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DEFENSE EQUIPMENT ACQUISITION SYSTEMS IN BRAZIL AND SWEDEN: A COMPARATIVE ANALYSIS

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SUMMARY

In this article, the main actors of the Defense Equipment Acquisition systems in Brazil and Sweden are mapped, using a comparative analysis methodology, through literature review, interviews and documentary analysis. To this end, basic concepts such as power, capacity and governance are initially discussed, as well as the theoretical aspects of the acquisition system itself, the triple-helix model and the public policy area. Subsequently, the formation of the defense industries of Brazil and Sweden is contextualized in order to produce considerations about the current stage of these systems. In the conclusions, it is found that, despite initiatives for greater integration in the Brazilian defense sector, such as the creation of the Ministry of Defense (MD) and the Secretariat of Defense Products (SEPROD), the country's acquisition system is still decentralized. In Sweden, for its part, the defense acquisition system applies to the three forces jointly, relying on other key players in the process.
Keywords: Acquisition System. Brazil. Sweden. Triple -Helix. Public Policies. Defense Industry.

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INTRODUCTION

In 2014, within the framework of the FX-2 Program of re-equipment and modernization of the Brazilian Air Force (FAB), there was the purchase of 36 Gripen E/F fighter aircraft from Saab, the main Swedish defense and security company. This is Saab's largest technology transfer program to another country (SAAB, 2023). But, in 2022, Brazil signalled interest in buying thirty more aircraft. In addition, recently, Embraer and Saab signed a Memorandum of Understanding (MoU) to position Embraer's C-390 Millennium aircraft as the preferred aircraft for tactical transport in the Swedish Air Force, and to evaluate the integration of Saab's equipment and systems (DEFESA AÉREA E NAVAL, 2023).

Brazil and Sweden have been industrial partners for decades, which was formalized with the Agreement on Economic, Industrial and Technological Cooperation, in 1989. The Gripen Program, therefore, directed the relationship between the two countries towards defense, specifically, generating a growing strategic rapprochement between non-traditional partners in the sector until then. With this, the theme of Defense Acquisition has been gaining prominence in both countries.

The defense sector of any nation develops in accordance with its acquisition system (also called "procurement") which, in the words of Lundmark (2021), is the sum of all processes and activities that enable the Armed Forces to acquire and maintain the technical systems they need to achieve the desired capabilities[3]

In Brazil, acquisition is the "modality of obtaining that refers to the purchase or contracting of a PRODE already existing in the market" (BRASIL, 2018, p. 1), with "PRODE" (defense product) being "any good, service, work or information, including armaments, ammunition, means of transport and communications, uniforms and materials for individual and collective use used in the final defense activities, with the exception of those for administrative use" (BRASIL, 2012).

Thus, a Defense Acquisition System (SAD) involves several actors; and it is the focus of this article to analyze the main ones, through a comparison between Brazil and Sweden. After all, in addition to the

3 Dr. Martin Lundmark was the co-advisor of one of the authors during her sandwich-doctorate at the Swedish Defense University/Försvarshögskolan (FHS), to whom she would like to register special thanks for the knowledge transmitted.

partnership in defense consolidated by the Gripen Programme, Sweden is the most innovative country in the European Union (EU), according to the Global Innovation Index, and the second in the world, behind only the United States, presenting a particular model of integration between different sectors (WIPO, 2023).

Theory

POWER, CAPACITY AND GOVERNANCE

The power of an individual is the ability to influence the conduct or feelings of others. Transposed to international relations, power is the ability of a political unit to impose its will on others (ARON, 2002, p. 99). In this context, the theory of realism has as its central aspect the state's search for the maximization of power. This is how Morgenthau, one of the main realist theorists, lists the factors for the emergence of a power: (1) geography, (2) natural resources, (3) industrial capacity, (4) state of military readiness, (5) population, (6) national character, (7) national morale and (8) quality of diplomacy (ARON, 2002, p. 105).

Of these factors, industrial capacity and military readiness are directly related to Defense Acquisition Systems, which justifies the presence of the defense industries of Brazil and Sweden's background in this article.

Capability, first of all, means being able to perform a certain task; *military capability*, then, is the complex combination of several elements. In the Brazilian perspective, the Capacity-Based Planning (CBP) defines capacity by the set of doctrine, organization, personnel, teaching, material, training, infrastructure and interoperability (DOPEMAI). In the Swedish perspective, for its part, the elements are the organization, troops, training, doctrine, technical systems, logistics and availability (of human and material resources). It is a type of capability that depends on the perception of threats and the military potential of the opponent, having six components, such as a "system of systems": mobility, attack, protection, command, intelligence and information, and resistance (LUNDMARK, 2021).

Finally, for the development of military capabilities that allows the exercise of power, it is necessary the coordination (the sum between cooperation and planning) between agencies at the political-strategic

level, building governance as the political-institutional architecture of the decision-making process, and aiming assertiveness in public policies in the defense sector (BRAVO, 2021).

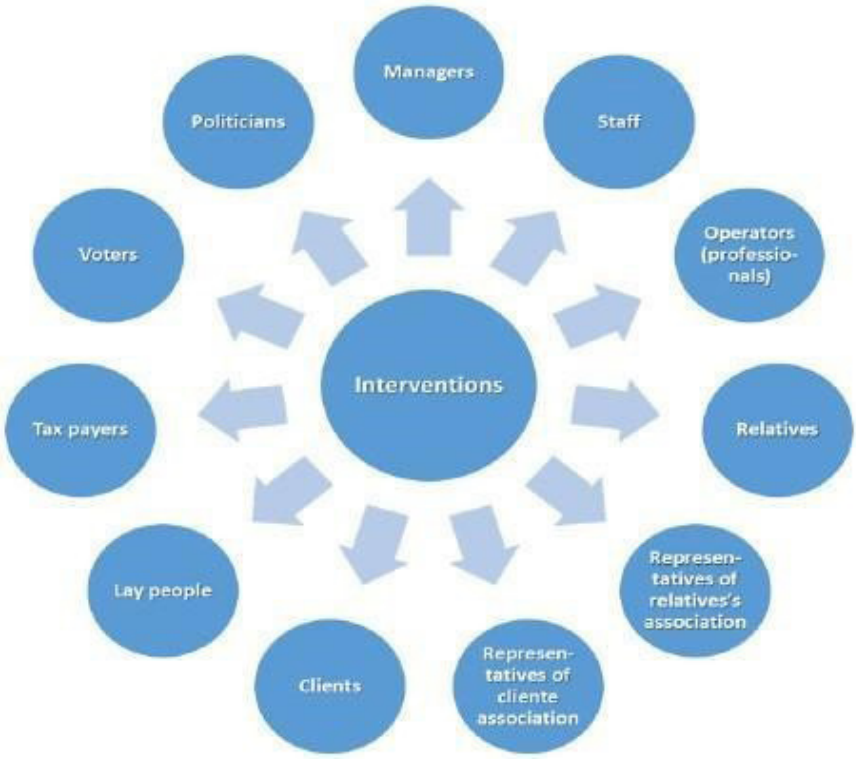
PUBLIC POLICIES

By the Intervention Theory, public policy decisions can follow regulatory instruments ("sticks"), economic measures ("carrots") or information/persuasion ("sermons"). More precisely, in the words of Evert Vedung:

> In the regulatory case, the governed is obliged to do what the ruler tells him to do. In the second example (economic measures), the governed is not obliged to perform an action, but the ruler can make the action easier or more difficult by adduction or deprivation of material resources. Thirdly, the relationship can be persuasive, namely, involving only the communication of claims and reasons, but not material resources or mandatory guidelines (VEDUNG, 1998, p. 31).

Thus, these interventions occupy a central position in the "Stakeholder Model of Evaluation", created by Vedung. In it, the stakeholder should be understood as more than an "interested" actor, since its insertion in the entire evaluation process of a given public policy occurs from an institutionalized perspective (VEDUNG, 2021).

Figure 1 - Stakeholder Model of Evaluation



Source: Own elaboration, based on VEDUNG (2012, p. 395).

Considering that various forms of intervention in public policies are carried out and/or perceived by stakeholders belonging to multiple sectors of society, the presentation of the "triple-helix"model is also relevant.

TRIPLE-HELIX

The essence of the triple-helix model is originated in the "Sabato Triangle" (1968). Jorge Sábato was an Argentine influential in raising awareness in Latin America about its National Science, Technology and Innovation Systems, attributing them to three main sectors: government, education ("scientific-technological infrastructure") and companies ("productive structure") (LONGO, 2004, p. 9). The concept, however,

has been commonly used in the world since the early 2000s, given the determining role of multinationals in the phenomenon of war in the Twenty-First Century (SUAEZ, 2005). In this sense, in the National Defense Strategy (END) of Brazil, the triple-helix model is reproduced in the following excerpt:

The state component of the BID (Defense Industrial Base) should, in principle, design and produce what the private sector cannot do so profitably in the short and medium term. In this way, the state will seek to act in the technological ceiling, in close connection with the Advanced Research Centers of the Brazilian Armed Forces and academic institutions. The search for new markets is one of the biggest challenges for the Defense Industrial Base and a relevant factor for its development and sustainability. In this scope, the action of the state is an important facilitating agent, as the foreign policy practiced by Brazil, as well as state support for financing programs, research projects, development, production, acquisitions and marketing of national defense products tend to provide greater confidence to potential buyers (BRASIL, 2020, p. 43).

> Lundmark, for his part, points out that, in Sweden, the use of the term "triple-helix" is predominantly commercial. However, the author lists some capabilities and other fundamental conditions for a productive defense structure in this model: (1) level of technological readiness; (2) ability to absorb, assimilate and commercialize novelties; (3) sophisticated innovation infrastructure; (4) common technology and strategy in collaborative companies; (5) synergy between actors; (6) trust; (7) common understanding and goals; and (8) sound defense and security policy (LUNDMARK, 2021).

A concept similar to the "triple-helix" in defense is the "Military-Industrial Complex" (MIC), coined by the sociologist Charles W. Mills, in 1956, and known internationally after mention made by the former U.S. President, Dwight D. Eisenhower, in 1961. Senator William Fulbright coined the expression "military-industrial-academic complex" (BRUSTOLIN,

2014). The MIC is an articulated network of politicians, military and entrepreneurs of a society, aiming defense spending and investments in the sector. It is a concept developed in the Cold War, but the option here made by the use of the term "triple-helix" is given by the wide use of this to name the area's theory . The format and depth of the implementation (sometimes only aimed) of the triple-helix model in Brazil and Sweden is a result of the historical formation of the defense industries in these countries, as will be presented in the next sections.

GLOBAL SOUTH AND GLOBAL NORTH

Before proceeding to the historical overview, it is necessary to make a geopolitical contextualization about the position of Brazil in the so-called "Global South" and Sweden in the "Global North". In 2013, when Brazil decided to acquire Gripen NG fighters from the Swedish company Saab, one of the alleged reasons for the decision was the fact that Sweden was not a member of the North Atlantic Treaty Organization (NATO). That argument is no longer valid. After 207 years of neutrality, Sweden is now in the ratification phase to become a member of NATO, as France and the United States – countries whose companies Dassault and Boeing competed with Saab in the FX-2 acquisition program.

In 2021, Brazil signed a Memorandum of Cooperation on Cybersecurity with Finland, who has developed major capabilities in the area, after successive attacks from Russia. Despite the attacks, Finland had remained neutral for almost 78 years. That also has changed. Russia's attack on Ukraine on February 24, 2022 opened a window of opportunity for Finland – which applied to join NATO along with Sweden, in May 2022 – and, in April 2023, it turned into a member of the organization.

In 2019, Brazil was designated an "extra-NATO preferred partner" of the United States. To achieve this designation, along with U.S. support for joining the Organization for Economic Cooperation and Development (OECD), Brazil planned to gave up the developing country status in the World Trade Organization (WTO). This status, not even China – the second largest economy in the world- has given up, as it represents a loss of protection for national production, but the decision was reverted. In March 2020, there was a second step: the governments of Brazil and the US signed the Agreement on Research, Development, Test and Evaluation (RDT&E).

In economic terms, Brazil has a lot to benefit from relations with the other BRICS countries (Russia, India, China and South Africa, originally, now expanded to Saudi Arabia, Egypt, the United Arab Emirates, Ethiopia and Iran). However, Brazil's military alignment decision has been reiterated for decades, since the country began to acquire weapons from NATO countries, especially the United States, as will be presented in this article. Changes are possible, but they take time and depend on the alignment of foreign and defense policies, as well as a long-term national strategy (grand strategy).

FORMATION OF THE DEFENSE INDUSTRIES

Brazil

According to Mattei and Santos Júnior (2009), import restrictions imposed on Brazil during World War I were a precursor to the industrialization process via import substitution that occurred from the 1929 crisis and the Great Depression. Although the government played a limited role in industrial stimulus in the 1920s, the war increased the perception of the importance of industry, especially in the war area (VINHOSA, 1990).[4] During the 1920s, Brazil's iron, steel and cement industries received increasingly frequent incentives from the government, in the form of tax exemptions and freight facilitation on public railways. In addition, there was an increase in the local assembly of motor vehicles, with American capital, which was also applied in oil refining, in the chemical and pharmaceutical industries, in addition to the manufacture of machinery and tires (FERREIRA LIMA, 1978).

The period from the arrival of the Portuguese royal family in Brazil, in 1808, to the revolution of 1930, is known as the "implantation"cycle. Brazil underwent a process of modernization since the revolution of 1930 (SKIDMORE, 1999). According to Amarante (2004), this was the first Military Industrial cycle of the country, under the view that, until then, the entire military industrial park used foreign technologies. The period from 1930 to 1956 is called the "Industrial Revolution"cycle.

4 This section is based on: BRUSTOLIN, Vitelio. Military Influence on Industrial Policy in Brazil During the 20th and Early 21st Centuries. Brasiliana: Journal for Brazilian Studies. Vol. 10, No. 2, 2021, p. 70-95; in addition to: SILVA, Francisco Carlos Teixeira da; et al (Org.). Dicionário de história militar do Brasil (1822-2022), Rio de Janeiro, Edupe, 2022.

With the arrival of Getúlio Vargas to power with the revolution of 1930, investments were conducted for the creation of an industrial infrastructure, focusing on basic and energy industries, also called production goods industries. Highlights of the period include the creation of: the National Petroleum Council (1938), (FGV, 2023a), the National Steel Company (1941), (FGV, 2023b), the Vale do Rio Doce company (1943), (FGV, 2023c), and the São Francisco hydroelectric company (1945), (FGV, 2023d).

Brazil fought on the side of the Allies in World War II almost 80 years ago, the last war in which it participated. Brazil was also the only South American nation to collaborate in the First World War. The industries that had been installed in the country since the First World War focused on the assembly of imported parts, but, at the beginning of the Second War, Brazil could no longer import the parts and machinery necessary for production, due to the war industrial focus around the world at that time. Thus, Brazilian military research and development began because of World War II (AMARANTE, 2004, p. 26) and there was, to some extent, an attempt to integrate the government and industry in the defense sector.

In 1945, the President Getúlio Vargas resigned, making room for elections (BRAYNER, 1968). During the second Vargas government (1951-1954), an investment in state entrepreneurship was made, which included the creation of the National Economic Development Bank (BNDE)[5](BNDES, 2023). However, a military cooperation agreement with the United States, signed in 1952, dampened Brazilian military technological development, which began to have access to low-cost equipment, leaving local production in the background (FGV, 2023e).

During the period from 1951 to 1961, two important institutions were created to promote scientific and Technological research in Brazil: The National Campaign for the Improvement of Higher Education Personnel (CAPES)[6], (CAPES, 2023) and the National Research Council, later renamed the National Council for Scientific and Technological Development (CNPQ), (FGV, 2023f). This institutions started to play a crucial role in the financing of research, with reflections and initiatives in industrial production and in the defense area.

Military and civilian institutions of higher education were already being employed in the process of industrialization of the country. It should

5 Later renamed to BNDES, with the addition of "Social" in 1982

6 Later, in 1961, this would be renamed to Coordination for the Improvement of Higher Education Personnel.

be noted, for example: the Technological Institute of Aeronautics (ITA, 1950), (ITA, 2023) and the Military Institute of Engineering (IME, 1959), (IME, 2023). In the civil sphere, the Federal University of Rio de Janeiro (UFRJ, 1920), (UFRJ, 2023) and the University of São Paulo (USP, 1934), (FGV, 2023g) stand out, representing many other institutes, universities, colleges and technical education centers that have been created over decades[7].

This structure, developed by the state, helped President Juscelino Kubitschek launching a plan of goals that accelerated the process of internationalization of the Brazilian economy, especially in the energy and transport sectors (FGV, 2023h). This period is known as the "Internationalization" cycle and extends to the present day.

In 1964, it began the military regime, which lasted until 1985. In the 1960s, the industrial base had reached a degree of development that enabled military production, especially in the Navy (AMARAL, 2013). Later, this production would also include the Aeronautics and the Army (FERREIRA, 2011).

In 1977, the Government of Ernesto Geisel denounced the Western Hemisphere defense agreement signed in 1952 between Brazil and the United States (FGV, 2023i). The denunciation of this agreement led Brazil to prioritize its own war industry for a period (BRUSTOLIN, OLIVEIRA, and PERON, 2020, p. 17). In the late 1980s, the country's defense industry reached its peak, becoming the eighth largest exporter in the world and selling equipment to 32 countries through Engesa, which produced armored vehicles (AMARANTES, 2004, p. 26). In 1985, Avibras sold US$ 1 billion in missile and rocket launch vehicles, with orders from the Armed Forces being placed with Brazilian companies (GODEIRO, 2010, p. 1).

By the end of the 1980s, about 90% of the means that mobilized the Army were manufactured in the national territory (AMARANTE, 2004, p. 27). In 1985, the military government was ended in a transition to redemocratization, and, since then, in Brazil, as well as in the United States, the president of the Republic, elected by popular vote, resumed the

7 Federal Fluminense University (UFF), with the Postgraduate Program in Strategic Studies of Defense and Security (PPGEST); Federal University of Rio Grande do Sul (UFRGS), with the Postgraduate Program in International Strategic Studies (PPGEEI); Federal University of Minas Gerais (UFMG), University of Brasilia (UnB), etc. Linked to the Joint Staff of the Armed Forces (EMCFA) and the Command of the Armed Forces, respectively, the Superior War College (ESG) and the Brazilian Defense College (ESD); and the Navy Research Institute (IPqM), the Naval War College(EGN), the University of the Air Force (UNIFA), the Army Command and General Staff College (ECEME) and the Army Technology Center (CTEx).

post of "Supreme Commander" of the Armed Forces (Brazil, 1988)[8]; nine civilian presidents have succeeded.

However, the political and social transformations of the 1990s and 2000s brought with them an unnecessary "almost annihilation of the defense industrial base and a considerable reduction in activities in national R&D [research and development] centers, especially in those that constitute the scientific-technological base of defense" (AMARANTE, 2004, p. 27). It is important to emphasize that, worldwide, there was a significant disinvestment in the defense area during the 1990s (SILVA & MARKSTEINER, 2021, p. 1), mainly due to the dissolution of the Soviet Union and the end of the Cold War, which made the international system unipolar, under the leadership of the United States (BRUSTOLIN, 2014).

Despite this, as defense is a strategic area, Brazil could have avoided the dismantling of its defense industry (AMARANTE, 2004). With the support of common public policies for the defense industry worldwide, many defense companies could have maintained themselves, producing multiple-use technologies (CARDOSO, 2004, p. 192-195). However, the civilian governments that led Brazil after the military government (in the late 1980s and 1990s) did not rescue the defense industry and, according to Ambrosio, at the end of the period of military governments, the Armed Forces lost priority in the allocation of resources (Ambrosio, 2016, p. 22). It is important to note that the share of the entire industry as part of the Brazilian Gross Domestic Product (GDP) decreased from 33.7% in 1980 to 29.1% in 1993 (PINHEIRO, 1996), and this conjunction of factors – political and economic – caused most military programs to suffer successive delays, with many of them being totally or partially cancelled (ABDI, 2011, p. 10).

In 1996, a Policy of National Defense (PDN, which, in future editions, in 2012, started to be called the National Defense Policy, PND) was released for the first time.

The Ministry of Defense (MD) was stablished in 1999, with the aim to concentrate the demands of the Armed Forces for the production and acquisition of defense equipment, replacing the three separate ministries that existed until then and a joint fourth military ministry. However, the country's defense industry continued to suffer from the dismantling pattern (BRUSTOLIN, 2014) and, in practice, the sector is still not fully integrated, despite the existence of the MD, as will be demonstrated below.

In 2004, the Brazilian Industrial Development Agency (ABDI) was

8 Brazil, 1988, Constitution of the Federative Republic of Brazil. Art. 84, XIII, 1998

created, which came into force in 2005, with the objective of supporting Brazilian industrial development, including the defense area.

The defense policy was updated in 2005. The country's First National Defense Strategy (END), published in 2008, expresses a new look at the role of the Armed Forces and Science and Technology, through the military. According to the END, "it is not evident for a country that has dealt little with wars, to convince itself of the need to defend itself in order to build itself". END itself seeks to demonstrate the importance of the area, stating that "the resources demanded by Defense require a transformation of consciences" (END, 2008). END prioritized three areas: Aerospace, Cyber and Nuclear. From 2012, the policy and strategy began to receive quadrennial reviews – that year also saw the release of the first edition of the National Defense White Book (LBDN).

Despite having a relatively reduced war tradition compared to geopolitically close countries, Brazil has invested and continues to invest substantial resources in defense. The budget analysis of the last 20 years shows that Brazil's defense has remained among the four portfolios with the highest budget forecast in the Union (along with Social Security, Health and Education) and among the three ones with the highest direct budget execution (ahead of Education). In addition, in current dollars, military spending in the country is higher than that of any other nation in Latin America and is currently ranked as fifteenth in the world. However, the governmental application of resources in the area is minimized when compared to the effort of each country in relation to its Gross Domestic Product (GDP). The Brazilian average over the past 20 years has remained at the margin of 1.5% of the GDP, below neighboring countries and all BRICS original members, except for South Africa. Therefore, in addition to the question of "how much is intended for defense", the questions of "how resources are distributed" are imposed[9], and "how the country's industrial base is fostered" (SILVA and MARKSTEINER, 2021, p. 2).

Sweden

In the seventeenth century, Sweden sought to expand in the Baltic, which required a robust Navy. In this sense, the construction of the ship "Vasa" began, which took two years and had about 400 employees to be ready, having been the largest industrial project in Sweden up to that

9 Not necessarily focused on capacity building

time. On August 10, 1628, however, a hundred meters after the Vasa set sail for its first voyage, the ship was wrecked by instability in the structure, possibly resulting from the urgency of the king of the time, Gustav II Adolf, to demonstrate power in the region.

In 1956, three hundred years after remaining submerged to thirty meters, the Vasa was rescued and rebuilt, with 98% of its original composition. It is a symbol of Sweden and has its own museum. After all, despite the shipwreck, the Vasa began its voyage as the most heavily armed ship in the Baltic at the time, if not in the world. Thus, its construction is considered the beginning of the Swedish defense industry.

However, because Sweden controlled most of the Baltic, it demanded high arms production. In this context, still in 1646, the Bofors company was founded, which produced cannons. In 1679, the naval base of Karlskrona was installed, a city in the south of the country (the waters of Stockholm freeze in winter and the enemies at the time were Denmark, Poland and Russia, nearby) and today a UNESCO historical heritage site, this base being the largest in Sweden and one of the oldest in the world[10]. Subsequently, in 1689, this shipyard was incorporated into Kockums, a producer of ships for the Swedish Navy and, today, as Saab Kockums, the company is a world leader in naval systems.[11]

In the nineteenth century, Sweden lost territories during the Napoleonic wars, such as Finland to Russia, in 1809. In addition, between 1812 and 1814, Sweden came into conflict with Norway, which made it decide on the external posture of neutrality (PEDONE, 2016, p. 87), understanding that its geographical position was critical in the event of a regional conflict. New influential factors in the formation of the Swedish defense industry would take place from the twentieth century.

In 1901, the country was the first to introduce the compulsory military system – SMO (ALSINA JR., 2018), which lasted until 2010. In the 1910s, there was the development of the electrical industry and, from the middle of that, the First World War (1914–1918), in which Sweden, choosing to remain neutral, did not have its territory attacked and could more easily carry out exports in defense. In parallel, its need for industrial self-sufficiency increased.

10 The oldest name in Sweden's defense industry was Åkers Krutbruk, established in 1552, with production focused mostly on gunpowder, but the company closed in 2018

11 The defense industry has a differential that most companies are the result of mergers with others (LUNDMARK, 2011, p. 40), so that, in its origin, the national defense industry is usually old, especially in European countries.

In 1920, the Swedish Ministry of Defense was established; and in the 1930s, the peak of the metals industry was reached. At the end of this period, however, the Second World War began (1939–1945), when Sweden, neutral again, continued its defense industry and increased its exports in the sector. "Development and production started with indigenous jet aircraft (Saab), artillery and missiles (Bofors), surface ships and submarines (Karlskronavarvet and Kockums) together with radar and communications systems and several other types of armament" (LUNDMARK, 2019, p. 290).

At this juncture, although part of Saab's history began in the seventeenth century, through the companies Bofors and Kockums, its foundation officially took place in 1937 (Svenska Aeroplan Aktiebolaget, on the eve of World War II, to supply aircraft for the Swedish Air Force. Since then, deciding that it should be self-sufficient in defense (only they did not produce helicopters, cargo planes and air-to-air missiles), the Swedish state needed investment and management of this segment of its industry and did so by focusing on aeronautics.

In the post-Second World War and during the Cold War, then, investments in the Swedish national defense were favoured by political consensus among the most diverse sectors of society, building a strongly institutionalized and trust-based military-industrial complex (LUNDMARK, 2019, p. 291)[12]. Since that time, for example, Saab is majority owned by the Wallenberg family, which has a long-standing relationship with the Swedish government, which composes the elaboration of public policies in the defense sector. In the words of the Marine Edvard Nordenvall, from the Swedish Armed Forces Joint-Staff, "Saab is an institution" (NORDENVALL, 2021).

From 1946 to 1969, the country was governed by the Social Democratic Party (PEDONE, 2016, p. 76), from which industrial investments were more focused on continuity than on new investments (LUNDMARK, 2019, p. 291). But, in 1960, the Swedish Armed Forces were structured in the current format (WIDÉN, 2021) and, still in 1968, the Swedish Defense Materiel Administration was created (Försvarets Materielverk - FMV), favoring a greater institutional structure to the area.

12 Lundmark (2021) draws attention, however, to the fact that "military-industrial complex" is not an internationally well-defined concept, since it is closer to a metaphor than to a theory. And, because it is a United States concept, the author understands that Sweden could have a proper name for your model (the term "triple-helix" is not limited to defense).

Also, in October 1981, the Soviet submarine S-363 (U137 in the Swedish denomination) ran aground near the Swedish naval base of Karlskrona. The submarine was of the Whiskey class of the Soviet Navy, which claimed a navigation accident. However, the point where the submarine U137 ran aground, was strategic and difficult to access, causing Sweden to interpret the incident as an attempt to spy on the former Soviet Union. The episode became known as "Whiskey on the rocks" and it is a milestone in the history of Sweden's defense, as it made the country pay more attention to the importance of its capabilities, especially in the Navy.

In this context, in the mid-1980s, Sweden was at the height of its technological development: "It produced its own fighter aircraft, naval vessels and submarines, armored vehicles, artillery, radars, ground combat weapons, ammunition and C31 solutions. It had developed the world's most advanced data-link for its Air Force, it was in the global forefront of developing a fly-by-wire fighter aircraft" (LUNDMARK, 2019, p. 291). Overproduction was a consequence of post-World War II (ÖLLSON, 2021).

In the 1990s, however, the conjuncture changed dramatically[13]. In 1991, with the dissolution of the Soviet Union, the Cold War ended, causing no more direct threats to European countries and, consequently, a reduction in global investments in defense, as mentioned in the previous section. That is, both Sweden would export less than before, and it would no longer have the reason and financial condition to support a self-sufficient defense industry. In this sense, throughout the decade, privatizations were made to recover from the crisis, aiming at the generation of jobs, mastery of research and freedom of business, deepening the presence of the private sector in various areas, including defense.

In 1995, together with Finland, Sweden joined the European Union (EU), seeking opportunities in this new international scenario. In addition, during this period and in the early 2000s, Sweden chose to, in addition to maintaining the aeronautical industry, direct its efforts to peacekeeping missions in Congo (1999), Afghanistan (2001) and Liberia (2003)16. Thus, in the two decades after the end of the Cold War, there was a reduction of the Swedish forces for National Defense.

In 2008, the Swedish Defense Acquisition Strategy was implemented with the definitions between the Swedish Defense Materiel Administration (FMV) and the Armed Forces on how procurement

13 In the early 1990s, submarine invasions occurred more frequently, but invasions themselves had been occurring since 1960 (WIDÉN, 2021).

processes should be organized, their roles, actors and priorities; the country, respecting its demands, should prioritize acquisitions "off the shelf". That is, products already ready on the market (from other countries) instead of dominating the entire production process, having less costs in the short term.

Finally, in the same year, there was the Russo-Georgian War and the recognition of South Ossetia and Abkhazia as independent republics by the Russian Federation, which ignited the Swedish warning about the threat of this country to the region. Similarly, the Russian invasion of Ukraine in February 2022 reheated the discussion about the importance of the capability of the Swedish Armed Forces, which should influence the review of the new Defense Acquisition Strategy, and, consequently, the Swedish acquisition system.

BRAZIL ACQUISITION

SYSTEMS

According to Article 28 of Law No. 14.133, there are bidding modalities: I – trading floor; II – competition; III – tender; IV – auction; and V – competitive dialogue (Brazil, 2021). However, bidding by competition is the broadest, taking place as follows:

Figure 2 - Bidding (Competition)

Source: Violante, Ottero, 2018, p. 100.

Competition can be waived when there is expertise or exclusive availability of technology by a company, and there may also be a cooperation agreement for joint production or technology transfer (BRUSTOLIN, 2014, p. 40), as it is the Gripen Program, initially presented.

Regarding acquisition in defense, in particular, the Brazilian Armed Forces first identify their need, based on policies and strategies. However, despite the already informed creation of the Ministry of Defense, in 1999, extinguishing the Ministries of the Army, Navy and Aeronautics, the Brazilian defense acquisition system is still decentralized, having a path within each of the institutions.

> The Brazilian Army (EB) is guided by General Instruction EB10-IG - 01.018, published in 2016, which guides the management of the life cycle of military employment systems and materials (SMEM). The Brazilian Navy (MB) is guided by the document EMA-420, published in 2002, which includes standards for material logistics, similar to the life cycle management methodology. The Brazilian Air Force (FAB), finally, is guided by the document DCA 400-6, published in 2007, which establishes guidelines on the life cycle of Aeronautics systems and materials (VIEIRA, 2020, p. 59)

> Defense programs at EB are coordinated by EPEx, subordinate to the Army General Staff. At MB, they are coordinated at a high level by the EMA, and each phase of the process falls under a sectoral steering body (...). The FAB programs, in turn, are in charge of the Aeronautics General Staff (EMAER) and its project sub-chiefs (VIEIRA, 2020, p. 71)

Here, we choose to present in greater depth the case of the Brazilian Navy, because, firstly, in addition to the logistics standards for Material (EMA 420), its acquisition system now has the Science, Technology and Innovation Strategy (Navy), (EMA 415), of 2018. Second, since the beginning of the submarine program (PROSUB)[14] and, more specifically, from the Tamandaré Class Frigates (FCT) Program[15], this system has developed in the institution significantly (CUNHA, 2022)[16]. For the purpose of understanding, a brief historical context is presented below.

In the 1970s, the military had a higher development capacity than the private sector in defense, characterizing the Navy Arsenal in Rio de Janeiro as robust, both quantitatively and qualitatively. The logic was that the Navy should be self-sufficient in production, as it was in the Niterói-Class Frigates and Inhaúma-Class Corvettes. However, in 1990, law 8.112, on the legal Regime of Civil Servants[17] made it impossible to continue hiring this type of server, who, at the time, was the one who held the knowledge, in fact (an interesting comparison is the similarity between the time of useful life of a ship and the career of a naval engineer, for example, maintaining the knowledge management).

14 See: MARINHA do BRASIL, PROSUB, 2023.

15 Available at: https://www.marinha.mil.br/program-class-tamandare. Accessed on: jan. 2023.

16 Special thanks to the Admiral José Augusto Cunha, former Chief of Staff of the Navy-CEMA (at the time, General-Director of the Navy Material - DGMM) for clarifications regarding the evolution of defense acquisitions in the Brazilian Navy. Thanks are extended to the Vice-Admiral Amaury Calheiros, former Industrial Director of the Brazilian Navy-DIM (at the time, Director of Program Management of the Brazilian Navy – DGePM.

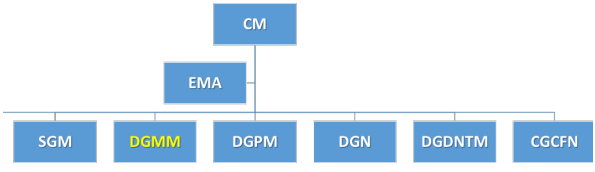
17 Brazil, law nº 8.112 / 1990.

In addition, in 1993, law 8.666, of Norms for Bidding and Government Contracts[18], hindered the acquisition process and, accordingly, complex programs. The Navy, thus, began to assume possible unforeseen events in acquisitions, such as the bankruptcy of shipyards, motivating the beginning of the contracting of Specific Purpose Companies (SPEs) and consortia. It should be remembered, though, the decline in investments in the Brazilian defense industry in the 1990s, the period of redemocratization in the country, with a gradual resumption only in the 2000s. In this sense, from 2008, with PROSUB, and especially from 2020, with the FCT Program, the old logic of total production by the Navy ended.

About the organizational structure and the acquisition system, finally, this is the current dynamic: the General Directorate of the Navy Material (DGMM), a sectoral management body (ODS), is subordinate to the Navy Command (CM), which, according to its regulations, coordinates and controls the activities of this type of body. The Navy's demands and priorities are defined through deliberations of the Admiralty, the Master Plan Council (COPLAN), and the Navy's Financial and Administrative Council (COFAMAR), and are guided by the Navy's Strategic Planning (PEM).

All these collegiums have the participation of the Chief of Staff of the Navy (CEMA) and the Commander of the Navy. The Navy Program Management Directorate (DGePM), then subordinate to the DGMM, centralizes the acquisition process in the institution, translating the opportunity to the market through a Request for Proposal (RFP). Finally, the COFAMAR, chaired by the Commander of the Navy, has the competence to deliberate on the final offers – Best and Final Offers (BAFO), deciding on the winner, currently focusing on the cost of operating and maintaining the acquisitions.

Figure 3 - Organization Chart of the Brazilian Navy

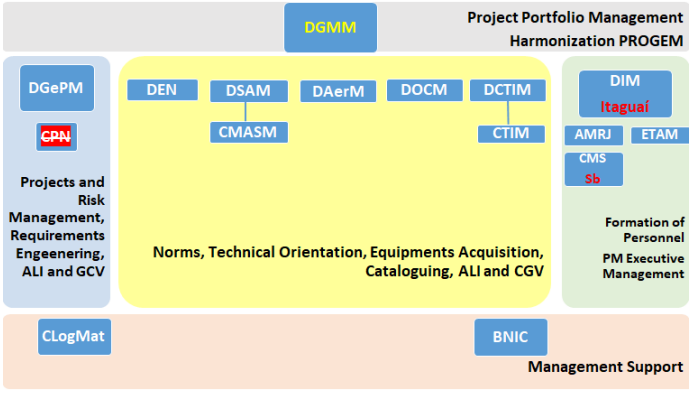


Source: Own elaboration, based on Brazilian Navy, 2022

18 Brazil, law nº 8.666 / 1993.

Considering the following organizational chart, the change is in the fact that, in the Material sector, there was no blue board. The Directorate of Naval Engineering (DEN) used to accumulate functions related to acquisition, but this was not parameterized. As the DEN and the other specialized Directorates (DE) are at the same hierarchical level as the DGePM, there are no conflicts, but they can influence the acquisition processes of the latter.

Figure 4 - Brazilian Navy Material Sector



Source: Own elaboration, based on Brazilian Navy, 2022.

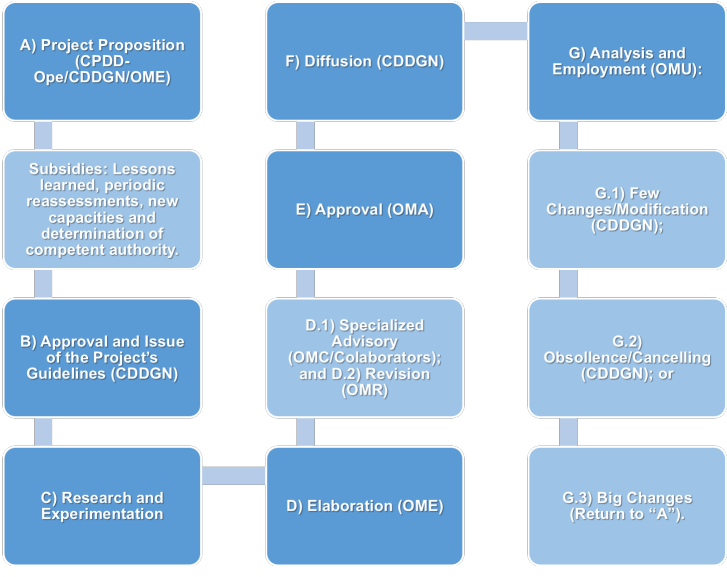
The CPN, however, was extinguished in December 2022 and, since then, the Naval Systems Design Center (CPSN) has been created, which is subordinate to the General-Directorate of Nuclear and Technological Development of the Navy (DGDNTM), being the result of the combination of the structure and professionals of the extinct CPN and the Submarine Development Center (CDSub). In addition, in the Navy acquisition system, it should be registered the existing partnership with the University of São Paulo (USP), where the Navy Technology Center in São Paulo (CTMSP) is located, also subordinate to the DGPNTM. This partnership contributes to the diffusion of the triple-helix model in Brazil, enabling the development and acquisition of defense products.

Finally, a military organization (OM) that has the potential to influence the acquisition system in the Navy is the newly created "Center of Doctrinal Development of Naval Warfare" (CDDGN)[19]

19 The CDDGN was preceded by the Implementation Nucleus (NI–CDDGN), created in September 2022, and became a center in December 2022.

whose importance was observed in a study conducted internally, in the operational sector, besides corroborated by the development of systematic force planning (SISFORÇA), as clarified by the center itself. In the CDDGN, the decentralization in force in the Navy doctrine process was verified, in addition to the fact that most of the production on the subject, used in the institution, was of foreign origin. In this sense, the main objectives of the CDDGN are the revision and unification (see systematic below) of the doctrine, at the operational and tactical levels, of the Naval, Air and Marine Forces of the squadron – the latter, in conjunction with the Center of Doctrinal Development of the Marine Corps (CDDCFN), contributing to the achievement of capabilities that allow the fulfillment of objectives established at the strategic level. With this, if the development of the doctrine today is influenced by what the institution produces and purchases, it is expected that, as revised and developed, the doctrine will influence the productions and purchases, parameterizing them[20].

Figure 5 - Systematic Doctrinal Development of the Operational Sector



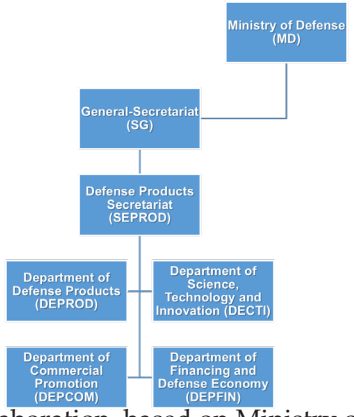
Source: Own elaboration, based on Brazilian Navy, 2023.

20 We would like to thank the clarifications of the Center to the Admiral Gentile, Director of the CDDGN, to the Captain of Sea and War Rodrigo Pace, Deputy-Director, and to the Captain of Sea and War Rodrigo Lázaro, former Head of the Department of Doctrinal Development and current Commander of the 2nd Escort Squadron (ComEsqdE-2).

Resuming the competitive bidding process, for the dialogue between the Defense Industrial Base aiming at public notices, Brazil has the Brazilian Association of Defense and Security Materials Industries (ABIMDE)[21]. When competitors and proposals are analyzed, however, it is up to the Minister of Defense, who, in turn, advises the Presidency of the Republic on the final decision, through instances such as the National Defense Council (CDN)[22], (MOREIRA, 2011, p. 140). The relationship between these actors is, then, a practical example of integration between government and industry representations, lacking the presence of educational and research institutions for the full dynamics of the triple-helix model.

Finally, for companies to be able to provide services and market their products with the MD and the Armed Forces, it is necessary that they comply with the requirements of the bidding law in force. If they are accredited by the Secretariat of Defense Products (SEPROD) yet, they acquire numerous advantages, such as the tax benefit of the special tax Regime for Defense Industry (RETID)[23], as well as access to the Special Bidding Term (TLE). Created in 2010, SEPROD thus represents an attempt to further centralize the Brazilian SAD, and the Secretary has the following divisions:

Figure 6 - MD & SEPROD Organization Chart



Source: Own elaboration, based on Ministry of Defense, 2023

21 In the industrial sector as a whole, for its part, there is also the Brazilian Association for Industrial Development (ABDI), which functions as a bridge between the government and companies.

22 See: OFFICE OF INSTITUTIONAL SECURITY, 2023.

23 See: MINISTRY OF DEFENSE, RETID, 2023.

The Department of Commercial Promotion (DEPCOM), first, acts mainly in search of new opportunities in international markets, working together with the Ministry of Foreign Affairs – MRE (Ministry of Defense, 2023). Commercial promotion considers, however, only those companies and products already accredited in the Defense Products and Companies Registration System – SisCaPED, this being the largest department of SEPROD (CORRÊA, 2023).

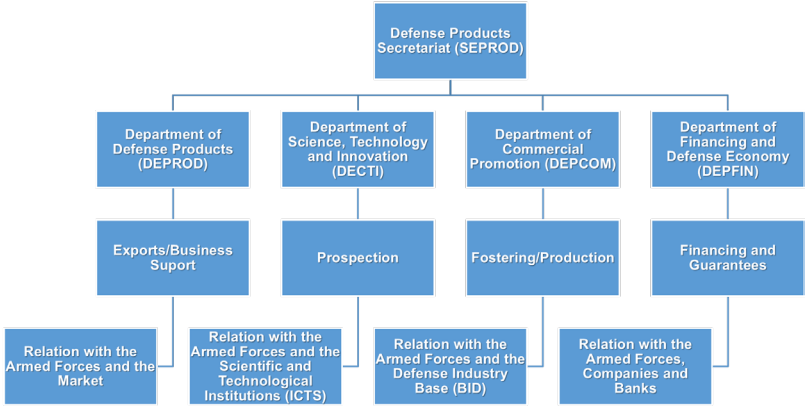
The Department of Science, Technology and Innovation (DECTI), in second place, has two divisions:

1. Sensitive Technology Division - Where international agreements and conventions are verified that may offer curtailment or boycott for industries, having four coordinations: Missile, Chemical, Biological and Nuclear;

2. Division of Basic Industrial Technology (TIB) – Defends the release of resources from the Financier of Studies and Projects (FINEP) for technological orders received by the Armed Forces ("proposal letters"). Nor the division of TIB, nor any other department of SEPROD is holder of projects, then, only supporters, accompanying them. The TIB division has an agreement with the National Institute of Metrology, Quality and Technology (INMETRO) for qualification and research infrastructure and, recently, signed a partnership with FINEP to create a public call for innovation for the BID with the new benefit of exclusive participation. In other words: in defense technologies, in addition to a special bidding term and tax benefits, companies registered in SisCaPED are able to apply for said notice. This same exclusivity occurred with the Brazilian Industrial Research and Innovation Company (EMBRAPII), in 2022, when the National Bank for Economic and Social Development (BNDES) committed R$ 20 million in defense technology projects. Finally, the TIB Division is being dismembered in the "Division of Knowledge Management" and "Division of Projects".[24]

24 We would like to thank Dr. Fernanda Corrêa, Head of the DECTI'S Division of Projects", for the detailed explanation of SEPROD's organizational structure and its functions.

Figure 7 - SEPROD (Divisions)



Source: Own elaboration, based on Ministry of Defense, 2023.

Thirdly, the Department of Defense Products (DEPROD) deals with all the standardization of defense products and strategic defense products (PED), the accreditation of defense enterprises (ED) and strategic defense enterprises (EED)[25], the follow-up of offsets (compensation agreements) and the formulation and updating of the National Defense Industrial Base Policy (PNBID)[26]. It is the department responsible for SisCaPED, managing the accreditation process of companies and the classification of their products (Ministry of Defense, 2023). In the approval and registration of these companies and products, by the way, the decision is made by the Joint Committee of the Defense Industry (CMID)[27]. To this end, the representative of the General Staff of each force in the DEPROD must express himself in favor of a certain PRODE, PED, ED or EED (CORRÊA, 2023), these being chosen in the step of "Best and Final"(BAF) of the acquisition system.

As the last Department of SEPROD listed here, the Department of Finances and Defense Economy (DEPFIN) identifies opportunities for public and private financing and proposes public policies to obtain

25 Highlights for Akaer, Amazul, Ares, Atech, Avibras, CBC, Condor, Consub, Embraer, Emgepron, Ezute Foundation, IMBEL, Nuclep, Saab and Taurus. The full list is available at ABIMDE Strategic defense enterprises, 2023.

26 Chamber of Deputies, decree Nº 11.169/2022.

27 Ministry of Defense, Joint Committee on Defense Industry (CMID), 2014

investment funds, acting with the Chamber of Foreign Trade – CAMEX (Ministry of Defense, 2023). It deals, in this way, with existing credit lines or ones to be created in the defense sector, having relationships with banks, such as BNDES (CORRÊA, 2023).

On the Brazilian Budget Model, finally, the Multiannual Plan of the Union (PPA) establishes guidelines, objectives and goals of the public administration, lasting four years, being prepared by the Executive Power and submitted to the National Congress. The Budget Guidelines Law (LDO), in turn, identifies in the PPA the actions that will receive priority, including the defense sector, and the Annual Budget Law (LOA) makes the planned financial year feasible (GONTIJO, 2023). The 2024-2027 PPA was submitted at the end of 2023 and the defense budget should be in accordance with the National Documents of the sector (National Defense Policy, National Defense Strategy and National Defense White Book), whose guidelines for updating were recently approved (Brazil, 2023). Although Brazil's defense budget is one of the four as mentioned earlier, the average "personnel" expenses of the last 20 years accounted for a total of 79.01% of it. Meanwhile, the average of "costing" (maintenance) stands at 12,55% and "investments" at 8,43%. In addition, only 37% of "personnel" resources are allocated to active military personnel, while 63% are allocated to inactive and pensioners.

Sweden

Sweden has a defense acquisition strategy, in which it is defined how acquisitions processes should be organized, which actors are involved and what are the priorities. The latest version is from 2018, and involves the following actors: Parliament (Riksdagen), Ministry of Defense (Försvarsdepartementet), Armed Forces, Swedish Defense Materiel Administration (Försvarets Materielverk - FMV) and the Swedish Defense Research Agency (Totalförsvarets Forskningsinstitut - FOI)[28]. The main triad, however, is made up of the FMV, Armed Forces and FOI, in this order.

28 Since Sweden is a successful example of the triple-helix model, many universities contribute to the defense sector in the country through their research, with prominent examples being the Royal Institute of Technology (KTH), Chalmers University of Technology, Stockholm University, Lund University, Uppsala University and Linköping University.

Founded in 1968, proving Sweden's long-standing institutional concern with the subject, FMV is responsible for the acquisition, applied research, testing and evaluation of defense technologies. These are funded by companies[29], but require government share – with FMV both receiving part of the investment, and assisting in its distribution for research in the Armed Forces and FOI. The FMV thus works closely with the Swedish Armed Forces, jointly and individually (HULT, 2022)[30], assisting them. Currently, the top management position in the institution is occupied by a military officer, but it used to be a civilian, like most of the employees there.

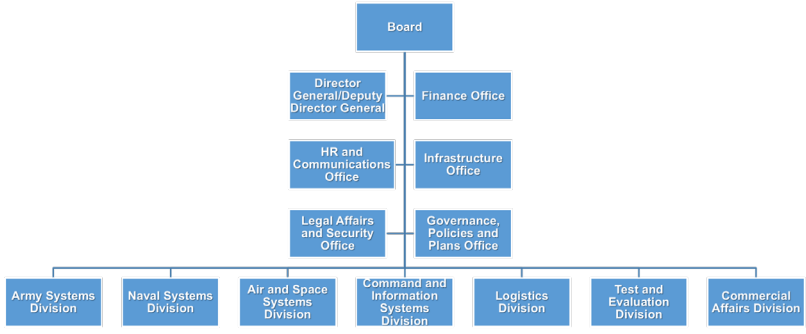
The demands of the FMV come, therefore, from the Armed Forces, which should seek solutions[31]. In 2015, "Essential Strategic Interests" (ESI) were stablished for Sweden's defense sector, these being fighter aircraft, submarine capabilities and critical elements for Command, Control, Communication and Information. On its turn, the War on Ukraine motivated the inclusion of a fourth ESI: ammunition. For FMV, then, the ESI may seem too generalist to directly influence the agency's planning, but, at the same time, they increase the amplitude for the justification of acquisitions (LUNDMARK, 2021).

29 The companies are active in the production, testing, supply, research and innovation in the Swedish Defense Acquisition System, the main one being the Saab Group, with around 70% of the market, followed by BAE Systems Hägglunds, BAE Systems Bofors, Nammo and GKN, respectively (LUNDMARK, 2021).

30 Thanks to Dr. Gunnar Hult, Professor at the Swedish Defense University and former Head of Research at FMV, for the detail in explaining the functioning of the institution.

31 There is no formal relation between the Swedish Innovation Agency (VINNOVA) and the FMV, as the former deals with innovation in the country in a broad sense, but there is communication between them, and there may be, eventually, (co)financing of projects.

Figure 8 - FMV (Organizational Structure)



Source: Own elaboration, based on FMV, 2021.

It is up to the Swedish Armed Forces to formulate capabilities and objectives about the defense technologies to be acquired. In this sense, in the organizational structure of its headquarters (Swedish Armed Forces Headquarters-SAF headquarters/Högkvarteret-HKV), some sectors stand out, namely the Defence sector. This division was created in January 2023, unifying the previous units of Management Team (Ledningstaben): responsible for Strategy Development, and the Production Management (Produktionsledningen), responsible for the acquisition part, direct contact with FMV and equipment testing. Another relevant sector is the Operations Management (Insatsledning), Responsible for international dialogue (NORDENVALL, 2021)[32]. In addition, in each Armed Force, the "Chief Scientist" - position originally from FMV - has a relevant role for the Swedish acquisition system (HULT, 2022). Norway and Finland have a similar one to FMV – although the latter is structurally smaller and more focused on logistics. Thus, having this type of institution for defense can be understood as a Nordic characteristic, prevailing culture in Sweden (OLSSON, 2021), in comparison with European influence.

Completing the main triad of the Swedish defense acquisition

32 Thanks to Edvard Nordenvall, Naval Engineer at the Headquarters of the Swedish Armed Forces, former FMV employee and Marine of the Swedish Navy, for the detail in the explanation of the organizational structure of the referred institution and its functions.

system, the Swedish Defense Research Agency (FOI) carries out defense research, having as main customers[33] the Swedish Armed Forces and the Ministry of Defense. FOI is an institution mostly composed of civilians, assisting the military in a strategic way (Policy Oriented Research-POR), like with the budget directions and the world's current scenario (OLSSON, 2021)[34].

As for the organizational structure, FOI has seven divisions, of which six conduct research in different areas of expertise within defense and security (Chemical, Biological, Radiological and Nuclear Defense/ CBRN, Cyber Defense, Analysis, Technology, Electromagnetic Warfare and Weapons, Protection and Security) and the seventh is a support division (Administration, IT and Communication). The top management consists of a Board of Directors, General and Deputy Director, Director of Planning, Finance, and the Heads of Research Divisions (FOI, 2023).

All the agencies presented are connected with the Ministry of Defense and Parliament, and also have a direct connection. The Swedish Ministry of Defense was established in 1920, demonstrating Sweden's longstanding concern for the institutionality and integration of its defense sector. In the Swedish Ministry of Defense, then, it should be highlighted the Department of Acquisition, Research and Development, and the Department for Military and Operations. Together with the Swedish Parliament, thus, these two are the actors that deal with the financial part of the acquisition system. However, unlike other countries, the Ministries in Sweden are not allowed to interfere in the day– to-day operations of the government agencies - a condition that is overseen by Parliament[35].

Related to the directions to be taken in the Swedish defense sector, the Parliament decides every five years on the budget to be made available. This budget is initially discussed by the Defense Commission, formed not only by members of the Ministry of Defense, but also by analysts from government agencies, politicians and other experts (these ones suggested by FOI), resulting in the "Defense Bill"[36]by the government (LUNDMARK, 2021). For the period considered, for example, which corresponds to 2021 to

33 The use of the term "customer" can be understood as a representation of Swedish pragmatism in business.

34 Thanks to M.ScPer Olsson, Researcher at FOI, for the detailed explanation of the role of the institution and the Swedish Defense Acquisition System.

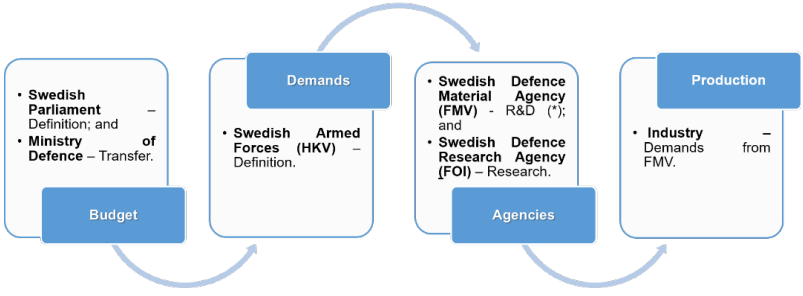
35 FÖRSVARSMAKTEN, Organizational Structure and Responsibilities, 2024.

36 It is equivalent to the "Swedish White Book", but the use of this term is not common in the country.

2025, there was, in 2020, an increase in the defense budget by 45% (SKr 27.5 billion/US$ 2.6 billion), equal to 1.5% of the Swedish GDP, approximately, the highest value since the 1950s[37].

The support for Ukraine in the current war against Russia, however, and Sweden's effort to join NATO, demanded the revision of these values towards an increase. In 2020, for example, for example, Sweden intended to spend SEK 79 billion/US$ 7.9 billion on defence in 2024, but revised it to SEK 119 billion/US$ 11 billion, which already corresponds to 2% of the country's GDP, the NATO standard (Försvarsdepartementet, 2023.

Figure 9 - Key Players in the Swedish Defense Acquisition System



Source: Own elaboration

Finally, despite being subordinate to the Ministry of Justice, a not so long created agency (January 1, 2022) is registered, which contributes to the better functioning of not only the Swedish defense sector, but also other sectors of society: the Psychological Defense Agency (Myndigheten för psykologiskt försvar). Its mission is to coordinate and develop Sweden's Psychological Defense in collaboration with authorities, government agencies, the private sector, and others, identifying, preventing, and combating disinformation in matters of interest to the country. (MPF, 2023). Also, on January 1, 2023, it was created the Swedish Agency for Total

37 This is a consequence of the Russian threat in the region since the annexation of Crimea in 2014, reaffirmed with the invasion of Ukraine, in 2022. At this juncture, Sweden is even more allied with Finland, its other neighboring country, which represents the geopolitics of the "sandwich system" (ROCHA, 2022).

Defense Analysis/Myndigheten för totalförsvarsanalys (MTFA), under the Swedish Ministry of Defense and with the mission to follow, analyze and evaluate total defense activities (MTFA, 2023).

FINAL REMARKS

Since the Gripen Program (2014), Brazil and Sweden, which had been Industrial Partners for decades, have consolidated their partnership in the defense sector, specifically, which highlights issues such as the acquisition system. The focus of this article was thus to present this system in both countries, allowing comparative analysis. For this purpose, the historical formation of the Brazilian and Swedish defense industries was presented, influenced by their position in the Global South and North, respectively. Both processes had their greatest development throughout the twentieth century, reaching prominence, including in exports: Sweden, from the Second World War, in which it remained neutral and decided for a self-sufficient war industry, focusing on aeronautics and high integration between academia, government and companies since that time, forming its military-industrial-academic complex; and Brazil from industrial cycles of the 1930s onwards, but especially after the Second War.

In the 1990s, however, with the end of the Cold War, there was a reduction in investments and consequent defense capabilities at the global level – a framework that gradually reversed with the turn of the century. In addition, in 2008, while Brazil opted for a greater focus on the national industry through the National Defense Strategy (END), Sweden began to prioritize, offers available in the market ("off the shelf") in its defense acquisition strategy.

The Brazilian and Swedish Defense Acquisition systems have been perfected and adjusted to their respective conjunctures, with Brazil creating in 2010, for example, the Secretariat of Defense Products (SEPROD), linked to the Ministry of Defense, and Sweden, establishing, in 2015, "essential security interests", which influence acquisitions, handled by the Swedish Defense Materiel Administration (FMV), existing since the end of the 1960s and the main actor in the country's acquisition system.

In Brazil, the Ministry of Defense is responsible for the budget transfer and monitoring of the Defense Industrial Base (BID), but the Armed Forces are the main decision makers of the acquisition system and, individually, have their own institutional process, as exemplified in

the case of the Navy, due to the evolution perceived since the Submarines Program (PROSUB) and the Tamandaré Class Frigates Program (FCT), mainly. Moreira points out that this decentralization can better meet eventual specifications of defense products and programs (MOREIRA, 2013), but there is potential in the country for a greater deepening of integration between government, industry and academia.

In Sweden, for its part, according to Evert Vedung's Theory of Intervention, the government intervenes in the defense sector through stimuli or discouragements, to the private defense industry, without the detention of the means, necessarily. This dynamic occurs from the Swedish Parliament and the Ministry of Defense, and, added to this, there is the aforementioned and successful implementation of the triple-helix model, which justifies Sweden's position as the second most innovative country in Europe; as well as the independence of government agencies, such as the performance of the Swedish Defense Research Agency (FOI) in the spending in the sector and the Swedish Armed Forces (SAF) themselves.

Finally, despite SAF being relatively small (Sweden has a population of about 10.5 million people, slightly higher than Portugal, but in a territory of 530 thousand km2, slightly smaller than France), the national defense industry is highly developed (OLSSON, 2021). Brazil, on the other hand, remains among the ten largest and most populous countries in the world[38], but has its Defense Industrial Base under development. It defends, therefore, the growing robustness in public policies aimed at the Brazilian acquisition system, strengthening institutions that promote integration both with the Armed Forces and among them (as state institutions), academia and industry, consolidating the triple-helix model in Brazil and, consequently, governance in defense. A robust defense acquisition system favors not only the national growth of the sector and its capabilities, but also the trade with other countries, as foreseen in the relationship between Brazil and Sweden itself.

38 WORLDOMETERS, 2023.

DEFENSE EQUIPMENT ACQUISITION SYSTEMS IN BRAZIL AND SWEDEN: A COMPARATIVE ANALYSIS

ABSTRACT

In this article, the main actors of the Defense Equipment Acquisition systems in Brazil and Sweden are mapped, using a comparative analysis methodology, through literature review, interviews and documentary analysis. To this end, basic concepts such as power, capacity and governance are initially discussed, as well as the theoretical aspects of the acquisition system itself, the triple-helix model and the public policy area. Subsequently, the formation of the defense industries of Brazil and Sweden is contextualized, in order to produce considerations about the current stage of these systems. In the conclusions, it is found that, despite initiatives for greater integration in the Brazilian defense sector, such as the creation of the Ministry of Defense (MD) and the Secretariat of Defense Products (SEPROD), the country's acquisition system is still decentralized. In Sweden, for its part, the defense acquisition system applies to the three forces jointly, relying on other key players in the process.
Keywords: Acquisition System. Brazil. Sweden. Triple -Helix. Public Policies. Defense Industry.

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