

## POLICY STRATEGIES OF COCOA FOR LEAD UP AGROINDUSTRIAL FOOD AND DRINKS IN JEMBER REGENCY, INDONESIA

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### ABSTRACT

Cocoa is one of the commodity plantation for foreign exchange, the source of income of farmers, agro-industries, and regional development. Indonesia is currently the third largest country in the world of cocoa production with a 15 percent share of production after Ghana (16%) and Ivory Coast (40%). The research aims to analyze the potential for superior Cocoa products in order to accelerate economic growth and development of the region. This study was conducted in Rambipuji and Wuluhan District in Jember, East Java. The study population is bringing cocoa households (RTP) and sampling using random sampling. Cocoa in the study site has a comparative advantage indicated by the magnitude of the greatly enhanced by DRCR <1 and the competitive advantage represented by the PCR value of 0.5803. The research location is also the location of the cocoa plant base that could potentially seed.

**Keywords:** Characteristics of cocoa Farmers, Agricultural System, Cocoa beans, food, drink.

### INTRODUCTION

Cocoa is one of the mainstay plantation commodities as a major foreign exchange earner, the source of the income of farmers, job creation for farmers, to encourage agribusiness and agro-industry and regional development. Indonesia is now in the production of third-largest cocoa world with a share production of 15% after Ghana (16%) and Ivory Coast (40%) (Brandt, 2007)

The study revealed that, even though the quality is important to all categories of actors in the cocoa sector, interactions among them are hampered by problems of information asymmetry that result especially in farmers evading recommended practices. While cocoa sector policies ensure the export of premium quality cocoa, they have not sufficiently alleviated the information problem especially in the relation between farmers and cocoa purchasing agents. (Quarmin et al., 2012)

That collective marketing has a positive and statistically significant effect on the net price received by farmers. This effect is estimated at 44 FCFA per kilogram of cocoa sold collectively, that means 8% increase on the individual sale price. (Bergaly et al., 2013)

Cultivation cocoa in Indonesia will be done through three forms of community plantation business, namely, large plantations state and private plantations, and there are approximately 965.00 thousands of farmer households directly involved in cacao farming.

The overall environmental impacts resulting from cocoa production and processing activities and improvement options towards the sustainability of the system studied are presented and discussed (Ntiamoah and Afrane, 2008)

According to ICCRI research centers, potential cacao production can reach more than 2 tons/ha/year. Indonesia's cocoa, especially those that produced by the people, is still regarded unpretentious low in the international market because most are not in good quality, even the seeds are dominated with non-fermented seeds, having high offscouring, and contaminated with insects, fungi, or mycotoxin.

However, Indonesia still has a quite big prospect for the development of cocoa both for the local market and international market from high upstream and downstream. This was because of: (a) its natural resources, labor, and technology rolls-off that were spearheaded by the Center

for research in cocoa commodities; (b) the government through its strategic plan of the Directorate General of the Department of Agriculture and Plantation to assert that cocoa will be developed as leading export commodities after rubber and palm oil. This policy implementation can be seen from the development in cocoa that has been done since the beginning of the 1980s.

The production of cacao seeds commodities are not only in various milling products but also has been made in the form of food and soft drinks using chocolate raw materials which are quite familiar in the community, among others are chocolate candy (*cocoa candy*), chocolate powder (*cocoa powder*), and the fat chocolate (*cocoa butter*) which is a semi-finished product.

The penchant of consuming chocolate-based food and soft drinks in this millennium era is no longer dominated by certain circles, but it has become a common matter of all layers of society, especially in children and young people. It shows a welcoming development on the market outlook of chocolate-based food and soft drinks. The increase of economic welfare of farmers is one of the factors which turns the community consumption patterns on chocolate food and soft drinks (Faturoti et al, 2012).

This condition gives an opportunity that is large enough to possible various parties taking advantage of the opportunities by keeping a priority that there are a basic benefit and cost ratio rational to economic growth and the increase in welfare and regional development community (Brandt, 2007). The study revealed that, even though the quality is important to all categories of actors in the cocoa sector, interactions among them are hampered by problems of information asymmetry that result especially in farmers evading recommended practices. (Quarmin et al, 2012) (Kpodo, 2006), (Vigueri, 2008). (Hounkonnou, 2009) (Dormon, 2009) (Fbaah, 2008). Calibration suggests that to ignore margins of pass-through other than price has substantial implications for welfare analysis. (Lorenzo and Tristan, 2013) (Jano and Mainville, 2007)

### State of Research Hypotheses

To provide the research hypothesis of the above is not easy. It is undeniable that some cacao farmers still have the knowledge and skills enough to apply ways of managing cocoa plantation. Social and economy matters

of the farmers, local culture, technological innovation, and agro-industry cacao also prompted more and more problems in the field. Responding to the question, it needs to be socialized in the plantation through dissemination by government officials, mentoring establishment, as well as the form of training by various parties, both private and government. The purpose of this research is to analyze the potential superior products in order to accelerate Cocoa economic growth and development areas.

## METHODOLOGY

### Location

The research focus is developing cacao commodities as superior products of agro-industry food and soft drinks. The place chosen was Rambipuji and Wuluhan Districts in Jember Regency, where one is in ICCRI location and the other is in Renteng Plantation of PTPN XII. The collaboration between farmers and the synergy of government, private, world trade, and higher education is important for the development of cocoa commodities.

### Sampling Procedures

The household Objects are cacao farmers (RTP). Random sampling method was used to determine samples. The Data Source is primary data collection of cacao RTP with a structured-administered questionnaire, observation, the Focus Group Discussion (FGD), and field notes while the secondary interview data collection was also done for the government agencies and institutions related to the

problems of developing a leading agro-industry cacao food and soft drinks.

### Result

A strategy is used to improve the welfare of farmers and the development of cacao commodities as well as to increase the extension program partiality towards the government and private sectors to cacao farmers. It is increasing the system management into an effective and efficient management and also accelerating the policy rule that gives conducive climate for cultivation cacao in the country.

The analysis of matrices policy for divergencies showed a negative value (see table 1), which means it failed to produce an efficient market price. In other words, there has been market distortion that indicate a lack in selling cacao from which should be achieved. This can happen due to lack of effective government policy in post-harvest / price of cacao which began in 2012, where the export cacao seeds must be fermented. Regulation rules are aimed at encouraging cacao processing industry development in the land so that it would give added value for the cacao farmers. The *tradable divergence input* is high-negative, both in Rambipuji and Wuluhan districts. A negative tradable divergence input causes market distortion, where the farmers buy tradable means of production cheaper because of the existence of fertilizer subsidies. Subsidy policy is intended to farmers to be able to buy recommended fertilizer. It can be seen in the table below:

**Table-1.** Divergencies in Commodity Prices of Cacao

No.	Model	Revenue	Tradable Input	Domestic Factors			Profits
				Labor	Capital	Land	
<b>A. Rambipuji District</b>							
1	Private	27,259,893	6,194,509	5,403,208	2,454,108	4,360,000	8,848,066
2.	Social	37,701,266	8,315,480	5,403,208	2,454,108	4,360,000	18,481,122
3.	Divergencies	(10,441,373)	(2,120,970)	-	-	-	(9,633,056)
<b>B. Wuluhan District</b>							
1	Private	27,852,071	6,277,724	5,224,852	2,445,020	4,480,000	9,424,473
2.	Social	38,520,266	8,347,171	5,224,852	2,445,020	4,480,000	19,326,021
3.	Divergencies	(10,668,195)	(2,069,447)	-	-	-	(9,901,547)
<b>C. Rambipuji and Wuluhan</b>							
1	Private	27,482,536	6,455,587	5,336,151	2,445,994	4,420,000	8,824,803
2.	Social	38,009,188	8,660,833	5,336,151	2,445,994	4,420,000	18,428,655
3.	Divergencies	(10,526,652)	(2,205,246)	-	-	-	(9,603,852)

Source: Research Analysis (2013).

**Table -2.** Divergencies benefits with Price Status and Social in Cacao Farming

No	Location	Private (Rp)	Social (Rp)	Divergencies (Rp)
1.	Rambipuji district	8,848,066	18,481,122	(9,633,056)
2.	Wuluhan district	9,424,474	19,326,022	(9,901,547)
3.	Rambipuji and Wuluhan	8,824,803	18,428,655	(9,603,852)

Source: Research Analysis (2013).

**ANALYSIS OF COMPETITIVENESS**

**Comparative Advantages**

The superiority comparative is the size of competitiveness (superiority) potential in the sense of competitiveness will be achieved if it does not have a distortion at all.

Commodities that has the comparative advantage also be said to have efficiency in the economy. Comparative Advantages is the relative size that shows the great potential advantage commodities in the trade in free markets (to be able to compete perfectly).

**Table-3.** Private cost Ratio ( PCR) and Domestic Resource Cost Ratio ( DRCR) of Cocoa Commodities Development in Jember Regency

No	Location	Domestic Resource cost Ratio ( DRCR)	Private cost Ratio (PCR)
1.	Rambipuji	0, 4158	0, 5,800
2.	Wuluhan	0, 4027	0, 5632
3.	Rambipuji and Wuluhan	0.4158	0.5803

Source: Research Analysis (2013).

**COMPETITIVE ADVANTAGE**

Competitive advantage or often called "*revealed competitive advantage*" is a measuring stick of actual economic condition competitiveness. It appeared in table cacao PCR in the value of 0.5803, while in Rambipuji district is 0.5800 and PCR Wuluhan district is 0.5632 which are <1. It shows that the development cacao in those locations have high competitive advantage. It also means that to produce a value of output in that price status, it is only needed less than one domestic unit-resource cost. This competitive development of cocoa commodities in Jember regency is due to the low usage of tradable input.

**Government Policy to the Development of Cocoa Commodities**

The size of divergence impact and government policy in The Analysis Matrices policy can be measured by transfer output, transfer input, transfer and other net transfers factors. The Relative Size is voiced by the analysis of protection coefficient output nominal or *nominal protection coefficient on output* (NPCO), coefficient protection input nominal or *nominal protection*

*coefficient on input* (NPCI), and coefficient effective protection or *effective protection coefficient* (EPC). *Profitability coefficient* (PC) and the ratio subsidy for producers or *subsidy ratio to produce* (SRP).

**Influence of policy Input to the Development Cocoa Commodities**

An incentive policy that was found on tradable input is shown by the transfer value input (IT) and nominal protection coefficient on input (NPCI). Policies to the tradable input factor can be in the form of trade subsidies and taxation while another divergence form can be caused by the market distortion. Transfer input shows the difference between input fees that can be traded at the price of the private input costs which can then be traded at a social price. Nominal Protection Coefficient Input (NPCI) as an indication transfer input which is a tradable input costs ratio is counted using the cost based on the private tradable input price that are counted in the social price. More detailed information on the value of IT on the development and NPCI of cacao commodities in the research location can be seen in table 4.

**Table-4.** Transfer Input of Cocoa Farmers in Jember Regency

No.	Location	Transfer Input (Rp)
1.	Rambipuji	(-2.120.970 )
2.	Wuluhan	(-2.069.447 )
3.	Rambipuji and Wuluhan	(2,205,652 )

Source: Research Analysis (2013).

**Table-5.** Nominal Protection Coefficient Input (NPCI) to the Tradable Input Fertilizer of Cocoa Farmers in Jember Regency

No.	Tradable Input Fertilizer	NPCI
1.	Urea	0.46
2.	ZA	0.69
3.	TSP	0.51
	Average of Tradable Input	0.52

Source: Research Analysis (2013)

**Influence of output to the Development cocoa commodities**

The existence of government intervention or policy incentive in output can be seen from the amount of transfer output value (OT) and NPCO. A form of Government intervention is the policy in trading, export taxes, import tariffs, and subsidizing policy and taxes.

Transfer output is the difference between the revenue that is counted on private prices with the revenue calculated based on social price. The coefficient protection of nominal output (NPCO) is an indication of the transfer output shown by the ratio between the revenue that is calculated based on status price with the revenue counted based on social price.

**Table-6.** Value of output Transfer (OT) and NPCO In Cocoa Farmers in Jember Regency

No.	Location	Output Transfer (IDR. in million)	NPCO
1.	Rambipuji	(10,441 )	0.723
2.	Wuluhan	(10,668 )	0.723
3.	Rambipuji and Wuluhan	(10,526 )	0.723

Source: Research Analysis (2013).

**Influence of policy of Strengthening Economy Input-output Model**

**Table-7.** NT, PC, EPC and the SRP in Jember Regency.

No.	Sub-district	NT IRD in thousands	PC	EPC	The SRP
1.	Rambipuji	(9,633 )	0,479	0,717	-0.256
2.	Wuluhan	(9,901 )	0,488	0,715	-0.257
3.	Rambipuji and Wuluhan	(9,603 )	0,479	0,716	-0.253

Source: Research Analysis (2013).

**DISCUSSION**

Cacao Farmers people in the research location are able to gain the profit status and social benefits. Higher profits from the social benefits indicated that the price means of production/input paid by farmers is less, or the output prices received by farmers is lower than the international oil prices. This means that the government subsidizes inorganic fertilizer, especially Urea, TSP, and ZA to the farmers. The implication is that farmers will enjoy more benefits than if they enjoy the international price of cacao. Even when subsidized fertilizers were eliminated, cacao farmers are still able to gain more if the result is fairly sold to international markets or in the domestic market with the world market prices. Meanwhile, divergencies advantage is in the negative value, meaning there is a distorted policy which is the subsidies of input fertilizer.

In Table 3, Rambipuji and Wuluhan districts each has a value of 0. 4158 and 0, 4027, respectively. It means that compared to overseas cacao production, Indonesia's still has comparative advantages. Economically, it will be more advantageous to provide an opportunity for Jember Regency to develop their cacao products rather than outside Jember or even imported from abroad. In Table 4, the massive transfer input of credit watch is negative, where the transfer input for cacao farmers in the

sub-district of Rambipuji is -2,120,970; greater than that of Wuluhan district, which is Rp. - 2,069,447. There was a policy that reflects a distortion, which is fertilizer subsidy policy. The fertilizer subsidy is reflected from the massive transfer input. Thus, cacao farmers in Rambipuji receive fertilizer subsidies more than cacao farmers in Wuluhan. In addition, the ratio to measure tradable input transfer is Nominal Protection Greatly enhanced by on Input (NPCI). The ratio showed how big domestic price of tradable input prices can be with different activities. If NPCI value is more than one, the cost for domestic input costs is more expensive than that of in high world prices. In other words, the system seems to be burdened by tax policy. When NPCI is smaller than one, the price is lower than the domestic world price, and the system seems to be subsidized by existing policy. If there is no transfer input price, the domestic and global prices will not be different, and NPCI will be equal to one.

Based on Table 5, it is showed that the coefficient of NPCI <1, all for Urea, ZA, and TSP, which was 0.46, 0.69, and 0.51, respectively. That means farmers will pay a lower price than it should be. For example, the Urea is paid by farmers to 46% of international oil prices. It was the role of the government to control, in order to give fertilizer price incentives or to protect the farmers so they can develop cacao commodities. To establish the structure

protection is by providing an image that farmers still have an incentive in developing cacao commodities which are shown as negative transfer values. Table 6 shows the negative value of output Transfer (OT) and the coefficient NPCO <1. But the high negative value of OT for Wuluhan farmers is still slightly higher than the farmers of Rambipuji. This shows that Rambipuji farmers are more able to compete rather than Wuluhan farmers because Rambipuji farmers are able to sell cacao with higher prices than it should be of Wuluhan' farmers. The NPCO value in a location with the coolness research of 0.723 means that cacao farmers accept the price 72.30% from the cost of goods sold for relatively competing commodities, which reflects the enormous cost production for cacao commodities. This situation made the cacao commodities to be able to compete with the prices of imported cocoa commodities.

Results of the analysis net transfers (NT) for the development of cacao commodities in the research location is NT negative. This means that there is a government policy providing incentives to the input (tradable input and domestic factors) and which in the overall output, benefits cacao farmers. The coefficient PC > 0, which means there is a government's overall policy to give incentive to cacao farmers, in this case in the form of fertilizer subsidies. The coefficient value of EPC < 1, shows a lack of protection to producers or cacao farmers, and means that the government, even though giving subsidy policy to input fertilizer, but the output is still not effective. The coefficient value of SRP in the research locations were relatively the same, which was -0.253 (table 7). This means that net transfer of Rp 9.6 million will happen to the policy of cacao export for 25.30% if there are no other divergencies. The negative SRP value shows, in general, that the policy of the government is distorting for cacao farmers "Although cacao farmers receive a subsidy from the government as incentives, but the government policy is less effective in output policy, especially in export category".(Dormon et al.,2009) (Oluyole, 2010) (Dongo, 2009).

## CONCLUSIONS

A strategy is used to improve the welfare of farmers and the development of cacao commodities through the increase in extension programs partiality toward the government and the private sector to cacao farmers. Analysis of matrixes policy for divergencies gave a negative value, which means that it failed to produce an efficient market price.

Results of the analysis net transfers (NT) for the development commodities cacao in research locations were NT negative. It means that there is government policy providing incentives to the input (*tradable input and domestic factors*) and which had the overall output to benefit the cacao farmers. The PC coefficient showed a lack of protection to producers or cacao farmers. It means that even though the government give subsidy policy of input fertilizer, the output is still not effective.

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