

International Conference on Food, Agriculture and Natural Resources, IC-FANRes 2015

Institutional Development Model Cocoa Farmers in East Java Province District Blitar

Sugeng Raharto *

Agribusiness Study Program, Faculty of Agriculture Jember University, Kalimantan Street 37, Jember 68121, East Java, Indonesia

Abstract

The agricultural sector especially the plantation sub-sector are required to play a role in the national economy, among others through the Gross Domestic Product (GDP), the creation of foreign exchange, the food supply. Cocoa absorb labor at the same time create jobs for farmers, contribute to a positive foreign exchange, and encourages the growth of agribusiness and agro-industries in the area. The quality of exported cocoa is generally not good, because about 90% of Indonesian cocoa exports which are not fermented. The purpose of this study was (1) to analyze the driving factor inhibiting the fermentation of cocoa farmers, (2) determine the root cause of the problem reluctance of farmers ferment, (3) institutional strengthening to formulate models that could encourage farmers to ferment. The method used in this research, descriptive methods, and action research in Blitar of East Java Province Sampling method using Simple Random Sampling with the number of samples in each region sebanyak 45 farmers. Including data analysis methods or the force field analysis Force Field Analysis (FFA), analysis or Fish Bone Fishbone Analysis, to analyze the root of the problem is less reluctance of farmers to ferment cocoa. In addition to data collection is done through the collection of primary data was also conducted Focus Group Discussion (FGD). This research is expected to encourage farmers to utilize fermented cocoa and cocoa-products in order to increase their family income. The wider benefits that cocoa exports of Indonesia has a good quality so that no rebates (automatic detention) in the world market. The results showed that farmers ferment inhibiting factor is the difference between the price of cocoa beans fermented and not fermented very small. The root problem reluctance cocoa farmers ferment cocoa beans market cluster is a cluster focus issues and knowledge of farmers are at the root problem of the factors that affect farmers in the fermentation of cocoa beans. While the model of institutional empowerment of farmers through the strengthening of institutional synergy among stakeholders.

© 2016 Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of the organizing committee of IC-FANRes 2015

Keywords: farmers; farmer groups; farmer knowledge; market

* Corresponding author.

E-mail address: raharto.faperta@unej.ac.id

1. Introduction

Indonesia can be said to be one of the countries in the world that controls most of the strategic agricultural commodities. Call it a commodity cane, coffee, oil palm, cocoa, and more. According to the Indonesian Cocoa Commission (2006), cocoa absorb labor at the same time create jobs for farmers, contribute to a positive foreign exchange, and encourages the growth of agribusiness and agro-industries in the area. Employment reached 965,000 peasant farmers and contributed income countries (Gross Domestic Product / GDP) through non-oil exports amounted to 665 million US \$ in 2005, with the value of positioning cocoa third largest foreign exchange earner after the rubber and palm oil a group of plantation crops.

Though the world's third largest cocoa producer, the fact that the cocoa industry is difficult to grow and flourish in Indonesia. Indonesia did not get the added value of these commodities. Processing industry thrive in other countries, while Indonesia only exporting raw materials. Indonesia is a producer of raw materials the world's third largest cocoa after the Ivory Coast and Ghana. 3 million of the world cocoa production, 50 per cent or 1.5 million tonnes came from the Ivory Coast, while Indonesia dominate the market 6 percent, or about 580,000 tons. Indonesian cocoa production of new 590 thousand tonnes per year under the Ivory Coast, which reached 1.3 million tons and Ghana 650 thousand tons per year (between 2007; Naomi Siagian, 2010).

The quality of exported cocoa is generally not good, because it is not fermented. About 90 percent of the exports of cocoa is cocoa random or not fermented. Unfermented cocoa beans do have markets in the world. However, the price is very low compared fermented cocoa. This condition also occurs in cocoa centers in Blitar, East Java. Almost all farmers do not ferment, even *Gapoktan* Pillars Santoso that has been instrumental not yet managed to encourage the treatment of fermented cocoa.

During this time everyone just focuses attention on increasing the productivity of the cocoa plant and ignore quality issues. Indonesian cocoa production is significantly increasing, but the resulting quality is very low and varied, among other less fermented, it is not quite dry, seed size was not uniform, high bark content, high acidity, taste is very diverse and inconsistent. The main issue in improving the quality of cocoa, primarily in Blitar, and Jembrana, lies not in the lack of capacity of the processing industry, but rather on a strong commitment to implement the fermentation, seriously. Fermentation occurs since farmers do not get the significant price from traders. The actual level of welfare of cocoa farmers can be improved by pushing ferment before selling it to collectors. The efforts will only be successful if sufficient available extension workers at the farm level.

2. Research Methods

Basing on the results of previous studies that found that farmers in Blitar region have good potential to be developed. Farmer groups were not optimal role, while the main group union has been very instrumental in the marketing of cocoa. *Gapoktan* already have some networking partnerships with cocoa buyer. One thing is quite crucial in the implementation of the study site is not fermented cocoa. Therefore, research on the perceived interest of farmers to ferment indispensable.

The research unit is the household farmers who cultivate cocoa in the study. Farmer sample is restricted to farmers who cultivate cocoa crops in agricultural land of farmers and not only at yards around the house. Sampling method using a simple random sampling with sample number 45 farmers.

2.1. Data analysis methods

To analyze the problem first is about the factors driving and inhibiting fermentation activities at the farm level was analyzed by Force Field Analysis (FFA). Force field analysis framework consists of:

1. Level of Agency Performance
2. Identify Incentives and inhibiting performance
3. Assessment Factors
4. Determination of Key Success Factors
5. Force Field Diagram

Identification of the root causes of the reluctance of farmers to fermentation begins with Focus Discussion Group to identify the factors at the root of the problem. FGD is also intended to avoid a wrong meaning of the researchers to focus on the problems examined. The collection of data and information is done through two (2) stages: First Stage: FGD using (a) Mechanical fin; and (2) Technical Analysis LFA (Logical Framework Analysis) in order to find the root cause.

In this study, more focused analysis technique LFA (Logical Framework Analysis). Steps Problem Analysis:

1. Any issue that is obtained from the public regrouped in order to obtain the main issues that really happened.
2. Then the problems which have been grouped are looking for logic linkages between issues. By arranging the logical relationship between the problem, then be determined which one is actually at the root of the problem and focus on the issue of what is considered important as an indicator of the occurrence of a problem.
3. The number of arrows coming out of an opinion box indicates the level of priority the root problem. With other meanings, opinion box dart discharge issues most is the root of most problems a priority.
4. While the opinion box which is the direction of incoming arrows with great frequency and number of arrows out of the box a little, or no the main issue. Fishbone Analysis (Fish Bones) , is the only tool that uses data verbal (non-numerical) or qualitative data in the presentation. This tool describes a condition of "irregularities" are influenced by a variety of causes that are interconnected. Cause and Effect Diagram / Bone Fish / Fishbone / Ishikawa is one tool in analyzing quality in order to determine the overall relationship between the weakness of the cause. The head of the fish is due to the effect and the thick arrows toward Effect diagram. Fishbone use aimed at finding the root causes of the obstacles farmers to ferment.

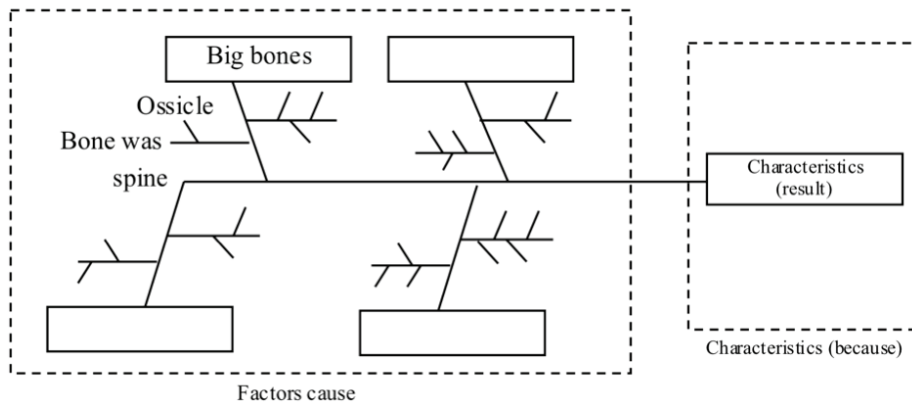


Figure 1. Fishbone diagram

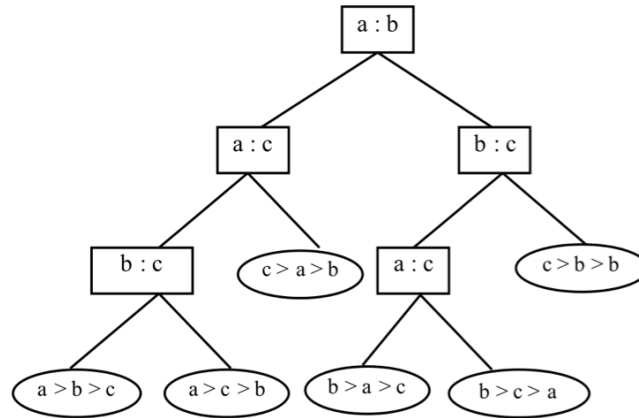
2.2. Decision tree

Decision Tree concept was changing the data (obtained from fishbone analysis) into a decision tree (decision tree) and decision rules (rule), with the following steps as (1) Data was expressed in the form of a table with the attributes and records. (2) Attribute declared a parameter that was created as a criterion in tree formation. Suppose for determining a game of tennis, the criteria considered was the weather, wind and temperature. One attribute was an attribute that states solution of data per data item called a target attribute. (3) Attributes have values that were called by the instance. Suppose instance attributes have the form of weather sunny, cloudy and rainy.

2.3. Examples of the different stages of decision tree.

To analyze the weak points of financial institutions, farmer organizations, support institutions to use the analysis followed by a description of the activities FGD (Focus Group Discussion) involving farmers, Estate Agency, marketing agencies, financial institutions, researchers, experts Cocoa and Coffee Research Center. This activity aims to raise brainstorming to determine the ideal role of each. Institutions related to the activities of cocoa fermentation.

Additionally, limited discussion among researchers was also done with experts to formulate the ideal role of related institutions.



3. Research Result

To determine the factors driving the increase in value-added agribusiness cocoa in Blitar district described in Table1.

Table1. Evaluation Incentives on Enhancing the Value Added Agribusiness Cocoa Village Kademangan, Blitar

No	Incentives	BF	ND	NBD	NRK	NBK	TNB	FKK
D1	Increased cocoa quality	0.23	3	0.69	2.86	0.66	1.35	2
D2	Gapoktan role GUSANT	0.31	4	1.23	2.71	0.84	2.07	*1
D3	The low cost of fermentation due to the use of TK in the family	0.23	3	0.69	2.00	0.46	1.15	4
D4	Role Centre of Kokoa	0.23	3	0.69	2.43	0.56	1.25	3

Description: *): Priority (FKK); BF: WeightFactors; ND: ValueSupport; NRK: Average ValueLinkage; NBD: ValueWeightSupport; NBK: Weight ValueLinkage; TNB: Total ValueWeight; FKK: Key SuccessFactors

Based on Table 1, it could be seen FKK driver who has the highest score is a factor D2 is the role Gapoktan Guyub Santosa (Gusant) with the urgency of a factor of 2.07. Gapoktan role Gusant have urgency highest value since Gapoktan Gusant has an important role in helping cocoa farmers to deliver their harvest to the cooperative Gusant. Gapoktan Gusant also serves as distributor of various government assistance such as fertilizer and seed aid. Based on interviews with farmers, the Gapoktan Gusant facilitate the farmers to sell their cocoa crops and facilitate the farmers in obtaining information related to cocoa cultivation is given through counseling. Therefore, the role of Gapoktan Gusant is the most important motivating factor for agribusiness kakao at Kademangan Village Blitar. Value of support (ND) is the highest on the role of factors Gapoktan Gusant. It shows that the role of Gapoktan Gusant was a factor that most have relevance in supporting agribusiness of Kademangan cocoa in the village of Blitar. In addition to the drivers, there is also an inhibiting factor that inhibits the increase in value-added agribusiness cocoa. In Table 2, the evaluation table inhibiting factor in the increase in value-added agribusiness Kademangan cocoa in the village of Blitar.

Based on Table 2 can be seen also on the FKK inhibiting agribusiness Kademangan cocoa in the village of Blitar, the H1 factor pricing less in line with the value of the urgency factor of 1.90. lack of appropriate pricing is vital to the welfare of cocoa farmers. Conditions contained in the cocoa agribusiness in the village Kademangan was not significant difference between the selling prices of cocoa fermented with non-fermented cocoa sold in cooperative

Gusant. Non-fermented cocoa selling price was Rp 18,000, - per kilogram, while the price of cocoa fermentation was Rp 19,000, - per kilogram. The price difference was not much that makes farmers reluctant to carry out the fermentation process.

Table 2. Evaluation of Factors Inhibiting the Added Value Sustainability Cocoa Village Kademangan, Blitar

No	Obstacle factor	BF	ND	NBD	NRK	NBK	TNB	FKK
H1	Lack of appropriate pricing	0.333	3	1	2.71	0.90	1.90	*1
H2	Limitations equipment	0.222	3	0.67	2.29	0.51	1.17	4
H3	Hassle method of fermentation	0.222	3	0.67	2.57	0.57	1.24	2
H4	Unwillingness to take risks fermentation	0.222	3	0.67	2.43	0.54	1.21	3

Description: *): Priority(FKK); BF: WeightFactors; ND: ValueSupport; NRK: Average ValueLinkage; NBD: ValueWeightSupport; NBK: Weight ValueLinkage; TNB: Total ValueWeight; FKK: Key SuccessFactors

Value of support (ND) at the highest inhibiting factor is the lack of appropriate pricing factor. This is an obstacle that has the highest relevance in supporting the increase in value-added agribusiness Kademangan cocoa in the village. The field strength of the factors driving and inhibiting factors increase value-added agribusiness Cocoa Village Blitar Kademangan presented in Figure below.

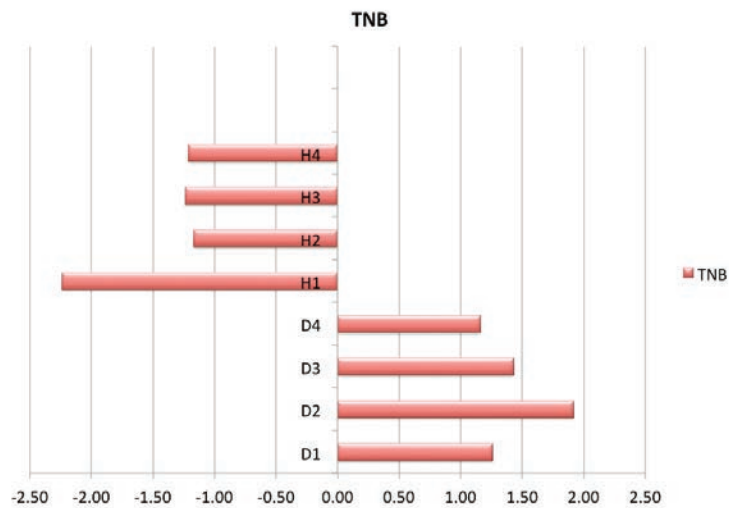


Figure 3. Strength Fermentation Process Cocoa Medan districts Kademangan In Blitar

Based on Figure 1 shows that the highest motivating factor is the role Gapoktan D2 Gusant and factors inhibiting the highest H1 pricing less appropriate. The total amount TNB driving factor is 5.82, while the total number TNB inhibiting factor is 5.52. It shows that the total number TNB driving factor is higher when compared with the total number of inhibiting factors TNB which means that agribusiness Cocoa Village Kademangan has excellence to improve its performance.

Having in mind the direction of the cacao agribusiness in the village Kademangan formulates policy recommendations in accordance with the results of FKK. This policy recommendation is the right way to achieve the goals set. Through appropriate policy recommendations, agribusiness cocoa in the village Kademangan later was also on target. FFA Based on the analysis above, the most effective policy recommendations is to eliminate or minimize the key barriers and optimization of the key drivers towards the objectives to be achieved. Such an approach was an approach-focused strategy. The strategy focuses on the analysis results FFA can be formulated

according to the picture that the strength or the key drivers that have been focused towards the set objectives, namely to increase the value-added agribusiness cocoa in the village Kademangan Blitar.

3.1. The root problem is the reluctance of Farmers Doing fermentation

To find the root cause a version farmers to ferment, then the activity was performed as follows as (1) Finding the issue of the problems felt by every farmers by farmers fill each card by writing a perceived problem and actually occur associated with cocoa fermentation, (2) Then the problems which have been group were looking for logic linkages between issues. By arranging the logical relationship between the problems, then be determined which one was actually at the root of the problem and focus on the issue of what was considered important as an indicator of the occurrence of problem, and (3) Problems divided into clusters as shown in Table 3.

Table 3. Cluster Root and Root Cause of the problems not doing Fermentation by Cocoa Farmers in the district of Jembrana Melaya, Bali

No	Problem	Cluster
1.	The selling price was not much different	Price gap
2.	The fermentation process complicated	The fermentation process
3.	Habits do not do the fermentation of cocoa	Farmers habits
4.	Cocoa market availability	market
5.	Capital constraints	economics
6.	The lack of farmers' skills in conducting fermentation	knowledge
7.	Limited facilities and infrastructure fermented cocoa	The fermentation process
8.	Cocoa fermentation process quite long	The fermentation process
9.	Family economic needs urgent	economics
10.	Lack of motivation fermented cocoa farmers	knowledge
11.	Lack of knowledge related to the fermentation of cocoa farmers	knowledge

No.	Cluster	Amount Arrow Sign	Amount Arrow Out
1.	Farmers habits	2	1
2.	Price gap	2	2
3.	Fermentation process	3	0
4.	Market	4	4
5.	Knowledge	1	1
6.	Economics	1	3

Based on the above-mentioned third mage based on the amount o f incoming arrows, then the market cluster shows the number of arrows hat goal much as 4. So the market is of issue cluster o factors that affect the reluctance of farmers to ferment cocoa. Meanwhile, based on the number of arrows out, cluster knowledge of farmers are at the root problem of the factors that affect farmer sin the fermentation of cocoa beans.

3.2. Model Institutional Empowering Cocoa Farmer

The results of Around Table discussion with experts would be formulated into a model of empowerment of farmers to the fermentation activity by strengthening the institutional synergy among stakeholders. Description of the ideal role of related institutions strived to follow the groove in the figure as follows.

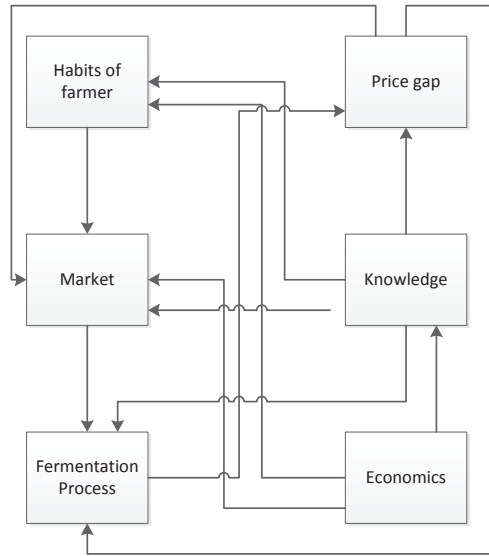
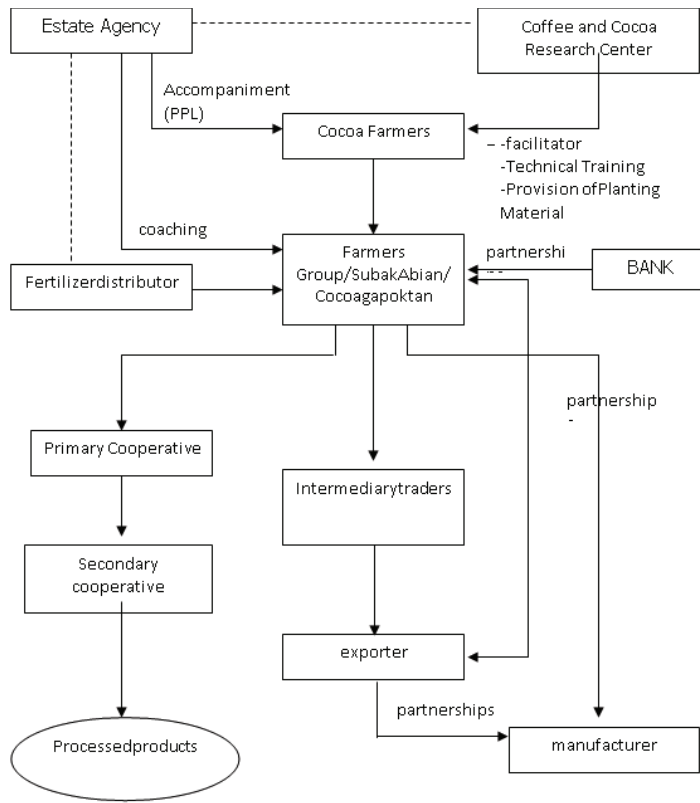


Figure 4. Cluster Problem Farmer Fermentation Cocoa Beans



Description:
 ----- : Coordinating line

Figure 5. Design Modeling Farmer Cocoa Empowering

4. Conclusion

Based on the discussion above, it can be concluded as (1) farmers in Jembrana Bali has not fully carry out the fermentation of cocoa beans due to fermentation equipment is in place Subak Abian, fermentation equipment is the help of the Department of Plantation, (2) The role of Subak Abian have the urgency highest value since Subak has an important role in helping cocoa farmers to deliver their crops to the cooperative. Subak Abian also serves as a distributor of a wide range of government assistance such as fertilizer and seed aid cocoa, (3) Equipment fermented cocoa farmers is a factor inhibiting fermentation of cocoa beans and cocoa affect price received by farmers, (4) Cocoa Farmers in Blitar not done due to the fermentation of cocoa beans had no means of fermentation and the fermentation process is considered complicated and takes a long time, (5) Factors inhibiting cocoa farmers in Blitar not perform fermentation, because of the difference in price between cocoa beans fermented and unfermented very small, (6) The other inhibiting factors, farmers in the district of Blitar not ferment cocoa harvest, caused by crop farmers was purchased by the Cooperative Guyub Santosa although not fermented, and (7) The FGD results indicate that farmers are reluctant to perform fermentation that market cluster is a focus issue, whereas farmers' knowledge is the root of the problem why the cocoa farmers do not want to do the fermentation.

References

- Anonymous, 2010. South Sulawesi further behind in fermented Cocoa Market". Accessed Oktober 2010
- Antara, 2011. Indonesian Cocoa Producing Countries Ready to Become Worlds Largest Antara, June, 2011
- Agriculture Agency., 2008. Prospects and Direction of Agricultural Development Cocoa.
<http://www.litbang.deptan.go.id/special/komoditas/files/0507>
- Forestry Agency and Estate Agency., 2008. People Blitar Cocoa Produce 110 ton. Accessed at [www://kabblitar.go.id](http://www.kabblitar.go.id)
- Estate Agency Bali Proven, 2009. Area of Development , Production , Productivity , Total Farmers and Smallholders Labour in Detailed According to the District in the Province of Bali.
- Dinul, K., 2010. Cocoa Development Prospect in Indonesia. Jakarta. Agribusiness Agency Agriculture Department. Jakarta.
- Agriculture Department Director General of Estate Department, 2010. Statistics Indonesia Year 2007- 2010 Cocoa Plantation. Jakarta.
- International Trade Centre, 2001. Cocoa: A Guide to Trade Practices (Product and Market Development). ITC. Geneva.
- Indonesia Commission Cocoa, 2006. Directories and Revitalization of the Indonesian Cocoa Sustainability : in the Face of Globalization Era. Ministry of Agriculture. Jakarta.
- Herman. 2007. Cocoa Indonesia cocoa arena World. Indonesia Research Institute. Jakarta.