF(PGS) examination has been dispensed with. To align with the recommendations of Dr. R. S. Paroda Committee Report ('Review of disciplines and eligibility qualifications for recruitment of ARS Scientists at the entry level'), the 56 disciplines have been re-grouped to fall under 16 Major Subject Groups for the purpose of conducting ICAR-SRF(PGS)

examination. Considering the recent advancements in different disciplines of Agriculture and Allied Sciences vis-à-vis NET/ARS syllabus, the syllabus for ICAR SRF (PGS) examination has been modified and updated. These recommendations have come into force and shall be applicable with effect from SRF(PGS)-2014 examination.

10.0 Performance of the Universities

The top five universities, based on the number of their graduates that qualified the AIEEA-PG, are UAS, Bangalore with 455 candidates, UAS, Dharwad with 358 candidates, OUA&T, Bhubaneswar with 323 candidates, ANGRAU, Hyderabad with 295 candidates and GBPUA&T, Pantnagar with 291 candidates. Though the number of candidates qualified from these universities is higher, it was interesting to note that out of 195 total qualified



Candidate interacting with University Official

Table 10 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 Agricultural University	Name of the Agricultural University whose graduates won highest number of fellowships
ICAR Junior Research Fellowships			
2013	474	36	GBPUAT, Pantnagar (UK)
2012	472	32	GBPUAT, Pantnagar (UK)
2011	472	34	KAU, Thrissur (Kerala)
2010	468	44	KAU, Thrissur (Kerala)
2009	472	33	KAU, Thrissur (Kerala)
ICAR Senior Research Fellowships			
2013*	190	37	IARI, New Delhi
2011	189	35	IARI, New Delhi
2010	186	23	IVRI, Izatnagar, Bareilly
2009	174	27	UAS, Bangalore

*The examination from 2012 onwards was conducted for the year 2013 on 21-04-2013

candidates from CAU Imphal, 116 (59.48%) took admission, indicating better 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 and SRF(PGS) produced. The GBPUA&T Pantnagar with production of 36 JRFs in 2013-14 ranked first (Table 10) followed by UAS, Bangalore and Dr. PDKV, Akola at second with 24 JRFs, and SKUAS&T, Srinagar with 20 JRF at third position. With 474 candidates admitted with JRF, 71 preferred IVRI, 68 IARI, 38 Pantnagar and 35 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 ranked the best during 2013-14. In so far as award of SRF (PGS) is concerned, the candidates having their Master's degree from IARI secured highest 37 SRFs in SRF (PGS)-2013 examination followed by IVRI (26); UAS, Bangalore (15) and GBPUAT, Pantnagar (13). Comparative number of JRF and SRFs secured by graduates/postgraduates of different universities, from 2008-2013, has been shown in (Table 11).

11.0 Talent getting attracted towards Higher Agricultural Education

Generally, there is an impression that meritorious students are not opting Agriculture as subject of their choice to pursue their higher studies. After recently concluded counseling for UG admissions (2013-14) and analysis of the aggregate marks secured by admitted candidates in qualifying (10+2) examination, it emerged that the efforts of the Education Division (ICAR) by way of publicizing the scope and relevance, e-initiatives like online submission of application and payment of examination fee, observance of "Education Day" in ICAR institutes and SAUs have



Counseling in progress

Table 11 Number of JRF & SRF (PGS) secured by the graduates/post-graduates of the Agricultural Universities

Sr. No.	Name of the University	2008		2009		2010		2011		2012		2013	
		No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured
1.	ANGRAU, Hyderabad (AP)	13	5	15	4	30	9	19	4	12	-	15	9
2.	AAU, Anand (Gujarat)	4	3	1	1	6	2	3	-	5	-	6	1
3.	AAU, Jorhat (Assam)	4	2	4	1	2	-	7	-	6	-	2	1
4.	AMU, Aligarh (UP)	-	2	-	1	1	-	-	-	-	-	-	1
5.	BCKV, Mohanpur, Nadia (WB)	12	1	9	1	11	-	2	-	16	-	11	1
6.	BAU, Ranchi (Bihar)	6	3	3	6	10	-	3	-	-	-	-	-
7.	BAU, Sabour, Distt. Bhagalpur (Bihar)	-	-	-	-	-	-	-	-	2	-	-	-
8.	CAU, Imphal (Manipur)	18	-	20	-	21	-	26	-	25	-	19	1
9.	CSKHPKV, Palampur (HP)	7	1	4	-	11	1	8	1	8	-	12	1
10.	CSAUAT, Kanpur (UP)	15	7	11	5	5	7	11	1	6	-	7	2
11.	CCSHAU, Hisar (Haryana)	3	6	3	4	7	7	6	5	4	-	6	6
12.	CKV, Durg, Raipur (CG)	-	-	-	-	-	-	-	-	-	-	1	-
13.	CIFE, Mumbai (ICAR-DU)	-	2	-	-	-	3	-	6	-	-	-	6
14.	Dr. BSKKV, Dapoli (Maharashtra)	18	-	24	1	11	1	12	7	7	-	9	-
15.	Dr. PDKV, Akola (Maharashtra)	22	5	18	3	22	-	23	2	21	-	24	4
16.	Dr. YSRHU, Tadepalligudem, WG (AP)	-	3	-	4	-	-	10	3	11	-	9	-
17.	Dr. YSPUHF, Solan (HP)	4	4	-	3	3	3	1	-	-	-	2	1
18.	GADVASU, Ludhiana (Punjab)	-	2	-	-	1	2	-	1	1	-	2	1
19.	GBPUAT, Pantnagar (UK)	12	20	15	13	28	9	23	14	32	-	36	13
20.	IARI, Pusa, New Delhi (ICAR-DU)	-	2	-	9	-	16	-	35	-	-	-	37
21.	IVRI, Izatnagar, (UP) (ICAR-DU)	-	9	-	22	-	23	-	29	-	-	-	26
22.	IGKV, Raipur (Chhattisgarh)	2	-	3	2	7	3	8	-	5	-	5	1

Table 11 Contd.



Table 11 Continued

Sr. No.	Name of the University	2008		2009		2010		2011		2012		2013	
		No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured
23.	JNKV, Jabalpur (MP)	9	2	8	-	8	-	5	2	3	-	7	1
24.	JAU, Junagarh (Gujarat)	1	-	1	-	2	-	1	1	2	-	2	-
25.	KVA& FSU, Bidar (Karnataka)	19	1	23	1	9	7	9	2	9	-	2	-
26.	KAU, Thrissur (Kerala)	47	6	33	3	44	8	34	3	18	-	7	2
27.	KV&ASU, Pookot, Wayanad, (Kerala)	-	-	-	-	-	-	-	-	13	-	10	1
28.	KUFOS, Panangad, Kochi (Kerala)	-	-	-	-	-	-	-	-	1	-	2	-
29.	LUVAS, Hisar (Haryana)	-	-	-	-	-	-	-	-	-	-	4	-
30.	NDPCV, Jabalpur, (MP)	-	-	-	-	-	-	15	-	9	-	11	1
31.	MPUAT, Udaipur (Rajasthan)	4	2	8	1	6	1	12	5	11	-	7	1
32.	MAFSU, Nagpur (Maharashtra)	19	-	23	-	23	-	13	3	7	-	9	2
33.	MPKV, Rahuri (Maharashtra)	27	2	12	1	16	1	17	1	11	-	10	-
34.	VNMKV, Parbhani (Maharashtra)	14	-	21	-	10	1	21	2	12	-	12	3
35.	NU, (SASARD), Medziphema	-	-	1	-	1	-	1	-	-	-	-	-
36.	NDUA & T, Faizabad (UP)	19	2	11	-	10	-	8	1	4	-	8	1
37.	NAU, Navsari (Gujarat).	2	1	-	1	-	-	4	1	2	-	8	1
38.	NDRI, Karnal, (Haryana) (ICAR-DU)	1	6	3	5	1	10	-	4	-	-	1	6
39.	OUAT, Bhubaneswar, (Orissa)	10	3	11	2	5	-	18	1	21	-	15	1
40.	PAU, Ludhiana (Punjab)	-	5	4	5	1	3	2	1	3	-	4	1
41.	RAU, Pusa, Samastipur (Bihar)	3	2	2	-	3	1	7	-	2	-	5	1
42.	RVSKV, Gwalior (MP)	-	-	-	-	-	-	2	-	2	-	3	-

Table 11 Contd.

Table 11 Concluded

Sr. No.	Name of the University	2008		2009		2010		2011		2012		2013	
		No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured	No. of JRF secured	No. of SRF (PGS) secured
43.	RUVAS, Bikaner, (Rajasthan)	-	-	-	-	-	-	-	-	-	-	2	-
44.	SVBPUAT, Modipuram, Meerut (UP)	-	1	-	-	1	2	-	-	4	-	1	1
45.	SKRAU, Bikaner (Rajasthan)	8	4	10	-	7	3	11	1	6	-	14	3
46.	SHIATS (DU), Naini, Allahabad (UP)	1	4	-	3	1	2	2	1	1	-	2	-
47.	SKDAU, Banaskantha (Gujarat)	1	-	1	1	1	-	1	-	2	-	2	-
48.	SKUAST of J, Jammu (J & K)	10	-	18	-	6	-	4	1	7	-	3	-
49.	SKUAST of K, Srinagar (J & K)	9	-	14	2	20	-	21	1	27	-	20	-
50.	SVVU, Tirupati (AP)	4	-	1	-	1	-	5	1	3	-	2	1
51.	TNAU, Coimbatore (Tamil Nadu)	15	10	16	6	13	8	8	8	7	-	2	5
52.	TNVASU, Chennai (Tamil Nadu)	13	6	7	5	9	1	7	3	10	-	3	-
53.	UAS, Dhanwad (Karnataka)	27	9	22	18	13	17	13	8	18	-	17	7
54.	UAS, Bangalore (Karnataka)	7	8	13	27	15	18	10	23	28	-	24	15
55.	UAS, Raichur (Karnataka)	-	-	-	-	7	-	6	4	7	-	3	4
56.	UBKV, Cooch Behar (WB)	14	-	25	-	15	-	11	-	7	-	7	-
57.	UHS, Bagalkot (Karnataka)	-	-	-	-	1	-	-	-	8	-	10	3
58.	DUVASU, Mathura (UP)	7	-	7	-	8	1	11	-	13	-	13	1
59.	Visva Bharati (PSB), Sriniketan (WB)	4	1	6	-	5	-	5	-	6	-	13	-
60.	WBUA&FS, Kolkata (WB)	7	1	3	1	2	1	-	1	2	-	2	2
61.	BHU, Varanasi (UP)	13	7	13	6	13	6	14	6	16	-	17	10
62.	Other Universities	18	11	15	6	11	7	12	5	9	-	24	4
	Total	473	171	472	174	468	186	472	189	472	-	474	190

started paying dividends in the form of growing attraction of talented youth towards Agricultural Education. This was evident by the startling revelation that out of 1,847 candidates admitted in 55 Agricultural Universities through All India Entrance Examination (2013-14) conducted by the Council for UG admissions, about 42% candidates secured 80% and above marks in their qualifying Intermediate Board Examinations, the highest being 99%. About

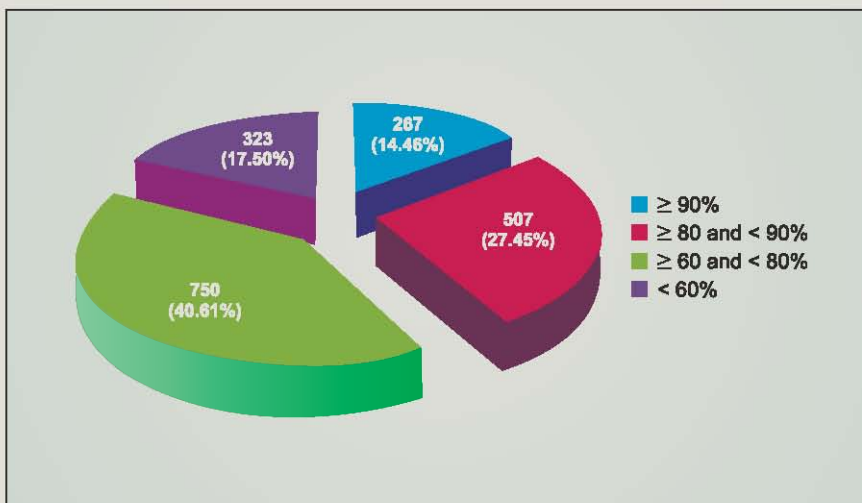


Fig.14 Marks profile of candidates admitted in UG courses

82% candidates had secured above 60 % marks (Fig. 14).

It is encouraging that many talented students are offering agriculture as their subject of first or second choice for the profession.



Chairman approving the allotment of seat



12.0 Scope of 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, are expected to 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 been 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.

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) Industries dealing with fertilizers and plant nutrients
- (v) Plant protection chemicals, insecticides and pesticides, veterinary drug 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.



13.0 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 infrastructural facilities to better equip themselves to meet the newer challenges in the sector.

To achieve average annual growth of above 4%, allied sectors have to be taken on board as we would require not only food but a balanced diet with adequate nutrition. For increasing production and productivity on sustainable basis, 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 competent human resource, not only for the research and teaching purposes but also to effectively deliver the technologies at the grassroots level to give momentum to get the optimum production.

Agriculture as a subject is generally opted by the students who do not get admission in medicine/engineering/management/veterinary courses to pursue their career. Therefore, talent within the available pool 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 offer '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 enthruse 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 on 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, nanotech-nology, 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 student exchange programmes. The number and scope of fellowships needs to be substantially enlarged to attract and retain the young talents.

In 12th Plan, 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 talent from all over country getting it exposed to different socio-cultural environment and nurture it, to provide quality manpower that is willing to work beyond regional and linguistic barriers as per emerging need in the coming years.

The background of the page features a soft, light green color palette. At the top and bottom, there are large, semi-transparent images of green leaves, likely from a plant like a banana or similar, with prominent veins. In the upper center, there is a faint, semi-transparent map of the African continent, showing the outlines of the major landmasses. The overall aesthetic is clean, natural, and professional.

TALENT FOR RESPONSIVE AGRICULTURE



*Selecting Talent
for
Responsive Agriculture...*

