

## COCOA CULTIVATION DEVELOPMENT TO IMPROVE THE ECONOMY OF FARMERS IN INDONESIA

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### Abstract

The aim of this study is to evaluate the impact of training and development programs on improving cocoa cultivation practices among farmers in Sidrap District, South Sulawesi, and to assess their knowledge and skills in disease control, productivity technology, and market strategies. This is a community-based intervention study using a mixed-methods approach, combining both qualitative and quantitative assessments to measure the impact of the training program. The study was conducted in the Betao Riawa Mampise farmer group in Sidrap District, South Sulawesi, from August 2024 to November 2024. The study involved 22 cocoa farmers from the Betao Riawa Mampise group. The participants were provided with extension sessions covering cocoa disease management, eco-friendly farming practices, and the use of technology for increased productivity. In addition, a digital marketing workshop was held to train farmers on utilizing platforms like Facebook and Tokopedia to sell cocoa products. Pre- and post-training assessments were conducted to measure improvements in knowledge and skills. A survey was also administered to evaluate the overall impact of the program. The training program effectively improved the farmers' knowledge of cocoa disease management, eco-friendly farming practices, and digital marketing strategies. This non-invasive approach could significantly enhance cocoa production and marketing, offering a sustainable way to increase income for cocoa farmers in Sidrap District. However, further support in technology access is necessary to ensure that all farmers benefit equally.

**Keywords:** *cocoa, cultivation development, farmer, marketing*

### 1. INTRODUCTION

South Sulawesi is one of Indonesia's provinces with a vast potential in the agricultural sector, especially in cocoa cultivation. Cocoa (*Theobroma cacao*) is an important agricultural commodity that not only contributes significantly to the region's economy but also plays a key role in both domestic consumption and export markets. The province is one of the largest cocoa producers in Indonesia, and its farmers have a long history of cultivating cocoa. Given South Sulawesi's climate, fertile volcanic soils, and high rainfall, the region offers ideal conditions for the growth of cocoa (Irfany et al., 2020).

Cocoa is considered a cash crop in South Sulawesi, and for many farmers, it represents a major source of livelihood. Most of these farmers are smallholders, often with limited access to modern farming technology and capital, relying on their cocoa yields to support their families and local economies. The production of cocoa in South Sulawesi has contributed significantly to both the provincial and national economy. However, despite its great potential, the cocoa industry in South Sulawesi faces several challenges that have hindered efforts to boost both the quantity and quality of cocoa production (Bryceson et al., 2023).

One of the primary challenges faced by farmers is the declining productivity of cocoa farms due to poor farming practices and limited access to agricultural technology. Many cocoa farmers continue to use traditional methods of cultivation, which often result in lower yields and decreased quality (Dewi Sasmita et al., 2024). Additionally, pests and diseases, such as cocoa pod borer and *Phytophthora*, continue to be a significant threat to cocoa crops. These issues, coupled with a lack of effective pest control measures, exacerbate the challenges farmers face in maintaining the health of their crops (Parawansa et al., 2022).

In addition to these technical challenges, the economic vulnerability of cocoa farmers is exacerbated by fluctuating global cocoa prices. The price of cocoa on the international market is influenced by factors outside of the farmers' control, such as global supply and demand, currency exchange rates, and economic policies in cocoa-producing countries. This price volatility means that farmers in South Sulawesi are often faced with periods of low income, affecting their ability to invest in improving their farming practices and the overall sustainability of their livelihoods (McMahon et al., 2018; Akbar et al., 2024).

Another major issue is the limited access to training and extension services for cocoa farmers. Although there have been efforts by the government and various organizations to provide support and education to farmers, many still struggle to adopt modern, efficient agricultural techniques. Lack of financial resources and poor infrastructure in rural areas further hinder farmers' ability to access these services (Kartini Parawansa et al., 2024).

Despite these challenges, South Sulawesi has significant opportunities to revitalize and improve cocoa production. The region's favorable climate and fertile soils, if optimally managed, could significantly increase both the quantity and quality of cocoa produced. Moreover, improving the technical skills of farmers through targeted training, promoting sustainable farming practices, and facilitating access to financing can help farmers enhance productivity (Parawansa et al., 2024).

There is also growing international demand for high-quality cocoa, especially from markets such as Europe and the United States, which provide a significant opportunity for South Sulawesi's cocoa industry to compete globally. By investing in better post-harvest processing, quality control, and certification of cocoa products, South Sulawesi could increase its cocoa exports and ensure that its farmers receive higher income from their crops.

The development of the cocoa industry in South Sulawesi is not only an economic opportunity but also a way to address broader social challenges such as rural poverty. With proper support, farmers can transition from subsistence agriculture to more profitable, sustainable practices, thereby improving their livelihoods. By investing in farmers' education, increasing access to modern agricultural technologies, and promoting better market linkages, South Sulawesi has the potential to transform its cocoa sector into a more competitive and lucrative industry.

This research aims to explore and evaluate the various strategies for improving cocoa cultivation in South Sulawesi, focusing particularly on the economic aspects of the farmers involved. By assessing the challenges that cocoa farmers face, the effectiveness of current agricultural support programs, and the opportunities for growth within the cocoa industry, this study seeks to provide comprehensive insights into how South Sulawesi can boost its cocoa production and improve the economic welfare of its farmers. The findings of this research are expected to serve as a foundation for policy recommendations aimed at enhancing the sustainability of the cocoa sector and increasing the income of cocoa farmers in the province.

## **2. MATERIAL AND METHOD**

### **2.1 PROVIDING KNOWLEDGE AND PRACTICAL SKILLS**

The first step is to enhance the understanding of the participants (farmers) about agricultural sciences and business management related to cocoa cultivation. During this session, the trainer will convey knowledge on:

- Proper cocoa cultivation techniques;
- Cocoa tree maintenance;
- Post-harvest processing;
- Marketing strategies; and
- Financial management for farmers.

After imparting theoretical knowledge, the next step involves a practical training session that emphasizes the implementation of what was learned (Amran et al., 2024; Mustafa et al., 2023; Tafsir and Mustafa, 2025). The participants will be guided on how to:

- Identify and select the most effective cultivation techniques;
- Maintain cocoa trees properly;
- Gather necessary resources and materials; and
- Run technical farming activities.

This practical session will be delivered using simulation methods, allowing farmers to gain hands-on experience. The simulations will be designed to encourage peer learning, as participants interact with each other and learn from their fellow farmers and the trainers.

## **2.2. PROVIDING MOTIVATION FOR ECONOMIC ENTREPRENEURSHIP**

The training will also include sessions that focus on motivating farmers to explore the potential and prospects of cocoa farming as a productive and sustainable economic activity. The session will include:

- An explanation of the concept of productive businesses; and
- Guidance on how to initiate and maintain an economically viable cocoa cultivation business.

This training is designed to encourage farmers to recognize cocoa farming as not only a subsistence activity but as an opportunity for long-term economic growth. By understanding the potential profitability of cocoa, the farmers will be motivated to take the necessary steps to improve and expand their farming activities.

## **2.3. SPECIFIC METHODS USED IN THE ACTIVITY**

### **A. Extension Sessions**

The extension sessions will cover various topics to provide farmers with essential knowledge. The topics will include:

- 1) Best practices for cocoa cultivation;
- 2) Proper maintenance of cocoa trees;
- 3) Post-harvest processing methods;
- 4) Marketing strategies; and
- 5) Financial management and record-keeping.

The goal of the extension activities is to provide new insights into agriculture and business opportunities to the cocoa farmers of Desa Betao Riawa Mampise, Sidrap. The extension will be delivered through lectures and followed by a Q&A session, where farmers can ask questions and clarify doubts.

### **B. Training Sessions**

The training will focus on specific technical skills, such as: (1) Effective marketing strategies; (2) Financial record-keeping; and (3) Product packaging and selling techniques. The training will combine lectures, direct hands-on experiments, and Q&A. After the lecture, participants will engage in practical demonstrations and experiments to apply the concepts discussed. The training will continue until all participants are proficient in executing the tasks independently.

### **C. Procedures for the Activity**

The steps for implementing this community service program include:

- 1) Coordination with the partners (i.e., farmer groups) to develop a training schedule.
- 2) Preparation for the extension and training sessions.
- 3) Conducting extension sessions on proper cocoa cultivation, maintenance, and post-harvest processing.
- 4) Training on marketing techniques and financial management.
- 5) Post-training support and mentoring to ensure continued progress and sustainability.

## 2.4. PARTICIPATION OF THE PARTNERS

The active involvement of partners (farmers and farmer groups) is essential for the success of the activity. Their participation will be evaluated through ongoing monitoring and feedback mechanisms.

### A. Participation of the Farmer Groups

- 1) Involvement in Decision-Making: The farmer groups will actively participate in decisions related to the program's direction and activities. They will provide valuable input based on their experience and needs in the field;
- 2) Sharing Knowledge and Experience: These groups will help in disseminating information on effective: (a) cultivation techniques; and (b) sustainable farming practices; and
- 3) Collaborative Marketing: The farmer groups will collaborate in marketing cocoa products, creating a collective network that can help expand market access and increase bargaining power.

### B. Participation of the Farmers

- 1) Active Involvement in Training and Socialization: The farmers will engage actively in the training sessions and socialization activities organized by the program. They will learn new techniques related to cocoa farming and processing;
- 2) Feedback and Consultation: Farmers will provide feedback on the program's implementation, sharing both positive aspects and challenges encountered in applying the learned techniques. This feedback will be crucial for adjusting the program to meet the farmers' real needs; and
- 3) Commitment to Implementation: Farmers will play a key role in applying the training content to their farms. Their involvement in evaluating the outcomes and suggesting improvements will be an integral part of the process.

## 2.5. EVALUATION METHOD

Evaluation will be carried out using direct observation by the community service team during the activities. After the training and extension sessions, an additional evaluation will be conducted using questionnaires to assess the participants' satisfaction, awareness, enthusiasm, and proficiency in applying the knowledge gained.

The evaluation criteria will focus on:

- The participants' awareness and enthusiasm for learning;
- The effectiveness of training and extension sessions in improving the participants' skills; and
- The ability of farmers to independently apply the knowledge they gained during the training.

The success of this program is highly dependent on effective collaboration between the implementation team and the partners (farmer groups). The partners' role in organizing participation, providing facilities (e.g., training space, equipment), and ensuring logistical support is crucial to the success of the program.

## 2.6. CONTRIBUTION OF PARTNERS IN THE ACTIVITY

The role of the partners (farmer groups and the farmers themselves) in this empowerment program is vital for the success and sustainability of the initiative. Partner contributions include:

- 1) Involvement in Decision-Making: Farmer groups will actively participate in decision-making processes related to program activities, providing insight into the needs of the farming community;
- 2) Sharing Knowledge and Experiences: Farmer groups will act as knowledge-sharing hubs, disseminating new techniques and practices to their members; and
- 3) Collaborative Marketing: By working together, farmer groups can create a stronger marketing network, helping improve access to broader markets and increasing their bargaining power.

In conclusion, the success of this program will depend on the continuous cooperation and active involvement of both the farmer groups and individual farmers, ensuring the sustainable development of cocoa cultivation in Sidrap District.

### 3. DISCUSSIONS

The implementation of the program in Sidrap District highlights several key outcomes and lessons learned that can guide future initiatives aimed at improving cocoa farming practices and promoting economic development through digital marketing and financial management:

- a) **Adoption of New Agricultural Techniques:** The successful introduction of disease management techniques and eco-friendly practices signals that farmers are open to adopting new approaches. This is especially important in improving cocoa quality and yield while minimizing negative environmental impacts. The training on using precision agriculture tools such as sensors for monitoring plant health and managing irrigation proved particularly valuable. However, there is still a need for additional training and support in adopting such technologies, as some farmers lack familiarity with these tools;
- b) **Empowerment Through Digital Marketing:** One of the most notable successes was the introduction of digital marketing platforms, which empowered farmers to expand their market reach beyond traditional methods. While the use of platforms like Facebook and Tokopedia was initially challenging for some, many farmers were able to understand the basic concepts of online selling. Over time, this could have a significant impact on cocoa sales, allowing farmers to receive better prices by eliminating intermediaries and directly connecting with buyers;
- c) **Challenges in Technology Access:** The issue of limited access to smartphones and mobile technology was a significant barrier for some farmers, particularly older generations or those from lower-income backgrounds. This limitation restricted their ability to participate fully in the training, especially for mobile-based financial management. Future programs should consider addressing this digital divide by providing farmers with access to affordable devices and offering follow-up support to ensure they can apply the technologies effectively. Hands-on mentoring and community-based training could help farmers better integrate these technologies into their farming practices;
- d) **Importance of Active Participation from Farmer Groups:** The success of this program heavily relied on the active participation of farmer groups. Their involvement not only helped organize the sessions but also served as a source of peer support. The sharing of knowledge among farmers further enriched the learning experience, with more experienced farmers helping those who were new to the techniques introduced. This collaborative approach is crucial for sustaining the impact of training programs, as it allows farmers to learn from each other's successes and challenges; and
- e) **Sustainability and Long-Term Impact:** For long-term sustainability, it is essential to continue providing support to the farmers beyond the initial training. This could include follow-up sessions, access to advanced resources, and further financial support to help farmers implement new technologies and practices. Post-training mentoring and regular feedback mechanisms will ensure that farmers are continuously improving their skills and adapting to new trends in the agricultural sector.

### 4. CONCLUSIONS

Overall, the community service program in Sidrap District has made significant strides in improving the capabilities of cocoa farmers. The combination of agricultural extension, digital marketing, and financial management training provided farmers with essential tools to enhance productivity, increase market access, and improve financial literacy. While challenges such as limited access to technology remain, the active participation of farmer groups and the dedication of the community are key to overcoming these barriers and ensuring long-term success. Moving forward, it is important to continue building on this



momentum by addressing technological gaps, providing further training in digital tools, and ensuring farmers have the support they need to implement what they have learned. These efforts will ultimately help improve the economic welfare of cocoa farmers in Sidrap District and contribute to the sustainable development of the cocoa industry in South Sulawesi.

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