

Research Report

Needs Assessment of Cocoa Business Development Using The Value Chain Approach & National Movement of Cocoa Production and Quality Improvement (GERNAS KAKAO)

Case study on Sikka Regency,
East Nusa Tenggara



FORDFOUNDATION

RESEARCH REPORT

Needs Assessment of Cocoa Business Development Using The Value Chain Approach

IN COOPERATION:

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I. INTRODUCTION

1.1. Background

One approach to agricultural development is through agribusiness activities that are oriented to increasing the competitiveness and ongoing economic development of the people's economy, conducted within the regional autonomy framework to strengthen the regional economy. Agricultural sector development involves various aspects of the value chain, both at stages of cultivation, collection, trade as well as processing. Thus, in order for the production of agricultural products to have high competitiveness, its implementation should consider the business aspects of the value chain.

One of the strategic agricultural products is the cocoa crop. Cocoa (*Theobroma cacao* L.) is one of the important crops that have historically first become known in Indonesia in 1560, but has only become an important commodity since 1951. Later the government began to pay attention to and support the cocoa industry in 1975, ie after the PTP VI managed to increase production of this crop through the use of quality seeds, the Upper Amazon Interclonal Hybrid (Sunanto, 1992).

According to the Food and Agriculture Organization (FAO), Indonesia is the number three largest producer of cocoa in the world with a production of 809,583 tonnes after the Ivory Coast with a production of 1,223,150 million tonnes. With such production amount, this commodity contributed to foreign exchange earnings of U.S. \$ 1.4 billion in 2009 as the third largest foreign exchange earnings in the plantation sector after oil palm and rubber. During 1998 to 2011, cocoa farming area recorded an increase by 9% per year. Of the 1,746 million hectares of cocoa plantations, 94% is managed by the people, 3.1% by the government and 2.9 % by private sector plantations. (Ditjenbun, 2012)

Cocoa is strategic for at least two reasons. First, because this commodity is an international trade commodity with high value, and Indonesia is the third largest producer of cocoa in the world. Second, 95% of this business activity involves small farmers with land ownership levels between 0.5 ha - 2 ha. Thus cocoa business development has directly or indirectly affected the economy of the community.

Although classified as a superior commodity, cocoa small farming business has several shortcomings that need to be improved. These shortcomings are associated with various aspects, ranging from cultivation, harvest/post-harvest maintenance, processing to marketing. But with the current

potential, farming is likely to be addressed, both technically and in terms of institutional governance.

Given the strategic position of the cocoa commodity, a large number of Local Governments (LG) has launched the cocoa farming business as a regional economy powerhouse. But of the many local governments as drivers of the regional economy, not many have concrete programs in cocoa business development. It can be said that there is no specific intervention in the form of programs and regulations to accelerate cocoa agribusiness development in the regions. Cocoa business activities are left to grow alone without significant support from the local government.

At the central level, there is the National Program for Improvement of Production and Quality of Cocoa (GERNAS). The purpose of the GERNAS program is to increase cocoa production, farmer's income and economic growth in the regions. The GERNAS program also serves as a momentum for the revival of the Indonesian cocoa industry to behighly competitive, sustainable, and to make Indonesia as the largest cocoa producer in the world. The government claims that GERNAS has significantly impacted on the improvement of cocoa productivity, farmers income, economic growth, and also the empowerment of farmers. This requires a further evaluation of the implementation of the GERNAS program.

KPPOD as an institution that is concerned on efforts to improve the regional economy intends to contribute on improving the quality of local policies associated with cocoa development, as well as to provide input and evaluation of the implementation of the GERNAS program. With the assistance of the FORD Foundation, KPPOD has designed a program called "Business Climate Development for Improvement of the Cocoa Production Value Chain". This program is expected to contribute to efforts of creating a favorable investment environment for cocoa business activities. This program is also intended for evaluation and feedback of the implementation of the GERNAS program. Given the wide scope of the cocoa value chain, this program is more devoted to highlighting the institutional factors in cocoa cultivation.

The early stages of the implementation of this activity are to conduct research related to cocoa business development in the region. Research activities have been designed as the basis for the implementation of three other activities (dissemination, advocacy, and technical assistance to local governments), as well as aligning the policy of government priority towards provinces and regencys. The study has sampled two

regions to be assisted, namely Sikka Regency in NTT and Majene Regency in West Sulawesi.

1.2. Formulation of Problems

This study aims to get an idea of business climate development problems for the improvement of the cocoa production value chain, and to get an overview of the GERNAS cocoa program implementation results. Specifically, the study objectives are as follows:

- 1) How is the overview of the cocoa business in the study region?
- 2) How are the problems of every cocoa business value chain in the study region?
- 3) How is the business climate development action plan for cocoa business value chain improvement in the study region?

1.3. Study Objectives

The objectives of this study are as follows:

- 1) Describe the general picture of cocoa in Sikka Regency;
- 2) Analyze the problems that occur in any cocoa business value chain in Sikka Regency;
- 3) Analyze the action plan for each problem in each of the business climate value chain for the future improvement of cocoa business development value chain in Sikka.

1.4. Study Benefits

Results of this study are expected to provide information about problems and stakeholder analysis in each cocoa value chain in Sikka. Hopefully, the results of this study feed into adequate policies to address cocoa problems for the improvement of cocoa productivity in Sikka. In addition, this study is expected to help identify key points for the implementation of capacity building in the field within the framework of business climate development for operational improvement of business value chain.

II. TERMS OF THOUGHT

In general, the agribusiness system includes sub-systems ranging from supplier production facilities, agricultural (farming) business, processing to marketing (Baga, 2003). To support the existence of agribusiness sub-systems, there are needs for research and development support, information, education, training, counseling, consulting, insurance, and regulation (Figure 1).

As a source of livelihood for the majority of the people of Sikka, cocoa farming is expected to support the economic life in the region. But in reality, cocoa business does not give enough benefits to the cocoa farmers. This is because farmers are lacking strength, especially in marketing. In cocoa marketing, farmers' bargaining position is low so that the benefits from cocoa farming are less optimized. The low bargaining position is due to several problems, such as disruption from merchant collectors who buy directly from farmers, low farmer productivity, and long chain of cocoa trade.

To optimize the role of cocoa farmers and improve their bargaining position, an analysis of cocoa business value chain in Sikka is required. Value chain is an activity that starts from raw material to after sales management. Value chain includes activities that occur because of relationships with suppliers (Supplier Linkages) and relationships with customers (Customer Linkages). Value chain analysis needs to be done to improve and streamline each value chain of the cocoa business in the region which in turn can boost the economy of Sikka.

To support value chain analysis, analysis of stakeholders is required to describe the role of each stakeholder in any value chain. With the stakeholder analysis, stakeholder roles can be identified which still need improvement in any cocoa value chain. Recommendations are expected from this analysis

Figure 1. Agribusiness Systems in Indonesia (Baga, 2003)

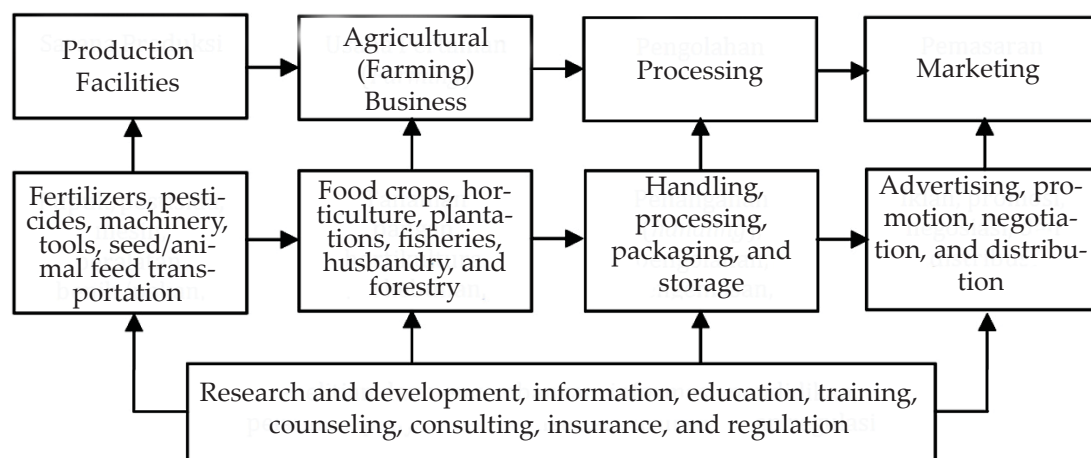
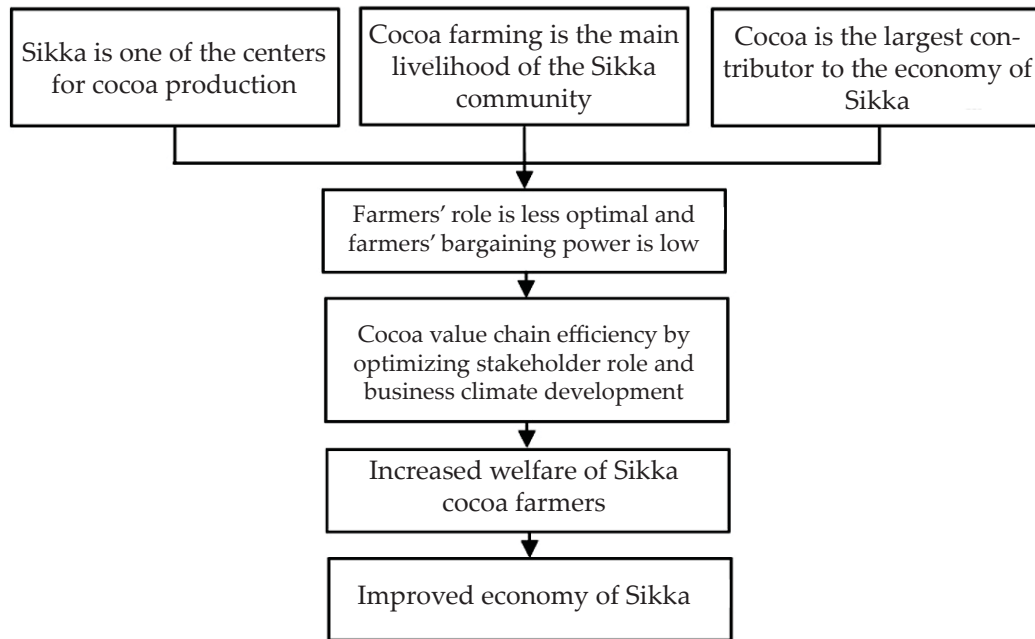


Figure 2. Study Framework

to improve stakeholder performance in any cocoa business value chain in Sikka.

Cocoa agribusiness development policies can be viewed from several aspects related to: (1) potential, constraints, and opportunities for development; (2) development strategy analysis; and (3) cocoa development policy operational steps. Potential, constraints, and opportunities for development are identified and analyzed using the SWOT analysis (Strength, Weakness, Opportunity, and Threat). SWOT analysis begins by identifying Sikka Regency from the aspects of strengths and weaknesses of internal factors, as well as opportunities and threats of external factors (Sianipar dan Entang, 2001 in Manikmas, 2003).

Furthermore, development strategy analysis is approached through a matrix on understanding the key aspects of the problem, source of problem, roots of the problem, intervention/action plan, and the stakeholders that play a role. Meanwhile, development policy operational steps are taken within the institutional analysis framework in cocoa farming business development.

III. METHODOLOGY OF STUDY

3.1. Study Approach

This study is using the qualitative approach that put the problem of business climate development and value chain improvement as a result of interaction among the stakeholders at every point of the value chain, both involved in policy making and implementation in the field. It is expected with such

an approach to obtain an inductive interpretation and understanding of the meaning of the cocoa value chain and business climate development problems as well as interaction among the stakeholders involved. For that purpose, the study is typically descriptive: describing and explaining analytically why and how patterns of problems have occurred.

3.2. Location and Time of Study

The study was conducted over three months from 20 November 2012 until 2 February 2013 in Sikka Regency.

3.3. Types and Sources of Data

Types of data used in this study are primary data and secondary data. Primary data is derived from interviews and focus group discussions (FGDs) with cocoa stakeholders in Sikka Regency. Besides in Sikka interviews and focus group discussions are also conducted with cocoa stakeholders at the national level. Secondary data is obtained from the Department of Agriculture and Plantations of Sikka Regency, Sikka Central Bureau of Statistics, Ministry of Agriculture as well as from other institutions/agencies.

3.4. Method of Data Collection and Selection of Respondents

Primary data collection in this study is performed in two ways, namely:

- 1) Observation, which is a technique of collecting data through direct observation of background and objects of the research.
- 2) In-depth interviews, which is a technique in the

study conducted through in-depth interviews of selected resource persons or stakeholders in the cocoa business in Sikka and at the national level.

- 3) Focus Group Discussions (FGDs) with cocoa stakeholders in Sikka Regency, as well as cocoa stakeholders at the national level.

The selection of resource persons in this study is essentially based on purposeful sampling, where selection of samples is done based on the type of information or consideration in existence/previously set and the identification of groups/people who have certain specificity (related positions, expertise/expert sampling, and experience in cocoa business). But on the ground, as part of purposeful sampling it is possible and even encouraged for the development of other categories/resource persons based on the snowballing technique (based on linkage information, recommended names, and so on).

Starting from this technique, the resource persons interviewed are cocoa stakeholders directly related to the cocoa value chain in Sikka regency, namely farmers, wholesalers, village/sub-regency merchant collectors, major merchant collectors, production facilities providers, extension workers and the Department of Agriculture, Forestry and Plantations of Sikka Regency, Bappeda, etc.

3.5 Method of Analysis

In response to the formulation of problems, this study is using the qualitative approach, namely value chain analysis method. Porter (2001) defines Value Chain Analysis as a tool to understand the value chain that forms a product. Value chain is derived from activities performed, ranging from raw materials from suppliers to final products to consumers, including after-sales service. The goal of value chain analysis is to identify the value chain stages in which value chain actors can increase product value for consumers or reduce costs and streamline work. Cost reduction or increase in added value can create a more competitive business or industry.

There are two business activities in value chain analysis namely primary activities and support activities. Primary activities are all activities directly related to added value from inputs and the transformation to products needed by customers. These activities include: inbound logistics, operations, outbound logistics, services, marketing and sales. Support activities are all activities which support or enable all major activities to function effectively. Support activities include: infrastructure, human resources, science and technology.

IV. POTENTIAL, OBSTACLES, AND OPPORTUNITIES OF COCOA DEVELOPMENT IN SIKKA

4.1. Background of Cocoa Farming in Sikka

In essence, cocoa farming activities include two aspects, namely technical and institutional aspects. Technical aspects include: (1) commodities covering aspects of production, means of production, post-harvest, processing, and marketing; (2) land and water resource use; (3) waste and water management and water; and (4) soil and water conservation (Badan LitbangPertanian, 2004b). While in terms of institutional aspects, it is expected to improve the performance of agribusiness institutions which will further impact on improving the accessibility of farmers to input and output markets, capital and superior technology. The improved performance of both technical and institutional agribusiness aspects is next expected to impact positively on farming yield performance, especially the lives of farmers and rural communities in general in the form of increased employment and income.

The farming pattern in Sikka Regency is relatively similar to other regions in NTT province especially on the island of Flores, namely implementation of dryland farming using the integrated system. Cultivated commodities are food crops, plantations and livestock. The implementation of these commodities is adapted to the social, economic and physical conditions of the regions.

Land area developed for cultivation in Sikka is 101,858 ha or 58.81 % of the total land area available. Of the 27,785 ha (16.04%) used for food crops, 1,749 ha is wetland and 26,036 ha is dry land. Horticultural and annual crops can be developed on land that is available and can be combined with food crops.

Most of the farming system in Sikka is based on plantation crops such as cocoa, cashew, coconut or coffee and cloves. This system is very different from the farming system in Timor and Sumba which is based on food crops such as rice, corn and beans serving as food security. In Sikka, particularly in the cocoa centers, food crops play a very small role and even in many regions farmers do not grow food crops. Sikka farmers rely heavily on income derived from the cocoa crop and they use the proceeds to buy food such as rice or other foodstuffs.

Cocoa (*Theobroma cacao*, L) which means "Meal for the Gods" or in Flores is better known as cacao is one of the plantation crops for the people. This crop bears fruit throughout the year and thus is a source of daily or weekly farmers' income. Cocoa was introduced to Flores Island one year after the independence of Indonesia, and has begun to be known by the people of Sikka since the 1960s. At first cocoa was brought by individual missionaries. At that time cocoa trees were planted around the churches and missionary offices, and then grown on farmer lands. It was only in the early 80s that the government began to intensively

promote cocoa.

In the early 1970s, in practice cocoa production was only centered in the sub-regencies of Kewapante and Bola. As further development this crop is developed in almost all sub-regencies in Sikka Regency at an altitude of 500 - 1000 m above sea level. Currently as many as 17 sub-regencies of the 21 sub-regencies (except the sub-regencies of Alok, West Alok, and Magepanda) produce cocoa, and cocoahas become a major plantation crop. Cocoa crop is important for Sikka Regency as the major commodity revenue contributor for farmers. At least 32,738 farming family lifes depend on the cultivation of the cocoa crop.

4.2. Problems Faced by Farmers

The outbreak of pests and diseases to cocoa trees in Sikka from 2006 to the present caused a significant change in situation to the livelihood of cocoa farmers. Pest explosion caused by plant pests (OPT) to cocoa trees resulted in low productivity and destroyed the income source of many families. In addition to pest attacks the old age factor of cocoa trees - some are more than 30-45 years old - is also a significant problem for cocoa farmers in Sikka. Old age cocoa trees are suspected to make this crop vulnerable to pests and diseases as well as decreased productivity.

This case has been going on since 2006, and in 2008 was considered the peak explosion in farmers' income decline (BPTP NTT). The agricultural research and development (R&D) of NTT province in Maumere claimed that the types of pest/disease that often attack the cocoa crop in the province include: cocoa fruit borer (*Conopomorphacramerella*), ladybugs suction cocoa pods (*Helopeltisspp*), and rotten fruit disease (*Phytophthorapalmivora*). The condition of pest and disease attacks is complex. Pest and disease is the most notorious problem faced by cocoa farmers anywhere including in Sikka. However, technically this problem can be addressed by methods and approaches appropriate to the specific conditions of the region.

The ageingcocoatrees and intercropping planting patterns that paid less attention to environmental sanitation in Sikka have also been assessed by experts as the cause of easy pest attacks. Cocoa trees can only survive on a stable temperature between 300C–320C and at a humidity level of about 1100 ml/year. When air temperature is unstable and rainfall is irregular, all of this would affect air humidity. Insufficient sunlight would affect the physiology of cocoa trees. Heavy rainfall between just 3-6 days may cause high humidity and allows the growth of the *Phytophthorapalmivorafungi* which causes the rotten fruit disease. As a sign of infected cocoa fruit there are dark brown spots that usually start from the tip or the base of the fruit.

Although loss of revenue from cocoa is caused by pests and diseases, the essence of the main problem is old age of trees coupled with serious pest and disease attacks. This problem is widely encountered in all cocoa producing sub-regencies in Sikka.

If pests and diseases are left alone this can result in loss of 80-100% of farmers' income derived from cocoa. Sikka cocoa production until 2003 reached 14,333.2 tonnes with a nominal value of Rp.372,663,200,000. Beginning in 2004, cocoa production continued to decline to 54% or 7,739.93 tonnes or equivalentto a GDP loss of Rp.201.2 billion per year. Such GDP loss has resulted in decreased multiplier effect activitieson the economy of Sikka. Reduction in consumption of goods and services, decreased production, decline in labor uptake and raw materials, decrease in income distribution and ultimately collapse of society.

Currently a cocoa farmer with 1 hectare of land can only harvest 497 kg per year. Assuming that cocoa price is Rp.17,000.-/kg, farmers' income only reaches Rp.8,449,000.- per year or Rp.704,083.- per month, before deducting production costs. Such small income causes difficulty in meeting basic needs, and means that other needs can also not be met.

4.3. Identification of Cocoa Development Internal Factors in Sikka

Identifying internal factors include: (1) availability of family labor; (2) acquisition of business land; (3) acquisition of venture capital; (4) production; (5) marketing; (6) social institutions; and (7) economic institutions. From these identification results are obtained an overview as follows:

A. Labor/Human Resources

Cocoa farmers in Sikkaare as many as 33,278 households (Department of Agriculture: 2011). Cocoa farming can be considered the main source of livelihood of the population in Sikka. Therefore, the amount of time made available and the allocation of household labor of local farmers is far greater for this farming activity. As an illustration, the average proportion of labor in the family is about 60.23% of total manpower required for cocoa farming management.

The average age of farmers is 45 years. Currently cocoa business development in Sikka is faced with the fact that the younger generation is less interested to work in the agricultural sector.

B. Production

Cocoa plantations are spread over 17 sub-regencies of the 21 sub-regencies in Sikka with a total land area of 21,657 ha and a total production of 6,409 tonnes (Department of Agriculture and Plantations of

Table 1. Land Area of Cocoa Trees, Production, Productivity, and Number of Households Involved in Cocoa Cultivation in Sikka (2012)

NO	KECAMATAN	LUAS AREAL (Ha)				Produksi (TON)	Produktivitas (kg/Ha)	Jumlah KK
		TBM	TM	TTM/TR	Jumlah			
1	ALOK	5	7	165	177	2	286	272
2	NITA	822	1.358	298	2.478	730	538	3.812
3	MEGO	462	754	138	1.354	259	344	2.083
4	PAGA	310	504	68	882	173	343	1.357
5	KEWAPANTE	230	487	132	849	323	663	1.306
6	WAIGETE	355	616	118	1.089	248	403	1.675
7	BOLA	475	967	209	1.651	412	426	2.540
8	TALIBURA	457	758	48	1.263	562	741	1.943
9	PALUE	146	250	26	422	230	920	649
10	LELA	402	722	92	1.216	474	657	1.871
11	NELLE	175	705	56	936	350	274	1.440
12	ALOK TIMUR	-	-	-	-	-	-	-
13	ALOK BARAT	11	15	386	412	5	333	594
14	MEGEPANDA	205	339	75	619	91	268	952
15	TANAWAWO	383	614	35	1.032	183	298	1.588
16	HEWOKLOANG	793	1.442	429	2.664	875	607	4.098
17	KENGAE	218	366	99	683	325	888	1.051
18	DORENG	638	909	102	1.649	400	440	2.537
19	MAPITARA	273	542	115	930	312	576	1.431
20	WAIBLAMA	206	330	-	536	230	697	285
21	KOTING	387	302	126	815	225	745	1.254
JUMLAH		6.953	11.987	2.717	21.657	6.409	10.497	29.156

Source: Department of Agriculture, Sikka Regency, 2012

TBM = Immature Crop

TM = Productive Crop

TTM/TR = Non-Productive Crop/Damaged Crop

Sikka Regency, 2011). Cocoa plantation business in Sikka uses traditional agriculture, with an average productivity of 497kg/ha/year well below the national average (900kg/ha/year). Meanwhile, production quality is low, because it is not dealt with to the fullest particularly after the harvest.

Cocoa in Sikka Regency is one of the cocoa types with the best quality. Cocoa potential in Sikka Regency was previously very promising and capable of producing about 7,880 tonnes per year. But currently 90% of cocoa plantations are seriously damaged and can no longer produce substantially so that in 2011 cocoa production in Sikka only reached 6,409 tonnes.

C. Land Tenure

Lands for cocoa cultivation are privately owned by farmers (households), none of which is rented to other parties, with an average land ownership of less than 0.5 ha. Only 7% of farmers have land more than

1 plot, and only 10% of farmers have land size of 1 ha or more. Increase in cocoa farm land with private plantation scale is no longer possible, except through replacement of existing crops with cocoa. In this case there is no government policy to maintain extensive cocoa business, or provide land for developing cocoa business in Sikka.

With the average available land area, it is quite reasonable for local households to make cocoa farming as their main source of livelihood. However, land tenure expansion, especially outside the village either through purchase or hiring or pledging, did not happen in Sikka.

Agricultural and population density has curbed available land for cocoa cultivation. Another issue associated with land tenure is land conflicts caused by the return of migrants from abroad who feel they still have ownership over the land they have previously left behind. Meanwhile, there is no government policy

to maintain an extensive cocoa business, or provide land for cocoa development in Sikka.

D. Capital Tenure

Sikka farmers so far have been proven capable of financing cocoa farming on their own, although the financing amount depends on the ability of each farmer. In other words, local farmers have limited capital tenure, thus limited efforts to implement technology

E. Socio-Cultural Environment

In Sikka communities there is a mutual aid farming tradition called “Sakoseng” and “Ulababag”. Actually this tradition means helping each other to ease the work of their fellow farmers. However, lately this phenomenon has degraded and becomes rare.

Farming is still done traditionally and not accompanied by a valid plan for the whole year. Attachment to land is still there, and the majority of the people still like to farm.

However, cocoa development in Sikka is currently faced with the fact that the majority of the younger generation is less interested to work in the agricultural sector. The average farmer age is 45 years.

There has been a shift in the community of the economic development concept from capitalist economy to democratic economy characterized by the existence of cooperatives, credit unions, savings and loans cooperatives, social gathering (arisan), farmer organizations, and others with a new awareness of the importance of self-help efforts from the bottom.

F. Facilities and Infrastructure

Production facilities and infrastructure with limited capacity is available in Sikka. However, complete production facilities and infrastructure can only be found outside the village, which is in the regency capital (Maumere). Farmer groups which role is expected to help accommodate farmer needs did not function properly. This is because the groups have not been active locally.

Supply of inputs for commercial purposes is controlled by two stores. Most supply of inputs for development programs come from NGOs, the Provincial Government and the Central Government, while the Regency Government is lacking the initiative to develop cocoa. Supply of inputs for farmers is dependent on government and NGO programs to meet the needs of production facilities.

In terms of infrastructure support, conditions of facilities and infrastructure (especially transportation) in Sikka Regency are relatively adequate. However,

it should be underlined that existing roads are not entirely in good condition.

4.4. Identification of Cocoa Development Value Chain in Sikka

There are several value chains in cocoa business development in Sikka. The first value chain is the provision of inputs or production facilities (saprodi) value chain, followed by agricultural production/cultivation value chain, processing value chain, and finally trade value chain. However, because of the limitations of this study, the cocoa value chain discussed ranges from suppliers to marketing at regency level only. The final consumer value chain of cocoa beans and cocoa products as derivatives has not been addressed in this study. In summary, cocoa business and stakeholder value chain in their respective value chains in Sikka can be illustrated in the next page figure 3.

A. Production Facilities/Inputs Factors

There are three sources of inputs factors, namely 1) of commercial nature, 2) subsidies (government, NGOs, church), 3) the farmers themselves. In terms of commercial inputs/production facilities, supply comes only from two stores, namely “Dirgahayu” and “Putra Remaja”, in which the supply of inputs comes mainly from Java. The rest comes from the government or NGOs through various assistance programs, one of which is the Gernas program. However, the sustainability of supply derived from subsidies could not be guaranteed. One mechanism for farmers to get subsidized fertilizers is by obtaining fertilizers at subsidized prices from Dirgahayu Store with a letter of recommendation from the Department of Agriculture and Plantations. In general, farmers feel that fertilizers are still expensive. Fertilizers are generally used for food crops, thus reflecting less awareness of farmers to use fertilizers.

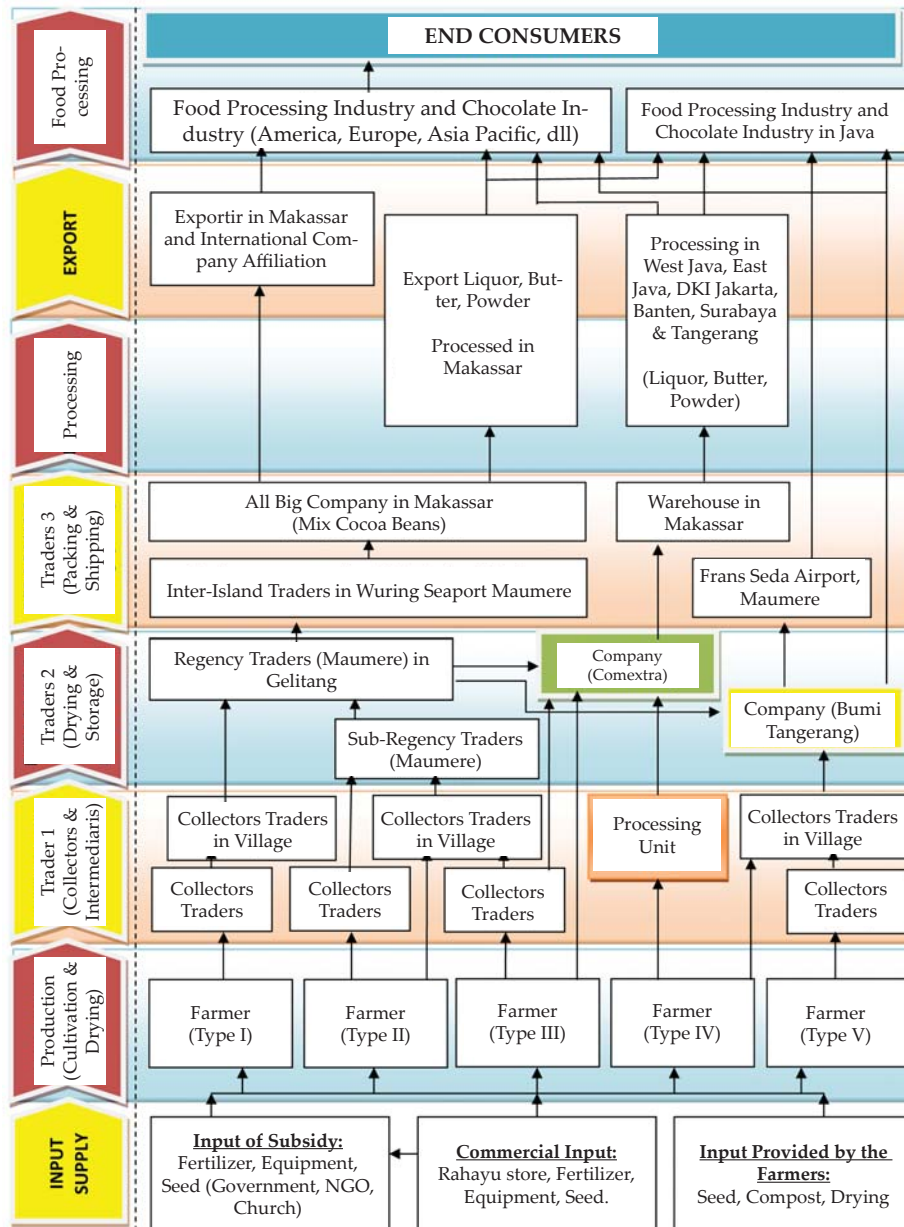
B. Cultivation Value Chain

The central position is on-farm activities where farmers are the main actors. On-farm activities include farm treatments such as pesticide spraying, pruning, fertilizing to cocoa harvesting. Other stakeholders in the cultivation value chain are local governments, companions, and farmer groups. Cocoa production in Sikka has been carried out through generations independently. In addition to individual farmers, farmer groups (Poktan) and Farmer Group Associations (Gapoktan) have been institutionalized in Sikka’s agricultural production processing.

C. Processing Unit (UPH)

UPH is one of the activity packages in the cocoa Gernas program. In the package, any regency that has implemented the Gernas program would get one unit

Figure 3. Cocoa Business Value Chain in Sikka Regency



of UPH per year. While selection of farmer groups to manage UPH is based on farmer group capacity and its strategic location. UPH development is expected to be the forerunner for cocoa cooperatives/associations. Third, UPH is expected to accommodate cocoa production activities. However, this effort would not be easy. An institutional initiative such as the UPH must supposedly get technical assistance.

Despite the availability of UPH, the farmers in the regency are still selling their cocoa beans individually, not through the UPH. There are several reasons why farmers did not sell their cocoa beans to the UPH, including financial and credit system of production facilities between farmers and merchant collectors that force farmers to sell their crops to them. In addition, sometimes there is great distance to the location of the UPH so that farmers prefer to sell to merchant collectors who come to their homes.

D. Distribution and Marketing

Currently there are approximately 30 local traders in Sikka. Of the 30 traders 5 of them belonged to the large category and 5 others to the medium category with all of them located in the regency and a few in the sub-regencys. Meanwhile, the other 20 traders are scattered in the small villages as vendors. Effective marketing is needed to market cocoa beans. Improved marketing is aimed at increasing marketing efficiency pursued by enhancing value to be received by farmers, reducing marketing costs and the creation of a fair selling price for cocoa farmers.

Here are the three main channels of cocoa marketing in Majene regency:

- 1) Farmers » village merchant collectors » sub-regency merchant collectors » wholesalers » factories
- 2) Farmers » sub-regency merchant collectors »

wholesalers/ companies »» factories

- 3) Farmers »» UPH »» sub-regency merchant collectors »» factories

4.5. Regulations Associated with Cocoa Business Activity Value Chain in Sikka

Associated with business activities in Sikka Regency, there are several regulations that must be adhered to.

A. To Start a Business/Invest Capital:

As set forth in Local Regulation No. 6 year 2011 on the work structure of KPPT and Investment, to start a trading business as well as a processing industry, an entrepreneur must own a business license. Several permits that must be obtained by businesses in Sikka in the context of investment are as follows:

1. **Supporting License consisting of:**
Trading Permit for commodities, registered and Company Registration Number (Tanda Daftar Perusahaan, TDP) and Industrial Permit;
2. **Implementation License consisting of:**
Location Permit, Building Permit, SITU and Nuisance Permit (HO).

B. For Trading Activities (Exports/Imports):

Furthermore, in running company operations (trade), there are national regulations that must be adhered to in the regions, namely Law No.16 year 1992 on the Quarantine of Animals, Fish and Plants, Government Regulation No. 16 year 2002 on the Quarantine of Plants, and Government Regulation No.82 year 2000 on the Quarantine of Animals. Based on the above regulations, service users are obliged to report their import and export plans to the quarantine officer. In essence, these regulations require several documents, such as:

1. **Certificate of Domestic Entry:**
Costs to get certificate of domestic entry depend on the size of the cargo, while processing time is 3 days before delivery.
2. **Certificate of Domestic Exit:**
Costs to get certificate of domestic exit depend on the size of the cargo, while processing time is 3 days before delivery.
3. **Export Certificate:**
Costs to get export certificate depend on the size of the cargo, while processing time is 3 working days.

A quarantine officer will check the completeness of documents and the contents of the cargo at the time of entry or exit of goods. Violation of the above provisions shall be liable to confiscation and destruction of traded goods. In addition, based on Law No.16 year 1992, the imposition of sanctions can be in the form of fines of up to 50 million rupiah and imprisonment for 3 years.

C. For Goods Distribution Activity:

Associated with the distribution of goods, there are several regulations that must be adhered to, namely Law No.16 of 1992 on the Quarantine of Fish and Plants, Law No.31 of 2004 on Fisheries, and Ministerial Regulation No.26 of 2008 on Format Storage Authority and Health Inspection Certificate in the Field of Quality and Security of Research Results. The above regulations stipulate the obligations of businesses to have several supporting documents for goods distribution activity, namely:

1. **Export Documents:**
Costs to get export documents depend on the volume of goods distributed, while processing time is three days before delivery.
2. **Certificate of Domestic Exit (inter-island):**
Costs to get certificate of domestic exit depend on the volume of goods to be delivered, while processing time is 2 – 3 days.
3. **Certificate of Domestic Entry:**
Costs to get certificate of domestic entry depend on the volume of goods, while processing time depends on inspection.

The documents mentioned above can be obtained by the service user by submitting and filling out an application form which contains: identity, sender's address, type of goods sent, delivery purpose. Usually the sender must report 2 days before delivery. In case the PAP and Expedition have goods that are unfit for delivery, the goods will be destroyed. Usually in other regions, there is a special regulation in accordance with the law, while in Sikka it is tailored to the needs of the customers.

Especially for shipments of agricultural commodities there should be an exit permit (clearance certificate) from the Sikka regency government. Exit permit can be obtained free of charge, and processing time is 1 day. For forest products there should be a Certificate of Forest Products (Surat Keterangan Hasil Hutan, SKHH). In this case entrepreneurs should report the types of commodity to be delivered consisting of: name of owner, destination, type and quantity of goods. In addition to the above documents, businesses should also have 3 licenses namely: SITU, Trading License (SIUP), Nuisance Permit (HO) and perform a MOU with the Sikka Regency Government. Inter-island traders and expedition companies that did not comply with the above regulations will be banned from doing business in Sikka, while investors will have their business licenses revoked.

4.6. Identification of Cocoa Development External Factors in Sikka

Identifying external factors include: (1) population; (2) condition of facilities and infrastructure; (3) economic conditions; (4) access to capital sources; (5) bargaining position of farmers; (6) introduction

of technology; (7) coaching by officers; (8) partner companies; (9) regional autonomy; and (10) economic liberalization. Identification results show that the opportunities are greater than the threats. This indicates that the local region has a relatively large potential for opportunities in cocoa agribusiness development compared to the threats.

A Population and Human Resources (HR)

One factor closely related to population is human resources. Associated with this, human resources (farmers) in Sikka Regency may be said to have a lot of experience in cocoa farming management. Facts on the ground indicate that experienced human resources in cocoa farming are numerous in Sikka. However, young people tend to be less interested in farm business management. They are relatively more interested in working in the non-agricultural sector. Despite having considerable experience in cocoa cultivation, generally traditional and farming practices have not been followed properly (Good Agriculture Practices – GAP). Technical knowledge of farmers is still lacking. This is evident from the lack of habit to properly take care of farms. Farm sanitation is very poor with intercropping and overlapping of various plants that are competing to acquire natural nutrients, water, air and sunlight. Fertilization has not been carried out correctly (the right dose, the right type of fertilizer, the right time and the right way of application). Neglect of soil and water conservation makes cocoa crop deficient in nutrients and water, especially during the dry season.

Farmers consider cutting down trees as taboo because of the strong emotional bond with the trees that have given life to them, besides worries that cutting down trees will cause loss of revenue so long new trees are not yet productive. Lack of incentives/subsidies from the local government to farmers who have cut down their trees is another factor, so that they are worried about loss of income source after their trees have been cut down.

Actually Sikka farmers have a desire to learn and are easy to teach and this is evident from their ability to produce quality products according to market needs. Currently farmers do not conduct post-harvest processing (fermentation and drying) as well as proper farm maintenance due to lack of motivation and no incentive from buyers - high price for good quality cocoa beans - and lack of capital for post-harvest activities. Due to the absence of incentives, many farmers did not continue or implement the knowledge they have acquired from trainings, in addition to coaching limitations from the Department of Agriculture and Plantations. At least until the year 2012 there was no sustainable cocoa development program. Existing programs are only in response to the programs from the Provincial Government, Central Government, or NGOs.

B. Access to Capital

It is difficult to get seeds according to Sikka conditions, while production facilities and infrastructure as well as business capital are lacking. Lack of funding is one issue to start and develop businesses through the cocoa farming groups.

It is difficult to get a loan from the bank and the Department of Cooperatives and SMEs due to convoluted procedures. Farmers do not have good managerial skills in finance and organization so that it is difficult to develop organization and business capital. Information about banking programs is not conveyed properly to farmers. There is no bank that directly provides capital. Capital is still in the form of KUR, with convoluted terms. Financial institutions still have a lot of give confidence to farmers to access credit due to lack of collateral and guarantors. Moreover socialization of programs or financial institution services products to farmers is less well socialized.

Poor communication and socialization is one of the causes of farmers' difficulty to access capital. Banks and cooperatives in Sikka have been providing credit schemes to farmers, but these have not been properly socialized. Another problem is the distortion by grant programs organized by NGOs, the government and other institutions. As a result, existing facilities are not widely used which lead to a negative impact on farmers to always expect aid through programs.

Distribution of credit schemes in collaboration with companions (PNPM) is already running. In addition there is the use of the local budget for Credit Program Channeling in collaboration with Banks at low interest rates. This has been implemented on coffee at Bajawa with considerable success and no bad debts.

Meanwhile, source of capital from other financial institutions such as traders and moneylenders exists in Sikka. At least banks such as BRI Unit Desa can be found at the regency level, while traders and moneylenders at the village level. However, lack of information and knowledge of the farmers and difficulty to meet requirements for working capital loans from banks has caused limited access to these financial institutions. Meanwhile, other sources of capital such as from traders and moneylenders tend to be more binding and cause hardships to farmers.

C. Marketing/Price

Cocoa is one of Indonesia's export commodities that are directly in contact with the competitive nature of international trade. In terms of cocoa commodity trade, Indonesia is only a price taker and cannot determine the world price. Cocoa trade price is determined in the New York and London Stock Exchanges.

In general, Sikka's cocoa has specific advantages, namely high fat content up to 54% and does not melt when stored at room temperature. However, limitations in technology and capacity of farmers, especially in post-harvest processing have resulted in less competitive cocoa crop in the liberalized (globalized) economy.

Price changes constantly to keep a breast of the world price based on quality and volume. In terms of pricing, the formula on price reduction of the prevailing price in New York is applicable so that the local price in each region is subject to a different formula. At the local level, the price quoted to farmers is determined by wholesalers who are a few and farmers do not always get up to date price information. Actually there is cocoa price information available which can be accessed by all parties, both at buyer and government levels. But the erratic market price for plantation commodities coupled with the weak farmers' access to capital has resulted in a tendency of low pricing by financiers. Farmers do not have a strong bargaining position. This is partly due to the lack of a good strong organization to control prices or to look for better marketing. Meanwhile, the government has so far not given enough moral and financial support to this business. The government could not stabilize the cocoa price and could not intervene in the market. In addition to no governing regulations, there are also no concrete programs to address the price issue. People like to borrow by mortgaging goods and merchants commit bonded crops before harvest.

Cocoa farming is the main source of the household economy in Sikka. Therefore, price volatility will have a direct impact, especially on the income of farmers. Most serious is if the price declined drastically, which would impact on farmers' income and indirectly also affected the optimization of cocoa farming management.

In selling cocoa, farmers in Sikka have direct access to traders (merchant collectors). Most of them can sell cocoa freely (no ties) to the traders. Some of these farmers sell to traders already known to them, and some others because of bonded loans. Regardless of this, many local farmers have no choice in terms of marketing, except by selling to the merchant collectors concerned.

The majority of farmers in the regency are relatively free to choose traders (merchant collectors) that they think offer the highest price. But the true reason is their weak bargaining position so that cocoa price is predominantly determined by the traders.

Not many companies have been included in the study (in Sikka only Comextra – in the past, PT Mars) and farmers do not have direct access to large corporations in Makassar. The government should provide a better business environment in order to encourage cocoa

investors to invest in Sikka and break the chain of long distribution lines detrimental to farmers. Cost and benefit issues is one of the reasons why PT. Mars closed down its buying station in Flores. To that end, one of the requirements to enhance appeal so that buyers would come to Maumere is sufficient quantity and good quality. Program set-up, specifically for processing activities should involve the private sector/entrepreneurs from the beginning, so that support from other parties, particularly from the government should be adjusted to produce products according to the needs of the market/private sector, both in quality and quantity. Buyers have not been able to set high prices because products sold are not in accordance with the required quality.

D. Role of Non-Governmental Organizations (NGOs)

There are several Non-Governmental Organizations (NGOs) in Sikka with experience in coaching/empowerment of cocoa farmers, namely Swisscontact, World Vision International (WVI), Caritas, YPMF, and PLAN. The majority of cocoa development programs have been initiated by these NGOs. However, regional implementation is limited and program plans are also limited. Program development in the economic field has not been oriented to attempts to break free from the poverty line.

However these NGOs have been instrumental in increasing cocoa productivity through on farm and off farm activities. The idea about Field School is an initiative from these NGOs in the framework of capacity building of farmers. The activities they carry out include improving the quality of life of farmers, education and health, cocoa commodity marketing efforts and the formation of modern farmers. Problems since the early stages included less SKPD involvement in program implementation. However, with the establishment of a Cocoa Forum coordinated by the Bappeda, good coordination in cocoa development began to take shape among the stakeholders in Sikka.

One of the NGOs with experience in community development, especially in Sikka, is Swisscontact. This institution has direct access (affiliated) to cocoa exporters, such as PT. Mars and Comextra. Currently NGOs in Sikka have participated in farmer empowerment activities. In addition to the role of supporting technical guidance in the field, this institution also plays a role in promoting the local region to exporters. Partially, this institution has begun to engage in cooperation activities including development/empowerment of farmers in the study region. However, the existing cooperation should be formalized in the form of a memorandum of understanding so that the responsibility of each party is transparent, at least among implementers (Sikka Regency Government), farmers (groups), and NGOs.

E. Export Tax Implementation Policy

This policy can become a development opportunity for the domestic processing industry to move closer to cocoa production centers. This policy encourages the reduction of cocoa exports in raw form and encourages downstream activities in the country so that cocoa processing industry can thrive. The cocoa processing industry has been establishing Buyer Stations at production centers thus benefiting farmers. Export tax implementation policy breaks the chain of commerce so that farmers get a better price. Prior to the application of Buyer Stations, farmers only received 80% of the terminal price, and after the establishment of Buyer Stations they receive more than 90% of the terminal price. But unfortunately the increase in the price received by farmers is not accompanied by an increase in productivity. On the other hand, increased capacity (demand) of the cocoa processing industry in the country is also not accompanied by an increase in domestic production. Given the conditions as stated above Indonesia will not be able to meet its future needs for exports of cocoa beans and instead will become a cocoa beans importer.

F. Role of Local Government

One of the aspects of regional autonomy policy is local government authority (regency) to manage the potential resources of the local region. This condition is one of the opportunities to improve cocoa farming as a superior commodity in the region. Nevertheless, there are needs for commitments, regulations and policies that support the attempts to that direction so that implementation activities can be carried out optimally.

The role of Sikka local government which has been most obvious is through extension workers (PPLs) as a medium for farmers to get information and also guidance in carrying out their farming activities. However, so far the existing extension workers have rarely provided guidance, so that their guidance function is arguably less optimal.

The farmer mentoring program conducted by Distanbun and BKP2 has been carried out with limited availability of budget as well as number and capacity of PPLs. Mentoring carried out by PPLs has been adapted to the limitations of the number and capacity of PPLs, their polyvalent/general nature and budget availability.

On the other hand the lack of coordination between Distanbun and BKP2 is partly due to sectoral ego persistence. For certain matters, each party has asserted its authority, while for other affairs a party considers the other party as having the authority.

In order to increase productivity, the field school

method has started to be implemented in Sikka Regency. Based on observations, the field school method has been considered the best when viewed from the process of knowledge transfer and human resources development of farmers. There are currently 6 Master Trainers and 80 Key Farmers, namely experts who have skills in cocoa cultivation. With this approach there is a need for ongoing assistance to farmers.

However, in terms of regulations there is currently no adequate regulatory support associated with the Aspects of Cocoa Cultivation Value Chain in Sikka. The lack of regulations has made cocoa development programs not sustainable. Another regulation is the Regulation of the Department Head of Food Crops Agriculture and Plantation and Husbandry of Sikka Regency No.520 01/01/SEKR/2009 on the Strategic Plan of the Department of Food Crops Agriculture and Plantation and Husbandry of Sikka Regency for 2009-2013. Despite the existence of regulations such as above unfortunately follow-up is lacking although SKPDs have been restructures to deal with cocoa business development.

Although not strict enough, there is Regent Decree No.245/HK/2012 on the Establishment of the Regional Economic Cooperation Council (Dewan Kerjasama Ekonomi Daerah, DKED) which formed the Sikka Cocoa Forum. Sikka Cocoa Forum is a forum consisting of cocoa stakeholders from the local government (each related SKPD), farmers/association of farmer groups, companies, traders, cooperatives, banks, etc.).

Lack of coordination of development programs and program implementation among stakeholders are the roots of the problem of less optimal cocoa development in Sikka. Improvement and optimization of coordination among all parties is necessary to improving cocoa productivity in Sikka. Actually in Sikka there is an institution that serves to coordinate all stakeholders from the government, private sector, farmers, NGOs and others for economic development, namely the DKED. DKED was established by Decree No.245/HK/2012 on the Establishment of Regional Economic Cooperation Council (DKED) in Sikka Regency. DKED then established the Sikka Cocoa Forum serving to find solutions to cocoa business problems. Given its strategic role, DKED should be revitalized by strengthening its legal basis.

As an illustration, the role of DKED is as follows:

- Provide input, suggestions, proposals and address problems in the regional economy and is instrumental in formulating policies on development and empowerment of the community in the economic field;
- Coordinate, organize, facilitate studies of local economic potential and opportunities for follow-up by the local government in the context of

economic empowerment of the people;

- Being mediator among state/local enterprises, the private sector and stakeholders in the context of regional economic development; and
- Perform monitoring, evaluation and control of general program implementation of the regional economy.

Revitalizing DKED can be done through issuing Local Regulations/Perbub namely to: Clarify, Reinforce, and Extend the Scope/Function, Structure, and Authority of DKED.

Unfortunately the Government is currently less committed towards Sikka's cocoa development. Plantations are not under a separate Department so that allocation of funding is very limited. In fact, if cocoa is considered a sub-sector that has significant influence on the economy it should have special financing sources.

The existing regulation on cocoa is Local Regulation No. 4 of 2008 (SOTK Dinas PTP3) on the Formation of Organization and Work Procedures of Departments in Sikka Regency, in which the plantation sub-sector comes under the section on plantations at PTP3 Department. There are 3 sections: Plantation Production; Plantation Crop Protection; Plantation Technology Application.

Ego sectoral issues at the program implementation level have become an obstacle to Sikka's cocoa development. This is evident from the lack of coordination among SKPDs so that each SKPD is carrying out programs/activities which are not its responsibility. Each SKPD has a different perception of the task and function -Tupoksi (Disbuntan and BKP2 on PPLs), so that implementation is not optimal, and results are less effective. There needs to be an effort in the future to strengthen the DKED as a coordination media for cocoa development in Sikka and to formulate joint programs.

Program design must also exist to synergize programs among cocoa stakeholders. Many cocoa development programs are implemented by stakeholders, namely the Government, NGOs, and others but on an individual basis (due to strong sectoral ego) because each stakeholder feels more superior. Existing programs are temporary, not long-term and not sustainable thus having less impact. Supposedly, assistance is carried out from upstream to downstream, thus providing higher motivation to farmers. Implementation of programs including the GERNAS program does not fully utilize the existing PPLs.

Cocoa is an export commodity that depends on the fluctuations in the world price and this price cannot be intervened by the local government. In this regard, the Department of Industry and Trade constantly

strive to cross- check the local price with the world price. However, policy implementation must yet be coordinated with other relevant policies.

G. Institutional Economics

There are no Production Cooperatives in Sikka but only Savings and Credit Cooperatives. But in the community there are still negative perceptions about cooperatives. Cooperatives are less trusted because their marketing paths are not clear and transparent. In addition to the absence of production cooperatives, farmers are less organized thus unable to intervene in price levels. There is less awareness among farmers/farmer groups to perform marketing/sales. Gapoktan has been formed for the benefit of certain government agency projects (forestry, agriculture, plantations, etc.) only, for distribution of funds at a certain moment and not for sustainable economic development. In this case the government is expected to play an important role, but unfortunately there are no regulations or government programs related to marketing and institutional economics of the farmers. The absence of institutions to strengthen the role of farmers such as cooperatives or associations has resulted in the farmers to not have market strength or protection thus only acting as a price taker. Farmers' marketing weaknesses have led to the lack of capacity to fulfill contracts directly with manufacturers.

Many small cooperatives did not run well because they were only established due to new programs and thus resulted in less guaranteed survival. On the other hand, the existence of clear institutional farmers in the form of cooperatives is to meet the challenges of the market that prefer to deal with groups or cooperatives and also as one of the requirements to access financial institutions, in particular Banks for working capital purposes and joint marketing activities. But the decision to institutionalize small groups into cooperatives needs to be reconsidered, as to whether small cooperatives can truly help improve the local economy. In this case there is a discourse to strengthen the capital for Village Unit Cooperatives (Koperasi Unit Desa, KUD). But in practice, business management assistance should be provided to farmer groups/cooperatives in order to increase confidence in them.

Farmers are generally incorporated into farmer groups, but in reality, not all farmer groups are active thus resulting in low motivation of farmers to join farmer groups. Often programs are introduced to the villages followed by the formation of new farmer groups without proper coordination, so that it is quite confusing for the farmers because of the many farmer organizations with the same goals. Therefore, companions are advised to not form new farmer group organizations but strengthen existing farmer group organizations as well as the Gapoktan.

4.7. Development Strategy Analysis

Cocoa agribusiness problems in Sikka Regency can be grouped into four aspects, namely: (1) production; (2) post-harvest; (2) facilities and infrastructure; and (4) institutional. The problems and future action plan related to cocoa cultivation value chain in Sikka are briefly summarized in the matrix below

Broadly speaking, the main cocoa agribusiness problems in Sikka Regency are: (1) production: cocoa production quantity and quality has decreased by about 30-40% (from 900-1200 kg/ha to 450 kg/ha); (2) post-harvest: low quality cocoa (water content is approximately 30-35%) so that cocoa price is also low; (3) facilities and infrastructure: disrupted transportation of production facilities or substandard results; and (4) institutional: farmer groups do not function optimally, suppliers of complete production

facilities are located outside the village, and limited capital provider institutions.

The innovations needed as an alternative for cocoa agribusiness development in Sikka Regency are related to several aspects, namely: (1) Production: innovation requirements including the Field School, replanting techniques, provision of inputs, fertilizer analysis recommendations, and improvement of the drainage system; (2) Post-harvest: innovations are necessary for this activity such as improved post-harvest technology for drying and sorting as well as processing; (3) Facilities and Infrastructure: road construction program, village axis roads, and bridges are the main prerequisites to support acceleration of innovations; and (4) Institutional: this aspect requires innovations associated with the sustainable guidance of groups, partnerships, and strengthening farmer marketing institutions.

Table 2. Matrix of Problems and Action Plan of Cocoa Development Value Chain in Sikka Regency

FACTS – OBJECTIVE CONDITIONS	SOURCE OF PROBLEM	ROOTS OF THE PROBLEM	ACTION PLAN	RESPONSIBLE PARTY
PRODUCTION FACILITIES:				
<ul style="list-style-type: none"> There are only two commercial stores providing fertilizers and inputs. Limitations of fertilizers for farmers Limitations of organic pesticides for farmers. Limitations of inputs/ tools such as sprayers (pesticides spraying tool), scissors for farmers. Scarcity/no cocoa seeds suitable to the climate in Sikka. 	<ul style="list-style-type: none"> Supply of inputs comes mostly from Java. Fertilizers are perceived still expensive by farmers. Suitable fertilizers are not yet available; Fertilizers are generally used for food crops. Excellent inputs are not available nearby. Farmers' access to capital/commercial loans for working capital is still lacking. 	<ul style="list-style-type: none"> In the provision of means of production such as fertilizers, seeds, and others, farmers are still relying on subsidies from the government, NGOs and church programs. Low financial capacity of farmers to buy fertilizers. Farmers can get fertilizers at subsidized price from Dirgahayu Store with a letter of recommendation from Distanbun but against a difficult procedure. Lack of coordination between government agencies and stakeholders in the provision of means of production. 	<ul style="list-style-type: none"> Provision of other sources in the supply of inputs so that the price is more competitive. The need for cooperation between provincial/city governments and Litbang and Puslit Cocoa (coffee and cocoa research center) for the development of local seeds. The need for cooperation with financial institutions in terms of capital, for instance collective loans through farmer groups. Creating and using organic fertilizers. Coordination among stakeholders both in the government and outside the government in the provision of means of production through DKED. 	<ul style="list-style-type: none"> Provincial government Regency government (Distanbun, BKP2). UPH Banking DKED

FACTS – OBJECTIVE CONDITIONS	SOURCE OF PROBLEM	ROOTS OF THE PROBLEM	ACTION PLAN	RESPONSIBLE PARTY
CULTIVATION/PLANTATION BUSINESS:				
Production: <ul style="list-style-type: none"> Low Cocoa Productivity: the quantity and quality of cocoa production has decreased by about 30 - 40% from 1,500 - 1,700 kg/ha to 300 - 400 kg/ha; Cocoa production in Sikka until 2003 = 14,333.2 tonnes with a nominal value Rp. 372.663.200.000 Starting in 2004, cocoa production continued to decline to 54% or 7,739.93 tonnes, equivalent to a GDP loss of Rp. 201.2 billion per year. Cocoa quality is low (about 30-35 % moisture content) 	<ul style="list-style-type: none"> Most cocoa trees are old (>20 years). Pests and diseases attacking cocoa fruit: HPT (rotten fruit, PBK, and cancerous stem). Not many farmers take good care of their farms (Good Agricultural Practicess-GAP). Lack of awareness of farmers to manage and take care of their farms with optimal fertilization. Replanting is scarce and currently performed by way of side-grafting and shoots-grafting techniques. The success rate of side-grafting and shoots-grafting techniques has been recognized as more successful than seeding. Reluctance of farmers to cut down and replant cocoa trees. 	<ul style="list-style-type: none"> HPT control techniques, sanitation, and waste management have not been fully understood and implemented by farmers. Farmers did not know the correct replacement (rehabilitation) system. Non-utilization of proper fertilization techniques. Lack of knowledge of farmers to replant and take care of farms. Lack of incentives/subsidies from the local government for farmers who rehabilitate cocoa trees, so that they are worried about losing their source of income due to immature trees. Difficulty of getting seeds in accordance with Sikka conditions. Lack of production infrastructure and working capital. Lack of coordination among the authorities. 	<ul style="list-style-type: none"> Conduct intensive coaching to farmers to implement GAP. The need to increase farmers' knowledge how to use fertilizers. Replanting by farmers through side-grafting/shoot-grafting. Institutional strengthening & capacity building of extension workers in a sustainable manner. Optimizing coordination among stakeholders by DKED. 	<ul style="list-style-type: none"> Local government (Distanbun) Extension workers (BKP2) DKED Farmers/ farmer groups. NGOs
Institutional: <ul style="list-style-type: none"> Modern farmer groups are still scarce. There is already a Field School (FFS) with teachers who are local farmers selected by the local government as well as Buyers, but their role have not been optimized. 	<ul style="list-style-type: none"> Farmers are generally cooperative members, but involved in savings and loan activities only. There are no business service and production cooperatives, which can be used as agencies for marketing cocoa. 	<ul style="list-style-type: none"> Farmer groups are not functioning optimally. Limited capital provider agencies. Lack of coordination and cooperation among parties (government, farmer groups, private sector, NGOs). 	<ul style="list-style-type: none"> Establishment of modern farmer groups, as an effort to empower farmers to be more focused and ongoing mentoring by the local government. Strengthening of UPH as a forum of farmers to conduct joint marketing. Strengthening of farmer groups through facilities and capital so that they can jointly buy wet cocoa to be dried and fermented in a better and more efficient manner. Optimization of the role and function of the DKED in coordinating competent stakeholders. 	<ul style="list-style-type: none"> Local government (DKED) NGOs Farmer groups UPH

FACTS – OBJECTIVE CONDITIONS	SOURCE OF PROBLEM	ROOTS OF THE PROBLEM	ACTION PLAN	RESPONSIBLE PARTY
CULTIVATION/PLANTATION BUSINESS:				
Human Resources: <ul style="list-style-type: none"> • Farmers' knowledge and skills are limited. • Limited capacity (ability) and number of extension workers(PPLs) • Capacity building of farmers is mostly done through NGO programs that exist in Sikka with limited coverage and sustainability level in accordance with the duration of the program. 	<ul style="list-style-type: none"> • Less awareness of farmers to use fertilizers. • Cultivation of cocoa is carried out in a traditional manner and farmers' knowledge is low in terms of cultivation, sanitation, fermentation, marketing, and quality of cocoa beans that the market demands. • Lack of awareness of farmers to take good care of their farms. • Farmers' dependence to get help from the government / local government. • Group culture to jointly grow "sakoseng" begins to decrease. • Farmers are reluctant to undertake joint marketing thus farmers' bargaining power is low. • Farmers are reluctant to come to training and prefer to come to meetings just to get attendance money. 	<ul style="list-style-type: none"> • Group organizing and benefits must yet be understood. • Imperfect farmer organizations. • Cooperatives are not functioning optimally. • Marketing agencies are yet to be organized. • Farmer mentoring programs by Distanbun and BKP2 are carried out subject to budget constraints and availability of the number and capacity of existing PPLs. • Existing PPLs are of polyvalent / general nature and subject to budget constraints. • Distanbun's institutional design causes less flexibility for cocoa development especially in terms of program preparation and budget allocation. • Lack of coordination between SKPDs in implementing and optimizing existing resources. 	<ul style="list-style-type: none"> • Improving farmers' knowledge of cocoa bean standards required by manufacturers and the market price of cocoa. • Increasing motivation of cocoa farmers to implement GAP. • Motivation to increase plantation land area for business. • The need for capital support of farmers and to encourage farmers to outright buy wet cocoa for joint production. • Optimizing role of master training and key farmers to be enabled in conducting training to other farmers in one group. • Institutional strengthening and capacity building of cocoa extension workers in a sustainable manner. • The strategy of extension workers can be changed through regularly visiting farmers, in an effort to motivate them and as a means of more effective transfer of technology. • Improvement and optimization of inter-agency coordination in the empowerment of farmers and farmer groups (Distanbun, BKP2, DKED). 	<ul style="list-style-type: none"> • Local government (DKED) • Extension workers/BKP2 • UPH • Church/ Community Leaders • Farmers • NGOs • Financial institutions and banks.
POST-HARVEST MANAGEMENT:				
<ul style="list-style-type: none"> • Post-harvest processing, such as drying is done traditionally in front of the house/ on asphalt with no regard to sanitary factors. Ideally a drying floor or rack is required. • Most farmers only dry for 1 day and then sell directly to village traders. 	<ul style="list-style-type: none"> • The drying machine from the government is not used by UPH, because it takes a longer time, the large capacity engine is not effective because it has to accommodate cocoa from a lot of farmers with different quality and thus incur higher production costs. 	<ul style="list-style-type: none"> • Drying technology is still simple. • Farmers need cash (cash money) immediately to make ends meet. • Not performing fermentation because it takes time and there is no price incentive • Group organizing and benefits must yet be understood. 	<ul style="list-style-type: none"> • Cocoa quality training is appropriate to market interest and supporting tools. • The local government is collaborating with NGOs, large buyers or financial institutions for the provision of dryers so that each farmer group owns one thus the utilization and use of dryers will be more extensive and better. 	<ul style="list-style-type: none"> • Local government • NGOs • Financial institutions • Buyers • DKED

FACTS – OBJECTIVE CONDITIONS	SOURCE OF PROBLEM	ROOTS OF THE PROBLEM	ACTION PLAN	RESPONSIBLE PARTY
POST-HARVEST MANAGEMENT:				
<ul style="list-style-type: none"> Only a small number of farmers uses simple technology for drying, called “tedengkoko” 	<ul style="list-style-type: none"> The constraints of making tedengkoko, is the expensive UV plastic used for cover. Large buyers such as PT Mars & Comextra give special fluid used during drying to provide a stronger scent of the cocoa. 	<ul style="list-style-type: none"> Lack of guidance and mentoring from the local government. Development of sustainable groups: <ol style="list-style-type: none"> Partnership Strengthening of institutional marketing for farmers 		
MARKETING AND SELLING PRICE:				
<ul style="list-style-type: none"> Price of cocoa is fluctuating following the New York commodity exchange price: Price at farm level is Rp 13 thousand for half wet cocoa (1 day drying); Rp 17-18 thousand for tester 7 (3-4 days drying), while selling price at buyer level is Rp 21 thousand. Farmers prefer to sell directly to village traders, despite the low price due to driven by need for cash. Knowledge level of farmers about cocoa bean quality in accordance with market standards/needs is still low. There is still a system of bonded labor from merchant collectors. Inadequate infrastructure in most areas of cocoa production centers. 	<ul style="list-style-type: none"> Very low bargaining power of farmers in determining cocoa selling price. There is common practice among traders to manipulate cocoa price Farmers' access to price information is very limited. Despite the possibility of short texting (sms), not all farmers have made use of this facility to ask about current international and local prices. Volume of cocoa beans produced by individual farmers is insignificant, thus inhibiting direct access to wholesalers. Quality of cocoa beans produced (post-harvest) is low thus the selling price is also low. Traders come every morning and afternoon, thus many farmers are interested in selling on the spot. UPH has not been optimized in the marketing chain. Fermentation and drying should be done collectively with traders/ farmer groups; UPH's role should be further enhanced to outright buy cocoa beans in wet condition. 	<ul style="list-style-type: none"> Group organizing and benefits must yet be understood Lack of cooperatives that serve to do marketing for cooperative members. Lack of incentives for farmers to manage cocoa beans better. Lack of mechanisms to ensure the economic security of farmers' subsistence. Lack of support/ government budget constraints of road construction and improvement. 	<ul style="list-style-type: none"> Enhancing the role of the local government in facilitating and encouraging farmers to undertake joint marketing efforts to increase their bargaining power. Enhancing the role of the local government in encouraging and guiding farmers to improve cocoa quality with GAP and better post-harvest processing, and to sell perfectly dried quality cocoa beans in accordance with international market standards in order to get higher prices. Conduct joint marketing both through farmer groups and cooperatives. Strengthening of UPH to accommodate farmer yield. Enhancing the role of the local government to develop alternative strategies through existing regulations such as: <ol style="list-style-type: none"> Warehouse receipt system: to accommodate farmer yield as value hedging measure if the price goes down (adopting practices in Ghana and the Ivory Coast). Develop joint marketing systems as maintained by state enterprises Implementing forward auction of cocoa. 	<ul style="list-style-type: none"> Local government DKED Farmers Local traders Wholesalers Banking financial institutions Cooperatives Farmers NGOs

FACTS – OBJECTIVE CONDITIONS	SOURCE OF PROBLEM	ROOTS OF THE PROBLEM	ACTION PLAN	RESPONSIBLE PARTY
MARKETING AND SELLING PRICE:				
	<ul style="list-style-type: none"> Broad distribution of cocoa crop areaso that pursuing joint marketing is technically difficult, and narrow land ownership causing insignificant production. 		4. Determination of the minimum selling price of cocoa, strengthening the role of the local government by way of establishing agencies like Bulog or a policy that requires the private sector to buy cocoa at the minimum price, etc <ul style="list-style-type: none"> Capacity building of farmers in the use of communications media and access to information related to cocoa development. Interventions from consumption industry stakeholders outside Sikka. Increased efficiency at trader's level. Development of road infrastructure linking production centers to the market. 	

4.8. Stakeholders and their Role in the Cocoa Value Chain in Sikka

Cocoa agribusiness development in Sikka Regency involves the active participation of several parties (stakeholders) such as farmer groups as the center or focus of activities: Farmers as the focus of the core program, as well as the local government, banks, and other institutions as supporting elements. The mechanism is illustrated in Figure 4 beside:

Each stakeholder member has its respective role. In carrying out its role, there are stakeholders that have contributed significantly and thus influencing the cocoa business development in Sikka. But on the other hand there are those that did not act as expected.

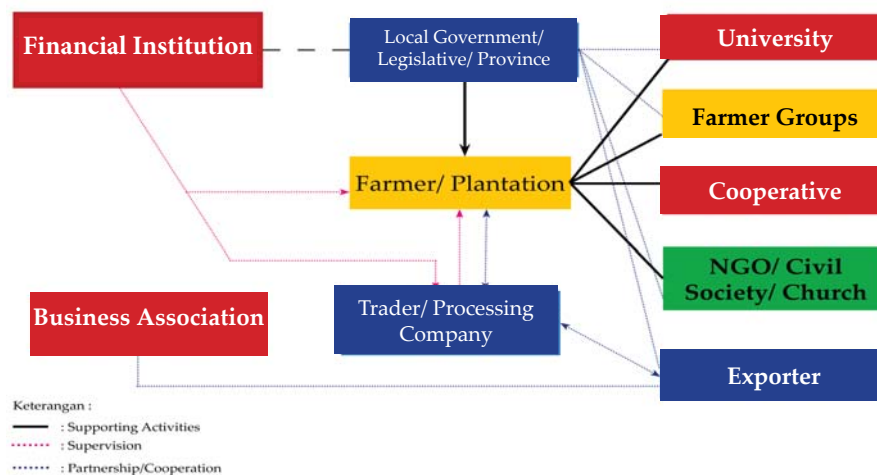
A. Farmers/Farmer Groups

In essence a farmer group is an organization that serves as a medium for discussion/deliberation by farmers. In addition, these organizations also have a role in accelerating agricultural development program activities. However there are many cases that farmer groups have only been formed in relation to the implementation of specific programs. As a result, the existence of such farmer groups often ended with the completion of the relevant program activities. As a broader result, program benefits are only felt at the time of implementation without any sustainability.

In connection with this, the existence of farmer groups should be guided by the principle of participation. In other words, farmers groups are formed by the farmers themselves, while outsiders only act as a facilitator. What should be underlined is the need of debriefing farmer groups that have been facilitated by the facilitator. Debriefing materials that need to be prepared are related to empowerment such as functions, tasks, planning, supervision, and so forth, so that farmer groups can grow and develop into independent (empowered) organizations. Debriefing should not only be facilitated by the facilitator or team of experts, but also by inviting other parties (stakeholders) of the supporting elements, as has been stated previously. This activity can be utilized as a meeting forum for exchanging ideas among all stakeholders in order to develop the cocoa agribusiness.

B. Local Government

In line with regional autonomy policy, local governments have a greater role in advancing their regions. Therefore, the development of cocoa agribusiness is one of the opportunities to promote the local region. Related agencies such as the Bappeda, Department of Agriculture, Department of Plantations, Department of Trade, Department of Industry, Cooperatives, or local legislatures (DPRD) are considered institutions that should be able to

Figure 4. Cocoa Farming Stakeholders in Sikka Regency

participate in the implementation of the operational steps of cocoa agribusiness development.

C. Banking Institutions

The banking sector has proved to be one of the pillars for sustainable economic development. However, the involvement of the banking sector in agriculture is relatively limited for large-scale business activities, among others for large exporters or large plantations. The role of banking institutions for small-scale businesses such as farmers in the countryside may be said to be rare. Most prominent is lending to farming business as has been done by Bank Rakyat Indonesia (BRI). Most banks grant working capital loans to non-agricultural businesses and rarely grant loans to farmers although they can in fact be categorized agricultural entrepreneurs. Yet so far farmers have been known as the weaker party in terms of capital and marketing transaction process.

This phenomenon is prevalent considering that a bank is a profit institution that is certainly not willing to bear the risk of loss. One of the weaknesses of farmers is lack of certainty (uncertainty) of farm yield that cannot be stored for a long time (perishable). In addition, farmers themselves are likely to act on their own or at least only in informal and limited collective activities.

One opportunity that currently needs to be followed up in Sikka Regency is collaboration with Bank BNI. Preliminary discussions with this Bank have hinted an opportunity for participation in the development of operational measures on cocoa agribusiness. This is consistent with one of the schemes of BNI itself, namely micro scheme aimed to small-scale unit activities at the grass root. Financing form can either be profit sharing or sale and purchase of commodities. The first category is based on business feasibility, while the second category is based on contract price (fixed price).

But above all, it should be noted that so far many banks still regard farmers as a party of dubious character and capabilities to comply with banking requirements. Therefore, one applicable solution is through cooperation with certain parties (traders/companies) that buy cocoa from farmer groups and act as an analyst (credit guarantor) to the bank.

D. Non-Governmental Organizations (NGOs)

There are six NGOs that play an active role in mentoring and development of cocoa business. One of the NGOs experienced in terms of community empowerment, especially in Sikka, is Swisscontact. This institution has direct access (affiliated) to cocoa exporters, namely PT. Mars and Comextra. Currently the NGOs in Sikka have been participating in farmer empowerment activities. In addition, Swisscontact also plays an important role to supporting technical assistance in the field and promoting the local region to exporters.

E. Exporters

In terms of trade, relationships with export companies in Sikka Regency are with PT. Comextra and PT. Mars that have offices in Makassar and in direct contact with Sikka traders. Therefore, the role of these two companies is expected to be integrated in the operational steps of cocoa agribusiness development.

F. Traders/Companies

Many allegations have so far been directed to traders as a party that often takes unfair advantage when purchasing agricultural commodities compared to the profit level of farmers as producers. They are very dominant in determining the price of cocoa beans, resulting in a very weak bargaining position of farmers. Therefore, the role of the traders in the operational steps of cocoa agribusiness development needs to be pursued. One concrete form is to invite

certain traders (companies) in related activities so that they can be expected to play a role as an avaylstfor local farmers. This support element can be strengthened by involving the Department of Industry and Trade.

Table 3 below provides an overview of the role of each stakeholder, and the additional roles expected from them in the future in order to be more optimal.

Table 3. Matrix of Cocoa Development Stakeholders Analysis in Sikka Regency

PARTIES CURRENTLY INVOLVED	CURRENT ROLE	EXPECTED ROLE
Ministry of Agriculture	<ul style="list-style-type: none"> Assist in increasing cocoa productivity through the Gernas Pro Cocoa Program (Co-cocoa Gernas). 	<ul style="list-style-type: none"> More sustainable programs and programs that are not only physical but more focused on capacity building of farmers.
NTT Provincial Government (NTT Province Plantation/ Estate Department)	<ul style="list-style-type: none"> Support the Gernas Pro Cocoa program, such as procurement and distribution of replanting activities (SE seeds, fertilizers, fungicides), rehabilitation (fertilizers, insecticides, fungicides) and intensification (fertilizers, insecticides and pheromones) Conducting the “Red Wine” program of which one of the programs is to improve the quality of life of cocoa farmers. »» Implemented by Bappeda. Assist the local government in getting/proposing projects from/to the Government. 	<ul style="list-style-type: none"> Encourage the local government in creating cocoa development programs, such as giving incentives to cocoa farmers who want to develop the cocoa sector. Provide mentoring and coaching programs to the Regency/City Governments in developing the cocoa sector. Programs can be both physical assistance program and policy program Provide clear direction of coordination flow between SKPDs associated with the development of the cocoa sector, in this case Distanbun and BKP2 so that they can provide guidance in an integrated manner to cocoa farmers in the area. Reduce dependency on central government assistance programs.
SIKKA REGENCY GOVERNMENT	<ul style="list-style-type: none"> Funding support to cocoa business empowerment activities in a limited portion. Responding to cocoa empowerment activities made by the Central Government or NGOs, although limited to the customization of the program. Currently there are no sustainable programs so that cocoa development programs have not been running optimally. 	<p>Increase commitments to cocoa business development, through:</p> <ul style="list-style-type: none"> Increased budget allocation from the local budget in the context of cocoa business development. Regulatory support to cocoa business development, according to the needs of each aspect of the value chain (Aspects of Input Availability; Production; Business Administration/Marketing, etc)
REGIONAL ECONOMIC COOPERATION COUNCIL (DKED)	<ul style="list-style-type: none"> Establish Cocoa Stakeholders Forum. Capacity building of farmers in terms of crop cultivation and processing, including marketing. Coordination between stakeholders, to discuss and advocate cocoa issues. 	<ul style="list-style-type: none"> Optimizing the function of each cocoa stakeholder forum member in fostering cocoa business development, according to the value chain in which they participate.
BAPPEDA OF SIKKA REGENCY	<ul style="list-style-type: none"> Implement the “Red Wine” program as a delegation of tasks from provincial programs. Being secretariat (with SwissContact - SC) in the coordination of the Regional Economic Cooperation Council (DKED). Through the stakeholders forum, the mobilization of PPLs and provision of operational budget for BPK and PPLs (Transportation and Fee). Selection of Master Trainers (MT), Key farmers (KF), and mobilization of farmer groups. Provide direct support both morally and materially to the SL and provide budget allocations for the SL Monitoring implementation of the SL 	<ul style="list-style-type: none"> Restore the function of Bappeda as planner rather than implementor of programs. Coordinate the tasks and authority of SKPDs in accordance with their task and function (tupoksi). Strengthen the coordination across SKPDs (Distanbun& BKP2). Strengthen the role of Distanbun in every activity associated with their tupoksi.

PARTIES CURRENTLY INVOLVED	CURRENT ROLE	EXPECTED ROLE
Department of Agriculture, Forestry and Plantation (DISTANBUN) of Sikka Regency	<ul style="list-style-type: none"> • Implement the Gernas program through providing fund sharing to finance the implementation of field operations. • Provide fertilizers at subsidized prices to farmer groups. • By way of the Gernas program select prospective farmers and land area as the location of activities. • By way of the Gernas program provide equipment assistance and carry out capacity empowerment of farmers. 	<ul style="list-style-type: none"> • Create cocoa sector development programs intensively and continuously. • Actively participate in stakeholders forums. • Coordinate with BKP2 and other SKPDs in creating program development. • The local government has a role in marketing and market pricing, thus farmers get a better selling price. • Provide information on cocoa market price. • Provide regulatory framework for integrated development of the cocoa sector »» including coordination framework with BKP2 or across other SKPDs.
Agency for Food Security and Agricultural Extension (BadanKetahananPangan-danPenyuluhKabupaten-Sikka, BKP2)	<ul style="list-style-type: none"> • Implement the Gernas program through providing fund sharing to finance the implementation of field operations. • Provide fertilizers at subsidized prices to farmer groups. • By way of the Gernas program select prospective farmers and land area as the location of activities. • By way of the Gernas program provide equipment assistance and carry out capacity empowerment of farmers. 	<ul style="list-style-type: none"> • BKP2 coordinates with Distanbun in mentoring and training farmers. • Strengthen coordination between BKP2 and Distanbun • Enabling BKP2 as extension agency in charge of assisting the Technical Department.
NGOs: <ul style="list-style-type: none"> • Swisscontact • WVI • Caritas • YPMF • Plan 	<ul style="list-style-type: none"> • Instrumental in increasing cocoa productivity, on farm »» off farm • Capacity building of farmers through the Field School (FFS). • Improving quality of life of farmers, education and health. • Promote marketing of cocoa. • Establishment of modern farmers. 	<ul style="list-style-type: none"> • Involving SKPDs in relation with program implementation. • Program coordination between NGOs and the local government.
Farmers/Farmer groups	<ul style="list-style-type: none"> • Conduct cultivation and post-harvest activities • Farmers have not been too motivated to participate in training activities (not at a maximum) 	<ul style="list-style-type: none"> • Farmers do not keep on hoping on aid programs from central government/local government. • Farmers' capacity and knowledge has improved thus motivated to take good care of their farms. • Farmers are motivated to undertake joint marketing.
Master trainers	<ul style="list-style-type: none"> • Conduct training, coaching and mentoring to farmers related to cultivation, production, post-harvest and marketing activities. 	<ul style="list-style-type: none"> • Increase the number of master training in order to optimize farmers' empowerment activities. • Training and guidance to farmers is strived to be more intensive and sustainable.
Key farmers	<ul style="list-style-type: none"> • Conduct training and mentoring to farmers related to cultivation, production, post-harvest and marketing activities. 	<ul style="list-style-type: none"> • The local government needs to pursue more training for farmers thus assisting the local government in farmer capacity building and mentoring. • Coaching and mentoring intensively by farmers in order to improve the quality of cocoa and always give motivation to them to always take good care of their farms.

PARTIES CURRENTLY INVOLVED	CURRENT ROLE	EXPECTED ROLE
Local traders (Village/Sub-regency traders)	<ul style="list-style-type: none"> • Currently merchant collectors go directly to the homes of farmers to buy cocoa beans in wet or half dry condition from them. • Merchant collectors will again dry the cocoa beans which in general take about 3-4 days. • Merchant collectors sell the cocoa beans to sub-regency collectors or to regency merchants. 	<ul style="list-style-type: none"> • Local traders quote cocoa price according to market price and quality. • Local traders provide correct market price information to farmers. • Increased knowledge capacity of local traders on good quality cocoa.
Regency traders (-/+ 20 actors)	<ul style="list-style-type: none"> • Obtain cocoa beans from local traders. • Regency merchants sometimes provide capital support to local traders to buy cocoa beans directly from farmers. • Regency merchants resell their cocoa beans to wholesalers in Makassar or Surabaya (PT. Mars Comextra Majora). 	<ul style="list-style-type: none"> • Provide fair cocoa price to match with the quality. • Increased knowledge capacity of local traders on good quality cocoa. • Give guidance to farmers on crop cultivation and marketing.
PT. Mars, Comextra Majora, PT. Bumi Tangerang	<ul style="list-style-type: none"> • Training and mentoring of MT and KF at the time of SL implementation, including transfer of knowledge about quality • Price and purchasing information • In cooperation with certification bodies to socialize "Cocoa Sustainability Certification" to all stakeholders. 	<ul style="list-style-type: none"> • Conduct intensive training to local traders related with cocoa quality in accordance with quality standards as required by the market.
Farmer Groups Yield Processing Unit (UPH)	<ul style="list-style-type: none"> • Accomodate cocoa yield from farmers/farmer group members with pricing according to the quality and volume »» farmers get better bargaining price (tester 7 Rp 17-18 thousand). • Provide education to farmers on good quality cocoa for sale. • Perform fermentation and drying of cocoa beans again. • Sell dry cocoa beans to Comextra (minimum 1 tonne). 	<ul style="list-style-type: none"> • Establish joint marketing programs • Encourage farmers to sell their cocoa at UPH, for example by seeking return of buliran funds (cooperation with financial institutions/local government).
Dirgahayu Store	<ul style="list-style-type: none"> • Supply of agricultural equipment and fertilizers »» Most fertilizers are used for food crops 	<ul style="list-style-type: none"> • The local government is expected to seek several other stores so that in terms of distance they can facilitate farmers and cocoa price can be more competitive. • Dirgahayu store may contribute further to accommodating agricultural products from farmers thus able to assist farmers in terms of marketing.
Expedition companies	<ul style="list-style-type: none"> • Inter-island transportation of commodities (Makassar and Surabaya) 	<ul style="list-style-type: none"> • Goes according to market mechanisms.

Based on analysis of cocoa stakeholders in Sikka, there are several stakeholders that should have a more important role, but their role so far is still not optimized. The following is the list of stakeholders

who have been playing a small role, and in the future are expected to play a larger role, in order to create changes to improve the business climate in the cocoa value chain in Sikka Regency.

Table 4. Matrix of Stakeholders with a Non-Optimal Role

STAKEHOLDERS WITH A NON-OPTIMAL ROLE		
STAKEHOLDERS	CURRENT ROLE	EXPECTED ROLE
Sikka Regency Parliament (DPRD)	<ul style="list-style-type: none"> Not playing a significant role in creating a clear regulatory framework related to cocoa development. 	<ul style="list-style-type: none"> DPRD along with the local government through legislative functions can be involved in cocoa development through the creation of the required regulatory framework.
University's Research and Development	<ul style="list-style-type: none"> Seeds activity has not yet been sought 	<ul style="list-style-type: none"> The need to involve all relevant stakeholders including the local government to initiate seeds activity that matches the natural conditions of Sikka (NTT), for example through scientific study competitions as a first step to identifying suitable seeds.
Church	<ul style="list-style-type: none"> Currently less instrumental in motivating cocoa farmers. 	<ul style="list-style-type: none"> Provide understanding to farmers in taking good care of their cocoa farms through church activities. Develop a culture to establish groups.
Financial institutions (Banks; Cooperatives; etc.)	<ul style="list-style-type: none"> Cooperatives and other financial institutions have currently not yet granted loans or bailout loans to farmers. Currently saving and lending or capital schemes are more directed to business services for consumption purposes, not to agricultural and plantation sectors. 	<ul style="list-style-type: none"> In cooperation with the local government as a guarantor for farmers who have applied for loans. This can encourage farmers to engage in joint marketing efforts.
Local media both radio and newspaper	<ul style="list-style-type: none"> There has been no transfer of information related to cocoa development raised by the media. 	<ul style="list-style-type: none"> Utilize the role of the media to enhance farmer knowledge and technology transfer both in terms of cultivation and marketing.
Industry	<ul style="list-style-type: none"> Several processing industries (still scarce in number) have entered into cooperation with the local government to provide counseling and capacity building of farmers both in cultivation and in post-harvest processing 	<ul style="list-style-type: none"> The need for increased cooperation between the industry and farmers/ farmer groups directly so as to motivate farmers to further improve the productivity and quality of cocoa as demanded by companies. This cooperation may shorten the supply chain so that farmers can get a better price. The need for cooperation between industrial companies and banks (financial institutions) in order to overcome capital constraints often faced by farmers. In this case the industrial company can act as an avalyst (foster parent) for the farmers.

V. CLOSING

The operational steps that need to be realized through cocoa agribusiness development policy in Sikka Regency are through planning, implementation, and participatory monitoring that work together (integrative), thorough (holistic), and continuous (sustainable) based on memorandum of understanding between the various parties (stakeholders).

Proposed Interventions

To overcome the problems surrounding the cocoa business value chain in Sikka in order to improve cocoa business climate, a number of recommendations of proposed interventions are as follows:

1. Increase commitment in cocoa business development, through:
 - Increased budget allocation from the local budget (APBD) in the context of cocoa business development.
 - Provide regulatory framework for integrated development of the cocoa sector, according to the needs of each aspect of the value chain (Input Availability Aspect; Production; Business Administration/Marketing, etc.) and the role of the local government in facilitating and determining market price, so that farmers' bargaining power becomes higher.
 - Planning and development of sustainable cocoa businesses and more focused on capacity building of farmers and not just a physical program.
2. Strengthening coordination across stakeholders and SKPDs (Disbantan & BKP2, and others) as well as program coordination between NGOs and the local government, and more actively engaged with banking institutions to provide capital support to cocoa farmers. In the context of strengthening coordination across stakeholders has been conducted Revitalization of the Regional Economic Cooperation Council (DKED) through amending the legal basis for its formation. DKED revitalization can be performed by issuing local regulations (Perda)/Head of Regency Regulation (Perbup) to: Clarify, Reinforce, and Expand the Scope/Function, Structure, and Authority of the DKED.
3. Breaking farmers' dependence on merchant collectors through capacity building of farmers and farmer groups for joint marketing efforts, as well as through strengthening of the UPH to accommodate farmer yield.
4. Capacity building of farmers and institutional

farmers can be done through several programs such as:

- Training of farmers to better farm cocoa (GAP), among others through the provision of a budget for training and comparative study;
 - Strengthen institutional capacity of farmers in terms of strength of its legality (legal entity);
 - Strengthen and sharpen empowerment programs for farmers and farmer groups; and so forth.
 - Develop alternatives of the economic safety net apart from cocoa trading business.
5. Strengthen the capacity and number of PPLs as a solution to overcome low cocoa productivity problems in Sikka. Several activities or programs to be carried out to strengthen the capacity and number of PPLs are as follows:
 - Capacity building and optimization of existing PPLs functionally at all levels of the government;
 - Institutional strengthening and restructuring of Disbantan; and so forth.
 - Improving coordination between Disbantan and BKP2;
 - Training of Trainers (TOT) and field school for PPLs and addition of the number of PPLs of at least 1 person per village;
 - Optimization of the role of independent extension workers in every village;

The alternative interventions above can be carried out as follows:

1. Increase government spending on legal aspects of financing, development of farmers, farmer groups, extension workers (socialization, counseling, training, education, and so forth), and microfinance business development at the farm level.
2. Budget allocation by the local government or related agencies as well as facilitate cocoa farmers to more easily obtain loans from financial institutions.
3. Other policies, both in the form of local regulations (Perda)/Head of Regency Regulation (Perbup) as well as in the form of programs that are structured based on two alternative measures which are combined as follows: The government establishes a mechanism for the coaching process of cocoa farmers, farmer groups through the provision of information, business development (management, marketing and technology), training and subsidies. Additional programs to strengthen the capacity and the number of PPLs should also be implemented. The rules of the game are then used as the basis of the rules of the game for each stakeholder involved and included in the DKED.





FORD FOUNDATION

RESEARCH REPORT

National Movement of Cocoa Production and Quality improvement (GERNAS KAKAO)

IN COOPERATION:

FORD FOUNDATION

and

Regional Autonomy Watch

Jakarta 2013

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I. BACKGROUND

Cocoa is Indonesia's strategic commodity that has become one of the foreign exchange resources of the country. In 2009, Indonesian cocoa accounted for the third largest exports after oil palm and rubber (FAO, 2010). Cocoa productivity volume reached 844,626 tonnes (in 2010), making Indonesia the second largest cocoa producing country after the Ivory Coast with an export value of 1,242,290 tonnes (FAO, 2010). Cocoa plantation area continues to grow each year (at an average of 7.9% per year), but this does not necessarily improve cocoa productivity further, instead cocoa production is declining. Data from the Directorate General of Plantation, Ministry of Agriculture showed that over the last 4 years cocoa production has decreased quite dramatically from 1,100/kg/ha/year to 660/kg/ha/year or about 40%.

The decline in productivity is among others due to slow rejuvenation (old age trees), lack of maintenance of existing cocoa trees, cocoa fruit borer pests (PBK) and vascular streak dieback disease (VSD) thus causing a decline in the quality of cocoa beans produced. Decline in cocoa productivity has resulted in decreased welfare of the people, especially in cocoa production center regions. The cocoa sector is a reflection of the people's economy, because cocoa is the main source of livelihood for nearly 1.5 million households. Of the total area of land development which reached 1.6 million ha, about 96% of cocoa cultivation businesses are run by smallholder farms, with about 0.25 ha of land ownership each. Besides the decreased welfare of farmers, the decline in cocoa productivity also decreases cocoa productivity at a national scale. This not only further diminish Indonesia's ideals to become the world's largest cocoa producer, Indonesia may instead become the largest cocoa importing country.

With all these problems, the Government has taken improvement steps through the Cocoa National Movement (Gernas) program implemented since 2009. Gernas cocoa is a movement to increase national cocoa production and quality to accelerate the increase in national crop productivity and quality by empowering/involving optimally all potential stakeholders and available resources.

Gernas program originated from the initiative of 4 governors of Sulawesi (South Sulawesi, North Sulawesi, West Sulawesi, and Southeast Sulawesi) as the largest cocoa commodity center regions in Indonesia (accounted for 60% of cocoa nationally). In August 2008, this initiative was welcomed by Vice President Jusuf Kalla at the time who then established the Cocoa National Movement (Gernas) program in order to improve cocoa production and quality with its implementation undertaken in 2009. Gernas target

area in its early implementation (2009) consisted of 40 regencys in 9 provinces, because the benefits are huge, the scope has been expanding every year until it reached 98 regencys in 25 provinces (2011), but the scope subsequently decreased to 12 provinces in 2012 and again to 4 provinces in 2013 adapted to the Gernas target area coverage which include 450 thousand ha.

Of the 5 (five) Gernas cocoa target regions, NTT province has become one of Gernas program implementation activities located in the regencys of Sikka and Ende. With total plantation area of 46,465 ha and annual production of 12,278 tonnes, NTT province ranked fifth after Sulawesi, Sumatra, Maluku and Java (BPS, 2011). In NTT province, cocoa is a commodity that gives the highest contribution in the field of plantation after coconut, cassava, corn, and coffee. Cocoa cultivation system is still traditional and the reluctance and lack of knowledge of farmers are factors that lead to the low cocoa productivity and quality in NTT province. Cocoa productivity in NTT is low (264.2 kg / ha / year), far below the national average (900 kg / ha / year). If managed properly, NTT has a potential to become the largest cocoa producer. Total land area is huge reaching 385,711 ha (89% expansion).

Cocoa cultivation development in NTT is scattered throughout the province with the exception of Rote and Ndao Regencys and Kupang City with the highest production in Sikka Regency (10,325.20 tonnes). Cocoa land area in Sikka reached 21,568 ha with a total production of 7,158 tonnes (Department of Agriculture and Plantation, NTT Province, 2011). Potential land area for cocoa development in Sikka is the largest in the province (followed by the regencys of Ende and East Flores), but its poor condition is one of the reasons why the Government has appointed Sikka as the target region for the Gernas cocoa program.

In order to measure the success of a program in achieving targets and improvements for the future, an evaluation needs to be done on the program. The evaluation includes program performance achievement, realization, impact and benefits resulting from Gernas activities in increasing the productivity and incomes of cocoa farmers. the structure

II. NATIONAL IMPLEMENTATION OF GERNAS COCOA PROGRAM

2.1 Institutional Structure

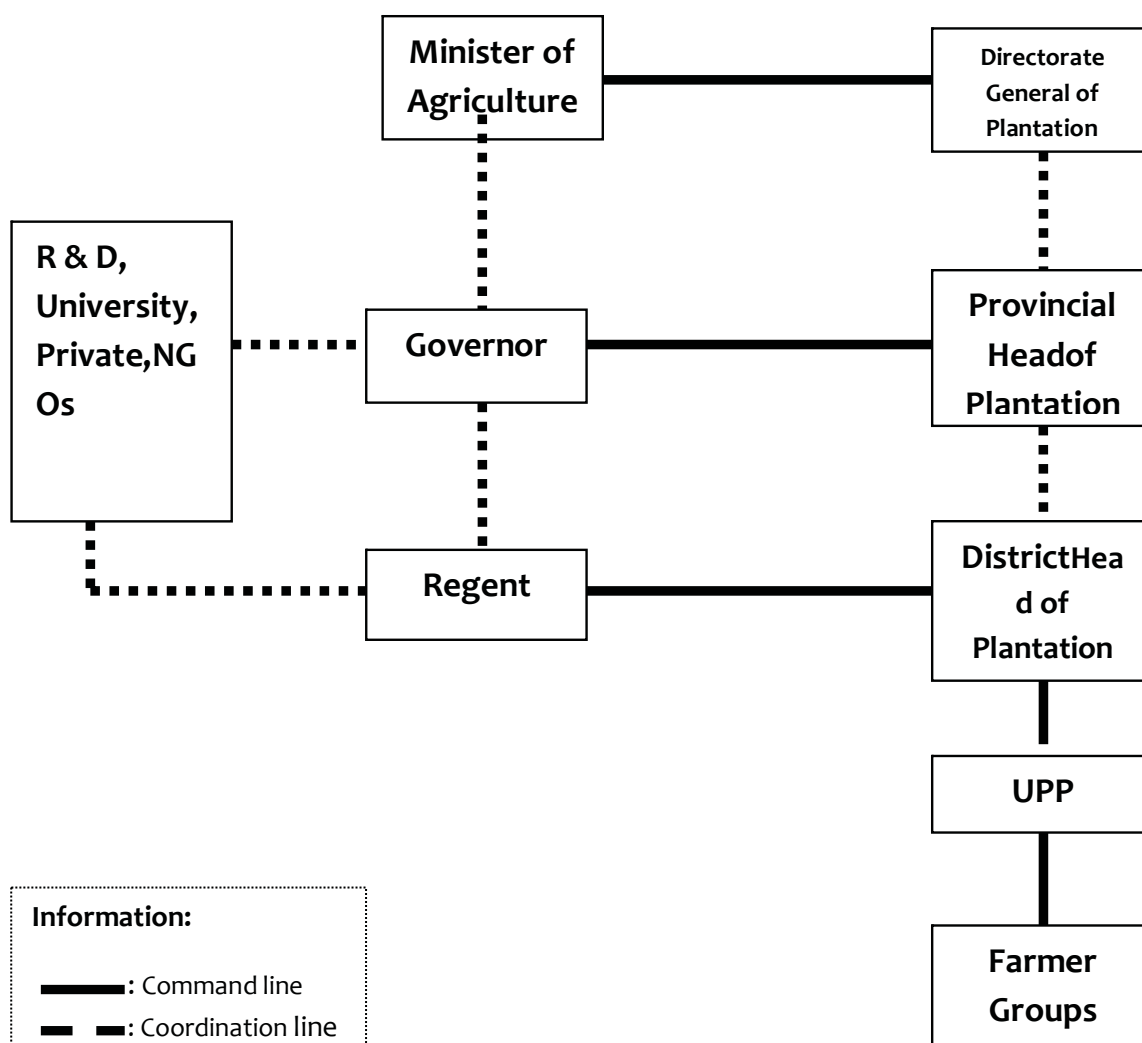
Gernas is a joint program involving various relevant stakeholders, both from Government and Non-Government elements. The parties

involved include the Government, Provincial Government, Regency/City Governments, the private sector, banks and also farmers. In order to support the achievement of the program, each party is expected to contribute and support Gernas cocoa activities. Here is the implementation structure of the Gernas cocoa program.

2.2 Gernas Program Target

Gernas cocoa program is aimed at increasing the production and quality of cocoa production. Through increased productivity and quality of cocoa beans it is expected to increase the incomes of cocoa farmers. Gernas target includes the following programs:

Figure 1.
Organizational Structure of the Implementation of the National Movement
For Cocoa Production and Quality Improvement
Based on Minister of Agriculture Decree No. 1643/Kpts/OT.160/12/2008



1. Improvement of people's cocoa plantations covering 450,000 ha, consisting of:
 - Rejuvenation of crop area of 70,000 ha;
 - Rehabilitation of crop area of 235,000 ha;
 - Intensification of crop area of 145,000 ha.
2. Empowerment of farmers through training and assistance to 450,000 farmers.
3. Control of pests and crop diseases covering an area of 450,000 ha.
4. Improved quality of cocoa in accordance with SNI.

Table 1. Gernas program target for 2009-2011

Year	Program	Target (ha)	Realization (ha)	Specification
2009	1. Rejuvenation	20,000	20,000	40 regencies, 9 provinces
	2. Rehabilitation	60,000	59,600	
	3. Intensification	65,000	65,000	
2010	1. Rejuvenation	15,150	14,850	56 regencies, 13 provinces
	2. Rehabilitation	28,613	28,394	
	3. Intensification	15,900	15,900	
2011	1. Rejuvenation	49,500	40,000	98 regencies, 25 provinces
	2. Rehabilitation	74,200	69,050	
	3. Intensification	62,800	43,200	

Source: Directorate General of Plantation, 2012.

From the above table can be seen that actually the achievement of the Gernas target which covered 450 thousand ha is almost completed. The rest of approximately 128,160 ha was completed in 2012-2013 which covered 5 (five) largest cocoa producing provinces namely South Sulawesi, West Sulawesi, Central Sulawesi, Southeast Sulawesi and NTT. Although in broad outline the Gernas cocoa target has been realized, but given the vast land area of cocoa reaching 1.6 million ha, the Gernas program only covers 30% of the total land area of cocoa in Indonesia.

2.3. National Evaluation of Gernas Implementation

The Gernas program is able to show an increase in cocoa productivity and quality in Indonesia. Data from the Directorate General of Plantation of the Ministry of Agriculture showed an increase in productivity of the cocoa crop particularly in the implementation of rehabilitation activities through side-grafting and grafting shoots. The results of these two activities can be seen in a period of 1.5 years, much faster than the planting of seedlings (rejuvenation), the results of which can only be seen after 3 years. The following is data on potential increase in cocoa productivity from the evaluation of

the implementation of Gernas cocoa in 2009-2012 conducted by an independent team (in cooperation with the Directorate General of Plantation, Bappenas, and Ministry of Finance).

Table 2. Potential Productivity of Gernas Cocoa Implementation Periods 2009-2012

No.	Activity	Initial Productivity (Kg/ha)	Potential Productivity (Kg/ha)	
			Value	%
1.	Rejuvenation	442	1,100	249
2.	Rehabilitation	567	1,600	282
3.	Intensification	1,089	1,100	101

Source: Directorate General of Plantation, Ministry of Agriculture, 2011.

Although the implementation of the Gernas program only covered 30% of the total area of cocoa plantations in Indonesia, but the program has been able to increase productivity. Based on the above data, plus the results of interviews conducted with the Directorate General of Plantation, Ministry of Agriculture, it transpired that the implementation of the Gernas cocoa program has been instrumental in increasing cocoa productivity by more than 200%. Though the implementation of the Gernas program only covered 30% of the total plantation area in Indonesia. This means that if the Gernas program can be implemented on an ongoing basis it is possible that Indonesia can beat Ivory Coast and Ghana as the world's largest cocoa producers. Similar to the opinion of the government, cocoa entrepreneurs themselves admit that the Gernas cocoa program is able to maintain the availability of domestic raw materials. Although the Gernas program coverage area only reached 30% of the total area of cocoa plantations (1.6 million ha) in Indonesia, the program has helped safeguard cocoa production in the country so that in 2012 production did not decrease significantly.

However, the limited range of the Gernas target has created some concern among entrepreneurs about the availability of raw materials for cocoa in the future. As it is known, in addition to the Gernas program, the government through the Ministry of Finance (MoF) has imposed export duty against entrepreneurs who sell cocoa in the form of beans without any added value. On

the one hand, the implementation of this policy has a positive impact on increasing the domestic cocoa processing industry, but on the other hand the increase in processing industry growth has not been matched with an increase in productivity of cocoa beans raw material so that there is some concern from the entrepreneurs about the possible disappearance of raw materials in the market.

Gernas program sustainability is looked forward by local governments and entrepreneurs. The Ministry of Agriculture through Heri Mardianto, Gernas Secretary has explained that the Gernas program will end in 2013. Based on consideration of the many other superior commodities that also require intensive care, the Ministry of Agriculture and the President has signed an **Integrity Pact** that contains a shared commitment to implement the sugar self-sufficiency program. The plan of the government to replace the Gernas program with the sugar self-sufficiency program in 2013 has raised concerns from local governments and businesses towards cocoa development in the future. In terms of Top of Form

local governments even though the Gernas program is only a stimulant program but local governments are expecting longer-term assistance from the central government until they are able to independently develop superior commodities in their regions. Meanwhile, for businesses the existence of the Gernas program in improving the productivity and quality of cocoa is able to guarantee the security of raw material supply of cocoa, so that the domestic processing industry can continue to thrive.

Although the Gernas program has ended, cocoa development programs remain with smaller scope of activities. The shift of state budget funds from cocoa to sugar does not mean to eliminate cocoa development programs altogether. In the first years of its implementation, the Gernas program has carried out rejuvenation, rehabilitation and intensification activities so that in the next years, most needed are programs on capacity and institutional building of farmers. Heri Mardianto, Gernas Top of Form

Secretary explained that cocoa development programs in the future will be prioritized at improving empowerment of cocoa farmers towards self sufficiency and the reduction of subsidized inputs such as fertilizers and farm equipment.

Local governments and stakeholders are expected to continue implementing the Gernas cocoa program in their regions. Gernas is only a stimulant program to provide understanding to the regions about the importance of cocoa farming development for the improvement of the people's economy and increased economic activities in the regions, so that with the end of this cocoa program it is expected there will be similar programs implemented by the local governments. In implementing cocoa development programs in their regions, the local governments are expected to establish partnership between them and entrepreneurs or between entrepreneurs and other relevant stakeholders (banking institutions, NGOs, and other institutions) in an effort to improve cocoa productivity and quality in Indonesia.

III. IMPLEMENTATION OF GERNAS COCOA PROGRAM IN SIKKA

Sikka Regency has the largest cocoa plantation area in the province, but cocoa productivity in Sikka is below the national average. Cocoa plantation area in NTT province reached 46,245 ha and about 48% of it is in Sikka. Cocoa farm ownership of the average farmer is 0.25 ha and Sikka farmers accounted for about 55.1% of cocoa farmers in NTT, namely 321kg/ha/year. When compared with the national cocoa productivity that reached 900kg/ha/year, cocoa productivity in Sikkais relatively very low. The low production and quality of cocoa is caused by several things, namely the large number of old age cocoa trees (30-40 years), lack of knowledge of farmers to properly take care of their cocoa farms, the presence of pest attacks and poor post-harvest handling.

With the variety of problems that cause a decrease in cocoa productivity, the Government has selected Sikka as the region for the implementation of the Gernas program. In order to optimize the achievement of the Gernas program, the role and involvement of all stakeholders is a critical factor in the implementation process of the program. The following is the role and involvement of each implementer of the Gernas program.

a) Government Institutions (Provincial and Local Governments)

Responsible for the implementation of the Gernas cocoa program in Sikka is the Regency Department of Agriculture and Plantation in coordination with the Provincial Department of Agriculture and Plantation as well as the Central Government through the Directorate General of Plantation. The Top of Form

duties under the authority of Sikka regency government has been clearly stated in the general technical guidelines on the Implementation of Gernas, in which Sikka regency government allocated a budget from the local budget to support the implementation of Gernas including:

1. Provide financing and determining prospective farmers/potential land (CP/CL);
2. Provide financing and conduct several activities of empowerment/training of farmers and socialize the application of the SNI;
3. Provide field extension workers including financing;
4. Provide funding for program operational support facilities including procurement of materials and equipment for rejuvenation activities.
5. Provide financing for development, coordination, monitoring and evaluation including socialization activities.

In terms of providing executing human resources, there are several obstacles in the implementation on the ground.

First, assistants are limited both in terms of quantity and quality. In the Gernas general technical guidelines is stated that provincial and regency/city governments have the authority to provide assistants. In this case NTT provincial government and Sikka regency government have recruited 185 new assistants consisting of 48 S1 graduates as contract labor and 137 high school graduates as support field officers to assist contract workers (PLP-TKP). The assistants are new recruits that did not come from the Agency for Food Security & Agricultural Extension (*Badan Ketahanan Pangan dan Penyuluhan*, BKP2) but generally come from different backgrounds so that prior to implementation of the program, all PLP-TKP are trained centrally at Puslitkoka in Jember. Although all assistants have been trained, however training time is short and assistants who generally come from diverse backgrounds do not have the sufficient technical ability to transfer knowledge to the farmers, for example, assistants are less able to approach the farmers to persuade them to attend training, the assistants conduct rehabilitation activities on their own without involving the farmers, in addition to the lack of knowledge leading to failure in carrying out side-grafting and grafting shoots techniques.

Second, the assistants (PLP-TKP) are new recruits and are not experienced assistants already trained before. The local government which has the authority to hire assistants (PLP-TKP) selected

the new employees through the recruitment mechanism. In fact on the ground, the selected PLP-TKPs did not have enough experience and technical knowledge of the duties and responsibilities of a PLP-TKP. The obstacles when on the ground, in addition to having limitations in terms of technical ability, PLP-TKPs often have difficulties in approach farmers to undertake cultivation and post-harvest processing. Supposedly, in selecting PLP-TKPs, the local government uses properly trained assistants with good technical skills so that the efforts to empower farmers can be performed optimally.

Third, BKP2 existence has not been optimized for technical assistance. BKP2 as food crop extension agency in institutional and technical capacity is more appropriate to deliver training and guidance to farmers, but its involvement in the Gernas program has not been optimized. The extension workers under the BKP2 have psychologically known the farmers and are closer to the farmers so that the approach they made are welcomed by farmers. In order to support the achievement of program objectives and the accuracy of the targeted goals, the Sikka regency government should supposedly increase coordination with BKP2 as the agency responsible for implementing empowerment programs to farmers. The lack of coordination among related parties and the absence of regulations governing the synchronization and synergy of programs among SKPDs, particularly the Department of Agriculture and Plantation as well as BKP2 in relation with the assistants, have led to non-optimized implementation of farmer empowerment programs.

b) Financial Institutions

The 4-year Gernas program is financed by the state budget, provincial budget, regency budget, bank loans, the private sector and farmers. Financing from banks is intended to finance crop maintenance activities in the second year and so on through the plantation revitalization program set forth in Minister of Agriculture Regulation No. 33/Permentan/OT.140/7/2006 on the Development of Plantations through the Plantation Revitalization Program and Minister of Finance Regulation No. 117/PMK.06/2006 on Bio Energy Development and Plantation Revitalization Loans (KPENRP). Although the government has allocated a budget from the state budget/local budget and provided credit assistance to farmers, the implementation of the Gernas program is still constrained in terms of funding, along with some constraints related to the financing and utilization of the credit support scheme provided in the Gernas program.

First is limited budget allocated to the Gernas program. The government has allocated a budget of 1 trillion per year, but implementation was not in accordance with the needs on the ground. The budget allocated to Gernas in Sikka Regency alone reached 2 billion rupiah for the overall implementation of program activities. The funds are managed directly by the Directorate General of Plantation. Based on interviews, the Department of Agriculture and Plantation stated that the local government only play a role in the allocation of 10% funds of the overall funds (approximately 80 million) to fund operations of field work, while all seeds and tools are brought in from outside Sikka Regency so that most (almost all) of the allocated funds go back to the central government and practically the region gets no benefit at all. Budget constraints have led to the non-optimized achievement of the Gernas program.

Second is the non-optimal utilization of working capital loans for farmers. The government provides working capital loans at low interest rates (6%) through the plantation revitalization grant scheme (KPENRP credit). With this credit scheme, the government subsidized the excess interest to be paid by farmers (10%) in the hope that farmers can more easily access working capital to finance maintenance of their farms including purchase of fertilizers, pesticides, and agricultural equipment. However, in practice only a few farmers have made use of the funds. Several obstacles that exist in utilizing the credit scheme are among others lack of collateral to apply for working capital loans, lack of local government's role as a facilitator between farmers and banks and lack of socialization of cheap credit from banks. These conditions are recognized by the Gernas Secretary, Heri Mardianto stating that the lack of local government's role as a mediator between farmers and banks is because of less optimal absorption of the KPENRP credit funds that have been launched by the Government (Ministry of Finance).

Based on the results of focus group discussions with cocoa stakeholders in Sikka, these barriers in access to capital are recognized both by the local government and the banks themselves. In this case, the local government has been less active in socializing the cheap credit program to farmers. In addition, the lack of local government's role is also evident from the absence of efforts to facilitate access for farmers to get working capital loans. The absence of a program to bring together farmers and banks, and the absence of land titling facilities for farmers are the causes of farmers' lack of access to working capital. The government should be able to act as foster father to serve, protect and guarantee farmers who generally do not have collateral when applying for credit. In addition, to foster the confidence of banks towards

farmers, the local government can also provide convenience to them through the land certification program for farmers so that their land can be used as collateral.

c) **Non-Governmental Organizations (NGOs, the private sector, churches, etc)**

The cocoa development program in Sikka is included in the Gernas program, with more active involvement of the private sector, especially NGOs. In Sikka, there are quite a lot of NGOs (6 NGOs: Swisscontact, WVI, Caritas, YPMF, Plan and *Yayasan Karya Sosial-YKS*) that provide guidance, especially in terms of increased revenue and welfare for the community in Sikka. In line with the goals to be achieved, these NGOs are involved in the empowerment and capacity building of farmers in crop cultivation and post-harvest processing. Besides NGOs, churches in Sikka also play a role although still small but they have begun to play a more important role in motivating people to improve the welfare of the community in Sikka. The involvement of NGOs and other institutions has been perceived beneficial by Sikka farmers as they are more directly involved in every activity process, for example through practices performed in the field school by Swisscontact and WVI.

IV. GERNAS COCOA PROGRAM ACHIEVEMENT IN SIKKA

The coverage of the Gernas cocoa program in Sikka has only reached 14% of the total plantation area. Cocoa plantation area in Sikka is very large, reaching 21,568 ha, but by 2012 the Gernas program was only able to cover about 3,050 ha and 200 ha of additional rehabilitated land in 2013. Gernas program implementation is scattered across 13 (thirteen) sub-regencys, namely the sub-regencys of Talibura, Waigete, Bola, Doreng, Hewokloang, Kangae, Nelle, Koting, Nita, Lela, Mego, Paga, and Tanawawo. The following is the regional distribution of Gernas program implementation in Sikka Regency.

The above table shows that the largest concentration of activities was carried out in the first year, reaching 1,650 ha (2009), with scope of activities covering rejuvenation, rehabilitation and intensification. During the first year the scope was broader aiming to rejuvenate damaged and old cocoa trees, while in subsequent years more activities were aimed at rehabilitation of cocoa trees. In subsequent years the scope of activities was more focused on rehabilitation and intensification activities so that land coverage declined. The above table shows that the Gernas land area coverage has declined, namely 400 ha in 2010, 600 ha in 2011, 400 ha in 2012 and only 200 ha in 2013. Through this Gernas cocoa program the government provides an assistance program through 3 (three)

**Table 3. Distribution Data of Gernas Cocoa in Sikka Regency
Fiscal Year 2009-2012**

NO.	SUB-Regency	FISCAL YEAR										
		2009			2010		2011			2012		2013
		P	R	I	P	I	P	R	I	R	I	R
1.	Talibura			175.3		11						
2.	Waigete				44.5		10					
3.	Bola		117.5		25							
4.	Doreng	100.5	44.5									
5.	Hewokloang	149.5	93	50	80.5							
6.	Kangae					30						
7.	Nelle								35			
8.	Koting		42			15			70			
9.	Nita		58.8	382				25	25		200	200
10.	Lela		44.5	200		30			20	25		
11.	Mego			92.8			150	15	130	50		
12.	Paga			100		124	15	60	20	125		
13.	Tanawawo					40	25					
	TOTAL	250	400	1000	150	250	200	100	300	200	200	200
	GRAND TOTAL	3,250 Ha										

Source: Department of Agriculture and Plantation, Sikka, 2013.

Information: P= Rejuvenation

R= Rehabilitation

I= Intensification

main activities, namely rejuvenation, rehabilitation, and intensification as well as a program to empower farmers through capacity building both in terms of cultivation and post-harvest processing including cocoa product standardization (SNI) efforts. The following describes more in-depth the effects and benefits obtained by farmers in Sikka from the implementation of the Gernas cocoa program.

1. Rejuvenation Activities

Rejuvenation is intended to replace old trees and plant new superior seedlings (Somatic embryogenesis - SE), or new trees obtained from side-grafting or grafting shoots. Through rejuvenation, cocoa trees aged over 25 years are cut down to be replaced with somatic embryogenesis (SE) seedlings. SE seedlings are clones from superior seedlings in the region which are then replicated into new superior seedlings based on a study conducted by the Cocoa Research Center (Puslitkoka) in Jember, East Java. The advantages of SE seedlings include high productivity, long life and resistance to pests and diseases, thus it is expected that cocoa beans produced from the SE seedlings will increase and are more resistant to pests and diseases.

An aid Top of Form

Package contains cocoa SE seedlings, pesticides, fertilizers, equipment (hand-sprayers and giant scissors), intercrop seeds, and wages based on general technical guidelines for the implementation as set forth by the Directorate General of Plantation of the Ministry of Agriculture. In addition, the criteria of farms subject to the rejuvenation program must match the criteria established by the Directorate General of Plantation of the Ministry of Agriculture as set forth in the general technical guidelines for 2009-2011. Here are the criteria of farms subject to rejuvenation activities:

- Productive age cocoa trees (age > 25 year);
- Number of stands/tree population < 50% of the standard number (1,000 trees/ha);
- Crop productivity is low (< 500 kg/ha/year);
- Attacked by major pests and diseases (PBK and *Helopeltis* spp pests, VSD and Rotten Fruit diseases);
- Qualified land suitability, including: 1,500-2,500 mm of rainfall (very appropriate) and 1,250-1,500 mm or 2,500-3,000 mm rainfall (appropriate), 0-8% slopes (very appropriate) and 8-15% slopes (appropriate).

Based on the above criteria, the target and realization of the rejuvenation program conducted in Sikka reached 600 ha spread across 6 (six) sub-regencies, namely the sub-regencies of Hewokloang, Doreng, Bola, Paga, Mego, and Waigete. Here are the regions of rejuvenation activities in Sikka.

Table 4. Achievement of Rejuvenation Activities in Sikka

Regency	Fiscal Year				
	2009	2010	2011 (1,5T)	2012	Total
Sikka	250	150	200	-	600
Ende	250	100	300	100	750
East Flores	-	150	300	-	450

Source: Directorate General of Plantation, Ministry of Agriculture, 2013.

Based on the data from Table 3 above, the actual achievement of rejuvenation activities in Sikka reached 100%. In terms of productivity (see table 4), rejuvenation activities also showed an increase in the productivity of cocoa beans, but unfortunately the number was not significant. In addition to a long time to reach fruition (4-5 years), the existence of some constraints both in terms of farmers, technical implementation, as well as lack of coordination by program executors resulted in many obstacles in the implementation of rejuvenation activities.

Based on the Gernas implementation report by the Department of Agriculture and Plantation of Sikka, the two causes of dead trees are as follows:

1. High humidity because old/damaged trees have not been removed
2. Cancer stems dieback due to pests and diseases(VSD)

Here are some of the obstacles encountered in the implementation of rejuvenation activities in the field.

The low level of knowledge of farmers has become obstacles in rejuvenation activities. The majority of cocoa trees in Sikka are old (> 25 years), so that the rejuvenation program is essential to increase the productivity of cocoa trees. The difficulty of persuading farmers to cut down their trees is one of the barriers to this rejuvenation program. Cocoa farmers regarded cocoa trees as a source of livelihood thus they are worried about losing their income if the cocoa trees are cut down. Farmers want to cut down their cocoa trees if the government is willing to provide financial security to compensate for their loss of income from the cocoa trees. In addition to concerns that they will lose income, cocoa farmers in Sikka are reluctant to prune their cocoa trees due to psychological factors and the belief that the trees should not be pruned, if pruned the trees will not bear fruit again. Due to the psychological constraints, there is a need for efforts to improve farmers' knowledge continuously and sustainably so that their knowledge about cultivation improved and they no longer feel worried when their cocoa trees are cut down.

Technical factors have become another obstacle in the implementation of rejuvenation activities in Sikka. Rejuvenation activities have been performed using SE seedlings produced through research conducted at Puslitkoka in Jember. However the SE seedlings have not been tested in the field before and have proven to be not suitable with the geographical conditions in Sikka, so that the results gained were far from expectations. Complaints also come from farmers claiming that the quality of the SE seedlings is not better than the previous cocoa trees. Unfortunately farms planted with SE seedlings take a longer time to bear fruit. Therefore, the assumptions that SE seedlings are more superior should be subject to further studies and adapted to the natural conditions and characteristics of the farm land of each farmer. Besides requiring a very long time to bear fruit, based on interviews conducted with farmers and several other stakeholders in Sikka, they generally argued that the majority of SE seedlings used

Table 5. Gernas Cocoa Tree Diversity Monitoring Form Rejuvenation Activities using Somatic Embryogenesis (SE) Seeds in 2009

No.	Sub-regency	Planting Time (Mth/Yr)	Planted Area (Ha)	Life Crop (Ha)	Dead Crop (Ha)	Productivity 2011 Average (kg)	Productivity 2012 Average (kg)
1	Doreng	Dec2009-Jan2010	100.50	83.49	17.01	25.00	175.00
2	Hewokloang	Dec2009-Jan2010	149.50	133.40	16.10	35.00	225.00
TOTAL/AVERAGE			250.00	216.89	33.11	30.00	200.00

Source: Department of Agriculture and Plantation, Sikka 2010.

have been infected by the severe VSD disease. This condition has caused rejuvenation activities in Sikka to become less optimal.

A different opinion was expressed by the Gernas Secretary, Heri Mardianto who said that the constraint in the use of SE seedlings has not been caused by the low quality of the seedlings, but more due to transplanting process from the nurseries to the planting sites. Transportation process of SE seedlings that did not meet standards, delayed distribution schedule, inappropriate packaging process and sanitation of transportation not in accordance with set technical standards, all these have resulted in decrease in seedling quality or even death. The rough handling of SE seedlings is due to ignorance on the part of assistants or helpers who perform transport of the seedlings from nurseries in Puslittoka to the distribution area so that sometimes the seedlings are already damaged when they arrived at the planting site.

- c) Crop productivity is low (<500 kg/hektar/tahun) but still possible to be improved;
- d) Number of shade trees > 70% of the standard;
- e) Attacked by major pests and diseases (PBK and Helopeltis spp pests, and Rotten Fuit disease);
- f) Qualified land suitability, including: 1,500-2,500 mm of rainfall (very appropriate) and 1,250-1,500 mm or 2,500-3,000 mm rainfall (appropriate), 0-8% slopes (very appropriate) and 8-15% slopes (appropriate).

Based on the above criteria, the farm land area for the rehabilitation program conducted in Sikka reached 700 ha spread across 7 (seven) sub-regencys, namely the sub-regencys of Nita, Lela, Koting, Nelle, Talibura, Paga and Mego. The following is the achievement of rehabilitation activities in Sikka until fiscal year 2012.

2. Rehabilitation Activities

Rehabilitation is carried out on cocoa trees that are still productive but their productivity is declining. Main rehabilitation activities are done through a system of side-grafting and grafting shoots using superior plant material, with the hope that after 9 months the cocoa crop can already be harvested. The side-grafting technique can make cocoa harvesting faster if compared to traditional planting which would usually take 4-5 years for cocoa trees to bear fruit.

In the Gernas Cocoa Regional Technical Guidelines for 2009-2011 issued by the Directorate General of Plantation, Ministry of Agriculture is stated that the provision of aid package for rehabilitation purposes include inputs, non-compound fertilizer subsidies in the form of briquettes (tablets) in light brown color as much as 200kg/ha with specific doses of 200 g / tree (applied at the beginning of the rainy season), 1 (one) unit handsprayer equipment for each 5 ha, pesticides such as Matador brand insecticides of 1 (one) lt / ha, Toupan brand herbicides of 1 lt / ha and Amystartop brand fungicides of 1 (one) lt / ha, as well as labor costs. Meanwhile, the areas for rehabilitation are farm land subject to the following conditions:

- a) Productive age cocoa trees (age <15 years) and technically possible for side-grafting;
- b) Number of stands/tree population 70%-90% of the standard number (1,000 trees/ha);

Table 6. Achievement of Rehabilitation Activities in Sikka

Regency	Fiscal Year				
	2009	2010	2011 (1,5T)	2012	Jumlah
Sikka	400	-	100	200	700
Ende	400	250	800	100	1,550
East Flores	-	-	100	-	100

Source: Directorate General of Plantation, Ministry of Agriculture, 2012.

Achievement of Gernas program implementation through rehabilitation is considered better by farmers if compared to rejuvenating activities, in addition to shorter harvest waiting time and higher productivity. This is illustrated in Table 6 below.

1. Intensification Activities

Intensification activities are carried out on cocoa trees of productive age, with high production potential, but limited application of cocoa cultivation technology. The technology pursued in cocoa cultivation is P3S, namely pruning, fertilizing, harvesting and frequent sanitation. **Pruning** is intended to give room for sufficient sunlight to the cocoa tree so that it can stimulate the growth of flowers (if 30% sunlight is used). Pruning includes maintenance pruning, production pruning, or a combination of both. Production pruning is generally done 1-2 times after each

**Table 7. Gernas Cocoa Tree Diversity Monitoring Form
Rehabilitation Activities using the Side-Grafting Technique in 2009**

No.	Sub-regency	Planting Time(Mth/Yr)	Planted Area(Ha)	Life Trees(Ha)	Dead Trees (Ha)	Productivity 2011 average (kg)	Productivity 2012 average (kg)
1	Bola	Sept-Dec 2009	117.50	71,595	45,905	-	875.00
2	Doreng	Sept-Dec 2009	44.25	31,405	12,845	-	550.00
3	Hewokloang	Sept-Dec 2009	93.00	63,625	29,375	360.00	900.00
4	Koting	Sept-Dec 2009	42.00	27,125	14,875	-	520.00
5	Nita	Sept-Dec 2009	58.75	37,942	20,808	-	830.00
6	Lela	Sept-Dec 2009	44.50	28,740	15,760	-	525.00
	TOTAL/AVERAGE		400.00	260,432	139,568	360.00	700.00

Source: Department of Agriculture and Plantation, Sikka, 2010.

Causes of Dead Trees:

1. High humidity because the upper trunk has not been felled.
2. Dead shoots/buds due to pest and disease attacks (helopeltis and VSD)

harvest, while maintenance pruning is generally done once a month or not routine depending on the willingness of farmers. Maintenance pruning can be done through removing wild branches or water shoots. **Fertilization** is intended to provide the availability of nutrients to the trees so that the soil becomes more fertile. **Frequent harvest** is intended to prevent the development of pests and diseases by harvesting cocoa fruits immediately after having reached maturity. **Sanitation** is intended to keep the farm environment clean, thus preventing development of pests and diseases.

Based on Gernas Cocoa Regional Technical Guidelines for 2009-2011 issued by the Directorate General of Plantation, the requirements for the provision of support equipment within the scope of intensification activities are in the form of fertilizers, pesticides, hand sprayers, giant scissors and labor wages. While the requirements to be met by cocoa farmers in order to participate in intensification activities of the Gernas cocoa program include:

- a) Cocoa trees are still young (< 10 years) but poorly maintained;
- b) Number of stands/tree population >70% of the standard number (1,000 trees/ha);
- c) Crop productivity is low (<500 kg/hektar/year) but still possible to be improved;
- d) Number of shade trees > 20% of the standard;
- e) Attacked by major pests and diseases (PBK and Helopeltis spp pests, VSD and Rotten Fruit diseases).
- f) Qualified land suitability, including: 1,500-2,500 mm of rainfall (very

appropriate) and 1,250-1,500 mm or 2,500-3,000 mm rainfall (appropriate), 0-8% slopes (very appropriate) and 8-15% slopes (appropriate).

Based on the above farm criteria, the locations of Sikka farms for the intensification program are spread across 6 (six) sub-regencies, in different locations each year but with the majority of aid spread across the sub-regencies of Nita, Lela, and Koting. The following is the achievement of intensification activities in Sikka Regency.

Table 8. Achievement of Intensification Activities in Sikka

Regency	Fiscal Year					Total
	2009	2010	2011 (1,5T)	2012	2013	
Sikka	1,000	250	300	200	200	1,950
Ende	1,000	200	650	100	-	1,950
East Flores	-	150	850	-	-	1,000

Directorate General of Plantation, Ministry of Agriculture, 2013.

These intensification activities are very helpful in providing understanding of the importance of cocoa farm maintenance for farmers. Sikka cocoa farmers in general have the characteristics of not taking intensive care of their farms and only visit their farms at the time of harvest. Limitations of cost, time, and energy as well as appropriate skills are the reasons why farmers are reluctant to perform intensive maintenance of their cocoa farms. The existence of the Gernas program can become a driving force for farmers to start doing maintenance and fertilization of their cocoa farms.

Fertilizer procurement assistance through the Gernas program is in the form of special formula compound fertilizers provided by the Provincial and Regency Departments of Plantation. These fertilizers are produced exclusively from Puslitkoka analysis by taking samples of soil type and leaves to match the soil conditions of the region concerned. Unfortunately these fertilizers are not yet licensed and thus not publicly sold. The distribution of these compound fertilizers to farmers is coordinated by the local government through the Department of Agriculture and Plantation which in turn is coordinated by the *Gapoktan*. The volume of fertilizers provided to farmers is less balanced than the cocoa plantation area so that results are less optimal. In connection with this problem, there needs to be strong farmer institutions in the future to coordinate farmers in obtaining fertilizer aid and other assistance from the government or other stakeholders. In addition, there is need for cooperation and involvement of other stakeholders both from local government and non-government elements (NGOs, businesses, banks) to provide technical assistance and training to cocoa farmers to pursue organic fertilizers that they can make themselves in farmer group institutions.

The availability of specially formulated compound fertilizers are only limited to the Gernas program. With the end of the Gernas program, the fertilizer support program which actually should be the local government's responsibility as well as the awareness of the farmers to pursue independently has the potential to become unsustainable. Given the limitations of available fertilizers, the local government (Department of Agriculture and Plantation) should facilitate the implementation of

an integrated training to farmers on organic fertilizer production using animal manure so that farmers through the *gapoktan* are able to meet their own needs for fertilizers.

These intensification activities are relatively successful, but due to the small coverage, the positive impact has not been significant. These intensification activities experienced problems, caused by the lack of provision of the aid package, the persistence of pest attacks, and internal factors of farmers themselves who have not carried out farm maintenance on an ongoing basis, so that the impact of the Gernas program is not significantly visible. Technical Top of Form

assistance provided through intensification activities are only limited to the farms that have met the pre-defined eligibility criteria in the general technical guidelines of the Directorate General of Plantation, and technical assistance was given only as a stimulus so that farmers are expecting further aid programs from other stakeholders to be able to continue cocoa intensification and development activities more independently.

4. Cocoa Farmers Empowerment Program

In addition to the 3 (three) main activities above, in order to increase the ability of farmers both in cultivation and post-harvest processing, the Gernas program is also striving for a farmer empowerment program through capacity building and institutional strengthening of cocoa farmers. The following are efforts to empower farmers conducted within the context of the Gernas program.

**Table 9. Gernas Cocoa Tree Diversity Monitoring Form
Intensification Activities of Cocoa Trees in 2009**

No.	Sub-regency	Implementation year	Planting Area(Ha	Productivity 2010 average (kg)	Productivity 2011 average (kg)	Productivity 2012 average (kg)
1	Talibura	2009	175,25	741	505	93
2	Hewokloang	2009	50,00	437	253	-
3	Nita	2009	382,00	869	569	-
4	Lela	2009	200,00	755	512	-
5	Mego	2009	92,75	654,00	462	-
6	Paga	2009	100,00	990,00	735	-
	TOTAL/RATA-RATA		1.000,00	741,00	506,00	93,00

Source: Department of Agriculture and Plantation, Sikka, 2010.

Information:

1. Pest and disease attacks.
2. Absence of further treatment.
3. Not all farms are participating in intensification activities.

1. **The empowerment of cocoa cultivation is conducted through socialization, training, and technical assistance to farmers.** Crop cultivation training is organized through the field school where farmers are trained by a field worker who will teach farmers how to properly conduct cocoa cultivation, including land fertilization and sanitation (25% theory and 75% field practice). This activity is important in order to equip farmers with the correct farming method, and guidance and training can be directly provided in the field to make farmers better understand how to take proper care of their farms so that optimal results can be obtained. Unfortunately, the limitations of the quality and quantity of assistants that only consist of 2 (two) people to handle 7 (seven) sub-regency have become an obstacle in the field so that the resulting output is not optimal (generally 1 PPL assists 1 village with 15 farmer groups). With this minimal number of assistants, the empowerment of farmers in Sikka is mostly done by NGOs through the field school.

Farmers admitted that the field school established by NGOs is more useful because farmers are given intensive training to practice directly on their farms. Technical assistants in the field school are called training masters and key farmers whose job is to assist and conduct training to farmers. Adequate technical ability coupled with the correct pattern of approach to farmers has made them more motivated to participate in the field school set up by NGOs.

2. **Provision of facilities and supporting infrastructure in the form of agro-processing units (UPH),** fermentation boxes, and other supporting facilities include motorcycles used by the assistants to go to technical assistance locations. Post-harvest processing training is done through the establishment of agro-processing units (UPH) as a means of support in order to market cocoa products processed through the provision of fermentation boxes so that the quality of cocoa beans sold are more qualified. At the start of its formation an UPH received working capital of Rp.94 million from the local government to buy raw cocoa from farmers. The existence of the UPH is very important as in addition to accommodating farmers' production, the UPH also seeks to empower the farmers related to quality selling standards and motivate farmers to conduct the fermentation process themselves so that they do not lose money.

At this time in Sikka, there are only 3 active UPH thus the number is very minimal considering their important role, especially in breaking the chain of cocoa trade system to make farmers get a better price than the prices obtained from merchant collectors in the regency and villages.

The minimal number of UPH is one reason why farmers still prefer to sell their cocoa to merchant collectors who are willing to come directly to their homes. Besides located a far distance from the residence of farmers their lack of motivation to perform fermentation also contributed to the less optimal role of the UPH. Farmers are generally lazy to perform fermentation due to the small price disparity between fermented and non-fermented cocoa. In addition, urgent needs have forced farmers to sell their cocoa directly to merchant collectors, although at a lower price. In this case, there are no incentives or regulations from the local government of the central government that are able to motivate farmers to perform and sell fermented cocoa. Currently in Indonesia, only about 10-15% of Indonesian cocoa is fermented. This has resulted in the low Indonesian cocoa price if compared to the Ivory Coast and Ghana.

The existence of the UPH is not optimal in breaking the chain of cocoa trade system. The trade system condition in existence so far, is more dominated by the role of middlemen. This was revealed by the Director General of Plantation, Ministry of Agriculture, Heri Mardianto who said that the cocoa trade system is dominated by middlemen who get a larger profit while farmers received a low price. The local government and the central government have not been able to do any intervention to improve the bargaining position of cocoa farmers. Judging by the management of cocoa in Ghana and the Ivory Coast that protected their farmers by providing a good price, in fact this policy has been applied to other commodities, such as onions, in which the local government would buy onions from farmers, thus providing protection to farmers through a better price. There should be a firm commitment from the local government to implement a similar policy to the cocoa trade system, so that the system does not only benefit farmers, but in the long run this policy can also create a sense of security to farmers and motivate them to continue managing cocoa farms.

A farmer empowerment program is more important to be implemented in a sustainable manner than a physical program. Physical activities such as handing out seeds, fertilizers and agricultural equipment are still needed, however in longer term the sustainability could not be assured. Instead the sustainability of farmer empowerment activities is more guaranteed. With the increased capacity of farmers, the benefits obtained will have an impact in the long term, thus the government should focus on improving the knowledge and capacity of farmers both in terms of cocoa cultivation and post-harvest processing.

V. CONCLUSION AND POLICY RECOMMENDATIONS

The implementation of the Gernas program has a positive impact on improving the productivity and cocoa quality of cocoa farmers. **For farmers**, this program provides physical assistance and technical assistance to empower farmers in terms of cocoa cultivation and post-harvest processing. From these activities, farmers are gradually provided understanding of the importance to take good care of their cocoa farms. **For entrepreneurs**, the Gernas program is relatively able to guarantee the availability of the supply of raw materials (cocoa beans) for the survival of the cocoa processing industry in Indonesia so that the volume of imports can be reduced. In order to pursue sustainable development of cocoa, efforts will be required as subsequent improvement measures.

Strengthening local government's commitment and the role of related agencies (Department of Agriculture and Plantation) in an effort to increase the productivity and quality of cocoa

With the end of the Gernas program, there is a need to strengthen Sikka regency government's commitment to continue implement development programs of cocoa as the source of livelihood for most Sikka residents. Sikka regency government should pay more intensive attention and strive for the sustainability of the cocoa development program that has been initiated through the Gernas program. Related agencies in this regard the Department of Agriculture and Plantation should formulate integrated cocoa development programs to be outlined in a regulation. With the presence of a binding regulation, this is expected to strengthen local government's commitment to developing the cocoa sector and implementing cocoa development programs in an integrated manner among the related stakeholders.

Strengthening stakeholder forum as an effort to synchronize and coordinate cocoa development programs. As explained earlier, one of the constraints to Gernas program implementation is lack of synchronization between the Department of Agriculture and Plantation with the Agency for Food Security and Agricultural Extension (BKP2) as the technical institution to perform counseling to farmers. The lack of synchronization is due to

the lack of program synergy among SKPDs. Farmer empowerment efforts are done on their own, so that the results are not optimal. A good practice that has been done in Sikka Regency is the establishment of a stakeholder forum called "**Regional Economic Cooperation Council**" which has passed through Regent Decree No.245/HK/2012 on the Establishment of Regional Economic Cooperation Council. With the establishment of the agency, a good partnership is expected between all relevant stakeholders from both government and non- government elements. In addition, this agency is expected to minimize the ego of each agency/institution so that they can play an optimal role in preparing a joint program including the strengthening of the role of financial institutions in providing convenience to farmers to access capital and obtain cheap/easy credit without collateral.

Institutional strengthening of farmers through the Gapoktan in pursuing the provision of special formula compound fertilizers

In the Gernas program, the fertilizers used are not publicly sold but even so farmers can still get them from fertilizer plants but in large quantities. Therefore there need for strong farmer institutions such as Gapoktan and cooperatives. The gapoktan either by themselves or in partnership with a cooperative or coordinated by the Department of Agriculture and Plantation can seek the provision of fertilizers for member groups, so that maintenance and fertilizing efforts for the cocoa crop can be implemented optimally.

Capacity building of farmers both in terms of cultivation and improvement of the quality of cocoa

In order to continue the spirit of farmer empowerment launched by the Gernas cocoa program, the local government should be able to expand the partnerships that have been built with NGOs and the private sector in its efforts to empower farmers. The role of the private sector is important to providing understanding to farmers about cocoa quality like what is demanded by the market that can bring a good price. Thus farmers become motivated to improve the quality of their cocoa with consideration of the benefits that can be gained. As for the private sector, such partnerships can provide a distinct advantage, because entrepreneurs will get quality cocoa in accordance with the required quality.





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