



RESEAU DES ORGANISATIONS PAYSANNES ET DE PRODUCTEURS
AGRICOLÉS DE L'AFRIQUE DE L'OUEST
Afrique Nourricière
09 BP 884 Ouagadougou 09 - Tel (226) 50-36-08-25 ; Tel/Fax : 50-36-26-13 ;
Site : www.roppa.info ; Email : roppa@roppa-ao.org; roppabf@liptinfor.bf ;

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Food sovereignty and export crops

*Could ECOWAS create an OPEC for sustainable cocoa?*¹
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Niek Koning & Roel Jongeneel
Wageningen University, the Netherlands

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1. Introduction

Farmers' organizations, NGOs and governments of low-income countries are putting forward *food sovereignty* as the leading concept for agricultural trade policy, pointing out that food is too important to make whole populations dependent on food imports from world markets. Besides, the production of food crops is vital for the livelihoods of millions of poor farmers in developing countries. Therefore, countries should have the fundamental right to protect their producers of food crops against cheap imports they cannot compete with.

Food sovereignty is opposed to neo-liberal prescriptions that urge developing countries to rely on export crops and to open their borders for food imports. Nevertheless, even if one rejects a one-sided export-led growth, export crops are still important for the trade balance and the livelihoods of many households in low-income countries. This begs the question concerning the role that export crops can play in a policy that has adopted food sovereignty as its driving strategy. To clarify the issue, we discuss two subjects in this paper:

- What is the rationale for a food sovereignty strategy, and what are the implications for export crops?
- How can the farm-gate prices of export crops be improved, and what could ECOWAS do in this respect?

At the end of the paper, we present a ten-step action plan to improve the prices of cocoa, of which ECOWAS is the world's number one producer.

2. Export crops and food sovereignty

Agriculture, economic development, and the world market

Agriculture is the starter of economic development. Agricultural development provides opportunities for agro-industries, food for non-farm workers, and rural markets for urban industries.² In virtually all developed countries, modern economic growth started with an economic revolution in agriculture.³

To enable agriculture to play its role as the starter of development, farmers need prices that allow them to invest and to combat soil degradation. In earlier centuries, this was less of a problem. Population growth raised agricultural prices because it increased the demand for food. However, in our modern world this has changed. Since the late 19th century, cheap transport and rapid yield increases in areas with modernized farming have caused global oversupply. It has caused low and unstable prices in agricultural world markets, which led to a need for supportive price policies and international supply management. That is why the GATT - the international trade treaty that preceded the WTO - did not prescribe free trade for farm products, but allowed countries to protect their farmers provided that they controlled their production.

Another paper for this forum (Koning 2006) explains how the EU and the US violated this condition. They protected their farmers, but rather than controlling their supply they dumped growing surpluses onto the world market. During the Uruguay Round negotiations (1986-93), these powers enforced a new rule that allowed them to give direct payments to their farmers without obligation to control their production. By shifting to direct payments for which they alone had the means, they could continue exporting for prices below their own costs of production. At the same time, the rest of the world was obliged to reduce its tariff defenses. Developing countries got 'special and differential treatment', which gave them some leeway for maintaining import tariffs. But the US, the EU, the World Bank and the IMF pressured them not to use this scope, claiming that it would be good for developing countries to liberalize their trade policies.⁴

While the two powers thus continued protecting their own farmers, they thwarted international commodity agreements that could support the prices of tropical export crops.⁵ In the 1980s, the collapse of the few existing agreements entailed a protracted fall in the prices of products such as coffee and cocoa. This was exacerbated because international donors urged developing countries to raise their export production. Thus the coffee crisis continued amidst a tenfold increase in production in Vietnam during the 1990s. In recent

² Johnston & Mellor (1961). Block & Timmer (1994). Delgado et al. (1993). Hazell & Roell (1983). Some economists think that today, an increase in farm incomes is no longer essential for development, because in a globalized economy, export demand could take the place of the domestic demand that is fuelled by farmer incomes. Therefore, economic development could start directly in some export industry, even when agriculture is stagnant. However, these experts forget that industrial enterprises rely on hired workers and are engaging in commercial transactions all the time, so that they can only thrive when commercial skills, labour discipline, and trust in non-relatives are sufficiently developed. Some preceding development is needed to create these conditions before successful industrialization is possible. Agricultural development can fulfill this function, because it is less dependent on hired labour and constant transactions than industry is, while its development still encourages these conditions (also cf. Timmer 1995).

³ Kuznets (1966). Timmer (1988).

⁴ Anderson & Martin (2005). See FAO (2006) for criticism on the model studies that underlie these claims.

⁵ Chimni (1987). Koning et al. (2004). Maizels (1992).

years, the war in Ivory Coast and poor harvests in Brazil led to some recovery in cocoa and coffee prices, but new price falls are likely to follow when these temporary causes have disappeared.

In brief, the US and the EU are hindering a responsible multilateral system of supply management that could support the world market prices of agricultural products. In this situation, the only expedient option left to low-income countries is to form regional customs unions and to claim their own internal markets, using import duties to protect their farmers against cheap imports with which they cannot compete. This option implies prioritizing food crops and other crops that can be sold on the internal market and requires an increase in import duties, as well as a determined resistance of attempts (including European Partnership Agreements) to squeeze the policy scope that low-income countries have for imposing such duties. In our opinion, this is the essence of the idea of *food sovereignty* that farmers' organizations and governments of low-income countries are setting against the pseudo-liberalization that the US and the EU are trying to sell to the world.

In a more ideal world, in which multilateral supply management were to support world market prices, low-income countries might also acquire food security and economic development by specializing in suitable export crops and importing part of their food, although they would still need some protection against the superior agribusiness of other regions. But in the world as it is today, they can only achieve these aims by systematically protecting their own food crop producers.

What does it mean for export crops?

Does the above strategy mean that export crops can be ignored? We think not. Export crops can fit in a strategy that prioritizes the protection of domestic food crops, provided that some conditions are fulfilled:

- *Export crops should support rural livelihoods, not destroy them.* An evolution as has occurred in some parts of Latin America, where export crops are coupled to massive eviction of small farmers or severe exploitation of labourers should be avoided. In West Africa, export crops are largely produced in smallholdings. Nevertheless, in some places, serious problems of labour relations have evolved.⁶ Labour protection and land reform may be needed to redress this.
- *Export crops should leave the natural resource base intact.* In the current situation, the impact on natural resources differs between crops. For example, while the fertiliser that is applied to cotton helps to moderate soil mining, current production techniques in cocoa entail deforestation and soil degradation (see below). An effective policy should achieve a shift to more sustainable techniques.
- *Export crops should provide adequate earnings to farmers.* In the current situation, farmers can neither pay decent wages to laborers nor invest in sustainable production techniques. To redress this imbalance, the farm-gate prices of export crops should be improved.

Improving the farm-gate prices of export crops requires first of all a fair distribution of export prices. In several cases, too large a share is still retained by para-statal bodies. Although the quality decline in cocoa following the dismantling of stabilization and marketing boards in Ivory Coast and Nigeria suggests that a simple dismantling of such bodies may not be the solution,⁷ it does not mean that things can continue in the same old way.⁸ Research and extension should encourage farmers to become more effective, and private merchants should be allowed to compete with para-statal bodies to force them to improve their efficiency. This would also create room for non-state-controlled enterprises that are owned by farmers themselves.

Yet giving farmers a fairer share of the export price will not be enough if world market prices themselves are too low. In the rest of this paper, we focus on possibilities for ECOWAS to improve the prices that it receives for its export crops. Because developed countries do not support a multilateral system of managed trade, we only consider strategies that could be applied by ECOWAS alone, or together with other developing countries.

3. How to improve the prices of export crops

Various approaches have been proposed for improving the world market prices of export crops, including trade liberalization, marketing of fair trade or organic products, and the formation of countervailing power against large trading and processing companies.⁹ Not all these approaches will work. Developed

⁶ See STCP (2002) on child labour in cocoa plantations.

⁷ See the explanation in Dorward et al. (forthcoming) of the reasons why private entrepreneurs may fail to take over the functions of para-statal bodies in low-income countries.

⁸ See e.g. Laven (forthcoming) on the cocoa board in Ghana.

⁹ See Lines (2005) for a comparison and discussion of these approaches.

countries will not cooperate with (real) trade liberalization when it hurts their own interests. Moreover, the sequel of the collapse of the cocoa and coffee agreements shows that trade liberalization does not prevent low prices.

Marketing of fair trade or organic products has been proposed to improve social and environmental sustainability in a liberalized world market. However, the niche markets for these products remain small; their limited scale entails high trade margins; and the necessary certification involves high costs that penalize smaller farmers.¹⁰ These initiatives bring benefits to some farmers and raise the awareness of consumers in importing countries, but they have little effect on average prices.

Formation of countervailing power against the giant international companies in the export crop chains is urgently needed. However, one cannot take a firm stand against large buyers when markets are glutted. Some system of international supply management is a precondition for any attempt to improve the bargaining power of producers.¹¹ That is why the African Union and the African Group in the WTO are putting supply management for agricultural commodities back on the international agenda.¹² Indeed, adjusting the global supply of export crops to the size of the global demand is vital for improving world market prices. However, the feasibility of doing so differs strongly between the two main export crops of ECOWAS: cotton and cocoa.

Cotton

Cotton can be produced by tropical and temperate countries alike. One-third of global cotton production is achieved by developed countries (see Table 1). The US alone accounts for one-fifth. Our assumption that developed countries will not co-operate implies that international supply management is unfeasible in this crop. Even WTO ‘liberalization’ will have only a slight effect on international cotton prices. While model studies employing full liberalization scenarios have predicted price improvements of over 10 percent,¹³ more realistic projections are around 1 percent.¹⁴ Cotton-producing developing countries may well demand a strong reduction in subsidies, but the US will make no more than a few modest concessions. Liberal-economic advisers who suggest otherwise are indulging in wishful thinking.¹⁵

This leaves ECOWAS with only one feasible option for really improving its cotton revenues: to increase the processing and sales of cotton in its own internal market. This first of all requires an energetic drive to support its small and medium-scaled textile industry in order to transform its own cotton into clothing for its own market. This should be coupled to import duties on cotton to protect its farmers against cheap imports, and to import duties on textile and clothing to protect its weavers and tailors against imported products made from dumping priced cotton. Such a policy would certainly be in line with an international division of labour based on comparative advantage. Even if West African textile producers were to be less productive than textile factories in India or China, it would be foolish to continue exporting 95 percent of West Africa’s cotton to far-away factories, and then transporting it all the way back as cloth or garments. However, realising this option requires that ECOWAS maintains enough policy scope for protecting both its agriculture and its textile industry. The conditions that the EU is making for a European Partnership Agreement would remove this scope, so it would be necessary to reject these conditions.

Table 1: Cotton lint production in various countries (average of 2000-2005)

	1000 tons	% of world production
Developed countries	7,023	34
United States	4,332	21
Developing countries	13,822	66
ECOWAS	938	4
World	20,844	100

Source: FAOSTAT data, 2006

In addition to the processing of cotton lint, value can be added to cotton by using the residues for biofuel. Cottonseed oil - even low quality oil that is unsuited for human consumption - can be used for biodiesel.¹⁶ In the warm climate of the ECOWAS countries, a significant percentage of cottonseed oil can be mixed with fossil diesel even without further processing. In the longer term, techniques will also become available to make

¹⁰ Clay et al. (2005). Talbot (2004).
¹¹ Koning & Robbins (2005). Robbins (2005).
¹² African Group (2006). African Conference of Ministers of Trade on Commodities (2005).
¹³ E.g. Baffes (2004).
¹⁴ See ‘other crops’ in table 3.2 of Polaski (2006).
¹⁵ Even Brazil, which is pressuring the US to reduce its cotton subsidies, may in the end trade this demand for smaller reductions in its protection of manufactures and services.
¹⁶ Griffin & Jamallamudi (2002).

bioethanol from fibrous residues like cotton gin trash or cotton stalks.¹⁷ With rising prices of fossil fuels, using cotton residues for bioenergy is a perfect option for cotton-producing countries that are land-locked and where importing fuel is especially costly.

Cocoa

There is no large demand for cocoa within ECOWAS itself. To improve the revenue from it, therefore, there is no alternative but to increase the world market price itself. This requires an international arrangement to control the global supply. Unlike cotton, developed countries cannot grow cocoa, so they cannot thwart such an arrangement by increasing their own production. Moreover, unlike peanuts or natural rubber, cocoa has no close substitutes and the demand for it is inelastic. Thanks to this, a small reduction will suffice to induce a significant improvement in prices.¹⁸ In fact, ECOWAS would be well-placed to take the lead in an attempt at regulating the world market for cocoa since it produces 63 percent of the global supply (see Table 2), as opposed to coffee, for example, where its share is little more than 3 percent.

Table 2. Cocoa production in various countries (average of 2000-2005)

	1000 tonnes	% of world production
ECOWAS countries	2,231	63
Ivory Coast	1,334	38
Ghana	523	15
Nigeria	352	10
Other ECOWAS countries	23	1
Non-ECOWAS countries	1,307	37
Indonesia	534	15
Brazil	189	5
Cameroon	145	4
Other non-ECOWAS countries	438	12
World	3,538	100

Source: FAOSTAT data, 2006

Many economists (especially those related to the World Bank) see the collapse of the international commodity agreements as proof that supply management of export crops is inherently impossible. As we have already stated above, the real reasons for this collapse were political rather than economic. Nevertheless, it is true that global supply management is not an easy task to achieve. This is an additional reason for prioritizing the protection of domestic food crops, which can be done by simple import duties. It is quite a challenge to persuade enough producing countries to restrict the supply of an export crop, to secure a fair implementation, and to ensure that the benefits actually reach the farmers. Only its governments and its farmer organizations can decide whether and when ECOWAS would be up to this challenge. However, if they were to consider taking such an initiative, the history of the international commodity agreements teaches some important lessons:

- *Do not depend on importing countries.* The older commodity agreements depended on importing countries for policing export quotas and for financing buffer stocks. Additionally, these agreements were negotiated in a framework that granted a veto to importing countries, resulting in endless discussions, ineffective control mechanisms, and the collapse of the few functioning agreements when importing countries changed their minds in the 1980s.¹⁹ If producing countries want to reintroduce supply management schemes, they should do so unilaterally; just like the oil-producing countries did in OPEC. This is why the African Group in the WTO is claiming scope for such unilateral initiatives in its recent proposal on agricultural commodity issues.²⁰ The co-operation of a few consuming countries would be helpful, but the scheme should not depend on it.
- *Involve farmers' organizations.* The older commodity agreements only involved governments. In many cases, the benefits were skimmed by para-statal bureaucracies.²¹ These benefits failed to reach the farmers, who therefore had few incentives to co-operate. To redress these flaws, farmers' organizations should play a vital role in the elaboration and implementation of any new scheme.

¹⁷ Demirbaş (2005).

¹⁸ Maizels et al. (1997).

¹⁹ Chimni (1987). Koning et al. (2004). Maizels (1992).

²⁰ African Group (2006).

²¹ Bohman et al. (1996). Gilbert (1996).

- *Include production controls.* The commodity agreements tried to manage the supply by buffer stocks and national export quotas. However, they did not control the volume of production itself. This led to smuggling and overflowing of stocks, since once a crop has been produced it is difficult to isolate it from the market. Buffer stocks and export quotas are important instruments for supply management, but they should be backed by production controls to make the system effective.²²

Two main difficulties need to be overcome if effective supply management of cocoa is to be achieved. The first involves preventing some producing countries from acting as free riders who benefit from the improved prices but are not co-operating with the arrangement and do not limit their own supply. The second concerns how to control the production of millions of smallholders in a fair and effective way, in countries with poor infrastructures and limited administrative capacities.

Free riding can be discouraged by using the carrot as well as the stick. The ‘carrot’ would be a rule that allows for a gradual transfer of production rights to countries where cocoa can be produced at lower cost.²³ This reduces the incentive to free ride for these countries, for whom expanding production is most attractive. This transfer should occur according to some objective formula that is agreed upon in advance by the participating countries. Countries that lose part of their quota rights through this rule should receive financial compensation to help them to diversify their production.

The ‘stick’ would be a special trading company that is owned by the international secretariat that runs the scheme. This company would assist in the market operations of the secretariat and act as a broker and sales agent for participating countries that wish to make use of its services. However, it would also make transactions that, while being profitable, at the same time decrease the prices and the price stability of cocoa that is traded outside the arrangement.²⁴ Again, this would make free riding less attractive for countries.

How to control the production of millions of smallholders is the other tough nut to crack. Developed countries have used individual farmer quotas and acreage reductions for this purpose.²⁵ They started doing so in the 1930s, long before computers and satellites were available to assist in the management of such measures. However, administrations and infrastructures in many low-income countries are weaker than they were in developed countries even at that time.²⁶ Therefore, an alternative line of attack might be considered: a *conservation approach* to supply management.²⁷ Below we sketch how such an approach in cocoa might look like.

4. A conservation approach for international supply management in cocoa

As has already been said above, ECOWAS produces 63 percent of the world’s cocoa. Three countries - Ivory Coast, Ghana and Nigeria - account for 99 percent of ECOWAS cocoa production (see Table 2). Major non-ECOWAS producers are Indonesia, Brazil and Cameroon. Fifteen years ago, Malaysia was an important producer, but its production has strongly declined. At present, Vietnam is increasing its cocoa production. A few years ago, it was announced that it wanted to plant 100,000 hectares with cocoa, which would mean some 3 percent of global production. More recently, Vietnam seems to have moderated its ambitions.²⁸ It wants to avoid repeating its experience with coffee, where a strong increase in its production prompted a global crisis that hit its own farmers too.

There are good reasons for combining biodiversity conservation and supply management in cocoa.²⁹ In its current form, cocoa is a nomadic crop. It grazes virgin rainforests leaving a degraded environment behind after a few decades. Young farmers move along to clear new forests, while those who stay behind become trapped in decline.³⁰ The cycle is accelerated by a shift from shaded plantations to open sun systems. The latter give higher yields, but pests and diseases increase and the productive life of the cocoa trees is shortened. The upshot is large-scale deforestation and conflicts over dwindling forest resources (the war in Ivory Coast started as a cocoa war).³¹ Moreover, this way of producing will fail to meet the world’s growing demand for cocoa in the future. At present, the supply is maintained by eating up the last forest reserves in Ghana and Ivory Coast - a situation that is clearly unsustainable.

²² Robbins (2003).

²³ Cf. Maizels (1992).

²⁴ See Koning & Robbins (2005).

²⁵ The EU still has individual farmer quotas for milk, and Canada, for milk and poultry.

²⁶ Elsewhere, Peter Robbins (an ex-trader in tropical commodities) and I have proposed a system of farmer quotas that might still work in these conditions (Koning & Robbins 2005). However, this requires strong farmers’ organizations to ensure a fair and efficient implementation. The system proposed in this paper may be more easy to manage.

²⁷ This too has precedents in developed countries. Especially the US has long used conservation measures to regulate the supply of its agricultural sector.

²⁸ International Herald Tribune, 2005-08-05 (www.iht.com/articles/2005/08/04/bloomberg/sxcocoa.php).

²⁹ Rice & Greenberg (2000).

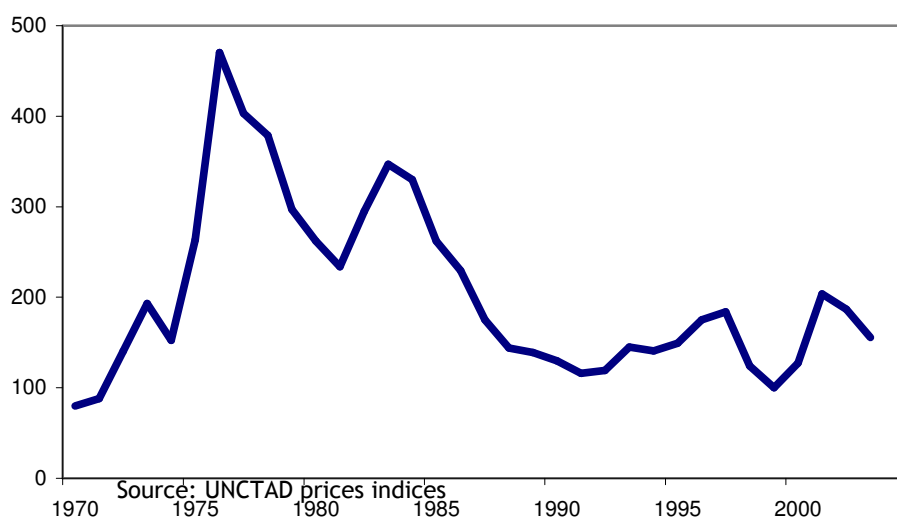
³⁰ See various chapters in Flood & Murphy (2004).

³¹ See Woods (2003).

In the longer term, the demand for cocoa can only be met by replanting older plantations, a return to shaded systems, and more controlled exploitation.³² Governments and international organizations are taking initiatives to introduce shaded systems and forest conservation in frontier areas, and to combine replanting and tree crop diversification in older cocoa areas.³³ However, a shift to sustainable cocoa production requires prices that make it worthwhile for farmers to invest their labour and money in replanting, shade trees, and pest management. Unregulated markets generate strong price fluctuations, which are enhanced by the time lag between planting and harvesting and by speculation on the New York and London cocoa exchanges.³⁴

Moreover, since the collapse of the cocoa agreements, international cocoa prices have strongly declined, depressing farm-gate prices even where the farmers' share in the export prices improved (Figure 1). This also stimulated the abuse of child labour in some areas.³⁵ Besides, low prices discouraged careful harvesting, fermenting and drying, thereby threatening the quality of the cocoa. In recent years, the prices have somewhat improved, but not enough to allow a shift to sustainable production methods. Moreover, if nothing changes, prices may fall again as soon as the war in Ivory Coast is over and Vietnam expands its production.

Figure 1: Cocoa prices in the New York & London exchanges (SPDs/tonne; 2000 = 100)



In this situation, an arrangement that would stabilize prices, improve farmer earnings and make cocoa production more sustainable would benefit all stakeholders. Consumers could be assured that the chocolate they buy does not involve 'slave labour' or forest destruction. They have an interest in anything that helps to reduce the poverty that is causing mass migration and other troubles that affect their own regions. The costs for them would be negligible. The farm-gate cocoa price is little more than 0.5 percent of the final consumer price. Besides, the two are quite unrelated. And international dealers, processors and retailers would also benefit from more stable and predictable prices. A rise in farm-gate prices would hardly affect the demand for their products. Conversely, it could greatly increase the farmers' scope for investing in sustainable production systems that would allow a reliable supply of good quality cocoa that does not harm reputations. Only speculators who earn money from price fluctuations would stand to lose.

Nevertheless, few stakeholders will take the initiative for an arrangement. For consumers, cocoa is only one of many products, and dealers and processors do not like 'government interference'.³⁶ Therefore, the initiative should come from farmers' organizations and governments of producing countries, for which an arrangement is much more urgent. Below we sketch a 10-step action plan that they could use.

³² Gilmour (2004). Wessel & Gerritsma (1993).

³³ E.g. Government of Ghana et al. (2004).

³⁴ Maizels et al. (1997).

³⁵ STCP (2002).

³⁶ Besides, some may worry about an arrangement that would complicate certain manipulations, like transfer pricing abuse, that are rife in the commodity trade.

A ten-step action plan

1. The first step would be for governments and farmers' organizations of cocoa-producing countries to unite in an international cocoa-producers' organization. The initiative could be taken by ECOWAS jointly with Indonesia, Brazil and Cameroon, which together control 87 percent of the world's cocoa. The organization is equipped with a permanent secretariat. This establishes its own trading company, hiring experienced and trustworthy staff who share the aims of the arrangement. (They could be recruited from the ranks of traders and managers who have worked with fair trade companies.) The organization asks citizens groups and fair trade companies in consuming countries for support, and invites international dealers and processors to co-operate, appealing to their corporate social responsibility. Under the guidance of the international secretariat, the countries agree on the national base quotas that each of them receives. These are based on the volumes produced during a uniform base period (e.g., the last three years). Some flexibility is given to emerging producers (Vietnam), and a formula is adopted that will allow a gradual transfer of quota rights from high-cost countries to low-cost countries in the future (the 'carrot' against free riding). The countries agree on the price band that is needed to allow decent earnings and a transition to sustainable cocoa production, and the secretariat ascertains the uniform percentage by which the national quotas should be reduced to bring the prices into this band. A transition period (e.g., 5 years) is fixed within which all countries should reduce their production to their adjusted quotas. The governments pledge that, during the transition period, the share of farm-gate prices in the export prices will not be reduced. Additionally, governments and farmers' organizations agree on a minimum level of this farmers' share (e.g., 65 percent) to be respected after the transition period.
2. To prepare the implementation of the quotas, each country designates two types of zones:
 - *No-clearing zones* are forest areas where no clearings for cocoa are allowed.
 - *Diversification zones* are low-productive old cocoa areas where cocoa trees are to be dug up and diversification crops to be developed. These can be tree crops like citrus or oil palm, but also food crops that become more profitable when tariffs on food imports have been raised. Governments prepare diversification plans for these zones in close consultation with farmer organizations.
3. The actual implementation of the arrangement starts with all producing countries imposing a common export tax. This comes on top of existing national taxes, and the entire revenue from this new tax is transferred to the international secretariat. Part of this is used by its trading company to buy sufficient stocks and production surpluses to move the world market price of cocoa within the agreed price band. Preferably low-quality products are purchased from the market. Apart from a buffer stock, all purchases are destroyed or denatured (e.g. into animal feed) to induce expectations of price rises, thereby stimulating private stockholding and moderating the size of the intervention required. To gain sufficient support among farmers, world market prices are raised sufficiently to allow some immediate improvement in farm-gate prices in spite of the tax.
4. Meanwhile, the secretariat's company starts its activities as a 'stick' against free riding. Due to its direct relationships with the secretariat, farmers' organizations and participating governments, the company has superior market intelligence. Also, it can grant traded options with limited risks because these will be underwritten by member countries. The company uses these advantages for profitable transactions that have the effect of decreasing the level and stability of the prices of cocoa from free-rider countries. For example, the company might unexpectedly buy or sell free-rider products, in short-term periods of free-rider market shortages or gluts, and sell or buy back these supplies at a profit. This would have the effect of increasing the uncertainty in the free-rider segment of the market. Several other types of market 'guerrilla' tactics would be available to a company using more sophisticated derivatives strategies. Fair trade and organic companies could support this action by not accepting any cocoa that is produced in free-rider countries.³⁷
5. Part of the tax revenue is refunded to governments to finance the changes in the diversification zones. They use it for setting up marketing chains and for giving credit to farmers to bridge the period before the new crops can be harvested, in accordance with the diversification plans that have been prepared for this purpose. In addition, farmers in the diversification zones receive premiums for digging up their cocoa trees (including abandoned plantations, which are havens for pests and diseases). The uprooting is voluntary, and the premium should be of such a level that farmers are persuaded to comply. However, the governments should make it clear that, after the transition period, all trading in cocoa from the diversification zones will be banned. The diversification process is monitored by the international secretariat to ensure that farmers are provided with attractive alternatives and that cocoa trees are indeed uprooted. As the uprooting advances, the volume of surpluses that the secretariat needs to buy

³⁷ See Koning & Robbins (2005).

from the world market to maintain the new price level will decrease, so that an increasing part of the tax money can be refunded for diversification and uprooting.

6. The secretariat transfers another part of the export tax revenue to farmers' organizations. These use this for an energetic mobilization campaign to get farmers in the cocoa areas organized in self-ruled associations. These local organizations take care of bulking and grading, so that higher quality beans can receive a better price, which will stimulate farmers to improve fermentation and drying. They also provide credit to farmers for inputs and the hiring of labour, and can undertake community activities like providing water pumps, grain mills or electricity. The local associations establish national unions that can negotiate with their governments.
7. After the transition period, sufficient trees will have been uprooted to sustain the new prices without further destruction of surpluses. The international secretariat can limit its market intervention to running a buffer stock for short-term price stabilization and commercial operations to discourage free riding, which should be self-financing. Governments are now free to use part of the increased export earnings for purposes such as public investments in roads, health and education, also outside the cocoa areas. They negotiate the farm-gate prices for cocoa with the unions of cocoa farmer associations. However, the minimum share of farm-gate prices in the export price that has been agreed upon at the outset is respected.
8. Meanwhile, the common export tax is maintained. The international secretariat hands the tax revenue that is no longer needed for other purposes over to the cocoa farmer associations. These use it to give payments per hectare of cocoa to farmers. In the case of sharecropping arrangements (*abusa*, *abunu* etc.), payments are divided between owners and sharecroppers in proportion to their shares. To qualify for payments, farmers should meet certain standards. Only productive fields are paid for, no abuse should be made of workers, etc. An important condition is that fields should be shaded or that serious work is made of reintroducing shade trees (which can start with border shading). Farmers who feel unfairly treated can appeal to arbitration committees. The allocation of payments by the associations is supervised by representatives of the international secretariat. If this finds that an association has been lacking in fairness or efficiency, it can replace it with other organizations, trusted institutions like churches, or its own agents if needed.
9. Once the balance in international markets is no longer threatened, a sustainable rise in yields is pursued. Local associations and extension workers organize farmer field schools to introduce better weeding, removal of diseased pods, and spraying (preferably with organic pesticides like *neem*). Replanting of cocoa in combination with reforestation and tree crop diversification is stimulated in designated areas. Plans for this are made by governments in close consultation with farmers' organizations. Meanwhile, care should be taken to keep production within the national quotas. One reason for giving farmers payments per hectare rather than higher prices per kilo is to avoid uncontrolled yield increases from undermining the effort to balance the market.³⁸ Besides, new uprooting and diversification measures may be needed to prevent replanting and improved yields from causing new overproduction. Governments and farmers' organizations manage the supply by balancing all measures. Fair trade and organic companies can help by using their niche market premiums in accordance with the plans that governments and farmers' organizations make for this purpose.
10. Over the years, the price band that is maintained by the arrangement is adjusted to the production costs in the participating countries. The world demand for cocoa increases with some 2 percent per year, which means that the national quotas can gradually be expanded. Every couple of years, a small part of the total quota room is transferred from high-cost producer countries to low-cost producer countries according to the formula that the participating countries have agreed upon. To avoid misunderstandings, this formula should be based on objective indicators that can be ascertained by the international secretariat.³⁹ Preferably, the general increase in quotas should exceed the loss in production rights by high-cost countries, so that no country is forced to cut down its production in absolute terms. Countries that lose quota rights receive financial compensation from an adjustment fund. This is managed by the international secretariat and financed partly out of the common export tax and partly by contributions from countries that benefit from the quota transfer.⁴⁰ The financial compensation also serves to help farmers in high-cost countries to diversify their production. Governments and farmers organizations decide together on the way in which the compensation money is to be used.

³⁸ In many countries, farmers have ample room for raising yields by more careful cultivation and harvesting (Dormon et al. 2006), and strong price rises could make them use this room.

³⁹ Possible indicators are the purchasing prices that farmers are willing to pay for cocoa fields or the payments needed to induce them to replanting.

⁴⁰ Cf. Talbot (2004: 216-217).

Some estimates

To illustrate the financial and economic feasibility of this action plan, we constructed a simple economic model to estimate the outcomes of a tangible version of it. The model is a partial equilibrium simulation model based on stylized market data for 2002/03 (Lass 2004). In it, supply and demand respond to price changes according to empirical elasticity estimates for the cacao sector based on Maizels et al (1997). Six regions are distinguished: ECOWAS, Indonesia, Cameroon, Brazil, an aggregate group including all other cacao-producing countries, and the rest of the world. This last region comprises all countries that consume cacao but do not produce it. The model considers the period 2006 till 2020 and assumes that the global demand for cocoa will increase at a rate of 2 percent per year. For some selected details see Table 3.⁴¹

To estimate the outcomes of the above action plan, we had to take a number of concrete decisions (see Table 4). We assumed that the plan would be introduced in 2006. In this year, a ban on new clearings in the no-clearing zones would be introduced. We assume that this reduces the autonomous (price-independent) expansion of the cocoa area from 0.5 percent to 0.2 percent per year. In addition, an export tax of \$300 per ton (15 percent of the world market price) is introduced. Of the revenues, 2 percent is used to finance the operational costs of the international secretariat, which recur each year. Until 2010, another 10 percent of the revenues is transferred to farmers' organizations for their campaign to organize cocoa farmers in self-ruled associations. In the same period, the rest of the revenues is used for buying production surpluses out of the market and for uprooting trees and developing alternative crops in the diversification zones. In 2006, 275 thousand tons of cocoa are purchased and destroyed or denaturated.

These purchases decrease in the following years, reaching zero in 2010. The yearly purchases can be seen in Table 4. This also shows the shares of the total cocoa area that are taken out of production by uprooting in the diversification zones. In 2006, one percent of the area is taken out of production; from 2007 to 2009, 2.5 percent yearly; and from 2009 to 2011, 0.5 percent yearly. In total, 10 percent of the total cocoa area is thus taken out of production. Because old cocoa fields are little productive and cocoa fields that are no longer harvested are also uprooted, we assume that this corresponds to a 2.5 percent reduction in total cocoa production. We assume that the amount of money needed for uprooting (uprooting premium plus diversification costs) is 10 times the market price of the cocoa that the uprooted trees produced (or would have produced if they had been harvested).

Table 3: Some selected world cacao model characteristics

	unit	ECOWAS	Cameroon	Brazil	Indonesia	Other Prod	RoW	average
<i>Market and policy data</i>								
land area used	1000 ha	686,70	49,00	56,70	148,75	124,60	0,00	1065,75
production	1000 t	1962,00	140,00	162,00	425,00	356,00	0,00	3045,00
share in production	%	0,64	0,05	0,05	0,14	0,12		1,00
demand	1000 t	64,72	16,18	40,45	404,50	80,90	2438,25	3045,00
excess supply	1000 t	1897,28	123,82	121,55	20,50	1275,10	-2438,25	0,00
world market price	\$	1500,00	1500,00	1500,00	1500,00	1500,00	1500,00	1500,00
para-statal agency financing tax (ad valorem)	\$	100,00	50,00	50,00	50,00	50,00	0,00	0,00
distribution and handling margin (fixed)	\$	100,00	100,00	100,00	100,00	100,00	100,00	100,00
producer price of beans	\$/t	1300,00	1350,00	1350,00	1350,00	1350,00	1400,00	1400,00
producer revenue total	mill.\$	2550,60	189,00	218,70	573,75	480,60	0,00	4012,65
<i>Behavioural response & technical coefficients</i>								
supply price elasticity	-	0,25	0,25	0,25	0,25	0,50	0,50	
land input elasticity	-	1,00	1,00	1,00	1,00	1,00	1,00	
land input-output price elasticity	-	0,13	0,13	0,13	0,13	0,50	0,50	
demand price elasticity	-	-0,25	-0,25	-0,25	-0,25	-0,25	-0,15	
demand income elasticity	-	0,10	0,10	0,10	0,10	0,10	0,55	
income growth	%	1,50	1,50	1,50	1,50	1,50	2,50	
yield shaded/yield unshaded	fraction	0,80	0,80	0,80	0,80	0,80	0,80	
slippage factor uprooted land	fraction	0,75	0,75	0,75	0,75	0,75	0,75	
exogenous land increase growth rate	%	0,50	0,50	0,50	0,50	0,50	0,50	

Source: own estimates based on Lass (2004) and Maizels et al. (1997)

⁴¹ More details are available upon request from the authors.

This combination of destruction of surpluses and area reductions allows an immediate increase in farm-gate cocoa prices of about 10 percent compared to the situation without intervention (see Figure 2).

From 2010, the bulk of the export tax revenues is transferred to cocoa farmers associations to give payments per hectare of cocoa to farmers who produce in a socially and environmentally sustainable way. (Table 5 shows the export tax revenues and how its spending on various purposes evolves over time). We assume that all farmers adjust their production so that all of them receive these payments. The payments will induce new increases in yields and area, but less than outright price rises would do.

To be on the safe side, we nevertheless assume that the effect of payments on yields will be similar to that of a corresponding price rise, but we assume that the ban on new clearings in the no-clearing zones reduces the effect on area to one-fifth. As a result of the payments and the prices effects, farmers now receive about 40 percent more revenue than they would have earned without the arrangement (see Figure 2). At the same time, 2 percent of the export tax revenues is left for additional purposes like the adjustment fund for compensating countries that lose production rights to countries with lower production costs.

Table 4. Applied policy instrument mix

	Export tax (\$/tonne)	Market intervention (1000 tonnes)	Area uprooted (% of total area)	Diversification expenditures (\$/hectare)	Direct payments (\$/tonne)
2006	300	275	1	18261	0
2007	300	190	2.5	17816	0
2008	300	175	2.5	18178	0
2009	300	100	2.5	17860	0
2010	300	0	0.5	15875	240
2011	300	0	0.5	16255	240
2012	300	0	0.5	16524	240
2013	300	0	0	16851	240
2014	300	0	0	17218	240
2015	300	0	0	17460	240
2016	300	0	0	17714	240
2017	300	0	0	17965	240
2018	300	0	0	18205	240
2019	300	0	0	18492	240
2020	300	0	0	18793	240

Figure 2. Producer revenues under the supply management programme (indexes, baseline is 100)

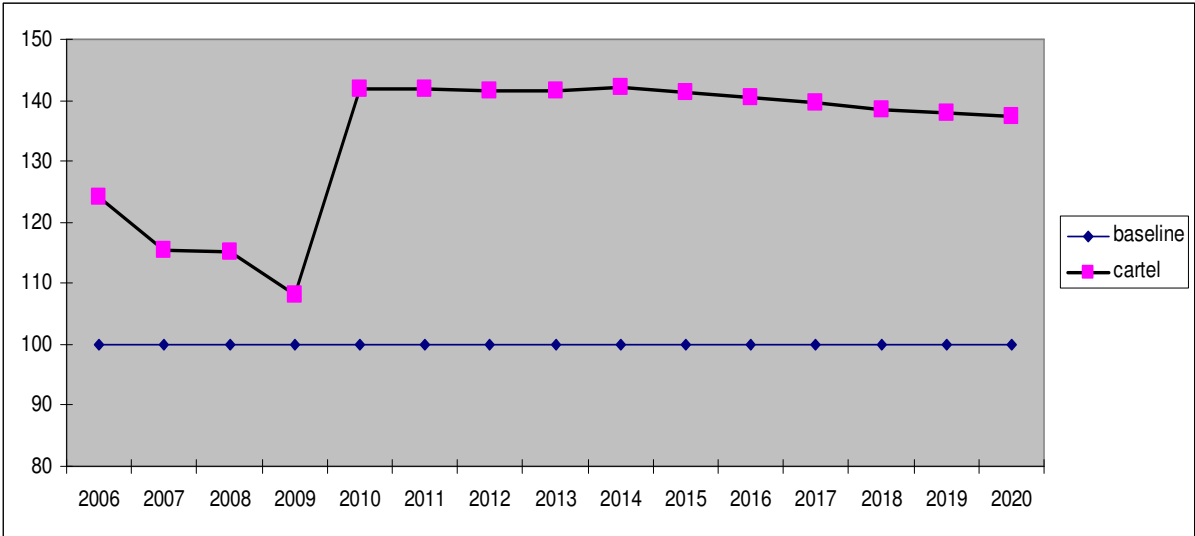


Table 5. Export tax revenues and expenditures (\$1000)

	Export tax revenues	Secretariat costs	Market intervention	Diversification expenditures	Farmers' organizations' mobilization campaign	Direct payments
2006	830394	16608	502173	194615	83039	0
2007	817782	16356	338507	474689	81778	0
2008	821481	16430	318123	484342	82148	0
2009	811453	16229	178604	475869	81145	0
2010	815531	16311	0	84595	81553	761717
2011	823656	16473	0	86617	0	767836
2012	832799	16656	0	88051	0	774967
2013	841622	16832	0	0	0	781757
2014	854121	17082	0	0	0	791435
2015	864775	17296	0	0	0	799845
2016	874526	17491	0	0	0	807518
2017	884437	17689	0	0	0	815331
2018	894562	17891	0	0	0	823336
2019	904512	18090	0	0	0	831138
2020	914511	18290	0	0	0	838966

To test the vulnerability of the programme to free riding, a similar scenario was run, but now it was assumed that only ECOWAS, Indonesia, Cameroon and Brazil would cooperate. The simulation results showed that this changes the results, but to a limited extent. The programme will still work, be feasible and attractive for the cartel of participating countries.⁴²

5. Concluding remarks

We believe that our proposal would be a robust and transparent arrangement. It is self-financing and not dependent on external support. Yet the improved sustainability will appeal to consumers and help to persuade other stakeholders. The operations by the trading company and the gradual transfer of quota rights to low-cost countries decrease the incentives for countries to free ride. The strong role of the international secretariat assures all participants that the agreed principles will be fairly applied. The sovereignty of national governments is respected, for they control the restructuring of their cocoa sectors and negotiate the sharing of the export price in their own countries.⁴³ The agreed minimum shares that farmers get of this price, the negotiating power of the new associations, and the allocation of hectare payments through these associations ensure that farmers will benefit. The international secretariat's supervision of the allocation process guarantees fairness to individual farmers.

The arrangement is within the rules of the General Agreement on Tariffs and Trade. In its article XXXVIII, this allows member countries to enter into international arrangements '*to stabilize and improve conditions of world markets*' in commodities. Such arrangements could include measures '*designed to attain*

⁴² The presented model figures as an illustration and provides only a simplified version of the cacao market and the policy arrangement. The shaded/unshaded types of production are still treated as exogenous. Moreover, no quota reallocation over countries is considered yet. The growth of the market due to the growth of demand creates a supply response that roughly implies that all producing countries expand their production proportionally.

⁴³ The active way in which this uses its superior market intelligence to frustrate free riders contrasts with the passive role of the older international commodity organizations, which did little more than managing buffer stocks. In a way, the role of the trading company that we propose could be compared to that of central banks, that seek to control the money supply and to counteract speculative flows of 'hot money'.

stable, equitable and remunerative prices for exports of such products'. In its recent proposal to the WTO, the African Group emphasizes that this allows unilateral action by producing countries, including the levying of an export tax for the purposes indicated above.⁴⁴

The above-presented design is not the only one possible. Alternative elaborations could also work effectively, and other features could be added. For instance, reintroduction of shade and diversification coupled to reforestation would contribute to carbon sequestration, so that Kyoto protocol mechanisms might be invoked to help finance the arrangement.⁴⁵ Governments and farmers' organizations should carefully study and compare all possibilities.

A critical aspect of any plan for controlling cocoa supply is diversification to allow the uprooting of older trees. This should not solely depend on cash crops, which may themselves be prone to oversupply. Food crops should also be involved. This requires that food crops become more attractive, which is only possible if import tariffs are raised. This is an additional reason why supply management in export crops should fit into a broader *food sovereignty* policy.

Any proposal for supply management will provoke criticism by opponents who will exaggerate the amount of bureaucracy involved. In reality, the administration costs will be dwarfed by the increase in export earnings. Moreover, such an increase would mean that numerous aid projects would no longer be necessary. These are projects that involve much higher administration costs and inefficiencies than supply management. Nevertheless, attempts to introduce supply management in tropical export crops may meet with resistance from developed countries and international financial institutions, which might threaten withdrawal of aid or trade preferences. Developing countries should help each other to withstand this pressure by announcing that they will only co-operate on issues that developed countries find important (e.g. foreign investor rights) if the latter promise to refrain from such actions. Once supply management schemes for a number of crops are effective, export taxes could be used to establish a common fund for balance of payments support that could loosen the grip of international donors on developing countries.

A final word should be said on processing. Various arguments exist for the case against large-scale processing of cocoa for export in West Africa. Tropical conditions are less suitable for storing cocoa beans and demand higher energy costs for cooling; processing is capital-intensive and brings limited employment for workers; and intermediate and finished cocoa products are less easily transportable than the beans themselves.⁴⁶ Nevertheless, this does not justify the higher import duties that developed countries apply on processed products from developing countries. In crops where processing is less complex, tariff escalation is a serious obstacle to activities that could add value to the crops themselves. The elimination of this obstacle remains a vital and justified demand.

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⁴⁴ African Group (2006).

⁴⁵ Newmark (1998). Sonwa (2004). It may be needed to invoke the forest reclassification clauses of the Clean Development Mechanism to benefit from these facilities.

⁴⁶ ITC (2001: ch. 17).

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