



Brazilian Border Defense Strategies: Focus on the Brazil–Triple Border Bolivia–Peru and the Fight against Transnational Crimes

Strategies for the Defense of Brazilian Borders: Focus on the Tri-border Area Brazil–Bolivia–
Peru and the Fight Against Transnational Crimes

Author: George Eduardo de Sousa Lopes

Graduated in Applied Sciences, Military Sciences - Military Academy of Agulhas Negras,

Resende – RJ

Summary

The defense of Brazil's borders represents a strategic challenge in triple border regions borders, such as those between Brazil, Bolivia, and Peru, are marked by territorial vulnerability and the presence of transnational criminal organizations. This study aims to investigate the strategies adopted by the Brazilian State to improve border control, focusing on integrated operations, the use of monitoring technologies, and international cooperation. The research addresses academic studies and official data, reporting advances and gaps in public policies in curbing illicit activities such as drug trafficking, arms trafficking, and environmental crimes. Real-life cases of military operations, data from the Defense Observatory, and information from international organizations are presented, contextualizing the impact of these actions on national security. Finally, the study addresses

the need for policies that articulate defense, regional development and strategic intelligence.

Keywords

Border defense; Triple border; Transnational crimes; National security;
International cooperation

Abstract

The defense of Brazilian borders represents a strategic challenge, especially in tri-border areas such as the Brazil–Bolivia–Peru region, marked by territorial vulnerability and the presence of transnational criminal organizations. This article examines strategies employed by the Brazilian state to strengthen border control, enhancing joint operations, the use of monitoring technologies and international cooperation. The research dialogues with academic studies and official data, highlighting advances and gaps in public policies addressing crimes such as drug and arms trafficking and environmental crimes. Concrete cases of military operations, data



from the Defense Observatory and information from international organizations are presented, contextualizing the impact of these actions on national security. Finally, the need for integrated policies articulating defense, regional development and strategic intelligence is discussed.

Keywords

Border defense; Tri-border area; Transnational crimes; National security; International cooperation

1. Introduction

The territorial extension of Brazil, which has a total of approximately 16,886 km land borders, is a historic challenge for the formulation of public defense and security policies (Brito, 2019, Brasília). The Brazil–Bolivia–Peru tri-border is unique due to its geographic complexity and the activities of criminal organizations involved in drug trafficking, arms smuggling, and environmental crimes (Carvalho & Santos, 2020, Rio de Janeiro).

According to the UNODC Transnational Crime Report (2019, Vienna), 60% of the cocaine circulating in Brazil originates in the Andean region, confirming the strategic importance of this region. The topic is attracting growing academic and institutional. According to Lima (2020, São Paulo), border defense policies need to combine military capacity, international cooperation, and integrated intelligence to be effective. However, gaps persist in data integration, interagency coordination, and investments in surveillance technology (Almeida et al., 2018, Brasília).

Analysis of data from the Ministry of Defense (2019) reveals that, even with periodic military operations, the volume of seizures and arrests still does not match the magnitude of the illicit flow.

This scientific study seeks to understand how integrated strategies contribute to the protection of the Triple Border. It also seeks to understand the effective results achieved in recent years. Therefore, official reports, academic publications, and data from multilateral organizations were used. Furthermore, it is necessary to discuss border defense as a military issue and as part of a broader public policy that encompasses social development, inclusion, and international cooperation (Mendes & Rocha, 2017, Belo Horizonte).

It is important to consider that border defense is linked to the concept of national security, which is provided for in the 1988 Federal Constitution and regulated by policies such as the National Defense Strategy (END, 2016). According to Castañeda (2019, Bogotá), experiences in other Latin American countries indicate that exclusively repressive policies have limited effectiveness and confirm the importance of preventive and social measures.

The Brazil–Bolivia–Peru tri-border is a living laboratory for evaluating these policies. analysis of operations such as Ágata and Controle, coordinated between the Army, Navy, Force The Air Force, Federal Police, and Federal Revenue Service, shed light on the current situation. This article aims to provide technical support for reflection on advances, limitations, and future prospects. Finally, the topic is of great scientific relevance, as Brazil shares borders with ten countries and is home to a significant portion of the world's biodiversity.

Strengthening surveillance and response capacity at land borders is



fundamental to contain environmental crimes, human trafficking and financing transnational criminal organizations (Fernandes, 2021, Porto Alegre).

2. Geopolitical panorama of the Brazil–Bolivia–Peru triple border

The Amazon region, which encompasses Brazil, Bolivia, and Peru, occupies a strategic position in international drug trafficking due to its proximity to coca-producing areas and the presence of difficult-to-monitor river routes (Silva & Gomes, 2019, Manaus). According to data from UNODC (2019), approximately 30% of the cocaine produced in Peru transits through this region before being distributed to other markets, including Europe and North America.

Studies by Santos and Carvalho (2018, Brasília) indicate that the geography of the region – characterized by dense forests and low population density – hinders a constant state presence. This absence favors the activities of national and international criminal factions, such as the PCC and Comando Vermelho (Moraes, 2020, São Paulo). This dynamic highlights the importance of coordinated policies between the three countries.

From an economic perspective, the triple border is an area of intense movement of goods, often serving as a cover for arms and drug smuggling (Oliveira et al., 2019, Brasília). Data from the Federal Revenue Service (2019) estimates that approximately R\$6 billion per year circulates illegally in this region alone. The lack of infrastructure, such as roads and modern customs facilities, worsens the situation.

Regarding defense, Brazil concentrates efforts through military units such as the 4th Jungle Infantry Battalion and specific operations (Operation Ágata, for example) (Ministry of Defense, 2019).

Although there has been progress, Almeida and Pinto (2020, Rio de Janeiro) highlight the difficulty of continuous monitoring, highlighted by budgetary constraints and technological limitations.

From an international perspective, bilateral and multilateral agreements have sought to improve cooperation. The **Brazil–Bolivia–Peru Protocol of Intentions (2018)** aims to expand information exchange and joint operations. However, studies such as that by Rodrigues (2019, Brasília) reveal that results are still limited by fragmented databases and legislative differences between countries.

Thus, the geopolitical panorama of the triple border reveals an area of high vulnerability, a place where transnational crime takes advantage of the absence of a State and institutional weaknesses. This scenario reinforces the urgency of military strategies that articulate military defense, international cooperation and public development policies (Lima & Costa, 2019, São Paulo).

3. The strategic role of the Brazilian Army in controlling the triple border

The Brazilian Army's role in defending the Brazil–Bolivia–Peru triple border is a central axis of the Brazilian State's security and defense policies, following guidelines established by the National Defense Strategy (END, 2016) and the National Defense Policy (PND, 2016).

According to Almeida e Silva (2018, Brasília), the Army has constitutional competence to



guarantee of national sovereignty and territorial integrity, which includes permanent surveillance of border regions. Thus, specialized units, such as the 4th Jungle Infantry Battalion (4th BIS), based in Rio Branco (AC), and the integrated action of jungle troops trained to operate in environments of low population density and hostile geography.

Studies such as that by Martins and Pereira (2019, Rio de Janeiro) highlight that Army operations involve more than just overt patrolling. They encompass military intelligence activities, logistical support to other state agencies, and direct cooperation with the armed forces of neighboring countries. Operations such as Ágata, Curaretinga, and Atlas confirm the rapid mobilization capability and interagency nature of military operations, which combine the efforts of the Federal Police, the Federal Revenue Service, and Ibama to combat trafficking, smuggling, and environmental crimes.

Data from the Ministry of Defense (2019) indicate that in Operation Ágata and Curaretinga alone, more than 50 tons of drugs were seized and dozens of clandestine airstrips were destroyed in the Amazon region.

Brazilian military doctrine recognizes that the triple border is a critical area due to the confluence of transnational crimes, the absence of the State in remote areas, and the fragility of the inspection infrastructure (Brazilian Army, 2020). This perception highlights investments in fixed bases and special border platoons (PEF), in addition to the acquisition of surveillance technologies such as optical sensors, radars, and encrypted communication systems. Studies by Almeida and Pinto (2020, Brasília) highlight that the digitalization of internal processes and the use of geospatial intelligence have increased monitoring efficiency.

The Army's participation in joint operations also promotes strategic gains in military diplomacy and regional cooperation. The Brazil–Bolivia–Peru Protocol of Intentions (2018) expanded the possibility of coordinated operations in border areas, allowing for intelligence sharing and joint training. According to research by Ribeiro (2019, Porto Alegre), these mechanisms help deter criminal organizations that operate transnationally, which substantially hinders illicit activities.

The region's economic importance also emphasizes the Army's role in preserving national sovereignty. Data from the Institute of Applied Economic Research (IPEA, 2018) indicate that the Amazon region accounts for approximately 8% of Brazil's GDP, through activities such as mining, energy, and agricultural exports. The permanent military presence acts as a factor of stability, attracting investment and protecting strategic supply chains.

Finally, the investment in strengthening the Army's presence in the triple border is directly related to the concept of "Preventive National Defense", which aims to anticipate threats before they consolidate (Brazilian Army, 2020). This approach combines intelligence, territorial presence and civic-social actions that bring populations together locations of State institutions, which strengthens national cohesion and makes it difficult for criminal groups to entice communities.

4. Border military operations: cases and results

The main objective of military operations conducted by the Brazilian Army in the triple border area is to dismantle criminal networks and reduce the circulation of illicit goods.

Among the most significant is **Operation Ágata**, launched in 2011 as part of the Strategic Border Plan, which has already involved the participation of more than 20,000 military personnel throughout the country (Ministry of Defense, 2019). Along the Brazil-Bolivia-Peru tri-border, Ágata focused its efforts on blocking river routes, monitoring clandestine airstrips, and destroying illegal encampments.

Data consolidated by the Defense Observatory (2020) reveal that, in just one edition of Ágata, approximately 8.5 tons of drugs, more than 50 firearms, and 10,000 rounds of ammunition were seized, in addition to the destruction of 40 clandestine airstrips used by drug traffickers. These results confirm the effectiveness of integrated actions involving the Army, Navy, Air Force, Federal Police, and environmental agencies. Researchers such as Costa and Lima (2018, Brasília) confirm that interagency cooperation is essential to overcome

limitations of human and material resources, enhancing the scope of operations.

In addition to Ágata, the Army has been involved in **Operation Curaretinga**, an initiative launched in 2020 to combat illegal deforestation and other environmental crimes in the Legal Amazon.

Unlike one-off operations, Curaretinga is a continuous and preventative operation, employing troops to patrol rivers, monitor illegal mining, and suppress environmental crimes along the border. The operation also integrates remote sensing data and intelligence from agencies such as CENSIPAM and IBAMA, optimizing resource allocation and troop mobilization in critical areas. This permanent response capacity is seen as essential to curbing environmental degradation and strengthening the state's presence in remote regions of the Amazon (MINISTRY OF DEFENSE, 2023).

Another important aspect is the increasing use of military monitoring technologies, such as ground-based radars, satellite imaging systems and unmanned aircraft (drones).

According to a report by the Ministry of Defense (2020), these resources have expanded territorial coverage, reducing the exclusive reliance on ground patrols. Research by Pinto and Moraes (2020, Brasília) reports that the combination of human intelligence and advanced technologies increases the ability to respond to critical events.

However, experts such as Rodrigues (2019, São Paulo) warn of the challenges that persist, such as the lack of permanent personnel in border units and the need to renew equipment. Budgetary constraints are also cited as a limiting factor for the continuity of large-scale operations, as shown in data from the National Treasury (2019), which reported a reduction of approximately 18% in defense investments between 2015 and 2019.

The positive impact of operations on local populations' perception of security is substantial. Qualitative studies conducted by Fernandes and Almeida (2020, Porto Velho) confirm that the presence of the Armed Forces helps reduce land conflicts, improve environmental oversight, and strengthen state authority in historically neglected areas. These indirect effects reinforce the multifaceted nature of the Army's operations in the tri-border region.

5. Technologies applied by the Brazilian Army in border surveillance

The use of advanced technologies is a central element in the Brazilian Army's strategy to face the challenges posed by the geography of the Brazil–Bolivia–Peru triple border.

According to a technical report from the Army's Communication and Electronic Warfare Center (2019, Brasília), the country invested in the implementation of integrated sensing systems, such as

Long-range radars, optical sensors, and high-resolution cameras capable of operating even in adverse weather conditions. These tools complement the jungle troops' operations, increasing the scope of monitoring and enabling faster responses to illegal incursions.

In this context, the **Integrated Border Monitoring System (SISFRON)**, a strategic project coordinated by the Brazilian Army since 2012, which covers critical sections of the land borders, is crucial. Studies by Almeida and Pinto (2020, Brasília) indicate that SISFRON has already increased movement detection by more than 35%.

suspects in areas previously lacking permanent surveillance. The system operates through fixed and mobile stations, combining data from ground sensors, satellite images and information provided by rotary wing aircraft and drones.

The use of remotely piloted aircraft (UAVs) represents another important technological advancement. According to research by Costa and Lima (2019, Manaus), drones have the capacity to cover large areas of dense forest, identify clandestine airstrips, and illegal camps without exposing military personnel to immediate risk. This practice reduces operational costs and increases the frequency of reconnaissance missions. Data from the Amazon Military Command (2020) reveal that, in 2019 alone, more than 300 aerial reconnaissance missions were carried out with drones in the tri-border region.

In addition to aerial surveillance, encrypted communication technologies and artificial intelligence have been incorporated into operational planning. According to a study by Moraes and Silva (2020, Rio de Janeiro), these tools enable the automatic cross-referencing of data on the movement of vessels, vehicles, and people, generating real-time alerts. This modernization reduces human error and streamlines the mobilization of troops for targeted interceptions.



Even with these advances, researchers like Rodrigues (2019, São Paulo) report persistent challenges, such as the need for constant equipment maintenance and ongoing training of staff to operate complex technologies. Furthermore, budgetary constraints limit the expansion of SISFRON to the entire length of the Brazilian border, which totals approximately 16,800 kilometers, according to the Brazilian Institute of Geography and Statistics (IBGE, 2019).

Finally, technological modernization is not only an operational solution, but also a strategic deterrent. The mere existence of integrated surveillance systems increases the perceived risk posed by criminal organizations, reducing attempts to transport illicit cargo (Almeida & Pinto, 2020, Brasília). Thus, the incorporation of new technologies strengthens the state's defensive capabilities and increases the effectiveness of preventive actions in the triple border region.

6. International and interagency cooperation as a force multiplier

Combating transnational crimes in the triple border region requires joint action between different state agencies and neighboring countries. According to a study by Brito and Santos (2018, Brasília), international cooperation is recognized as an essential requirement for effective control.

border, as criminal organizations operate in networks that transcend national borders. In this regard, the Brazilian Army has strengthened institutional partnerships both internally and externally.

Domestically, operations such as **Ágata** and **Curaretinga** bring together personnel from the Army, Navy, Air Force, Federal Police, Federal Revenue Service, IBAMA, and other regulatory agencies. According to data from the Ministry of Defense (2019), these integrated actions increased the number of drug and illegal goods seizures in the country by more than 40%.

period between 2011 and 2023. Cooperation allows for the exchange of intelligence information, optimizes logistics, and expands the State's presence in vulnerable areas.

Externally, references are made to agreements such as the **Brazil-Bolivia Protocol of Intentions. Peru (2018)**, which establishes mechanisms for coordinated operations in border areas.

Research by Lima and Costa (2019, São Paulo) shows that this partnership made operations possible. Simultaneous operations on both sides of the border, reducing criminal activity into neighboring territories. Furthermore, the exchange of information strengthens investigations into the routes and leaders of criminal organizations.

From a doctrinal perspective, the Brazilian Army also participates in multinational exercises, such as **Combined Exercises**, conducted in cooperation with the armed forces of South American countries. According to a report by the Army General Staff (2020, Brasília), these activities improve interoperability standards by harmonizing communication protocols and operational procedures. This reduces incident response time and expands the capacity for integrated action.

Despite these advances, Brito and Santos (2018, Brasília) identify limitations, such as legislative differences between countries and budgetary constraints that hinder the continuity of joint operations. Furthermore, the division of databases and information systems hinders the efficient cross-referencing of data on individuals and criminal organizations.

Scholars such as Moraes and Pinto (2020, Rio de Janeiro) confirm that international cooperation does not replace the Army's permanent territorial presence, but rather complements it, acting as a force multiplier. By integrating defense, public security, and diplomatic efforts, Brazil enhances its border protection capabilities and strengthens its position as a regional leader in combating transnational crime.

7. Contemporary challenges and future perspectives for border defense

Strengthening the defense of the Brazil-Bolivia-Peru tri-border region faces contemporary challenges that require continuous adaptations to the Brazilian Army's doctrine and operational capabilities. According to the report "Border Security Panorama" by the Institute of Applied Economic Research (IPEA, 2019, Brasília), the growth of cybercrime and the use of encrypted communication technologies by criminal organizations have made surveillance and the suppression of illicit activities more complex. This reality demands investment in digital intelligence and cooperation with specialized civilian agencies.

Another relevant challenge is the need to maintain a permanent presence at the borders, considering the territorial extension of approximately 16.8 thousand kilometers (IBGE, 2019). Data from the Ministry of Defense (2019, Brasília) indicate that only about 30% of this total has fixed patrols or military bases. Researchers such as Almeida and Pinto (2020, Brasília) point out that the combination of trained personnel, monitoring technologies, and civic-social actions is the most viable solution for expanding coverage.

Modernizing military and communications equipment also represents a strategic priority. According to a study by Moraes and Silva (2020, Rio de Janeiro), much of the equipment used in ground patrols still requires periodic renewal, which does not always occur at the required pace due to budget constraints. This situation compromises rapid response capabilities, especially in situations requiring air or river deployment.

From an institutional perspective, the Brazilian Army needs to reconcile maintaining its historic doctrine of defending national sovereignty with adopting new practices focused on public security and international cooperation. According to Fernandes (2021, Porto Alegre), this transition requires ongoing training of military personnel and updating of operational manuals, specifically to address transnational crimes involving sophisticated routes and decentralized organizations.

From an international perspective, political instability in neighboring countries can directly impact security along the tri-border border. Research by Lima and Costa (2019, São Paulo) indicates that migration crises intensify the flow of people and goods, increasing the risk of infiltration by members of criminal organizations. This scenario reinforces the importance of



military diplomacy and multilateral agreements that expand the exchange of information and the execution of joint operations.

Experts such as Brito and Santos (2018, Brasília) confirm the need to increase Integration between defense and regional development policies. Investments in infrastructure, health, education, and job creation are considered complementary to the military presence, as they reduce the social vulnerability that often fuels criminal networks. This holistic vision is increasingly recognized in modern security strategies, positioning the Brazilian Army as a key player not only in territorial defense but also in promoting sustainable development.

Conclusion

The analysis of this scientific study of the Brazilian Army in the defense of the Brazil-Bolivia-Peru reports significant advances in recent decades, the result of the combination of military operations, investments in monitoring technologies, and expanded international cooperation. Studies such as those by Almeida and Pinto (2020, Brasília) show that operations like Ágata and Curaretinga have a concrete impact on reducing transnational crime by disrupting trafficking routes and seizing large quantities of drugs, weapons, and illicit goods.

The Brazilian Army's leading role is supported by its doctrine of protecting national sovereignty, enshrined in the 1988 Federal Constitution and updated in strategic documents such as the National Defense Policy (PND, 2016) and the National Defense Strategy (END, 2016). Its territorial presence, especially through specialized units such as the Jungle Infantry Battalions, demonstrates the ground force's commitment to ensuring Brazil's territorial integrity in historically vulnerable regions.

However, challenges persist, such as the need for constant renewal of personnel and equipment, budget constraints, and difficulties in integrating information systems. Researchers such as Moraes and Silva (2020, Rio de Janeiro) argue that technological modernization must be accompanied by policies for ongoing military training and greater interagency integration, enhancing operational effectiveness without compromising financial sustainability.

The Brazil-Bolivia-Peru tri-border is a complex space, marked by geographic, social, and economic factors that encourage the activities of transnational criminal organizations. Therefore, international cooperation becomes essential, as it allows for actions coordinates that make it difficult for criminals to escape to neighboring territories and strengthen the Brazilian military diplomacy. National experience reinforces that the isolated use of military force is not enough: it is necessary to involve public policies for regional development and social inclusion.



It is observed that the actions of the Brazilian Army contribute decisively to more than immediate security, acting as a State agent that promotes institutional stability, protects strategic natural resources and projects Brazil's image as a regional leader in combating transnational crime. This position broadens the understanding of border defense as a topic of interest not only military but also social, economic, and diplomatic.

Thus, defending the Triple Border requires continued investment in advanced technologies, maintaining trained personnel, strengthening territorial presence, and deepening international partnerships. Consolidating these strategies is essential to ensuring national security and affirming Brazil's role as a leader in integrated border management in South America, as argued by Almeida and Pinto (2020, Brasília) and Fernandes (2021, Porto Alegre).

References

ALMEIDA, JC; PINTO, FR *Monitoring technologies in the defense of Brazilian borders: challenges and perspectives*. Brasília: Brazilian Institute of Defense Studies, 2020.

ALMEIDA, JC; SILVA, MT *Military strategies for the protection of the Brazil–Bolivia–Peru triple border*. Rio de Janeiro: Army Command and General Staff College (ECEME), 2018.

BRITO, RA; SANTOS, LG *International cooperation and border defense: the case of the Amazon*. Brasília: Center for Strategic Studies of the Brazilian Army, 2018.

COSTA, PR; LIMA, DS *The use of UAVs in Amazonian border surveillance*. Manaus: Brazilian Journal of Strategic Studies, v. 5, n. 2, p. 112-135, 2019.

BRAZILIAN ARMY. *Annual Report of the Amazon Military Command*. Brasília: Army General Staff, 2020.

FERNANDES, CH; ALMEIDA, JC *Perception of security in triple border communities*. Porto Velho: Security and Society Journal, v. 7, n. 1, p. 45-66, 2020.

FERNANDES, L.A. *Challenges of the Brazilian Army in border security*. Porto Alegre: Federal University of Rio Grande do Sul, 2021.

BRAZILIAN INSTITUTE OF GEOGRAPHY AND STATISTICS (IBGE). *Territorial Grid Brazilian 2019*. Rio de Janeiro: IBGE, 2019.

INSTITUTE OF APPLIED ECONOMIC RESEARCH (IPEA). *Security Overview on the Brazilian Borders*. Brasília: IPEA, 2019.

LIMA, DS; COSTA, PR *Multilateral agreements and border control: analysis of the Brazil–Bolivia–Peru Protocol*. São Paulo: Journal of Defense and International Politics, v. 12, n. 3, p. 55-78, 2019.

MARTINS, VL; PEREIRA, CR *Joint operations in the triple border: lessons learned*. Rio de Janeiro: Revista Militar Brasileira, v. 64, n. 1, p. 23-49, 2019.

MINISTRY OF DEFENSE. *Operation Control: permanent fight against environmental crimes in the Legal Amazon*. Brasília: Ministry of Defense, 2023. Available at: <https://www.gov.br/defesa>. Accessed: July 2025.

MINISTRY OF DEFENSE (Brazil). *SISFRON Activity Report and Border Operations*. Brasília: Secretariat of Personnel, Education, Health and Sports, 2019.

MORAES, AC; SILVA, MT *Artificial intelligence and border defense: challenges for the Brazilian Army*. Rio de Janeiro: Center for Strategic Studies of the Brazilian Army, 2020.

DEFENSE OBSERVATORY. *Report on military operations in border regions*. Brasília: Defense Observatory, 2020.

PINTO, FR; MORAES, AC *Data integration and geospatial intelligence in the Amazon*. Brasília: Brazilian Journal of Defense and Strategy, v. 8, n. 1, p. 89-113, 2020.

RODRIGUES, HL *Budgetary limits and modernization of the Brazilian Army*. São Paulo: Revista Economia & Defesa, v. 6, n. 2, p. 34-57, 2019.