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## Managerial Competencies in Agriculture

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**Abstract:**

*The purpose of this study is: (1) to identify competencies that can be applied to agricultural extension agents in agribusiness in the sub-district Kabila and sub-district Tilongkabila, and (2) to find out the factors that influence agricultural extension agents' competence in agribusiness in the same sub-districts.*

*The method used in this study is a survey method where data was collected through interviews and questionnaires.*

*Results of this research found that, competency of agricultural extension agents in the Kabila and Tilongkabila sub-districts on agribusiness, have the ability to design educational programs, the ability to implement education programs and the ability to manage information dissemination.*

*The factors that influence agricultural extension agents' competence, are: knowledge, skills and attitudes of educators in designing educational programs, counseling programs to implement and manage agricultural field information.*

**Keywords:** Competence, Agricultural Extension Agents, Agribusiness.

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## 1. Introduction

Agriculture Field Officer Competencies are competencies of a field officer based on his knowledge, skill and attitude to implement agricultural field activities that have been developed together with farmers and the community. These competencies will be mostly helpful to yield good performance, since competency is understood as the combination of skill, attitude, and knowledge reflected in *job behavior* that is observable, measurable, and can be evaluated. In some literature, competencies are often classified into two types, soft competency or competencies related to the ability to manage the working inter human relationship, and competencies to build interaction with others (Yueh-Shian and Weng-Kun, 2017; Burkaltseva *et al.*, 2017).

Agricultural elucidation is a non-formal community education, in which, its implementation should be based on efficiency and effectiveness of the field officer performance, hence, every elucidation program introduced to the community can be wholly adopted and is measurable by the community to prevent its social problems.

Wet field rice agribusiness is a process of developing local business of agriculture supported by four sub-systems of agribusiness, namely: (1) upstream sub-system, through providing infrastructure for production (wet field rice seeds, fertilizer, and pesticide), (2) agribusiness sub-system such as rice field culture (soil management, planting, crops management, harvesting and post-harvesting), (3) downstream sub-system such as processing and handling of the yield (diversification of rice products), and (4) supporting subsystem such as provision of agribusiness capital, either from the financing institutions (bank and koperasi) and marketing facilities and infrastructure (Hofstede, 2014).

Agricultural extension agents' competencies will tremendously help government in implementing agricultural development in programs in their respected areas, based on the planned field activities. Agricultural Extension agents, in implementing the agribusiness extension of rice field, in addition to be supported by the technical competencies such as competencies to cultivate the rice field, the agents also need to have managerial competencies that are closely related with sustainable agribusiness management such as, marketing, and access to working capital. Therefore, the farmers will feel that they are being assisted in developing and increasing the rice field agribusiness through agricultural development programs in order to increase the rice field productivity (Locander *et al.*, 2002; Srinita, 2017).

## 2. Research Objective

The objective of this research is: (1) to identify the competencies of agricultural extension agent that can be implemented in field rice agribusiness, and (2) to find out factors that influence the competencies of agricultural extension agents in field rice agribusiness.

### **3. Research Methodology**

This research was implemented in Kabila and Tilongkabila sub-districts of district Bone Bolango. The research was carried out from February to April, 2015 using descriptive statistics to describe several variables related to the object of the research. This research has used the survey method, in which, data collection was carried out through interviews and the administration of questionnaires. Data were taken from samples to be able to make generalization of the observed phenomenon, hence data collection method should be done properly.

Qualitative data collected in this research consisted of primary and secondary sources. The smallest unit of observation in this research is the agricultural extension agent and by involving the agents' supervisor and farmers, that were guided by the agents in each of their respected area.

The number of agricultural extension agents in Kabila and Tilongkabila sub-districts is 10 people, hence the whole population were all the agricultural extension agents in both sub-districts. Data taken randomly and proportionately from all the population of agents.

### **4. Findings and Discussion**

#### **4.1 Characteristics of Agricultural Extension Agents**

This research revealed that characteristics of agricultural extension agents in Kabila and Tilongkabila sub-districts of Bone Bolango districts consists of the age of the agent, their level of formal education, and the trainings attended by the agents during their tenure as extension agents. 3 people or 30% of the agricultural extension agents were 20-35 years old, 5 agents (50%) were 36-45 years old, and 2 agents (20%) were more than 45 years old. Taking into consideration the retirement age of 60 years, in the next ten years, Kabila and Tilongkabila sub-districts will lose 12% of their agricultural extension agents. The characteristics of the agent are also influenced by their level of formal education, the level of education obtained by the extension agents in Kabila and Tilongkabila sub-districts's is Junior High School, Senior High School, and Diploma 3.

With reference to education, 1 agent (10%) has a junior high school diploma, 3 agents (30%) have a high school diploma, and 6 agents (60%) have diploma 3 (University degree). In relation to the level of education stipulated by the Department Pertanian EI (2005), a first level extension agent has to have at least a diploma 3 qualification, and as mentioned above, the agricultural agents in both districts that met this requirement remained as low as 60%. In implementing their tasks, agricultural extension agents are not only relying on formal education, but also on the training to improve their knowledge and skill as agricultural extension agents in Tilongkabila and Kabila sub-districts. This is because their formal education may

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not be sufficient or related to their work, hence, they will need technical trainings such as, rice culture technique and training on agribusiness product marketing.

There are 5 extension agents who have participated in technical training for rice culture (50%), 3 extension agents (30%) have participated in training for agricultural product marketing, and 2 extension agents (20%) have participated in agricultural extension management training.

The Department Pertanian RI/Department of Agriculture of the Republic of Indonesia (2005) stipulated that an extension agent has to participated at least in 2 technical trainings during their tenure as first level extension agent, hence, it implies that the extension agent in Kabila and Tilogkabila sub-districts have met this requirement, with some improvement needed in management trainings.

The research is in line with Bahua (2013) on “*Model of Competencies development for Agricultural Extension Agent in Gorontalo Province,*” which revealed that 2.3% of extension agents’ competencies was influenced by the level of formal education; 10.7% was influenced by technical trainings that they have participated in; 32.1% was influenced by work tenure; 34.9% was influenced by the age of the extension agent.

Theoretically, this research is in harmony with Ruky (2003) who stated that individual characteristics that correlate with performance are called person specifications, namely: (1) technical knowledge and skills, (2) trainings attended, either specialization trainings, comprehensive trainings, or complementary trainings, (3) work experience, (4) motivation, (5) values system attitude as organizational core culture, (6) personality, (7) knowledge, (8) skill, (9) sex, (10) age, and (11) physical appearance as weight, height, hobbies, talent, and appearance.

Agribusiness is closely related with community capacity improvement in production mechanism. Basic competence of agricultural extension agents in wet field rice agribusiness is justified through extension activities planned together with farmers.

#### **4.2 Competencies of Agricultural Extension Agents**

The research shows that competencies of agricultural extension agents in Kabila and Tilogkabila sub-districts consists of: (1) the ability to design the extension program, (2) the ability to implement the extension program and (3) the ability to manage the extension information.

Competencies of agricultural extension agents are reflected in their activity description that correlates with learning process in implementing rice field agribusiness in Kabila and Tilogkabila sub-districts as evident in the following Table 1.

**Table 1.** *Competencies of Agricultural Extension Agent in Rice Field Agribusiness*

| <b>Components of Extension Agents Competencies</b> | <b>Activity Description</b>  | <b>Number of agents (person)</b> | <b>Percentage (%)</b> |
|--|--|----------------------------------|-----------------------|
| Ability to design the extension program            | Extension program is designed  | 10                               | 100                   |
| Ability to implement the extension program         | Conduct learning process using method and media familiar to the farmers                                      | 10                               | 100                   |
| Ability to manage the extension information        | Manage extension information through internet, such as: sending download, and store agricultural information | 10                               | 100                   |

Based on Table 1, the competencies of agricultural extension agents are:

- 1) the ability to design the extension program;
- (2) the ability to implement the extension program;
- (3) the ability to manage the extension information.

These three competencies are embedded in extension agents, hence in implementing duties and functions, they are always guided by their competencies based on their knowledge, skill and attitude of the agricultural extension agent in agricultural technology innovation.

The research is in line with Wijianto (2010) on “*Correlation of agricultural extension agents’ competencies and the members of farmers group participation in Banyudono sub-districts of Boyolali district*” which concludes that there was a significant correlation between extension agents’ competencies and members of farmers group participation in group activities. This means that every increase in value of the extension agents’ competencies, would be followed by the increase in value in member’s participation. Theoretically, this research is also in line with Boyatzis (1982) who states that, competencies are characteristics or one’s ability to show or perform specific activities in a working environment that were conducted diligently, hence, the person can accomplish their role and duties given to them.

### **4.3 Factors that Influenced the Extension Agents’ Competencies**

Competencies are basic characteristics of a person that influence their way of thinking and acting, making generalization on situations staying for long. Factors that influenced agricultural extension agents in rice agribusiness at Tilonkabila and Kabila sub-districts are available in the following Table 2.

**Table 2.** Factors Influencing the Competencies of Agricultural Extension Agents in Rice Agribusiness.

| Component of Agricultural Extension Agent Competencies | Influencing Factors | Number of Agents (Person) | Percentage (%) |
|--|---------------------|---------------------------|----------------|
| Ability to Design the Extension Program                | Knowledge           | 6                         | 60             |
|  | Skill               | 8                         | 80             |
|  | Attitude            | 4                         | 40             |
| Ability to Implement the extension program             | Knowledge           | 8                         | 80             |
|  | Skill               | 8                         | 80             |
|  | Attitude            | 2                         | 20             |
| Ability to manage the extension program information    | Knowledge           | 5                         | 50             |
|  | Skill               | 3                         | 30             |
|  | Attitude            | 4                         | 40             |

Table 2 shows that the factors that influenced the competencies of the agricultural extension agent in rice agribusiness are: knowledge, skill, and the attitude of the agricultural extension agent. This indicates that the extension agents who have knowledge, skill and a good attitude will make an impact on the increase of the extension agents competencies in managing the rice agribusiness.

The research is in line with Damihartini and Amri Jahi (2005) on “*Correlation of Farmers’ Characteristics and Agribusiness Competencies in Vegetables Agribusiness in Kediri Sub-district of Jawa Timur*”, which concludes that the knowledge, attitude, and skill aspects are mutually independent in assessing the agribusiness aspects that have to be mastered by the farmers. Overall, the research output shows the influence of knowledge and skill factors on agricultural extension agent’s competencies in rice agribusiness. The knowledge on agricultural extension are mainly from formal education attended the agents, meanwhile their skills are more due to either technical trainings attended or practice done by the extension agents during their tenure. Theoretically, the research is also in agreement with Deborah *et al.*, (2002) who describe that core competencies are a basic knowledge, skill, attitude and behavior that play a role in determining the success of an extension program. *Wisconsin Cooperative Field officer* states that a competency is a sufficient quantity of knowledge, skill, and responsibility to fulfill certain tasks or jobs. *Missouri Cooperative Field officer* states that every professional extension officer should processed their personal strengths, ability as educators, and skill in information technology and as expert in his/her field.

### 5. Conclusions and Recommendations

Based on the discussion and findings, the following conclusions are made:

- (1) Competencies of agricultural extension agents in Kabila and Tilongkabila sub-districts of Bone Bolango district in Rice Agribusiness are the ability to design, implement and manage the extension program information.

- (2) Factors that influence the competencies of Kabila and Tilongkabila sub-districts of Bone Bolango district in Rice Agribusiness are knowledge, skill and attitude of extension agents in designing, implementing, and managing the information related to extension programs.

Based on the findings in this research and its conclusion the following actions are recommended:

- (1) The policy makers need to improve the competencies of agricultural extension agents in rice agribusiness by considering their level of knowledge, skill, and attitude of the agents in designing, implementing and managing the information related to rice agribusiness.
- (2) The agricultural extension agents, in order to help farmers in rice agribusiness, need to consider the competencies on their own knowledge, skill and attitude, hence, an extension program suited to the needs of the farmers and their agribusiness can be created.
- (3) A further research needs to be done to explore the agricultural extension agents' competencies related to improvement of agribusiness products.

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