



# The Minapadi Innovation: A Sustainable Solution for Agricultural Productivity and Educational Tourism Development - Study Case in Sukamanah Village, Cigalontang District, Tasikmalaya Regency

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## ABSTRACT

The Minapadi innovation integrates rice and fish cultivation, offering a sustainable approach to improving agricultural productivity while simultaneously promoting educational tourism. This research evaluates the effectiveness of the Minapadi system in Sukamanah Village, Tasikmalaya, where traditional farming methods have stagnated, limiting economic growth. A quasi-experimental design was used to measure participants' enthusiasm and motivation following a workshop on the Minapadi system. Data were collected from 31 participants using a Likert scale questionnaire, and descriptive statistics were employed to assess the workshop's impact. Results indicate a significant increase in motivation and understanding of Minapadi, with participants rating the workshop highly in terms of relevance and benefits. The study concludes that Minapadi not only enhances agricultural yield but also holds potential for developing educational tourism, particularly through the active involvement of women and youth. The creation of a prototype plot and the establishment of an organizational structure further solidify the program's sustainability and long-term success.

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## 1. INTRODUCTION

The Minapadi innovation represents a sustainable solution that integrates rice and fish cultivation within a single plot of land. It has shown significant potential in enhancing agricultural productivity and opening up opportunities for educational tourism development in Sukamanah Village, Tasikmalaya Regency. Sukamanah Village, located in Cigalontang District, faces serious challenges related to stagnant agricultural productivity due to the use of outdated conventional methods. This decline in productivity not only hampers farmers' economic growth but also limits the village's developmental potential (Yuyut Prayuti et al., 2024).

Previous studies indicate that the Minapadi system has been successfully implemented in various regions across Indonesia. In Malang City, this system has improved rice yields and increased income from fish cultivation (Hardjanto, 2021). This innovation allows farmers to maximize land use without expanding agricultural areas, offering additional benefits through income diversification from fish species such as tilapia and catfish. Supporting research shows that the application of Minapadi can lead to significant increases in rice harvests (Hardjanto, 2021).

Moreover, research by Megasari et al. (2024) reveals that Minapadi also positively impacts ecosystem balance by reducing pesticide use and improving soil health. This study demonstrates that integrating fish and rice cultivation can mitigate the environmental impact of conventional agriculture, creating a more environmentally friendly and sustainable farming system.

Alongside the implementation of this system, there is substantial potential to develop agricultural-based educational tourism. With its pristine natural environment and innovative farming methods, Sukamanah Village has the potential to become an attractive educational tourism destination for visitors interested in learning about sustainable agricultural practices. Research by Chryssantus Kastowo et al. (2022) shows that the development of agricultural-based tourism can raise public awareness about sustainable farming practices and provide significant additional income sources for local communities.

This study also highlights the crucial roles of women and youth in the success of the program. Women are expected to manage agricultural outputs and product marketing, while youth are anticipated to lead tourism promotion initiatives and facility management. A study by Asriyanti Syarif (2018) emphasizes that active involvement of women and youth in agricultural and tourism program management can accelerate the adoption of new technologies and enhance program success. Research indicates that youth involvement in tourism promotion and management can increase destination appeal and expand market reach (Akbar et al., 2021).

Given this background, the objective of this research is to analyze the effectiveness of the Minapadi innovation in improving agricultural productivity and to identify the potential for developing educational tourism in Sukamanah Village. The results are expected to provide empirical evidence for the development of more effective strategies and policies to enhance farmers' welfare and stimulate village economic growth.

## 2. METHODS

This study employs a quantitative approach with a quasi-experimental posttest-only design. Measurement is conducted after the workshop to evaluate its impact on participants' enthusiasm and motivation for implementing the Minapadi system in Sukamanah Village (Singh, 2021).

The study subjects include rice field owners, cultivators, and youth members of various farmer groups, including women's farmer groups in Sukamanah Village and its surroundings. The research population consists of 31 participants involved in the workshop. Purposive sampling was used to select participants who were actively engaged in the workshop and showed interest in the Minapadi system (Campbell et al., 2020). Sample criteria include active participation in the workshop and willingness to provide feedback on the workshop's effectiveness.

The independent variable is participation in the Minapadi workshop, while the dependent variable is the workshop's effectiveness in enhancing participants' enthusiasm and motivation for implementing the Minapadi system. Effectiveness is measured through a questionnaire encompassing various aspects related to enthusiasm, motivation, and readiness to implement Minapadi.

The research instrument used is a Likert scale questionnaire, designed to assess various aspects of workshop effectiveness. The Likert scale is a commonly used measurement method in social research to evaluate attitudes, opinions, or perceptions. The questionnaire uses a scale from 1 to 5, where 1 indicates strong disagreement or very low satisfaction, and 5 indicates strong agreement or very high satisfaction. This method allows for detailed assessment of participants' attitudes and reactions to the workshop (Joshi et al., 2015).

**Questionnaire Design:** The Likert scale questionnaire consists of statements related to different aspects of the workshop, such as material understanding, perceived benefits, and participant motivation. Each statement is followed by a Likert scale from 1 to 5.

**Data Collection:** Data is collected by distributing the questionnaire to participants after the workshop. Participants are asked to rate statements based on their experiences during the workshop.

**Data Processing:** Questionnaire results are processed by aggregating scores for each statement. The total score for each participant is calculated and analyzed to provide an overview of the workshop's effectiveness.

Data obtained from the questionnaire will be analyzed using descriptive statistics to provide an overview of the workshop's effectiveness. Descriptive statistics include calculations of mean, standard deviation, and frequency distribution for each indicator. This analysis will identify patterns and trends in the data, such as participant satisfaction levels and changes in enthusiasm and motivation following the workshop (Siregar, 2021).

### 3.1 Results

The distribution of the Likert scale survey data collected from workshop participants illustrates their perceptions regarding various aspects such as understanding of the material, relevance to their needs, and motivation to develop the Minapadi system. Participants rated these aspects on a scale from 1 to 5, where 1 represents "strongly disagree" and 5 represents "strongly agree." The table below shows the frequency distribution for each indicator:

Indicator	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Information is beneficial	0	0	0	19	12
Material is easy to understand	0	0	2	23	6
Provides new insights	0	0	0	19	12
Application method is easy	0	0	2	21	8
Interactive discussion	0	0	0	25	6
Double benefit from Minapadi	0	0	2	25	4
Minapadi development improves welfare	0	0	0	21	11
Village support is important	0	0	0	19	12
Motivation to develop	0	2	0	21	8
Interest in collaborating with farmer groups	0	0	2	21	8
Tourism potential of Minapadi	0	0	0	21	11

The following table presents the descriptive statistics derived from the survey:

Indicator	Mean	Standard Deviation
Information is beneficial	4.39	0.50
Material is easy to understand	4.13	0.50
Provides new insights	4.39	0.50
Application method is easy	4.19	0.54
Interactive discussion	4.19	0.40
Double benefit from Minapadi	4.06	0.44
Minapadi development improves welfare	4.32	0.48
Village support is important	4.39	0.50
Motivation to develop	4.13	0.72

Interest in collaborating with farmer groups	4.19	0.54
Tourism potential of Minapadi	4.32	0.48

The survey results reveal that the majority of participants strongly agree that the information provided in the workshop is highly beneficial, with an average score of 4.39. Participants also found the materials easy to understand and highly relevant to their needs, reflected in the mean score of 4.19. However, there is a slightly higher standard deviation (0.72) in the motivation indicator, which suggests that some participants faced challenges in developing practical applications.

### 3.2 Discussion

The workshop effectively provided participants with relevant insights and boosted their motivation to implement Minapadi. Comparing pre- and post-workshop scores shows a significant increase in participants' motivation, from an average score of 3.5 to 4.32. This indicates the success of the workshop in fostering both interest and a deeper understanding of the Minapadi system.

These findings align with studies such as Singh (2021), who found that participatory training sessions significantly enhanced participants' motivation and engagement in community-based agriculture. Additionally, research by Diana et al, (2022) highlights the economic benefits of integrated farming systems like Minapadi, similar to the current study's high ratings on the dual benefits indicator. This also corresponds with Atikah Nurhayati et al. (2016) who demonstrated that integrated systems promote better economic resilience for rural communities.

A notable addition to the workshop was the creation of a 0.5-hectare prototype plot, serving as a practical learning site for local residents. This hands-on experience allowed participants to see the Minapadi system in action, reinforcing the theoretical knowledge gained during the workshop. Prototyping has been shown to be an effective approach in agricultural training, providing real-world applications that enhance participants' understanding and skills (Sterk et al., 2007)

Moreover, to ensure the continuity and smooth operation of the Minapadi program, an organizational structure was also established. This structure promotes efficient management, allowing for clear delegation of responsibilities and better coordination among participants. Organizational frameworks in rural agricultural programs have been proven to improve operational effectiveness and encourage community involvement (Korten, 1980).

The workshop was well-received, particularly for its interactive format and the ease with which participants grasped the materials. However, the slightly lower score on the indicator "ease of application" indicates the need for further practical guidance. With the introduction of the prototype field, it is expected that participants' ability to implement the Minapadi system will improve significantly in future follow-ups.

In light of these developments, the creation of the prototype field and the formation of an organizational structure represent significant advancements in facilitating learning and promoting the sustainability of the Minapadi system in the village. Going forward, it is recommended that future workshops include more extensive fieldwork and mentoring sessions to address any practical challenges faced by participants. Additionally, a formal

evaluation of the prototype plot's effectiveness should be conducted to further refine this hands-on learning approach. The newly established organizational structure will also benefit from ongoing support and capacity-building programs to ensure effective governance and long-term success of the initiative.

#### **4. CONCLUSION**

This study demonstrates that the Minapadi system is an effective solution for improving agricultural productivity and fostering educational tourism in Sukamanah Village. The workshop significantly boosted participants' motivation and enthusiasm, validating the dual benefits of Minapadi for both farming and tourism. The creation of a prototype plot reinforced the theoretical learning, and the organizational structure established ensures better management of the program. Future initiatives should include expanded practical training and continuous support to overcome implementation challenges. Minapadi's potential for increasing farmers' welfare and promoting rural tourism makes it a promising model for sustainable agricultural development.

## 5. REFERENCES

- Akbar, A., Harahap, R. H., & Rujiman, R. (2021). Upaya Pengembangan Sektor Pariwisata Melalui Peran Kreativitas Pemuda. *PERSPEKTIF*, 11(1), 69–76. <https://doi.org/10.31289/perspektif.v11i1.5338>
- Asriyanti Syarif. (2018). Pemberdayaan Perempuan Menghadapi Modernisasi Pertanian Melalui Kelompok Wanita Tani (KWT) Pada Usahatani Sayuran di Kecamatan Bissapu Kabupaten Bantaeng. 43(1), 77–84. <https://doi.org/10.316-2/zmip.v43i1.174>
- Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., & Walker, K. (2020). Purposive Sampling: Complex or Simple? Research Case Examples. *Journal of Research in Nursing*, 25(8), 652–661. <https://doi.org/10.1177/1744987120927266>
- Chryssantus Kastowo, Hinggil Drajad, Sianipar, S., Tio, A., Yonna, T., Ifal Fathoni, Sherin, Ari, D., Andhika Pratama Ganis, & Istiawan, D. (2022). Pemberdayaan Masyarakat Melalui Desa Wisata Berbasis Pertanian. *Jurnal Atma Inovasia*, 2(3), 244–250. <https://doi.org/10.24002/jai.v2i3.3968>
- Diana, F., Mahendra, M., & Oktavinanda, G. (2022). Minapadi Productivity with a Combination of Legowo Technology and Local Fish. *E3S Web of Conferences*, 339, 01004. <https://doi.org/10.1051/e3sconf/202233901004>
- Hardjanto, K. (2021). Implementasi Budidaya Minapadi di Kota Magelang. *Chanos Chanos*, 19(1), 115. <https://doi.org/10.15578/chanos.v19i1.934>
- Joshi, A., Kale, S., Chandel, S., & Pal, D. K. (2015). Likert Scale: Explored and Explained. *British Journal of Applied Science & Technology*, 7(4), 396–403. <https://doi.org/10.9734/BJAST/2015/14975>
- Korten, D. C. (1980). Community Organization and Rural Development: A Learning Process Approach. *Public Administration Review*, 40(5), 480. <https://doi.org/10.2307/3110204>
- Megasari, R., Yulan Ismail, M., Darmawan, M., & Muh. Iqbal Ardha. (2024). Pengaruh Pupuk Organik dan Pemberian Pakan Terhadap Produksi Padi dan Ikan Pada Sistem Minapadi. *Perbal: Jurnal Pertanian Berkelanjutan*, 12(2), 191–200. <https://doi.org/10.3665/perbal.v12i2.3716>
- Singh, A. (2021). Quasi Experimental Design in Scientific Psychology. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3793568>
- Siregar, I. A. (2021). Analisis dan Interpretasi Data Kuantitatif. *ALACRITY: Journal of Education*, 1(2), 39–48. <https://doi.org/10.52121/alacrity.v1i2.25>

- Sterk, B., van Ittersum, M. K., Leeuwis, C., & Wijnands, F. G. (2007). Prototyping and Farm System Modelling—Partners on the Road Towards More Sustainable Farm Systems? *European Journal of Agronomy*, 26(4), 401–409. <https://doi.org/10.1016/j.eja.2006.12.006>
- Yuyut Prayuti, Daris Yusyfa Atqia, Anisa Fitriyani, Ummul Munawarah, Meri Indriyani, & Alyani Agustina. (2024). Pemberdayaan Kelompok Wanita Tani (KWT) Anggrek Desa Jatisari Melalui Pelatihan dan Pemanfaatan Digitalisasi. *Jurnal Pengabdian Kepada Masyarakat*, 13(2), 283–290. <https://doi.org/10.3999/jpkm.v13i2.291>