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BIODIVERSITY CONSERVATION LAW AND POLICIES IN THE AMAZON REGION OF SURINAME, GUYANA AND FRENCH GUIANA

LEI E POLÍTICAS DE CONSERVAÇÃO DA BIODIVERSIDADE NA REGIÃO AMAZÔNICA DO SURINAME, GUIANA E GUIANA FRANCESA

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ABSTRACT

Guyana, Suriname, and French Guiana are three territories which have in common their extensive forested areas and abundant biodiversity, their location in the Guiana Shield and their belonging to the Amazon jungle. The population is not numerous; together they do not exceed two million inhabitants. At the same time, the three territories present disruptive colonization processes of the American continent of the Spanish and Portuguese hegemony of the 16th and 17th centuries. Based on this, in this article, we propose to present and describe the main policies and laws for the conservation of biodiversity in Guyana, Suriname, and French Guiana. To aim this objective, we made an extensive review of literature and policies and legislation regarding the conservation of biodiversity in these territories. The triangulation of sources was also practiced considering different institutional and governmental reports and press releases on the advantages, scope and weaknesses of the application of the regulations.

Keywords: Guyana; Suriname; French Guiana; Amazon region; biodiversity conservation.

RESUMO

Guiana, Suriname e Guiana Francesa são três territórios que têm em comum suas extensas áreas florestais e abundante biodiversidade, sua localização no Escudo das Guianas e seu pertencimento à floresta amazônica. A população não é numerosa; juntos, não excedem dois milhões de habitantes. Ao mesmo tempo, os três territórios apresentam processos de colonização disruptivos do continente americano da hegemonia espanhola e portuguesa dos séculos XVI e XVII. Com base nisso, neste artigo, propomos apresentar e descrever as principais políticas e leis para a conservação da biodiversidade na Guiana, Suriname e Guiana Francesa. Para atingir esse objetivo, fizemos uma extensa revisão da literatura e das políticas e legislações relativas à conservação da biodiversidade nesses territórios. A triangulação de fontes também foi praticada considerando diferentes relatórios institucionais e governamentais e comunicados de imprensa sobre as vantagens, o escopo e as fragilidades da aplicação das regulamentações.

Palavras-chave: Guiana; Suriname; Guiana Francesa; Região Amazônica; conservação da biodiversidade

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INTRODUCTION

The Amazon rainforest, often called as the “lungs of the Earth”, is a global biodiversity hotspot, and Guyana, Suriname, and French Guiana form a crucial part of its ecological landscape. These regions are home to an astonishing array of flora and fauna, many of which are endemic and play vital roles in maintaining the ecological balance of the planet. Their rich ecosystems contribute significantly to carbon sequestration, water cycle regulation, and climate stability, making them of immense ecological value.

Against this backdrop, the core research question of this study is to explore the characteristics of the laws and policies for biodiversity conservation in these three areas. As countries and regions around the world are increasingly emphasizing biodiversity protection, understanding how these policies are designed and implemented in the Amazon's edge regions is of great significance.

After an extensive review literature, we observe that studies on laws and policies in the Amazon region of Guyana, Suriname, and French Guiana are not profuse. The three territories have in common their extensive forested areas and abundant biodiversity, their location in the Guiana Shield and their belonging to the Amazon jungle. The population is not numerous; together they do not exceed two million inhabitants. At the same time, the three territories present disruptive colonization processes of the American continent of the Spanish and Portuguese hegemony of the 16th and 17th centuries.

The objective of this article is to describe and highlight the main the policies and laws for the conservation of biodiversity in Guyana, Suriname, and French Guiana. The research also presents some historical-structural features to delve into each territorial context.

Methodologically, in order to have a complete record of the issue, all current policies and legislation regarding the conservation of biodiversity in the Cooperative Republic of Guyana and the Republic of Suriname were tracked through the FAOLEX Database platform (FAO, 2023), the official sites of the government of these two countries and the government of the Republic of France. In addition, laws and policies on food, agriculture, and natural resource management of these three territories were reviewed, which indirectly adopt an approach of protection and conservation of biodiversity, ecosystems and the environment. Likewise, we resort to the review of the scientific and academic bibliography present on the conservation of biodiversity in the aforementioned territories. The triangulation of sources was also practiced

considering different institutional and governmental reports and press releases on the advantages, scope and weaknesses of the application of the regulations.

Guyana

Historical-structural characteristics of the Guyanese territory

Guyana is a country in northern South America with an area of 214,970 km² that has 0.4% of the planet's forest with, approximately, 87% of its national territory covered by jungle that is part of the Amazon region. Most of the forest areas are managed by the State (BEEN et al., 2020).

Guyana's population is estimated at 805,000 people (WORLD BANK 2021a) and is based mainly along the coast. The indigenous people, who inhabit the forested areas, constitute 9% of the population and have property rights over more than 14% of the territory.

From the late 16th century to the early 19th century, the territory of Guyana was contested by Spanish, Dutch and British colonists. In 1831, it was consolidated as a domain of Great Britain, which exercised sovereignty until 1966, when Guyana achieved independence within the framework of the Commonwealth. Later, in 1970, the Cooperative Republic of Guyana was proclaimed.

Guyana has more than 80% forest cover, making it one of the countries with the largest tracts of intact forests globally (SOUZA, et al., 2020). In 1990, using satellite imagery and aerial photography, it was estimated that the country's forest cover was 18.47 million hectares. Subsequently, other studies confirmed that assessment, with very low levels of annual deforestation (GUYANA FORESTRY COMMISSION AND PÖYRY MANAGEMENT CONSULTING, 2011). Between 2000 and 2005, Guyana had the world's lowest deforestation (FAO, 2005) rate and forest area change collected during 2010-2017 (BEEN et al., 2020).

The main activity driving deforestation and forest degradation in Guyana is gold mining (this product is Guyana's second most exported commodity after oil (OEC 2023a). At a secondary level, there are other mining activities, infrastructure construction, agriculture and logging (LAING, 2014; BELLFIELD et al., 2015).

Biodiversity Conservation Laws and Policies in Guyana

Based on our source collection and bibliography, we identified a twenty-seven laws and policies related to biodiversity and conservation in Guyana. Of those 27 policies, we will highlight and explain 13 of them.

The Amazon Cooperation Treaty Organization: It is worth noting that among the main international agreements signed by Guyana is the Amazon Cooperation Treaty of 1978. This is a cross-border legal instrument of the Amazon region-signed by Brazil, Bolivia, Ecuador, Colombia, Venezuela, Peru, Suriname and Guyana- which seeks to maintain a balance between economic growth and environmental conservation, respecting the national sovereignty of the countries of the region. In 1995, the Amazon Cooperation Treaty Organization (ACTO) was created in order to strengthen the implementation of the treaty. ACTO emphasizes the sustainable management of forest resources and aims to provide standardized reports on each member country's progress. This includes compliance with international commitments such as the United Nations Forum on Forests (UNFF) and other major international fora on natural resource issues (ELÍAS, 2004). It also prioritizes the conservation of traditional knowledge and the protection of indigenous peoples.

Climate Change Action Plan in Response to its commitments to the United Nations Framework Convention on Climate Change (UNFCCC): this policy, with an intersectoral approach, was presented in June 2001, and its general objective is the mitigation of climate change in accordance with the UNFCCC. Specifically, it is proposed: a) to control, to reduce or to prevent greenhouse gas emissions in all sectors of human activity (energy, transport, industry, agriculture, forestry, waste management and health); b) to examine the vulnerability of sectors and communities and to identify adaptation mechanisms to address the impacts of climate change; c) to implement measures to mitigate and to facilitate adaptation to climate change; d) to carry out sustainable development measures in accordance with the UNFCCC; and e) to promote the development of capacities for effective management of climate change.

The plan, also, proposes to develop the Clean Development Mechanism - a mechanism under the Kyoto Protocol - that would provide opportunities through participation in energy efficiency projects, renewable energy resources, carbon capture and improved agricultural management. Likewise, it is proposed to take measures to reduce greenhouse gas emissions through energy efficiency, improvement of forestry and agricultural management, and the use

of renewable energy resources. It also expresses to promote climate-smart agriculture, monitoring and management of coastal zones, water conservation measures, a plan for protection against forest fires, stricter control of logging practices and waste management.

National Biosafety Framework for Guyana (2007): it was prepared under the auspices of the United Nations Environment Program-Global Environment Facility (UNEP-GEF) National Biosafety Frameworks Development Project. It is a biotechnology, biosafety and biosecurity policy that encourages public-private partnerships and foreign direct investment to do business in Guyana due to its rich biodiversity and indigenous resources. Its guidelines cover sustainable development, safety, public health and environmental considerations for both Genetically Modified Organisms (GMOs) and Living Modified Organisms (LMOs), and all types of genetically manipulated materials.

National Forest Policy Statement (2011): The general objective of this policy is the conservation, protection, management and use of the country's forest resources, promoting the sustainable development of ecosystems, biodiversity and the environment "while allowing fair returns to local and foreign entrepreneurs and investors" (GUYANA FORESTRY COMMISSION, 2011, p.16). In addition, this policy pretends the protection of watersheds, soils, and forests, promoting "natural regeneration, afforestation and reforestation" (GUYANA FORESTRY COMMISSION, 2011, p. 16). It is worth noting that this policy is proposed "[to] identify and quantify environmental services to generate forest incentives for national development" (GUYANA FORESTRY COMMISSION 2011, p. 16).

Low Carbon Development Strategy (LCDS) (2013): the first Guyana's strategy for the reduction of carbon emissions was formulated in 2008 and it was financed through the Guyana-Norway Agreement, in 2009. It proposes a low-carbon economic development, providing a model for the world in the face of climate change, urging the international community to take necessary collective actions, especially with the REDD+ mechanism (Reduction of Emissions from Deforestation and Forest Degradation). Guyana intends through this policy to generate conditions for economic growth and promote investment in low carbon sectors. The strategy considers that deforestation and forest degradation are the main contributors to climate change. Likewise, the strategy considers that "as well as their climate services, forests help to regulate

the planets rainfall, contain vital biodiversity resources, and provide livelihoods for millions of people” (GUYANA LANDS AND SURVEYS COMMISSION, 2013).

National Biodiversity Strategy and Action Plan (2012-2020) (2014): This strategic instrument harmonizes the conservation of biodiversity with the national objectives of food security, the development of agriculture and the elimination of poverty and hunger by 2025. The objectives are related to contributing to the advancement of biosecurity and development low carbon socioeconomic and to improve the conservation of ecosystems, species and genetic diversity (GUYANA. MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT, 2014).

Revised Intended Nationally Determined Contribution (INDC) (2015): this contribution was made in accordance with the commitments of the XIX Conference of Parties (COP 19) in Warsaw (2013) and COP 20 in Lima (2014) of the UNFCCC. It is proposed to convert to Guyana in a green economy, reducing environmental risks and ecological deficiencies, seeking a low-carbon and socially inclusive economy Guyana plans to increase its participation in renewable energy by 100% by 2025. It states that the country will continue to contribute to achieving an effective REDD+ program, with policies, measures and programs that generate broad participation of civil society and the private sector in actions against deforestation and environmental degradation.

National Action Plan (PAN) to Combat Land Degradation (2015): it was effected in alignment with the 10-year strategy (2008-2018) of the United Nations Convention to Combat Desertification (UNCCD) and planning on land conservation against desertification and the promotion of sustainable management of the land. One of the objectives is to improve the living conditions of the affected populations and ecosystems. The approach adopted seeks to harmonize anthropic activities with the protection of biodiversity, ecological functions and the maintenance of the ecosystem.

Green State Development Strategy (GSDS) (2017): this strategic instrument was prepared with technical and financial support from the UN, and it considers that the three dimensions of sustainable development -economic, social and environmental- must be balanced to ensure the implementation of the 2030 Sustainable Development Agenda of the United Nations

(GUYANA. MINISTRY OF THE PRESIDENCY, 2017). The policy addresses a perspective of structural transformation and emphasizes its support for a transition towards a green and socially inclusive economy with a better quality of life for all Guyanese and sustainable management of natural resources and environmental services. Among the most prominent issues is the “Energy Transition Plan”, agricultural diversification, the increase in forest biomass and carbon reserves.

Revised National Forest Policy Statement (2018): Its general objective is the conservation, protection and use of the States forests, ensuring that the social, economic and environmental benefits are maintained and enhanced for the benefit of the current and future inhabitants of the country, while Guyana’s commitments to the international community.

Among the principles that frame this policy we highlight, among others: a) the precautionary principle: a risk management policy that considers that if there are threats of serious or irreversible loss of biodiversity, people, habitats or ecosystems, or the lack of scientific certainty, the policy or action should not be carried out; b) intergenerational equity: it is a mechanism by which the current generation must protect the health and sustainability of biodiversity and the environment for the benefit of future generations; c) protection of the natural capital base, which includes preserving ecosystems against the impact of anthropogenic activities.

To support these Guyana efforts, the policy document provides for international compensation to be received by the country for its environmental services and contribution to climate change mitigation (such as REDD+) (COOPERATIVE REPUBLIC OF GUYANA, 2018).

Green State Development Strategy: Vision 2040 (2019): it is a national policy whose development is planned for a period of 20 years. It reflects the principles of the “green agenda” in which is proposed a development that improves the quality of life of all the inhabitants in accordance with the natural wealth of the country, highlighting the population diversity and the abundance of natural resources (water, land, forests, minerals and biodiversity) (GOVERNMENT OF THE COOPERATIVE REPUBLIC OF GUYANA, 2019).

Strategic Plan Capacity Building of the National Climate Change Committee (2020): this policy presents a transversal approach. With a defined vision for 2025, the purpose is to improve the capacity of the National Climate Change Committee -under the coordination of the Office of Climate Change (OCC), an agency of the Ministry of the Presidency- for effective and efficient management, with the intention of providing scientific, financial, institutional and technical support for climate change processes. In order to this, adaptation and mitigation priorities on climate change in agriculture, forestry, water, energy sector and transport are addressed. (GUYANA, 2020).

Low Carbon Development Strategy (LCDS 2030) (2022): The country intends to establish a world model to avoid deforestation, maintain forests and sustainably develop of the economy within 10 years. Four objectives are established: 1) Value Ecosystem Services; 2) Invest in Clean Energy and Stimulate Low Carbon Growth; 3) Protect Against Climate Change and Biodiversity Loss; 4) Align with Global Climate and Biodiversity Goals (GUYANA, 2022).

Some of the main laws referring to the protection and conservation of biodiversity that remain in force -even when they were partially modified- come from the period under British administration such as Wild Birds Protection Act (1919), which last modification was in 1997, and Kaiteur National Park Act (1930), which last modification was in 2000 (GUYANA, (2000 [1930])).

Once declared independence, Guyana inherited that legislation while formulating different laws that addressed the protection of biodiversity and the environment; although the presence of a commercial perspective in regards to fauna is notorious in some regulations.

Surinam

Historical-structural characteristics of the Surinamese territory

The Republic of Suriname is a country located in the northeast of South America with an area of 163,270 km². Demographically, it has 613,000 inhabitants (WORLD BANK, 2021b), of varied ethnic, linguistic and cultural composition, product of the historical and political trajectory of its territory that was a Dutch colony from the 17th century until 1975 (BLAKELY, 1998; CARLIN, 2015; JANSSEN, 2011).

The country has an equatorial, subequatorial and tropical climate, of a semi-humid type; it has two dry seasons and two rainy seasons in the northern part, and a dry season and a wet season in the southern part. The annual average temperature is 27°C, varying from 26°C in January to 31°C in October (REPUBLIC OF SURINAME, 2016). Rainfall is abundant and varies throughout the territory from 1,545 mm per year to 2,445 mm per year.

The coast of Suriname is located by the Caribbean Sea and is part of a fluvial system integrated with the basins of the Amazon River and the Orinoco River (REPUBLIC OF SURINAME, 2016).

Various studies have investigated the conciliation between the care of natural resources and the use of the land in Suriname, highlighting those who have proposed an increase in productivity, higher economic returns and the development of organic crops without the need to expand agriculture territorially (LATAWIEC ET AL., 2014)

This country has so far conserved approximately 15 million hectares of its forested areas (representing more than 90% of its land), with extraordinarily high levels of biodiversity, carbon, and freshwater. This gives it great importance in terms of global ecosystem services and puts in tension national definitions regarding the increase in agricultural production and the expansion of crops in order to reduce food imports. This tension is also part of the cross-border disputes over the variety of land uses (ALEXANDRATOS & BRUINSMA, 2012) within the framework of the exponential growth trend of the world population (FAO, 2009), which intensifies the global demand for food, fuel and wood, among others, to while exacerbating environmental degradation and climate change (HARVEY & PILGRIM, 2011).

Ecological considerations within the framework of current global capitalist dynamics establish the possibility for Suriname to enjoy the benefits of conserving forest carbon and biodiversity by financing the so-called "early-action" for the Reduction of Emissions from Deforestation and Forest Degradation (REDD).

In the past, during the colonial period, the plantations were located near the coastal zone in order to take advantage of the infrastructure of the ports for the shipment of agricultural merchandise to Europe. Tensions between the European settlers and the indigenous and maroon population (people who had fled the slavery conditions imposed by the settlers) who inhabited the forested areas prevented further exploitation of the interior of the country.

It is worth noting that during the late 1960s and until the 1980s, Suriname had a rich palm oil industry, in which the Patamacca and Baboenhol plantations stood out. However, these

productions were strongly affected or destroyed during the civil war (which took place between 1986 and 1992) in which the military dictatorship led by Desiré Bouterse and the political-military organization Jungle Commando, led by Ronnie Brunswijk (SEDOC-DAHLBERG, 1990), faced each other.

As the 21st century began, concerns grew about the low annual deforestation rate (0.03% to 0.04% per year) would not be maintained due to the expansion of crops such as African oil palm and sugarcane for sugar production.

During the second term of President Ronald Venetiaan (2000-2010), the government signed agreements with companies from China and India to expand oil palm production. This line continued during the Desiré Bouterse presidency (2010-2020), when the president promoted the development of local oil plants (VAN MAELE, 2017).

In 2004, the Surinamese government granted Chinas Zhong Hen Tai some 50,000 hectares in Patamacca; however, in 2023, they were subject to revocation by the current government of President Chandrikapersad Santhoki because the investment plan was not fulfilled (DAGBLAD SURINAME, 2023).

In 2012, the Indian company Fats, Foods, and Fertilizers (3F) also arrived with concessions of 40,000 hectares for crops and facilities for the development of an oil plant (SHERRARD, 2018).

In addition, other concerns about deforestation are related to the implications of mining activity on natural ecosystems. Contamination with cyanide and mercury used in gold mining⁴, which is the main export product, concentrating 80% of the country's merchandise sales (OEC, 2023b).

Thus, these historical-structural elements are a key to understanding the specific scope of environmental and biodiversity conservation policies and legislation. For example, although a sustainable development approach that contemplates the indigenous and maroon population has predominated, the Surinamese State has not been immune to demands from this type of population. In 2000, the Saramaka people filed a lawsuit against the State of Suriname before the Inter-American Commission on Human Rights, which was admitted in 2006 and on which the Inter-American Court of Human Rights issued a reparatory sentence in favor of the original peoples (CORTE INTERAMERICANA DE DERECHOS HUMANOS, 2007).

⁴ Suriname's gold is exploited by two large multinational mining companies: the Canadian IAMGOLD and the American Newmont Mining. In addition, a group of small and medium-sized miners carry out this activity, mainly through the illegal use of mercury (EBUS & LEEUWIN, 2020).

Biodiversity conservation laws and policies in Suriname

Article 6g of the Constitution of the Republic of Suriname, approved in November 1987, provides the legal basis for a biodiversity conservation policy: “The social objectives of the State are aimed at: (...) creating and promoting the conditions necessary for the protection of nature and for the maintenance of the ecological balance” (REPUBLIEK SURINAME, 1987. Translated by the authors). Thus, the State organically defines adherence to these principles as a social objective, including participation in the main environmental conventions.

In this way, different laws -some inherited from their colonial status- and policies provide a basis for environmental protection and sustainable management of common natural assets.

It is significant to mention that among the international conventions adhered to by Suriname -like Guyana- is the signing of the Amazon Cooperation Treaty (1978). In addition, Suriname subscribed to the Rio de Janeiro Declaration (1992). The signing of the text of this Summit, in which 172 countries participated, committed Suriname to preserve the environment and use it sustainably. In addition, it became part of the Convention on Biological Diversity (CBD) signed by more than 160 States, becoming a state party: “the Convention recognizes that biological diversity is about more than plants, animals and microorganisms and their ecosystems – it is about people and our need for food security, medicines, fresh air and water, shelter, and a clean and healthy environment.” (REPUBLIC OF SURINAME, 2006).

Below, we will explain several conservation and biodiversity policies and laws. Of the 20 policies we identified, we will describe the top 10, due to space constraints.

National Forest Policy of Suriname (2006): this policy counted for its formulation with the support of FAO for the participatory construction of the main guidelines. The main objective is to enhance the contribution of forests to the economy of Suriname and the well-being of current and future generations, taking into account the conservation of biodiversity. Three goals of equal weight are contained in the main objective: 1) Economic goal; 2) socio-cultural goal and 3) environmental goal. In reference to the first one, it is understood that forests will be used efficiently and sustainably to improve their contribution to the country's economy. If we consider the socio-cultural dimension, forestry policy aims to increase the subsistence level of the population in general, and in particular of those people who live in and around forests and who directly depend on forests for their livelihood. Regarding the environmental goal, the

policy highlights the protection of water reserves and supplies, the fauna and flora populations found in Suriname. At the same time, it makes explicit considerations on minimizing the negative effects of the forestry industry on the environment. In addition, in compliance with the main objective, it is proposed to take into account land use planning, increase income from timber and non-timber products, and environmental protection. In chapter 6.7, it is established the financing conditions and the redirection of international funds for the development of the sector (MINISTRY OF NATURAL RESOURCES IN COOPERATION WITH THE FOUNDATION FOR FOREST MANAGEMENT AND PRODUCTION CONTROL, 2006).

National Biodiversity Strategy (NBS) (2006-2020): it is a national policy with an intersectoral approach. Its objectives are: (1) the conservation of biodiversity through the protection and enhancement of habitat and species at the local, regional and national level, (2) the sustainable use of biological, cultural and natural resources in local and national economic activities, (3) the application of research and education to create access to environmentally sound services, safe development for the transfer, management and use of biotechnology and modified organisms, (4) access to genetics resources and associated traditional knowledge with equitable sharing of benefits, (5) building institutional capacity for sustainable management and monitoring of biodiversity, (6) raising public awareness on conservation of biodiversity, culture and nature, planning, management and monitoring at the local and national level through environmental education and communication opportunities, and (7) public participation in the planning, management and monitoring of biodiversity, including communities, the scientific community and companies, as well as international strategies with the ACTO and CARICOM.

Likewise, these guidelines promote the development of: a) legal frameworks for the conservation of habitats and species, b) the capacity of government institutions responsible for the control and compliance with biodiversity measures, c) the efficient management of protected areas, d) the sustainable use of agricultural land by reducing the use of pesticides and promoting organic agriculture and the soil and water conservation practices of indigenous and maroon communities, e) sustainable forest management systems through the control of the illegal extraction of wood and other forest products; and f) the investigation and inventory of the diversity of species and the impacts of human activity on the habitat.

In addition, this policy instituted a National Committee with representatives from the government, NGOs, educational institutions and private companies to improve the technical data required for environmental planning and decision making (Republic of Suriname 2006).

National Biodiversity Action Plan (NBAP) (2012-2016): this action plan had its pilot experience in a plan developed since 2007 for the coastal zone of Suriname. The objectives of the action plan are in line with the NBS, to which was added the objective of financial sustainability of the different actions to be implemented. The proposal includes the hiring of consultants for its execution and the selection of objective and measurable indicators that allow verifying the scope and compliance of the actions (REPUBLIC OF SURINAME, 2013).

National Plan for Forest Cover Monitoring (FCM) (2014): it is a sectoral policy that seeks to monitor forest cover in order to implement multipurpose policies such as national planning on land use, use of REED+ and sustainable forest management; observing compliance with laws (for example, the gold extraction law or the mangrove forest protection law). Being a country with high forest cover and low deforestation, the Surinamese State intends to use the benefits of REED+ as a sustainable development strategy, conserving and improving carbon stocks and contributing to the UN strategy to combat climate change. The plan was developed at the request of ACTO and was financed by the same organization (SVENSSON, 2014). That same year, Suriname declared itself a carbon negative economy; that is, any greenhouse gas produced, it is offset by the natural resources that absorb those gases (NACIONES UNIDAS, 2020).

The National Climate Change Policy, Strategy and Action Plan for Suriname 2014-2021: this national policy document was developed in collaboration with the Government of Suriname and the Caribbean Community Climate Change Center (5Cs) and was supported by the European Union. It was presented in January 2015 and it is an implementation of the Suriname Environmental Policy (2012-2016). The implementation of climate resilience measures the generation of data on environmental vulnerability and social awareness of climate change are proposed. It is planned to contribute to the national objectives of efficient and sustainable agriculture, the development of water, energy and transport infrastructure, and the establishment of social safety nets that include food banks, vaccination programs and health services (REPUBLIEK SURINAME, 2015).

The Policy Development Plan 2017-2021: it is a comprehensive policy that establishes the development priorities of Suriname that establishes four pillars: 1) strengthening development

capacity, 2) growth and economic diversification, 3) social progress and 4) use and protection of the environment. The Plan promotes agriculture, forestry and fishing to be more productive and sustainable, encouraging environmentally friendly production systems with an emphasis on conservation and sustainability. The strategic objective for the forestry sector is based on conservation programs of the tropical forest of Suriname in relation to the sustainability of rural communities (GOVERNMENT OF THE REPUBLIC OF SURINAME, 2017).

National Adaptation Plan 2019-2029: it is a national policy with a multisectoral approach presented in 2019 and is expected to have a term of 10 years. The plan establishes medium- and long-term adaptation strategies to reduce climate risk. The proposal includes participatory articulation between government agencies, farming, pastoralist, and fishermen communities, and private companies in different productive, educational, and research programs that promote climate resilient management, including land degradation, deforestation, irrigation, protected areas, agroforestry, and buffer zones. The plan received support from the Government of Japan, through the United Nations Development Programs Japan-Caribbean Climate Change Partnership (UNDP JCCCP) (REGERING VAN SURINAME, 2019).

Suriname's National REDD+ Strategy (2019): this strategy was developed in accordance with the National Development Plan (2017-2021) through a participatory process that included government agencies, local communities, the private sector, academics and civil society. Greater attention is proposed to the preservation of the environment and, in particular, of tropical forests, in line with providing solutions to the problems of land rights of indigenous communities. The various strategic lines include maintaining “the status of a country with high forest cover and low deforestation rate and receiving compensation for investment in economic diversification.” By implementing the national REDD+ strategy, the government intends to ensure that REDD+ actions are implemented consistently and in accordance with the seven Cancun safeguards (NACIONES UNIDAS, 2010; REGERING VAN SURINAME, 2019).

Nationally Determined Contribution (NDC) (2020): these contributions are the instrument established by the Paris Agreement on Climate Change (2015) for the definition of its long-term objectives, and its formulation constitutes the fulfillment of the national commitments reached. The document was presented in December 2019 and it is in line with the priorities of

the 2017-2021 Policy Development Plan. Adaptation and mitigation measures to be executed within 10 years (until 2030) are addressed. The government undertakes, among various issues, to: a) maintain a forest cover of 93% of its territory, including the status of country with high forest cover and low deforestation; b) execute a REDD+ strategy in order to attract international and national financing; and c) increase the percentage of forests and wetlands under protection from 14% to at least 17% of the territory by 2030 (THE REPUBLIC OF SURINAME, 2019).

Multi-Annual Development Plan 2022-2026: the document was presented in December 2021 by the government of Santokhi and Brunswijk and formulates a vision of Suriname towards 2050 in which specific guidelines regarding sustainable development, greening and green growth (reducing the carbon footprint and adopting environmentally friendly growth strategies), and land rights of indigenous and maroon communities. The strategic actions to be developed between 2022 and 2026 include the protection of water, forests and biodiversity and monitoring of degraded natural areas in community settings (REPUBLIC SURINAME, 2021).

Regarding environmental legislation related to biodiversity conservation, there are several laws that were enacted during Suriname's colonial status⁵; some of them were maintained after the country achieved independence⁶.

So far, in the 21st century, Suriname has had to face changes in relation to centralized planning regarding land use, since the lack of implementation of planning measures has been characteristic for a long time (LATAWIEC et al., 2014).

Likewise, the impact of legal and illegal mining threatens the efficiency of biodiversity conservation efforts and, due to the country's poor conditions, ends up involving maroon and indigenous communities in the exploitation (EBUS & LEEUWIN, 2020).

Currently, the Surinamese State has given priority to a development agenda that values the Amazon rainforest, which acts as a carbon sink. Laws and policies developed in recent years are in line with the conscious adoption of updated plans for biodiversity conservation and combating climate change.

⁵ For example, Law on provisions for the protection of fauna and for the regulation of hunting in Suriname (1954), Nature Preservation Act (1954), National Planning Act (1973).

⁶ For example, Forest Management Act (1992), Government Decree on Nature Protection (1998), Animal Welfare Law, N°. 4 (2017), Decision of the Minister of Trade, Industry and Tourism N° 630 (March 20th, 2019), Environmental Framework Law N°. 97 (2020).

These government guidelines have received the support of the United Nations Organization and its agencies -such as the Food and Agriculture Organization of the United Nations (FAO)- and converge with the efforts of agricultural cooperatives, indigenous communities and maroons, and scientists in favor of sustainable development and the preservation of biodiversity (NACIONES UNIDAS, 2022).

French Guyana

Historical-structural characteristics of the territory of French Guiana

After several attempts, this territory was colonized by the French Crown in the 17th century. French Guiana is not a country, but currently has the status of an overseas department of France and it is, therefore, an integral part of the European Union. It is located on the northeastern coast of South America and borders the Caribbean Sea to the north, Brazil to the east and south, and Suriname to the west.

It covers an area of 83,496 km² and has a population of approximately 302,000 inhabitants. Estimates of the indigenous population are around 4% of the population, but they are imprecise since the French Constitution prohibits ethnic statistics (SOMMER-SCHAECHTELE, 2023).

The territory presents a high density of humid tropical and equatorial forests that cover approximately 90% of the soil with an exuberant plant and animal biodiversity. Rainfall varies by region and can range from 1,800 mm per year in the coastal sector to 8,000 mm per year in the northern mountain chain and central highlands. Its climate is tropical and the average annual temperature is 26.7°C.

In 1852, commercial logging began using prisoner labor. In 1875, the industrialization of rosewood oil (*Aniba rosaedora*) commenced, using it in the manufacture of soaps and perfumes; from then on, the native reserves of this plant were drastically reduced (SHARAPIN, 2020). Around the same time, commercial exploitation of gum balata (*Manilkara bidentata*) started (BRULEAUX, 1990).

Currently, environmental problems related to the protection and conservation of biodiversity, ecosystems and the health of the population persist. Among the main drivers of deforestation and degradation of ecosystems is the development of transport infrastructure, mining, poaching of protected species.

The main gold mining transnationals, that have been present in French Guiana for several years, are the American Columbus Gold and the Russian company Nordgold (JAMASMIE, 2019). In addition, this activity is also carried out illegally with high levels of mercury contamination of the environment, directly impacting the health of the indigenous population living in the Amazon jungle (GERY at al., 2014).

French Guiana has plant and animal species declared as patrimonial by France; that is, the French State considers itself responsible for their protection. The territory also has eight nature reserves and a national park.

Biodiversity conservation policies and laws in French Guiana

In recent years, the French administration has established specific policies regarding the territory of French Guiana, while there are French policies, laws and measures that apply to the overseas departments.

Thus, the public debates developed in the framework of the Forum “Grenelle de l’environnement”, between 2007 and 2010, led to reconsider the importance of knowledge and conservation of the Amazonian natural heritage present in French Guiana. For example, in 2008, the French government of Nicolas Sarkozy blocked Canadian mining company Iamgold from approving the development of a gold mine, bordering the Kaw wetland in French Guiana. The region is home to, approximately, 700 species of plants, 100 species of mammals and 254 species of birds. In addition, it is bordering the Trésor Regional Nature Reserve (created in 2009) which has various ecosystems of the Amazon region (mountain forests, swamp forests and savannahs) (BUTLER, 2008).

With the objective of rehabilitating the sustainable production bases of the Aniba Rosaedora species, currently a plant in danger of extinction, the Anib@rosa project, developed between 2010-2013, set out to recover plantations, identify agronomic factors, and establish socioeconomic viability factors for the recovery of the “palo rosa” oil industry (KOMETTER, 2022). The total budget was 948,000 euros and it was financed by the European Regional Development Fund (FEDER) of the European Union, which contributed 62%, and by the Center for International Cooperation in Research Agronomique pour le développement (CIRAD) of France, which provided 38%.

In 2022, the National Biodiversity Strategy 2030 was defined. The official document of this policy stipulates that the main objective is to coordinate national plans with an impact on biodiversity. The strategy aims to stimulate policies for the protection and restoration of biodiversity and ecosystems, strengthen the regulation of polluting agents and expansion of protected areas. On this last point, the Strategy explicitly contemplates French Guiana, as well as on the considerations on illegal gold mining (FRANCE, 2022).

Regarding the French laws and decrees in relation to the conservation of biodiversity in French Guiana we can mention:

French Ministerial Decree (April 9th, 2001): this measure protected 83 species of plants (among which is the species *Aniba rosaeodora* Ducke), which prohibits destroying, hiding, mutilating, collecting and marketing them. However, this decree is not applicable to cultivated specimens.

Ordinance No. 2005-867 (July 28th, 2005): this ordinance extended the land law and the French Forest Code to Guyana. The regulations consider the sustainable management of forest heritage from the economic and ecological point of view (FRANCE, 2005). Exceptions are made regarding free concessions to people who traditionally derive their livelihood from the forest. However, the extraction conditions are no longer the traditional ones and end up affecting the ecosystem.

French Ministerial Decree (July 24th, 2006): the decree provided for the protection of various species of birds, mammals, reptiles, amphibians and insects throughout the French territory (FRANCE, 2006).

Decree No. 2007-006 that creates a National Park (2007). In 2007, a national park, of almost 3.4 million hectares, was created in the south of the territory, which was called the “Amazonian Park of French Guiana” (FRANCE, 2007). This park connects with the Tumucumaque Mountains National Park in Brazil. These two national parks form a protected tropical area of more than 7 million hectares. The management of the Amazon Park is proposed, in addition to safeguarding biodiversity, to preserve the native cultures and their collective use rights that live in the territory (ROGER et al., 2016).

The Grenelle I Law or Law N° 2009-967 (2009): this law is the result of the implementation of the 268 commitments of Grenelle Environnement.

The Grenelle II Law (2010) on the national commitment to the environment: this law breaks down its objectives into more precise provisions: 57 articles grouped into 6 titles to formulate a framework of action to respond to the ecological emergency and the need for ecological transition.

French Ministerial Decree (March 25th, 2015): it establishes the protection of a list of bird species for the entire department of Guyana.

FINAL CONSIDERATIONS

The ecological value of Guyana, Suriname, and French Guiana as part of the Amazon rainforest is immense, and effective biodiversity governance is crucial for global ecological balance. The structural conditions of the economies of the three territories affect the main threats to their biodiversity and ecosystems and the rights and customs of the indigenous, Maroon or Creole population in direct contact with nature. Legal and illegal mining, deforestation and timber trafficking, poaching, and agricultural expansion are presented as the main drivers of environmental degradation.

So far in the 21st century, the governmental instances of the territories have redoubled their efforts to account for the protection and conservation of fauna and flora with a sustainable development that contemplates the well-being of the present and future population. At the same time, specifically Suriname and Guyana draw strategies around the economic benefits derived from environmental services and their contribution to climate change mitigation.

In this way, we observe that each territory has enacted a set of laws, decrees and ordinances that seek to protect the environment, some inherited from the former colonial status of these countries (with the exception of French Guyana, which continues to be an overseas territory), and most recent regulations. Likewise, in the cases of Guyana and Suriname, both countries have adhered to different mechanisms to combat climate change, such as the REDD+ program.

However, there is still room for further improvement in the measures related to biodiversity conservation in the Amazon region of these three countries. Recommendations for enhanced governance include strengthen regional cooperation mechanisms, improve the effectiveness of community empowerment, optimize international fund allocation, conduct interdisciplinary research, and so on.

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