Handling Plant Pests and Diseases – A Solution for Agriculture Extension

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Abstract: - Plant pests and diseases are a chain of problems for farmers who are almost never broken and thorough. Every time always appear new variants of pests and plant diseases. Agricultural extension workers in their duties to assist farmers (farmer groups), but the fact that is in the field is still difficult to serve farmers if agricultural extension workers get various questions about pest and / or plant diseases and how to overcome. Gapoktan (Combined Farmer Group) which is a combination of several farmer groups in an area that needs to receive assistance from an agricultural extension worker. Focus group discussion (FGD) is a routine activity that must be done by agricultural extension to deliver various guidance coaching cultivation, as well as accommodate various questions submitted by farmer group. While the lack of knowledge possessed, often a barrier for agricultural extension workers to answer the various questions conveyed by the farmers who are members of a group of farmers who are being accompanied. So there needs to be a concept that will facilitate agricultural extension in carrying out the task, namely the existence of an application program that is able to answer various problems given by farmers in pests and plant diseases and techniques of handling. This research is in the form of making an application program that is built for agricultural extension and will be used in all regions in Indonesia based on data compiled from information submitted by experts and Balai Proteksi Tanaman Pangan dan Hortikultur (BPTPH) as an institution that plays a center of pest assessment

Keywords: - Plant pests and Disease; Mitigation; Agriculture Extension

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I. INTRODUCTION

Mastery of knowledge about plant pests and diseases owned by an agricultural extension is crucial to the success of agricultural productivity in a region. This is related to the prevention of pests or plant diseases that attack on an area. So the faster the handling of pests and / or diseases, it will be faster also its role to the success of the harvest in a growing season.

To face the era of Asean Economic Community (MEA) which has been implemented starting in 2016 will determine the ability of agricultural extension workers. Where previous agricultural extension only accompany farmers in terms of cultivation, while the problems of pests and plant diseases are the responsibility of extension pests. So it is expected that agricultural extension officers have more capability, other than as a cultivation instructor, is also able to assist farmers in terms of handling pests and plant diseases.

The main problem in the implementation of guidance and counseling on plant pest and disease information and its handling is the condition of the territory of farmer groups. In addition, the number of agricultural extension workers in particular in Bengkulu Province is quite a lot of both extension agents, contractors and extension self-help but still require additional knowledge about pest control and plant diseases.

The resulting software will be delivered master freely to the government through a coordinating body extension (Bakorluh) Bengkulu Province as a pilot project of the program management information systems to control pests and plant diseases. While the use of the training program will be held following the schedule set by Bakorlah after receiving instructions from the provincial government. The general objective of this study was to achieve an increase in productivity of agriculture in each area farming groups get assistance from counselors who have been equipped with the knowledge of prevention of various pests and plant diseases. In other words, its relevance to the increase in household income after the farmers free of pests and plant diseases. So that the agricultural extension instructor can answer the various issues raised by farmers in terms of the symptoms caused by pests and diseases that attack the crop and countermeasures in accordance with the recommendations of experts through this program.

Based on the above facts, then that need attention later on is the level of completeness of the data and information relating to the issue of pests, diseases that attack the crop and at the same time various procedures for handling. Thus updating the data and the information was continuously indispensable for renewed (updatable) and delivered to farmers belonging to the groups of farmers.

II. MATERIAL AND METHOD

Information systems

Information is a collection of data that is processed into a form that is more useful and more meaningful for those who receive. Without the information, the system will not run smoothly and will eventually die, in other words, is the data source for the information. The information system is a system within an organization reconcile the needs of the processing of daily transactions that support the function of the organization's operations that are managerial in strategic activities of an organization to be able to provide to outside parties certain information necessary for decision-making and may also be information for all levels in such organizations whenever necessary. An information system is a collection of hardware and computer software and hardware man will cultivate and use. In addition the system can be defined following information:

- 1. A system created by humans which consists of components within the organization to achieve a goal that is present informasi.
- 2. A set of organizational procedures when implemented will provide information for decision makers and or to control the organization.
- 3. Reconciling the needs of transaction processing, support the operation, managerial and strategic activities of an organization and provide certain outside parties with the necessary reports.

Plant Pests and Diseases

The pest is a plant cultivated vermin eg rice, wheat, potatoes, mangoes, apples and so on. While the disease is causing the plant to be sick, such as bacteria, fungi, viruses, lack or excess of water. While the pain is a condition deviating from normal. Having knowledge of pests and diseases has been held, further control of pests and diseases will provide very good impact on crops and productivity. While the action taken is in the form of biological by providing pest predators. (Pracaya, 2007).

Model designing a system reveals that there are several models that can be used, namely :

- 1). Waterfall Model (Waterfall), which is a model that describes the system design complete stages ranging from analysis and requirements definition, system design and software, implementation and unit testing, integration and system testing, operation and maintenance.
- 2). Evolutionary Development Model, which is a model which is based on the idea and initial diimplemetasi then offered to customers to be explored and commented upon. Then gradually revised in accordance with the wishes of the user.
- 3). Literature study, which searches a variety of information on plant pests and diseases that have been published by the experts and latest.

III.RESULTS AND DISCUSSION

The results obtained in this study was the establishment of an information system program pest control and plant diseases. The display of the program after the run looks as follows :



Figure 1. Main Program

Figure 1 above is a result of a program that has been created, in which the program is organized into the menu, namely: Plants, Prevention, Information and Done. Tanaman (Plants) submenus are provided to serve the various problems of the existing plant, submenus Penanggulangan (Eradication) provided to serve the needs of penanggulapungan both pests and diseases of plants is desired. Information submenu are provided to serve the needs in terms of information about the desired plants.



Figure 3. Example of handling vegetable's pests



Figure 4. Example of handling fruit's pests

So with these programs, agricultural extension can freely assist farmers who need a variety of information related to pests and diseases as well as ways to overcome them.

IV.CONCLUSIONS

Based on the results of the testing program that has been created, the comments provided by the extension of plant pests and diseases can be described as follows:

- 1). Need additional information related to pests and diseases and tackling the various other plants.
- 2). So that the program can be optimized, it is necessary the addition of some facilities, such as printing brochures concise, facility updates and discussion forums

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