

*Full Length Research Paper*

# Training needs assessment of Agricultural Extension Officers in Animal Husbandry Department of Malang Regency, East Java-Indonesia

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The main objective of this research project is to identify the training needs of Agricultural Extension Officers in the Animal Husbandry Department of Malang Regency. The research questions are: (1) what are the present knowledge and skills of Agricultural Extension Officers in the Animal Husbandry Extension Department in Malang Regency, (2) what knowledge and skills are needed for Agricultural Extension Officers, and (3) what training materials are needed based on the needs assessment? To accurately identify the needs of these Agricultural Extension Officers, a training needs assessment is developed in the format of a semi-structured questionnaire which is completed by 24 of the 29 Agricultural Extension Officers in Malang Regency. Emerging from this study, four main suggestions can be outlined. Firstly, farming management and content delivery are two issues that should be included in the training manual; secondly, training programs development should be based on Agricultural Extension Officers' needs, wants, aspirations, communication and media mastery, which are the important areas that are believed could bring out their capability. Finally, training programs have to meet the espoused high training needs found in the training needs assessment.

**Key words:** Present knowledge and skill, critical needs, future training needs.

## INTRODUCTION

East Java is one of three provinces of Java Island that consists of 9 cities and 29 regencies. Each city and regency then is divided into smaller areas called districts. Malang Regency is located in the north of East Java, which has 4,778.87 square kilometers. It is divided into 33 districts and the regency central government is located in Kepanjen where all political decisions are made (Figure 1).

### Profile of farmers in Malang

As the rainfall in Malang Regency is around 1,118.50 mm/year (Malang Regency, 2006), about 50.47% (560,350 people) of Malang Regency total population work in the agriculture sector (Malang Regency, 2004). Most of them work as farmers in paddy field (*sawah*) while 102,880 farmers have cattle, beef, dairy cows and poultry as the primary and/or secondary income (Malang Regency, 2005).

The Malang Regency government have big expectations of livestock and poultry farming to be successful in its 'poverty fighting' program. The level of household income increase from 2004 to 2005 indicates that this sector could significantly contribute to farmers' wealth (Table 1). Despite the increasing rate of household income farmers still face several problems, they are:

1. Lack of motivation to:
  - (a) Plant specific pasture for beef and dairy cattle feed
  - (b) Obey farming registration regulation
2. Lack of knowledge and skills in:
  - (a) Handling and processing animal products
  - (b) Accessing and using market situation and price information
3. Partnership farming contract abuse in:
  - (a) "Gaduhan" contract between beef farmers
  - (b) Nucleus-Plasm contract between poultry farmers and poultry/feed mill industry.

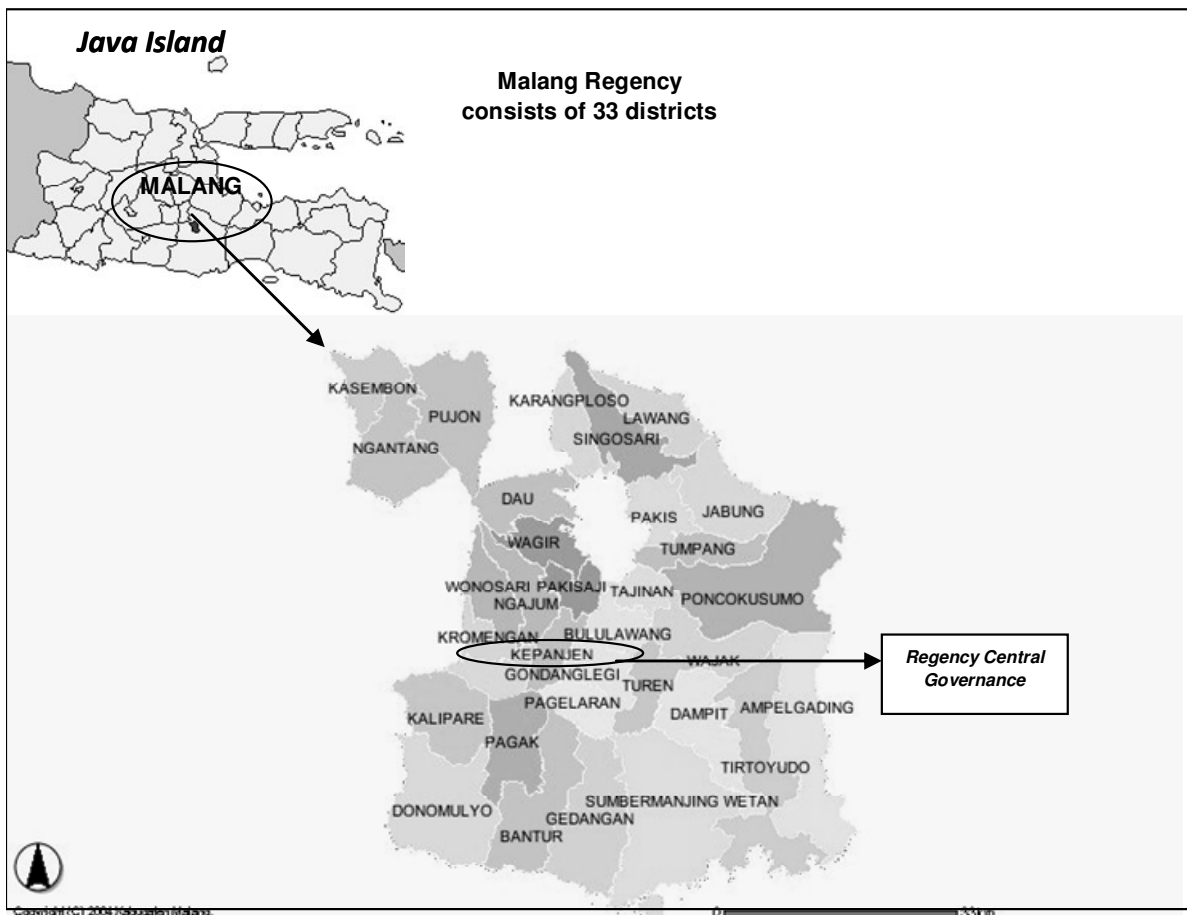


Figure 1. Location of Malang regency.

Table 1. Series of household income (Year 2004-2005).

| No. | Farmers         | 2004 (in Rupiah) | 2005 (in Rupiah) | Rate (%) |
|-----|-----------------|------------------|------------------|----------|
| 1.  | Beef farmers    | 848,513          | 861,537          | 1.53     |
| 2.  | Dairy farmers   | 1,778,660        | 1,804,612        | 1.46     |
| 3.  | Poultry farmers | 2,423,436        | 2,797,582        | 15.44    |

Source: Livestock and Fishery Service Office of Malang Regency (2006).

Solutions can be offered to solve farmers' problems above by carrying out extension programs that:

1. Give understanding about the importance and the benefits of (a) planting suitable pasture, and (b) obeying farming registration regulation to their farming existence.
2. Improve farmers' knowledge and skills in (a) handling and processing animal products, and (b) accessing and using market situation and price information to increase their income.
3. Inform farmers about their rights and obligation in "Gaduhan" and Nucleus-Plasm contracts so they can

have longer partnership, get more income in a long term, and get material and/or technical support from their partners.

Those problems have been persisting for years due to three main reasons. First, Javanese culture which demands younger people obey elder people and it is therefore inappropriate to give advice to them. Extension officers find this situation discourages them when they do their job. Second, some of traditional farming management methods that are not longer suitable are still difficult to change. Farmers do not feel at ease to giving

up the technology that they have used for decades. Thirdly, trainings carried out for farmers sometimes were not managed properly. Communication strategy, timing, venue, content, and materials did not meet farmers' needs and wants. Hence, there must be some effort to help extension officers in carrying out their job optimally. Improvement is needed in both the process and content of extension programs and in the training of extension officers.

Training needs design for Agricultural Extension has been a crucial point to increase the quality of agricultural extension. Study of Hoque and Usami (2007) suggest to provide training program planners in other developing nations with valuable information in order to make more effective training program for the agricultural extension personnel. Another study in Pakistan (Malik and Khan, 1997) shows that Agricultural Extension Officers need in-service training for increasing their work efficiency. It was also proven that the farmers are likely to benefit more when they receive technological package from a qualified personnel, a person who knows what to carry and give to farmers (Mngumi, 2010).

Every year some training and workshops were carried out for Agricultural Extension Officers in the Animal Husbandry Extension Department in Malang Regency and those programs apparently are to be continued in the following years. However, the functions of Agricultural Extension Officers are not optimally performed. There are two reasons that underlie this condition. First, some of basic knowledge and skills that Agricultural Extension Officers got from their previous education were insufficient. Only 10 of 29 Agricultural Extension Officers have undergraduate certificates in Agricultural Faculty (5 officers), Animal Husbandry Faculty (3 officers) and Veterinary Faculty (1 officer). The other officer got his degree from Law Faculty which is less appropriate with the demand of his job as an Animal Husbandry Extension Officer. The other 19 officers got their certificates from 3 years diploma (2 officers) and senior high school or year 12 (17 officers). There is a fundamental lack of appropriate training in the roles and responsibilities of Agricultural Extension Officers. Second, those training only included the practical and technical things content, not how to deliver the content itself. The way Agricultural Extension Officers spread the message to their clients is an important issue that should be tackled professionally. It needs special knowledge and skills that must be supported by organized and suitable training materials. These skills and knowledge are the focus of this report both in the needs assessment carried out and in developing appropriate training materials to met this needs.

All of the farmers' problems are basically possible to change by conducting an appropriate extension program. The effectiveness of the program mostly depends on how Agricultural Extension Officers deliver their message to farmers. Agricultural Extension Officers should be able to

develop extension programs where the content can solve farmers' problems and the way of delivery is appropriate to the culture, farmers' characteristics and attributes (age, sex, education level, etc). For this reason, Agricultural Extension Officers need to be knowledgeable and skilled in extension program management and delivery as well as the farming management. However, the training materials on extension program management and extension delivery which Agricultural Extension Officers get from their institutions and further learning are not sufficient.

The purpose of this study is to develop training materials that able to meet the needs of Animal Husbandry Extension Department officers in order to improve their performance in conducting their job. A need assessment will be done to get succinct results about the materials that Agricultural Extension Officers would like to be developed and to be included in their future training material. This assessment complements the observations and discussions that have been held with extension staff. The training process and develop reflects that mostly wanted by Agricultural Extension Officers.

## MATERIALS AND METHODS

Training needs assessment is important to confirm the researcher is initial belief that Agricultural Extension Officers need particular training form and to help develop the manual guide that would be a final result of the research. Three steps of activities were used to assess the training needed by Agricultural Extension Officers, they were:

1. Developing questionnaire
2. Targeting and interviewing
3. Discussion with selected agricultural extension officers

Method of the research was descriptive survey to describe the whole population. The focus of the research is what exists in this moment with one variable. The population of the research was Agricultural Extension Officers in Animal Husbandry Extension Department in Malang Regency. Total sampling was used to get the data. Questionnaire is used to keep interviewer on track in stay in the main structure of the interview. Questions in the questionnaire are directly aimed to answer the training needs of Agricultural Extension Officers. All of 29 officers in the department were involved in the research to get succinct and rich result, since every respondent was asked to contribute his/her experience and ideas. Interview was intended to be done personally to enhance the result, although in a few cases the questionnaire was mailed to respondents.

To enrich the research, discussion about some issues beyond the questionnaire was done. Related issues about training needs assessment raised by Agricultural Extension Officers were fruitful in developing the manual guide and for further recommendation of the research. The researcher had discussions with Agricultural Extension Officers who were available during data collection and were seems to be open in sharing and discussing further matters.

Several tables were built to collate and to organize the data collected based on the questions in the questionnaire. Using a different table for each question, data recording, data reading and data interpretation would become uncomplicated. The table about skills and knowledge that are presently needed by Agricultural

**Table 2.** Present agricultural extension officers' skills and knowledge ability.

| No. | Topic  | Ability |    |   |   |   |
|-----|--|---------|----|---|---|---|
|     |  | 1       | 2  | 3 | 4 | 5 |
| 1.  | Communication and media                              | 7       | 9  | 2 | 2 | - |
| 2.  | Agribusiness   | 3       | 5  | 5 | - | - |
| 3.  | Rural development                                    | -       | 2  | 2 | - | - |
| 4.  | Extension management                                 | -       | 4  | - | 1 | - |
| 5.  | Veterinary   | 6       | 2  | 1 | - | - |
| 6.  | Animal product processing and by products management | 3       | 10 | 8 | - | - |
| 7.  | Farming and breeding management                      | 4       | 14 | 4 | 1 | - |
| 8.  | Animal nutrition                                     | 1       | 2  | 1 | - | - |

Ability: 1= Very poor, 2= Poor, 3= Adequate, 4= Good, 5= Excellent.

Extension Officers contains the main topics that are needed and how they rate the needs. The next table is similar to the former one, only it focused on the future needs. Current level of Agricultural Extension Officers' skills and knowledge ability are recorded in the third table by using two main columns: main topics and ability scores. The ability scores were developed from Agricultural Extension Officers' measurement on their own ability in the main topics they had opted for. The last table about training materials priorities is more detail as it also includes total score of training materials needed, the average of each training material and the interpretation using the Linkert scale (Likert, 1932).

Data interpretation was the next step after pulling together data into tables. Basically, interpreting the data was to answer the research questions based on the research result. Data were, then analyzed to meet the objectives of the questions in the questionnaire.

## RESULTS

Agricultural Extension Officers were expected to measure their own skill and knowledge ability in the areas mentioned in question number one. They rated their ability on the Table 2. Some areas were not familiar with Agricultural Extension Officers hence they could not measure their skill and ability. But mainly they rated their skill and ability were in "poor" condition,

The second question was to identify the skill and knowledge that are currently needed by Agricultural Extension Officers. The result of the first question was on Table 3. Animal product and by products processing and management was the main area chosen by Agricultural Extension Officers as mostly needed in the current period.

Question three was very much related to question number one in that it was intended to discover the materials needed by Agricultural Extension Officers in the future. Communication and media was rated highest than other 7 areas.

## DISCUSSION

The competency of agricultural extension officer including

knowledge and skill were very important in the success of agricultural program. The research of Shaffri et al. (2010), Hoque and Usami (2008) and Mwangi (1998) illustrate the importance of training for Agricultural Extension Officers. Background of the research was based on the issue that livestock and poultry farming sector in Malang Regency have been shown to able to significantly contribute to farmers' wealth and 'poverty fighting' program. However, farmers still face several problems, such as: lack of motivation, knowledge and skills in applying innovation, and some partnership contract abuse. Agricultural Extension Officers was expected to help solving farmers' problems, but they have no optimal performance because: (1) their previous education is not sufficient and/or compatible; (2) training provided only included the practical and technical things, not how to deliver the content itself.

The purpose of this study was to identify the training needs of Agricultural Extension Officers in the Animal Husbandry Department of Malang Regency officers in order to improve their performance in conducting their job. To do this a need assessment will be done to get succinct results about the materials that Agricultural Extension Officers would like to be developed and to be included in their future training material. Key elements of each of 6 critical topic areas in knowledge and skill for Agricultural Extension Officers were used, that are Communication and media, Agribusiness, Rural development, Extension management, Veterinary, Animal product processing and by products management, Farming and breeding management and Animal nutrition. Tladi (2004) reveals the importance of needs assessment of agricultural extension agents in improving their performance. His findings of his study further stress the need by the Ministry of Agriculture and related training institutions to conduct thorough extension training needs assessment involving all stakeholders before developing in-service training programs for extension agents.

When Agricultural Extension Officers were expected to measure their own skill and knowledge ability in the eight areas mentioned it seems there were no Agricultural

Extension Officers who feel strongly confident and satisfied with their performance. On the negative side, they might be discouraged to do their job since they feel less competent and less confident than necessary. If no response given to this situation it will impact on the success of the program. Agricultural Extension Officers might feel underestimate themselves and the communication process between Agricultural Extension Officers and farmers will not successfully undertook. However, the benefit of this situation is Agricultural Extension Officers may be motivated to get new skills and knowledge to enhance their performance. In this situation, the Department together with Agricultural Extension Officers can build training materials so it will be appropriate with incompetent knowledge and skills that they need to master.

For the knowledge and skills that are currently needed by Agricultural Extension Officers, the result illustrates the awareness of Agricultural Extension Officers about their capabilities and the importance of extension management in conducting their job. Technical materials such as "products" processing (22 statements), farming and breeding management (20 statements) are the main areas that get attention from Agricultural Extension Officers. Unfortunately, extension management that would help to deliver the materials is somewhat forgotten (only 6 statements). This situation might be based on several reasons:

1. Many problems come from the farming areas that need urgent assistance. So, it is understandable since Agricultural Extension Officers were keen to help farmers in technical problems due to low productivity of farming.
2. Agricultural Extension Officers did not realize the importance of extension management to carry out their job.

On the other hand, if Agricultural Extension Officers put emphasis on the technical content instead of the way they deliver messages there must be an additional effort to make them realize that extension management has equal significance to farming management materials. The effort can come from the Department involving the experts in extension management, communication and adult learning process to bring the picture the needs of knowledge and skill in message delivery. Thus, it will depict another need of training material they should have in the future.

By examining the answers of the skill and knowledge that are needed by Agricultural Extension Officers in the future, the aspiration of Agricultural Extension Officers can be determined. Extension management still does not get much attention, it is therefore important to raise Agricultural Extension Officers' understanding about the function of extension management. Agricultural Extension Officers estimated that skills and knowledge in communication and media will be important for them in

the future. This is a very logic option since communication and media are the main tools they use in extension process, as Diamond (1994) gives special attention to these areas. He says that the reason is because the number of time messages was relayed through the system, the information was often distorted by the time it reached the farmers. To be able in operating communication devices can be a special concern. Especially, there are a lot of new technologies that simplify information seeking and distributing can help Agricultural Extension Officers task, for example internet, LCD projector, etc.

Whereas agribusiness and farming and breeding management both are also considered as important parts in extension function. This shows that Agricultural Extension Officers need constant training in farming and breeding management as new technologies keep invented and affect farmers. Agricultural Extension Officers' concern in Agribusiness has to be appreciated and noticed because today these become a crucial consideration that is effected in farming sustainability. Recommendations that arise from the study are set up out below:

First, training which includes farming and breeding management as well as content delivery is critically needed to enable Agricultural Extension Officers to become better and more relevant in performing their duties.

Second, in developing training programs, it is important to involve Agricultural Extension Officers as audience and users of the materials. Training programs should consider Agricultural Extension Officers needs, wants and aspirations.

Third, in this research, training programs have to meet the espoused critical/high training needs found in the training needs assessment.

Fourth, current training programs that need to enhance in the future are Communication and Media, Agribusiness, Extension Management. Other training programs (Rural Development, Veterinary, Animal product processing and by products management, Farming and breeding management, and Animal nutrition) can be amended to the more important ones.

Fifth, the manual guide should be used to develop relevant training and workshops based on the generic program process outlined in the report.

This study points up the present knowledge and skills of Agricultural Extension Officers in Animal Husbandry Department in Malang Regency from their own perspective. They rated their present knowledge and skills poor and imply the current urgent needs of technical materials, farming and breeding management training. Agricultural Extension Officers also select communication and media as the number one materials wanted to learn in the future since it has a strong correlation with information seeking and disseminating.

**Table 3.** Skills and knowledge that are currently needed by Agricultural Extension Officers.

| No. | Topic  | Need |
|-----|--|------|
| 1.  | Communication and media                                  | 8    |
| 2.  | Agribusiness   | 10   |
| 3.  | Rural development  | 6    |
| 4.  | Extension management                                     | 6    |
| 5.  | Veterinary   | 7    |
| 6.  | Animal product and by products processing and management | 22   |
| 7.  | Farming and breeding management                          | 20   |
| 8.  | Animal nutrition technology                              | 5    |

**Table 4.** Skills and knowledge needed by Agricultural Extension Officers in the future.

| No. | Topic  | Need |
|-----|--|------|
| 1.  | Communication and media                              | 21   |
| 2.  | Agribusiness   | 11   |
| 3.  | Rural development                                    | 2    |
| 4.  | Extension management                                 | 7    |
| 5.  | Veterinary   | 3    |
| 6.  | Animal product processing and by products management | 4    |
| 7.  | Farming and breeding management                      | 11   |
| 8.  | Animal nutrition                                     | 2    |

This study stress the significance of needs assessment of Agricultural Extension Officers training programs to enhance their performance and the success of the program carried out by them. This needs assessment should be based on Agricultural Extension Officers' needs, wants and aspirations since they can easily identify their own plus and minus points. In the future communication and media must get special attention because supposed be able to support Agricultural Extension Officers capability. Animal Husbandry Extension Department also requires giving more consideration in the needs of knowledge and skill in message delivery as one of the future training material (Tables 3 and 4).

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