

## **The Influence of Leadership on the Effectiveness of Livestock Farmer Groups and P3A Banda Tengah in Managing Rice Field Irrigation in Lubuk Sikarah District Solok City**

**Yusmi Nelvi\***

Department of Agribusiness Faculty of Agriculture, University of Mahaputra Muhammad

Yamin. West Sumatera. Indonesia

\*Corresponding author: [yusminelvi@gmail.com](mailto:yusminelvi@gmail.com)

### **ABSTRACT**

This research aims to determine the influence of group leader leadership, group effectiveness, and group leader leadership on the effectiveness of the Banda Livestock Farmers and Water Users Farmers Association (P3A). Tengah in irrigation management in lowland rice cultivation. This research was conducted using a survey method in IX Korong Village, Lubuk Sikarah District, Solok City. The research sample consisted of 65 respondents randomly selected from members of the Banda Tengah P3A group. The research results show that the leadership of the P3A group leader is in the medium category, and the effectiveness of the Banda Tengah P3A group is in the high category. The leadership of the P3A group leader has a significant influence on the effectiveness of the Banda Tanga P3A group in managing irrigation in the Banda Tengah P3A, Lubuk Sikarah District, Solok City.

**Keywords:** effectiveness, water-using farmer groups (P3A), leadership

## 1. INTRODUCTION

Agricultural development is important for national development and aims to expand employment opportunities, improve product quality, increase farmers' income and standard of living, and increase exports.

The success of agricultural development cannot be separated from community participation in rural areas. (Komarudin, 2010) According to the Rice Research Center of the Ministry of Agriculture in 2020, rice raw materials have an important role in driving economic growth in Indonesia. It is estimated that more than 60 percent of rural residents in Indonesia grow rice.

The dependence of the Indonesian people on rice as their staple food has encouraged many methods to be implemented to achieve maximum harvest results by utilizing the potential of land in Indonesia, thereby reducing import problems. Alternatives have emerged to increase rice production, starting from cultivation systems and methods, implementing aspects of mechanization, irrigation methods, and maximizing plant care. All of these methods are applied to increase rice production, apart from that the implementation of efficient and efficient cultivation activities needs to continue to be improved to produce increasing production

both in terms of quality and quantity. (Sareh & Rayes, 2019)

The construction of an irrigation system is to provide infrastructure to deliver water from its source to agricultural land. The long history of irrigation in Indonesia has provided opportunities for farmers to develop traditional irrigation water management institutions. If the physical facilities of an irrigation network are the "hardware", then these institutions are the "software", which is absolutely necessary to manage irrigation water properly. The institutions that have been developed by farmers are a kind of very valuable national resource, which deserves to be studied and understood so that the potential for irrigation water and the prosperity of rural residents can continue to be improved. (Ansori et al., 2019) Irrigation operations in the provision, regulation, and distribution of water are said to be good if the network, officers and central P3A are ready to achieve their targets, namely (1) the irrigation network functions well, (2) distribution of water is achieved optimally, (3) ) pay attention to economic age according to plan. If a WUA organization faces serious ecological challenges, its operating system tends to be more neat, formal and detailed, thereby encouraging the creation of an appropriate and proportional water distribution

system. (Ansori et al., 2019)

The agricultural sector is one of the main pillars of economic growth in the Solok City area. According to (BPS 2022, nd), Based on West Sumatra PSDA (Water Resources Management) data in 2022, Solok City has the third highest area of irrigated rice fields, Solok City only has an area of 58.72 square kilometers which is divided into 2 sub-districts. namely Lubuk Sikarah with an irrigation area of 549.51 Ha and Tanjung Harapan with an irrigation area of 135.07 Ha. The process of cultivating lowland rice requires irrigation channels to irrigate the rice fields. According to conditions where the productivity of rice farming is increasingly difficult to increase, increasing the area of rice harvest is an effort that must be made to increase national rice production. Increasing the area of rice harvest can be achieved through the construction of irrigation networks which allow increasing the intensity of rice planting per year, and increasing the area of rice fields through the creation of new rice fields. However, limited land resources and development budgets make these two efforts increasingly difficult to realize. (Martadona et al., 2023).

Solok City also has water resources in the river basin area (Batang Lembang) which is used as an area for the development of very extensive

technical irrigated rice fields. The large water potential in Solok City to develop irrigation, especially in irrigated rice fields, requires good management such as construction and management of irrigation to realize food sovereignty, especially rice. According to (Kusnadi, 2011) one of the factors that can facilitate agricultural development is individual awareness. With the awareness of these individuals, farmers join a forum, namely the Livestock and Irrigation Farmer Group, managed by the Water User Farmers Association (P3A), which is an irrigation management institution which becomes a forum for water user farmers in an irrigation service area which is formed by the water user farmers themselves individually. democratic, including local institutions managing irrigation water (Department of Agriculture, 2020). In Solok City there are 17 P3As and 2 GP3As spread across the two sub-districts, namely Lubuk Sikarah District and Tanjung Harapan District, the Livestock Farmers group and Banda Tengah P3A, IX Korong Subdistrict has a total of long irrigation channels, namely in the Livestock Farmers group and Banda Tengah P3A namely 123.59 Ha and has 142 members. Based on the background of the Banda Tengah Livestock Farmers and P3A group with the longest number of channels and

the most members in Solok City, the researcher is interested in conducting research on the Influence of Leadership of the Head of the Livestock Farmers and P3A Group on the Effectiveness of the Banda Tangah Livestock Farmers Group and P3A in Rice Farming Irrigation Management Rice fields in Lubuk Sikarah District, Solok City.

## 2. MATERIALS AND METHOD

This research was conducted in Tanah Garam Village, Lubuk Sikarah District, Solok City. The location determination was carried out deliberately with the consideration that Solok City is a food commodity center in West Sumatra Province with a type of irrigation using irrigation in lowland rice farming. The selection of groups was based on the consideration that the Livestock Farmers and P3A Banda Tangah groups were the P3As with the longest total irrigation channels and the most members of all P3As in Solok City. The research was conducted in September - November 2023. This P3A was founded in 2002 with 142 members consisting of 62 rice field owners and 80 rice field cultivators. This P3A consists of 2 farmer groups, namely the Sawah Solok and Tunas Kelapa farmer groups. The sampling technique uses random sampling.

The research location was determined by considering that IX Korong Village is one of the sub-districts that runs the P3A program and P3A IX Korong is the P3A with the longest total irrigation

channels and the highest number of members. Determining the number of samples uses the formula (Soekartawi, 2015).

The method for determining sample size was also used by (Sirait & Maryati, 2018). The method in this research is a survey method, namely research that takes samples to represent the population using a questionnaire as a data collector. The data in this research are primary data and secondary data. Primary data was obtained through interviews with respondents. Meanwhile, secondary data was obtained from literature studies of related agencies or services as well as institutions related to this research. Data processing was carried out using a descriptive analysis method to determine the level of leadership of the P3A group leader and the effectiveness of the Livestock Farmers and Banda Tangah P3A groups as measured using the mode formula. According to (Sugiyono, 2018), the mode formula is as follows: The qualitative approach descriptive analysis method aims to obtain a factual, systematic and accurate picture of the nature, facts and relationships regarding indicators in the variables in the research.

## 3. RESULTS AND DISCUSSION

General Condition of Respondents The number of respondents in the research was 65 farmers in IX Korong Village, Lubuk Sikarah District, Solok City. The respondents of this research are farmers who are members of P3A Banda Tangah. The classification of the National Labor Force

according to BPS (2023) is non-productive age (15-64 years) and unproductive age (>64 years). The research results showed that respondents had an average age of 52.85 years or were of productive age. The formal education taken by respondents was an average of 8.34 years or low education classification. The average length of time a respondent has been a member of the Livestock Farmer and P3A group is 20.02 years or the old member classification. The land area of the P3A member farmer respondents has an average land area of 0.50 hectares or is in the narrow land classification. Rice production in one planting season in 2022 has an average value of 1.8 tons or is in the low production classification. The rice productivity of farmer respondents who are members of P3A Banda Tangah has an average value of 3.44 tonnes/ha or is in the high classification. P3A Group Leader Leadership Variable (X) The leadership of the P3A group leader really determines the members' attitudes towards the orders/information given. Suitability of the circumstances and conditions of the group with the leadership of the group leader will realize the effectiveness of the group being coached. Leadership measurement indicators are the nature of the leader, the power of the leader, providing motivation, decision making and how to communicate. The classification of leadership indicators is put into three classes, namely score three (high), score two (medium) and score one (low) using the mode formula (Sugiyono, 2018).

Table 1. Recapitulation of leadership of P3A group leaders

Leadership of P3A group leaders	High (score 3)	Medium (score 2)	Low (score 1)	Σ
Respondents	27	38	0	65
Percentage	41,5	58,5	0	100

In Table 1, the recapitulation results of the majority of respondents as many as 65 farmers who are members of the P3A show that the leadership of the P3A group leader is in the medium classification. This means that the leadership of the Banda Tangah P3A group leader has had a positive impact on the running of the organization. The group leader can be accepted and respected by P3A members with the performance they have demonstrated. The group leader's ability to direct the achievement of group goals, make decisions during group meetings and convey discussion points can be understood by members of the P3A Banda Tangah group. P3A Group Effectiveness Variable (Y) Group effectiveness influences the achievement of group goals accompanied by member satisfaction as P3A members. Indicators of effectiveness are group productivity, group morale and member satisfaction. Group effectiveness is classified into three classes, namely score three (high), score two (medium) and score one (low) using the mode formula (Sugiyono, 2018). The research results showed that the majority of respondents, 65 farmers who were members of P3A, were in the high classification. This shows that the leadership

of the group leader provides benefits from the implementation and management of the irrigation network and has a positive impact on the farmers who are members of the Banda Tengah P3A, namely the coordination of the physical construction of new irrigation, renovation of old irrigation channels and assistance with seeds/farmers. Group members' satisfaction with the elimination of water pipe fees amounting to Rp. 10,000.00/member thereby minimizing expenses for P3A group members. Regular meetings between members of the P3A group make it easier for farmer members of the P3A to convey aspirations or complaints. A recapitulation of the

#### 4. CONCLUSION

The leadership of the P3A group leader in the management of rice farming irrigation in IX Korong Subdistrict, Lubuk Sikarah District is in the medium category (84.62%) in that the leadership of the group leader has quite a positive impact on the running of the organization. The effectiveness of the P3A group in managing rice farming irrigation is in the high category (61.54%), meaning that the effectiveness of the P3A group is very good,

#### REFERENCES

Ansori, A., Ariyanto, A., & Syahroni, S.

effectiveness of the P3A group can be seen in Table 2.

Table 2. Recapitulation of the effectiveness of the P3A group

Effectiveness of the P3A group	High (score 3)	Medium (score 2)	Low (score 1)	Σ
Respondents	45	20	0	65
Percentage	69,2	30,8	0	100

which is influenced by the leadership of the group leader. The leadership of the group leader (X) has a significant effect on the effectiveness of the P3A group (Y) or the leadership of the group leader (X) is able to positively influence the level of effectiveness of the P3A (Y) group in the Banda Tengah P3A in the management of rice farming irrigation in IX Korong Village, Lubuk Sikarah District Solok City.

(2019). *Kajian efektifitas dan efisiensi jaringan irigasi terhadap kebutuhan air*

- pada tanaman padi (Studi kasus irigasi Kaiti Samo Kecamatan Rambah Kabupaten Rokan Hulu).* BPS 2022. (n.d.). *Pertumbuhan ekonomi daerah.*
- Komarudin, R. (2010). Peningkatan Kinerja Jaringan Irigasi Melalui Penerapan Manajemen Yang Tepat Dan Konsisten Pada Daerah Irigasi Ciramajaya. *Jurnal Teknik Sipil ITB*, 17(2), 115–122.
- Kusnadi, D. (2011). Dasar-Dasar Penyuluhan Pertanian. *Penyuluhan Pertanian*, 1–45.
- Martadona, I., Syahril, S., & Pangestu, R. I. (2023). Kinerja Perkumpulan Petani Pemakai Air (P3a) Banda Tengah Dalam Pengelolaan Jaringan Irigasi Sawah Di Kecamatan Lubuk Sikarah Kota Solok. *AGRISAINTEFIKA: Jurnal Ilmu-Ilmu Pertanian*, 7(1), 30. <https://doi.org/10.32585/ags.v7i1.3612>
- Pertanian, D. (2020). e-AGRIBISNIS : TEORI DAN APLIKASINYA. *Departemen*, 7(Snati 2007).
- Sareh, A. F. F., & Rayes, M. L. (2019). Evaluasi kesesuaian lahan padi pada sawah irigasi di kecamatan junrejo kota batu Land suitability evaluation of rice on irrigated rice field at junrejo district of batu city. *Jurnal Tanah Dan Sumberdaya Lahan*, 6(1), 1193–1200. <https://doi.org/10.21776/ub.jtsl.2019.006.1.18>
- Sirait, S., & Maryati, S. (2018). Sistem kontrol irigasi sprinkler otomatis bertenaga surya di kelompok tani Kecamatan Meureubo Kabupaten Aceh Barat. *Jurnal Irigasi*, 13(1), 55–66.
- Soekartawi. (2015). *Analisis Usaha Tani.*
- Sugiyono. (2018). *konsep, metodologi dan Penerapan.*