

Several Factors Supporting the Success of Development Extension Strategies in the Agricultural Sector

Ernawati S. K

Universitas Negeri Makassar, Indonesia

Correspondence Author E-mail: ernawatisyahrudin71@unm.ac.id

ABSTRACT

Development extension is a communication and learning process aimed at improving community knowledge, skills, and participation in current sustainable development programs. This article aims to analyze the factors supporting the success of development extension strategies in the agricultural sector. A literature review was conducted using various relevant domestic studies. The results of the study indicate that the success of extension programs depends on various factors, including the extension workers, the targets, the methods and media used, the materials delivered, and support from relevant institutions. Extension worker performance is influenced by work experience and available facilities; target characteristics influence the level of participation in the program; methods and media significantly influence innovation adoption; the quality of materials determines the effectiveness of information delivery; and institutional support determines the sustainability of extension programs. Thus, the success of development extension programs cannot be seen from a single aspect but requires cooperation from all parties involved to achieve development goals optimally.

Keywords: Development extension, agricultural sector, communication, non-formal education

INTRODUCTION

According to Al-Ummah et al. (2021), counseling can be defined as a form of non-formal education provided to the community with the aim of helping them increase their skills, independence, and awareness to improve their quality of life. Counseling goes beyond simply providing information; it is an activity aimed at changing the community's knowledge, attitudes, and behaviors to better prepare them to face the various social and religious issues they face. Because of its educational nature, counseling serves as a way to build a community that receives information and applies it in its daily life.

In the field, various facts show that there are still significant differences in the level of innovation adoption between regions, even though the extension programs provided are nearly identical. For example, a study by Luthfia and Sadono (2025) in Purwabakti Village showed that, despite intensive extension training on organic farming systems, the level of innovation adoption by farmers remains low. This is due to the socio-economic characteristics of farmers and inadequate support from extension workers.

The success of extension services depends not only on the ability of extension workers to convey information but is also influenced by various supporting factors in the field. According to research (Seprama Reno, 2023), several factors, such as the dynamics of extension institutions, the ability of extension workers to adapt to farmer conditions, and the availability of innovative technology, are important factors in determining the effectiveness of extension services. Extension workers who are able to adapt to changing farmer needs, understand local conditions, and receive support from institutions are usually more successful in encouraging the implementation of innovations. Therefore, extension services

are not only about providing information but also about how extension workers, institutions, and farmers work together in a mutually supportive system.

The results of these various studies increasingly demonstrate that the success of development extension programs is driven by complex interactions between extension workers, the community, and the institutional structures that support them. A crucial question that arises is, what factors are the most important determinants of extension program success? Is extension program success due to the competence of the extension workers themselves, or is it more due to social conditions, the readiness of the target group, and the support of existing institutions and policies? At this point, it is important to discuss the factors that influence the success of development extension programs, as only by understanding these key aspects can extension strategies be designed more appropriately. This discussion will further explain the role of each factor, the relationships between them, and their impact on extension effectiveness in various community contexts.

Given the above situation, this article attempts to further discuss the factors influencing the success of development extension activities. This research focuses on five key components frequently identified in various sources and studies: extension worker factors, extension target groups, methods and media used, materials delivered, and support from relevant institutions. This focus aims to provide a broader picture of the relationships between factors and their respective roles in enhancing the effectiveness of extension programs.

Although many studies have discussed the effectiveness of agricultural extension, previous literature generally focuses on isolated variables such as extension worker competence, farmer participation, or institutional performance. Most studies do not integrate these factors into a comprehensive framework that explains how each component interacts to determine program success. This gap indicates the need for a literature-based analysis that not only identifies key factors but also compares the strength of evidence across studies and highlights their interrelationships. Therefore, this article contributes by synthesizing recent findings (2018–2025) and proposing a more integrated understanding of how extension strategies succeed in diverse agricultural contexts.

Furthermore, a discussion of these five key factors is expected to provide a broader understanding of how extension programs should be designed and implemented to achieve development goals optimally. Each factor cannot operate independently; rather, they influence and collaborate to determine the success of an extension program. For example, competent extension workers require the right methods, media, and materials to effectively convey messages to the target community. Similarly, the existence of a strong institution can strengthen information networks and increase community involvement. By comprehensively understanding the interrelationships between these factors, this article seeks to contribute to strengthening a more effective and sustainable development extension strategy.

METHODS

This study uses a literature review method to explore and analyze various previous studies that discuss the factors influencing the success of development extension. This method was chosen because it provides a comprehensive overview and allows researchers to combine information from various sources to gain a broader understanding of the topic.

Secondary data sources used included accredited national journals, scientific articles, and research results related to the topic of agricultural extension and development. Literature identification was carried out by researchers by selecting scientific articles that specifically discussed factors influencing the success of extension, such as research on extension worker performance, target characteristics, extension methods and media, delivered materials, and support from institutions. Selection and screening of literature that was less relevant to the

research objectives were removed. Only relevant articles published between 2021 and 2025 were analyzed further. Content analysis was carried out by researchers by reviewing each article to identify main themes, findings, important variables, and factors contributing to the success of extension. Researchers synthesised the analysis results by combining a comprehensive overview of the factors determining the success of development extension.

RESULTS AND DISCUSSION

This section describes the main findings of various studies analyzed through a literature review related to factors influencing the success of development extension services. The analysis was conducted by evaluating research on the performance of extension workers, the characteristics of participants, the delivery methods and media, the content of the materials provided, and support from institutions that influence the successful adoption of innovations. In accordance with Rahman & Ichsan (2022), who emphasized that the success of extension services is determined by collaboration between extension workers, communication strategies, and institutional readiness, this discussion presents a summary of results from various relevant sources to provide a comprehensive understanding of the effectiveness of development extension services.

Extension Factors

According to research (Kustiari & Ananta Budiman, 2023), the digital skills of extension workers are crucial for the success of development extension work, especially in today's world where extension workers are required to utilize information technology to assist communities. This research demonstrates that digital literacy, institutional support, and extension worker skills are interrelated in determining the effectiveness of extension workers. The study found that "extension worker skills influence the relationship between institutional support and digital literacy in improving extension worker performance," indicating that extension workers who are technologically proficient and supported by strong institutions can perform better in disseminating information, creating innovation, and providing development services. These findings confirm that the quality of extension workers, both in terms of technical and digital skills and organizational support, is a key factor in determining the success of development extension work.

According to research (Jamil et al., 2023), extension workers are a crucial factor in determining the success or failure of extension activities. Internal and external conditions heavily influence their performance, shaping their ability to assist communities. This research shows that extension worker performance is shaped by several factors, including individual (personal experience and abilities), psychological (motivation and perception), organizational (institutional support), and the work environment. The results indicate that when extension workers have good personal capacity, high motivation, and institutional support, the process of delivering innovations and assisting communities will be more effective. Thus, the success of development extension will also increase.

This research also explains that new challenges such as the pandemic are forcing extension workers to adapt to digital work methods. This makes the role of extension workers even more crucial, as they must ensure that extension services continue despite changing conditions. Extension workers are now expected to use technology to talk to and help communities, so having digital skills is an important part of their job. In other words, the quality of extension workers, including technical and psychological skills and the ability to adapt to change, is a key factor in determining how well development extension services achieve their goals and provide tangible impacts on communities.

Research conducted by Hasanuddin, Viantimala, and Fitriyani in 2021 (Penuluh Pertanian Lapangan et al., 2021) shows that the performance of field agricultural extension workers (PPL) is a crucial factor influencing the development process in the agricultural sector. The results indicate that extension worker performance is influenced by several factors, such as age, length of service, and the availability of supporting facilities. Meanwhile, education level and employment status were not shown to have a significant impact. These findings indicate that the quality of extension workers' work is highly dependent on work experience and the facilities provided, making both factors crucial for the success of field extension work.

This study found a close relationship between farmer satisfaction and extension worker performance. Farmer satisfaction with extension worker services impacts corn farming productivity. Satisfied farmers are more likely to implement technical recommendations provided by extension workers, thereby improving their farming yields. This indicates that extension workers are not only information providers but also a key factor in the success of extension programs, particularly in increasing farm productivity and income. Therefore, extension worker performance can be considered a crucial factor in the success of agricultural development programs based on extension.

Extension workers also need to establish effective and active communication with the target communities. A positive relationship between extension workers and the community helps build trust and encourages the target community to participate in the entire extension process. If the community feels valued, heard, and involved in every stage of the activity, the development messages conveyed are easier to understand and apply in their daily lives. Therefore, the interaction methods and approaches used by extension workers are crucial factors in enhancing the overall success of the development extension.

Extension Targets (Society/Farmers/Communities)

Research conducted by Khotimah et al. (2024) emphasized that the characteristics of farmers targeted for extension are crucial in determining the success of development extension programs. In the study, variables such as farmers' education level and knowledge significantly influenced their participation in the KUR Tani program in Tempuran Village, Trimurjo District, Central Lampung. Farmer participation is considered an indicator of extension success, as the more active farmers are in participating and implementing the program, the greater the positive impact of these development efforts. These findings indicate that the success of extension programs is not solely determined by the extension workers or the methods used but also depends heavily on the characteristics of the extension program targets themselves.

Research by Yunus and Kurniawan (2023) emphasizes that the target audience for extension services, particularly farmers who receive information and innovations, plays a crucial role in determining the success of development extension services. They found that the level of farmer readiness, participation, and ability to understand and manage information depend heavily on how effectively farmer institutions function. If farmer groups or local organizations function well, farmers will more easily obtain information, share experiences, and be motivated to implement innovations provided through extension services. This demonstrates that the success of extension services depends not only on the extension workers or the methods used, but also on the quality of interactions, social support, and capabilities of the extension partners themselves. Therefore, the role of extension partners is a crucial factor in ensuring that development messages are received, understood, and implemented sustainably.

Therefore, this study shows that farmer characteristics, such as education level, field experience, and openness to new ideas, influence how they receive and apply extension

information. Farmers who are more knowledgeable about information tend to understand extension materials more easily and adopt new technologies more quickly. However, for farmers with limited access to knowledge, the role of institutions and extension workers is critical in making sure they are not left behind in agricultural developments. Therefore, the success of extension programs depends heavily on farmers' ability to receive information, which can be enhanced with the help of active farmer groups or local organizations. Furthermore, support from fellow farmer group members also strengthens farmers' confidence in trying innovations.

When farmers see their group mates successfully implementing a technique, they become more enthusiastic about trying it. A supportive group environment makes it easier for extension workers to explain the material together, making the learning process more effective and focused. Social support, active communication, and strong relationships among farmers facilitate the quicker absorption and consistent implementation of extension messages. This demonstrates that farmers are not merely recipients of information but also drivers of change in the success of agricultural development.

The aforementioned references clearly demonstrate that extension targets, such as the community, are a key factor influencing the overall success of development extension programs. Considering extension targets, such as farmers, communities, or citizens, as crucial factors, this study demonstrates that the success of a development program depends heavily on the extent to which these targets understand, accept, and actively participate in extension activities. Therefore, when planning and implementing development extension programs, it is important to consider the profile, knowledge level, and capabilities of the target groups to ensure effective strategies that achieve the desired development goals.

It's important to ensure that the needs, expectations, and real-world situations of the community inform the development of extension materials. If target participants perceive that the extension materials are relevant to the problems they are experiencing, they will be more motivated to participate and apply the information provided. An approach that takes local conditions into account also helps narrow the gap between extension materials and the reality on the ground, making development messages more easily accepted and generating a positive impact on the community.

Extension Methods and Media

Research (Pello & Djunina, 2024) emphasizes that the methods and media used in extension are crucial for the success of development extension programs. The study shows that the choice of extension methods, such as individual, group, or large-scale extension, as well as the use of media such as audiovisual and print, significantly influences the level of farmer adoption in lowland rice cultivation. The adoption of agricultural innovations is a sign of successful development extension programs, because the better the methods and media used, the better the information delivered, and the higher the likelihood of farmers adopting the socialized practices.

These findings suggest that extension methods depend not only on the content but also on how the material is delivered. The right extension method can increase farmer interest, understanding, and engagement in the process. For example, group extension facilitates discussion and sharing of experiences, while individual extension is better suited for more personalized support. Selecting a method appropriate to the social conditions and needs of farmers is crucial for successful knowledge transfer.

In addition to methods, the use of engaging and easy-to-understand media can also improve communication between extension workers and farmers. Visual media, such as video demonstrations of agricultural techniques, help farmers understand procedures directly, making them easier to implement in the field. Meanwhile, printed media, such as leaflets or

modules, can serve as learning materials that can be read repeatedly. This diversity of media allows extension workers to adapt strategies to the characteristics and conditions of farmers.

This study also confirms that combining appropriate methods and media can make extension services more interactive, participatory, and focused on problem-solving. When farmers perceive extension services to be delivered in a fun, relevant, and easy-to-follow manner, their participation naturally increases. This high level of participation subsequently leads to increased adoption of innovations, as farmers begin to understand the technical and economic benefits of the practices. Therefore, selecting the right methods and media is crucial in ensuring the success of extension services, especially in agriculture.

According to research discussed in the article "Analysis of Extension Methods and Media (UBT)" (FELIS, 2018), the methods used in extension are crucial in determining the extent to which development messages can be understood and implemented by the target audience. The research explains that the success of extension depends not only on the material delivered but also on the delivery method. The researchers' findings state that "extension methods aim to ensure that messages are delivered more easily and understood effectively by the target audience," so the choice of methods such as individual, group, or mass extension must be tailored to the characteristics of the target community. This confirms that the right approach can increase community participation and encourage changes in attitudes and behavior that support development.

The study also emphasized that extension media plays a crucial role in the success of development communication. Media are not only visual aids but also tools to attract attention and enhance target audience understanding. The study stated that "extension media are used to arouse the thoughts, feelings, and attention of the target audience to make the message more easily accepted," so that the selection of appropriate media such as images, posters, videos, or live demonstrations can strengthen the effect of the extension method. Thus, according to this study, the use of an appropriate combination of methods and media can truly increase the effectiveness of extension and accelerate the process of disseminating innovations in the development sector.

In addition, the research above confirms that extension methods and media are important factors in the framework of factors that influence the success of development extension. The success of extension is not only determined by the ability of the extension worker or the readiness of the target, but is also greatly influenced by the method of conveying information and the means used. Therefore, in planning development extension, attention must be paid to the strategy of methods and media so that the message can be conveyed clearly, accepted, and adopted by the target community so that development goals can be achieved optimally.

Furthermore, the selection of methods and media for extension services must be tailored to the social and cultural characteristics and level of understanding of the target community. Media that is engaging, easy to understand, and tailored to community needs will make them more interested and receptive to development messages. Furthermore, the use of methods that involve the community, such as group discussions or field demonstrations, can also encourage them to participate more actively. This way, the community not only hears information but also tries and implements it themselves. Thus, appropriate methods and media will strengthen the extension process and ensure that behavioral changes or capacity building in the community can be achieved sustainably.

Extension Material

Within the framework of factors influencing the success of development extension, research (Yumna Luthfia & Sadono, 2025) emphasizes the importance of support provided in

extension activities to achieve successful adoption of agricultural innovations. This study shows that the level of farmer participation in extension activities and the type of support provided by extension workers have a clear relationship with the implementation of organic rice farming systems. This proves that the success of development extension is highly dependent on how well extension workers convey information and guide farmers in implementing innovations, particularly in providing technical materials tailored to farmers' needs.

The research findings also indicate that practical assistance, such as direct field guidance, demonstrations of methods, and examples of agricultural techniques, significantly impact farmers' success in implementing innovations. When extension workers provide step-by-step instructions and adapt the material to the farmers' local conditions, the learning process becomes more accessible. This approach not only enhances farmers' technical knowledge but also helps them build confidence in trying new technologies. Therefore, organized and ongoing support from extension workers is crucial in encouraging changes in agricultural behavior toward a more modern and sustainable approach.

In addition to technical assistance, this study also emphasized the importance of motivational and emotional support in increasing farmer participation. Extension workers who are able to build positive relationships, provide encouragement, and create a comfortable learning environment will encourage farmers to be more active in extension activities. This kind of social support makes farmers feel valued and supported, and they feel free to express the challenges they face when implementing innovations. In this context, the success of extension services is measured not only by their understanding of the material but also by the extension workers' ability to create an inclusive, collaborative, and empowering learning environment.

The results of this study support the argument that extension materials are a critical factor in the success of development extension programs. Although the study did not specifically evaluate the quality of the materials, the interactions between extension workers and farmers, as well as the support provided, indicate that clear, structured, and easily understood delivery of materials is a crucial component of a successful extension program. Therefore, when designing a development extension program, attention must be paid to how the materials are delivered so that the information can be received, understood, and adopted by the target community, thereby maximizing the achievement of development goals.

Furthermore, it's also important to consider the extent to which the extension materials are tailored to the needs of the target community. If materials are created without considering local conditions, preferences, or the real problems faced by the community, they are likely to be ineffective in driving behavior change. Therefore, extension materials must be designed based on the results of problem identification and needs analysis to ensure that the content delivered truly addresses the issues faced by the community.

Thus, relevant and contextually appropriate materials will be easier for the community to understand and apply. In addition, in developing extension materials, it is best to also include real examples, images, or concrete actions that are appropriate to the situation in the field. This approach not only helps the community understand the material better but also increases their ability to apply the material independently. When the community sees the direct benefits of the material provided, the level of acceptance or behavioral change will be higher. Therefore, the quality of materials that are applicable, practical, and easy to understand is very important in supporting the success of sustainable development extension.

Support from institutions

In the context of factors influencing the success of development extension, research (Makmun 2021) emphasizes that institutional support is crucial for the success of agricultural

development, especially among young farmers. This research shows that the sustainability of agricultural development is highly dependent on the quality of institutions, such as farmer organizations, farmer groups, and other supporting institutions. Research results using the SEM method indicate that if institutions are weak, the adoption rate of agricultural innovations will be low, ultimately hampering the success of development extension. Therefore, the success of extension depends not only on the extension workers or the materials delivered, but also on the institutional structures that support the extension process in the field.

According to research (Khairunnisa et al., 2019), the success of development extension programs is highly dependent on the institutional support of farmers, particularly in the decision-making process and the implementation of technological innovation. This research shows that strengthening institutions increases the capacity of farmer groups, making them more independent in accepting and implementing innovations. The study found that "strong farmer institutions provide opportunities for members to actively participate in decision-making," thus institutions play a key role in increasing the effectiveness of extension programs. Therefore, strong institutional support directly contributes to the success of development programs by strengthening organizations and increasing their ability to accept technology.

According to research by Yumi et al. (2012), support from community institutions significantly influences the success of development extension programs, particularly in helping farmers learn about resource management based on community collaboration. The study found that local institutional structures, both formal and informal, can facilitate farmers' learning and increase their participation. Their article states that "support from community institutions significantly influences how actively farmers learn," making local institutions a crucial factor in maintaining the continuity of extension programs. The results of this study indicate that the existence of active social institutions is a key foundation for the success of development processes through collaborative learning, collaboration, and shared resource management.

The results of this study confirm that institutional and policy support is a critical factor in the success of development extension programs. Strong institutions, which can be strengthened through government or internal organizational policies, enable extension workers to provide effective guidance, coordinate programs, and facilitate the adoption of innovations by farmers. Therefore, when planning development extension programs, institutional and policy aspects must be considered to ensure optimal extension operations and sustainable agricultural development goals.

Furthermore, this research shows that strong institutions not only serve as a place to coordinate activities but also foster a continuous learning environment for farmers. By joining farmer groups or agricultural organizations, young farmers can share information, gain access to training, and receive support in the form of facilities, capital, and technical assistance. Well-functioning institutions also facilitate communication between extension workers and farmers, allowing messages to be delivered in a regular, structured, and more easily understood manner. When institutions function smoothly, the adoption of agricultural innovations is accelerated because farmers perceive sufficient moral, social, and technical support to implement new practices. Therefore, strengthening institutions is a key factor in the success of development extension, particularly in encouraging the emergence of young farmers who are able to adapt to technological change and development.

CONCLUSION

The success of development outreach activities is influenced by various important factors, such as the extension workers themselves, including work experience, communication skills, and the availability of supporting facilities, which influence the quality of the outreach. The characteristics of the outreach targets, such as their education level, knowledge level, and readiness to accept innovation, will influence the participation and outcomes of a development program. The methods and media used in outreach significantly determine the effectiveness of information delivery; selecting the right strategy can increase the acceptance of innovation by the community.

The success of a development extension strategy can only be achieved through effective collaboration between extension workers, targets, methods, materials, and institutional support. An integrated approach will help achieve effective, sustainable development goals and deliver tangible impacts on communities.

The success of development extension programs also depends on the program's ability to adapt to technological developments and changing social conditions. Integrating digital media, strengthening extension institutions, and enhancing the capabilities of extension workers are factors that require continuous development to ensure extension programs can meet the increasingly complex needs of the community. A responsive extension approach that involves the community and is based on real needs on the ground will strengthen community learning processes, increase acceptance of innovations, and ensure the sustainability of development programs.

REFERENCES

- Al-Ummah, B. ', Makmun, F., Raden, U., Lampung, I., Uin, F., & Lampung, R. I. (2021). *Penyuluhan Agama Dalam Pengembangan Masyarakat Islam: Studi Peran Penyuluh Agama Dalam Pengembangan Masyarakat Islam*. 16(1). <https://doi.org/10.24042/bu.v%vi%i.9269>
- Felis. (2018). *Analisis Metode Dan Media Penyuluhan Pertanian Di Kecamatan Tarakan Timur Kota Tarakan (Studi Kasus Kelompok Tani Harapan Sejahtera)*.
- Jamil, M. H., Rahma Azizah Basmahuddin, N., B Dammallino, E., & Ridwan, M. (2023). Faktor-Faktor yang Mempengaruhi Kinerja Penyuluh Pertanian dalam Masa Pandemi Covid-19 di Kabupaten Jenepono. *Jurnal Penyuluhan*, 19(01), 80–92. <https://doi.org/10.25015/19202341935>
- Khairunnisa, Amiruddin, & Oos M Anwas. (2019). *penguatan Kelembagaan Petani Padi dalam Pengambilan Keputusan Adopsi Teknologi IPB Prima*. <https://journal.ipb.ac.id/index.php/jupe/article/view/23460>
- Khotimah, K., Nurmayasari, I., Listiana, I., & Ibnu, M. (2024). Pengaruh Karakteristik Petani Padi terhadap Tingkat Partisipasi dalam Program KUR Tani di Desa Tempuran Kecamatan Trimurjo Kabupaten Lampung Tengah (The Influence of Rice Farmer Characteristics on The Level of Participation in The KUR Tani Program in Tempuran Village, Trimurjo District, Central Lampung Regency). *Journal of Extension and Development ISSN*, 06(02), 171–178. <http://repository.lppm.unila.ac.id/54357/>
- Kustiari, T., & Ananta Budiman, Y. (2023). Peningkatan Kinerja Digital Penyuluh Pertanian Dinas Pertanian dan Pangan Kabupaten Banyuwangi Jawa Timur. *Jurnal Penyuluhan*, 19(02), 62–79. <https://doi.org/10.25015/19202346275>

- Makmun, L., Daud Kameo, D., Tri Sunaryanto, L., Wahidah Mubarakah, W., Pembangunan Pertanian Yogyakarta -Magelang Jalan Kusumanegara No, P., & Umbulharjo, T. (2021). *Dukungan Kelembagaan Pertanian bagi Petani Millennial di Era Disrupsi Pertanian Cerdas (Smart Farming) (Kajian Keberlanjutan Pembangunan Pertanian di Provinsi Jawa Tengah) Agricultural Institutional Support for Millennial Farmers in The Era of Smart Farming Disruption (Study of the Sustainability Agricultural Development in Central Java Province)*. <https://journal.polbangtanyoma.ac.id/jp3/article/view/1195>
- Pello, W. Y., & Djunina, H. (2024). Pengaruh Metode dan Media Penyuluhan Pertanian terhadap Adopsi Budidaya Padi Sawah. *Jurnal Penyuluhan*, 20(02), 272–283. <https://doi.org/10.25015/20202451741>
- Penyuluh Pertanian Lapangan, K., Petani, K., Produktivitas Usahatani Jagung Di Kecamatan Natar, dan, & Lampung Selatan, K. (2021). Performance of Agricultural Extension Worker, Farmer Satisfaction, and Productivity of Corn Farming in in Natar District, South Lampung Regency. *Journal of Extension and Development ISSN*, 03(02), 117–125.
- Seprama Reno, H. H. B. T. (2023). 324-332.
- Yumi, Sumardjo, Darwis S. Gani, Basita G, & Sugihen. (2012). *Dukungan Kelembagaan Masyarakat dalam Pembelajaran Petani untuk Pengelolaan Hutan Rakyat Lestari di Kab. Gunung Kidul, Provinsi Daerah Istimewa Yogyakarta dan Kab. Wonogiri, Provinsi Jawa Tenga*. <https://journal.ipb.ac.id/index.php/jupe/article/view/9887>
- Yumna Luthfia, & Sadono, D. (2025). Analisis Penerapan Inovasi Sistem Pertanian Padi Organik di Desa Purwabakti, Kecamatan Pamijahan, Kabupaten Bogor. *Jurnal Penyuluhan Pertanian*, 20(1), 41–57. <https://doi.org/10.51852/d03mhv41>
<https://jurnal.polbangtanbogor.ac.id/index.php/jpp/article/view/959>