Effectiveness of management and utilization of agricultural equipment and machinery assistance (ALSINTAN) by recipient farmer groups in South Sulawesi

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Abstract. Alsintan is an agricultural technology created to help farmers in farming. Alsintan aims to minimize the costs incurred by farmers such as processing time, harvesting, drying, the amount of labor, the length of land processing work and an important opportunity is the increase in rice production. Alsintan assistance is one of the Ministry of Agriculture programs intended for farmers / gapoktan / upja / farming communities with the aim to overcome labor scarcity and help accelerate the process of agricultural cultivation. This study aims to analyze the effectiveness of management and utilization of alsintan assistance in Mappedeceng District, North Luwu Regency, South Sulawesi. Data analysis techniques used are descriptive analysis to find out the effectiveness of management and utilization of alsintan assistance by farmers groups receiving alsintan results showed that the effectiveness of management and utilization of alsintan assistance is 77.04%. This shows that the management and utilization of alsintan assistance in Mappedeceng sub-district has not been effective.

1. Introduction
The agricultural sector still has a very important role in a national development and as a support for the nation's economy. In connection with agricultural development it is mentioned that an agricultural development realizes food self-sufficiency and increases agricultural production. The effort of a development process is inseparable from the existence of effective agricultural technology in the hope that it will increase the ability of farmers in farming activities and increase production in order to realize the purpose of a development process, namely food self-sufficiency [1]

The application of technology can be implemented, one of which is by utilizing agricultural tools and machinery (Alsintan). Alsintan is a technology that is able to minimize all production factors in conducting a farming business. The use of agricultural machinery is one of the ways to increase the productivity and efficiency of farming, improve the quality and added value of products and empower farmers. In fact, the use of agricultural machinery is to increase human labor in the process of agricultural production, where every stage of the production process can use alsintan [2]

The Provincial Government of South Sulawesi through the Agriculture Office of Food Crops and Horticulture prepared the assistance of 4,608 units of agricultural machine tools (Alsintan) for 2016. The provision of assistance is carried out gradually at the district level. The assistance worth around IDR 240 billion consists of pre-match machines such as tractors and post-harvest machines. This
alsintan assistance is expected to support efforts to increase food crop production through modern agriculture [3].

One of the regency that has received alsintan assistance in South Sulawesi is North Luwu Regency. With the presence of this alsintan, it is expected that North Luwu Regency will not only reach the target of agricultural products but also can exceed the target, so that North Luwu will become a barn producing agriculture not only in South Sulawesi but also in Indonesia. Furthermore, Mappedeceng sub-district is one of the sub-districts that received alsintan assistance in North Luwu Regency. Alsintan assistance can be used to encourage the acceleration of rice field printing programs and improve agricultural yields. Because with the presence of alsintan is certainly the way farmers work to be very helped. Farmer groups that have received alsintan assistance are expected to make the most of the government's assistance.

The results of [4] showed that the effectiveness of alsintan assistance program has not fully run according to its design [4]. One indication is the determination of recipients and locations that do not meet the criteria in the guidelines. Specifications of some types of alsintan distributed are not all in accordance with the wishes and needs of farmers. Some tools do not correspond to the characteristics of the territory (topography of land and land structure). Similarly, from the management aspect, where a lot of alsintan assistance has not been managed properly by the recipient farmer group. Based on this, this study aims to analyze the effectiveness of management and utilization of agricultural equipment and machinery assistance (alsintan) by the Recipient Farmer Group in Mappedeceng Kecematan, North Luwu Regency.

2. Research methods

This research was conducted from March to May 2019 in Mappedeceng Subdistrict, North Luwu Regency, South Sulawesi Province. The selection of research locations was done purposively (intentionally) in accordance with the opinion of Sugiyono (2014), who said the sampling techniques of data sources were carried out with certain considerations [5], namely on the basis of consideration that Mappedeceng District is one of the sub-districts receiving alsintan assistance programs implemented in North Luwu Regency. With other considerations is the element of affordability of research locations by researchers both in terms of energy and in terms of time efficiency to conduct research.

The population in this study is a group of rice farmers who received alsintan (hand tractor) assistance as many as 19 farmer groups in Mappedeceng District.

Table 1. Rice farming group of alsintan recipients (hand tractor) in Mappedeceng District, North Luwu Regency in 2019.

| No | Village         | Farmer Group       | Class Group |
|----|-----------------|--------------------|-------------|
| 1  | Cendana Putih   | Tani Jaya I        | Continue    |
|    |                 | Tunas Baru         | Beginner    |
|    |                 | Buah Padi          | Beginner    |
|    |                 | Bunga Coklat       | Continue    |
|    |                 | Merta Sari         | Madya       |
| 2  | Tarra Tallu     | Harapan Tani       | Continue    |
| 3  | Uraso           | Kambae             | Continue    |
| 4  | Cendana Putih I | Ramayana V         | Beginner    |
|    |                 | Ramayana III       | Continue    |
|    |                 | Mawar              | Continue    |
|    |                 | Taman Sari         | Continue    |
| 5  | Kapidi          | Merta Sari         | Utama       |
| 6  | Cendana Putih II| Merte Sari         | Madya       |
| 7  | Mekar Jaya      | Mekar Sari         | Continue    |
|    |                 | Merta Sari         | Continue    |
Sampling of a population for the first purpose is done by purposive sampling technique (intentional). The number of samples taken as many as 4 groups of farmers with different class classifications (beginners, advanced, madya and main) representing the entire population of the research location with the consideration that the farmer group is the parties directly involved and know information about the management and utilization of alsintan assistance carried out by each farmer group from the highest grade level to the lowest grade level. With other considerations is the element of affordability of the location for the efficiency of time to conduct research.

3. Results and discussion

3.1. Effectiveness of management and utilization of agricultural equipment and machinery assistance (ALSINTAN)

The effectiveness of management and utilization of alsintan assistance is assessed based on the obligations that must be fulfilled by the recipient of assistance, namely: 1) farmer groups receiving alsintan assistance to carry out alsintan management/utilization activities through alsintan service business activities; 2) farmer groups receiving alsintan assistance are required to book the management activities/utilization of alsintan including in the recording of the results of alsintan services; 3) Farmer groups receiving alsintan assistance use the results of alsintan services business for operational costs, maintenance and investment of new alsintan and 4) farmer groups receiving alsintan assistance must form a unit of Alsintan Service Business (UPJA) or managed through other UPJA locations closest to the location of farmers groups / gapoktan beneficiaries. Alsintan Service Unit (UPJA) can be seen as a business unit, or can be developed into an economic institution, engaged in the service (rental) of agricultural machine tools. As a rural economic institution, UPJA should use and manage these machine tools optimally. This development is a series of efforts to facilitate, serve and encourage the development of agro-industrial businesses based on food crop farming, especially rice fields [6]. The indicators of effectiveness of managers and utilization of alsintan assistance can be seen in table 1.

For the second indicator, the group of farmers receiving alsintan assistance is required to book the management and utilization of alsintan activities including in the recording of the results of alsintan services business. Of the overall samples, 8 samples said to be appropriate or as many as 66.67% and 4 samples that said it was inappropriate or as much as 33.33%. Based on the results of recapitulation of respondents’ answers, shows that the group of farmers merte sari and merta sari who have done bookkeeping every activity of management and utilization of alsintan on a regular basis. As for the farmer group Ramayana V and Padi Murni is not complete in carrying out any administration of bookkeeping activities even though the organizational structure has been established but the secretary of the group has not been maximal in carrying out its duties, namely not recording all activities that have been carried out only a few activities.
Table 2. Percentage effectiveness of alsintan management and utilization in Mappedeceng Subdistrict, North Luwu Regency in 2019.

| No | Effectiveness Indicator                                                                 | Appropriate | Inappropriate | Total (%) | Farmer Group | Information                  |
|----|----------------------------------------------------------------------------------------|-------------|---------------|-----------|--------------|----------------------------|
| 1  | The farmer groups receiving the alsintan assistance carry out activities in the management and utilization of the alsintan through the alsintan service business activity | 12 100      | -             | 1 100     | Ramayana V   | Rental frequency 18 times   |
|    |                                                                                        |             |               |           | Padi Murni   | Rental frequency 17 times   |
|    |                                                                                        |             |               |           | Merte Sari   | Rental frequency 22 times   |
|    |                                                                                        |             |               |           | Merta Sari   | Rental frequency 15 times   |
| 2  | Farmers groups receiving alsintan assistance are required to keep records of activities in the management and utilization of alsintan including recording the results of the alsintan service business. | 8 66,67     | 4 33,33       | 1 100     | Ramayana V   | Book activities are not routinely carried out |
|    |                                                                                        |             |               |           | Padi Murni   | Book activities are not routinely carried out |
|    |                                                                                        |             |               |           | Merte Sari   | Book routine activities carried out |
|    |                                                                                        |             |               |           | Merta Sari   | Book routine activities carried out |
| 3  | Farmer groups receiving alsintan assistance use the results of alsintan services business for operational costs, maintenance and investment of new alsintan | 12 100      | -             | 1 100     | Ramayana V   | Fuel costs, damage, virginity and cash deposits are borne by farmer groups |
|    |                                                                                        |             |               |           | Padi Murni   | Fuel costs, damage, virginity and cash deposits are borne by farmer groups |
|    |                                                                                        |             |               |           | Merte Sari   | Fuel costs, damage, virginity and cash deposits are borne by farmer groups |
|    |                                                                                        |             |               |           | Merta Sari   | Fuel costs, damage, virginity and cash deposits are borne by farmer groups |
| 4  | Farmer groups receiving alsintan assistance must form a Service Business unit (UPJA) or managed through other UPJA locations closest to the location of farmers groups / gapoktan beneficiaries | 3 25        | 2 9           | 1 75      | Ramayana V   | There is no UPJA            |
|    |                                                                                        |             |               |           | Padi Murni   | There is no UPJA            |
|    |                                                                                        |             |               |           | Merte Sari   | There is no UPJA            |
|    |                                                                                        |             |               |           | Merta Sari   | There is UPJA               |

Rata-rata 72.92 27.08
For the third indicator of the overall sample or as much as 100% said that the farmer group receiving alsintan assistance has used the results of alsintan services business for operational costs, maintenance and investment of new alsintan. This can be seen from every borrowing tool (hand tractor) by farmers operational costs such as solar bear is the farmer group. Similarly, if there is damage to alsintan, it is the farmer group that has the task to bear the cost of such treatment. For the new alsintan investment group of farmers respondents at the research location using the results of alsintan services business that has entered in the group's coffers to buy new tools. This is done by farmer groups to meet the needs of tools that are still lacking.

As for the fourth indicator, the group of farmers who receive alsintan assistance must form a Service Service Business unit (UPJA) or managed through other UPJA locations closest to the location of farmers groups / gapoktan recipients are still low, which is only carried out in the Merta Sari group only, this is because other farmer groups such as the Pure Rice farmer group has not been informed about the obligation to institutionally form UPJA while for the group of farmers Ramayana V and Merte Sari already know about the rules of forming UPJA but still ignore it. Until now, the three farmer groups have not been registered in UPJA membership.

According to the ministerial regulation of home affair of the Republic Indonesia in 2013, the program is said to be effective if the predetermined indicators are greater than or equal to 80% and if below 80% can be said to be ineffective. So that the effectiveness of alsintan distribution is said to be effective if the four indicators of effectiveness of management and utilization of alsintan are above or equal to 80%. And if it is below 80% then the distribution of rastra is said to be ineffective. Based on table 12 above shows that the level of management and utilization of alsintan assistance by the recipient farmer group in Mappedeceng District, North Luwu Regency is 72.08% (< 80%). This indicates that the management and utilization of alsintan by the recipient farmer group has not been effective. This is because the group of farmers receiving alsintan assistance at the research location has not carried out the obligations that must be inhabited based on the technical procurement and distribution of alsintan assistance optimally.

4. Conclusion
The effectiveness of the management and utilization of alsintan assistance is 72.92% stating that the management and utilization of alsintan is appropriate and 27.08% are declared inappropriate. So that the effectiveness of management and utilization of alsintan assistance by the group of recipient farmers in Mappedeceng subdistrict has not been effective.

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