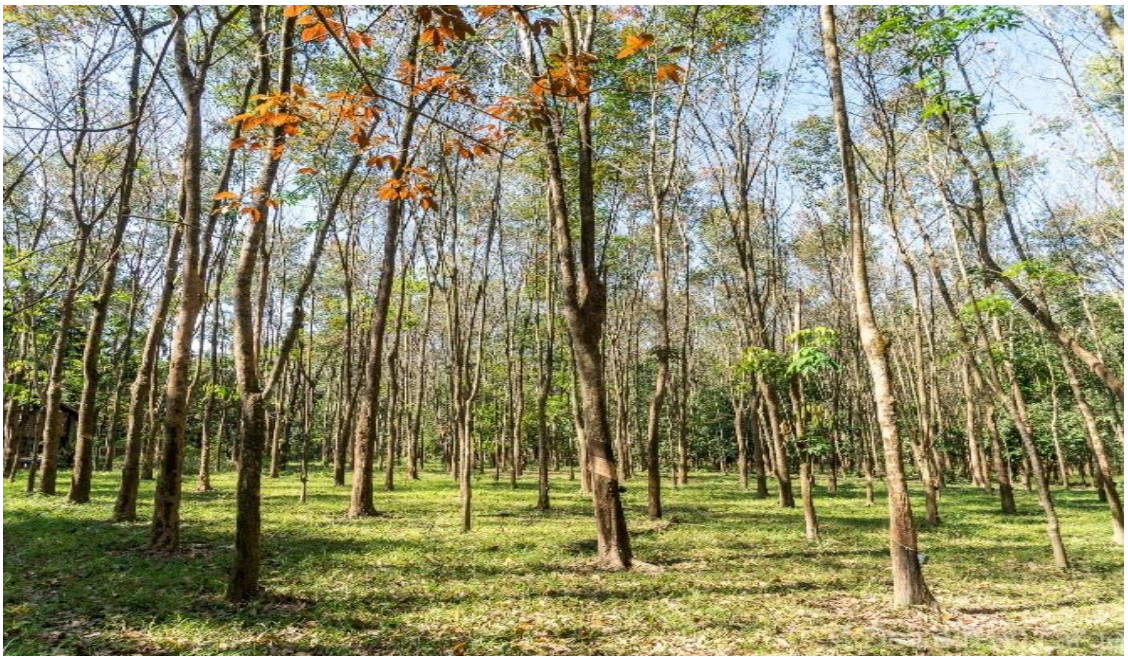
Cost-benefit analysis report of FSC certification for natural rubber producers in Côte d'Ivoire



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EXECUTIVE SUMMARY

GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH) is implementing the global project "Sustainability and Added Value in Agricultural Supply Chains" (ProAgriChains) on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). The project is part of the BMZ's central theme "Agri-food Systems Transformation".

The project is being implemented in Côte d'Ivoire under the supervision of the Ministry of State, Ministry of Agriculture and Rural Development (MEMINADER). In Côte d'Ivoire, the project focuses on cocoa, natural rubber, and coffee supply chains, which are the main sources of income in the project's areas of intervention.

The natural rubber sector in Côte d'Ivoire is growing rapidly at an annual rate of 25% over the past three years (APROMAC, 2023). Thus, Côte d'Ivoire has become the world's third-largest producer of natural rubber and the leading producer in Africa.
However, the natural rubber sector in Côte d'Ivoire faces a series of challenges,including high price volatility, volatile demand caused among other things by the poor organization of farmers, the low level of professionalization of agricultural cooperatives, the lack of qualified harvesters, poor access to financing, and so on.

In this context, the new EU regulation on deforestation-free supply chains and corporate due diligence offers the opportunity to get supply chain actors to take action and prove that the products they buy are deforestation-free and respect human rights and social justice.

In March 2023, the Forest Stewardship Council (FSC) launched the development of an interim national forest management standard (NSI) for Côte d'Ivoire, with support from Preferred by Nature, GIZ, the Rainforest Alliance, and other partners.

The methodology used to carry out this study was done in 3 main stages: the document review, the consultation of stakeholders and the field missions. These stages were punctuated by the drafting of this report, which was submitted to the sponsor for review and correction in an online meeting held for the production of the final report.
The actors in the natural rubber sector are spread throughout the value chain, from farmers at the grassroots level to the users of the finished products, both nationally and internationally.

They include: producers including small, medium and large producers, cooperatives, industrial plantations, buyers of products composed of individual buyers (comparable to intermediaries in the cocoa and coffee sector) who may be small farmers who have invested in this activity, individual farmers seeking to diversify their activities who collect small productions from their neighbours, weighbridge owners installed in village production areas and producer cooperatives owning weighbridges. There are also processors who play a major role in the chain, some of whom own industrial plantations and others who get their supplies exclusively from village plantations or cooperatives. Finally, at the end of the chain are exporters of products in the form of cup bottoms or pellets.

In addition to the various production or processing actors involved in the rubber sector in Côte d'Ivoire, various national structures provide support to these actors. Among the main structures, five in particular can be mentioned: the Rubber and Oil Palm Council CHPH), the Interprofessional Fund for Agricultural Research and Advisory (FIRCA), the Association of Natural Rubber Professionals of Côte d'Ivoire (APROMAC), the National Center for Agricultural Research (CNRA) and the Rubber Development Fund (FDH).

For natural rubber certification, 2 standards are possible to be used: the FSC Sustainability, Traceability, and Group Certification and the Rainforest Alliance (RA) Sustainable Agriculture Certification.

The Forest Stewardship Council is an international non-governmental organization created in 1993 in response to this environmental awareness.

The elements of the FSC system that can be applied to the certification of natural rubber and rubber seed, considered as a non-timber forest product (NTFPs), are:

- The forest management certification standard (***FSC-STD-CIV-01-2023 Interim Forest Management Standard for Côte d'Ivoire)*** which is composed of 9 principles out of the 10 put in

place by the FSC because principle 3 has not found a subject of application in Côte d'Ivoire. The indicators relating to the 9 principles are being adapted to the Ivorian context.

- The Chain of Custody Certification Standard (**FSC-STD-40-004 V3-1 FR)**
- The Group Certification Standard (**FSC-STD-30-005)**

These 3 standards cover all aspects of certification from planting to the sale of finished products on the market

As for RA's sustainable agriculture certification standard, it is structured around: plantation management, traceability, income and shared responsibility, agriculture, social and environmental.

The costs identified during the study are related to compliance with the various FSC standards. These are:
- FSC-STD-CIV-01-2023 adapted to the Ivorian context (adaptation process underway);
- FSC-STD-40 004 V3-1 relating to the chain of custody, also known as the chain of custody;
- FSC-STD-30 005-V2-0 on group certification.

An in-depth analysis of the criteria and indicators of these 3 standards has highlighted the aspects of the management of rubber plantations, the organization of producers and the monitoring of traceability that will generate additional costs for the various actors in the sector. The analysis of costs and their structure clearly shows that the establishment of a good management system and an efficient administrative organization associated with the monitoring of the traceability of products within the framework of the RDUE will facilitate compliance with the above-mentioned standards.

The advantages or benefits identified during the study are monetary and non-monetary. As for the monetary benefits, it is important to note that the State of Côte d'Ivoire has strongly regulated the price of natural rubber throughout the production chain.
The field purchase price of the rubber is set each month by APROMAC. However, in remote areas or far from major production and processing centers, it is common to find that this price is not respected. Nevertheless, in recent years, several structures engaged in sustainability programs guarantee the purchase of rubber at the APROMAC price for all their registered planters. Some have decided to apply a bonus linked to compliance with certain standards, but these bonuses rarely exceed 10% of the APROMAC purchase price. This rate of 10% of the official price was noted during our online exchanges with correspondents in Thailand

Details of the costs and benefits of natural rubber certification in Côte d'Ivoire are presented in the study report.

FSC certification, like any other certification, is voluntary and is a market instrument. It leads to new constraints, especially financial, which are often difficult for an individual planter to bear. Group certification appears to be a solution to remove some of these constraints.

The costs of certification are high for the primary producer because it is up to him to set up and comply with procedures and other technical itineraries at the grassroots.
The financial benefits of certification go more to the actors at the end of the chain, especially those who market the finished products on which the certification logos are affixed. Sharing is therefore largely in favour of the actors at the end of the chain. Moreover, the purchase price of field-grown rubber is not liberalized and does not reflect the law of supply and demand. In the current context, even liberalization is likely to have adverse effects, to the great disadvantage of grassroots producers.

The adoption of FSC forest certification will have impacts on production factors such as labour, inputs and the overall environment of production areas. The good practices set out in the FSC certification standards will have an impact on deforestation, leading to a significant reduction in the longer term.

At the end of the study on the cost-benefit analysis of FSC certification in the natural rubber sector in Côte d'Ivoire, it should be noted that it is at the embryonic stage in the country. State and non-state actors throughout the chain still have very little information and training on this certification scheme and the real or supposed benefits it can offer to the state, the private sector and producers and their families.
Several experts on this issue exist in the country and have a good understanding of these issues to get the actors involved and take charge of the entire FSC certification mechanism in Côte d'Ivoire.

However, as in all other countries where FSC certification is applied, the fact is that the costs and benefits are unevenly distributed throughout the chain. The highest burden of compliance with the provisions of the various applicable FSC standards lies with the primary producers (individual growers and cooperatives). The highest margins are made by the final distributors of FSC-labelled finished products. This unequal distribution is not a source of motivation to engage grassroots producers and cooperatives in the certification process. Also, the spread of preconceived ideas about the high cost and difficulty of implementing FSC certification reinforces this reluctance of actors to commit to FSC certification.

Some recommendations can be made:
Establish mechanisms to encourage cooperatives and small producers at the grassroots level to get involved in certification ;
Take steps and measures to transfer part of the profits made by major distributors to actors at the start of the chain (such as the PPECF – Project for the Promotion of Certified Forest Exploitation – implemented in Central Africa by COMIFAC and supported by KFW and GIZ).

I. INTRODUCTION

GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH) is implementing the global project "Sustainability and Added Value in Agricultural Supply Chains" (ProAgriChains) on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). The project is part of the BMZ's central theme "Agri-food Systems Transformation". Agricultural supply chains are critical for rural livelihoods in many developing and emerging countries. Global players who play a key role in the international market can help make supply chains fairer and more sustainable. This is why the ProAgriChains Côte d'Ivoire project focuses on cooperation with these actors, in order to create added value and improve sustainability along supply chains. Starting from the point of final consumption, the project works along the entire supply chain, from the shelf (consumers) to the field (producers).

The project is being implemented in Côte d'Ivoire under the supervision of the Ministry of State, Ministry of Agriculture and Rural Development (MEMINADER). In Côte d'Ivoire, the project focuses on cocoa, natural rubber, and coffee supply chains, which are the main sources of income in the project's areas of intervention. The duration of the project in Côte d'Ivoire is from 05/2021 to 04/2024.

In March 2023, the Forest Stewardship Council (FSC) launched the development of an interim national forest management standard (NSI) for Côte d'Ivoire, with support of Preferred by Nature, GIZ, the Rainforest Alliance, and other partners. Thus, organizations that manage forest areas – Forest Management Units (FMUs) – that are verified by an accredited third-party certification body to comply with all applicable requirements of the national standard, will be able to sell forest products, including natural rubber, rubberwood and wood with the FSC label, players further down the supply chain.

II. GENERAL CONTEXT OF THE STUDY

The natural rubber sector in Côte d'Ivoire is growing rapidly at an annual rate of 25% over the past three years (APROMAC, 2023). Thus, Côte d'Ivoire has become the world's third-largest producer of natural rubber and the leading producer in Africa.

The natural rubber sector in Côte d'Ivoire is well-structured. Thanks to the leadership of the Ministry of Agriculture (in particular the Natural Rubber and Oil Palm Oil Council) and the sector's umbrella organization (*Association of Natural Rubber Professionals of Côte d'Ivoire - APROMAC),* significant efforts are being made to:

- Avoid new plantations of natural rubber in forest areas,
- Promote agroforestry systems in rubber production,
- Use spatial data to monitor plantations, etc.

However, the natural rubber sector in Côte d'Ivoire is facing a series of challenges, among them high price volatility, volatile demand due to the COVID crisis, weak farmers' organization, low professionalization of agricultural cooperatives, lack of qualified harvesters, low access to finance, etc.

In this context, the new EU regulation on deforestation-free supply chains and corporate due diligence offers the opportunity to get supply chain actors to take action and prove that the products they buy are deforestation-free and respect human rights and social justice. As a result, certification schemes can play an important role in demonstrating that forest products from companies operating in Côte d'Ivoire are free of deforestation, child labour, harmful pesticides, etc., while offering producers a fairer price.

This study aims to carry out an ex-ante assessment of the costs and benefits of meeting these national sustainability standards for smallholder farmers.

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there is an uninterrupted chain of custody, the final product can be stamped with the FSC label, and sellers have the advantage of making both in-product and out-of-product claims related to responsible sourcing of forests. The Interim National Standard (INS), which will align well with the EU Due Diligence (EUDR), is currently being revised, with a consolidated version including comments received during the public consultation phase scheduled for the end of August 2023. This public consultation finally took place in March 2024 with only some stakeholders. The Ministry in charge of Water and Forests had not been consulted and requested a specific meeting which is awaiting scheduling by Preferred by Nature.

With the entry into force of the EUTR, the products covered are likely to face huge restrictions on their access to EU countries' markets. The elements related to FSC certification could be catalysts in the steps to be taken to bring actors into compliance with the provisions of the EUR.

III. METHODOLOGY USED

The methodology used to carry out this study was done in 3 main stages: the document review, the consultation of stakeholders and the field missions. These steps were punctuated by the drafting of this report, which was submitted to the sponsor for review and correction that was taken into account for the production of the final report.

3.1 DOCUMENT REVIEW

This phase consisted of consulting the documentation related to the study with the sponsor (GIZ), the actors of the rubber sector (SAPH, SOGB, APROMAC, Conseil Hévéa Palmier), the FSC and some certification bodies (websites), etc.

3.2 CONSULTATION WITH SELECTED STAKEHOLDERS

This consultation was carried out through telephone exchanges, online conferences, especially with external actors such as experts who have worked on the theme related to the FSC certification of natural rubber. A total of 8 online meetings were organised (see GIZ) to benefit from the experience of the people targeted by GIZ in rubber certification and trade in certified natural rubber products.

3.3 FIELD MISSIONS

In accordance with the terms of reference, stakeholders in the rubber sector were met in the Mé Region during the period from April to June 2024. During these missions, meetings were held with the SOCOPHEPAAM cooperative in Ananguié, the company SAP-LAME, the SAPH in Adzopé, the NGO Nitidae and the forestry company INPROBOIS. The latter was met for its experience in the processing of rubber wood as another by-product of natural rubber, while SOCOPHEPAAM has had an initial experience in the valorization of rubber seeds.

3.4 PREPARATION OF THE REPORT

This report was produced on the basis of information collected from these entities as well as information collected on the internet.

3.5 PRESENTATION OF THE REPORT TO STAKEHOLDERS

The report, after a review of some key stakeholders, was identified by GIZ.

3.6 SUBMISSION OF THE FINAL REPORT

The various observations, contributions, and remarks were taken into account in the production of the final report.

IV. PRESENTATION OF THE RUBBER AND NATURAL RUBBER SECTOR IN CÔTE D'IVOIRE

A schematic representation of the main stages and intermediate products of the rubber sector in Côte d'Ivoire is given in Figure 1.

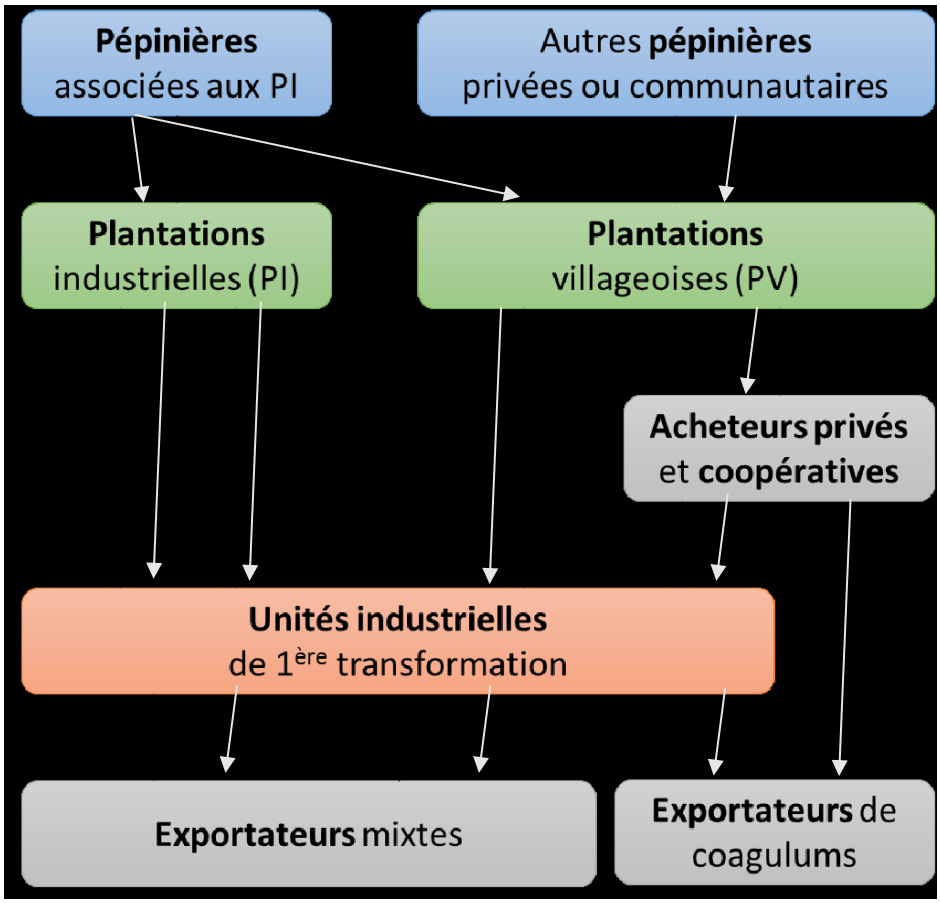

Figure 1 : Schematic representation of the rubber sector in Côte d'Ivoire

4.1 PLANTATION CREATION AND MANAGEMENT

The rubber sector starts with the production of rubber seedlings, at the level of nurseries. Seedling production includes the stages of rubber seed germination, plant development, grafting, and plant preparation (Attobra et al., 2013a). The establishment of the plantation consists of the preparation of the land, the transport of the plants, the planting, and the maintenance.

4.2 SITUATION OF RUBBER PRODUCTION

In 2018, more than 90% of the planted areas were village plantations (PV), and consequently, less than 10% were industrial plantations (IP).

Rubber plantations are generally planted for 30 to 40 years, broken down into an immature phase of 6 to 7 years and a mature phase of 23 to 34 years (Attobra et al., 2013c; Martin, 2014). Almost all rubber is produced in the form of coagulums, or “cup bottoms”, the harvest in the form of latex being marginal and reserved for a relatively small fraction of IP surfaces.

The rubber from the plantations is then sent to the industrial primary processing units. The transformation of the coagulums includes storage and maturation stages, this first step may be preceded by pre-washing depending on the site, then it enters the process of homogenization and washing by crepe machines and/or extruders, drying, and pressing in the form of 35 kg bales, before packaging.

As 2nd processing plants are marginal in Côte d'Ivoire, the rubber bales produced in this way are mainly shipped to the ports of Abidjan or San Pedro for export.

However, although local processing into bales before export remains the main way of valorizing the coagulums produced, a growing share of rubber production, of about 30% in 2019, is directly exported in the form of coagulums. This phenomenon can be explained by the discrepancy observed at the time between the level of production of the plantations and the national processing capacity.

4.3 GENERAL ORGANIZATION OF THE RUBBER SECTOR IN CÔTE D'IVOIRE

In addition to the various production or processing actors involved in the rubber sector in Côte d'Ivoire, various national structures intervene in support of these actors. Among the main structures, four can be mentioned:

- The Oil Palm Rubber Council: The main attributions and missions are to:
  - Regulate the activities of supervision in village rubber and oil palm plantations, internal and external marketing of rubber and oil palm products;
  - Arbitrate as a second resort disputes arising in the context of the activities of the two sectors;
  - To set the rules for the geographical positioning of processing units of cup bottoms or palm bunches in production areas;
  - Monitor cross-cutting operations between the actors of the Rubber and Oil Palm sectors;
  - Participate in the mobilization and securing of financing for the benefit of the rubber and oil palm sectors;
  - Supervise and ensure synergy of initiatives and projects in favor of the Rubber and Oil Palm sectors;
  - To control the management of the two sectors.

- The Interprofessional Fund for Agricultural Research and Advice (FIRCA), created in 2002, is a professional organization at the service of the sectors and public authorities, responsible for financing applied research, agricultural advice, training in professions and capacity building programs for agricultural and forestry organizations.
- The Association of Natural Rubber Professionals of Côte d'Ivoire (APROMAC), created in 1976, is a non-profit professional association, whose aim is to represent the rubber sector to the public authorities and private actors, to promote its development, and to facilitate relations between the different trades in the sector, including planters and industrialists, but also commercial companies and research institutes.
- The National Centre for Agronomic Research (CNRA), created in 1998, is a public limited company with a majority public financial participation, whose purpose is to carry out research programmes in the agricultural and agro-industrial fields, and to disseminate the results.
- Within APROMAC, the Rubber Development Fund (HDF), set up in 2008, aims more particularly to contribute to the promotion and strengthening of the development of rubber cultivation in Côte d'Ivoire. The creation of the HDF met the national objective of setting up 300,000 ha of new plantations from 2009 to reach a national production of 600,000 tons of rubber by 2020, an objective already achieved in 2018. To this end, the main missions of the FDH are to guarantee the quality of the rubber plant material used in Côte d'Ivoire, in particular through the approval of nurseries, to strengthen training in rubber professions, and to support the maintenance and opening of access roads to plantations.

Given the importance of the village sector in Côte d'Ivoire, since 2005 FIRCA and APROMAC have been organizing agricultural supervision and advice for individual planters. To do this, the country has been divided into rubber growing areas, which are themselves subdivided into lots. In 2024, there are 18 sectors and 55 lots, throughout the southern half of the country (see Figure 2). Technical assistance specifications are drawn up every three years to define missions and priorities, such as the identification and geolocation of rubber planters, the training of tappers or the prevention of root fungus (Fomès).

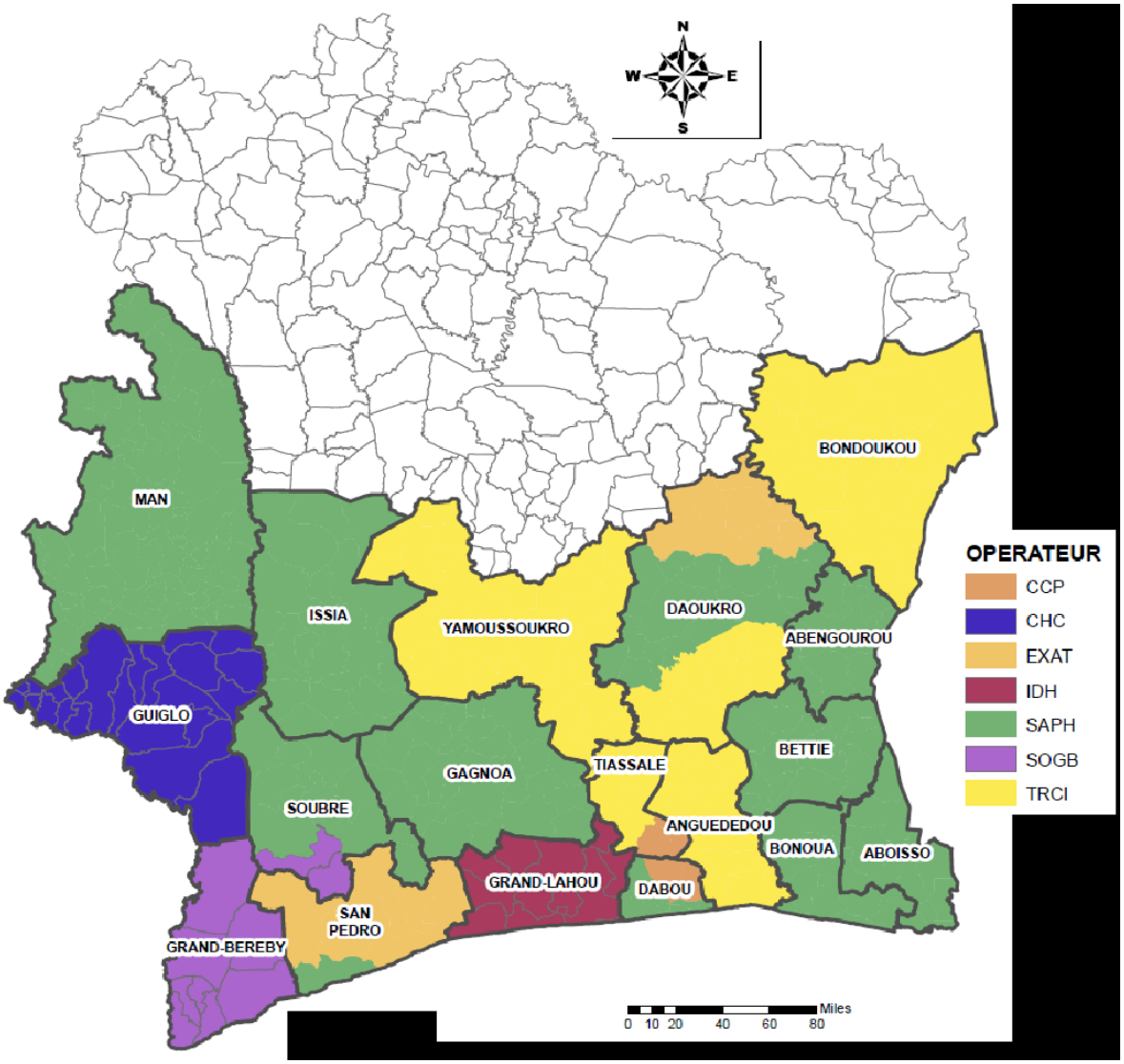

Figure 2 : Geographical division and allocation of the rubber sectors and lots of FIRCA and APROMAC, for the period 2018-2020

Each of the 55 rubber lots is allocated by the FIRCA to a technical operator (supervision and purchasing). For the current period 2018-2020, there were seven such operators: CCP, CHC, EXAT, IDH, SAPH, SOGB, and TRCI.

4.4 TYPES OF RUBBER PLANTATIONS

Rubber cultivation requires a humid tropical climate, with an annual rainfall preferably between 1500 and 2500 mm, with a minimum of 1100 mm without a drought period of more than 4 months, an average annual temperature of between 25 and 37 °C, and more than 1650 ha of sunshine (Bickel et al., 2006 ; Attobra et al., 2013b). By cross-referencing these conditions with the climatic characteristics of Côte d'Ivoire, given in Figure 3, it appears that rubber cultivation is particularly well adapted to the coastal area and the south-west of the country, along the border with Liberia. The central and eastern areas may also be suitable for rubber, but with lower potential yields given the lower rainfall and increased risk of prolonged periods of drought. Village plantations were created in addition to the industrial plantations that were dedicated to supplying the established processing units. The area planted with rubber trees in Côte d'Ivoire, including mature and immature plantations, was about 500,000 ha in 2012, of which 90% was VP and 10% IP. The geographical distribution of these plantations is given in Figure 3, by rubber growing sector.

4.4.1 Industrial plantations

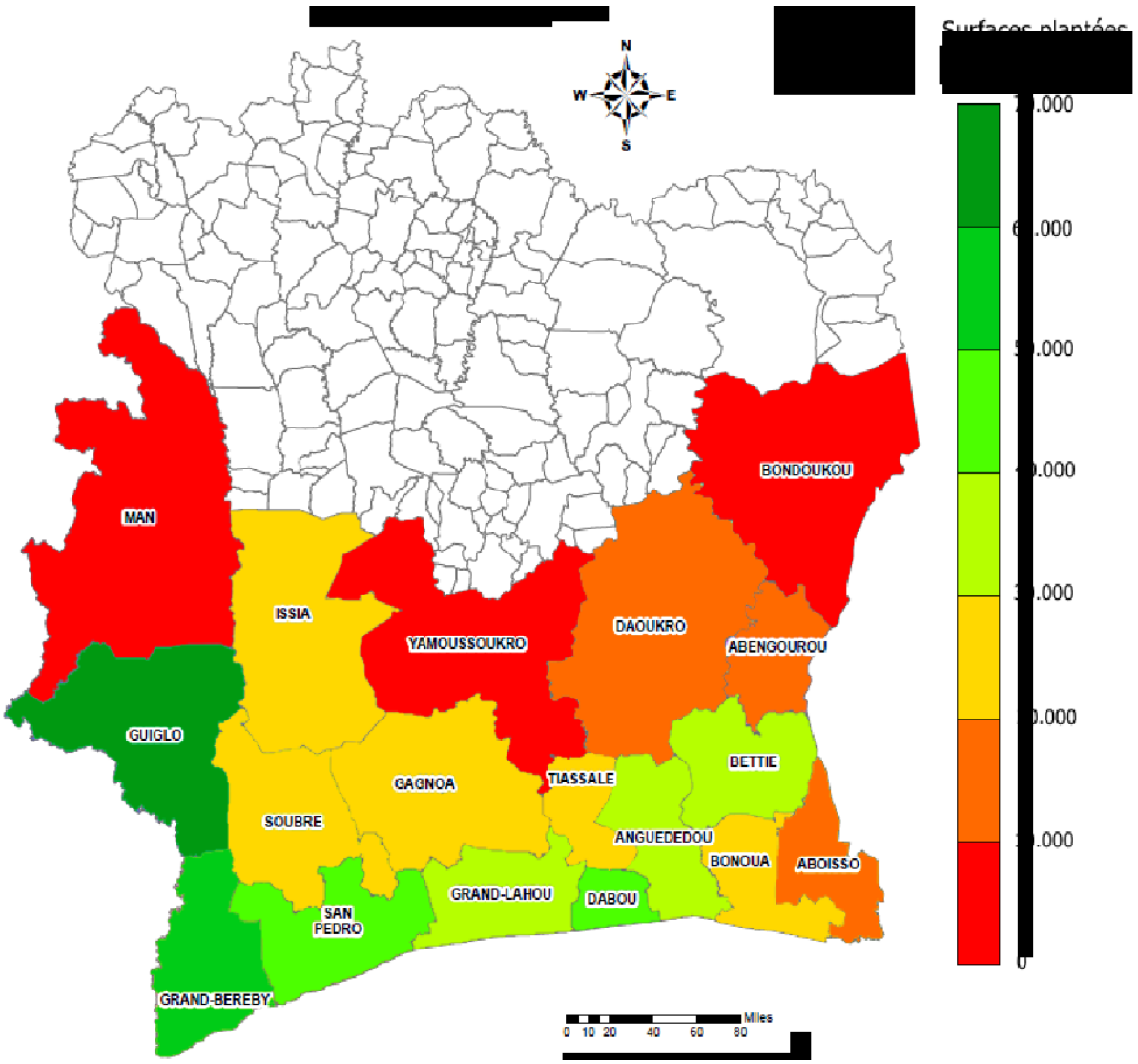

Figure 3 : Geographical distribution of rubber plantations (PV and IP) in Côte d'Ivoire in 2012

It appears that the largest planted areas are found in the areas most suitable for rubber cultivation from a climatic point of view, particularly rainfall. The two main exceptions concern:

- The Man sector, despite significant rainfall, had only about 500 ha of rubber plantations in 2012. This small surface area is mainly explained by the mountainous terrain of this sector, which implies significant slopes, temperatures that are a little too mild, and a relative isolation of the area.

For these reasons, this sector is not historically a rubber-growing area. Nevertheless, this situation is tending to change, with an increase in planted areas observed since 2006, with more than 90% of the plantations existing in 2012 being 6 years old or less.

- The sectors of Aboisso and Bonoua which, despite good rainfall and temperature conditions, had only moderate planted areas in 2012, of the order of 20,000 ha in each sector. This situation is mainly explained by the type of soils encountered in this area, which are often waterlogged, which is not favorable to rubber cultivation (Attobra et al., 2013b), and by the historical prevalence of other crops, such as pineapple in Bonoua.

4.4.2 Village plantations

The surface area of rubber village plantations (VP) in Côte d'Ivoire has been expanding rapidly since the end of the 1990s. Based on the latest data available on village plantations from FIRCA and APROMAC, the areas covered by VP represent 500,000 ha in 2018 and 550,000 ha in 2019, of which about 75% are mature plantations (AgroConsulting, 2019). Data available from the *International Rubber Study Group* (IRSG) show higher total areas, with 594,000 ha in 2018 (IRSG, 2020).

Thus, the areas planted with rubber trees, which represented about half of the areas planted with rubber trees in Côte d'Ivoire in 1995, have been multiplied by a factor of more than 10 in 20 years, and now represent more than 90% of the areas planted

The rubber tree is considered an agricultural plant in Côte d'Ivoire. Its management and the legal and regulatory provisions are the responsibility of the Ministry in charge of agriculture. Nevertheless, given the origin of this plant and the historical uses of its products, some actors classify rubber as a forest product. This is why there is a growing trend towards applying forest management standards to it.

V. PRESENTATION OF THE FSC CERTIFICATION SYSTEM AND STANDARDS FOR CÔTE D'IVOIRE

5.1 What is the Forest Stewardship Council?

5.1.1 A response to citizen pressure: new modes of governance

In the 1980s, the recurrent observation of deforestation and degradation of tropical rainforests was a topic placed at the top of environmental concerns by scientists, governments and Non-Governmental Organizations (NGOs) (Alphandéry, Djama, Fortier, & Fouilleux, 2012). Awareness of the need to preserve the quality of the environment and natural resources was growing and citizens were increasingly sensitized, particularly through awareness campaigns and denunciations by major Environmental Non-Governmental Organizations (ENGOs) such as WWF or Greenpeace. We are therefore seeing the emergence of the idea that new ways of governing make it possible to better deal with contemporary global problems, including environmental problems (Pattberg, 2006).

5.1.2 The FSC: a governance system initiated by large ENGOs based on a market logic

The Forest Stewardship Council is an international non-governmental organization created in 1993 in response to this environmental awareness. It was the first large-scale private regulatory system in the forestry sector (the very first being *the American Tree Farm System*, established in the 1940s and which remains mainly national in scope (Jean, 2011)). **It is based on the principle of global governance using a market logic** :
"It tries to influence the act of purchasing by telling them, through specific labelling, that the forest products they buy come from responsibly managed forests." (Alphandéry, Djama, Fortier, & Fouilleux, 2012). It is therefore a question of providing a guarantee of responsible management sought by consumers. This must be a competitive advantage for those who can provide this guarantee. To obtain it, a certain number of criteria must be met that must guarantee that the labelled final product comes from responsible forest management. It is therefore a voluntary certification, based on market logic. The system can only work if it is credible to consumers. This is the role of the ENGOs that have been the driving force in the implementation of the system: by supporting it, they give it credibility. They act with distributors in two ways. Firstly, by developing buyers' clubs, bringing together companies that are committed to integrating FSC into their procurement policy. These clubs form the *Global Forest Trade Network (GFTN)* managed by WWF as part of a support approach (Guéneau, 2007). The second way is coercion, which takes the form of pressure campaigns that discredit brands that are resistant to certification (Lafrance, 2006). The Forest Stewardship Council relies on three systems to ensure that the final product is in line with its vision of sustainable forest management:

- Forest management certification: this certification is based on forest management standards. It is intended for producers of wood and non-timber forest products to be able to produce certified forest products.
- "Chain of custody" certification: this certification concerns the entire processing chain to ensure good traceability of products from the producer to the end consumer as well as responsible processing.
- “Brand assurance” monitors the use of the FSC label and ensures its credibility. Thus,

any distributor of FSC products or FSC-certified structure wishing to communicate on this certification must have a license to use the brand.

It is important to note here that while the awareness that led to the creation of FSC is indeed associated with tropical forests, the system was not limited to them. Today, 196,265 million hectares are FSC certified in 82 countries around the world and 84% of this certified area corresponds to forests in Europe and North America.

5.1.3 The functioning of the FSC: a global "top-down" governance based on the principles of sustainable development

The FSC system is based on international standards that are applied at national level and monitored by independent bodies. It is thus made up of several NGOs that carry out these different functions. FSC International is the "parent organization". All FSC members can participate in its general assembly. It is from this NGO and its various departments that internationally valid standards emanate. At the local level, the FSC system is represented by the "local initiatives" recognized by FSC AC. These associations are in charge of promoting FSC in their country or region and adapting international standards to local specificities. The Accreditation Service International (ASI) is responsible for verifying that independent certification bodies are working in compliance with international rules and procedures. Each region of the world and each country has principles and criteria from an international scale, so this system can be described as "top down" but adaptable. In addition, the requirements at both the international and local levels are not set in stone and can be adapted and subject to possible changes. For example, the new reference framework being developed for Côte d'Ivoire will be valid for 5 years from the date of adoption. Figure 4 below summarizes the operation of the FSC system.

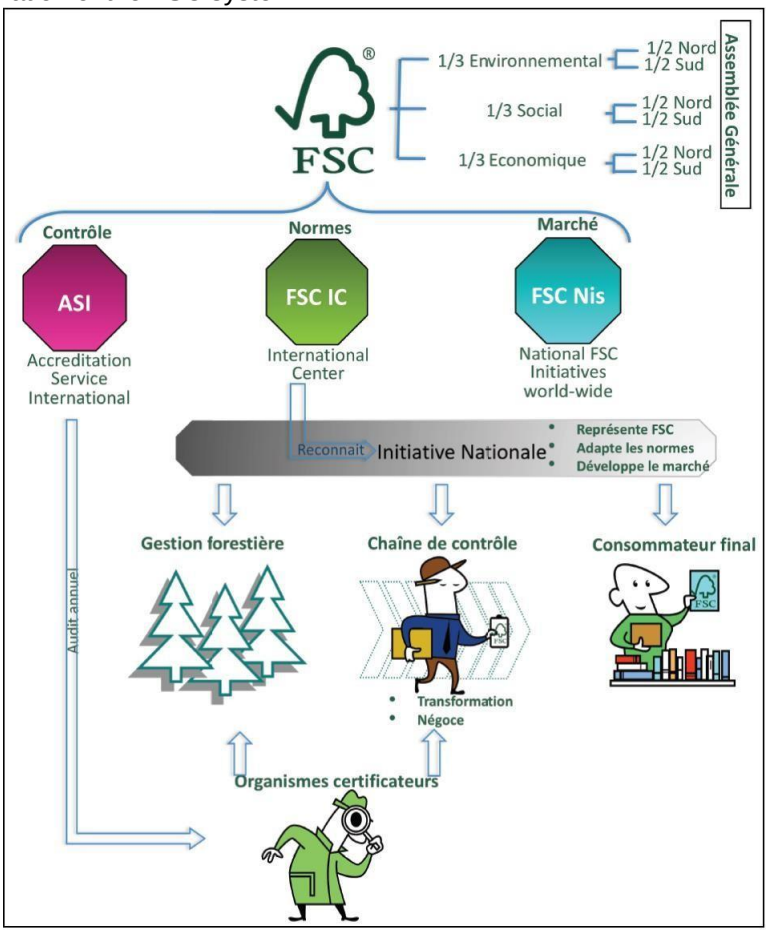

Figure 4 : How the FSC system works. Source: (Jean, 2011)

The governance of the FSC system is divided into three chambers based on the sustainable development model: environmental, social and economic in order to balance the interests of the different actors within the decision-making process. The electoral weight of each chamber is equivalent regardless of the number

of participants in each chamber. Within each chamber, the votes are also weighted in order to achieve parity of representation between the countries of the South and the countries of the North. The system is therefore constructed in such a way as to balance the interests of the participants. This balance is criticized, in particular, by the fact that some countries can display their authority through very powerful and organized non-state representatives (Alphandéry, Djama, Fortier, & Fouilleux, 2012). However, it is this balanced organization that makes the credibility and strength of the FSC (Jean, 2011).

The forest management standards to be met in order to be certified are gathered in a forest management reference system, developed according to the system described above. This so-called “forest management” reference framework contains elements relating to the conditions of production and exploitation of wood and non-timber forest products (NTFPs) but also to the consideration of the environment and social issues. The ten principles on which FSC is based are available on the FSC website (www.fsc.org).

5.1.3.1 The certification and audit system

This credibility is reinforced by the audit system: FSC does not issue certification itself, but delegates this task to independent certification organizations, which are themselves audited by ASI. The seriousness of this audit is seen as a real guarantee of the system's credibility. So it's not the members of the association that certified structures have to deal with, but the auditors of the Certification Organizations (COs). It is important to note that it is not necessary to be a member of the FSC to be certified. It is therefore quite possible that a certified structure has never had contact with the association itself. To be certified, a structure must therefore contact a certifying organisation and pay for an audit. The transaction is made directly between the CO and the structure and does not go through the FSC association as can be the case in other systems. A fee is also paid to the FSC association, collected by the CO through its contract with its client wishing to be certified.

The FSC system requires an initial audit that verifies that the structure complies with FSC standards. Compliance with these standards is therefore an essential prerequisite for certification. Here we will detail the audit system for forest management certification. If non-conforming elements are found during an audit, which are referred to as "non-conformities", the certification candidate or certified person is assigned a "corrective action request". This means that the candidate must comply with the FSC standard. Depending on the extent of this non-conformity, it is qualified as "major": the certified person then has three months to act or "minor": he or she has one year to act. The certified person also has the option of having a pre-audit, which is not mandatory, carried out before the initial audit to be better prepared during the latter. The certified person commits for 5 years at the time of the initial audit. Each year, a so-called "surveillance" audit is carried out. At the end of the 5 years, if the certified wishes to keep their certification, they must carry out a renewal audit which will rehire them for 5 years.

5.2 FOREST MANAGEMENT CERTIFICATION

FSC's sustainable management certification is structured around 10 principles. With regard to Côte d'Ivoire, the preliminary assessment made during the process of national adaptation of the standard concluded that Principle 3 has no subject of application in the country, since no historical study, documentary review, let alone consultation with specialized structures, has indicated the presence of indigenous peoples in the country within the meaning of the definition published by the United Nations.
This study will therefore retain the 9 other principles that relate to the following elements contained in ***FSC-STD-CIV-01-2023 Interim Forest Management Standard for Côte d'Ivoire*** :

PRINCIPLE 1 – Respect for the law The organization* must comply with all laws in force*, all regulations and international treaties ratified* at the national level, and all agreements, and conventions.

PRINCIPLE 2 – Workers' rights and working conditions: the organization *must preserve or enhance the social and economic well-being of workers*.

PRINCIPLE 4 – Relations with communities: the organization* must contribute to maintaining or enhancing the social and economic well-being of local communities*

PRINCIPLE 5 – Forest Benefits The organization *should effectively manage the various products and services of the management unit in order to maintain or enhance the long-term economic viability* and a variety of environmental and social benefits.

PRINCIPLE 6 – Environmental Values and Impacts The organization* shall maintain, conserve and/or restore the ecosystem services* and environmental values* of the management unit*, and shall avoid, correct or limit adverse environmental impacts.

PRINCIPLE 7 – Management Planning The organization* should have a management document* that is consistent with its policies and objectives*, and commensurate with the scale* and intensity* of management activities and the risks they create. The management document should be implemented and updated based on control information, to promote adaptive management*. The plan and associated procedures must be sufficient to guide staff, inform relevant and interested stakeholders, and justify management decisions.

PRINCIPLE 8 – Monitoring and Evaluation The organization* must demonstrate that progress towards achieving management objectives*, the impacts of management activities, and the state of the management unit* are monitored and evaluated, commensurate with the scale* and intensity of management activities and the risks they create, in order to implement adaptive management

PRINCIPLE 9 – High Conservation Values* the organization* should maintain and/or enhance the high conservation values* in the management unit* by applying the precautionary principle

PRINCIPLE 10 – Implementation of management activities carried out by or for the organization*, within the management unit*, should be selected and implemented in accordance with both the economic, environmental, and social policies and objectives of the organization, and the principles and criteria.
The indicators attached to these Principles have been adapted to the national situation on the basis of the International Generic Indicators developed by the FSC and used as a basis for the development of national or regional forest management standards.

In addition to the forest management standard, the certification also relies on the chain of custody standard to track the journey of products from the forest to the end consumer. This standard will also be used for the certification of natural rubber in Côte d'Ivoire. Nevertheless, it will be used without being subject to any national modification or adaptation during audits.

Finally, as natural rubber is produced by hundreds of thousands of low-income planters on small farms, it was wise to take into account the group certification standard, which federates producers and groups their products under common management. This group certification approach makes it possible to pool efforts and resources but requires a certain organization, the implementation of procedures, and a group management system.

For FSC certification of natural rubber in Côte d'Ivoire, two other FSC standards must be taken into account. These are the product traceability standard and the group certification standard.

5.3 CHAIN OF CUSTODY CERTIFICATION

The product traceability standard does not require national adaptation and takes into account the following elements:

- **Chain of Custody Management System:** The organization must implement and maintain a CoC management system commensurate with its size and complexity to always remain compliant with all applicable certification requirements

- **Supply management:** The organization must maintain up-to-date information on all suppliers who supply materials used for FSC product groups, including the supplier's name and certification code (if applicable), as well as the materials supplied

- **Receiving and storage of materials:** If there is a risk of ineligible inputs entering FSC product groups, the organization must implement one or more of the segregation methods (Physical Separation of Materials, Temporal Separation of Materials, Identification of Materials)

- **FSC Product and Material Records:** For each product group or manufacturing/order number, the organization must identify the main processing steps involving a change in the volume or weight of the materials, and specify the conversion factor(s) for each processing

step or, if this is not feasible, for the entire process

- **Sales:** The organization must ensure that sales documents (physical or electronic) are issued for products sold with an FSC endorsement
- **Compliance with timber legality legislation:** The organization must ensure that its FSC-certified products and controlled timber products or forest products comply with all applicable timber legality legislation
- **FSC Basic Labour Requirements:** In applying the FSC Basic Labour Requirements, the organization must take due account of the rights and obligations established by national legislation while fulfilling the objectives of the requirements
- **Definition of product groups for FSC control:** The organization must establish product groups to control FSC labelling and output statements
- **Product Transfer System:** The transfer system is an FSC control system that provides the simplest approach to determining output statements, by transferring FSC input statements directly to output products
- **The percentage system:** The percentage system is an FSC control system that allows all outputs to be sold with a percentage statement that corresponds to the proportion of inputs contributing to the statement during a period of calculation of the specific statement
- **The credit system:** The credit system is an FSC control system that allows a proportion of outgoing products to be sold with a credit claim corresponding to the quantity of inputs contributing to the claim taken into account with their conversion factor(s) applicable to the product group
- **Requirements for the affixing of the FSC mark:** The organization can apply the FSC mark on FSC-certified products by complying with the requirements set out in the FSC-STD-50-001 standard
- **Subcontracting:** The organization may subcontract work within the scope of its certificate to FSC CoC certified contractors and/or non-FSC CoC certified contractors
- **Eligibility for Individual CoC Certification:** An organization is eligible for Individual CoC Certification if the scope of its certificate includes a single site or multiple sites (two or more sites) that meet the criteria set out by the FSC for this purpose
- **Eligibility for multi-site CoC certification:** An organization is eligible for multi-site certification if its certificate covers at least two sites or legal entities (referred to as “Participating Sites” in FSC-STD-40-003) that meet the criteria set out by the FSC
- **Eligibility for Group CoC Certification:** A Group CoC Certificate may be issued for two or more independent legal entities (referred to as “Participating Sites” according to FSC-STD-40-003) covered by the certificate if the eligibility criteria

5.4 GROUP CERTIFICATION

5.4.1 HOW DOES GROUP CERTIFICATION HELP OWNERS?

Group certification allows you to:

- Promote access to FSC certification for small forest owners;
- Pooling certification costs between the different owners (cost of upgrading, cost of building common and shared tools, cost of audit);
- Conduct annual audits on a sample basis;
- Gradually integrate owners by defining strict and clear rules for integration (and exclusion) in the group;
- Build common analytical frameworks, procedures, or management tools;
- Promote communication and information/training processes between the group manager and the different members, which ultimately increases the competence and involvement of the owners, accompanied by the group manager.

Group certification requirements

5.4.2 Requirements for Group Leaders

The group leader must be a person or group of persons registered as a legal entity. It is responsible for compliance with the group certification standard.
The method of appointing the person in charge is left to the discretion of its members.

5.4.3 Requirements for Class Members

Each member wishing to take part in the group must sign a declaration of consent. Each member must:

- Commit to respecting the group's operating rules and the forest management standard in force;
- Declare that the management units they add to the group are not covered by another FSC certificate;
- Agree to allow the group leader, the certifying organization, FSC and ASI to assume their responsibilities;
- Accept that the group leader is the main contact person for certification;
- Each group can decide how to organize it internally, and the group leader can decide how to divide the different responsibilities in order to comply with the current forest management standard;
- When the group leader, or another player in the group, is responsible for compliance with a requirement of the forest management standard in force, and this compliance is implemented for the entire group, and for all the management units of the group, this mode of operation is commonly referred to as "implementation or compliance **at the group level** ".

Compliance of all management units: Compliance with all requirements of the current forest management standard must be demonstrated for each management unit covered by the scope of the group certificate

Compliance with Criterion 6.5 (network of conservation areas) in all SLIMF management units:

By default, each field unit should individually meet Criterion 6.5 (Figure 1). However, when the SLIMF management units cannot meet the criterion individually, the group's SLIMF management units can comply collectively (Figure 2). This means, for example, that two SLIMF management units with a higher proportion of their area for conservation can be held on behalf of all SLIMF management units in the group, provided that the area dedicated to conservation is equal to or greater than the cumulative area required for all SLIMF management units in the group.

5.4.4 Group Operating Rules

The group leader shall draft, implement, and maintain written group management rules covering all applicable requirements of this standard, depending on the scale and complexity of the group, in this case:

(a) rules establishing who may become a member of the group;

(b) rules on how to add new members to the group;

(c) rules setting out when members may be suspended or excluded from the group;

(d) an internal monitoring system for the group;

(e) a process for responding to requests for corrective actions issued internally and by the certifying body, including a timetable and a description of the consequences of non-compliance with the corrective actions;

(f) a procedure for resolving claims made by stakeholders against group Members;

g) A system for the traceability and tracking of FSC-certified forest products produced by group members to the place of transfer of ownership of the products outside the scope of the certificate, in accordance with Criterion 8.5 of the current forest management standard;

(h) requirements relating to the marketing or sale of products;

(i) rules establishing the terms and conditions for the use of the FSC trademark and trademark license number.

5.4.5 Group Records

The group leader must keep up-to-date records covering all current requirements of this standard and the forest management standard in force.

The group leader must implement a documented internal monitoring system, including at least the following:

(a) a description of the internal monitoring system sufficient to:
i. ensure uninterrupted compliance with the forest management standard in force in the group's management units;
ii. Verify the adequacy of the group management system and the overall performance of the group leader.
(b) regular monitoring visits (at least annually) to a sample of the management units belonging to the group;
(c) regular (at least annual) analyses of the results of internal monitoring in order to improve the Group's management system

5.4.6 Internal Monitoring

The group's internal monitoring includes annual visits to a sample of the group's management units. The minimum number of management units to be inspected annually is calculated using the table in the FSC Group Management Standard.
The group leader may also justify a lower level of monitoring in accordance with the provisions of the FSC group management standard. To do this, the group leader must analyze the results of his or her internal monitoring. Based on this analysis, the group leader can improve their group management system, and adapt the intensity of their internal monitoring to adapt to the circumstances

The group leader must evaluate each forestry contractor wishing to join the group, before approving its integration

The indicators attached to these Principles have been adapted to the national situation on the basis of the International Generic Indicators developed by the FSC and used as a basis for the development of national or regional forest management standards.

In addition to the forest management standard, the certification also relies on the chain of custody standard to track the journey of products from the harvesting site to the end consumer. This standard will also be used for the certification of natural rubber in Côte d'Ivoire. Nevertheless, it will be used without being subject to any national modification or adaptation during audits.

Finally, as natural rubber is produced by hundreds of thousands of low-income planters on small farms, it was wise to take into account the group certification standard, which federates producers and groups their products under common management. This group certification approach makes it possible to pool efforts and resources but requires a certain organization and the implementation of procedures and a group management system.

5.5 Introducing the Rainforest Alliance Sustainable Agriculture Standard

When compared to the Rainforest Alliance Sustainable Agriculture Standard, it is clear that some aspects of farm management and crop monitoring are poorly addressed or remain implied in the FSC standards mentioned above.

Indeed, the Rainforest Alliance's Sustainable Agriculture Standard is organized around the following points and addresses in a more detailed and specific way the issues of smallholders and the monitoring and management of their production. These are:

5.5.1 Chapter 1: Management

This chapter is based on the premise that agriculture is not only a way of life, it is also a business, and good management is the key to success in business. The Rainforest Alliance wants to see certified farms run efficiently, transparently, openly, and economically viable. To this end, it is necessary for farms and groups to implement an integrated management and planning system with processes and systems for continuous improvement. Good management and planning contribute to the productivity and profitability of farms, as well as to a reduced environmental impact. Improved efficiency in the use of land, water, fertilizers, and pesticides also enhances climate change adaptation and mitigation of its adverse effects (Climate-Smart Agriculture).

To achieve this result, the Management chapter contains topics related to management capacities, group and farm administration, data management, sustainability assessment and management planning. The requirements for these topics follow a process of evaluation, planning, implementation and adjustment.

Based on the risk assessment, specific climate change adaptation practices and mitigation measures are defined. Farm groups and farm administrators play a key role in facilitating this planning process.

This chapter also contains requirements on the collection of geolocation data to ensure the traceability of certified products and to ensure that they do not come from deforested areas or protected areas in which production is strictly prohibited. The collection of polygons provides more accurate data on farm size, which in turn can also strengthen farm management by facilitating the analysis of volume estimates, for example.

Finally, this chapter contains the cross-cutting themes of gender and youth participation. The inclusion of these topics in the chapter on management shows the fundamental importance of these problems and indicates that they apply to several levels of the activity of agricultural groups and holdings. Rather than requiring a certain level of gender or youth participation, the standard encourages context- and farm-specific targets and activities to achieve the appropriate goals of the relevant members.

5.5.2 Chapter 2: Traceability

A reliable and successful certification program for sustainable agriculture must be able to give its users confidence that certified products are safely produced in accordance with the standard. This requires a robust and transparent system to trace the origin of products throughout the supply chain, from the farm to the level of the small-scale trader.

The requirements set out in this chapter provide producers with a framework to accurately and reliably record the quantities of certified production of their operations, the segregation of their non-certified products, sales transactions, conversion methods, and the use of registered trademarks.

5.5.3 Chapter 3: Income and Shared Responsibility

The Rainforest Alliance has the ambition to make sustainability the norm in the industries in which it operates. A fundamental transformation of the principles of supply chain operation is therefore needed in the given sectors. There is a need to move to a system where sustainability in agricultural production is valued and priced as a material service on top of the cost of the commodity, and where the investments needed to advance sustainability practices at the outset are borne by the market and producers.

These goals are reflected in two elements of the 2020 Sustainable Agriculture Standard. The first is the Sustainability Differential, a mandatory monetary payment paid to producers in addition to the market price for the sale of certified agricultural crops. The second element is sustainability investments that are made by market participants to contribute to the investments needed to drive sustainability progress at the outset.

This chapter begins with two freely chosen requirements on production costs and living income to improve the profitability and incomes of farmers. The concept of a living income recognizes the fact that farmers are able to improve the profitability of their businesses and earn at least an income that allows their families and households to have decent living conditions.

5.5.4 Chapter 4: Agriculture

This chapter focuses on the outcomes of sustainable agriculture, crop productivity and profitability, and natural resources and ecosystem services. These outcomes include the goals of Climate-Smart Agriculture and Food Security: farms and groups mitigate adverse impacts and adapt to climate change and increase their resilience by implementing sustainable and diversified practices where possible.

The topics covered in the chapter on agricultural practices complement each other in order to achieve these results. Agronomic activities related to sustainable production practices, soil conservation and fertility, integrated crop protection and safe management of agrochemicals enhance the outcomes of sustainable productivity and profitability, as well as the conservation of natural resources and ecosystem services. Here, the requirements encourage context-specific and locally adapted practices to ensure that natural inputs and resources are used efficiently, that natural cycles are optimized to increase resilience to climate change, soil health and fertility are improved, pollinators are attracted, water management and reclamation are improved, pesticides are minimized and other negative environmental effects are reduced.

Finally, crop profitability is enhanced by post-harvest practices, where farms and groups manage to improve crop quality to meet market demand.

The implementation of the requirements in this chapter is part of the foundation of a broader set of sustainable agriculture activities that, when combined with other field, market and promotion interventions, can enhance impacts at the regional and sectoral levels.

5.5.5 Chapter 5: Social

The Social chapter of the Requirements for Agricultural Holdings seeks to value producers and workers so that they can obtain better living and working conditions for themselves and their families, to promote equality and respect for all with special attention to vulnerable groups such as migrants, children, youth, and women and to strengthen the protection of labour and human rights on certified farms.

Sustainable agriculture is intrinsically linked to the livelihoods of millions of producers, families, and their communities. To strengthen sustainable livelihoods, the Rainforest Alliance Sustainable Agriculture Standard sets out requirements related to all basic human and labour rights, the living wage, health and safety, and decent working and living conditions. Farms and groups must respect the legal and customary rights of indigenous peoples. These requirements align with the United Nations Guiding Principles on Business and Human Rights, ILO conventions, and other multi-stakeholder concepts such as the Living Wage, developed in coordination with the Global Living Wage Coalition.

Human rights violations such as child labor, forced labor, discrimination, or workplace violence and harassment have no place on Rainforest Alliance Certified farms. For these other types of violations, our certification system will adopt an “Assessment and Resolution” model, which goes beyond a simple interdiction approach in its ability to make a difference. Given the high risk of these violations in some agricultural supply chains, we will require farms and groups to put in place a rigorous system that includes conducting a risk assessment and implementing appropriate mitigation measures, conducting regular self-monitoring, and resolving all known instances of these violations. Serious cases, if not resolved, and/or breaches of the applicable legislation, will lead to a decision to refuse certification, suspend or cancel the certificate. This approach is further detailed in 5.1 and the associated appendices.

In addition, the certification system aims to enable agricultural workers and their families to achieve decent living conditions and earn a living wage. To this end, the standard enforces respect for workers' rights to collective bargaining and freedom of association, healthy and secure working and living conditions, and access to health care. While the system aims to contribute to better wages for workers by requiring that the minimum wage be paid and that there be progress towards a living wage, the Rainforest Alliance recognizes the limitations that producers face in unilaterally solving the problem of low wages. In line with the United Nations Guiding Principles on Business and Human Rights, our approach is to provide transparency on wages in agricultural production, engage certificate holders in continuous improvement and dialogue, and encourage companies to practice shared responsibility in supply chains to prevent and mitigate the negative impacts of inadequate wages.

Agricultural activities can have positive or negative effects on the natural environment, depending on how they are managed. This chapter highlights the journeys of certified farms that enable them to have a positive impact on the planet and its forests, on biodiversity, on water and on the climate. By complying with the

main requirements of the Farm Requirements, farms also comply with the High Conservation Values approach defined by the HCV Network.

The first topic of this chapter supports the finding that farms and groups do not contribute to deforestation, forest degradation and the destruction of other natural ecosystems and that they conserve, maintain and restore natural ecosystems and their services. The topic on wildlife and biodiversity supports the fact that farms and groups avoid the degradation of natural habitats, contribute to the enhancement of biodiversity and help prevent the extinction of endangered species. On the topic of water, waste and energy, farms and groups reduce pollution, treat wastewater, minimize spills of hazardous pollutants, and reduce waste and energy through prevention, reduction, recycling, and reuse. A self-selected topic is added for farms and groups that want to take a step forward and measure greenhouse gas emission reductions.

Finally, throughout this chapter and the Agricultural Practices chapter, the Requirements for Farms work to ensure that farms and groups adopt climate resilience and adaptation techniques and strengthen climate change mitigation.

Once again, the Rainforest Alliance believes that farm certification has a place in the broader landscape of land conservation, where multiple strategies are needed to create a sustainable impact for biodiversity and the planet. The content of this chapter marks a starting point from which farms and certified groups can support this goal.

5.5.6 Chapter 6: Environment

Agricultural activities can have positive or negative effects on the natural environment, depending on how they are managed. This chapter highlights the journeys of certified farms that enable them to have a positive impact on the planet and its forests, on biodiversity, on water and on the climate. By complying with the main requirements of the Farm Requirements, farms also comply with the High Conservation Values approach defined by the HCV Network.

The first topic in this chapter supports the outcome that farms and groups do not contribute to deforestation, forest degradation and the destruction of other natural ecosystems, and that they conserve, maintain and restore natural ecosystems and their services. The topic on wildlife and biodiversity supports the fact that farms and groups avoid the degradation of natural habitats, contribute to the enhancement of biodiversity and help prevent the extinction of threatened species. For the topic on water, waste and energy, farms and groups reduce pollution, treat wastewater, minimize discharges of hazardous pollutants, and reduce waste and energy through prevention, reduction, recycling and reuse. A self-selecting topic is added for farms and groups who want to take a step forward and measure reductions in greenhouse gas emissions.

Finally, throughout this chapter and the one on farming practices, the Farming Requirements work to ensure that farms and groups adopt climate resilience and adaptation techniques and enhance climate change mitigation..

Once again, the Rainforest Alliance believes that farm certification has a place in the broader land conservation package, where multiple strategies are needed to create a sustainable impact for biodiversity and the planet. The content of this chapter marks a starting point from which farms and certified groups can support this goal.

VI. COMPARATIVE ANALYSIS OF FSC STANDARDS FOR AND RA STANDARDS FOR SUSTAINABLE AGRICULTURE

The two standards (FSC and RA) identify the provisions that must be in place to guarantee the sustainability of the spaces dedicated to the production of the goods and services subject to the certification.
The FSC standard is much more oriented towards forest management and the production of the goods and services derived from it. It also affects forest plantations and their various products of goods and services, which could include rubber plantations and their products such as rubber, seeds (NTFPs) and rubber wood. The standards for product traceability and group management complement this standard to enable it to take into account all the provisions necessary to ensure the sustainability of the management of rubber plantations and the traceability of all the products that come from them.
The AR standard concerns all agricultural production and takes into account the management of cultivated areas and the entire process of production, packaging, and transport of products. It impacts the entire

product chain and also has the advantage of taking into account the environment of the plantations, the working conditions and all the processes of production, transport, and processing of products. It contains much more details related to the management of plantations and their products, which are likely to facilitate the work of auditors during the various evaluations.
FSC standards will have to call on the genius and experience of auditors in the field of natural rubber (classified as an agricultural product in Côte d'Ivoire) and therefore lead to less objectivity.

VII. IDENTIFICATION AND ANALYSIS OF STAKEHOLDERS IN THE RUBBER AND NATURAL RUBBER SECTOR IN CÔTE D'IVOIRE

Stakeholders in the natural rubber sector are spread throughout the value chain, from planters at the grassroots level to users of finished products, both nationally and internationally. A distinction is made between producers, buyers of products, millers, and exporters.

7.1 PRODUCERS

7.1.1 Small planters

These are individual producers with small farms

They can be distinguished into 3 main categories: owners of plantations of less than 10 ha, planters whose surface area varies between 10 and 50 ha and those who have more than 50 ha.

7.1.2 Co-operatives

These are associations or organizations of producers who pool their means of production. The areas held can be very large, up to a thousand ha in one piece or in several blocks interspersed with fallow areas, forests or other agricultural speculations.

7.1.3 Industrial plantations

They are pioneers in this field and have their own plantations. They are integrated from production to processing. Generally, they have always reserved natural areas in order to ensure their environmental responsibility in terms of biodiversity.

They are owned by large groups that have been concerned with securing and controlling a large part of their sources of supply and protecting themselves from disruptions in the supply of raw materials.

The first two groups mainly market cup bottoms, while the last group has the possibility of producing both latex and cup bottoms.

7.2 PRODUCT BUYERS

In this category, we distinguish in order of increasing importance:

- Individual buyers (comparable to trackers in the coffee-cocoa sector) who may be small economic operators who have invested in this activity
- Individual planters who want to diversify their activities by collecting small crops from their neighbours.
- Weighbridge owners installed in village production areas.
- Producers' cooperatives that own weighbridges.

7.3 AGRO-INDUSTRIAL COMPANIES

Agribusiness companies have organized themselves to collect rubber from their own industrial plantations or village plantations that they have helped to create, but also to buy the rubber from individual planters, cooperatives, or weighbridge holders.

MILLERS

There are several kinds:

7.3.1. Millers with industrial plantations

These are large agro-industrial groups that were initially state-owned companies or that had negotiated land with the state to develop industrial plantations and which were obliged to develop a component of village plantations. This category includes companies established during the pre-independence or immediately post-independence period.

7.3.2 Millers without industrial plantations

These are economic operators who have seized the opportunity or who have been encouraged by the State to absorb the overproduction resulting from the uncontrolled extension of individual village plantations. They have processing units and mainly source their cup funds from cooperatives, weighbridge holders or planters or individual buyers. They come in a variety of sizes, ranging from those that make smoked rubber in an artisanal or semi-industrial way to large industrial units that manufacture granulated and dried rubber.

7.3.3 Finished Product Processing Units

This sector of activity is very underdeveloped and is still at the embryonic stage in Côte d'Ivoire.

7.4 PRODUCT EXPORTERS

Two categories of players share this sector of activity:

7.4.1 Exporters of Cup Funds

This category of player emerged in response to the country's rubber overproduction crisis. They benefited from special government authorizations to carry out this activity.

7.4.2 Exporters of Dried Pellets

Most of the processing units installed in the country produce and export the dried pellets.

VIII. MATRIX OF COSTS AND BENEFITS OF FSC CERTIFICATION OF NATURAL RUBBER IN CÔTE D'IVOIRE

8.1 COSTS ASSOCIATED WITH FSC CERTIFICATION OF NATURAL RUBBER IN CÔTE D'IVOIRE

The costs identified during the study are related to compliance with the various FSC standards. In the case of natural rubber in Côte d'Ivoire, the FSC standards that affect the natural rubber sector are those relating to the sustainable management of rubber plantations, the traceability of products and the management of groups. The costs may or may not be financial.

It is important to note that the FSC standard was originally developed for the management of natural or planted forests with wood as the main product and secondarily non-timber forest products (NTFPs). However, in Côte d'Ivoire, natural rubber has always been considered an agricultural product and rubber much more as an agricultural plant than a forest plant. The management provisions of this speculation and its products have always been governed by agricultural laws and regulations. However, internationally and in some countries (Asia and Latin America), rubber is considered a forest tree and natural rubber and rubber seeds are considered NTFPs.

To achieve FSC certification, natural rubber producers will now have to comply with the requirements of the following standards:

- FSC-STD-CIV-01-2023 adapted to the Ivorian context (adaptation process underway);
- FSC-STD-40 004 V3-1 related to the chain of custody, also known as the chain of traceability;
- FSC-STD-30 005-V2-0 on Group Certification.

An in-depth analysis of the criteria and indicators of these 3 standards has highlighted the aspects of the management of rubber plantations, the organization of producers and the monitoring of traceability that will generate additional costs for the various actors in the sector.

It should be noted that many of these costs are simply within the purview of compliance and should not be incorporated into this study. They were nevertheless cited for the purposes of the cause. There are also the requirements of the European Union's Deforestation Regulation (EUDR) which take into account compliance with the law and the traceability of products. These provisions are new in Côte d'Ivoire, but several actors are working to comply because the European Union constitutes a large part of the natural rubber market exported from Côte d'Ivoire as a main or secondary destination by transiting through non-European markets, in this case Asia.

The analysis of costs and their structure clearly shows that the establishment of a good management system and an efficient administrative organization associated with the monitoring of the traceability of products within the framework of the RDUE will facilitate compliance with the above-mentioned standards.

Given the lack of sufficient hindsight in the application of certain provisions of the standards, some costs have been difficult to understand due to the lack of historical data and experience in this area.

Another important aspect that emerged from the analysis and which was formally identified as a prerequisite for the application and compliance of the practices of the actors with FSC standards is the information, training, and awareness of all the actors in the sector on the provisions that affect their specific field of activity.

In addition, there will be familiarization with audit systems, drafting, and implementation of procedures and technical itineraries as well as the analysis of gaps and their causes and the implementation of corrective actions following the various audit missions (internal and external).

Table 1 : Synoptic presentation of costs

Topics	Activities or tasks	Monetary costs	Non-monetized costs	Entities responsible for bearing the cost		
				Planter	Cooperative	Transformer
Group organization and management						
	Identification and census of Group Members		FR		X	X
	Creating and managing a database of group members	1 000 000*			X	X
	Monitoring and supervision of group		FR	FR	X	X

	members					
	Drafting a procedure for managing group members	200 000*			X	X
	Declaration to the CMU			X	X	X
	Reporting and identification to the NSIF/person	2 000 000			X	X
	PPE Acquisition, Distribution and Management	5 000 000**			X	X
Implementation and monitoring of product traceability		7 000 000				X
	Geolocation of parcels and assignment of identification codes/parcel	3,500 to 25 000	FR	X	X	X
	Creation of a database to monitor individual monthly productions	500 000			X	X
	Establishment of a system of physical separation of products according to the status of origin/year/point of purchase	300 000**	FR		X	X
	Physical or temporal separation during product processing	1 000 000*	FR			X
	Storage, identification and marking of products/packages/month	10 000			X	X
Compliance with the SFM standard						
	Hazard study by shift, including the worst forms of child labour	3 500 000*		X	X	X
	Study for the identification and management of HCV sites	3 500 000*			X	X
	Study of industrial hazards and risks	5 000 000				X
	Study on the identification, storage and management of hazardous chemicals	6 500 000*		X	X	X
Conduct of FSC Certification Specific Activities						
	Diagnosis of the system in place and identification of strengths and weaknesses with an action plan for the initial audit	6 500 000			X	X
	Monitoring of product traceability, monitoring of delivered production and comparison to performance standards	FR			X	X
	Conduct of internal and external audits/year	3 500 000**			X	X
	Drafting and validation of specific procedures	6 500 000*			X	X
	Training on the new requirements related to FSC certification	10 000 000*	FR		X	X
	Implementation of procedures	FR		X	X	X
	Initial certification audit	6 500 000*			X	X
	Annual surveillance and other audits	3 000 000**			X	X

8.2 ADVANTAGES OR BENEFITS OF FSC CERTIFICATION

The advantages or benefits identified during the study are monetary and non-monetary.
As for the monetary benefits, it is important to note that the State of Côte d'Ivoire has strongly regulated the price of natural rubber throughout the production chain.
The field purchase price of the rubber is set each month by APROMAC. However, in remote areas or far from major production and processing centers, it is common to find that this price is not respected. Nevertheless, in recent years, several structures engaged in sustainability programs guarantee the purchase of rubber at the APROMAC price for all their registered planters. Some have decided to apply a bonus linked to compliance with certain standards, but these bonuses rarely exceed 10% of the APROMAC purchase price. This rate of 10% of the official price was noted during our online exchanges with Thailand's correspondents.
FSC certification will be able to guarantee the APROMAC price and the promised bonuses and also provide other benefits to planters, as is seen in the context of FSC forest certification (see WWF report in Central Africa).

Table 2 : Overview of the benefits of FSC certification

				Stakeholders involved		
Topics	Activities or actions	Monetary Benefits	Non-monetary benefits	Planter	Cooperative	Transformer
Sale of products						
	Correct weighing of the product	FR		X		
	Sale of cup bottoms at the guaranteed APROMAC price/kg	362 (June 2024)		X		
	Allocation of a bonus (10%) FSC or RDUE certification	36 (June 2024)		X		
Individual benefits for the producer						
	Registration at the CMU			X		
	Declaration to the NSIF (coverage in the event of an accident or occupational disease)			X		
	Payments on bank account or mobile money			X		
	Reduced theft of products in the field and during transport			X	X	
Collective benefits for the producer group						
	Compliance with the provisions relating to the RDUE and other trade restriction provisions	FR			X	X
	Creation of health	FR		X		

	and socio-educational infrastructures common to the group					
	Regular maintenance of slopes and other collective infrastructure	FR		X	X	X
	Carrying out projects common to the group with the support of the State, agro-industrialists or other groups of actors (electricity, drinking water, health centers, schools, etc.)	FR		X		
	Health insurance for farmers	2 000 000**		X	X	X
	Specific health care for severe cases		FR	X	X	X
	Distribution of school kits		FR	X		
	Organization of Christmas trees and end-of-year celebrations with distribution of gifts to the most deserving for a healthy emulation		FR	X		
	Establishment of literacy programs for farmers and their out-of-school children	FR	FR	X		

NB: FR= For the Record

IX. ASSESSMENT AND IN-DEPTH ANALYSIS OF THE COSTS AND BENEFITS OF FSC CERTIFICATION OF NATURAL RUBBER IN IC

9.1 OVERALL IMPACT OF RUBBER CERTIFICATION

FSC certification, like any other certification, is voluntary and is a market instrument. It leads to new constraints, especially financial, which are often difficult for an individual planter to bear. Group certification appears to be a solution to remove some of these constraints.

The costs of certification are high for the primary producer because it is up to him to set up and comply with procedures and other technical itineraries at the grassroots.

The financial benefits of certification accrue more to the actors at the end of the chain, especially those who market the finished products on which the certification logos are affixed. Sharing is therefore largely in favour of the players at the end of the chain. In addition, the purchase price of the rubber at the edge of the field is not liberalized and does not bring into play the law of supply and demand. In the current context, even liberalization risks leading to perverse effects to the great disadvantage of grassroots producers.

The Professional Agricultural Organizations (OPA), if they really start to play their roles and work for the well-being of their members, can be real boosters for the adoption and conduct of FSC certification throughout the chain.

Pooling producers' efforts and collective bargaining of rights and benefits could help improve producers' living conditions.

Finally, there are mechanisms to ensure a more equitable distribution of the benefits generated by FSC certification. These mechanisms must be explored by the State and technical and financial development partners to encourage the adoption of FSC certification by the greatest number of actors

9.2 IMPLICATIONS OF THE CERTIFICATION SCHEME ON FACTORS OF PRODUCTION AND DEFORESTATION

9.2.1 Impacts on factors of production

Workforce

As has been noted in the forestry sector in the Congo Basin (see CIFOR report on the social impacts of FSC certification) and in the cocoa sector in Côte d'Ivoire, a number of external and internal social requirements are in place to the great benefit of farmers and their workers when structures are involved in the certification process.

Use of fertilizers

The use of chemical fertilizers is quite marginal in the field of rubber cultivation in Côte d'Ivoire.

These chemical fertilizers are still used in the sector. However, with the evolution of knowledge through scientific research, green and organic manures will become more and more important in the sector to maintain and/or improve the yields of rubber products without causing soil depletion and other negative impacts on the environment.

Use of stimulation products

Their use will be better regulated in the context of certification if more natural and organic substitutes are not found, in order to reduce the negative impact on the environment and the health of the workers who use them.

9.2.2 Impacts on deforestation

The implementation of the provisions of principle 9 will certainly have an impact on deforestation. Indeed, the preservation of residual forests in the landscape of rubber producer groups will be a common affair that will work if measures are taken to compensate for the efforts undertaken collectively to preserve, enrich and safeguard the identified HCVs. It is also possible to imagine and implement incentives for efforts to preserve and increase forest areas. These incentives are to be financed by a portion of the profits generated by the sale of FSC-certified products on the international market.

X. CONCLUSION AND RECOMMENDATIONS

At the end of the study on the cost-benefit analysis of FSC certification in the natural rubber sector in Côte d'Ivoire, it should be noted that it is at the embryonic stage in the country. State and non-state actors throughout the chain still have very little information and training on this certification system and the real or supposed benefits it can bring to the state, the private sector and producers and their families.
Several experts on this issue exist in the country and have a good understanding of these issues to get the actors involved and take charge of the entire FSC certification mechanism in Côte d'Ivoire.
With the first workshops and the various studies carried out on the issue, there is a stir at all levels to get involved in the process. This will be further boosted by the imminent entry into force of the RDUE provisions on European markets. These markets are the main or secondary destinations for Côte d'Ivoire's basic

products, whose natural rubber is becoming increasingly important in terms of export volume and contribution to GDP.

However, as in all other countries where FSC certification is applied, the costs and benefits are unevenly distributed throughout the chain. The highest burden of compliance with the provisions of the various applicable FSC standards rests with primary producers (individual growers and cooperatives). The highest margins are made by the final distributors of FSC-labelled finished products. This unequal distribution is not a source of motivation to engage grassroots producers and cooperatives in the certification process. Also, the spread of preconceived ideas about the high cost and difficulty of implementing FSC certification reinforces this reluctance of actors to commit.

Some recommendations can be made:

- Establish mechanisms to encourage cooperatives and small-scale grassroots producers to get involved in certification;
- Take measures and measures to transfer part of the profits made by large distributors to actors at the beginning of the chain (such as the PPECF – Project for the Promotion of Certified Forest Exploitation – implemented in Central Africa by COMIFAC).

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