

# Model and Strategies of Agribusiness Development of Cocoa Commodity in North Luwu Regency South Sulawesi Indonesia

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**Abstract:** *National development program, as it is known that the greatest contribution comes from the role of agriculture sector supported by the industry in the provision of food, or as a provider of employment, and subsequently as a producer of foreign exchange. The objective of this study is to analyze model and strategies of agribusiness development of cocoa commodity in North Luwu Regency South Sulawesi Indonesia. The research approach used in this study was descriptive quantitative approach. Descriptive quantitative research aims to describe information about the extent of non-technical aspects, including the instructor characteristics, instructor motivations, instructor competences, and instructor independence, as well as the instructor performance, competence of farmer group leader and farmer's competence in Luwu Utara regency. Based on targeted samples, this study included the survey category. The survey was conducted by distributing questionnaires to respondents. Samples were collected from 5 sub-districts as follows: Mappideceng Sub-district, Sabbang Sub-district, Sukamaju Sub-district, Masamba Sub-District and Tanalili Sub-district. Overall samples were collected from 100 respondents. Data was used to construct model of the relationship between the research variables. There are four exogenous variables (variables that are not influenced by other variables in a relationship model or often known as independent variables), the variables are; Instructor characteristics (X1), Instructor competences (X2), Instructor motivations (X3), Instructor independences (X4), and three endogenous variable (variables that are influenced by other variables within a relationship model or often known as "dependent variable") are the Instructor performances (Y1), Head of farmer's group competence (Y2), Farmer competence (Y3) variable. In modeling, it will involve all indicator variables so that all variables are latent. In accordance with the above relationship model, the data analysis technique to be used in this research is structural equation modeling (SEM), where the independent variable will be divided into a number of arranged blocks. To implement the model, the strategy is analyzed by SWOT analysis (strength, weakness, opportunity and threat). The final model of development of cocoa farmer agribusiness has shown the relationship among variables and indicators. The best path was accomplished as follows: improve instructor competences to increase instructor performance, so that the farmer competence is achieved. To achieve that development, seven strategies were formed as follows: (1) Increased Human Resources apparatus extension through cocoa agribusiness education / training. (2). Reduce the shift of agricultural land to non-agricultural functions to increase cocoa production and agribusiness. (3). Optimizing the community's ability to manage cocoa agribusiness through increasing the role of farmers in the development of cocoa plantation, (4). Increasing the quantity and quality of cocoa products through the agribusiness system, (5). Improving the management and quality of Cocoa products through extension and training programs, (6). Increasing the competitiveness of cocoa products both in quality and quantity, (7). Development of industries based on the agricultural sector by developing derivatives of agricultural products to obtain high added value.*

**Keywords:** Cocoa, Development, Farmer, Strategy, Structural Equation Modeling

## 1. Introduction

National development program, as it is known that the greatest contribution comes from the role of agriculture sector supported by the industry in the provision of food, or as a provider of employment, and subsequently as a producer of foreign exchange Production of agricultural export commodities is one source of income for developing countries including Indonesia. Cocoa and coffee is an important export commodities in the world. Indonesia is the third largest cocoa producer in the world. This situation is supported by the introduction of a full-sun, high-yielding variety of cocoa to Indonesia and improved infrastructure [1].

Indonesia's statistics show that the main cocoa production centers are located in eastern Indonesia, covering South Sulawesi, Southeast Sulawesi and Central Sulawesi. Sixty percent of Cocoa production comes from Sulawesi (South Sulawesi, West Sulawesi and Southeast Sulawesi). South Sulawesi province is one of the areas of agricultural barn, which contributes to the growth of national economy, including the production of Cocoa [2]. Cocoa market has a great potential seen from the increase in world consumption, so it is expected to take advantage of these opportunities. Data of 2014 in South Sulawesi Cultivation area of cocoa = 246,223 Ha with production of 143,237 Ton. And Luwu Utara Regency as a research area of 34,252

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Ha with production of 21,236 Ton. The Cocoa products have many benefits for the farmers' income, so that the cocoa commodity continues to be widely developed.

The priority commodities developed are food crops which are the main food source for the Indonesian population, besides plantation commodities, fishery products, livestock sector, and forestry are also developed. Professional Agricultural Counselors are extension workers who know deeply about what (substance of matter) is preached / delivered, proficient in how to counsel (methodological) so that effective, efficient and good personality. The objectives of Law Number 16 Year 2006 are, in particular, contained in Chapter II article (3); regulation of extension system covering human resource development and social capital improvement that is: (1) Strengthening the development of advanced, modern agriculture, fisheries and forestry in sustainable development systems; (2) Empowering key actors and business actors in enhancing capabilities through creating a conducive business climate, motivation growth, potential development, opportunities, awareness raising, and facilitation and facilitation; (3) Provide legal certainty for the implementation of productive, effective, efficient, decentralized, participatory, open, self-sufficient, equitable, gender equitable, broad-minded, environmentally-friendly and accountable education that ensures the implementation of agricultural, fisheries and forestry development; (4) Provide protection, justice and legal certainty for the main actors and business actors to obtain extension services and for extension workers in carrying out counseling; and (5) Developing human resources, advanced and prosperous, as the main actors and targets of agricultural, fisheries and forestry development.

Cocoa (*Theobroma cacao*) or chocolate is one of the mainstay commodities of plantation whose role is quite important for the national economy, especially as a provider of employment, sources of income, and foreign exchange. Cocoa also plays a role in encouraging regional development and agro-industry development. The cocoa plantation in 2002 provided employment and income sources of approximately 900 thousand heads of farm families mostly located in eastern Indonesia and contributed the largest income to the three plantation sub-sectors after rubber and palm oil valued at US \$ 701 million. IN fact, the cocoa commodity, not too difficult to cultivate and maintain, cocoa fruits can be harvested every week and planting location can be done in fertile land and marginal land. People who do not have a garden specifically cultivate cocoa, usually they only plant cocoa in the yard; beside / behind the house and 2014 Cocoa production = 22,362.25 Ton (decrease).

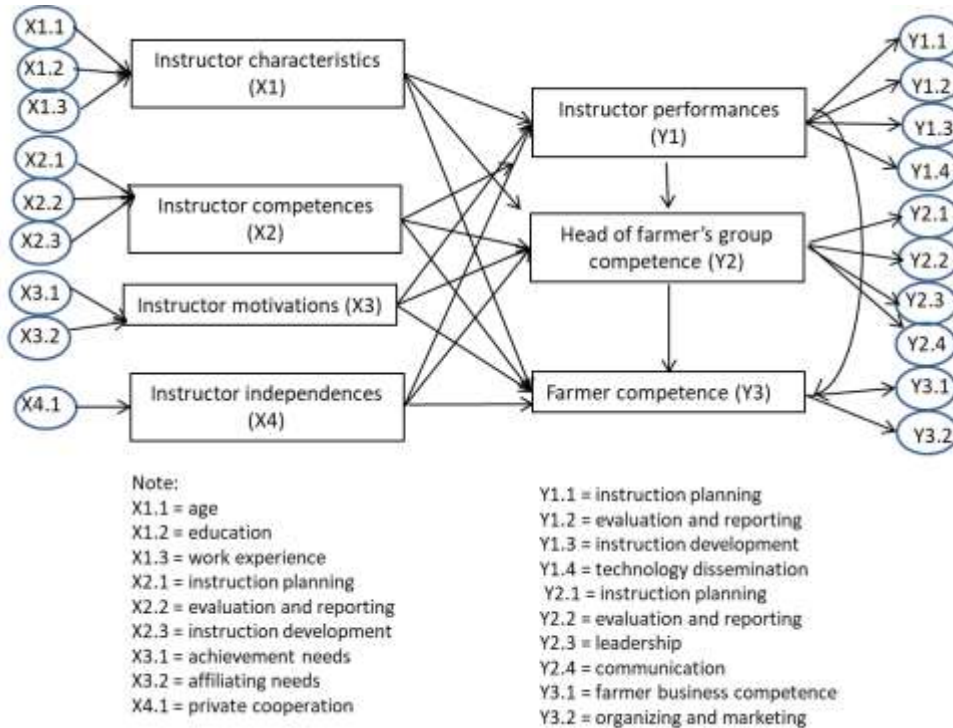
Cocoa agribusiness system to date still has some shortcomings. The shortcomings are related to various aspects, ranging from cultivation of maintenance, harvest / postharvest, processing, to marketing [2]. But with the potential that is owned, farming is likely to be fixed both technically and in terms of arrangement of agribusiness.

The purpose of the study as follows: (1) Identify the application of farming system in Agribusiness of Cocoa Commodity, (2) Analyzing the relationship between motivation and perceptions of farmers on the application of farming systems in the development of Agribusiness Cocoa Commodity, Developing human resources, advanced and prosperous, as the main actors and targets of agricultural, fisheries and forestry development, (3) Analyzing the relationship of institutional counseling with Functions and Roles Finding Agricultural Extension Model in Agribusiness Development of Cocoa Commodity, and (4) Finding Effective Cocoa Farming Model and Strategy in Improving Farmers' Welfare.

## 2. Methods

The research approach used in this study was descriptive quantitative approach. Descriptive quantitative research aims to describe information about the extent of non-technical aspects, including the instructor characteristics, instructor motivations, instructor competences, and instructor independence, as well as the instructor performance, competence of farmer group leader and farmer's competence in Luwu Utara regency. Based on targeted samples, this study included the survey category.

In accordance with the problem studied, in this study sampling was classified as survey research. A survey study examined large and small populations by selecting and reviewing selected samples from the population to find relative events, distributions and interrelations of social variables. This type of survey can be considered as the sample survey. The survey was conducted by distributing questionnaires to respondents. Samples were collected from 5 sub-districts as follows: Mappideceng Sub-district, Sabbang Sub-district, Sukamaju Sub-district, Masamba Sub-District and Tanalili Sub-district. Overall samples were collected from 100 respondents. Data was used to construct model of the relationship between the research variables. There are four exogenous variables (variables that are not influenced by other variables in a relationship model or often known as independent variables), the variables are; Instructor characteristics (X1), Instructor competences (X2), Instructor motivations (X3), Instructor independences (X4), and three endogenous variable (variables that are influenced by other variables within a relationship model or often known as "dependent variable") are the Instructor performances (Y1), Head of farmer's group competence (Y2), Farmer competence (Y3) variable. In modeling, it will involve all indicator variables so that all variables are latent (Figure 1). In accordance with the above relationship model, the data analysis technique to be used in this research is structural equation modeling (SEM), where the independent variable will be divided into a number of arranged blocks. To implement the model, the strategy is analyzed by SWOT analysis (strength, weakness, opportunity and threat)



**Figure 1:** Design of model SEM of agribusiness development of cocoa

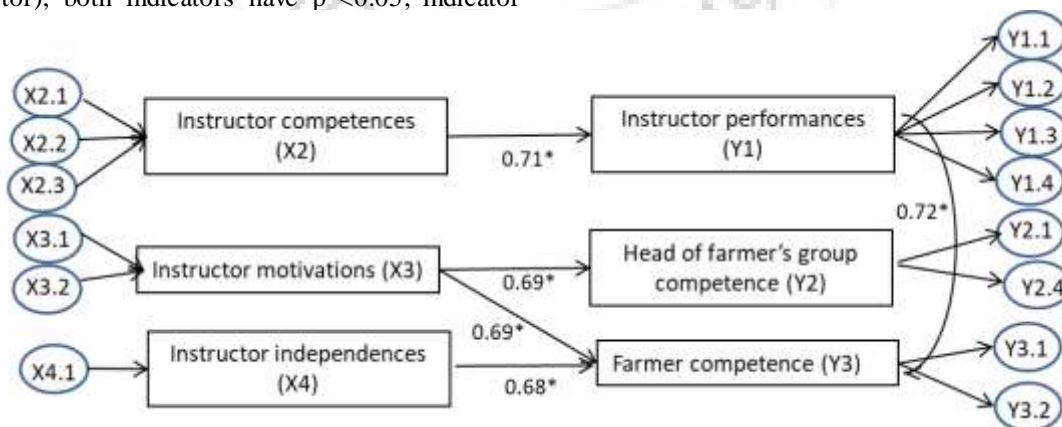
### 3. Results and Discussion

The results of this study Application of farming system in cocoa agribusiness consists of; Agribusiness system conducted by farmers in the farming Cacao plant in the start of subsystem upstream, farming and downstream subsystem with cropping pattern:

Monoculture on an intensive field, Multiple cropping planted in the home yard as a non-intensive side crop.

This study indicated that of the 19 indicators, 10 indicators of which are significant indicator X1.2 (education); X4.1 (private sector), both indicators have  $p < 0.05$ ; indicator

X1.1 (age), X1.3 (work experience), X2.1 (instructing planning), X2.2 (Evaluating and reporting), X2.3 (development), X3.1 (achievement needs), X3.2 (affiliating needs), X4.1 (private sector), these eight indicators have  $p < 0.01$ . The significant variables include the instructor competent (X2) and instructor performance (Y1), instructor motivation (Y1) and head of the farmer competence (Y2), instructor motivation (X3) and farmer competence (Y3), instructor independence (X4) and farmer competence (Y3), as well as instructor performance (Y1) and farmer competence (Y3). From this result, the strongest relationship path is the instructor competent (X2) instructor performance (Y1), and farmer competence (Y3) (figure 2).



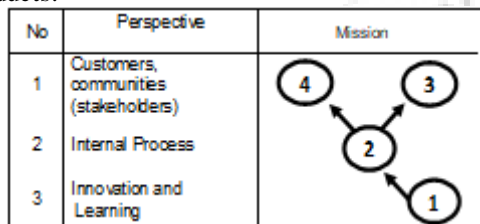
**Figure 2:** Final model showing the relationship among variables and indicators

The relationship between motivations with the perception of farmers on the application of farming systems in the development of agribusiness Commodity is not significant. The motivation of farmers to conduct cocoa farming was because, among others; form of words and languages in a

specific, natural context and by utilizing various scientific methods. While the approach of inferential, showed

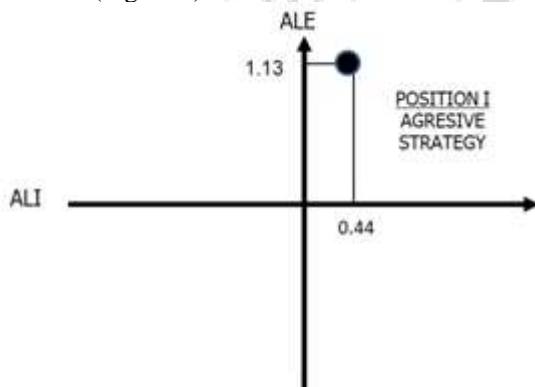
- Farm land is very suitable for cultivation of Cocoa,
- The existence of market certainty at a favorable price,
- Government assistance in the form of superior local clones resistant to pests and other diseases,

- d) The relationship of institutional counseling with the function and role of agricultural extension in the development of cocoa agribusiness, shows that between the extension institutions is very closely related to the function and role of agricultural extension in North Luwu Regency.
- e) Planning of the extension program is arranged with Leagans model begins with the activity of Identification of the general condition of the area and its potential, then done Problem identification, once the problem is done with inventory goal setting based on the priority of the problem, and planning activities continued with the achievement of goals that contain strategy implementation, monitoring and evaluation activities followed up with reconsideration. Planning of extension programs for cocoa farmers aims to improve the knowledge, understanding and skills of cocoa farmers in the field 1) Cocoa farm management, 2) management management of cocoa production, 3) processing of cocoa products and 4) marketing management of cocoa products.



Picture 3: Strategic Map of the Development Mission of Agriculture with a Balanced Scorecard Approach

Based on SWOT analysis, scores of ALE and ALI meet on position I that meant an aggressive strategy must be implemented (Figure 4).



Picture 4: The Position of Agricultural Extension Institution of Luwu Utara Regency in implementing agricultural extension

Internal Environmental Analysis =  $1.712 - 1,268 = 0.444$ , External Environmental Analysis =  $2.150 - 1,013 = 1.137$  Development of industries based on the plantation sector by developing derivatives of cocoa products to obtain added value. →Optimizing the community's ability to manage cocoa agribusiness through increasing the participation of farmers in plantation development.

The SO strategy (maximizing the power to exploit opportunities) is as follows:

- f) The existence of cocoa commodity extension institutions is very intense to conduct extension activities to farmers and cooperate with local non-government organizations or foreign NGOs in encouraging increased production, productivity and marketing of cocoa farmers, 4. Cocoa farming extension model that is effective in improving the welfare of farmers. The hypothetical model proposed includes 60 indicators derived from three independent variables and four bound variables. After the prediction of variables influential on the performance of agricultural extension, found a structural model of agricultural extension performance that shows the path of influence among variables.

While the extension development strategy based on Strength and Opportunity (SO) is described as follows: The relationship of all perspectives in Balanced Scored Card developed by Robert S Kaplan, has 3 (three) perspectives and mapped into strategic map (Strategic Map) as presented in Figure 3.

- 1) Increasing quantity and quality of cocoa products through agribusiness system.
- 2) Optimizing the performance of field officers / agricultural extension special agribusiness cocoa.
- 3) Optimizing land use through intensification and diversification.
- 4) Development of industries based on the plantation sector by developing derivatives of cocoa products to obtain added value.
- 5) Optimizing the community's ability to manage cocoa agribusiness by increasing the participation of farmers in plantation development.

Based on the sequence of number of scores then found 7 (seven) strategies that became the key to success of cocoa agribusiness development program in Luwu Utara Regency. The seven strategies are:

- 1) Increased Human Resources apparatus extension through cocoa agribusiness education / training.
- 2) Reduce the shift of agricultural land to non-agricultural functions to increase cocoa production and agribusiness.
- 3) Optimizing the community's ability to manage cocoa agribusiness through increasing the role of farmers in the development of cocoa plantation.
- 4) Increasing the quantity and quality of cocoa products through the agribusiness system.
- 5) Improving the management and quality of Cocoa products through extension and training programs.
- 6) Increasing the competitiveness of cocoa products both in quality and quantity.
- 7) Development of industries based on the agricultural sector by developing derivatives of agricultural products to obtain high added value.

The development of agribusiness is strongly supported by labor and natural resources. This growth is influenced by internal and external factors including the external environment, government subsidies and trade [3]. The gender of the farmer, the number of contacts with the

extension agents, the access to credit, and the amount of canopy shade in the farm all had significant effects on the agricultural performance of cocoa farmers in the West and Central African countries. In terms of strategies and policies, it was suggested that rural credit and extension policies warrant attention [4]. The role of extension agents can focus on the operator goals considered to be most important and to yield higher levels [5]. The extension program starts with knowledge management and ending with human Resource Development. Agricultural extension and resources nature has an important role in promoting adoption of new technologies and innovations [6]. The educational and communication process in farmer attitudes, knowledge, and skills affects agricultural extension change through. Role from agricultural extension involves dissemination of information, build capacity of farmers through use of various methods of communication and assistance farmers make decisions [7].

#### 4. Conclusion

Management of water resources through local government policy and local wisdom in the conservation area of Bukit Kelam NTP apply the law and other regulation. Regional Regulation About Spatial Planning of Regency is accommodating utilization zone in natural forest park area of Bukit Kelam mentioning that the importance of conservation of natural resources one of them water. The government is still dominant in its role over the local community, and it is full of state rights. Water resources management policies implemented so far have not fully demonstrated the principle of harmony between social, environmental, economic, and far-reaching interests from the principles of justice and sustainability, norms, standards, guidelines and criteria, community interests and local wisdom.

Supporting factors are the existence of abundant natural resources such as water, social and cultural environment is very good and openness of society as well as awareness to participate in maintaining the region. While the factors that hamper the management of water resources is the implementation of policy is still centralized, the scope of the boundaries of areas with community settlements that have not been clear, because the local community mapping is not involved, the weak coordination and cooperation between agencies with and the number of tbsp in the conservation area is still lacking.

The ideal policy model for water resources management is incremental, which puts forward decisions based on compromise and collective agreements between many participants, because the local communities of four Kebong, Kelam Sejahtera, Merpak and Samak villages want a joint regulation based on the local wisdom values of the community applying a 70% pattern of water retribution to community rights intended for rural development, and 30% deposited to the local treasury. Management arrangements need to adapt to local conditions, physical and contain fairness principles for all users; strengthening coordination,

integration, synchronization and simplification between existing agencies. Apply a clear legal basis at the local level. Community participation in water resources management through the Air Care Forum of Bukit Kelam Nature Tourism Area is of course important to be supported. Improvements in the quality of water resources management such as institutional infrastructure and the recognition of the tribal rights of local communities should be understood as citizens together an indigenous legal partnership based on the similarity of residence and harmony.

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