Strategic Management of Information, Defense and Sustainability Policies in The Context of Legal Amazonia: The Sipam Case

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ABSTRACT

The object of this paper is to study the correlations existent between the strategic use of information and the articulation and implementation of defense policies, national security and sustainable development in Legal Amazonia. For such, it presents the Amazonia Protection System (SIPAM in the Portuguese acronym), verifying how these systems have contributed to the definition and implantation of those policies. For Amazonia, with its natural resources, threats and vulnerabilities, the perspectives of integration, security and national defense and sustainable development present huge challenges to be surmounted. For such, the efficient use of technology is a basic reference that should be included in public strategies and policies in those areas, which increasingly reflect the ways of life in the region's cities. In that context, SIPAM sits in a line of approach in which the guarantee of national sovereignty in Amazonia, besides the strategic-military enterprise, also includes the attention to local people's development, within an educational and integrating proposition. As a way of conclusion, we have found that SIPAM creates a paradigmatic model for local public management, in which organizations work with a shared set of information, as well as in an integrated way.

Keywords: Legal Amazonia; SIPAM; Regional development; Sustainability.

FOREWORD

In current times, we notice that the turmoil and pressures of the macroenvironment promote faster shifts in the context of political and institutional relations, and in people's own lives, much more than in the past. Those turbulences, translated in contingent facts and events, are the main catalyzing forces for changes and the establishment of new conjunctures, making more apparent the forceful need of adaptations, renewal of knowledge and the strategic use of information for the completion of goals related to organizations, institutions and mainly the State.

Information technology has the role of major motive in this contemporary scenario, defined by Castells (2003) as a networked society characterized by a technological revolution concentrated on information technologies, which is remodeling society's material base and international relationships in a fast pace.

In that sense, underlying several mundane activities as watching TV, talking on the cell phone, making bank transactions in an ATM and on the internet, exchanging messages with the other side of the planet, researching and studying, there is an immense media mesh that covers whole countries, connects continents and arrives to homes and organizations: phone wires, microwave channels, optic fiber lines, transoceanic

submarine cables, satellite emissions. Computers process information, control, coordinate and make compatible the different mediums. Aggregating and giving sense to the physical structure, are the people who operate it or use it.

There is no doubt that the word lives the information era, typified by the more and more intense use of complex structures for the management of information as prime matter for taking decisions that strongly impact life in society and institutional relationships.

Such context brings new responsibilities to all the social actors included in it. Ferreira (2000) points out that those responsibilities denote those actors' duties of providing a constant flux of data that allow the generation of new knowledge and decision making in society's different areas and instances, including the State.

Seen through this functional optics, information may be understood as a resource that reduces uncertainties (Masuda, 2000; Ferreira, 2000), and in what concerns development it could make viable the elaboration, implementation and evaluation of public policies with a higher degree of efficiency and effectiveness, departing from the analysis of social complexity in its demands and contradictions.

To Brazil and particularly the Amazonian region, which contains rich and strategic natural resources, the perspectives of integration, security and national defense, and sustainable and urban development compound great challenges to be faced, in which the efficient use of technology is a basic reference to be incorporated in public policy strategies in those areas. Under that optic is seen the importance of dominating relevant technologies to better integrate and protect, know, diagnose and monitor the environmental conditions of Legal Amazonia, as well as to protect it and preserve Brazilian sovereignty, moreover due to its territorial extension, diversity of ecosystems, complexity of pertinent problems, threats and vulnerabilities.

In that sense, the Amazonia Protection System (SIPAM) emerged from the need of actions by the Brazilian State in Legal Amazonia, aiming at the integration of an important area of the national territory, the protection and defense of that region, conservation and sustainable development of one of the planet's major frontiers of non-renewable resources.

Besides being the world's major environmental protection project, responsible for the data collection and monitoring of all Legal Amazonia, i.e., of 60 percent of the national territory, it also presents a huge strategic significance to the country, especially in the present moment, due to the pressures produced by internal and external threats to the region. It is, therefore, a strategic project for national and Amazonian sovereignty.

It is on this context that we develop the paper, which intends to analyze the existing correlations between the strategic use of information and the articulation of defense, national security and sustainable and urban development public policies, verifying how that system has contributed to the definition and implementation of those policies with a rational, efficient and strategic use of information, relating to threats and internal and external vulnerabilities linked to the Amazonian space.

1 GEOPOLITICS, NATIONAL DEFENSE AND AMAZONIA DEVELOPMENT

In the 20th century, Brazilian geopolitical thinking has developed under the aegis of the East-West

confrontation, of Cold War and the impact of the National Security Defense (DSN) and the fight against the internal enemy. Therefore, the effort to understand the meaning of this thinking passes forcibly by the recognition of the international dimension that involves other nations' games of interest for the Amazonian region.

Authors such as Mário Travassos (1935), Lysias Rodrigues (1947), Golbery do Couto e Silva (1967) and Carlos Meira Mattos (1975), inspired by European theories and concepts, mainly from German authors such as Ratzel, Mackinder and Haushofer, and from the Swedish Rudolf Kejllen, promoted the studies of geopolitics[1] in Brazil. In a certain measure, Brazilian geopolitical thinking in the 20th century has been the foundation of the territory's national defense and integration policies. In the same track, the need of integrating the Amazonian region to the rest of the country is a constant in Brazilian geopolitical studies. Those national authors were dedicated to think Brazil and Amazonia through the prism of geostrategic occupation[2].

History shows that Portugal was able to keep the Amazonia and expand it beyond the limits of the Tordesillas Treaty, thanks to territorial control strategies. Therefore, geopolitics was more important than economy in order to assure sovereignty on Amazonia, whose occupation happened in surges linked to external demands, followed by large periods of stalling and decadence. In this same perspective, to Nascimento (2005), one of the primary definitions of geopolitics is that of science of Power. Geopoliticians understand power in the sense of governmental policies inspired in the physical medium. Generally speaking, geopolitics is associated to a field of knowledge in which occurs the essential foundation of the expansion and control policy of territories beyond their own. In that sense, geopolitics emblematically turns Amazonia into a region that should be peopled at any cost to warrant and legitimize the sovereignty on its natural resources. So, with the emergence of a new world order after Second World War, Amazonia once more returned to the military and national security agenda.

In the apex of the rubber cycle (20th century), the Amazonian borders were defined. Before that, the region was considered demographically void. After that period, the region fell in oblivion until rumors of internationalization projects appeared during the military regime, and development projects were implanted that included from military occupation to infrastructure works, agro-industrial and settlement projects, with deep socioeconomic impacts. On the other hand, with the Cold War end, there was a growing pressure from Western powers and from non governmental organizations about the Amazonian forest devastation.

At that time, the Armed Forces took the initiative of articulating the region with the nation's economic center, with the aim of protecting it from international covetousness -- according to the military discourse, those threats were already clear. That perspective was repeated in the following decade. Souto Maior (2000) sees that question in the following way:

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[1] In the study of geopolitics, Santos (2006) states that there are several approaches to which that concept may be submitted, as there are also many definitions, each one tryinf to explorer one aspect. Despite the multiplicity of the concept, all who have dedicated to the study of geopolitics declare that it does not make part of geographic science, but of political science. That explains the term "geopolitics".

[2] According to Tosta (1984), geostrategy is the establishment of guidelines of a National Security Policy as a global character strategy, founded on the country's geographic factors. In the same way a country's security or defense policy may be founded on geographic facts, a strategy may also be conceived in reference to space and territory. Hence the term "geostrategic".

> [...] in the decade of 1980, with the introduction of human rights and the environment in the international agenda, it seemed to the military that the future of Amazonia was once more threatened, now aggravated by the intention (more apparent than real) of the great powers to legitimize their right of interference. That is: to legitimize a self-conferred, supposed right to be exerted according to their interests and the rules of political realism.

From then on, a new set of themes emerged in the international scene, issues strongly compromised with the hegemonic bias manifested by developed countries, under the aegis of the United States.

Brazilian Amazonia started being designated as Legal Amazonia through the Law n. 1806 from Jan. 06, 1953. That transformation was the fruit of a political concept, not of a geographic principle. The concept has for purpose the Amazonian region's economic planning. In 1996, the Law n. 5173, from Oct. 27, 1966, and later the Article 45 of the Complimentary Law n. 31, from Oct. 11, 1977, have amplified the limits of Legal Amazonia, arriving to its present configuration, as shown in Figure 1.

FIGURE 1: Legal/Brazilian Amazonia. Available at: http://pportalparamazonia.blogspot.com/2016/01/amazonia-legal-e-internacional.html. Accessed on Apr. 23, 2019.

The literature on the place, in a general way, points at two kinds of threats against the area: internal and external. Internal menaces are related to environmental questions, widely discussed: wildfires, lumbering, pollution of hydric resources and the indigenous question. The external threats basically relate to narcotraffic, biopiracy, guerrilla actions, screen NGOs, and military basis around the Brazilian borders. Internal threats to Amazonia particularly imply motives for pressure from the great powers, which, often based on the right of interference discourse, relativize national sovereignty. Recurring suspicions among members of the Armed Forces point out that that discourse would aim at the region's internationalization. Therefore, the consolidation of Brazilian sovereignty in the Amazonia's international borders is also defied

by restrictions to the decision on the use of the territory. On the international frontiers, such restrictions arise from external factors, such as the drug traffic, political turmoil in neighboring countries, where the military presence of the United States and also the European Union is growing. Thus, it is correct to ascertain that in the intersections between internal and external aspects of the environmental question lays one of the fragile points of national sovereignty on the Amazonia.

1.1 *C&T and Sovereignty: The Role of Top Technology in Amazonian Security*

In face of the National Defense Policy (NDP) dispositions, it is important to underline the relevance of information technology as a defense strategy for Legal Amazonia. On this aspect, Cardoso (2004) argues that from the defense guidelines the domain of technologies to keep the state economically and militarily strong is necessary; the technological gap relative to developed countries must decrease, while it is enlarged relative to the smaller ones; and to offer the State material conditions to attend to the people's demands. Cardoso (2004, p. 185) goes on to declare that the virtuous cycle of technological development/powerful state/happy people strengthens the country materially and spiritually, and empowers and predisposes it toward the sovereignty defense, while reinforcing it and making the country less dependent.

The fundamental significance of the role of science, technology and tropical biotechnology becomes clear for the solution of problems related to the sustainable development practice (Nascimento, 2005), as long as it incorporates the impacts caused by the exploration of natural resources without destroying ecosystems and attending to the local populations' needs.

However, in the world of high-speed global information, the problem of formulating national security policies is translated, for Raza (2004, p. 3), as:

> [...] first of all, in the need of an analysis structure that allows to quickly make clear simultaneous (and sometimes contradictory) demands in the international, State and human spheres, **making it compatible with economic development alternatives that are simultaneously efficient, effective and socially payable.** Still according to the same perspective, **the provision of security and development should be forcibly integrated by coordination mechanisms that allow to transpose the dividends into political variables that can act under the global vase-communication mechanisms.** (Bold types are ours.)

In face of these considerations and of the dispositions contained in the NDP, we consider SIPAM as a reference to the new concept of defense and security in the Amazonian context, since it attends to the guidelines and goals of sustainable and city development policies, now no longer mounted exclusively on military factors. SIPAM is a multi-ministerial project directed to the optimization of public resources. Its organizational guidelines come toward the crescent ecological, humanitarian, social demands, and it aims at responding in an intelligent, but not submissive, manner to the actions of new national and international non-governmental actors (Lourenção, 2003).

In face of the world conjuncture and the evidence that technological capacity is a fundamental factor to determine a country's potential and its future aspirations, SIPAM seems to be attuned to transforming

paradigms in the scope of defense and security in Brazil and in the Amazonian region. The use of top technology based on artificial intelligence as a standard of the region's co-optation and development, for security and defense effects, go toward those paradigms. Therefore, in concrete terms, the region's strategic valuing in the defense policy scope should resonate on effective and consentaneous actions that embrace all threats and lessen their vulnerabilities in a preventive way, promoting sustainable development. On that line, SIPAM appears as a model of public management, characterized by the articulate participation of State institutions in different levels, aiming at the convergence of efforts to reach, at least in theory, solutions compatible with the region's real needs. However, few people, even Brazilians, know the function and/or role of the Amazonia Protection System (SIPAM) and the strategic programs executed under its protection and preservation.

1.2 SIPAM: Systemic Organization of Information Production and Release

SIPAM is a systemic organization of information production and release, formed by a complex technological base and an integrated institutional network, which acts on the Legal Amazonia in the federal, state, municipal and non-governmental scopes, for the management of the region's knowledge, protection and human and sustainable development. This project was drawn in a moment in which ideas that the international demands for environmental preservation and demarcation of indigenous lands represented a challenge to national sovereignty, and consequently a growing pressure by Western powers and non-governmental organizations about the Amazonian forest devastation.

Corroborating that, with the absence of defense mechanisms in the region, starting in the 1990s (Denys *apud* Cypriano, 2006), studies were performed analyzing demographic, ecological, psycho-social and military aspects, and a number of problems were identified: demographic void; unhealthy environment, barely known; a scarcely explored region, with a small presence of the public power, being it more critical along the extensive border strip scantily inhabited and protected, allowing an easy penetration of elements and illegal activities --mineral, vegetal and animal smuggling, drug traffic; low incidence of land communication ways, and the few existent dependent of climate conditions; internal political conjuncture in some countries to the North and Northeast of Amazonia, specially Guyana and Surinam, which became independent in 1966 and 1975, respectively, and were the object of dispute during the Cold War; Colombia, with its guerrilla activity and a big international producer of drugs (cocaine), with the availability of transposing to the Brazilian side; extreme dearth of basic social resources as health care of Amazonid[3] populations; conflicts involving natives, gold diggers, land encroachers and mining companies; and the environmental impacts caused by predatory exploration in some areas.

SIPAM arose from the need of adoption, by the Brazilian government, of strategic actions that would allow the generation of updated knowledge on the Brazilian Amazonia with the intent of creating conditions for the integration of government sectorial agencies, searching solutions for the protection of Amazonia, as well to systematizing the region's control, checking, monitoring, vigilance and protection. Effectively, its formulation is conferred by the National System of Multidisciplinary Coordination, aiming at the integrated

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[3] 1. Nacionality of people native or inhabitant of Amazonia; Amazonian; 2. Relative to Amazonia; 3. People from Amazonia; 4. Cultural and historical identity of the Amazonian people.

action of governmental organs in the repression of illicit acts and the environmental protection in Amazonia.

2 THE AMAZONIA PROTECTION SYSTEM (SIPAM) AND URBAN DEVELOPMENT POLICIES

The National Defense Policy (NDP) was approved by means of the Complementary Law n. 136, from 2010, the so-called New Defense Law, and is composed of two parts: a political one, dealing with the concepts, the international and national environment and defense goals; and another one, strategic, that deals with guidelines and orientations. In the political perspective, the NDP acknowledges the multifaceted and diversified aspect of national physiography, which in terms of defense demand, simultaneously, a general policy and a specific approach to each case, emphasizing the vital areas that gather more political and economic power concentration. In a complementary way, it prioritizes the Amazonia and the South Atlantic for their rich resources and vulnerability of access through their territorial and maritime borders.

That scenario implies reckoning that vivification, the proper indigenist policy, the sustainable exploitation of natural resources and the protection of the natural and artificial environments are essential aspects to the region's development and integration. At the same time, the intensification of the State presence, particularly of the Armed Forces, along those borders, is a necessary condition for the attainment of Amazonia's stabilization and integrated development.

Concerning the artificial environment, according to the Census by the Brazilian Institute of Geography and Statistics (IBGE, 2015), the integrated cutout of legal Amazonia counted on 772 Brazilian municipalities. With approximately 5,020,000 square kilometers (1,24 billion acres), it corresponds to the area of all the states of the North region (Acre, Amapá, Amazonas, Pará, Rondônia, Roraima and Tocantins), added of the state of Mato Grosso (141 municipalities) and more 181 municipalities of Maranhão that sit to the west of the meridian 44º. From the latest release by the IBGE on the theme, in 2007, some municipalities were included: Mojuí dos Campos (PA), emancipated in 2013 from Santarém. And in 2007 the entry of Bacuri (MA) and the exclusion of Nina Rodrigues (MA) (Prates, 2015).

It is in that space that the urban public policies are formulated, according to local needs. In order to guide evaluation and formulation instruments of Urban Policies in Brazil, the group Observatory of Metropolises has published in 2016 the Index of Human Well-Being in Brazilian Municipalities (IBEU-Municipal), which describes the analysis in regional scope:

> In a regional analysis, we may conclude that there are great disparities of urban well-being in the country, **having in view that urban conditions are worse in the North and Northeast regions** and better in the Southeast and South regions, being the Midwest region a space of transition from urban well-being conditions. That means that the urban well-being disparities, regionally manifested among Brazilian municipalities, represent a national theme, even if its solution passes through urban policies that should be adopted in municipal scopes. (RIBEIRO & RIBEIRO, 2016, p. 2) (Bold types by the author.)

From that reality, the role of the Amazonia Protection System (SIPAM) enters with the program SIPAMCidade (SIPAMCity). SIPAMCidade allows the mapping of both the urban and rural areas,

reinforcing the significance of geospatial knowledge to help taking decisions on the proper occupation of municipalities. It is a program that allows the construction of joint databases for municipal management, amplifying and enhancing the public management competences. The program training intends to diffuse the use of geotechnologies for technical support to Legal Amazonia municipalities' management, building a spatial data network. The qualification of technicians for using Terraview helps municipal governments to elaborate environmental diagnoses for municipalities, to plan urban development, land registering, road construction, and identifying risk areas (land sliding, floods, etc.). "Information are furnished to municipalities, in a CD, on the kind of soil, relief, river basins, geodiversity and other information about the area. The program started in 2008". (CENSIPAM, SIPAM, 2009).

In order to face the Amazonian urban problems, there is also the Integrated System of Hydrometeorological Monitoring and Alert (SIPAMHidro), that collects data mainly on the hydrological conditions of rivers and the occurrence of rains, very common in the region. Cities may be monitored via the internet. SIPAMHidro is developed and implemented by the Managerial and Operational Center of the Amazonia Protection System CenSIPAM, an agency in the Ministry of Defense structure (SIPAM, 2019).

The system's major beneficiary is the Amazonian population. SIPAMHidro allows the public institutions acting in the region, mainly the state and municipal civil defenses, which detain the prerogative in preventive actions aimed at minimizing natural disasters' impacts, may dispose of real-time information on occurrences of floods or severe droughts caused by the climate seasonality in the region, as well as on severe storms followed by floods in the basins of Amazonian larger cities.

Another beneficiary is the fluvial navigation, the one directed to human mobility as well as cargo. That following will offer monitoring data and storm forecasts in areas of great navigability, where events potentiate the rivers' conditions, sometimes causing big disasters.

That system will allow a higher efficacy of responses by specialists who act in the areas of prevention and mitigation of impacts generated by extreme events (SIPAM, CENSIPAM, 2019).

From the period of 2013 and 2015, Censipam started monitoring the environmental protection activities developed in 70 Legal Amazonia municipalities inserted in the axis Sustainable Productive Activities' Fomentation, in the third stage of the Plan for Prevention and Control of Deforestation in Legal Amazonia (PPCDAm in the Portuguese acronym). Among the monitoring actions are bilateral meetings with the agencies that are part of the Plan, the identification of strategies of government policies and creation of control mechanisms and activities' follow-up. The monitoring evaluation is made bimonthly, in a meeting with delegates of the agencies (SIPAM, CENSIPAM, 2017).

Another benefit to the local population is the use of SIPAM technology in Justice, through the project effective justice (National Justice Council System - CNJ/PROJUDI). The project intended to offer the people of remote areas the same agility existent in Manaus, the Amazonas state capital. Due to defaults in road and telecommunication infrastructure, the distances between Amazonian cities, and transport difficulties in the region, SIPAM has installed VSAT antennas to support the work of Legal Districts and share data with other institutions, which already happened in several towns of the Amazonian region (SIPAM, 2009).

The project coordinated by the Managerial and Operational Center of the Amazonia Protection System

(CenSIPAM), of the Ministry of Defense, has also mapped more than 70 percent of the so-called Amazonian cartographic void, an area of 1.8 million km2 (around 445 million acres), which until then did not count on land cartographic information. The void, according to the mapping, corresponds to 35 percent of the total Amazonian territory, and is concentrated in areas of forest and borderland, in the states of Amapá and Amazonas, besides part of Acre, Maranhão, Mato Grosso, Pará and Roraima (SIPAM, 2015).

Through those projects, SIPAM intends to integrate, evaluate and diffuse information for the planning and coordination of global government actions in Amazonia, allowing sustainable development, protection and security in the region. The System presents unique complexity and range features, since it is responsible for the data acquisition and monitoring of 60 percent of the national territory. Considered a strategic project, and conceived with a view to the future, for the Legal Amazonia protection and development, a vital area for the nation, its object is to allow a viable and balanced economic exploitation of the region, through the rational handling of its potential, in benefit of the present, without disregarding actions that guarantee the natural resources' conservation. Based on that optic, SIPAM requires coordination, both on the political and the strategic levels.

2.1 Information and SIPAM's analysis functions

The technology and information structure of SIPAM is formed by several functions. The environmental analysis function has as its goal to generate information on nature (vegetal cover, hydrology); ecosystemic (society and the use and occupation of spaces), subsidizing the decision-making in the urban public policies environment, in short and long term, directed to the sustainable use of natural resources and the enhancement of the Amazonian population's life quality. Its purpose is the development and implementation of mechanisms for monitoring and evaluating environmental shifts, resulting from natural and human actions on the region.

The Territorial Monitoring function intends to identify and monitor activities and irregular movements, and illicit acts in the region related to the irregular activities infrastructure, aerial movement and furtive landing fields. In that perspective, it also acts on the identification of areas of irregular exploitation of natural resources, gold-digging, monitoring of special areas and illnesses related to those areas.

SIPAM has also the Meteorological and Climatologic Monitoring function, whose studies and analyses is continuous in Legal Amazonia. That function is essential for air navigation, since it identifies areas of weather risk and helps in the search for alternative routes. It has also the function of Operations Planning and Control, whose range is to support operations planning, either acting alone or with federal, state and municipal agencies, and non-governmental organs, in field activities that aim at the prevention or fight to illegal acts, sustainable development and the protection of Amazonian natural resources.

Concerning the Information Systematization function, its goal is to offer the products and services generated by the system in a continuous way, allowing informational support to technical-scientific activities, using the telecommunications network for transmitting content, and supporting the Amazonia protection process through the systematization and dissemination of available informational resources. The Social Analysis function develops studies on the human dimension through the integration of socioeconomic information, aiming at subsidizing public policies in the different government spheres that

act in Legal Amazonia.

The User Attendance function intends to integrate SIPAM's users through the telecommunications network and to respond to the solicitations of products, services and information, remitting suggestions, criticisms and allegations to processing. The function also promotes the access to the system's database. More than 700 user terminals installed in the Amazonian region and in Brasília are SIPAM's tip, where information is transmitted. That telecommunications network is composed by remote terminals, interconnected to the system's centers, via satellite and urban terminals, located in the towns where are the municipalities and partner agencies' seats.

SIPAM has also acted in the generation of information for the process of homologating the indigenous reservation Raposa Serra do Sol[4] (Roraima), with activities of planning support for field actions monitoring. In Roraima, in the municipalities of Boa Vista, Bonfim and Cantá, the Operation Acácias was developed, which identified, through image interpretation, the areas of planting of Cassia trees and evaluated the conflicts of land use and occupation through the integrated analysis of information. During the elaboration of the project for the Coari-Manaus Gas Pipeline, it contributed monitoring the pipeline construction, evaluating environmental impacts, atmospheric discharges and weather events in the related areas.

Among other relevant operations, we have the project of highway BR-319, that links the state capitals Porto Velho (Rondônia) and Manaus (Amazonas). Presently with several parts blocked for over 15 years, the highway does not fulfill its role of linking the two states and outflowing the production. The product transportation between those cities is made through the hydroway Madeira River, implying a delay in face of particulars involving the Madeira-Mamoré basin. In that sense, SIPAM has developed activities of aerial monitoring, and through geo-referential photos has performed the identification of critical areas that served as analysis instruments for the project of reconstruction and reopening of traffic between both capitals.

The action of Amazonia Protection System (SIPAM) was relevant in the process of homologation and construction of the hydroelectric plants of Santo Antônio and Jirau, on the Madeira River, in Rondônia. Other operations are being accomplished, related to the seizure of illegal material used in wood fires and deforestation, land regularization, mapping of Environmental Protection Areas (APA in the Portuguese acronym), special areas and indigenous reservations.

3 SIPAM AND PUBLIC INTEREST IN THE FORMULATION OF PROGRAMMATIC ACTIONS FOR AMAZONIAN DEVELOPMENT

In face of SIPAM's wide-reaching actions, CENSIPAM is developing studies since 2007 with the intent of

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[4]   Raposa Serra do Sol is an area of indigenous land (TI) located in the northeastern part of the Brazilian state of Roraima. In the municipalities of Normandia, Pacaraima and Uiramutã, between the rivers Tacutu, Maú, Surumu, Miang and the border with Venezuela. It is intended to the permanent possession of the indigenous groups ingaricós, macuxis, patamonas, taurepangues and uapixanas. It was demarcated by the Ministry of Justice, through Order n. 820/98, later modified by Order 534/2005. The demarcation was homologated by decree of the Presidency of the Republic in April 15, 2005. Available at: http://www.planalto.gov.br/ccivil_03/_Ato2004-2006/2005/Dnn/Dnn10495.htm. Acessed in: Apr. 24, 2019.

defining strategic areas in which the system's actions should be reinforced.

Therefore, the strategic areas presently developed by SIPAM's programs are: hydrology, environmental impacts (natural and artificial environments). Special areas (Conservation Units and Indigenous Lands), study of airborne sensors' potentialities, databases, special projects and publications. As part of the planning, the recently approved creation of the Monitoring and Prevention of Extreme Events Division stands out. The managers' expectations are that with these programs' development SIPAM will have a large scientific, academic and political projection, and will present a cutting-edge institution for the study of Amazonian environmental questions.

It is understood that SIPAM develops public interest actions. Thus it is worth situating the public interest concepts, considering that the above mentioned programs deal with that matter, that is, while a place of public interest, SIPAM appears as a public character system.

> (...) How does the public interest shows up? Is there one only public interest? How to arbitrate between conflicting interests? Managerial law elected discretionality as a central category and turned to the discipline of their controls, very much dealing with the theme of public interest, and so it tacitly adopted the premise that there should be a universal, non-susceptible public interest of questioning or opposition. In the analysis of José Eduardo Faria (2004, p. 14), public interest is a concept pragmatically vague and ambiguous, an almost mythic concept whose value sits precisely on the indefinite character of its meaning, of a lesser analytical value, but big functional usefulness, in the measure of its adaptability to variable social realities. (BUCCI *apud* VICHI, 2004, p. 94)

Concerning Habermas' idea that sits between facticity and validity (between facts and validity) in the context of language and of communicative action, both terms -- politics and public -- coexist without friction, while lived in life's world. That is, while social and communication relationships that typify daily living are not problematized (HABERMAS *apud* FREITAG, 2005, p. 191). The different sociological, juridical and political implications that either concept might have only come to the surface when the actors describe the interest they manifest in each of the terms. In the law field, Celso Antônio Bandeira de Mello (*apud* VICHI, 2004, p. 95) describes public interest as the interest resultant from a set of interests that individuals personally have when considered in their quality of members of society and for the simple fact of being so. The author proceeds:

> Public interest, the interest of all, of the social group, is no more than **the public dimension of individual interests,** that is, the interests of each individual as part of Society (legally embodied in the State), also harboring there **the timeless deposit of those same interests,** it is worth noting, now faced in their historical permanence, having in view their nationals' generations successiveness. (MELLO *apud* VICHI, 2004, p. 95) (Bold types by the author).

It means the necessary arguments for the defense of the Amazonia Protection System's creation, whose focus, among others, is the educational action turned to the Amazonian people's interest. In that line of

thinking, through discursive ways, that is, the base of the dialogue SIPAM must attain with that population, it is dedicated to re-establish its validations reinstated in the present discourses of information and technology science, as presented above. For its terms and foundations about the concept of politics and public as concerning SIPAM's principles, that is, the convincing form of saying: national defense policies, security policies, public policies directed toward the collective good.

Maria Sylvia Di Pietro (2004) reveals the difficulty of legal science in bringing the public interest unison concept, mentioning from Carl J. Friedrich, passing by Dalmo de Abreu Dallari, to Ernest S. Griffith (VICHI, 2004, p. 95). In the end, the author indicates: the idea of public interest coincides with the idea of common good (...), incorporated by the so-called Social Rule of Law, as a reaction to the utilitarist conception, typical of the individualism that characterized the Liberal State period (DI PIETRO *apud* VICHI, 2004, pp. 95-96).

In that sense, Dalmo de Abreu Dallari (*apud* VICHI, 2004, p. 96) mentions: "The gender that includes several modes (of interests): the **general interest,** which affects all society; the **diffuse interest,** pertaining to a group of people identified by indetermination and indivisibility; and the **collective interest,** which refers to a determined or determinable group of people". (Bold types by the author.)

According to Vichi (2004, p. 95), what is the reason of so much difficulty to conceptualize and/or signify politics and public interest? To the author, it happens simply because the legal ordainment does not offer to legal (dogmatic) science a positive definition of public interest, which is absolutely understandable, according to him, given the amplitude of that institute and, therefore, it must recur to the systematic interpretation of the legal ordainment (VICHI, 2004, p. 96).

With that our reading of SIPAM's programmatic actions is complete. Aiming at the legitimacy of actions inherent to that national protection policy model, of sustainable development to the natural and artificial environment, being a natural sequence in the Amazonian space, it is necessary that the political exercise of such System incite a political practice, even if in a reflex form (DI PIETRO *apud* VICHI, 2004, p. 162).

In that scheme, SIPAM's proposal is a conjoint force to make the Amazonian environment, at times fragmented and distant from the large Brazilian urban centers, a reconstruction by means of a discursive practice. It means an integrating force that reunites and harmonizes the lived world with the economical and political system (systemic world), threatened of dissociation and undesirable colonization of the first by the two latter (FREITAG, 2005, p. 194).

However, it is worth making here a reflection on its workings, because it is precisely the discursive practice that now is presented positively that also becomes the system's neuralgic point. The required interaction between SIPAM and its partner agencies is full of problems, related to the non-sharing of information (information democratization), fruit of interference and absence of systemic vision, duplicity of efforts, which implies performing the same activities, among others. Due to this factor, there is a latent preoccupation by the managers of enhancing the institutional relationship, for being conscious that SIPAM's structure model is its great differential, and that it constitutes the ideal model for accomplishing Amazonia's development.

In the scope of SIPAM's actions and operationalization, in face of the problems and critical factors identified, along the studies, as the one indicated above, it is clear that the system is not yet institutionalized

in the State structure. The elaboration and implementation of the strategic plan indicates that reality is fully perceived by its managers, and that there is an effort in the sense of proceeding the proper adequacies in order to establish a new conjuncture for the system. The structural and functional analyses developed from the diagnosis performed in the structure of the Technical Operational Center (CTO) and Managerial Control Center (CCG) show that the effectuation of SIPAM's proposal, as an inter-institutional organ, requires the definition of clearer guidelines, allowing a more effective management of the available material and immaterial resources in order that its mission is fully accomplished.

4 Conclusions

Developing a research that includes themes such as national defense and security in the context of Legal Amazonia under the perspective of a strategic information management represents a big challenge to be overcome. In that sense, as mentioned by Vergara (2004), the study's delimitation relates to the limits established by the author in his study, as much as it defines the borders related to variables and points to be considered, and the time lapse of the investigation. It is the instant in which it is made clear to the reader what stays within the study and what stays out. Therefore, in this work we were not restrained by technical aspects, nor have evaluated the performance of resources and equipment that compose the technological structure of the Amazonia Protection System (SIPAM), because that would require other methodologies. The object was to analyze and to present some qualitative results of programmatic actions originated from the System, as well as its functions and the public interest they demand.

From the conclusions of the present study, one may affirm that the military rhetoric on the Amazonian question regarding defense formed one of the main pillars of the arguments on the maintenance of national sovereignty on the region. That discourse substitutes moreover the National Security Defense from the 1960's, which guided the national strategic thinking until the period of Brazilian re-democratization. It was in that period that the Amazonia Protection System (SIPAM) seemed to translate a quite different and more updated government perception of Amazonian problems, based on the experiences of governmental projects developed for the region, especially those that did not achieved the desired success (Nascimento, 2005) in past periods, as is the case of Amazonian region's municipalities; the deconstruction of the demographic void myth; the absence of contact with other national regions, among others. In that sense, as verified, SIPAM's proposal emphasized the need to build instruments which would supply detailed and integrated information on different aspects of Amazonian reality in order to subsidize the elaboration of more effective public policies for the region.

The technical-programmatic scope of SIPAM makes clear its role of subsidizing the ecological-environmental, economic, urban, political and social order demands that emerged after the Cold War, regarding environmental preservation, the valuing of cultural diversities that inhabit the Amazonian space, the enhancement of local populations' life standards, a stimulus to political participation and to citizenship, sustainable economic development, educational investment, and so on.

We may also conclude, from this study, that SIPAM comes toward a new national defense and security paradigm for Legal Amazonia, in which the Brazilian sovereignty on the region is guaranteed not only by means of a strategic-military action. Thus, in order to guarantee Amazonia's defense, beside the military

presence, it is required to make clear the competence and responsibility with the region's development and its delicate ecosystem. Therefore, with a rational and ethic occupation, the coherent responses are given to external criticisms, without totally surrendering to absolute conservationism. SIPAM, with its challenges and problems, also constitutes the nation's strategy against arguments that favor a relative sovereignty proposed by developed countries, since it makes viable the case that the region's integration constitutes the best strategy for its defense.

Still in that context, one may conclude that beyond technological innovation, through a new way of dealing with Amazonian problems and presenting competent, effective solutions and public policies, SIPAM implies a perspective of security and defense, according to which the full sovereignty of Amazonia, beyond the military aspects, is also exerted, moreover, by means of the region's integration and economic, social and cultural articulation with the rest of the nation, operated by the articulation of strategic, environmental, energetic, technological, educational, health and defense policies.

Geopolitical aspects that particularly pervade Amazonia, for their turn, as well as its economic potentials and natural wealth, show that it is really necessary the maintenance of the national defense policy of Amazonia, allowing to present a dissuasive factor. So, even recognizing that the threats and vulnerabilities that affect the region might be overstated, its geopolitical position and the demographic voids vindicate the required strengthening of the policy SIPAM has been developing in the region. As it was shown, Amazonia represents a pending point among national problems, and so, given its potential and natural riches, to consider it a priority in the national defense policy and to implement defense and security actions under a new focus represented by SIPAM constitute suitable measures. Therefore, the conception of a defense strategy whose scope is to collect critical data on Amazonia and to integrate the public policies in the region considering this acute and intrinsic perception of risks and threats constitutes one of the great virtues of the system's installation, because with it the Brazilian State aims at enhancing credibility and conquering the confidence of world public opinion that it wants and is capable of containing the ecological devastation, while it stimulates the region's economic exploration.

At that point, the system and the policies that may be implemented with the application of its products and services have a significant role for Amazonia's sovereignty, not to block its improbable invasion by a superpower, but to promote this space's superficial and aerial control, monitoring the economic exploitation, fighting misdemeanor and other threats. Therefore, it was worth at this moment to validate the principles and their function in the place they are installed, so that their action reaches the other countries of the jungle and reinforces Brazil's position as the leader in the integration process of the whole Continental Amazonia.

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6. References

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