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Biodiversity, biopiracy and intelligence

— *Antônio Cláudio Fernandes Farias and
Antônio Augusto Muniz de Carvalho*

THE SOVEREIGNTY AND CLIMATE CENTER

The Sovereignty and Climate Center is a think tank that aims to promote dialogue, support for training, and provide knowledge and information for the constructive rapprochement between the sectors of environment, security, and national defense. The Center strives to provide ambience and quality for a fruitful debate that highlights the convergences and overcomes existing resistance between relevant stakeholders from governments, organized civil society, the armed forces, academia, and the market.

SOVEREIGNTY AND CLIMATE DIALOGUE

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Executive summary

This text aims to present the role of Intelligence activity in the context of biodiversity, climate change and the environment in general.

We live in a moment in which things happen with astonishing speed, with instant transmission to the four corners of the world. The internet is an unknown territory for the vast majority of people, in which everyone can do whatever they want, whenever they want. This freedom of use allows crimes to be committed on an unprecedented scale, including environmental ones.

Biopiracy, deforestation, burning, illegal logging, illegal mining, illegal fishing, land grabbing and drug trafficking are just some of the crimes committed daily in the Amazon, in the Pantanal, in the Cerrado, in what remains of the Atlantic Forest and in the Blue Amazon. Incalculable wealth is drained out of the country, without a penny being paid back to the Brazilian government. Not only Brazil loses, but also the traditional communities that have developed knowledge for centuries. There are numerous patents registered worldwide related to fauna, flora and knowledge, especially of the traditional populations of the Amazon, without any benefit returning to the country. This must come to an end.

The eyes of the world are directed to Brazil, concerned about the fate of forests, especially the Amazon. National and foreign satellites photograph every millimeter of the world, providing valuable data for the preservation of forests, but also mapping wealth. Sporadically, leaders of some countries manifest themselves on the sovereignty of the Amazon, which is very worrying.

The care for our forests is also a concern of Brazilians, who do not want to see the largest biodiversity in the world compromised. It is necessary to show that the standing forest is worth more than felled and that it is possible to exploit our wealth in a sustainable way, maintaining sovereignty over our treasure. This is the will of Brazilian society.

This same society perceives the Intelligence theme with extreme suspicion either due to ignorance of its function, its objectives and its institutional actions or due to prejudice generated by the controversial use that was associated with its activities in a past context.

The time has come to review these positions so that our country can be a protagonist in the global arena and no longer suffer expropriation of its natural wealth and associated traditional knowledge, without any counterpart. The Intelligence activity needs to work in its fullness to provide subsidies that allow governments better decisions, the preservation of forests, the creation of a sustainable economy and the maintenance of Brazilian sovereignty over these areas so essential for life on Earth.

KEYWORDS

Biopiracy. Climate Change. Intelligence. Sovereignty.

Biodiversity, biopiracy and intelligence

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1. Introduction

The commercial exploitation of the wealth of fauna and flora in our country began shortly after the discovery. The first economic activity carried out by the Portuguese was the Brazilwood (*Pau-brasil echinata*) trade, also called *Pau-Brasil* (in Portuguese) or Ibirapitanga by the Tupis Indigenous people, used for making furniture and as a dye for fabrics, due to its red resin. It was exploited so intensely and for so many years that it came very close to extinction (D'agostini et al. 2013).

Rubber, extracted from the Rubber Tree (*Hevea brasiliensis*), native to the Amazon, had a significant weight in the Brazilian economy for almost fifty years, from the 1870s, boosting the development of the region. However, thousands of seeds smuggled by the English gave rise to the cultivation of the Rubber Tree in Asia, which gradually dominated the world trade for this product. In 1947, the country made its last significant export of rubber, starting to import it in 1951 (Martin and Arruda 1993).

Brazilian scientist Sérgio Henrique Ferreira discovered that a substance derived from the venom of the snake *Jararaca* (*Bothrops jararaca*), the Braticinin Enhancement Factor, is capable of combating the increase in blood pressure. This discovery allowed drugs to be created moving billions of dollars a year. However, the product patent was registered by a North American laboratory, which earns all the profits, without Brazil or the researcher having received any part of them (Correio Braziliense 2009).

Several Brazilian species were the subject of patent registrations abroad, causing great problems for the Brazilian government, which seeks the suspension of these patents, with success in some cases. Among these species are *Açaí* (*Euterpe oleracea*), *Andiroba* (*Carapa guianensis*), *Copaíba* (*Copaifera sp.*), *Cupuaçu* (*Theobroma Grandiflorum*), *Espinheira-Santa* (*Maytenus ilicifolia*) and *Jaborandi* (*Pilocarpus pennatifolius*).

We also suffer from animal trafficking, mainly from the Amazon and the Pantanal, which moves large volumes of money. Species such as the Common marmoset (*Callithrix jacchus*), the Capuchin monkey (*Cebus apella*), the Chopi blackbird (*Gnorimopsar chopi*), the Chestnut-bellied seed finch (*Oryzoborus angolensis*), the Turquoise-fronted parrot (*Amazona aestiva*) and the Hyacinth macaw (*Anodorhynchus hyacinthinus*) are among the most smuggled.

1. Lawyer, Professor and Specialist in Intelligence, Professor at the Federal Institute of Education Science and Technology of Pará, Superintendent of ABIN in Pará (2004 to 2008), Director of the Integrated Strategic Center (CEI) of the State Secretariat of Public Security and Social Defense of Pará (2011), Deputy Secretary of Public Security and Social Defense of Pará (2012), Author of the project to create the Integrated Center for Environmental Monitoring of Pará (CIMAM), Author of the book "Intelligence Activity: The Cycle of Knowledge Production".

2. Retired Intelligence Officer, graduated in Biology, Secretary of Planning and Management of the Brazilian Intelligence Agency - ABIN (2016 to 2019), ABIN Technology Director (2014 to 2016), Intelligence consultant and founding member of the Sovereignty and Climate Center.

“Theft, trafficking, deforestation, illegal extraction and espionage have caused enormous damage to the Brazilian economy, in the face of the international community.”

Illegal logging, illegal mining and mineral smuggling also bring significant damage to the country, both financially and in terms of preserving our natural resources.

Theft, trafficking, deforestation, illegal extraction and espionage have caused enormous damage to the Brazilian economy, in the face of the international community. Intelligence activity has a lot to contribute in the fight against all these harmful practices, by offering decision makers the knowledge to improve their actions, as well as to allow the bodies responsible for combating these illicit acts to conduct their actions more effectively and efficiently.

2. Biodiversity and biopiracy

The discussion on the planet's biodiversity, a topic of worldwide importance, is highlighted for its relevance to the preservation of a wide variety of life forms found in the most diverse environments, which have been impacted by human action. In many cases, with serious threats to fauna and flora due to impacts on the environment, such as changes in the food chain, the extinction of species, soil erosion, atmospheric pollution caused by wildfire and deforestation, soil and water pollution by pesticides and other attacks on ecosystems.

Biodiversity, a word derived from the term “*bio*” from Greek (whose meaning is life) plus the word “diversity” (whose meaning is variety), is formed by living species (plants, animals and microorganisms), being responsible for ensuring the balance of species worldwide. The close connection that exists between humans and the environment results in complex systems, ecosystems, which bring together living factors (plants, animals - including humans and microorganisms) and non-living factors (light, water, air, sun, etc.) that relate to each other in equilibrium and perform exchanges of energy and matter. Forests, caatinga, tundra, cerrados, rivers, oceans, lakes are some examples of ecosystems. The sum of all existing ecosystems on Earth forms the biosphere (atmospheric layer that encompasses living beings).

The number of plant and animal species has a higher concentration in the tropical areas of the planet. It is estimated that 2/3 of these species on the surface of the Earth are concentrated in Brazil, which makes it the region with the greatest biodiversity in the world.

Thus, protecting Brazil's biodiversity is vitally important for national interests. Identifying the opportunities and threats to Brazilian biodiversity becomes crucial to the national development and to the protection of the country's ecosystems. The national biodiversity resources are numerous and, for this reason, the country is a constant target of biopiracy.

According to the definition of the Brazilian Institute of International Trade Law, Technology, Information and Development (*CIITED*, in Portuguese),

Biopiracy consists in the act of accessing or transferring genetic resources (animal or plant) and/or traditional knowledge associated with biodiversity, without the express authorization of the State from which the resource has been extracted or of the traditional community that has developed and maintained certain knowledge over time (a practice that violates the binding provisions of the United Nations Convention on Biological Diversity). Biopiracy also involves a fair and equitable non-sharing — between States, corporations and traditional communities — of resources derived from the commercial exploitation or not of the resources and knowledge transferred (Amazon Link 2019).

The Convention on Biological Diversity (CBD) defines biopiracy as

obtaining access to genetic resources without proper authorization (Convenção sobre Diversidade Biológica 2000).

It also defines authorization as

“...protecting Brazil's biodiversity is vitally important for national interests. Identifying the opportunities and threats to Brazilian biodiversity becomes crucial to the national development and to the protection of the country's ecosystems.”

The legal capacity to obtain access, under specified conditions of use and ensuring access and equitable sharing of the benefits arising from the use of genetic resources for all entities involved (Convenção sobre Diversidade Biológica 2000)³.

According to the National Network to Combat Wild Animals Trafficking, a non-governmental organization, approximately 38 million animals from the Amazon, the Atlantic Forest, the flooded plains of the *Pantanal* and the semi-arid region of the Northeast are captured and sold illegally, which would yield about 1 billion dollars per year (Renctas 2016).

Illegal exploitation of natural resources and traditional knowledge inflicts losses to the economy and the environment:

- **Economy:** Losses to the country due to the commercialization of the products generating profits not fairly shared to the holder of the resource and to the traditional communities.
- **Environment:** The extraction of resources endangers the biodiversity of an area, inasmuch as that there is no rule for the practice of exploiting the resources and knowledge.

The consequences are the loss of biodiversity, the extinction of species, the ecological imbalance, the socioeconomic damages and the underdevelopment of national scientific and technological research.

The biodiversity issue became an object of global concern since the late 1970s.

Since 1975, Brazil has been a signatory to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which protects approximately 5,950 animal species and 32,800 plant species worldwide and has the Brazilian Institute of Environment and Renewable Natural Resources (*IBAMA*, in Portuguese) as its representative authority in the country (Ibama 2021).

During the Eco-92 — the United Nations Conference on Environment and Development (UNCED), carried out in *Rio de Janeiro/RJ* in January 1992 — the Convention on Biological Diversity (CBD) was approved and ratified by the National Congress under the terms of Legislative Decree No. 2 of 1994, whose foundation was the idea that if all countries sought the same pattern of development of rich countries (considered as developed) there would be no natural resources available for all without serious and irreversible damage to the environment. The CBD was the first global treaty of the United Nations on the sustainable use, conservation and sharing of the benefits of biodiversity, being considered the main global forum related to biodiversity themes and issues.

In its article 1, the document establishes that its objective is:

The conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding (Convenção sobre Diversidade Biológica 2000: 9).

In its article 8, item j, the Convention also obliges the signatory countries to

...respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and

3. "Authority" refers to the ability of the source to legally provide access on specified conditions to establish conditions to ensure that the source or other relevant persons involved will receive an equitable share of benefits arising from the use of genetic resources. "Authority" is used here to define a legal condition, rather than to refer to a government entity (administrative or judicial) whether access under specified conditions is permitted or prohibited.

encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices (Convenção sobre Diversidade Biológica 2000: 11-12).

Alves (2006) points out that “there is an international legal vacuum in the context of the fight against biopiracy and, despite the legal principle of respect for the internal sovereignty of each country, there is no preventive action to combat these crimes.”

Brazil has been a signatory to the World Patent Law since 1995, but it does not provide for the fight against biopiracy [...] This law strengthens ownership over genetic material to the nations that can isolate DNA, develop and register intellectual property without the need to prove the origin of such genetic material. [...] The Environmental Crimes Law (Law no. 9.605/98) provides for criminal and administrative sanctions for environmental crimes committed by individuals or legal entities. However, the profits from exploitation, especially regarding the biotechnological development, compensate for the punishments suffered by such criminals [...] (Alves 2006: 12).

The action of the “biopirates” is facilitated by the absence of a legislation that defines the rules for the use of Brazilian natural resources (lack of a specific legislation). Biopiracy, by disregarding the territorial sovereignty, allows the country’s genetic and biological heritage to be exploited by national and international groups.

3. Intelligence

The Intelligence Activity presents itself as a management tool capable of advising the decision-making process, in the environmental sphere, whose point of interest is to identify the forms of exploitation of natural resources and their impact on the environment and society, identify opportunities and threats to monitoring mechanisms, inspection and environmental control, in addition to other situations of immediate or potential influence on Brazilian ecosystems (environmental policy, biopiracy, deforestation and other situations that reflect national interests).

It is important to remember that, under the terms of the National Intelligence Policy (*PNI*, in Portuguese), established by Decree No. 8.793, on June 29, 2016;

Intelligence Activity [is] the permanent exercise of specialized actions aiming the knowledge production, inside and outside the national territory, in order to advise government authorities, at the respective levels and areas of attribution, for the planning, execution, monitoring and evaluation of State policies (Brasil 2016).

To do Intelligence is to produce timely, useful, broad, impartial and precise knowledge, to achieve successful results for the development of the State, and to protect it and the society itself against threats to their safeguarding and security.

In the environmental sphere, Intelligence Activity has the task of systematically monitoring the situation in the various Brazilian ecosystems, identifying opportunities (favorable conditions for preservation and sustainable development) and threats to the environment and to the national policies and interests.

Intelligence actions consist of measures to obtain data, through collection (specialized action to obtain available free access data) and search (specialized action to obtain denied data, be it of a restricted or of a protected access, with the use of operational techniques - Intelligence operation), whose objectives, among others, are:

- To obtain data for the production of knowledge about the various factors that influence the state of conservation, preservation, degradation, recovery and environmental use of areas of the various Brazilian ecosystems;

“In the environmental sphere, Intelligence Activity has the task of systematically monitoring the situation in the various Brazilian ecosystems, identifying opportunities (favorable conditions for preservation and sustainable development) and threats to the environment and to the national policies and interests.”

- To subsidize planning, control, recovery, preservation, conservation measures and the use of the environment, in addition to assist the definition of environmental policies;
- To identify biopiracy actions in the national territory;
- To identify the deliberate action of governments, interest groups, individuals or legal entities that may influence the country's policies in relation to biodiversity, with the objective of favoring foreign interests to the detriment of national ones;
- To identify the deliberate action aimed at obtaining confidential knowledge or data, related to national biodiversity, to benefit States, groups of countries, organizations, factions, companies, authorities or individuals; and
- To allow the State to better know the result of the institutions' actions regarding the actions of the environment, especially in relation to plans, programs, projects, legal and financial instruments.

The product generated would be the Intelligence Knowledge, usually expressed in the form of Intelligence Report (RELINT), as a result of the application of its own methodology, also known as "Intelligence Cycle". The Intelligence Cycle orients the elaboration of specialized knowledge derived from the data collection — duly processed, evaluated and analyzed — to meet the demands of the user at any of its levels, and aims to rationalize the work, systematize the knowledge production, and avoid error and intuitive actions.

The knowledge production is related to several activities. The press produces the information so that the reader can be aware of the events and the research centers produce knowledge for society in general. However, the production of Intelligence knowledge is distinguished from these activities by directing its attention particularly for identifying opportunities and threats, veiled or concealed, to the interests of the State and the security of society (Farias 2017).

In the Intelligence Language, knowledge (as a product) is the representation of a fact or situation, of interest to the Intelligence Activity, produced by the professional in the area.

The Intelligence knowledge is not, therefore, a construction. It is representation, a reproduction of the fact or situation (event). The truth of facts or situations (events) resides in themselves, in their own determinations, in the thing itself, independent of the particular will, conception and type of interest.

The suspension of what is pre-established is the path to the impartiality, because it allows us to be aware of what is beyond our mind, making it possible to go to the core of the object, to meet it in its own definition, inasmuch as this is the only way possible to apprehend its properties. And in this act, it is the determining element of the relationship while the subject becomes the determined (Patrício 2011).

Taking into account that what already exists cannot be built, if the user is interested in knowing facts or situations (events) that constitute opportunities or threats, it is the intelligence professional who represent it, even when it is a matter of designing an unfolding. Thus, there are no discoveries or constructions in the Intelligence knowledge, but phenomena of reality by representation, using rational methodological resources guided by the doctrine of Intelligence (Patrício 2011).

The similarity between activities that work with data to be transformed into knowledge was highlighted by Lee S. Strickland, a professor at the College of Library and Information Science Studies at the University of Maryland/USA, a member of the Senior Intelligence Service since 1986 and an officer responsible for developing information and security policies within the Central Intelligence Agency (CIA), when he stated:

Simply stated, intelligence bears a very strong resemblance to other information-based businesses such as a major news organization or research centers in the academic community. Intelligence is perhaps the ultimate information or knowledge-based business, but all share the same primary activities (Strickland 2002: 19).

In the article “*El Ciclo de Inteligencia y sus Límites*”, Diego Navarro Bonilla (2004, p. 53) from the University Carlos III of Madrid points out that “the Intelligence Activity is represented by the phase of the so-called ‘Intelligence Cycle’, conducted to obtain, analyze, integrate and disseminate specialized knowledge related to the defense and security of a country” (our translation). For the author, despite all the activities mentioned resorting to the traditional scientific method, the difference would be in the nature of the work of the Intelligence Activity, focused on the defense and security of the State.

According to Farias (2017), the procedures for obtaining, processing, analyzing and evaluating data in the Intelligence Activity can be grasped as a typical knowledge management process. Hence, it is correct to say that the aim of the Intelligence Activity is to create an effective knowledge production system to advise the State in the definition of its strategy and in the adoption of intervention measures, using knowledge management procedures and instruments towards identifying opportunities for the achievement of national policies and interests and threats to the safeguarding and security of society and the State. Thus, this is the difference in the activity of an intelligence agency in relation to the other agencies of the state administration, where knowledge management is a mere auxiliary element of its main action.

The fact is the primary material of the Intelligence Activity. Knowledge, however, is not the sum of data obtained from various sources, but the product of the processing, evaluation and analysis of data by the intelligence professional, in order to discover and understand the facts and situations (things and events) and to anticipate possible and probable developments, to provide knowledge that allows the State to make appropriate decisions and to reduce the risks inherent in any action (Farias 2017).

Another aspect to be highlighted, as it has been done above regarding the Intelligence Activity and its function in advising the decision-making process, is what distinguishes it from other government advisories: it aims at identifying opportunities and threats, veiled or concealed to the interests of the State and the security of society. Therefore, it will act in the identification of opportunities and threats, seeking to anticipate events of immediate or potential influence on Brazilian biodiversity and other aspects related to the environment.

It is clear that the work of the Intelligence professional needs to be guided by the principles of the Activity, whose observance is fundamental for the decision-making authority at various governmental levels. Thus, without prioritizing any of the principles, we highlight the principles of Impartiality, Interaction and Utility, only to show the relevance they have for the planning, organization and execution of Intelligence actions.

The principle of Impartiality aims to guard against preconceived ideas and other factors that may distort the results of the work. The basic assumption of Intelligence Activity is that the truth of the facts or situations resides in the events themselves, in their determinations, in the thing itself, regardless of the particular will, the conception or any interests. Therefore, the product of intelligence has to be exempt and express the reality of the facts, regardless of any subjective bias.

The principle of Interaction implies establishing and consolidating cooperative relationships that allow optimizing efforts to achieve the objectives. Intelligence activity presupposes the sharing of data and knowledge, in order to facilitate the performance of the State in the various areas, and to achieve success in the work performed with the joint efforts. In this sense, the work in the area of Environmental Intelligence should involve all bodies responsible for this issue in order to fulfill knowledge production.

The principle of Utility aims the applicability of the works developed for decision making. To produce timely, broad, impartial and accurate knowledge and in line with the other principles is no longer sufficient to give credibility and effectiveness to the actions of the producing agency. Adding utility, especially when attested by the user as a responsible for decision-making, is essential for the success of Intelligence actions in the current world.

There are numerous academic discussions with favorable results, with no exception, for the development of actions to stimulate the production of a knowledge useful to the decision-mak-

ing process. In recent decades, opportunity, comprehensiveness and impartiality have been much demanded. New events in the world have provoked “another look” at world intelligence, with critical analysis of the quality, efficiency and effectiveness of the knowledge produced.

There are many proposals made by scholars of the Intelligence Activity in order to strengthen the relations between producer and user. They consider that the quality and utility of Intelligence depend strongly on an understanding of the producer about the needs of customers/users, and also on a corresponding recognition by them on the advantages and the limitations of the capabilities of the Intelligence Activity. To achieve this mutual understanding, they advocate the establishment of a greater rapprochement between the subjects (producer and user) of the activity, using a variety of approaches, including personal exchange and a system of evaluation of the utility of the knowledge produced, in other words, validation of the result of Intelligence.

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The National Intelligence Policy lists eleven threats that present potential capacity to endanger the integrity of society and the State and the national security of Brazil. They are:

- Espionage
- Sabotage
- External interference
- Actions contrary to National Sovereignty
- Cyber attacks
- Terrorism
- Illegal activities involving dual-use goods and sensitive technologies
- Weapons of mass destruction
- Organized crime
- Corruption
- Actions Contrary to the Democratic Rule of Law

It also lists five opportunities with the potential to raise the level of competitiveness and to assist in the promotion and defense of the interests of the State and Brazilian society:

- Insertion of the country into the international scenario
- International cooperation
- Scientific and Technological Development
- Cyber intelligence
- Consolidation of logistics network and infrastructure of national interest

It also lists the five objectives of the National Intelligence:

- Monitoring and evaluation of internal and external situations, in order to advise the national decision-making process and government action;
- Identification of facts or situations that may result in threats, risks or opportunities;
- Neutralization of adverse intelligence actions;
- Protection of sensitive areas and facilities, systems, technologies and knowledge, as well as the holders of such knowledge;
- Raising social consciousness for the permanent improvement of Intelligence activity.

The National Intelligence Strategy (*ENINT*, in Portuguese), approved by the Decree of December 15, 2017, when describing the strategic environment in which Brazil operates, states

The need to reconcile the preservation of the environment with sustainable development and the rational exploitation of natural resources will be constant guidelines in the

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following years. In this context, the country must be attentive and prepared for issues such as illegal deforestation, pressures on biomes and the search for efficient energy sources (Brasil 2017).

The themes related to the environment also permeate the 33 strategic objectives listed in ENINT, particularly the following ones:

- To create joint protocols for the protection of sensitive knowledge;
- To improve the risk management process;
- To foster the culture of knowledge protection in society;
- To increase the interaction of SISBIN with other intelligence systems on topics of interest;
- To establish priority themes for the production of knowledge related to the following threats: corruption, organized crime, transnational illicit acts and terrorism;
- To improve the means of sharing information on the following threats: corruption, organized crime, transnational illicit and terrorism;
- To create specific protocols for SISBIN's integrated action in relation to the following threats: corruption, organized crime, transnational illicit acts and terrorism.

An attentive look on these objectives unravels that themes such as biodiversity, biopiracy, as well as climate change, the environment and the protection of the Amazon are present in all of them, directly or indirectly. This makes them indispensable themes in any discussions about Intelligence, Defense and National Sovereignty.

4. The environmental threat

Environmental issues have been the subject of global Intelligence interest at least since the early 1980s, particularly with regard to the risks of extreme weather events, impacts on food production and water availability, rising sea levels, and dramatic changes in the Arctic, including access to energy resources.

In 1987, for instance, the United States National Security Strategy stated that, besides the Cold War threats, the country should also consider the global population explosion and problems related to food, water and poverty, among many others, as threats themselves. This concern stems from the possibility that climate-induced degradation will contribute to instability and violence worldwide, triggering economic crises, physical displacement and mass migration (The White House 1987).

In 1990, the program The Measurements of Earth Data for Environmental Analysis (MEDEA), created by the American scientific and intelligence communities, allowed valuable satellite data obtained since the 1960s to be unclassified and made available for environmental studies (Baker and Zall 2020).

In Africa, where there are some of the most vulnerable countries, the drought has displaced millions and contributed to community violence, such as in Nigeria, Cameroon, Chad and Niger. The continuous instability of the region raises security concerns similar to failed states and faltering economies that create fertile ground for power gaps filled by extremist groups.

Analyses of American intelligence point out to the fact that the melting of the sea ice has led to the emergence of a new arena of great dispute for power with China, Russia and others competing for control over maritime routes and natural resources in the North and South Poles.

In the Arctic, for instance, the reduction of frozen areas allows the access to very valuable resources, including oil. It has also opened up new maritime routes with the potential to redirect global trade and enable high-speed internet connectivity between Europe and Asia. All

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this obviously attracts the interest of important actors on the global stage, who invest political and financial capital in the region.

In Antarctica, there is an embargo defined by the Madrid Protocol of 1991 and promulgated by Decree No. 2,742 in 1998, which prevents the exploitation of natural resources until 2048. Even so, dozens of nations are interested in the area, thirty of them have research bases in the region, including Brazil (Brasil 1998c).

Many believe that, in the future, the only source of natural resources will be on the continent, which is why all nations capable to mark their presence there do so, anticipating a possible re-discussion of the veto on the exploitation of resources, which include natural gas, oil and gold, in huge intact reserves, in a territory of about 14 million km², almost twice the size of Brazil.

It should be noted that the Antarctic Treaty of 1959, promulgated by Decree No. 75,963 on July 11, 1975, ensures the use of its territory only for peaceful purposes and any measures of a military nature, such as the establishment of bases and fortifications, the execution of military maneuvers and experiences with any type of weapons, are prohibited (Brasil 1975).

The Amazon is always at the top of concerns when the matter is the environment, biodiversity or climate change. It is not uncommon for world leaders to make statements about the importance of the forest for the future of the planet, some of them that deserve our attention. Thus, it is up to the national intelligence to produce analyses capable of providing the Brazilian government with the best information so that decision-making on these issues is the best possible, especially with regard to National Defense and Sovereignty.

National and international criminals operate in the Amazon in an organized manner, with great damage to Brazilian society. Timber extraction, illegal mining and deforestation, drug trafficking and biopiracy can only be adequately fought through the integrated action of public agencies at all levels, with accurate and frequent information, capable of directing and enhancing their performance.

5. Final considerations

In order to face all this situation, it is necessary that the agencies of the Brazilian Intelligence System (*SISBIN*, in Portuguese)⁴, established by Law No. 9.883 of December 7, 1999, and regulated by Decree No. 4.376 of September 13, 2002, act in a synergistic manner and sharing knowledge, regarding the magnitude of the work to be performed, in one of the most complex regions of the country. There is no possibility that an isolated action of any entity, public or private, can cover the entire spectrum of information necessary for the authorities to make the most appropriate decisions for the sustainable development of this gigantic part of the Brazilian territory. Among its component bodies there are the Ministry of the Environment, the Brazilian Institute of the Environment and Renewable Natural Resources — *IBAMA* and the Chico Mendes Institute for Biodiversity Conservation — *ICMbio*.

Furthermore, it is necessary to adequately protect the information originated from research carried out by Brazilian universities, research institutes and the traditional knowledge of forest peoples, which have been the object of theft for decades, with incalculable losses to Brazilian society.

For this reason, it is urgent and indispensable to bring together Intelligence, academia and entities that carry out serious work for the development of the region, in order to seek reliable data and information, which can serve as a basis for the analyses to be offered to governments.

“Furthermore, it is necessary to adequately protect the information originated from research carried out by Brazilian universities, research institutes and the traditional knowledge of forest peoples, which have been the object of theft for decades, with incalculable losses to Brazilian society.”

4. The Brazilian Intelligence System comprises 48 federal agencies, under the Coordination of the Institutional Security Office - GSI, in accordance with Decree No. 4.376/2002.

This can be done through regular contacts between members of intelligence and scientists and researchers, through seminars, workshops and discussions promoted by the federal government, as well as through invitations for universities and research centers to participate in work developed by Intelligence, such as the National Intelligence Center.

Brazilian society has much to gain from the proximity between Intelligence and Universities and Research Institutes that work on issues related to the environment. The protection of sensitive knowledge, including traditional knowledge, and counterespionage are important tools that can help prevent the bleeding that has been taking place for decades of national resources and treasures, which have been systematically stolen and taken abroad, where they generate billionaire profits, which do not benefit Brazil or the Amazonian populations.

Similarly, information from such cooperation can help to fight organized crime and corruption, which erode the foundations of society and cause enormous damages to the country.

Therefore, it is necessary to change the way of understanding what Intelligence is, so that we can perceive it as an effective management tool capable of acting in a transversal way to public policies of climate, biodiversity, public security, defense and sovereignty, offering useful, objective, impartial, reliable and timely knowledge, which can support decision-making by government authorities. ■

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