
Setting up an organic cocoa sector in SAO TOME

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***Abstract:** This paper concerns the creation of an organic cocoa sector on the island of Sao Tome, Africa. Cocoa was introduced at the beginning of the 20th century and the Portuguese colonizer quickly began growing it in monoculture.*

After Sao Tome became independent in 1975, a socialist government ruled the country. All colonial plantations were nationalized, and the agricultural workers became state employees. The 1990 changes of government supported the progressive redistribution of state lands, primarily to state employees, who became independent farmers.

In the first part of this paper, we describe the history and organization of the cocoa industry in Sao Tome. In the second part, we discuss the construction of the organization, the setting up of trade, and the role and contributions of different actors and institutions. In the third part, we present an impact study, based on investigations, with a cost-benefit model analysis that takes into account externalities. Open-ended participatory interviews were conducted in an individual and/or collective way.

The study shows that the organization has yielded many positive socioeconomic effects. They had the opportunity to export cocoa directly, for the first proof in the history of the country.

Key words: Sao Tome, cocoa, organic product, producers' organisation, fair trade

Roche G., Dulcire M. 2007. Setting up an organic cocoa sector in Sao Tomé. In : AIEA2 International Conference "Knowledge, Sustainability and Bio-Resources in the further Development of Agri-food Systems", within the XLV SOBER Congress in Brazil, Londrina, Brazil, July 22nd-27th 2007, 11 p.

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1. Introduction

The two islands of Sao Tome and Principe are located at the same longitude as Ecuador in the gulf of Guinea. Their surface areas are 860 and 141 km², respectively. These islands are of volcanic origin, with a hilly relief. The region is characterized by a tropical wet climate. In 2004, the population of the two islands was approximately 140,000 and 90% of the food consumed had be imported.

Beginning in the 16th century, slavery allowed the production of sugarcane by Portuguese colonists. In the mid-17th century, production of sugarcane ceased, and the region began producing mainly basic food crops, until the introduction of coffee at the beginning of the 19th century. Cocoa was introduced at the beginning of the 20th century and producers quickly began growing it in monoculture. During the 1920s, Sao Tome became the first international cocoa exporter, with an annual production of more than 30,000 tons. Sao Tome was called the “chocolate Island” in spite of the very hard working conditions of farm labourers. However, production collapsed in the early 1930s, and is today down to about 3000 t

Table 1: export trends of cocoa, 2000-2004

	2000	2001	2002	2003	2004
Tons	2880	3650	3460	3800	2500

Source: adapted from Dos Santos, 2005

The cocoa of Sao Tome had a good organoleptic potential, and was regarded as fine cocoa; but the disorganization of the sector led to the loss of its reputation and a shift to cocoa butter production. This occurred in spite of the international context of high price premiums for high-quality cocoa

After Sao Tome became independent in 1975, a socialist government was took over, as was the case for the majority of Portugal’s ex-African colonies (Angola, Mozambique, Cape Verde Islands). The 26 colonial plantations were nationalized into 15 state-owned firms, and the agricultural workers became state employees. The 1990 change of government supported the progressive redistribution of state plots, primarily to state employees, who became independent farmers (table 1). Postharvest treatment infrastructures for cocoa were controlled by five exporters, preventing thus small farmers from moving upstream in the cocoa supply chain.

In 2000, at the request of the International Fund for Agricultural Development and local authorities, , the director of the French organic chocolate company KAOKA was contracted as technical adviser to the agricultural extension service. In 2005, KAOKA began buying organic cocoa.

2. Development the organic cocoa sector

The object of this work was to understand the share (conscious or not), taken by the producers in the setting up of the organic cocoa sector and in particular in helping write up of the contract which detailed the rights and duties of each participant. Talks according to the "understanding" mode (Kaufmann 1996) were carried out with the actors of the national cocoa sector.

Table 2 : characteristics of land distribution, 1993 to 2005

	Smallholders		Medium-sized companies	forest and fallow	Total
Year	Area (ha)	Number of families	Area (ha)	Area (ha)	Area (ha)
1993	1592	846	1287	1067	3946
1994	3083	859	625	4664	8372
1995	2578	917	2099	1500	6177
1996	1764	730	321	2312	4397
1997	2472	1151	1692	2243	6407
1998	1161	665	83	1561	2805
1999	1166	750	171	212	1549
2000	1055	645	1450	1847	4352
2001	3966	1969	350	89	4405
2002	263	172	182	421	866
2003	190	32	25	30	245
2004	129	142	52	42	223
2005	390	252	777	1105	2272
Total	19809	9130	9114	17093	46016

2.1 Context

The way in which former slaves became gradually farmers better characterized the situation. Living under conditions of high dependency on their employer until 1975, in situation of "crypto slavery" (Valbert 1990), then official employees until 1990, they tried to organize themselves to improve their living conditions. Pioneer experiment in a country where the trade of cocoa remains in the hands of five exporters.

At the time of plot distribution of the plots there seemed to have been much heterogeneity with regard to condition, their unevenly allotted surfaces, which created a differentiation at the level of the characteristics of the exploitations. Moreover this distribution was often made to benefit other persons (Joiris and of Laveleye 1998). These persons also benefited from the attribution of workers' residences at the time of colonization (id.). (Morel 1998) reported that 45 % of the recipients did not live in the community (dependência) in which they receive their plots. What took place is mere plot distribution instead of a complete land reform with the installation of basic infrastructures in order to improve rural living conditions in the zones.

Cocoa was introduced from Brazil during the first part of the 19th century. The cacao-trees *Amelonado* had a good aromatic potential. Other varieties from Central and South America were introduced via Cameroon at the beginning of the 20th century. From 1965 on, studies on genetic improvement have been carried out at the research centre of Poto. Clones originating from international collections were used to create hybrids with local clones. This program did not seem to have a great impact on the production (Aguilar 1997).

Yields have been low at about 150 kg/ha, because of the age of the plantations and because many producers collected their cocoa solely to keep a right on the plot.

In spite of the plot distribution, the cocoa trade remained in the hands of a small elite (five exporters). These latter succeeded in having the sole use of cocoa postharvest treatment infrastructures and thus treated alone the cocoa bought fresh (goma) from small producers.

The purchase price to the producer—was low: about 0.23 \$/kg of fresh cocoa or approximately 600 \$/t of dry cocoa, *i.e.* 40% of the cocoa international. This low price and the fact that the quality was not taken into account at the purchase level resulted in a spiral of cocoa price falls and quality falls. Sao Tome cocoa is primarily used for cocoa butter production. However, the country remained classified as a fine cocoa producer by the International Organization of the Cocoa (ICCO), with a quota of 50% of the national production (International agreement of the cocoa, 1986, CCI 1991); partly for this reason it still keeps its status of historical zone of production.

2.2 Installation of the contract

At the origin in 1999, there was a joint request from FIDA and local authorities to find a solution to improve the incomes of small cocoa producers by producing a cocoa with differentiated quality. KAOKA director, who was an expert in developing sectors of fine cocoa issued from organic agriculture (CEC N° 2092/91), acted as a technical adviser at the onset of the project.

The aim of cocoa producers and of their cooperatives was to find a system, a sector... to improve sustainably the purchase price of cocoa without incurring major changes in customs and habits. On one hand there was KAOKA looking for a fine, typified and sustainably-produced cocoa, issued from organic agriculture. It also looked to diversify the source of his cocoas and to guarantee the regularity and quality of the supply.

On the other hand, there where the producers, who unanimously preferred their current statute of farmer to the previous one of official agricultural employee, in spite of inequalities in plot distribution within the communities (Breuillac 2003).

The talks highlighted the following:

- The technical aspects to adapt farming techniques to meet organic agriculture requirements were not a problem. The State stopped subsidizing chemical inputs, so the producers could not afford them anymore.
- The producers were not aware that their participation was expected during the implementation of the contract. To ensure a sustainable market, the purchaser needed the reassurance that the contract was accepted in particular by the producers.
- The person in charge of KAOKA headed the project in a subdued way at first. In general, businesses do not move at the pace as producers' training, which includes learning to become a farmer after being an employee and to organize one's affairs in a democratic system.
- The producers, according to their statements, followed the "instructions" and acted like farm labourers. The paid price rewarding the additional efforts, they respected the terms of the contract, to take part in the building of the postharvest infrastructures, to take an active part in the postharvest activity (fermentation, drying and sorting of the cocoa. It followed the attitude of respect for decisions taken elsewhere in the interest of all (Chia and Torre 1999). But they acknowledged that not all the communities that had the possibility, nor their own community became members of the sector, because at some point in the negotiations they did not want to go any further.

- The purchaser's many visits to the communities (a very rare occurrence in the chocolate industry) created bonds unanimously appreciated by the producers. Gradually they understood that this purchaser was different from the others. The contract signed with the producers, who had a low level of education, was based on trust, verbal engagements (held at the time of setting up the sector), the "handshake".
- The producers also unanimously approved the terms of the contract, which they understood well, in particular the sustainability of the program, which was very important for them. Various people and institutions surveyed on the spot (highly) praised the contract between CECAB and KAOKA. Nobody suggested that modifications be made.

3. Organic fair trade effects on the national cocoa sector

The impact study was carried out based on a model by Bocoum (2005). We studied the adaptability of the model by analyzing the costs/advantages broadened to take into account externalities.

The main indicators were:

- costs; before and after the production
- advantages; production, marketing, other
- external effects; positive, negative
- territorial impacts

3.1.) The situation

Target group

It included 780 families of small producers (out of 9000 in the country) who were members of communities which formed part of CECAB (Cooperative of Export Organic Cocoa).

The segmentation

The whole process developed within the framework of both organic and free trade rules. The segmentation was established according to an individual production mode (organic agriculture), the cocoa postharvest treatment, and the market to a collective mode.

Quality attributes

The cocoa had to have the following quality attributes

- Physical; moist contents, specific bean size, no appearance defects, physicochemical characteristics
- Organoleptic; the presence of varieties with good aromatic potential in Sao Tome makes it possible to project in the medium term the manufacture of a chocolate-with an "origin"
- Ecological; organic certification

Organizational; acting as a group gave Sao Tome small producers the opportunity to export for the first time.

- Social; -organic fair trade, KAOKA engagement

Target market

- Export market, KAOKA, subsidiary of CEMOI group (first French chocolate company)
- Organic chocolate (industrial, bars and candies) for industry, supermarket chains and specialized networks
- Research to improve cocoa attributes and develop other types of chocolate

Objectives of the segmentation

The prime objective for Sao Tome cocoa producers was to increase their income. It was also to enable the more progress-inclined farmers to join the cocoa marketing sector. The organic agriculture aspect became then a reference criterion which positioned the producer on the market. The purchaser aimed at finding a significant quantity of organic certified cocoa with good physical and organoleptic qualities. To achieve this goal the purchaser had to count on a powerful human organization and adapted infrastructures.

Situation of reference

The situation at the onset of the program is presented in Schema 1.

- Five exporters, who were the sole owners of postharvest treatment infrastructures, bought a large quantity of fresh cocoa from the producers.
- Competition between the five purchasers was based on the technique of allowance for problems of quality (the least constraining), not on the prices.
- The producer obtained some advantages; transport was assured and included in the price of cocoa paid by collectors, who generally made immediate payment, and a small attention at the end of the year (Sugar, rice, etc..) The producer received only 47% of the FOB (free on board) price which was low compared to other countries. In the organic sector the producers received 72% of the FOB price.
- The actual FOB price of cocoa corresponded to the international price (New York) less 125 \$/t (Schema 1), putting it in the lower range of generic cocoas.
- Historically, Sao Tome cocoa was known for its specific quality and was classified by the cocoa organization ICCO as a fine cocoa producer for 50% of its production. However, this is no longer the case as it is today of poor quality and is mainly used to make butter and powder.

3.2) Analysis of the impacts on the differentiated sector

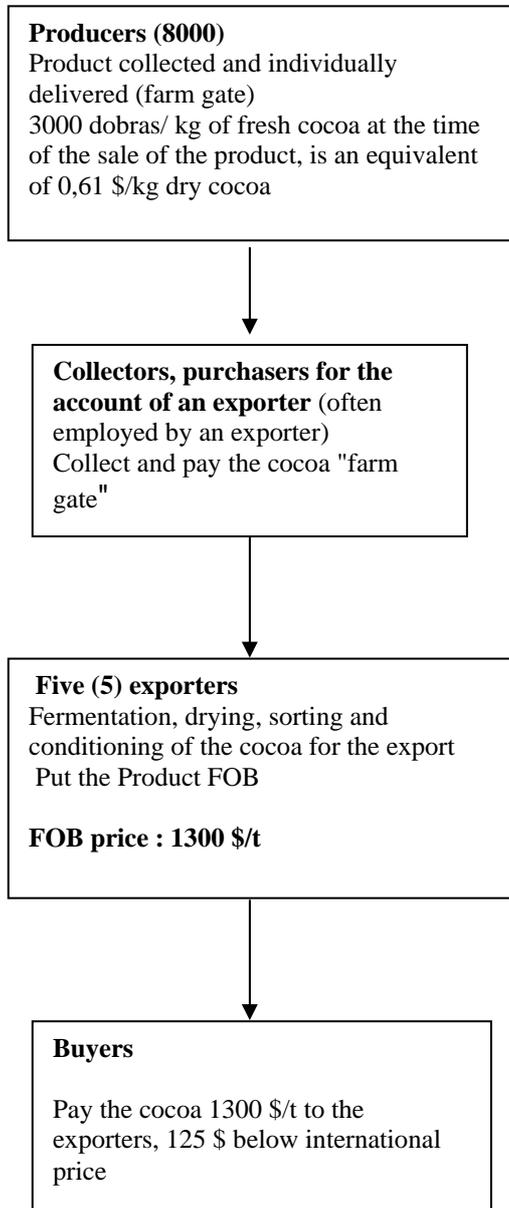
The CECAB sector consisted of 780 producers grouped into 20 communities (out of 153 for the whole country) structured as cooperatives, members of CECAB. This structure was set up thanks to economic and technical contributions from international and national (public and private) organizations.

Evaluation of the costs to the producers

Until 2001 Sao Tome producers received agricultural inputs (fungicides and insecticides) through donations or large subsidies. When they were no longer subsidized, producers stopped using these chemicals because of their costs. Adapting to organic agriculture (EU 2092/91) was therefore not a problem for those inclined to work with KAOKA.

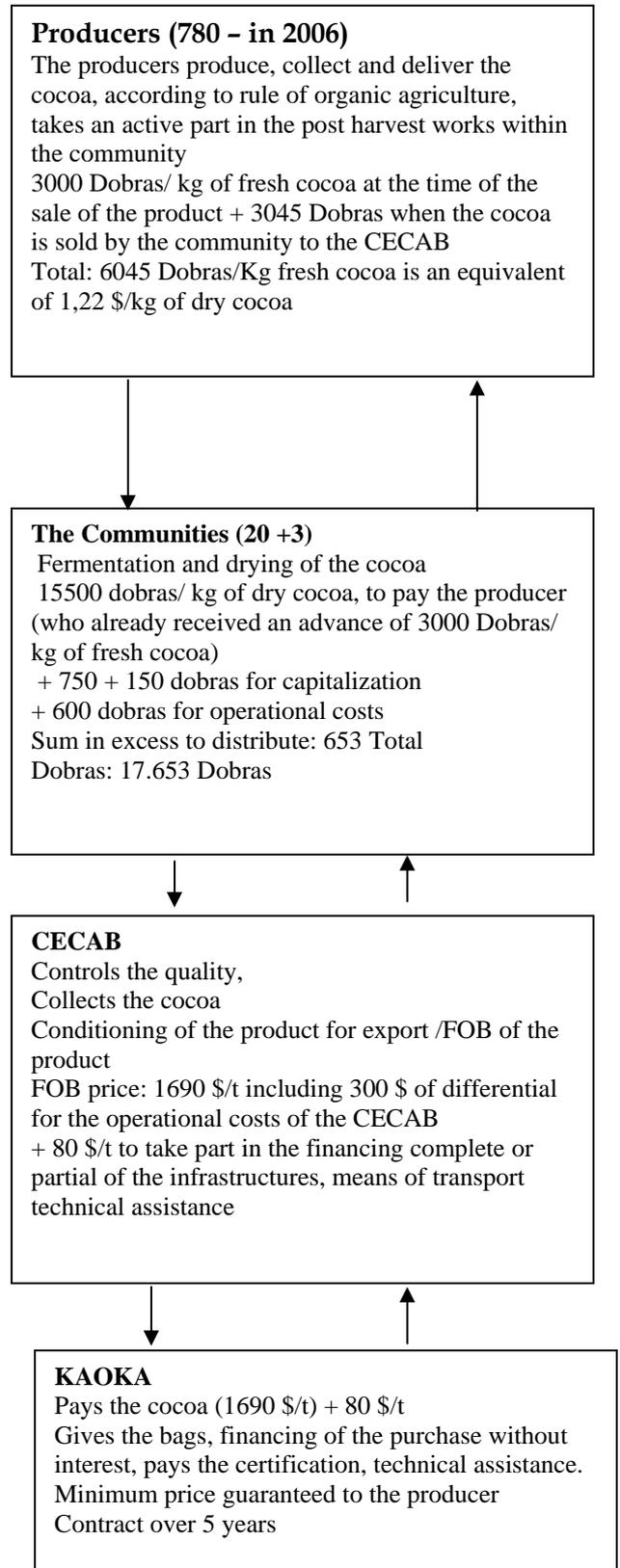
Schema 1: The two cocoa sectors in São Tomé

CONVENTIONAL



Situation November 10 to 19, 2006
 1 \$ = 12700 Dobras
 International cocoa price: 1425 \$/t
 (New York)

BIO EQUITABLE



A question arises: if the producer had the means to buy these inputs, what would have been the loss for converting to organic agriculture? It is noteworthy that the project areas were selected among those where the damage caused by pests had the least impact. Discussions with the producers highlighted the fact that those who used chemical inputs had slightly better outputs. But the prices they received largely compensated for the loss of production and this while they benefited from free inputs.

The maintenance of soil fertility in organic agriculture did not seem to have an insurmountable cost in the long term: the culture was extensive, the soils were of good quality and there were only very weak exports of biogenic salts, the organic manure being brought by the decomposition of leaves and cut weeds in the plots. External inspections carried out by ECOCERT as well as internal control, led to short-term measure prevent the risks of erosion which could be the most important cause of loss of fertility of the soils.

When considered individually, the only difference between these producers and those of the conventional sector was the time spent working at the community level for cocoa postharvest treatment, attending meetings and training courses, participating in the development of infrastructures, submitting to internal controls (organic agriculture). These added up to about six days of work (estimate based on data obtained during the survey), and slightly more for delegates and leaders of communities who took part in more collective activities. At the current cost of the working day in rural areas ~~that~~ this represented approximately 60,000 dobras (i.e. the difference in price between the organic and conventional sectors equivalent to [OK?] 7.5 kg of dry cocoa, a family producing approximately 330 kg/year).

The organization could, with the funds that it got within the framework of marketing, to finance the transport of the cocoa, the maintenance of the infrastructures, the internal control, the traceability of the product, the quality control, the setting under FOB etc., until now the differentials envisaged for this purpose were sufficient and should even allow a capitalization.

Finally, the costs of organic certification were paid by KAOKA.

Advantages

The financial advantages were undeniable (Schema 1): the producers' selling price for fresh cocoa was 6045 dobras/kg in the organic sector vs 3000 dobras in the conventional sector. For an average production of 330 kg/year/family of dry cocoa, equivalent to 870 kg of fresh cocoa, it represented an income supplement of about 205 \$/year. Considering that on average 50% of a family income came from cocoa (PAPAFPA 2000), i.e. approximately 200 \$/family/year for a total income of 400 \$/family/year, the financial advantage of organic cocoa represented a 50% increase in a family income. In the local context 205 \$ were equivalent to 10 months' wages for a farm labourer.

On the spot talks confirmed that this was a major advantage; no producer declared himself willing to leave the organic sector in spite of strong doubts before the first export in 2005.

The financial advantages, a renewable contract over five years and the guarantee of a minimum price, had a direct impact not only on the purchasing power, but also on the risks related to the fluctuation of the international price of ~~the~~ cocoa.

Direct consequences included the possibility to improve living conditions; housing, health, education, training, etc., and social recognition at the national level; many communities were thus interested in belonging to the organic sector.

This program was one of the very rare ones to have had an impact on producers' incomes in the agricultural sector. There was also the producers' satisfaction to take part in setting up something which they did not imagine possible a few years before.

As was noted during the visits, the producers knew that the organization could provide them with services (e.g. the collection of bananas; associative collection but individual sale).

It also seemed that the local authorities were aware that this experiment could impact (before the arrival of crude oil) on the economy of the country in the gloomy context of the cocoa price, especially in a market with major disparities between fine organic cocoa and poor quality cocoa.

The international institutions participating in the program showed that the action was sustainable and had an impact on producers' incomes.

KAOKA, which had a difficult start because of the three years' delay before the organic cocoa could be harvested and because of small marketable quantities (500 t was the minimum for the operation to be viable), acquired a good reputation for knowing how to develop organic cocoa sectors.

Zones of influence of the project

Initially the project was localised in the zone most favourable for the production of cocoa in accordance with the rules of organic agriculture and where cocoa have a good aromatic potential, i.e. the Western Northern zone of the island of São Tomé. Now new zones are in the course of integration, in the centre of the island of São Tomé and on the island of Príncipe.

Externalities

The culture according with the rule of organic agriculture is a good practice with regard to the management of the environment and the health of the people who work in the plots. Moreover one cacao-plantation carried out on this mode constitutes a forest ecosystem which can be beneficial at the international level and allows the maintenance of biodiversity. Cocoa in São Tomé since the distribution of the plots is not any more one monoculture, many other agricultural productions are produced in the same time in the cacao-plantations (bananas, lemons, oranges, papaw, breadfruit tree, taro, etc.); all this food is also produced under conditions "organic" what even if it is not yet the case currently, should be able to be marketed on a differentiated market, to make thus possible to improve the possibility of setting in market food productions. In any way can be beneficial for the health of the consumers.

A long-term job has been undertaken by the organizations of agricultural advisory service and KAOKA in a difficult, insular context and with a very low level of education. This work caused an awakening at the producers' level, even if that is not yet completely assimilated, that there is another way of working, in a group while preserving its personal interest. That the decisions, they are taking collectively could help the producer, ex farm labourer which had only little opportunity of showing initiative, to be able to take decisions.

This awakening of the producers, who for the first time of the history of the country succeeded in exporting cocoa directly is a step in front of this country where one started to speak about small producers of cocoa and not of slaves or forced workers or of

official workmen since about fifteen years. This step ahead goes well in the direction of the actual current, because in the world, quantities of agricultural products, each day more important, are marketed in an associative way by producer groups

On the other hand the focusing of the majority of the public means available around this program is regrettable, leaving since 2002 many producers without support nor technical aid, thus increasing the difference between these two sectors.

Can one speak about exclusion for the producers who are not in the organic sector? The authorities tell that is not the case. In the oral confirmation, it acts well of a pilot project, whose results obtained should make it possible to pass on a larger scale.

With regard to the producers who do not take part in the program, whom we met, it does not seem that there is a feeling of exclusion; some are trying besides to be structured to enter in the "organic" sector. But also the regret is expressed at the level of some farmers of these communities; the members did not have coordination sufficient nor collective will to be integrated in the program whereas they had the possibility. On the other hand certain communities justify the refusal to take part by theft risks: to prevent this risk the producers collect the insufficiently ripe cocoa, which is not accepted within the framework of the "organic" sector.

4. Conclusions

The setting up of the organic cocoa sector made possible to produce a cocoa of differentiated quality, without defect of presentation and good organoleptic quality. From our survey on the spot arises that this process could not be built on participative bases. No active implication, of the partners farmers: the talks highlight that the producers did not become aware that it was however the required process. Necessary according to the manager of KAOKA, they highlight their passivity in this process. Nevertheless such a collective working way exists in São Tomé only for the production of organic certified cocoa. This innovation but which requires a long training, does not seem reproducible in the short-term out of this sector, as well for the cocoa out of CECAB as for the other productions. Our talks with members of CECAB emphasize great limiting factors: the level of education; no practice of autonomy, accustomed to be directed and not to negotiate and build projects - individually and/or collectively.

The situation could be dangerous for the producers, subjected to the monopoly of only one purchaser? But the fact that the price guaranteed to the producer by KAOKA via the CECAB and to the communities, is higher than the double of what is practised on the local market, shows the will of the purchaser to not misuse the situation. Moreover KAOKA always kept to his commitments, supports the process of development by the means of a premium for each ton of exported cocoa.

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