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**ANALYSIS OF COMPETENCY AND CERTIFICATE OF COMPETENCY REQUIREMENTS FOR
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ABSTRACT

Faced with future agricultural and food problems, Indonesia must not only innovate its agricultural system but also improve the quality of its human resources, especially those who play a direct role in the food system products of the agricultural industry. Human resources as a source of competitive advantage for an organization play an important role in achieving the organization's mission of achieving its vision and goals, which impacts the success of the organization. The Indonesian government has established a special agency to carry out skills certification under SKKNI. Therefore, this study was conducted to determine: 1) What skill standards do workers in the agricultural industry need? and 2) Who needs these skills. The agribusiness sector requires technically and managerially competent human resources, especially those involved in the agri-food subsystem. For informal workers, skills can be acquired through training, but for formal workers such as employees and government, they need certification of competency as a tool to demonstrate skills mine.

Keywords: Agribusiness workers, competencies, achievement standards, certificate of competency

INTRODUCTION

In the era of the 4.0 industrial revolution, the agricultural industry still occupies an important position in human life because without this industry, human resource development cannot develop properly. Due to economic transformation, the agricultural sector's contribution to GDP in many countries is decreasing with each decade (Arsani, 2020). The trends and challenges analyzed here are a source of both hope and concern. Much progress has been made in reducing poverty and improving food security and nutrition (Food and Agriculture Organization, 2017). However, this still leaves various challenges from several aspects as presented in the table below.

Table 1. The Future of Food and Agriculture

No	Trends	Challenges
1	Selected global trends affecting food security, poverty and overall sustainability of food and agricultural systems	These trends pose a series of challenges for food and agriculture.
2	Economic growth and population dynamics are driving of structural changes in the economy	Eliminating extreme poverty and ensuring that vulnerable people who escape poverty and do not fall back into poverty require measures to reduce inequality
3	Climate change disproportionately affects areas affected by food insecurity, putting agricultural and livestock production at risk, fishing stocks and fisheries at risk	Pro-poor growth must go beyond agriculture and involve both rural and urban areas, and support job creation and income diversification

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|---|---|--|
| 4 | Hunger and extreme poverty have decline globally since the 1990s. | Rethinking of food systems and governance is essential to meet current and future challenges |
| 5 | Essential elements of the food systems are increasingly capital intensive, vertically integrated and concentrated in fewer hands. | On the path of sustainable development, all countries are interdependent. |
| 6 | Conflicts, crises and natural disasters are increasing in number and intensity | |
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Source: Food and Agriculture Organization, 2017

To solve the above challenges, Indonesia must not only innovate its agricultural system but also improve the quality of its human resources, especially those who play a direct role in the agribusiness system. Rozaki (2021) suggests that agricultural performance, as it is known in the field, includes a variety of physical activities and that age has a strong influence. Older farmers may be less productive; Although their experience is higher than that of the younger generation, their physical strength is getting weaker. In Indonesia, the aging of farmers is also a problem, as is the trend of young farmers losing interest in agriculture. The process of revitalizing the agricultural sector is very slow and fraught with many challenges, but preparation is still needed. Salsabila and Lo (2023) then explain that human resources as a source of organizational competitive advantage play an important role in achieving the organization's mission of achieving its vision and goals, from that has an impact on the success of the organization. In support of this assertion, Katidjan et.al (2018) found that competencies have a positive and significant impact on employee performance. The Indonesian government has established a special agency responsible for implementing skills certification under SKKNI. The establishment of the National Professional Certification Agency (BNSP) was made mandatory in 2003.

Another reality shows that, in agriculture, rural human resources can be both a responsibility and a skill, depending on how well they are managed. Individual farmers have less access to the resources needed to strengthen their capacity to become agents of development. However, with community groups as organizations, they will have greater bargaining power, access and capacity through collaboration and empowerment. The group can manage to supply raw materials, sell products at better prices, provide financial resources, share knowledge, and information and many other benefits. Based on the description, the researchers would like to discuss the importance of skill standards in the agricultural sector. Therefore, this study was conducted to determine: 1) What skill standards do workers in the agricultural sector need; and 2) Who needs these skills?

RESEARCH METHOD

This study uses a qualitative descriptive method based on a literature review. Previous research results serve as references to describe topics such as: 1) Classification of employment in the agricultural food sector; 2) Employment standards in the agricultural sector; 3) Skill needs analysis based on the agri-food subsystem.

RESULT AND DISCUSSIONS

1. Standard of Competencies Review

Hiring employees with the right skills will most likely gain an advantage in the market. The skills that each employee possesses are different, which is why many people use this aspect of skills as a metric to evaluate performance. Competence is a person's ability to perform at a satisfactory level in the workplace and also represents the characteristics of knowledge and skills that person possesses or needs to be able to perform tasks, work responsibilities effectively and improve their professional qualifications. This is also explained by Becker et.al (2001), skills include a number of aspects such as knowledge, skills (expertise) and competencies or personality traits that can affect performance their movements. Skill contain a deep, genuine, inherent part of a person's personality, capable of reacting predictably in different work situations and tasks. Predictions of good and poor performance can be measured against the criteria or standards used. Having good skills will encourage employees to perform well. On the contrary, when employee skills are not good, it is also encouraging poor performance.

Regarding these skills, the government is actively trying to improve the quality of human resources by implementing skills certification and professional certification programs. Certification plays an important role in establishing a solid professional career structure and promoting quality in various fields, including education, healthcare, finance, government and society. This certification is granted by the National Board for Professional Certification (BNSP) or the Institute for Professional Certification (LSP) (Eskandar, 2023). Improving access to occupational skills certification will be followed by efforts to accelerate the completion of the Indonesian National Skills Standards (SKKNI) within each industry or business sector by industry and professional associations, industry, government and other stakeholders, and provide certification standards (Arif et.al, 2020). Occupational skills certification is a skills certification process that is carried out systematically and objectively through skills testing according to national occupational skills standards, international standards and/or standards.specifically (State Secretariat, 2012). Skills certification is one of the three pillars of skilled human resource development recognized at the national and even global level (BNSP, 2017).

2. Field of Work in the Agribusiness Sector

In agribusiness, there are four interrelated subsystems, and each system has a benchmark for its level of success.

These five subsystems include: 1) Upstream agribusiness; 2) Agricultural business on the farm; 3) Downstream agricultural enterprises; and 4) agricultural sector institutions. Harli et.al (2018) explains that agricultural development is an approach to agricultural development that includes not only agricultural industry but also the production and distribution of raw materials, tools and agricultural services, industry as well as distribution and processing of agricultural products. Agribusiness systems are a concept that situates agricultural practices in general and global operations as well as one that can consider and respond to a variety of issues and challenges.

Table 2. Agribusiness Subsystem Activities and Actors

Subsystem	Activity	Actors
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Up-Stream	Buy and sell agricultural products (seed, plants, animal feed, fertilizers, pesticides, credit institution, fuel, tools, machinery, agricultural production equipment).	Individuals, private companies, governments, cooperatives
On-Farm	Production of agricultural products in the form of food, crops, fruits, flowers and ornamental plants, livestock products, animals and fish	Farmers, breeders, pond entrepreneurs, ornamental plant entrepreneurs and others
Down-Stream	Collecting, processing, preserving and distributing agricultural products. Some agricultural products are distributed directly to domestic and foreign consumers. Others must first undergo processing and then distribute them to consumers	Product collectors, processors, traders, distributors to consumers, canners and others
Supporting Institution	All types of activities have the function of supporting, serving and developing the activities of upstream subsystems, on-farm subsystems and downstream subsystems.	Extension, consultant, finance, and research.

Source: Munanto, 2014

In general, agricultural activities span from upstream to downstream stages, including land use preparation, seedling preparation, planting of seedlings in soil, growth and development of crops, harvesting, collection and storage, production and packaging, distribution and finally consumption. These include experts conducting research, farmers, a government bureaucracy, an NGO lobby groups, a technologist and a scientist (Mephram, 2012).

In developing countries like Indonesia, small-scale farming has always played an important role because the majority of the population lives in rural areas. But this small-scale agriculture has traditional characteristics. According to Princy (2022), traditional farming is a primitive farming method that includes the use of knowledge, tools, natural resources, organic fertilizers and ancient agricultural customs and beliefs people. Different from the modern concept, it refers to a type of agricultural production that uses a lot of money, labor and a lot of agricultural equipment.

During implementation, each activity of each subsystem can still be performed in traditional and modern ways but there are differences in cost, time and achieved results. This fact shows that the gap between results and quality makes the agricultural-industrial system unable to develop optimally. However, each type of activity has different standards, but every performer must meet the same standards. Based on these activities, a person's skills or competencies should begin to be categorized to ensure consistency of results.

3. Standards for Implementing Activities in the Agribusiness Subsystem

Each subsystem has different achievement goals, although ultimately successful achievements between subsystems will support each other and become an indicator of the success of the complete system. However, if there is a problem between any subsystem, it can be said that the system is not working well.

a. Upstream Agribusiness

Upstream agriculture is associated with providing inputs for agricultural production. This subsystem is the first subsystem of the agri-food system. From there began all activities related to agriculture. The success of this subsystem is the first indicator that determines the success of the next subsystem. Citing

research results by Mutambara (2016), 79% of farmers have difficulty accessing agricultural inputs. This statement shows an indication of the failure of this subsystem, which in turn requires improvement of its operation. Therefore, it is important to know the implementation standards that must be met to ensure the success of this subsystem.

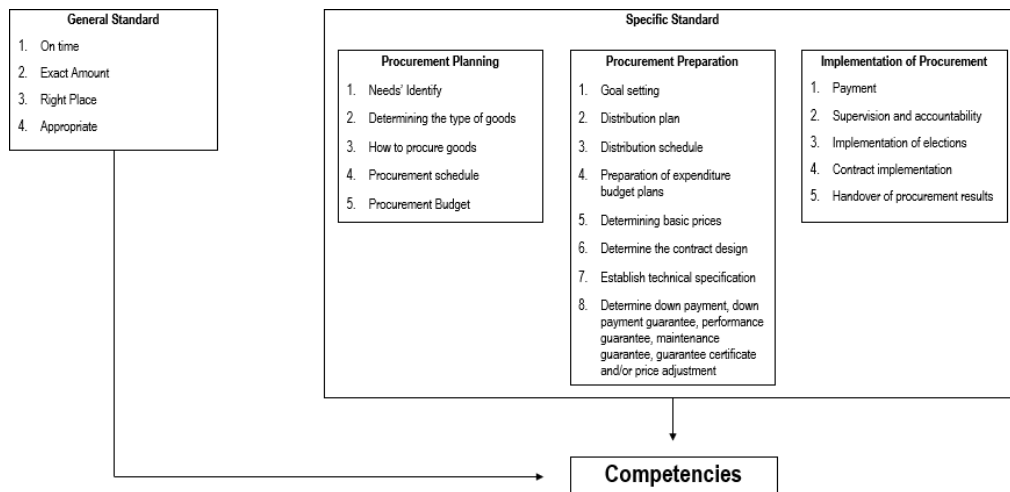


Figure 1. Competency Standards are Based on Up-Stream Achievement Standards

The figure above shows the general and specific standards that must be adhered to in upstream agribusiness management. Each operating point associated with a specific standard must ensure that it meets the general standard, that is, it meets 4 aspects of accuracy, including: at the right time, in the right quantity, in the right place and in the right way. From a labor perspective, the upstream agricultural industry requires specialized human resources for accurate analysis, and not everyone has the ability to analyze, so it is a reference to explain why players in this subsystem Must have special skills.

b. On-Farm Agribusiness

In general, farm operations include land preparation up to harvest, regardless of the method used, traditional or modern. Every activity undertaken must produce effective and efficient results to achieve optimal levels of quality, quantity and revenue.

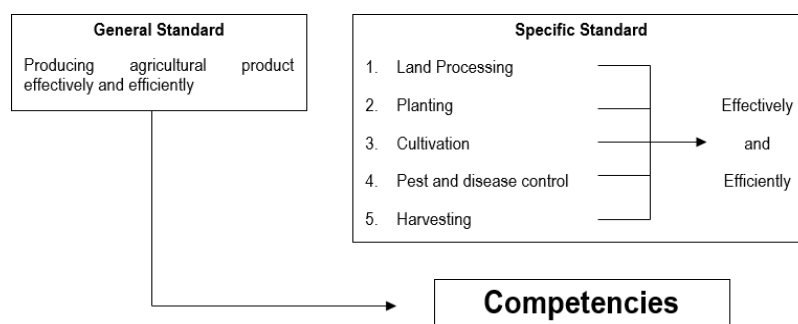


Figure 2. Competency Standards Based on On-Farm Achievement Standards

Much research has been carried out from land preparation to harvesting, both by conventional methods and using machinery. However, in reality, farm operations have not yet achieved the expected efficiency and effectiveness. The most basic reason is that subjects in the agricultural sector lack professional knowledge, and even farmers' experience is not used as a learning tool to improve their operations. In this case, cultural actors need measurement skills, such as input requirements, to achieve certain outcomes, in addition to technical expertise.

c. Downstream Agribusiness

The downstream agricultural sector will be explained here based on agricultural product processing and preservation standards. Depending on the progress of human civilization and international relations, the storage techniques used also evolve. People not only produce goods for themselves but also serve others. The more people they have to serve, the more inventory they need to have. Sufficient inventory can only be obtained through collection and storage activities. The role of storage is therefore increasingly important so that objects collected and stored are not damaged or lost.

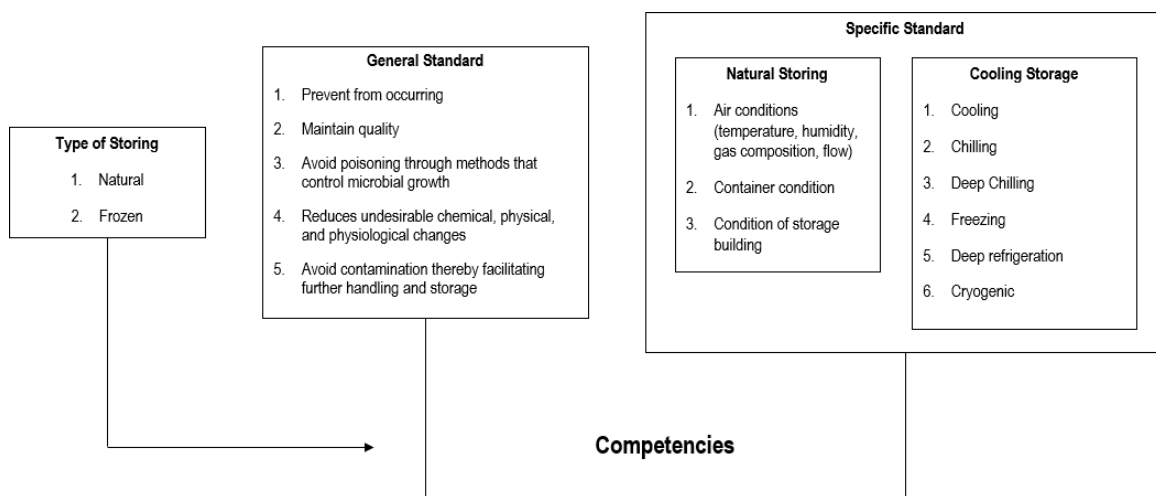


Figure 3. Competency Needs Based on Storing Achievement Standards

In general, storage standards aim to maintain product quality and reduce yield losses. Currently, the role of product storage at the Indonesian farmer level has not had a significant impact. The reason is that land ownership is limited and the commercial scale is small, so the harvest is not very large. In addition, most Indonesian farmers sell their products in neighboring markets. However, in the future, this storage will be essential, especially as changing climate conditions threaten future food sources. Therefore, current and future generations of farmers must begin to acquire knowledge and even skills in preserving products.

Today, international trade requires agro-industrial companies to pay attention to product quality, food safety and traceability, both during the production process and throughout the production chain. To meet the requirements of international trade regulations and strengthen their company's position in global competition, food companies must implement quality assurance systems. Commonly used and scalable quality assurance

systems in the food industry are the HACCP and ISO 22000. Below is an overview of the principles and objectives of the HACCP and ISO 22000.

Table 3. Food Processing Standards Based on HACCP and ISO 22000

No	HACCP		ISO 22000	
	Principle	Purpose	Principle	Purpose
1	Analyze hazards and identify risks and ways to prevent them	Management Commitment	Interactive communication	The relationship between food processing and distribution
2	Identify and define critical control points (CCP) in the manufacturing process	Establish HACCP team	a System management	A management system
3	Determine the critical limits for each identified CCP	HACCP team training	Prerequisite program	Food risk control (HACCP requirements system)
4	Prepare monitoring procedures and requirements for CCP monitoring	Product description	HACCP principle	Continuous monitoring and process improvement
5	Determine the corrective actions that must be taken if deviations occur at critical limits	Identify the intended use or consumer		
6	Implement effective procedures for recording and storing data	Preparation of charts or process flow diagrams		
7	Establish procedures for fact-checking	Check and recheck the process flow diagram		
8		Applying the seven HACCP principles		

Currently, the agricultural sector is growing, especially due to the goal of increasing the added value of products and efforts to diversify products. The quality of the obtained products complies with HACCP and ISO 20000 standards. Many agricultural industries, especially household or small-scale ones, prioritize the efficient use of raw materials to adapt to commodity price conditions decline in the market, so the quality aspect is often pushed aside. In addition to price reasons, compliance with product quality standards is also little known to agricultural companies. In the face of global business competition, food and beverage businesses must begin to understand the importance of product quality standards and possess specialized knowledge and skills in product processing. Some suggested skill types include:

Table 4. Competency Scheme Recommendations

No	Subsistem	Competency
1	Upstream Agribusiness	Purchasing facilitator Purchasing supervisor Purchasing manager
2	On-Farm Agribusiness	Agricultural machinery operator Farm operations manager

3	Downstream Agribusiness	Agricultural warehouse technician Agricultural warehouse supervisor Agricultural warehouse manager
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A type of job field that typically includes technical staff, supervisors, and managers, although in reality, sometimes just one person can complete the job into more than just a specialized function. Everyone working in a field is expected to benefit from different types of programs depending on the type of work they do.

4. Competency Training and Competency Certification

Wong (2020) argues that there is a difference between “competency” and “competen”. These differences are described in the table below.

Table 5. The Comparison Between “Competency” and “Competence”

Competence	Competency
Focus on results	Focuses on a person's behavior
Describe the domain characteristics of job tasks or job outcomes	Describes a person's attributes
Include the various skills and knowledge required to perform the job	Build on a person's basic attributes for superior job performance
Not transferable because each more specific skills and knowledge to perform the job	Can be transferred from person to person
Evaluated according to job performance	Rated behavioral and attitudinal values
Task orientation	People-oriented

Source: Yuvaraj, 2011

. Developing skills requires training, on-the-job learning and career management. The working capacity of individuals will be increased. It is important to note that as the organizational and socioeconomic landscape continues to evolve, the need to conduct skills assessments continues to increase, this is known as skills certification.

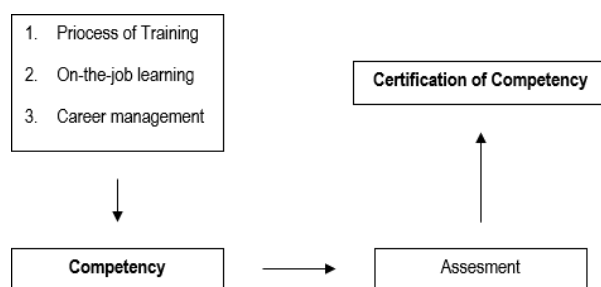


Figure 4. Competencies Concept

A profession is defined as a field of work whose functions and tasks require a person to fulfill certain skills related to that field (Lau et al, 2011) and a certificate of competency can be used as a means to demonstrate one's competence. When it comes to the agricultural sector, informal sectors such as farmers and entrepreneurs will only need training to expand their knowledge and enhance their skills. This is different from the formal sector, such as employees and government, who require a certificate of competency that can be used as evidence that they are worthy of holding a certain position depending on the certificate of competency and power they have.

Although there are differences in demand between the formal and informal sectors, vocational training and certification should refer to the same SKKNI so that there is no difference in the level of skills possessed.

CONCLUSION

The agribusiness sector requires technically and managerially competent human resources, especially those involved in the agribusiness subsystem. For informal workers, skills can be acquired through training, but for formal workers such as employees and government, they need skills certification as a tool to demonstrate competence his force.

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