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Level Of Implementation Of Integrated Farming (A Case in P4S An-Nabawie Agrolestari Majasuka Village Palasah District Majalengka Regency)

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Abstract: *The purpose of this research is to find out the description of the application of integrated farming systems in efforts to develop agribusiness and also to determine the level of application of integrated agricultural systems in efforts to develop agribusiness. This research was conducted in Majasuka Village, Palasah District, Majalengka Regency. The analytical method used, namely descriptive analysis, is intended to find out how the description of the application of integrated agricultural systems and the level of implementation of integrated agricultural systems in the development of agribusiness efforts. The results showed that the level of application of integrated agricultural systems in the development of agribusiness is quite high with an average total conformity rate of 80%. the respondent farmers have been quite good about integrated farming systems in an effort to develop agribusiness*

Keywords: Integrated Farming Implementation, Development of Agribusiness

INTRODUCTION

Agricultural development in Indonesia currently does not only focus on increasing production but is more focused on the welfare of farmers. Therefore, various policies created by the government are expected to be able to improve the welfare of farmers. Agricultural development is not just a process or activity to increase agricultural production but a process that produces social changes in terms of values, norms, behavior, institutions, social and so on in order to achieve economic growth and improve the welfare of farmers and better society (Abadi et al., 2019; sulaksana, 2021). One of the government policies is to increase the diversification of agricultural resources.

Development in the current reform era still places the agricultural sector as the top of economic development in Indonesia which plays a strategic role. The agricultural sector is still the main source of livelihood for the majority of people in this country, especially in Majasuka Village, Palasah District, Majalengka Regency.

Integrated agriculture is a pillar of the rise of the Indonesian nation by providing actual food for the Indonesian people. In terms of economics, integrated agriculture is very beneficial for the community because the output produced is higher and this integrated agricultural system does not damage the environment because this system is friendly to the environment. With an integrated farming system in order to support agribusiness efforts, farmer participation is highly expected, so that farmers can plan cropping patterns according to the potential of agribusiness actors and the carrying capacity of regional conditions(Ansar & Fathurrahman, 2018; Elly et al., 2020). Integrated farming can be seen from the national, regional and farmer perspectives. The pattern of integrated farming at the national level means expanding the range of products produced by the country in total. At the regional level, this means expanding the range of products produced in their farming lands which are oriented towards agribusiness (Paramesh et al., 2022; Prasetyo & Mauludin, 2016)

An integrated agricultural pattern that can be seen in P4S Annabawie Agrolestari Majasuka Village, Palasah District, Majalengka Regency. P4S An-nabawie Agrolestari implements an integration pattern with several business units including businesses in the agricultural sector which manage food crops, especially sorghum, in the livestock business sector which manages cattle and sheep, and in the fisheries business sector managing freshwater fish ponds. It can be seen from the results of planting sorghum that when it is in production it can not only be consumed by humans but also can be made into animal feed, where poultry (chicken) produce manure and manure can be used as fish feed because the fish pond is right under the chicken coop. If the agricultural, livestock and fishery businesses can be utilized properly, there will be an increase in production yields and an emphasis on production costs so that production effectiveness and efficiency will be achieved so that it can support agribusiness businesses. Then, An integrated farming system can produce four products (4F), namely fuel, fertilizer, animal feed and food. This product is a basic need in running an agricultural and livestock business so that it will create a sustainable business and reduce external expenses. Integrated farming systems are expected to produce cheap feed and organic fertilizers that can be used for Likert scale farming businesses. The main function is to display information related to the level of implementation of integrated farming systems (Elly et al., 2020; Rachmawatie et al., 2021)**.**

Based on the formulation of the problems that have been raised, the objectives of this research include the following: Identifying the application of an integrated agricultural system in an effort to develop agribusiness at the research location; Analyzing how big the level of implementation of integrated farming systems in efforts to develop agribusiness in research locations

METHODS

The location of the research was carried out at P4S An-nabawie Agrolestari, Majasuka Village, Palasah District, Majalengka Regency, West Java Province. The choice of location was based on the consideration that Majasuka Village is one of the villages that has the potential to develop integrated farming patterns through an agricultural institution in the form of P4S. The high potential for agricultural development in Majasuka Village is supported by the geographical condition of being in the lowlands, which automatically means that the existing soil conditions are very suitable for agriculture. This research was conducted in July 2022.

The method used in this research is mix method, a qualitative and quantitative descriptive method. Research data will be obtained by collecting data from P4S An-Nabawie members who are then sampled by interviews and observations for primary data.

The types of data used in this study are primary data and secondary data. Primary data, is research data that comes directly from the original source or not through intermediary media. The primary data used in this study were obtained directly from the respondents, namely P4S members. Methods of data collection by interviews/direct observation by providing responses

to the questions asked and by submitting questionnaires. Primary data was obtained through a questionnaire, while the stages in designing the questionnaire are as follows:

Compile a list of questions in accordance with the variables of the integrated farming patterns that have been applied**.** Testing the questionnaire (interview), with the aim of adjusting it so that the questionnaire made is truly understandable and easy to understand. Secondary data, is research data obtained by researchers indirectly through intermediary media or obtained and recorded by other parties, results of previous studies, relevant sources, data obtained from the Central Bureau of Statistics, District Agriculture Office or other sources obtained from the results of literature studies

The respondent determination technique in this study used the entire population. The population is a collection of all the elements that are the object of research in the form of people, objects and attitudes and values and have the same characteristics. To determine the population that will be research respondents, namely members of P4S An-Nabawie. The total population that became the object of research was 20 people.

As for the respondents, using the entire population to be used as research (*Total Sample*). *Total Sample* is a sample whose number is equal to the population. Samples are the same number as the population are often called "*Total Sample*".

The data that has been obtained is then analyzed according to needs, the analysis that will be carried out in this study is; 1) What is the description of the implementation of an integrated farming system in P4S An-nabawie. 2) Analyze the level of implementation of an integrated agricultural system in an effort to develop agribusiness.

An overview of the implementation of this integrated agricultural system is analyzed descriptively by explaining the various attributes of the application of integrated farming patterns in an effort to develop agribusiness (Sulaksana, 2020).

The data that has been collected is processed first so that the data is simpler and neater so that in its presentation it will make it easier for researchers to analyze it later. The data processing stage includes editing, tabulation and analysis. After the editing and tabulation stages have been completed, the next stage is analysis. The data analysis phase was carried out using the method *Likert scale*.

Measurement of interest was carried out using a method consisting of strongly agree (4) agree (3), disagree (2) strongly disagree (1).

Table 1. Likert Scale

No	Symbol	Definition	Score
1	SA	Strongly Agree	4
2	A	Agree	3
3	DA	Disagree	2
4	SDA	Strongly Disagree	1

Source : Ridwan (2009:88)

Based on the respondent's answer, one tendency will be obtained for the respondent's answer. Questionnaire distributeddone using a scale*Likert.* Then the calculation of the respondent's answer index is carried out with the following formula:

Index Value = ((F1x1) + (F2x2) + (F3x3) + (F4x4) + / 4 Where:

F1 is the frequency of respondents who answered 1 (Strongly Disagree); F2 is the frequency of answers of respondents who answered 2 (Disagree); F3 is the frequency of answers of respondents who answered 3 (Agreed); F4 is the frequency of respondents who answered 4 (Strongly Agree).

In this research questionnaire, the number of respondents' answers does not start from the number 0, but from the numbers 1 to 4. The resulting index numbers will start

from the numbers 24 to 96 with a range of 72. Criteria 3 boxes (*three box method*) is used in calculating the index range, whether it includes low, medium or high categories. So then 72:3=24. The range of 72 is divided into 3 and produces a range of 24, which is as follows: 24 – 48 = Low; 49 - 72= Moderate; 73 – 96 = High

The attitudes and perceptions of the members are expressed in the form of a continuum review so that it can be seen how much the perceptions and attitudes of the members towards the integrated farming system implemented in P4S An-Nabawie Agrolestari, whether they are in the category of very low, low, medium, high or very high.

The following is the order of the search process for the highest ideal score, the lowest ideal score, class interval length, and variable continuum review based on the formula from Ridwan (Riduwan, 2008). The total score is entered into the continuum line,whose measurement is determined by: Maximum Index Value, Minimum Index Value and Minimum Value). Score Interpretation Criteria:

0% - 20% = Very Weak
21% - 40% = Weak
41% - 60% = Enough
61% - 80% = Strong
81% - 100% = Very Strong

RESULT AND DISCUSSION

Sorghum and Cattle Plant Integration System

Development of livestock and sorghum integration systems by utilizing available waste from agricultural sub-sector activities as animal feed,

As is known, the biggest costs in animal husbandry are feed and labor costs. By integrating livestock raising activities with other farming businesses, high production cost efficiency will be produced. With simple management, it can be processed into fertilizer or compost which is beneficial for soil fertility. Apart from being used for their own needs, the results of cow waste which is made into manure (fertilizer/compost) can be sold and has a profitable economic value, so that as a whole the combination of livestock and crop raising activities (cattle-sorghum) will provide benefits by reducing production costs and yield increase. In detail, the benefits of the crop–livestock system include:

(1) increasing access to livestock manure; (2) increasing the added value of plants or their by-products; (3) has the potential to maintain ecosystem health and function; (4) has high independence in the use of energy resources and nutrients flow to each other between plants and livestock. has a profitable economic value, so that as a whole the combination of livestock and crop (cattle-cattle) raising activities will provide benefits by reducing production costs and increasing results. In detail, the benefits of the crop–livestock system include (1) increasing access to livestock manure; (2) increasing the added value of plants or their by-products; (3) has the potential to maintain ecosystem health and function; (4) having high independence in the use of energy resources and nutrients flowing between plants and livestock.

After the main product of sorghum is harvested, the byproducts in the form of leaves, stems and cobs before or after processing can be used as an alternative source of animal feed.

The amount of sorghum by-products can be from a unit area of sorghum plants between 2.5-3.4 tonnes of dry matter per hectare which is capable of providing raw material for a source of fiber/forage substitute for one livestock unit (live weight equivalent to 250 kg with dry feed consumption of 3% weight alive) in a year. The sorghum plant by-products before being used as feed raw materials can be processed into silage either with or without fermentation and

ammoniation processes.

Provision in fresh or processed form is recommended to be chopped or chopped first to make it easier for livestock to consume. In order for livestock to prefer it, molasses or salt water can be added. Processed livestock manure can be used as a source of energy (biogas) and organic fertilizer which can be used to improve soil structure in sorghum plantations.

Analysis of the Level of Application of Integrated Agricultural Systems

System Integration Analysis of Sorghum and Cattle

The system integration variables of sorghum and cattle in this study were measured by 3 questions. The results of the answers and the analysis of the answer score index are presented in the following table

Table 2. Respom to Sorghum and cow

Statement	1	3	4	Sum	Indeks
1		6	12	70	87,5
2		8	8	64	80
3		8	10	68	85
Average					84

source : the processed data

Based on the respondent's answer, one tendency will be obtained for the respondent's answer. The questionnaires distributed were carried out using a Likert scale. Then the calculation of the respondent's answer index is carried out with the following formula:

Index Value = ((F1x1) + (F2x2) + (F3x3) + (F4x4) + / 4 , where:

F1 is the frequency of answers of respondents who answered 1 (Strongly Disagree) F2 is the frequency of answers of respondents who answered 2 (Disagree)

F3 is the frequency of respondents answering 3 (Agree)

F4 is the frequency of respondents who answered 4 (Strongly Agree)

The average index score for answers to the integrated system of sorghum and cattle crops was 84. Based on the score index category*three box method,* then the average is at the high score level.

Analysis of Organic Fertilizers and Botanical Pesticides

The independent variables of organic fertilizers and vegetable pesticides in this study were measured by 3 questions. The results of the answers and the analysis of the answer score index are presented in the following table.

Table 3. Score Index of organic fertilizers and vegetable pesticides

Statement	1	2	3	4	Sum	Indeks
1		3	7	10	62	83,75
2		5	8	7	62	83,75
3		4	10	6	62	83,75
Average						83,75

Based on the respondent's answer, one tendency will be obtained for the respondent's answer. Questionnaire distributed has done by using a Likert scale. Then the calculation of the respondent's answer index is carried out with the following formula:

Index Value = ((F1x1) + (F2x2) + (F3x3) + (F4x4) + / 4 Where:

F1 is the frequency of answers of respondents who answered 1 (Strongly Disagree); F2 is the frequency of answers of respondents who answered 2 (Disagree); F3 is the frequency of respondents answering 3 (Agree); F4 is the frequency of respondents who answered 4 (Strongly Agree).

The average index score for independent organic fertilizers and vegetable pesticides was 83.75. Based on the score index category based on*three box method*, then the average is at the high score level.

Animal Feed

The independent variable of animal feed in this study was measured by 3 questions. The results of the answers and analysis of the answer score index are presented in the following table :

Table 4. The Score Index of animal feed

Statement	1	3	4	Sum	Indeks
1		6	8	56	70
2		8	8	64	80
3		6	11	68	85
Average				62	78

Based on the respondent's answer, one tendency will be obtained for the respondent's answer. The questionnaires distributed were carried out using a Likert scale. Then the calculation of the respondent's answer index is carried out with the following formula:

Index Value = ((F1x1) + (F2x2) + (F3x3) + (F4x4) + / 4 Where:

F1 is the frequency of answers of respondents who answered 1 (Strongly Disagree); F2 is the frequency of answers of respondents who answered 2 (Disagree); F3 is the frequency of respondents answering 3 (Agree); F4 is the frequency of respondents who answered 4 (Strongly Agree). The average answer score index on animal feed self-sufficient is obtained at 78. Based on the score based index category *three box method*, then the average is at the high score level.

Discussion

In general, the results of the research show that the system of integration of sorghum and cattle crops as a whole for raising livestock and crops (livestock–sorghum) will provide benefits by reducing production costs and increasing yields. In detail, the benefits of the crop–livestock system include (1) increasing access to livestock manure; (2) increasing the added value of plants or their by-products; (3) has the potential to maintain ecosystem health and function; (4) having high independence in the use of energy resources and nutrients flowing between plants and livestock. In detail, the benefits of the crop–livestock system include (1) increasing access to livestock manure; (2) increase in added value of plants or their by-products; (3) has the potential to maintain the health and function of ecosystems; (4) has high

independence in the use of energy resources and nutrients that flow to each other between plants and livestock (Chai et al., 2021; Mukhlis et al., 2018; Salim et al., n.d.).

Making organic fertilizer is one step towards being self-sufficient in agricultural production inputs and creating sustainable agriculture. farmers with this activity the skills of farmers in developing organic fertilizers and vegetable pesticides can have an impact on farmers' dependence on chemical fertilizers and can also reduce the cost of crop expenditure. This activity requires an understanding of the substances contained in the chemical fertilizers they buy and the local potentials that contain substances contained in these chemical fertilizers. There are several ways to meet the needs of animal feed, one of which is to utilize and manage crop waste in the form of straw, leaves from peanuts, and sorghum stems and cobs (Ruhiyat et al., 2020). This method can overcome the scarcity of grass or forage in the dry season. In the independent farming study room activities, it also prepares independent farmers for animal feed by managing livestock feed through an integrated farming system. In this activity, the management of farmers' crops supports the availability of animal feed during the dry season.

CONCLUSION

The result of research shows that the attribute considered by members to have the highest index score is attribute Number 1 of the sorghum and cattle integrity system with an average value of 84. Meanwhile, attribute Number 2, organic fertilizers and vegetable pesticides has an average score index of 83.75 and the attribute number 3 , animal feed has an average score index of 78.

The results showed that the level of application of integrated agricultural systems in the development of agribusiness is quite high with an average total conformity rate of 80%. to further improve the integrated farming system several efforts should be made for integrated farming systems in the development of agribusiness

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