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Agroforestry: An Indigenous Farming toward Sustainability and Inclusive Market

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Abstract

The Agroforestry and intercropping farming systems are carried out by farmers in managing their cocoa cultivations due to limited land and the availability of commodities to support household needs. This system is maintained because it impacts increasing farmers' income, maintaining local horticulture commodities and fulfilling the social needs of these commodities. This research uses a qualitative approach, with Focus Group Discussions involving farmers, NGOs, government, and other stakeholders. The results showed that agroforestry as an alternative to indigenous farming for cocoa farmers in Polewali Mandar Regency positively impacted farmer institutions, increasing income and meeting the needs of farmer households. The existence of farmer-NGO partnerships has helped change farmer institutions. Still, it has not altered local institutions that have become farmers' habits in managing farmland, including utilizing cocoa farms by intercropping. There has been a significant change on cocoa farmers from producing non-fermented cocoa to fermented and certified cocoa. Besides that, there is an increase in farmers' income by integrating cocoa - goats by utilizing shade trees in cocoa gardens as animal feed, producing organic fertilizers and pesticides from goat urine, and creating a market for inter-crop commodities such as cocoa, coconut, ginger, and locally grown fruits. all are in the same garden. Agroforestry as an alternative to indigenous farming must be maintained because it can increase farmers' income, also offers solutions to land degradation, and provides environmental services so it is expected to be able to guarantee sustainability and on the one hand, continue to support the achievement of an inclusive market for cocoa.

Keywords

Cocoa; inclusive market; institutional; smallholders

1. Introduction

The dynamics of the world cocoa market are very dynamic, and the changes that occur are in line with development in the needs of the world cocoa market. The agricultural inclusive market was created due to consumer awareness of the demand for healthy and environmentally friendly agricultural products, then developed into a healthy lifestyle that has been institutionalized internationally which requires guarantees that agricultural products must have food safety attributes, high nutritional attributes, and be friendly. environment (eco-labeling attribute) (Hanafi & Tinaprilla, 2013), while farmers as producers try to get a better bargaining position for the efforts made to meet consumer needs. Opportunities and challenges for Indonesia's cocoa exports in the global market still have considerable challenges. One of them is the aspect of sustainability. Aspects of sustainability are not only demanded from aspects of production (on-farm), processing, and marketing (off-farm) but also from management or institutional aspects of farmers (Rahmaniah HM, 2023).

ICCO (International Cocoa Organization) data for 2018, Indonesia is still ranked 5th as a world cocoa producer after Ivory Coast, Ghana, Ecuador, and Nigeria. Then, Indonesia dropped to 7th place in 2021 (ICCO, 2021). This downward trend is not only experienced by Indonesia but other producing countries due to Covid-19. West Sulawesi is one of the largest cocoa producers in Indonesia with a contribution of 9.32% of the total national cocoa production and 95.97% of national cocoa production is managed by small farmers (Plantation Statistics, 2022). This means that to increase the added value and competitiveness of national cocoa, support from cocoa stakeholders is needed to jointly facilitate well-organized farmer institutions so that an inclusive market can be created for all parties. In other words, improving the performance of farmer farming is done to increase household income which has been inadequate overall (Arsyad et al., 2020), and improve the performance of the cocoa supply chain through stakeholders (Rahmaniah HM, Darma, and Arsyad 2022).

The development of farmer institutions built on cocoa farmers in Polewali Mandar Regency is growing rapidly in line with the many interventions from external parties such as NGOs, private actors, and the government in supporting the inclusiveness of cocoa farming from economic, social, and environmental aspects. On the economic aspect, farmers are required to increase the production and quality of cocoa to obtain a better price. On the social aspect, farmers are directed to build well-organized farmer organizations so that they are easily intervening in terms of knowledge, skills, and attitudes. Meanwhile, for the environmental aspect, the Agroforestry system is considered capable of being an alternative for environmental sustainability for cocoa farms because this system supports reforestation, climate change mitigation by absorbing carbon, and climate adaptation by conserving biodiversity, maintaining soil, controlling pests, and providing a good microclimate. profitable (Antonie C. Fountain and Friedel Huetz-Adams, 2021). These sustainability aspects can synergize with each other if farmer institutions are oriented towards an inclusive market.

Data from the Department of Agriculture and Food Crops of Polewali Mandar Regency in 2020 shows that the area of cocoa cultivated by farmers in Polewali Mandar is 48,929.50 ha, with a total production of 36,451.62 tons and a total of 46,554 farmers. Cocoa plantations in Polewali Mandar Regency are cultivated by farmers using agroforestry or intercropping. This agricultural system has become a local institution in the community, where almost all farmers

intercrop cocoa with commodities needed by the household such as local fruits, coconuts, palm sugar, and animal feed plants. This is maintained by the farmers because cocoa has a big harvest season twice a year, so farmers must have other income from farming, while farmers' land is limited. Besides that, cocoa plants also need shade plants so that they are not exposed to full sun (Balima et al., 2020), and offer protection against rising temperatures and decreasing rainfall (Schroth et al., 2016) so that these conditions become a symbiosis of mutualism.

One of the farmer organizations formed in Polewali Mandar Regency which is a cooperative partnership between farmers, NGOs, and the government is the Mitra Agribisnis Mandiri. This cooperative was assisted to become a pilot project for the development of sustainable agriculture, having 1413 members spread across all districts designated as cocoa development areas. This farmer organization not only develops cocoa farming but also supports commodities, utilization of intercrops, cocoa-goat integration, and other processing businesses. This farmer organization developed because of the driving factors, namely the existence of suitable natural and environmental potential, solid farmers, and then the intervention of outsiders that was in line with the local institutions that had been formed by the farmers themselves. This study aims to describe the economic institutional model of cocoa farmers and the impact of agroforestry as an alternative to indigenous farming towards sustainable and inclusive markets in the Polewali Mandar Regency.

2. Materials and Methods

2.1. Conceptual Framework

This research adheres to a constructivist paradigm in which ontologically this school states that reality exists in various forms of mental construction based on social experience, is local and specific, and depends on those who do it. Epistemologically, the relationship between the observer and the object is a unity, is subjective, and is the result of a combination of interactions between the two (Umanailo, 2019). This study describes the economic institutional model of cocoa farmers and the impact of agroforestry as an alternative to indigenous farming towards sustainable and inclusive markets in the Polewali Mandar Regency.

This research was conducted at the Independent Agribusiness Partner Cooperative which has carried out institutional development of cocoa in Polewali Mandar Regency. The selection of this area was based on various considerations, including (1) the area is the largest cocoa producer in Polewali Mandar Regency and uses an intercropping system; (2) historically cocoa farmers in the regions have been intervened by many parties. In 2005 it was fostered by the global cocoa organization ACDI/VOCA to improve cocoa productivity and quality. Then in 2006 - now assisted by the NGO WASIAT for the development of local institutions and in 2011 facilitated by Rikolto Indonesia in the development of sustainable agriculture and cocoa market institutions; (3) researchers conducted a preliminary study of farming communities holistically so that they can be used as a forum for capturing information on cultural values that are reflected in the daily lives of people in the local area, and have made changes and developments in farmer institutions from the beginning of their formation to the present. This. and (4) maintaining agroforestry farming systems as an alternative to indigenous farming. The following is the conceptual framework of this research:

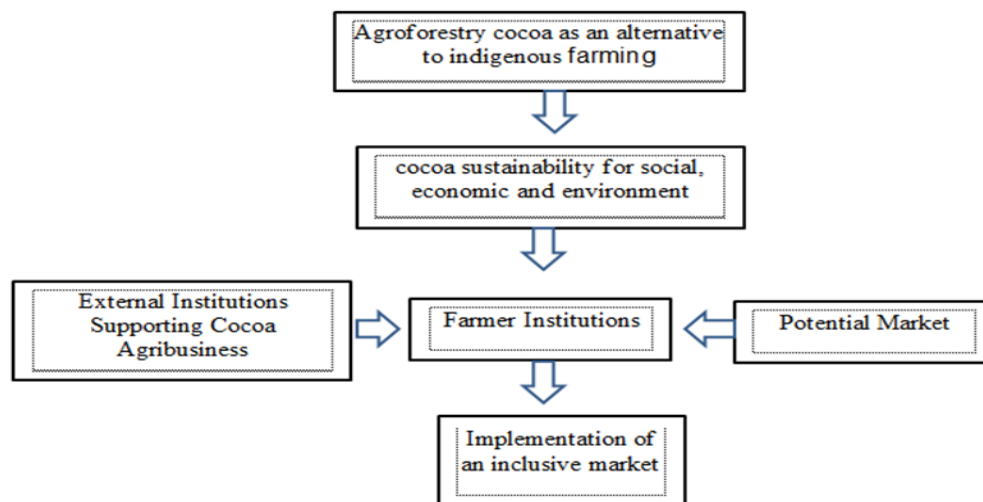


Figure 1 . Conceptual Framework

This research used qualitative methods, according to (Thomas & Harden, 2008), qualitative methods tend to be related to the subjective nature of social reality, so this method has a good ability to produce understanding from the perspective of stakeholders and allows researchers to see things as seen by the stakeholders. perpetrator. The researcher tries to understand the subject from the subject's point of view, without neglecting interpretation by making a conceptual scheme. The phenomenological approach is called *Verstehen* when it reveals relationships between social phenomena that can be tested, not just empathic understanding. By using this method, researchers can understand farmers' decisions in organizing and following the dynamics of developing markets, and their involvement in cocoa inclusive markets. This research is a case study, where to distinguish the type of research, case studies are empirical investigations that investigate phenomena. In this case, there are opportunities and challenges in the institutional development of cocoa farmers in the Polewali Mandar Regency.

The subjects of this study were individuals who were involved in the development of farmer institutions consisting of farmers, and management of Mitra Agribisnis Mandiri, and NGOs. WASIAT, Rikolto, and the government. While the object of this research is farmer institutions and farmer organizations which include how market dynamics affect cocoa farmer institutions, how farmer institutions are developed, coordinated, and perceived, how cocoa agroforestry works in the aspect of sustainability, and what are the challenges and opportunities. development. The main data sources for qualitative research are words and actions, the rest is additional data such as documents and others. The data in this study were obtained through in-depth interviews, observations, FGDs, and analysis of relevant documents. The unit of analysis in this study is the institution that plays a role in the institutional development of cocoa farmers, so the analysis technique used is single case analysis. Single case analysis in each case, the analysis process is carried out using an interactive analysis model. In this analysis model, there are three components of analysis, namely data reduction, data presentation, and drawing conclusions or verification.

2.2. Data Collections

The data needed is the number of farmers and institutions involved in farmer economic institutions and their interrelationships with each other in the entire process of cocoa production, product processing, and marketing. All relevant agencies have identified their functions and roles. Data and information were collected through documentation from cooperatives, Rikolto, the government, discussions, and in-depth interviews using an open questionnaire to explore how far and in what aspects the contribution of related institutions to the agricultural system from upstream to downstream.

3. Results and Discussions

3.1 Institutional Development of Cocoa Smallholders

Based on Law Number 16 of 2006 concerning Agricultural and Forestry Extension Systems, and Law Number 19 of 2013 concerning Protection and Empowerment of Farmers that farmer institutions are institutions that are fostered from, by, and for farmers to strengthen cooperation for the interests of farmers (groups farmers, farmer organizations, associations, national commodity councils), while farmer economic institutions are organizations that carry out agricultural activities from upstream to downstream developed by the community, both with legal entities and those without legal entities (cooperatives or other farmer organizations). Farmer institutions have been recognized by many as having an important role in agricultural development, both in industrialized countries and developing countries such as Indonesia. However, the reality shows the tendency of still weak farming institutions in developing countries and the large obstacles in growing institutions in farming communities. The same is the case with farmer institutions in Pakistan, smallholders do not have access to information and formal credit for farming. The government of Pakistan implemented a policy a foos security for smallholders by proving the credit needed to purchase inputs such as agricultural machinery, fertilizers, and seeds, but has still not been able to support smallholders (Hussain & Thapa, 2012)

Farmers institutional are expected to be able to help farmers get out of the problem of economic disparities but until now they have not functioned optimally. It is increasingly difficult for development programs to reach a large number of individual small farmers. The existing economic situation, infrastructure, and policies created by the government often push small farmers and farm laborers toward economic and social marginalization. In addition to control over narrow agricultural land, and low agricultural exchange rates, agricultural policies that are not in favor of farmers have further pushed farmers into poverty (Dermawan, 2018)(Rahmaniah HM, Darma, and Arsyad 2022). Farmer institutions referred to here are farmer organizations located in local areas (local institutions), which are in the form of membership organizations, namely farmers who are members of cooperative groups (farmer groups and or cooperatives). This institution includes a broad understanding, that is, in addition to including the notion of farmer organizations, also the 'rules of the game' (roles of the game) or rules of behavior that determine patterns of action and social relations, including social units - social units which are concrete manifestations of that institution (Uphoff, 1986).

Farmers institutional that have grown in the community are very difficult to cange because they have become community habits and have their values in society. The things that must be done is todevelop institutions into something of economic and social value because this aspect is very dynamic and easily connected with the community. As well as to the farmers

institution in Jember, East Java and Jembrana, Bali, it is very difficult to change the habits of smallholders to produce cocoa non-fermented to cocoa fermented even though they have been given knowledge and skill by the government, but the attitude of farmers to change these habits is quite difficult. Therefore, the institutional empowerment model for farmers is carried out by strengthening institutional synergies between stakeholders. By organizing, farmer institutions are more easily intervened by stakeholders, because some farmers think that the highest decision making is in mutual agreement with members of the organization. Gradually the farmers will make the change if it is carried out jointly and there is a market that can provide a fair price for the effort made by the farmers (Raharto, 2016). This condition also occurs in cocoa farmers in Polewali Mandar Regency. Nevertheless, farmer institutions are slowly being formed with more open markets, interventions from NGOs, private actors, and big traders have gone directly to farmers to assist so that more and more farmers want to increase cocoa productivity and quality. This development is not only from changes in cultivation methods but also from ways to improve post-harvest quality and awareness to join farmer organizations so that they can obtain other benefits, such as proximity to markets, increased capacity of farmers in GAP (Good Agricultural Practices), and lower prices. One of the farmer organizations formed was the AMANAH Cooperative which is now the Mitra Agribisnis Mandiri. This cocoa farmer organization began operating in 2006 after the completion of the ACIDI/VOCA program which assisted farmers to increase their cocoa productivity. Initially, this organization was formed by local facilitators and assisted farmers due to concerns about the potential loss of cocoa resources following the cooperation activities. Not a few farmers then stopped continuing their cocoa farming business due to uncompetitive prices, so with this organization all the farmers who had been fostered previously created an organizational forum and to legalize the organization a cooperative was formed by them.

This cooperative operates two business units, namely: First, forming a farmer-owned business entity which is a joint marketing business unit for cocoa. Cocoa is collected from all members by the cooperative management and sold directly to wholesalers in Makassar with the hope of breaking the trade chain. Farmers no longer depend on village traders (middlemen) and get competitive prices because they are sold collectively; Second, provide assistance and training to increase farmer capacity, good garden management, and financial reporting. Cooperative members then formed the NGO WASIAT as a cocoa agribusiness consulting service provider. In 2011, AMANAH partnered with VeCO, which has now changed its name to Rikolto, which has a vision and mission to improve the bargaining position of farmers by increasing the human resources of smallholders through increasing the capacity needed by farmers at that time and presenting potential markets for them. AMANAH Cooperative is a cocoa pre-certification pilot project in the SACD (Sustainability Agriculture Cocoa Development) program. Farmers are trained and accompanied to carry out good agriculture practices in each farmer group regularly per sub-district. At this stage, the pre-certification standard or known as traceability must be followed so that cocoa from farmers can be traced from the production process to its marketing. Then the cooperative partnered with the exporter PT. Armajaro used the UTZ certification in 2011 and the collaboration was terminated in 2013 due to very dynamic market dynamics which were influenced by government policies that were in effect at that time namely Government Regulation Number 55 of 2008 concerning Imposition of Export Duty on Export Goods, one of which is cocoa beans.

In 2013 – 2015, the AMANAH Cooperative collaborated with the Cocoa Processing Industry in Makassar by co-purchasing RA-certified non-fermented cocoa (Rainforest Alliance) facilitated by VeCO. The AMANAH cooperative forms a joint purchasing unit called PUSKOPTAN AMANAH, and conducts quality control tests independently. In 2015 – 2017 cocoa market conditions became increasingly competitive with local government policies granting permits to wholesalers to go directly to farmers so that the purchasing units of PUSKOPTAN AMANAH were not able to compete with these traders. This has caused some AMANAH farmers to switch to other traders because market information is clear and all traders send daily prices to farmers via short message service (SMS) so farmers can easily choose where to sell their cocoa. Market competition is very clear because there are quality standards for certified beans and various benefits obtained from other traders, such as giving bonuses, picking up cocoa at the farmer's location resulting in efficiency in transportation costs, and so on. However, not a few farmers continue to sell to the AMANAH Cooperative because of social capital, some farmers think that the AMANAH Cooperative was built by farmers, and for farmers. Social Capital according to (Uphoff, 1992), is an accumulation of various types of social aspects which include psychology, culture, institutions, and invisible assets which can then influence behavior in collaboration.

In 2017 there was an organizational setback, the AMANAH Cooperative changed its name to the Mitra Agribisnis Mandiri due to a change in government policy regarding taxes which were not well socialized to Cooperatives causing material and non-material harm to the organization, and a reduction in the number of members. The impact of these losses is 1) Cooperatives are more selective in establishing cooperation with buyers and strengthening cooperation contracts; 2) Cooperative institutional strengthening is increased by prioritizing transparency and accountability; and 3) increasing understanding of government regulations regarding taxation. Even though the number of farmers decreased from 2123 farmers to 1413 farmers, this farmer organization still survives and cooperative members are selected naturally.

Then the thing that also influenced the institutionalization of cocoa farmers was the issuance of government policies regarding quality requirements and the quality of cocoa beans contained in the Minister of Agriculture Regulation Number 67 / PERMENTAN/ OT.140/ 5/2014 which requires cocoa to be certified and fermented. This has changed the cocoa market and advisory services. Rikolto began facilitating the Cooperative by approaching the fermented cocoa market, such as the domestic processing industry, chocolate entrepreneurs, and exporters from abroad such as from France and the Netherlands. Farmers are then given technical assistance regarding the fermentation process according to market demand. Rikolto facilitates cooperatives in collaboration with PT. Masoong, which is one of the leading chocolate companies in Denpasar, is very selective in choosing cocoa beans. This was followed by cooperation with several other chocolate entrepreneurs to become partners in the Cooperative. Because the need for certified non-fermented cocoa beans is still large, the Cooperative is still opening opportunities for cooperation with cocoa processing industries such as PT. Mars Symbionaise and PT. Tanah Mas Sulawesi.

The Mitra Agribisnis Mandiri has begun to expand its business by targeting a more complex market by opening up market opportunities for cacao intercrops which are also regional

superior products, such as coconut, ginger, and goat as an alternative livelihood for farmers besides cocoa. One of the cooperative business units is Cocoa-Goat Integration by utilizing goat manure and urine to become organic fertilizer and vegetable pesticides. This business has been running since 2015 and is capable of producing 100 liters per month of vegetable pesticides and tens of tons of organic fertilizer. These fertilizers and pesticides are distributed to farmer organizations in South Sulawesi and Nusa Tenggara which are also Rikolto's partners. The cooperative also collaborates with various parties that can increase the capacity of cooperatives such as joining the Indonesian Farmers Alliance which is a forum for achieving independent farmer organizations throughout Indonesia so that its market network can further develop and also collaborating with researchers from Hasanuddin University and West Sulawesi University in student internships and research relating to cocoa and goats. The following table shows the development of farmer organizations based on cocoa market demand for 2006 – 2022 listed in Table 1, the economy institutional model of the smallholders in Figure 2, and Inclusive model market of smallholders in Figure 3.

Table 1 . The Institutional Development of Farmers at The Demand of The Cocoa Market

No.	Year	Cocoa Market Demand	Supprting Institution
1	2006 – 2009	Random Cocoa	NGO WASIAT
2	2009 – 2013	Pre-certified Cocoa (Traceability)	NGO WASIAT, VeCO Indonesia, PT.Armajaro
3	2013 – 2016	Nonfermented Cocoa Certification	NGO WASIAT, VeCO, PT. Mars Symbionaice
4	2016 – 2018	Nonfermented Cocoa Certification	NGO WASIAT, Rikolto,
5	2018 – 2022	Nonfermented Cocoa Certification And Fermented Cocoa Certification	NGO WASIAT, Rikolto, API (Indonesian Farmers Alliance)

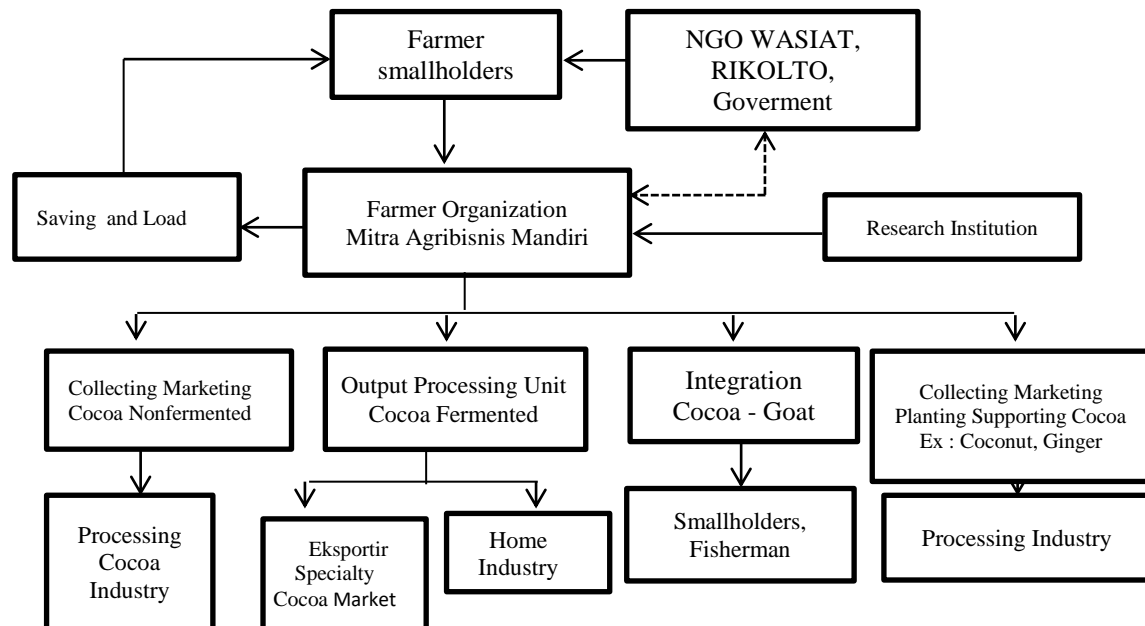


Figure 2. Economic Institutional Model of Smallholders

Figure 2 above shows the economic institutions of cooperatives; the business units carried out are cocoa products and cocoa derivatives products. This cooperative has business units which are the main business; collective marketing of cocoa beans fermented but uncertified and collective marketing of cocoa beans nonfermented but uncertified. In addition, it has a savings and loan business unit, a microfinance institution that can lend farming capital to members at any time so they are not trapped in debt bondage and middlemen.

The organization operates on cooperative principles, plays a role in building and developing the economic potential and capabilities of members in particular and society in general to improve their economic and social welfare. This cooperative is a voluntary and open farmer organization for every farmer who wants to participate as a member and its management is very democratic. Support from various external institutions such as NGOs, government, and other stakeholders is very important so that this cooperative continues to exist and survive with the increasing number of competitors from large traders who have entered to smallholders. Furthermore, a figure of the marketing model and actors involved in the Cooperative business as shown in figure 3.

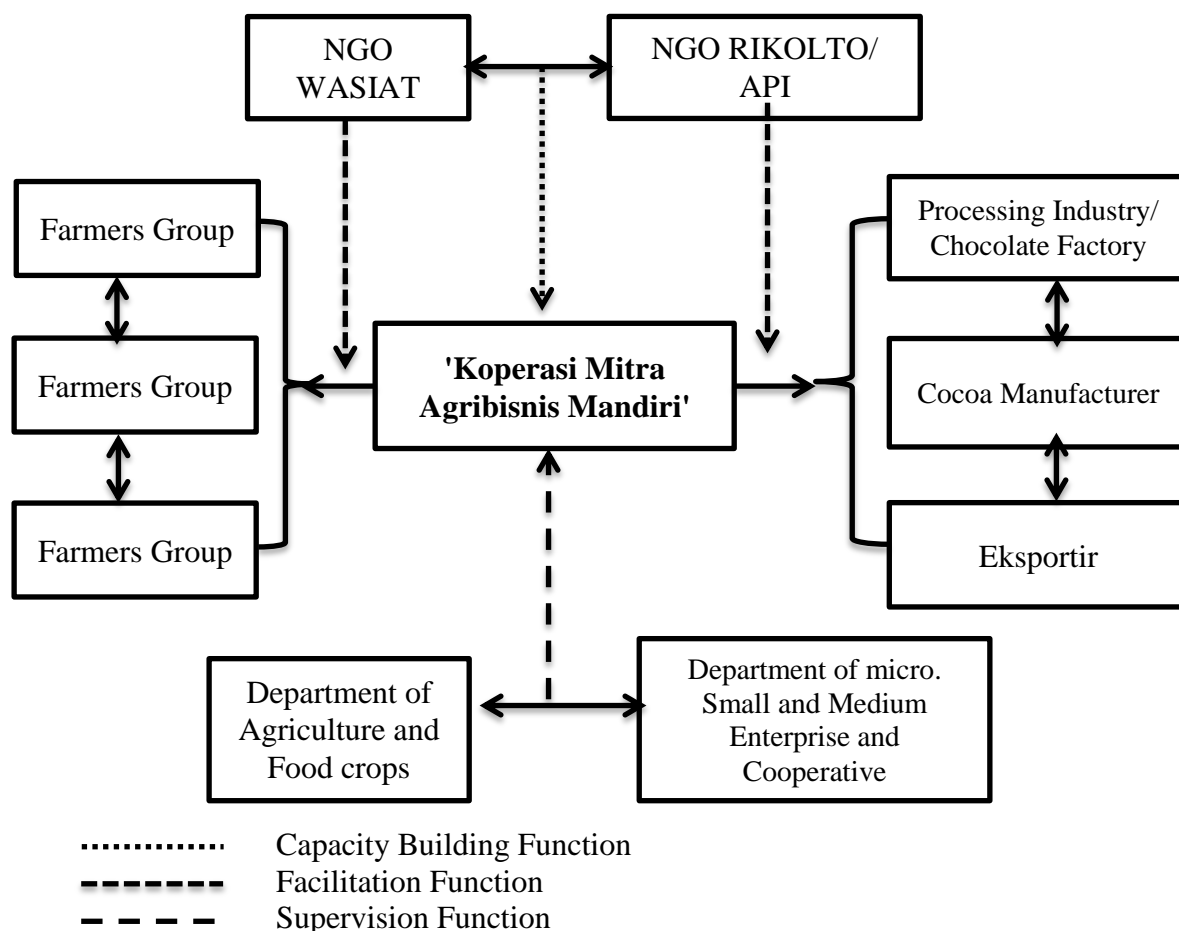


Figure 3. Inclusive Market Model

3.2 Agroforestry: Alternative to Indigenous Farming towards a Sustainable and Inclusive Market

Various arguments surfaced regarding the impact of agroforestry or intercropping on the productivity of cocoa products. One assumption is that cocoa yields decrease when grown in agroforestry systems compared to monocultures, due to competition for resources, such as nutrients and water. However, some argue that the complementarity between species in resource use can increase the efficiency of resource use and result in better system performance (Nyantakyi-Frimpong et al., 2017). There is ample empirical evidence that yields losses can be prevented by using innovations and good agricultural practices such as cocoa agroforestry (Richard & Ræbild, 2016). Cocoa agroforestry is thus defined as the strategic integration in space and time of suitable and valuable non-cocoa tree species and other crops into cocoa plantations (Tothmihaly et al., 2019).

There is an evidence that Agroforestry is a recommended practice to promote cocoa production towards Climate Smart Agriculture, and given the role of shade trees in balancing light for cocoa crops, there is a need to understand its dynamics. The size of the shade and the upper canopy greatly influences the provision of shade for cocoa plants (Ndubuisi & Owusu, 2023) and this can be obtained from intercrops such as durian, langsung, rambutan, and intercrops planted by farmers in Polewali. Mandarin. This is in line with (Nelson & Coe,

2013) (Gliessman, 2015) which state that agricultural production can be intensified by the use of agroecological techniques, including a more varied cropping system, increasing the integration of leguminous plants, and adding organic matter to the soil. Similar to what farmers do by integrating cocoa-goat in the production of organic fertilizers and organic pesticides from goat urine (Rahmaniah HM et al. 2020).

Recent empirical evidence shows that agroecology and diverse farming systems ensure beneficial inter-species interactions, weed control, and breaking of pest life cycles (Cong et al., 2015) ; (Gliessman, 2015). In addition, these agricultural practices not only lead to the wise use of land, water, and other agricultural resources, but are also the most environmentally friendly strategy to address people's food and nutrition insecurity (Nyantakyi-Frimpong et al., 2017);(Seufert et al., 2019);(Frison et al., 2011) . The choice of agroecology with agroforestry in the tropics is perfect for farmers by diversifying their crops and adapting their diets. This condition has strong implications for increasing food security, good nutrition, and public health (Nyantakyi-Frimpong et al., 2017) .

Agroforestry and intercropping have been farming systems for generations in the farming community in Polewali Mandar Regency, almost all of the vacant land will be filled with plants needed by farmer households as well as those that have economic value such as *langsat*, rambutan, and durian which are typical local fruits. In addition, cocoa is required to have protective plants, and generally, farmers will plant *lamtoro*, *Gamal*, and elephant grass which can be used as animal feed. Animal feed is important because some of these cocoa farmers also raise goats, so it can be said that agroforestry practices or intercropping on cocoa are a sustainable solution for cocoa farming from an economic, social, and environmental perspective. On the economic aspect, there has been an increase in farmers' income not only from cocoa but also from other crops planted as cocoa shade trees. Likewise, intercrops are used as goat feed, organic fertilizers, and vegetable pesticides. On the social aspect, these fruit plants are plants that can strengthen relationships in society because these plants besides having economic value also have social value, that is, when these fruits are harvested, they will bond family and social relations. On the environmental aspect, it is undeniable that this agroforestry system makes cocoa plants more productive because they have shade, improve the soil by reducing land degradation, create biodiversity, and other environmental services. So far, this farming system is considered the best way to manage cocoa farms and still maintain the region's leading horticultural commodities. However, institutional challenges for cocoa farmers cannot be avoided in the face of the current uncertain market turmoil and rapid social changes in society.

3.3 Challenges and Institutional Opportunities toward the Cocoa Inclusive Market

The main role of institutional management in society according to (North, 1997) is to reduce uncertainty by building structures of human interaction that are stable but not necessarily efficient. Institutional change is very complicated because it can change all binding regulations, although formal regulations are easy to change, binding informal regulations are difficult to change because they are influenced by culture, tradition, and all the norms attached to society. Likewise, changes in cocoa farmer institutions in Polewali Mandar Regency, slowly but surely can follow the direction of developing cocoa farmer institutions towards independent and competitive farmer organizations. This institutional change is in line with the government's strategy to empower farmers, namely: First, there is an increase in

farmers' income with training and assistance, farmers can change the way they manage their farming business from scratch and then carry out good garden management. practice following certification standards. To obtain this, farmers must work in groups, because with groups farmers are easier to organize so they can obtain added value and cocoa competitiveness and have a better bargaining position; Second, the development of systems and facilities for marketing agricultural products. The cocoa market is increasingly competitive because there is clear market information, and wholesalers/exporters/processing industries are free to enter and exit the market so by organizing farmers they have a clear marketing system through partnerships and spurring farmers and farmer organizations to be more innovative. and creative in managing cocoa, especially postharvest. ; Third, easy access to science, technology, and information. The existence of WASIAT and Rikolto Indonesia NGOs provides the widest possible space for farmers who want to increase knowledge and technology and information through annual meetings with other Rikolto partners, annual comparative studies conducted by farmers to successful farmer organizations, as well as the involvement of women and youth in entrepreneurial activities that can boost the spirit of sustainability for the next cocoa generation.

Institutional challenges for cocoa farmers cannot be avoided in the face of the current uncertain market fluctuations and rapid social changes in society. Every business is always not free from challenges, but the extent to which an organization can face challenges depends on organizational management and government policies that support the development of domestic cocoa. The challenges are first, uncertain climate and weather conditions can affect cocoa productivity at any time and farmers cannot predict the possibility of climate and weather changes and overcome these problems; Second, agreements with partners must be strengthened because entrepreneurs often issue sudden technical policies that are not included in the MoU (Memorandum of Understanding), for example, agreements on price changes, payment techniques, and the uniformity and quality of fermented cocoa beans which are very difficult. obtained because of the location of the scattered farmers; Third, competitors from other cocoa wholesalers who often undermine market prices at the farm level by creating shadow middlemen/collectors; Fourth, access to capital through banking is still difficult to penetrate without guarantees in the form of goods and other things; Fifth, the lack of dissemination of government policies related to cocoa and policies that sufficiently affect organizational management.

Cocoa market opportunities are currently very open for cocoa farmers, where market demand is still very high for both domestic and foreign needs. This opportunity must be properly utilized by farmer organizations to increase the added value and competitiveness of cocoa. First, the cocoa market is becoming more open, local government policies have begun to enable wholesalers/exporters down to the farmer level to obtain the expected cocoa so that innovation and creativity of farmer organizations are needed in capturing these market opportunities. In addition, Rikolto Indonesia as a cocoa activist NGO always assists farmer organizations to find partners for cocoa exporters/wholesalers/processing industries so that there is a better bargaining position for farmers; Second, cocoa productivity can still be increased with good garden management and utilization of cocoa waste and goat manure as part of the cocoa-goat integration farmer organization business unit by producing natural fertilizers and pesticides so that environmental sustainability can be achieved; Third, other potential market opportunities can be utilized by farmers through markets for coconut, ginger

and their various derivative products; Fourth, a new generation of cocoa farmers can be increased by involving the younger generation and housewives in farming activities both off the farm and on the farm so they can work together with the government in increasing human resource capacity.

In addition, institutions play an important role in regulating the use/allocation of resources in an efficient, fair, and sustainable manner. Institutions can show social roles, including regarding the type of work. Each institution has a different role according to the duties, authorities, and responsibilities it has to carry out. Overall, supporting and filling roles in achieving goals is a crucial issue (Purwanto, 2007). Institutional roles are expected to be able to build an agribusiness system, three aspects need attention: a) Institutional structures and functions are regulated in such a way as to be able to mobilize all resources, both locally available and externally supported; b) Institutional facilities and activities. The facility is a center for socio-economic activities in a community, including; 1) The center of economic activity plays a role in regulating and controlling the mechanism of production, consumption, and distribution of goods and services, 2) the center for research and development of the people's economy, plays a role in understanding and formulating problems faced, 3) centers for employment and education or training and counseling, plays a role in fostering and developing the quality of human resources through efforts to increase knowledge and skills regarding the use of new technology and business management; 4) community empowerment. Farming community groups need to be given certain roles that enable them to learn to increase their knowledge and skills in their participation, so that the independence of the target group is formed effectively through the management process, apart from through special education and training efforts organized by the institution (Hussain & Thapa, 2012). Farmer groups are farmers formed based on common interests in the same environmental (social, economic, resource) conditions, familiarity, and harmony led by a chairman (Veky Supit, 2016) in the community. The discussion above suggests that the dynamics of the cocoa market must be considered on how to add an inclusive market by considering three important aspects. They are social, economic, and environmental (or ecological) as the main indicators of sustainability and are supported by smallholder organizations.

4. Conclusion

It can be concluded that cocoa plantations with an agroforestry system as an alternative to indigenous farming carried out by farmers in Polewali Mandar Regency have a positive impact on farmer institutions, increasing income and meeting the needs of farmer households. The existence of farmer-NGO partnerships has helped change farmer institutions but has not changed local institutions that have become farmers' habits in managing farmland, including utilizing cocoa farms by intercropping. There has been a major change in smallholders from producing non-fermented cocoa to fermented and certified cocoa. Besides that, there is an increase in farmers' income by integrating cocoa-goat by utilizing shade trees in cocoa plantations as animal feed, producing organic fertilizers and pesticides from goat urine, creating a market for inter-crop commodities such as cocoa, coconut, ginger, and locally grown fruits, all are in the same garden. In addition, the cocoa market is still great potential for domestic and foreign consumption. This opportunity is also a great potential for smallholders, and must be properly utilized by farmer organizations to increase the added value and competitiveness of cocoa. It is noted that currently the needs of partners from the cocoa industry can be fulfilled by the Cooperative as much as 300 kg/month and this amount

is still small compared to the needs of the cocoa processing industry. Cocoa farming in the long term is still a promising farming business so the existence of farmer organizations is feasible for development. Therefore, farmer institutions must continue to be developed to increase farmer income, added value, and cocoa competitiveness to meet the sustainability aspects of an inclusive market (economic, social, and environmental). Finally, inclusive markets require institutional strengthening.

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