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Empowering Corn Farmers Through Good Agricultural Practices in Balongga Village, Central Sulawesi

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ABSTRACT

Good Agricultural Practices (GAP) is a guideline for good cultivation practices to increase productivity, yield quality, and the sustainability of farming businesses. However, in practice, GAP recommendations for corn cultivation have not been fully adopted by farmers, resulting in suboptimal productivity. This study aims to analyze the implementation of an empowerment program to improve farmer knowledge, GAP implementation, and corn productivity. The study was conducted in Balongga Village, Dolo Selatan District, Sigi Regency, Central Sulawesi Province using a mixed-method approach. Data collection was carried out through observation, interviews, questionnaires, pre-tests and post-tests to measure farmers knowledge levels, and checklists to assess GAP implementation, complemented by activity documentation. The results showed improvements in three main aspects after the implementation of the empowerment program. The level of farmer knowledge increased from 68.59% to 96.41%, the level of GAP implementation increased from 59.62% to 93.37%, and corn productivity increased from 2.1 tons ha^{-1} to 5.1 tons ha^{-1}. The implementation of empowerment activities through field school activities, demonstration plot gardens, and routine monitoring has shown effectiveness in increasing the understanding and application of GAP by farmers, which in turn has a positive impact on increasing corn productivity.

INTRODUCTION

Corn (*Zea mays* L.) is an agricultural commodity that plays a crucial role as a source of food and feed. Corn is now increasingly cultivated as part of efforts to achieve food self-sufficiency in Indonesia (Wulandari & Jaelani, 2019). According to data from the Central Sulawesi Province Statistics Agency, in 2024, dry kernel corn production with a moisture content of 14% was recorded at 96,199.79 tons in 2022, and decreased by 20,260.13 tons in 2023, bringing total production to 75,939.66 tons (BPS, 2024).

Balongga Village, situated in Sigi Regency, Central Sulawesi, is predominantly an agrarian community where corn cultivation serves as the primary source of livelihood. In recent years, however, corn productivity in the village has shown a gradual decline. This downward trend is largely attributed to limited farmer knowledge and inadequate skills in modern cultivation practices. One critical factor influencing productivity is the low level of technological adoption in farming activities. For instance, the application of appropriate planting distances and adherence to Standard Operating Procedures (SOPs) are proven methods that can significantly enhance yields. Pest and disease management also plays a vital role in sustaining productivity, as effective control measures directly contribute to healthier crops and higher output (Dinata, 2017). Despite these well-established practices, many farmers in Balongga Village continue to rely on traditional methods, often described as “stagnant planting.” This approach involves minimal crop management, where corn is planted and left largely unattended until harvest. Such practices neglect essential aspects of care and maintenance, including soil preparation, fertilization, irrigation, and pest control. Consequently, the lack of systematic cultivation not only reduces yields but also perpetuates cycles of low productivity.

The evidence suggests that improving farmer knowledge, enhancing skill development, and promoting the adoption of modern agricultural technologies are crucial steps toward revitalizing corn production in Balongga Village. Without these interventions, the community risks further economic vulnerability due to declining agricultural output. In addition to limited knowledge and technological adoption, farmers in Balongga Village face external challenges such as unfavorable weather conditions. Prolonged droughts, in particular, have been identified as a major obstacle, often resulting in crop failure and reduced yields. These climatic stresses highlight the need for systematic interventions that can mitigate risks and stabilize production. One promising approach is the implementation of standardized cultivation methods through Good Agricultural Practices (GAP). GAP provides a comprehensive framework for proper crop management, ensuring that cultivation techniques not only enhance productivity but also maintain food safety and environmental sustainability (Tahir et al., 2024). By following GAP, farmers can adopt practices such as efficient water management, soil conservation, and integrated pest control, all of which contribute to resilient and sustainable corn production.

In Indonesia, the guidelines for GAP are formally codified under SNI 8969:2021, which establishes the Indonesian Good Agricultural Practices (IndoGAP) for food crop cultivation (BSN, 2021). These standards serve as a benchmark for farmers, offering clear instructions on planting, maintenance, and post-harvest handling. Adoption of IndoGAP in Balongga Village could therefore play a pivotal role in addressing both technological gaps and environmental challenges, ultimately leading to improved corn yields and greater livelihood security for the farming community.

To address the challenges of declining corn productivity, an empowerment program has been implemented for corn farmers in Balongga Village. This initiative seeks to enhance

farmers capacity to manage their land more effectively, with corn identified as a priority commodity under the national Farming for the Nation program (BUN). The program provides comprehensive support throughout the cultivation process, emphasizing both knowledge transfer and practical application. The empowerment activities consist of three main components: Farmers Field School (FFS): Conducted biweekly, FFS sessions aim to improve farmers knowledge and skills, particularly in understanding and applying proper cultivation practices; Demonstration Plots: Jointly established plots serve as practical learning sites where farmers can directly observe and implement the GAP introduced during training; Land Monitoring and Home Visits: Weekly inspections of farmland, coupled with household visits, allow facilitators to identify emerging problems and provide tailored guidance. Farmer empowerment encompasses all stages of the agricultural cycle, including land preparation, planting, maintenance, harvesting, and post-harvest handling. By strengthening these stages, the program not only improves productivity but also enhances the sustainability of agricultural enterprises in Balongga Village (Kusmana & Garis, 2019).

Despite the availability of GAP guidelines, their adoption among corn farmers in Balongga Village remains limited, resulting in suboptimal productivity. This gap between recommended practices and actual implementation forms the basis of the present study. The primary objective is to analyze the effectiveness of empowerment activities designed to improve farmer knowledge, enhance GAP adoption, and ultimately increase corn productivity in Balongga Village, Dolo Selatan District, Sigi Regency, Central Sulawesi Province. Specifically, the study seeks to examine changes in farmer knowledge regarding corn cultivation before and after participation in empowerment program, assess the extent of GAP implementation among farmers following program interventions, and evaluate improvements in corn productivity as a direct outcome of enhanced knowledge and GAP adoption. By addressing these objectives, the study aims to provide empirical evidence on the role of farmer empowerment in bridging knowledge gaps, promoting sustainable agricultural practices, and strengthening food security at the village level.

RESEARCH METHODS

Study area and research design

This study was conducted in Balongga Village, located in the Dolo Selatan District of Sigi Regency, Central Sulawesi Province, Indonesia. The research was carried out over a ten-month period, from September 2024 to July 2025. The methodological framework encompassed four sequential phases: (1) field observation to obtain contextual and environmental insights, (2) systematic data collection through both qualitative and quantitative approaches, (3) rigorous data analysis employing appropriate analytical techniques, and (4) structured presentation of the findings to ensure clarity, coherence, and scholarly relevance.

Target population and sampling design

The target population of this study comprised corn farmers residing in Balongga Village, Dolo Selatan District, Sigi Regency, Central Sulawesi Province. A non-probability sampling design was employed, specifically utilizing purposive sampling. Purposive sampling is a technique in which research subjects are deliberately selected based on predefined criteria relevant to the study objectives (Sugiyono, 2020). In this context, the inclusion criteria focused on farmers who were actively engaged in and had received assistance through the local empowerment program. The total population meeting these criteria consisted of 32 assisted farmers, all of whom were considered within the scope of the study.

Research approach

This study employed a mixed-methods design, integrating both quantitative and qualitative approaches to provide a comprehensive understanding of the research problem (Nasution et al., 2024). The qualitative component was implemented through field observations and in-depth interviews, enabling the researchers to capture contextual insights into social dynamics, events, and information directly related to the research subjects. Specifically, qualitative methods were used to document the profile of Balongga Village and to describe the conditions and circumstances of the assisted farmers.

The quantitative component focused on systematically measuring farmer conditions, knowledge levels, and the extent of GAP implementation. Data were collected using structured instruments, including farmer condition surveys, questionnaires, pre-tests and post-tests, and standardized checklists derived from project productivity work documents. This dual approach allowed for triangulation of findings, thereby enhancing the validity and reliability of the results.

Data collection

The data collected in this study consisted of both primary and secondary sources. Multiple techniques were employed to ensure the comprehensiveness and validity of the findings:

Observation

Participatory Observation: The researcher was directly involved in farming activities, not only observing but also participating, thereby gaining experiential insights. Structured Observation: Conducted using predetermined guidelines, focusing on specific aspects to ensure systematic and replicable data collection.

Interviews

Key informant interviews were conducted with the Agricultural Extension Officer, Village Head, Village Secretary, Head of the Balongga Village Agricultural Group Association, and demonstration plot owners. These interviews provided information on village history, socio economic and cultural conditions, infrastructure, institutional arrangements, agricultural groups, membership structures, commodities cultivated, and challenges faced by corn farmers. Informants were selected based on their expertise and knowledge of the subject matter. Semi structured interviews were also conducted with the 32 assisted farmers during field monitoring and home visits. These interviews aimed to identify problems occurring on their land and to capture farmer perspectives in a flexible yet guided manner.

Questionnaires

Closed ended questionnaires were administered before and after empowerment activities. These instruments collected data on farmer characteristics and conditions, enabling systematic comparison across respondents.

Pre-tests and Post-tests

Pre-tests and post-tests served as evaluation tools to measure changes in farmer knowledge levels. By comparing results before and after empowerment activities, these instruments assessed the effectiveness of the program in enhancing knowledge.

Checklists

Checklists were used as structured instruments containing activity indicators to evaluate improvements in GAP implementation. They provided a systematic means of assessing the presence, consistency, and quality of specific practices based on predetermined criteria.

Documentation

Secondary data were obtained through the collection and analysis of relevant documents, including reports, letters, photographs, videos, and other materials related to the empowerment program and agricultural activities in Balongga Village.

Data processing and analysis

Qualitative data from secondary data and interviews were analyzed using descriptive narratives. The calculation of the level of GAP implementation was based on the percentage (%) implementation of each GAP component (Firdaus et al., 2024):

$$\text{GAP implementation level} = \frac{\text{Number of respondents who have implemented GAP}}{\text{Total number of respondents}} \text{ x } 100\% \ldots\ldots (1)$$

The data obtained from this measurement were categorized according to the percentage of GAP implementation by farmers (Maulidin, 2024). The following formula is used to determine the categories:

$$\text{Score determination} = \frac{\text{Maximum percentage value - Minimum percentage value}}{\text{Number of categories}} \ldots\ldots (2)$$

$$= \frac{100\text{-}0}{3}$$

$$= 33.33$$

Based on the formula above, three categories of GAP implementation levels for corn were obtained:

a) Low (0% - 33.33%),
b) Medium (33.34% - 66.67%),
c) High (66.68% - 100%).

The data presented in tabular form and analyzed descriptively using Microsoft Excel 2019 and IBM SPSS version 26.0, namely Paired t-Test and Wilcoxon Signed Ranks Test analysis. The obtained values were then compared between the GAP implementation level category values obtained before and after empowerment were then tabulated, illustrated and analyzed descriptively.

RESULTS AND DISCUSSION

Results

Characteristics of Corn Farmers in Balongga Village and Community Empowerment Activities

Corn farmers in Balongga Village are predominantly middle-aged, ranging between 46 to 65 years old, with educational attainment generally limited to junior high school and high school levels. The majority of farmers are landowners, managing plots that typically range from 2,000 to 10,000 m². Household structures are relatively small, with most families having fewer than three dependents. In terms of economic conditions, farmers monthly incomes fall within the range of IDR 2 million to IDR 6 million, reflecting modest but varied livelihood outcomes. These demographic and socioeconomic characteristics provide important context for understanding both the challenges and opportunities in implementing GAP and farmer empowerment program in the village (Figure 1).

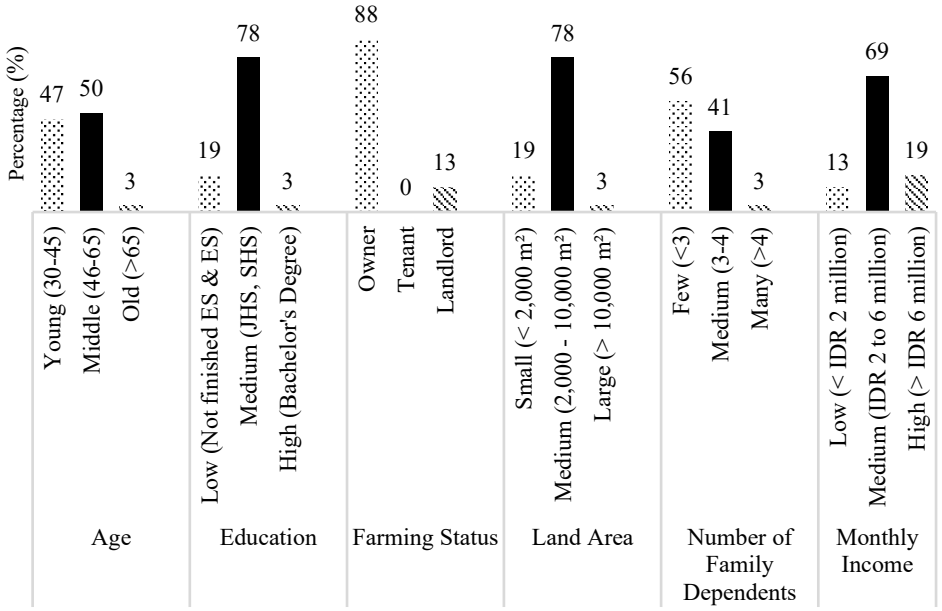

Figure 1. Characteristics of Farmers in Balongga Village, Dolo Selatan District, Sigi Regency, Central Sulawesi in 2025. ES: Elementary School; JHS: Junior High School; SHS: Senior High School

The findings indicate that the majority of corn farmers in Balongga Village are within the productive age range, enabling them to contribute both physical energy and accumulated farming experience. A portion of the farmers have not completed formal education due to financial constraints, while only a small number hold bachelor's degrees. The high cost of higher education often compels farmers to enter the workforce directly rather than pursue extended schooling. Many farmers have been engaged in corn cultivation since adolescence, assisting their families on agricultural land from an early age.

Land tenure patterns reveal that 28 farmers (88%) cultivate corn on land they own, whereas four farmers (13%) operate as sharecroppers under a profit-sharing arrangement. This distribution demonstrates that the majority of farmers manage their land independently, without reliance on external ownership. Community empowerment initiatives under the BUN program encompass several structured activities, including the implementation of the FFS, the establishment of demonstration plots (demplot), and continuous monitoring. Training and mentoring are delivered in stages according to a predetermined schedule, ensuring systematic knowledge transfer and sustained farmer engagement.

1. Field Farmers School (FFS)

The FFS represents a participatory field-based learning method implemented within the BUN program to enhance farmers knowledge and skills in corn cultivation. Sessions were conducted directly on the fields of participating farmers, allowing immediate application of the material to their own land and thereby strengthening comprehension of the cultivation process. The schools were organized with varying schedules and themes, structured sequentially in accordance with the stages of recommended corn cultivation practices. Activities were held routinely every two weeks at the homes of assisted farmers located near the demonstration plot.

The pedagogical methods employed included group discussions, field practice, demonstrations, observations, and case studies. A diverse range of media supported the learning process, encompassing visual media (whiteboards and flipcharts), print media (leaflets), audio-visual media (PowerPoint presentations), digital media (WhatsApp), and environmental media (demonstration plots).

A total of four FFS meetings were conducted, attended by assisted farmers, the Village Head, Farmers Development Associates (FDA), mentors/Field Facilitators (FF), Agricultural Extension Workers, and the Head of the Agricultural Extension Center. The thematic content of these sessions included: Planting preparation and Standard Operating Procedures (SOP) for corn cultivation techniques, Fertilization practices and the production of alternative fertilizers utilizing Photosynthetic Bacteria (PSB) and Jakaba (Eternal Lucky Fungus), Pest management strategies, including the production of organic botanical pesticides and Trichoderma, Farming business analysis, focusing on economic evaluation and sustainability considerations (Figure 2).

Figure 2. The field farmer school activities: (a) 1st meeting; (b) 2nd meeting; (c) 3rd meeting; (d) 4th meeting

Attendance at the FFS sessions demonstrated a consistent upward trend across the four meetings. The average attendance rate reached 94%, with approximately 30 farmers present per session. The highest attendance was recorded at the fourth meeting, with full participation (100%) from all 32 assisted farmers. Conversely, the lowest attendance occurred during the first meeting, with 28 farmers present (88%). The second meeting achieved 91% participation (29 farmers), while the third meeting reached 97% participation (31 farmers).

2. Demonstration Plot (Demplot)

Demonstration plot (Demplot) are model gardens developed in collaboration with farmers assisted by the BUN program (Figure 3). Demonstration plots serve as a practical medium for implementing and demonstrating cultivation technologies, allowing farmers to directly observe, learn, and compare them with conventional methods. Furthermore, demonstration plots serve as extension facilities to improve farmers knowledge, skills, and motivation in adopting agricultural technologies, and are strategically located for easy access.

Ownership of the demplot was vested in one of the assisted farmers who voluntarily offered their land, reflecting openness and willingness to participate without external coercion. The location was determined through collective deliberation involving facilitators and all participating farmers, thereby reinforcing principles of equality and active participation in

program implementation. The plot was established as a monoculture system using hybrid corn seeds, covering an area of 1,000 m² with a plant population of 6,071 stalks. Situated at an elevation of 73 meters above sea level with a slope of 4°, the site provided suitable agroecological conditions for corn cultivation.

(a) (b)

Figure 3. Demonstration plot established under the BUN program: (a) plot condition prior to planting; (b) plot condition after planting.

1. Monitoring

Monitoring is a crucial component of the BUN program, conducted routinely every two weeks to assess progress and identify challenges on farmers land. This activity involves direct interaction between facilitators and farmers through observation of cultivation practices, provision of technical guidance, and recording of field issues. Through regular monitoring, the program ensures timely corrective actions are implemented, thus supporting the effectiveness and sustainability of empowerment activities.

In addition to documenting garden activities, Farmers Development Associates (FDA) engaged directly with farmers to listen to the challenges they faced and collaboratively explore solutions. These interactions also provided a forum for sharing personal experiences and daily life stories, thereby strengthening social relationships between facilitators and farmers through both field and home visits. This participatory approach facilitated a deeper understanding of farmers needs and served as a motivational driver for the adoption of GAP in corn cultivation. Attendance levels further underscored the effectiveness of the program. All 32 assisted farmers consistently participated in every scheduled activity, resulting in a 100% attendance rate. This high level of participation is a strong indicator of farmer commitment and reflects the success of the program implementation phase. The monitoring activities not only reinforced farmer engagement but also accelerated the adoption of improved cultivation practices, ultimately contributing to enhanced farming efficiency and sustainability.

Knowledge Level and Implementation of Farmer GAP

Farmers assisted by the BUN program in Balongga Village demonstrated measurable improvements in corn cultivation knowledge. To assess the extent of this progress, pre-tests and post-tests were administered as direct evaluation tools, enabling comparison of knowledge levels before and after participation in the empowerment activities. The results indicated a clear increase in farmer knowledge following the mentoring program, thereby confirming the effectiveness of the intervention in enhancing technical understanding of corn cultivation practices.

The evaluation results revealed an average increase in farmer knowledge of 27.81% following participation in the BUN program. This improvement was particularly pronounced in specific indicators of GAP. The most significant gain was observed in the corn planting time indicator, which increased by 62.50%. This finding underscores the urgent need for information

on optimal planting schedules, as inappropriate timing can lead to substantial yield losses due to crop failure (Figure 4).

Similarly, the indicator for plant watering time increased by 53.13%, reflecting farmers growing awareness of the importance of timely irrigation in supporting optimal plant growth. Weed control knowledge improved by 46.88%, indicating that farmers increasingly recognize the role of weed management in maintaining nutrient availability and reducing competition with the main crop. Moderate improvements were recorded in the indicators for drainage channel function and mulch utilization, both at 37.50%. These relatively lower scores suggest that farmers still perceive water management and mulching as cost-intensive practices with limited immediate benefits.

Other indicators also showed positive trends, largely attributable to the increased intensity of extension activities and direct field practice. Conversely, the pest and disease control indicator exhibited only a marginal increase of 6.25%. While seemingly low, this result reflects the fact that most farmers already possessed a sound understanding of pest and disease management and routinely implemented control measures. A similar pattern was observed in the harvest sorting indicator, which increased by 12.5%. This modest improvement suggests that sorting practices are already being adopted by some farmers and are no longer considered a major constraint in the cultivation process.

Although certain indicators contributed minimally to overall knowledge gains, their presence nonetheless reflects incremental progress in farmer understanding and implementation of improved cultivation practices. Collectively, these findings demonstrate that the empowerment program effectively strengthened farmer knowledge, particularly in areas where gaps were most critical, while consolidating existing practices in domains where farmers already had substantial experience.

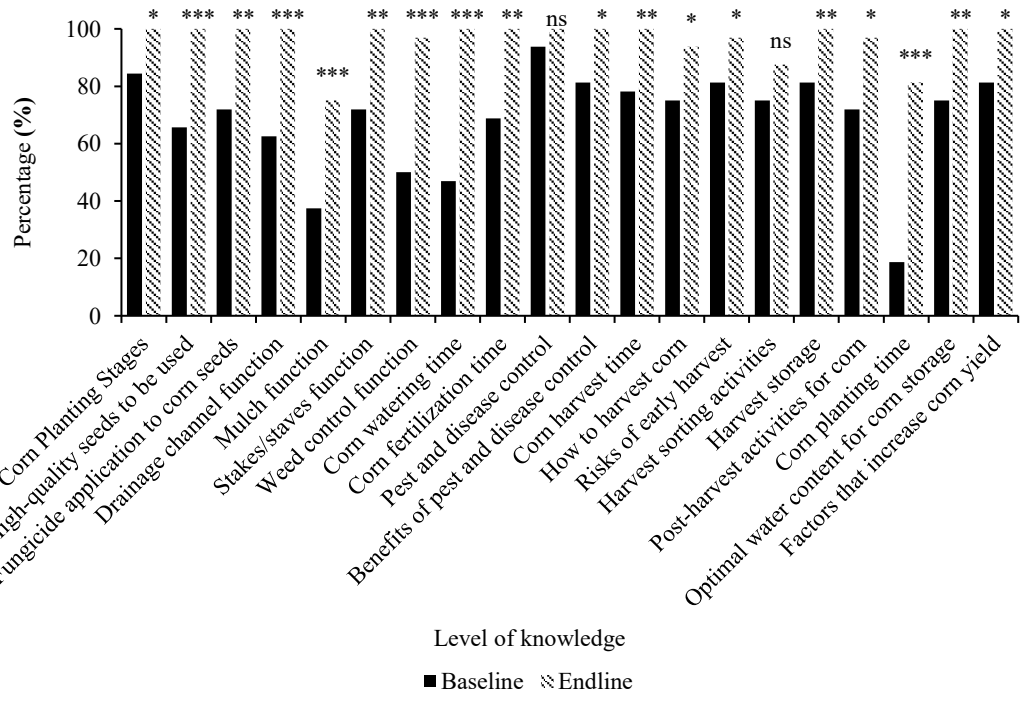

Figure 4. Level of farmer knowledge before and after empowerment based on the Wilcoxon Signed Ranks Test statistical test; *, **, *** indicate significant difference at $p < 0.05$, $p < 0.01$, $p < 0.001$, and (ns) indicates not significant.

The level of GAP implementation in this study was assessed based on farmers corn cultivation practices before and after participation in the BUN program. A structured checklist was employed as the primary evaluation instrument. The survey was conducted twice: initially during the first week of field observations and subsequently in the final week during the program closing activities.

The assessment framework comprised eight key indicators of GAP implementation: Planting preparation, Land preparation, Seed preparation and planting, Watering and fertilization, Maintenance, Weed control, Pest and disease control, and Harvest and post-harvest. The results of these measurements were analyzed to determine the extent to which the program enhanced farmers ability to implement GAP comprehensively and systematically. This approach provided a clear picture of both the improvements achieved and the remaining challenges in adopting recommended cultivation practices.

The results revealed a significant improvement in the implementation of GAP among assisted farmers following the BUN program. Prior to program participation, the average GAP implementation rate was 59.62%. After completion of the program, this rate increased to 93.37%, representing a 33.74% improvement in the systematic application of recommended corn cultivation practices (Figure 5). This substantial increase demonstrates that the empowerment activities through field schools, demonstration plots, monitoring, and mentoring were effective in strengthening farmers capacity to adopt GAP comprehensively. The findings highlight the program role in bridging knowledge gaps, reinforcing practical skills, and promoting sustainable cultivation methods.

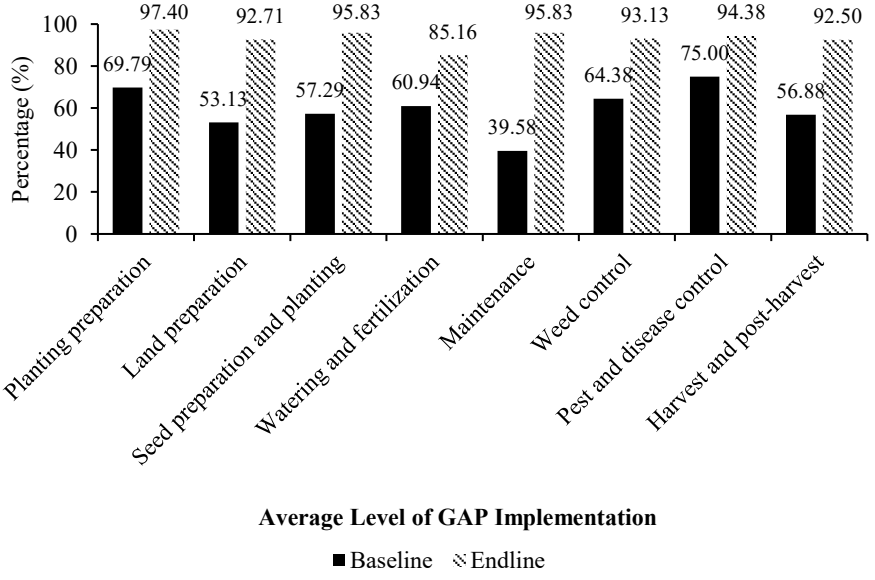

Figure 5. GAP implementation levels

Corn Productivity Level

The implementation of the BUN program resulted in a substantial improvement in corn productivity among assisted farmers. Prior to receiving assistance, the average yield achieved was 2.1 tons ha^{-1} in the form of dry corn kernels. Following participation in the program, average yields increased to 5.1 tons ha^{-1}, surpassing the program standard benchmark of 5 tons ha^{-1} (Figure 6).

This improvement demonstrates a clear and positive change compared to pre-program conditions, highlighting the effectiveness of empowerment activities in strengthening farmer capacity to implement GAP. The significant difference in average productivity before and after

program participation provides strong evidence of the program real impact, not only in enhancing technical knowledge but also in translating that knowledge into measurable improvements in cultivation outcomes.

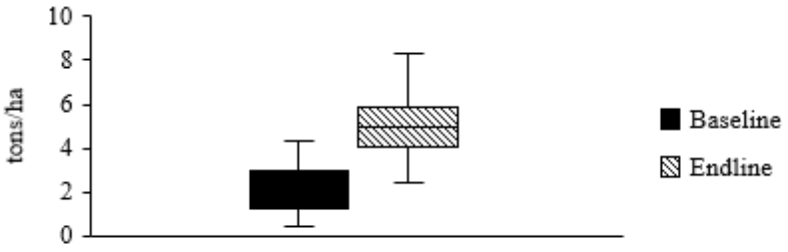

Figure 6. Results of corn productivity (tons ha^{-1}) before and after empowerment based on the Wilcoxon Signed Ranks Test; *** indicates significant difference at $p < 0.001$.

Discussion

Characteristics of Corn Farmers in Balongga Village

Balongga Village, located in Dolo Selatan District, Sigi Regency, Central Sulawesi, is recognized as an active agricultural area, particularly for corn cultivation. The site was selected for the BUN program based on the predominance of farming households and organized farmer groups, which represent the program primary target beneficiaries. The demographic profile of corn farmers in the village reveals that most are of productive age. Younger and middle-aged farmers typically exhibit strong curiosity and openness to innovation, enabling them to adopt new practices more rapidly, albeit with limited experience (Arita et al., 2022). In contrast, older farmers often possess less formal knowledge but demonstrate greater ability to interpret and respond to field conditions (Ryan et al., 2018).

Educational attainment among respondents generally includes junior and senior high school levels. While not advanced, this level of education is sufficient to equip farmers with the skills necessary to comprehend agricultural training and extension materials. Farmers with higher education levels tend to have broader perspectives, making them more receptive to innovation (Gusti et al., 2021). Land tenure plays a crucial role in agricultural decision-making. Private land ownership provides farmers with autonomy in determining cropping patterns, technology adoption, and risk-taking strategies (Mardikanto & Soebianto, 2017). In addition to corn, many plots are diversified with crops such as coconut, cocoa, banana, avocado, cassava, and chili peppers, reflecting household strategies to enhance economic resilience.

Most farmers own medium-sized plots (2,000 - 10,000 m^2), which provide sufficient capital for independent farming operations. This land size is considered optimal for family-based management, balancing profitability with efficiency, without requiring extensive external labor. This aligns with Mardikanto and Soebianto (2017), who argue that small-to-medium-scale farming is ideal for family farmers, as it can be managed independently while contributing significantly to household and community economies.

Household composition also influences farming decisions. The relatively small number of dependents (fewer than three per household) reduces consumption burdens and allows farmers to allocate more resources toward agricultural investment, such as purchasing superior seeds, fertilizers, or participating in training. Conversely, larger household sizes increase consumption expenditures, limiting investment opportunities (Arita et al., 2022). Economically, most farmers report moderate monthly incomes ranging from IDR 2 to 6 million. This level of income reflects relative stability and provides opportunities to allocate resources toward technological adoption in cultivation practices (Tahir et al., 2024).

Overall, the characteristics of farmers in Balongga Village demonstrate strong potential for developing more productive and sustainable corn farming. Their productive age, secondary education levels, land ownership, and openness to empowerment program provide a solid foundation for the success of the BUN initiative. The findings confirm that the farmers engaged in the program are active corn cultivators who are socially and economically positioned to benefit from empowerment activities, thereby supporting the program objectives.

Empowerement and Technology Adoption

Empowerment within the BUN program is aimed at fostering independent farming communities capable of making informed decisions through increased participation, access to resources, and heightened awareness, ultimately promoting the economic well-being of farmers (Setiawan & Choiriyah, 2024). Adoption of agricultural technologies through Field Schools has been shown to drive behavioral changes in farming practices (Yuliandri & Alnido, 2023), in line with Ministerial Regulation No. 50/*Permentan*/OT.140/5/2013 (Ministry of Agriculture, 2013).

The Field School component of the program proved to be an effective learning medium, as its curriculum was structured around real-life challenges faced by farmers and implemented in a participatory manner that combined theory with practice. Farmers were trained to produce organic fertilizers and botanical pesticides, as well as to analyze farming practices. Although attendance was not always complete, enthusiasm remained high, with participation extending beyond assisted farmers to include family members and other community farmers. These activities not only enhanced knowledge but also encouraged attitudinal change and strengthened farmer independence.

The demonstration plot served as a practical tool for comparing new cultivation techniques based on GAP with conventional methods (Rahyunanto et al., 2024). Strategically located along the farmers road, the plot was managed collaboratively with the FDA, applying GAP principles and hybrid corn seeds. Farmer involvement in site selection reflected active participation and a sense of ownership. The demonstration plot reinforced farmers understanding, trust, and motivation through tangible field evidence, while simultaneously benefiting the wider community.

Consistent and communicative monitoring was another crucial element of the empowerment process. Farmers active presence demonstrated acceptance of the activities and highlighted their value as a means of continuous learning rather than mere supervision. Monitoring accelerated GAP implementation, increased farmer confidence, and bridged extension training with practical application. Through these empowerment activities, farmers knowledge increased significantly, positively influencing their attitudes toward technology adoption. Assistance in corn cultivation aligned with GAP principles provided farmers with a deeper understanding of environmentally friendly and sustainable cultivation techniques (Sari et al., 2024). In Balongga Village, the program successfully strengthened farmer capacity, demonstrating that empowerment not only improved knowledge but also fostered independence and resilience in agricultural practices.

CONCLUSION

The community empowerment program in Balongga Village was successfully implemented through a combination of Field Schools, demonstration plots, and corn cultivation mentoring based on GAP. These integrated activities significantly enhanced farmers knowledge, strengthened technology acceptance, and improved GAP implementation in the field. The resulting changes had tangible impacts on both productivity and crop quality, demonstrating the effectiveness of the empowerment model.

Beyond technical improvements, the program fostered farmer confidence, independence, and resilience in managing sustainable farming enterprises. The synergy between Field Schools, demonstration plots, and consistent monitoring created a comprehensive learning system that promoted awareness, attitudinal change, and improved agricultural practices. The success of the BUN program in Balongga Village underscores the importance of adopting integrated empowerment strategies to achieve sustainable agriculture. This model provides a replicable framework that can be applied in other agricultural regions, contributing to strengthened food security and sustainable rural development.

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