# Skill Gap Analysis Among Agricultural Graduates

**Nagendra[1], S. Helen[2], Mridula N.[3] and Darsana S.[4]**

1. Former PG student, College of Agriculture, Vellanikkara, 2. Professor & Head,
3. & 4. Assistant Professors, Central Training Institute, Mannuthy, Thrissur -680651 Kerala
*Corresponding author's e-mail: helen.s@kau.in*

***ABSTRACT***

*A study was conducted among the outgoing students of Kerala Agricultural University and employers in agriculture sector to assess the skill gap existing among agricultural graduates in Kerala. A sample size of 120 student respondents from three colleges offering degree courses in agriculture under Kerala Agricultural University and 30 employers in agriculture domain were selected for the study. It was found that overall skill gap (14.54) among agricultural graduates of Kerala was found low. The top five highest skill gap among overall skills of agricultural graduates were self-presentation skills, information skills, interpersonal skills, ICT skills, and critical thinking skills. Revised course curriculum, improvement of soft skills through effective utilization of language labs and professional mentoring for building employability skills are the suggestions for improving the skills of agricultural students in Kerala.*

***Key Words:*** *agricultural graduates, skill gap, demanded skills, existing skills, employability skills*

## INTRODUCTION

The fast changing agricultural scenario poses many challenges for agricultural education. The skilled workforce to carry out the future of Indian agriculture in the productive and sustainable manner is a need of the hour. The technology driven competitive world need agricultural graduates with professional abilities and employability skills. It is estimated that in India, 1.65 lakh students are enrolled every year in various degree programmes in the Agricultural Universities. Present day graduates are expected to possess a variety of soft skills, such as leadership, communication, negotiation, facilitation and organisational capabilities which are being demanded by potential employers and which foster active participation in the Agricultural Innovation Systems (AIS). There is a need for analysing the skill gap, developing content for skill development and organising hands-on training. In India, there is need to ramp up especially when 298.25 million workers are to be reskilled/upskilled and Recognition of Prior Learning (RPL) (Sanghi, 2017). Skill gap analysis helps organizations align their talent development strategies with their long-term business goals. By identifying the skills that are in high demand or lacking, organizations can develop training and development programs that focus on bridging those gaps. By hiring graduates with the necessary skills, employers can ensure that their workforce is efficient and productive. These skills enable graduates to perform tasks with proficiency, thereby reducing time and resources required for training and supervision. With this background, a study was conducted with an objective of assessing the skill gap among the agricultural graduates in Kerala.

## METHODOLOGY

To achieve the objective of the study and to represent the skill level of entire agricultural graduates in Kerala, three colleges offering degree courses in agriculture under Kerala Agricultural University were selected for the study. They were College of Agriculture, Vellanikkara from the main campus Thrissur, Central Kerala, College of Agriculture, Vellayani, Trivandrum at the south and College of Agriculture, Padannakkad at the northern part of Kerala. Proportionate sampling technique was adopted to select a sample size of 120 outgoing student respondents during the year 2018 viz; 34 agricultural graduates from CoA,

Vellanikkara, 58 agricultural graduates from CoA, Vellayani and 28 from CoA, Padanakkad.

Employers from various organizations of agriculture domain were considered as respondents to assess the skill demanded by the employers. Thirty employers in managerial position of agriculture based organizations were selected randomly from the state of Kerala. Respondents were selected from various institutions viz; financial institutions, co- operatives, NGOs, department of agriculture, agricultural marketing, agricultural research and development and private agriculture related companies.

The scale developed by Blom and Saeki (2014 was used with suitable modifications to measure the three broader dimension of skills viz; Core employability skills, professional skills and communication skills. Fifteen variables under core employability skills, ten variables each under professional skills and communication skills were identified and administered for judges opinion. After that the responses of selected judges were considered to select the variables for the present study with Relevancy Index (RI) value of 80.00 and above. Twelve variables under core employability skills, nine variables under professional skills and five variables under communication skills were finalised for measuring the skills demanded by the employers of agricultural graduates and existing skills among agricultural graduates in the present study.

The selected variables were measured by adopting the scales developed by various authors with suitable modifications. The identified statements for measuring each variable were rated using five point continuum viz; strongly agree, agree, undecided, disagree and strongly disagree with the scores of 5, 4, 3, 2, and 1 to each statement respectively. Thereafter total score and index value of each statement and composite index for each dimension were calculated using index method.

The skill gap was operationally defined for the present study as the difference between the skills demanded by the employers of agricultural graduates and the current skills possessed by agricultural graduates to perform well in their profession.

$$\text{Index of each statement} = \frac{\text{Total score for each statement}}{\text{Maximum score of the statement}} X100$$

$$\text{Composite index} = \frac{\sum X}{MxNxS} x100$$

Where, $\sum X$ = sum of total scores of all statements
(Sum of frequencies multiplied by weight)

M= Maximum score
N=Number of respondents
S = Number of statements

The skills demanded by the employers of agricultural graduates were calculated using the index method for each skill. Thereafter mean index for each dimension and overall skills demanded by the employers of agricultural graduates was calculated. Simultaneously, the skill level of agricultural graduates was measured using index method for each skill. Thereafter mean index for each dimension and overall skill level of the agricultural graduates was calculated.

Skill gap = Skills demanded by the employers of agricultural graduates – Current skill level of agricultural graduates

Above formula was used to calculate the skill gap for each skill among the agricultural graduates. Thereafter mean index of skill gap for each dimension and overall skill gap of agricultural graduates was calculated.

## RESULTS AND DISCUSSION

From the Table 1, it was found that overall skill gap of agricultural graduates of Kerala was low with an index value of 14.54. Both the demanded skills by the employers and the existing skills of agricultural graduates were above average with the composite index values of 80.59 and 66.04 respectively. It could be observed from the table that the demanded skills by the employers of the agricultural graduates were more than the existing skills among agriculture graduates of Kerala. Among the overall expected skill level by the employers, top ten demanded skills were team work, interpersonal skills, leadership skills, self-confidence, integrity, oral communication skills, positive attitude, creativity, self-presentation skills and problem solving skills with index values of 90.80, 90.20, 88.20, 84.60, 84.25, 84.20, 83.80, 83.60, 83.20 and 81.60 respectively. Employers in agricultural sector require graduates to possess skills that are directly applicable to the work situation. These demanded skills ensure that graduates can immediately contribute to the organization and are well-versed in the practices and techniques required in agriculture. By hiring graduates with the necessary skills, employers can ensure that their workforce is efficient and productive. These skills enable graduates to perform tasks with proficiency, thereby reducing time and resources required for further training and supervision.

Among the overall existing skills of agricultural graduates, ten top skills were team work, empathy, integrity, responsibility, adaptability, leadership skills, customer service skills, self-confidence, positive attitude and oral communication skills with the index values of 79.06, 77.91, 76.40, 75.03, 73.33, 72.66, 72.16, 71.98, 70.94 and 70.43 respectively. Top five highest skill gap among agricultural graduates were self-presentation skills, information skills, interpersonal skills, ICT skills, and critical thinking skills with the index values of 23.32, 22.71, 22.47, 21.47 and 20.96 respectively. Whereas top five lowest skill gap was observed in having customer service skills, empathy, adaptability, responsibility and management of people with the mean index values of 1.44, 1.69, 4.47, 5.37 and 5.38, respectively.

Among all the skills, core employability skills of agriculture graduates were demanded high with the mean index value of 83.28 indicating that the core employability skills were highly important in performing their job. While existing core employability skills among agriculture graduates was above average with the index value of 70.33. Among the overall skill gap of agricultural graduates, core employability skill gap was lower with the

*Table 1*
*Details of skill gap among agricultural graduates in Kerala*

| S. No. | Nature of skills | Demanded Skills | Existing skills | Skill gap |
|---|---|---|---|---|
| | | Index values | | |
| **I** | **Core employability skills** | | | |
| 1 | Self-confidence | 84.60 | 71.98 | 12.62 |
| 2 | Self-presentation skills | 83.20 | 59.88 | 23.32 |
| 3 | Leadership skills | 88.20 | 72.66 | 15.54 |
| 4 | Team work | 90.80 | 79.06 | 11.74 |
| 5 | Integrity | 84.25 | 76.40 | 7.85 |
| 6 | Empathy | 79.60 | 77.91 | 1.69 |

| | | | | |
|---|---|---|---|---|
| 7 | Adaptability | 77.80 | 73.33 | 4.47 |
| 8 | Responsibility | 80.40 | 75.03 | 5.37 |
| 9 | Positive attitude | 83.80 | 70.94 | 12.86 |
| 10 | Interpersonal skills | 90.20 | 67.73 | 22.47 |
| 11 | Self- motivation | 77.20 | 60.56 | 16.64 |
| 12 | Ethics | 79.41 | 58.53 | 20.88 |
| | **Mean index** | **83.28** | **70.33** | **12.95** |
| **II** | **Professional skills** | | | |
| 1 | Customer service skills | 73.60 | 72.16 | 1.44 |
| 2 | Creativity | 83.60 | 66.16 | 17.44 |
| 3 | Management of people | 73.60 | 68.22 | 5.38 |
| 4 | Decision making | 78.20 | 59.72 | 18.48 |
| 5 | Problem-solving skills | 81.60 | 62.50 | 19.10 |
| 6 | Critical thinking skills | 78.40 | 57.44 | 20.96 |
| 7 | Willingness for starting agri-related enterprises | 79.20 | 67.00 | 12.20 |
| 8 | General knowledge about agriculture | 68.40 | 54.79 | 13.61 |
| 9 | Goal oriented | 76.20 | 57.70 | 18.50 |
| | **Mean index** | **76.97** | **62.85** | **14.12** |
| **III** | **Communication skills** | | | |
| 1 | Oral communication skills | 84.20 | 70.43 | 13.77 |
| 2 | Written communication skills | 80.40 | 63.25 | 17.15 |
| 3 | ICTs skills | 80.20 | 58.73 | 21.47 |
| 4 | Information skills | 79.00 | 56.29 | 22.71 |
| 5 | Technical skills | 79.40 | 59.02 | 20.38 |
| | **Mean index** | **80.64** | **61.54** | **19.09** |
| | **Overall skill gap index** | **80.59** | **66.05** | **14.54** |

value of 12.95. Among the demanded core employability skills of agricultural graduates, team work (90.80), interpersonal skills (90.20), leadership skills (88.20), self-confidence, integrity, with the index value of 84.60, 84.25, respectively were the top five demanded skills. Overall top five skills among existing core employability skills of agricultural graduates were team work, empathy, integrity, responsibility and leadership skills with the index values of 79.06, 77.91, 76.40, 75.03 and 72.66, respectively. Overall top three skill gap were self-presentation skills (23.32), interpersonal skills (22.47) and ethics (20.88). Overall least skill gap were empathy (1.69), adaptability (4.47) and responsibility (5.37). Niranjan and Krishnakumare (2020) reported that there was an improvement in most of the employability skill parameters of the graduates. Great improvement was seen in case of the ability of the students to take risk to achieve their goal. In contrast, a reduction in some of the skill parameters like innovativeness, knowledge on up-to-date information about the subject and current affairs was also observed.

Overall gap of professional skills of agricultural graduates was low with the mean index value of 14.12. Both the overall demanded professional skills and existing professional skills

among graduates were identified as above average with the mean index values of 76.97 and 62.85 respectively. Overall top three professional skills expected by the employers were creativity, problem solving skills and willingness with the index values of 83.60, 81.60 and 79.20 respectively. Overall top three professional skills existed among graduates were customer service skills, management of people and willingness for starting agri-related enterprises with the index values of 72.16, 68.22 and 67.00 respectively. Top three professional skill gaps among agricultural graduates were critical thinking skills, problem solving skills and goal orientation with the index values of 20.96, 19.10 and 18.50 respectively.

Overall skill gap of communication skills among agricultural graduates were observed low with the mean index value of 19.09. The demanded communication skills by the employers and existing communication skills among the agricultural graduates were found above average with the mean index values of 80.64 and 61.54 respectively. Among the communication skills, oral communication skills was the most expected by the employers with the index value of 84.20 followed by written communication skills, ICT skills, technical skills and information skills with the index values of 80.40, 80.20, 79.40 and 79.00 respectively. Among the communication skills possessed by agricultural graduates, oral communication skill, written communication skill, technical skill, ICT skill and information skill were assessed with the index values of 70.43, 63.25, 59.02, 58.73 and 56.29 respectively. Information skill was recorded as the highest skill gap among the communication skills with the index value of 22.71 followed by skill gap in ICT skill, technical skill, written communication skill and oral communication skill with the index values of 21.47, 20.38, 17.15 and 13.77, respectively. (Fig.1) The findings of Kaur and Anupam (2020) and Charu (2019) are similar to the findings of the present study and stated that the managerial competency was identified to be the most needed one among the agricultural graduates as perceived by the students followed by entrepreneurial, extension skills, technical, market/understanding government policy, communication/ICT and personal competency. Aljohani et al (2022) reported that entrepreneurship education, digital skills and soft skills appeared as prominent themes amongst university students. The skills in high demand were related to data science, cyber security, natural language processing and machine learning. The same skill sets may be required among agriculture students too in near future.

The results showed that overall skill gap was low among the agricultural graduates in Kerala. The educational system followed in Kerala and positive atmosphere for the graduates to inculcate their skills might be the reasons for the low skill gap among the agricultural graduates. Communication skill gap was the highest among all the skill gap because of less knowledge and awareness regarding the fast changing ICTs and modern communication tools. The second highest skill gap was observed in the professional skills of agricultural graduates. The possible reasons for the low level skill gap among the professional skills might be the pattern of syllabus followed in agricultural education such as field orientation classes, practical classes, Rural Agricultural Work Experience programme, experiential learning etc. Low skill gap was observed in core employability skills (12.95) when compared to professional skills (14.12) and communication skills (14.54) among agricultural graduates.

The findings were in accordance with the results of Tanwar (2018) and Thakur (2014). In contrast, Vaishali and Rashmi (2020) concluded that respondent employers felt that only 37 per cent of fresh graduates were employable, with high level of variations that each graduate possessed based on many factors.

## CONCLUSION

Overall skill gap (14.54) among agricultural graduates of Kerala was found low. Top five highest skill gap among overall skills of agricultural graduates were self-presentation skills, information skills, interpersonal skills, ICT skills, and critical

thinking skills whereas top five least skill gap was observed in customer service skills, empathy, adaptability, responsibility and management of people. The overall skill gap among agricultural graduates' core employability skills (12.92) was low. Top three core employability skills having high skill gap were self-presentation skills (23.32), interpersonal skills (22.47) and ethics (20.88) while least skill gap were: empathy (1.69), adaptability (4.47) and responsibility (5.37). Overall skill gap of professional skill (14.12) was low among the agricultural graduates. Overall top three skill gaps existed among professional skills were critical thinking skills, problem solving skills and goal orientation. Overall skill gap for communication skills (19.09) of agricultural graduates were observed as low. Information skills recorded the highest skill gap followed by ICT skills, technical skills, written communication skills and oral communication skills.

By understanding the skill gap of agricultural graduates, organizations can make informed decisions about hiring, training, and professional development opportunities to ensure a skilled and competent workforce in the agricultural sector. This analysis contributes to the overall development and improvement of the agricultural industry by mapping the skills and competencies required for success in various roles and addressing any gaps in education or training. Revised course curriculum to meet the diversified needs of prevailing agricultural situation, improvement of soft skills through effective utilization of language labs, professional mentoring for building employability skills, updating course content regularly based on the current demands in the job market and active involvement of placement cells for employability audit to prepare action plan for improving the employability of students are the suggestions for improving the skills of agricultural students.

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