



# SHAPING FARMERS FOR TOMORROW: INNOVATION IN AGRICULTURAL EDUCATION IN SOUTH KOREA

| 3

The Korea National University of Agriculture and Fisheries (KNUAF)'s innovative program is helping South Korea overcome issues relating to its ageing rural population while simultaneously developing elite human resources to establish and promote a highly competent agriculture sector. Since its inception, the KNUAF has been producing young highly competent professionals to manage its high tech agriculture either as entrepreneurs or farm managers.

KNUAF has developed a unique program that selects youth who are willing to take up farming and fisheries, provides them hands on experience with farming, support them in establishing a startup of their choice and provide continued support for another 7-10 years after they graduate. This holds several lessons for countries trying to attract and retain their youth in agriculture, says Dr. Song Yong-sup in this Good Practice Note.

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## CONTEXT

Rapid industrialization and urbanization coupled with an ageing rural population pose serious challenges to agriculture in South Korea. More than 46% of farmers in Korea are 65 years old or older (Song Yong-sup, 2023)<sup>1</sup>. International trade agreements related to agriculture concluded in the early 1990s made Korean agriculture more vulnerable as it opened intense competition to its agricultural produce. The Government recognized the need to deploy cutting-edge technologies (including mechanization and automation) and the importance of having highly competent professional agricultural managers to lead its agriculture and fisheries industries so as to enhance the competitiveness of Korean agriculture.

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<sup>1</sup>The elderly population of agricultural managers increased from 21.7% to 46.8% between 2000 and 2021.

Though the country has been producing agriculture graduates who have studied the discipline for four years, they have been reluctant to put their expertise to use in agricultural fields as they prefer laboratories and offices. The education system in the agricultural colleges have failed to foster a new generation that can practice agriculture. Professors in agricultural universities have been oriented towards academic and theoretical problems in specialized and subdivided major areas and been occupied with research papers rather than paying heed to the real problems farmers face. Many universities taught 'agriculture', but very few of them taught agricultural technology for field application. These universities were nowhere near cultivating agricultural professionals who could handle the future of the country's agriculture and fishery sectors.



View of the KNUAF Campus ©KNUAF

## KOREA NATIONAL UNIVERSITY OF AGRICULTURE AND FISHERIES (KNUAF)

### Establishment

South Korea has been implementing innovative policies and programmes since the 1980s. One such innovation was the establishment of KNUAF, which has been producing young and highly competent professionals to manage its high-tech agriculture, either as entrepreneurs or farm managers.

The idea for the university originated in May 1994, when the Rural Development Committee, a presidential advisory body, proposed the establishment of a purely agricultural college that would provide field-oriented education. In June 1994, as part of the 'Rural Development Plan and Agricultural Reform Promotion Plan', an agricultural and fisheries technical college was set up. A detailed action plan for the establishment of the school was laid out in September 1994, and the

Korea Agricultural College establishment ordinance (Presidential Decree No. 14742) was promulgated on July 27, 1995, and the school opened as a three-year national college under the Rural Development Administration on March 20, 1997. On September 27, 2006, the Korea Agricultural University Establishment Act (Law No. 7997) was promulgated and the name of the colleges was changed from Korea Agricultural College to Korea Agricultural University. On April 1, 2009, the Korea University of Agriculture and Fisheries Establishment Act (Law No. 9624) was promulgated and took effect on October 2, 2009, expanding the scope of human resources training to all fields of agriculture, forestry, fisheries and food, and the name of the university was changed to Korea National University of Agriculture and Fisheries. Its affiliation was changed from the Rural Development Administration to the Ministry of Agriculture, Food and Rural Affairs (MAFRA), and standards were established for awarding bachelor's degrees to those who completed the advanced major course.



*Students on the KNUAF campus ©KNUAF*

The University has 4 Technical Departments and 1 Department for Liberal Arts (Figure 1).

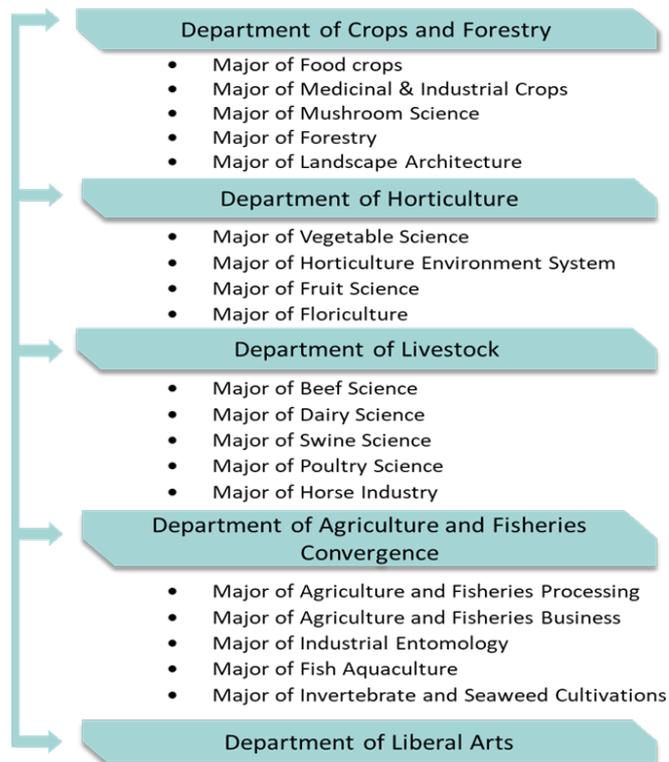


Figure 1: Departments of KNUAF



Drone operating practice ©KNUAF

## Programme Objectives

The programme aims at:

- Fostering capacities to handle agricultural machines, high-tech facilities and equipments and post-harvest management skills
- Enhancing production skills
- Reinforcing management and marketing training necessary for commercial agriculture
- Providing field-oriented practical education that integrates subject matter with field experience
- Potential for specialization - Students can choose specialties independently. Integrated education is provided under each specialty on production, storage, processing, marketing and management.
- Fostering a global outlook through foreign language training and overseas training.
- Fostering leadership through special lectures on culture, dormitory life, and extra-curricular activities.

### Curriculum Details

The three-year school system nurtures future agriculture and fisheries leaders through practical training programmes that strengthen the link between subjects studied and practice, and systematic support for startups (Table 1). Those who want to undergo an additional year can get a bachelors degree on a major they specialize.



*Greenhouse for flower cultivation at KNUAF ©KNUAF*

Table 1: Details of the programme

Year	Content	Details
1	<b>Education in liberal arts and agricultural and fisheries industry expertise</b>	Basic knowledge of agriculture and fisheries sectors, use of agricultural machinery, understanding digital agriculture, basic skills for each major and liberal arts course to become a successful manager and foreign language education.
2	<b>Field education through advanced farming and fisheries training</b>	The specialized knowledge acquired in the first year is applied directly to the field, where students experience the management and production techniques of domestic and foreign farms/enterprises. A short-term overseas training course is offered for students to acquire advanced technology by visiting production, processing, and distribution sites in the agriculture and fisheries sectors in developed countries.
3	<b>Startup design, major practical education</b>	The focus is on the development of startups by checking information related to a specific startup and multiple variables that influence the creation of startups, with customized individual guidance for each startup type.
4	<b>Intensive major course: Bachelor's degree program</b>	A bachelor's degree is conferred upon completion of the intensive major course (1 year) after graduation. Graduates are taught post-harvest treatment, storage, processing, distribution, and management of agricultural products, all focused on solving problems encountered in farming.



Horse breeding training centre at KNUAF ©KNUAF

## Selection of students

Every year, the programme is open to 570 high school graduates who have been recommended by the principal of a high school, mayor of the city and county or director of agricultural extension center, with the following selection criteria:

### *Primary criteria:*

- The student's record in high school
- Individual farm size
- Letter of recommendation and
- Letter of self-introduction

### *Secondary criteria:*

- Written examination to test basic knowledge and interview

### *Additional criteria:*

Graduates from agriculture-related high schools, those with certificates of national qualification in agri-related fields, those who have completed military service, and women applicants or graduates from junior colleges or universities are given preference in the selection process.

After graduation, it is mandatory for these students to engage in farming or fisheries for six years, which is twice the number of years of their study.



*Practical Training Center (Greenhouse) at KNUAF ©KNUAF*

## Student Support

All the students receive full government scholarship that covers the registration, tuition fee, living expenses and dormitory accommodation. They also get a graduation certificate of junior college and financial support for farm resettlement. Students also receive other types of support during their study and after they graduate (Figure 2).

## IMPACT

Since its establishment in 1997, KNUAF has produced 6,931 graduates (as of 2023) and contributed to nurturing young farmers and fishermen who will lead the sustainable growth of the agriculture and fisheries sectors of Korea. Of these, 88.3% of the graduates successfully settled as farmers or fishermen.

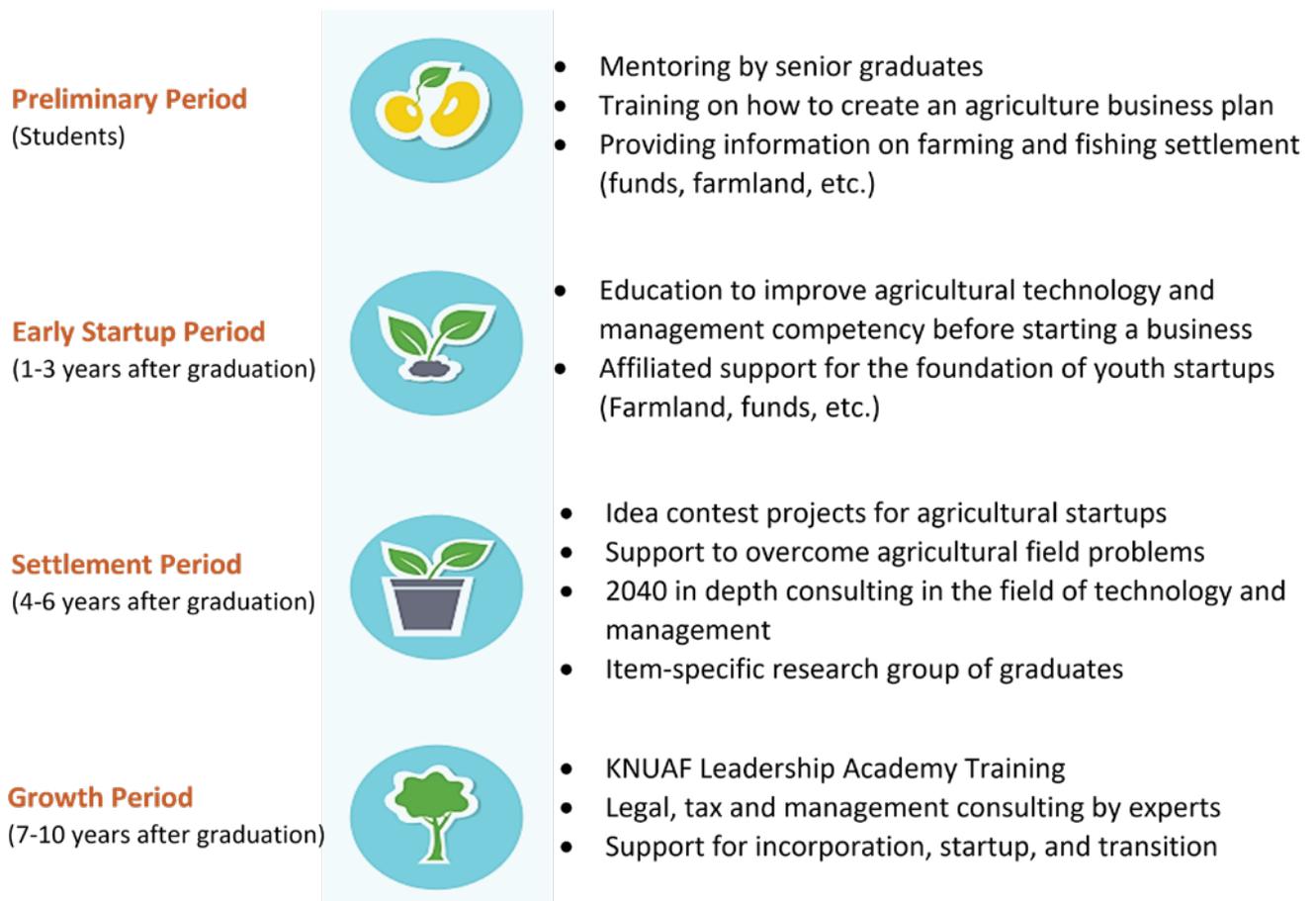


Figure 2. Student support from KNUAF (Source: Brochure published by KNUAF, 2022)



*Creative Education Center at KNUAF ©KNUAF*

## LESSONS

The setting up of KNUAF was a major institutional innovation to enhance the competitiveness of South Korean agriculture while addressing the larger issues of youth migration to cities in search of jobs and an ageing rural population with no one to look after their farms. KNUAF is among the wide range of policy instruments used by the Korean government to attract and retain youth in agriculture (Ma, 2014; Lee & Choi, 2019, Song 2022).

Primarily, the setting up of KNUAF provided mechanisms both to create competent manpower to manage high- tech farms and for continued handholding and financial assistance to trained graduates to become entrepreneurs.

Given that barely 1 to 2% of four-year agricultural university graduates settle in farming sites, fostering talent is of great importance.

Secondly, there is a lot of scope to improve the quality of education through KNUAF. As its focus is on fostering professional agriculture, forestry and fishery managers, the curriculum should be fully organized around students and the field, not professors who are providers of knowledge. Field-oriented and practical education centered around practicability, business feasibility, and field applicability are key to preventing excessive segmentation of departments based on the faculty's personal major or interest.

Thirdly, there is a need to strengthen on-site guidance after graduation through the provision of short-term supplementary education if necessary, so that graduates can successfully settle in farming or fisheries. Rather than awarding a degree, a government-recognized 'agricultural manager' qualification system would enable only those who have obtained this qualification to become farm managers, agricultural CEOs or managers.

Lastly, preference should be given to students with good academic credentials, high school graduates who wishes to choose agriculture, forestry, and fisheries as a lifelong job and with no restriction on age or gender. More importantly, the selected students should have a strong sense of mission, responsibility and creativity in protecting and reviving the agriculture, forestry and fisheries sectors.

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## Good Practice Notes Series

The Asia-Pacific Islands Rural Advisory Services Network (APIRAS) and the Asia-Pacific Association of Agricultural Research Institutions (APAARI), in close collaboration with the Office of Innovation at the Food and Agriculture Organization (FAO) of the United Nations, are committed to strengthening Agriculture Innovation Systems (AIS) in the Asia-Pacific region to transform agri-food systems.

There is a growing recognition on the importance of institutional innovations in promoting more efficient and productive collaboration among the various actors in AIS. The publication of this series of Good Practice Notes by APIRAS and APAARI is an attempt to document cases of institutional innovations that are currently transforming agri-food systems.

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