



OAS|CICTE

# BIOSECURITY IN THE AMERICAS

A REGIONAL THREAT ASSESSMENT



CASE OF: COLOMBIA



UNIVERSITY OF  
MARYLAND

**START**   
NATIONAL CONSORTIUM FOR THE  
STUDY OF TERRORISM AND RESPONSES TO TERRORISM

**UWT**   
UNCONVENTIONAL WEAPONS AND TECHNOLOGY



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REGIONAL THREAT ASSESSMENT

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## ABOUT THIS REPORT

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The conclusions of this research and the contents of this publication are those of the authors’ presented exclusively for informational purposes and do not represent the official position of the OAS, its General Secretariat, its Member States, CICTE, the EU, the University of Maryland, or START.

## ABOUT CICTE

CICTE is the Inter-American Committee against Terrorism it is the only regional entity of the Organization of the American States whose purpose is to prevent and combat terrorism in the Americas. Its main goal is to prevent and combat terrorism in the Americas.

CICTE promotes cooperation and dialogue among member states to counteract terrorism, in accordance with the principles of the OAS Charter, with the Inter-American Convention against Terrorism, and with full respect for the sovereignty of countries, the rule of law and international law.

## ABOUT UNSCR 1540 IMPLEMENTATION PROGRAM

CICTE’s 1540 Implementation program provides assistance to countries in the Hemisphere that request it, to comply with their obligations under Resolution 1540 (2004) of the United Nations Security Council (UNSC) on the non-proliferation of weapons of mass destruction to non-state agents.

The goals of the program are: Support member states to comply with and enforce Resolution 1540; Promote a regional framework for the implementation of Resolution 1540 (2004) in the Hemisphere; and Strengthen the network of contact points on Resolution 1540 (2004) in the region.

## ABOUT START

The National Consortium for the Study of Terrorism and Responses to Terrorism (START) is a university-based research, education and training center comprised of an international network of scholars committed to the scientific study of terrorism, responses to terrorism and related phenomena. Led by the University of Maryland, START is a Department of Homeland Security Emeritus Center of Excellence that is supported by multiple federal agencies and departments. START uses state-of-the-art theories, methods and data from the social and behavioral sciences to improve understanding of the origins, dynamics and effects of terrorism; the effectiveness and impacts of counterterrorism and CVE; and other matters of global and national security. For more information, visit [www.start.umd.edu](http://www.start.umd.edu) or contact START at [infostart@umd.edu](mailto:infostart@umd.edu).

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# PROLOGUE

As we have seen in recent years, the world is vulnerable to biological threats. In the case of the Americas, the H1N1 epidemic of 2009 and, more recently, the COVID-19 pandemic have demonstrated, as reflected by World Health Organization figures, a disproportionately high number of deaths in the region compared to other parts of the globe. These statistics confirm a pressing need to strengthen the region's prevention, detection and response capabilities.

Fortunately, the level of terrorist threats to biosecurity in Latin America is relatively low; in fact, the region's threats typically take the form of crimes, which are more difficult to predict but easier to prevent. Implementation of internal measures and national biosafety and biosecurity regulations in laboratories and research centers is an essential step to prevent biological accidents (whether intentional or unintentional), to mitigate risks and to prepare adequate responses in the unfortunate event of any accident.

To address these needs, the Inter-American Committee against Terrorism of the Organization of American States (CICTE/OAS) has carried out in recent years a project entitled "Strengthening biosafety and biosecurity in Latin America in line with Resolution 1540", generously funded and supported by the European Union.

Thanks to the collaboration between CICTE/OAS and the National Consortium for the Study of Terrorism and Responses to Terrorism (START) of the University of Maryland, in the context of this project we have already launched two free online courses on biosafety and biosecurity in Spanish for laboratory personnel, scientists and decision makers. Through these courses we intend to contribute to lay the foundations of a biosafety culture, create a Latin American network of expertise and strengthen biosafety and biosecurity standards and measures throughout our continent.

As part of these collaborative efforts, START shares in this publication the findings and results of an excellent investigation of potential biosecurity threats in Colombia. In recent years, Colombia has demonstrated an unwavering commitment to biorisk reduction, demonstrating a marked interest, at all levels of the public and private sector, in consolidating safer environments. Precisely to this end, Colombia has identified its priorities in this area and CICTE/OAS has facilitated its cooperation within the framework of various funded programs. This has included, for example, a peer review exercise with Chile, through which both countries have shared their experiences and practices in this area. Additionally, a sub-regional workshop on biosafety and biosecurity was organized by CICTE/OAS in Bogota in November 2019. Other similar exercises are planned thanks to the support of the country's authorities. Colombia is one of the eight beneficiary countries of the project supported by the European Union and, in that sense, this report seeks to contribute to its efforts to further strengthen its controls and develop safer activities regarding the handling of biological agents.

We hope that this work will prove to be an effective tool so that Colombia, and other countries in the region that are moving in this direction, can continue to consolidate their regulatory and control mechanisms in this area in accordance with established international standards.

I want to thank the experts who have participated in this project, sharing their knowledge and experiences. Undoubtedly, their ideas and proposals allow us to move forward in the right direction. I also would like to thank all the Colombian authorities for their trust, their solid commitment and their ongoing work in pursuit of compliance with their international obligations.

With this publication, CICTE/OAS reiterates to the government of Colombia and to all the countries of the Americas its traditional institutional support for the international disarmament and non-proliferation regime and expresses, once again, its willingness to collaborate in these efforts aimed at ensuring, from multiple perspectives, a greater regional security for all.



**Alison August Treppel**  
Executive Secretary of the Inter-American  
Inter-American Committee against Terrorism

## Introduction

Utilizing funds provided by the European Union (EU), the Organization of American States (OAS), through the Secretariat of the Inter-American Committee against Terrorism (CICTE), and in conjunction with the University of Maryland (UMD), the National Consortium for the Study of Terrorism and Responses to Terrorism (START) has undertaken a two-pronged effort to enhance biosecurity in Central and South American countries. This two-pronged effort comprised a comprehensive biosecurity threat assessment of the Central and South American region and a set of four country-level threat assessments.

This report provides a biosecurity threat assessment of the Republic of Colombia for policy-focused individuals and those responsible for working in or managing the activities of laboratories. For policy makers it is important that they have, at a minimum, a broad understanding of the basic requirements and practices of biosecurity. Although there is no expectation that they will be provided with an in-depth understanding of biosecurity principles, practices, or measures, they should take away a core understanding that can be a sufficient basis for decision-making or interaction with officials from different branches or divisions of government, as well as an awareness of the need to seek clarification or explanation when meeting with others who may have much more detailed responsibilities in these matters.

For laboratory personnel, who as a rule have a need for, and typically receive, much more detail-oriented training in the specific application of biosecurity principles to their day-to-day work, this report is intended to provide a holistic overview that will contextualize and reinforce specific requirements.

For both audiences the report also aims to highlight the existence and nature of various active biosecurity threats and illustrate how these can be mitigated or eliminated through rigorous and diligent application of their training.

In this report “biosecurity” is understood as encapsulating the combination of protocols, policies, procedures, methods, equipment, and measures taken to protect biomaterials from unauthorized access, unintentional loss, theft, or misuse by outside actors or personnel exploiting their access to such materials.

It should be noted and understood that this report is not intended to operate as a needs assessment. Nor does this report represent an assessment of risk at any individual facility. Individual facilities should always conduct their own independent biosecurity risk assessments as part of their overall biosecurity risk mitigation effort.

## What is Biosecurity?

Biosecurity is a term with potentially broad application and definitions that can vary significantly depending on the particular agency, industry or context in which the topic is being discussed. This has the potential to lead to misunderstanding, particularly when laboratory personnel, or those whose primary work is tied to the laboratory/scientific enterprise, interact with other fields that must also practice biosecurity such as food and agriculture research or production. In addition, there is potential for complexities to be introduced by something as simple as differences in the translation of the concept from one language to another.<sup>1</sup> A further complexity is introduced by the unfortunate tendency to use the term “biosecurity” inappropriately to describe two separate, though inter-related, concepts– specifically, biosafety and biosecurity.<sup>2</sup> Failure to adequately differentiate these two concepts can greatly complicate efforts to train and prepare personnel, or set appropriate expectations or priorities.<sup>3</sup> Finally, definitions and understanding of the implications of those definitions, change over time. This chapter of the report discusses the different ways in which the term is used internationally and across different sectors to highlight the existence of differences that may be encountered by officials and practitioners, and which introduce the potential for miscommunication; introduces the basic definition of biosecurity that will be used throughout the overall project; and provides an explanation for the particular definition chosen.

### Biosecurity defined

This section presents the specific definitions of biosecurity and biosafety used in this document and for all subsequent related analyses.

#### *Biosecurity*

This is a term used to encapsulate the combination of protocols, policies, procedures, methods, equipment, and measures taken to protect biomaterials from unauthorized access, unintentional **loss, theft, or misuse** by outside actors or personnel exploiting their access

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<sup>1</sup> Example: Spanish language terms *bioseguridad* and *bioproteccion* may both be translated into English as “biosecurity,” greatly complicating discussions.

<sup>2</sup> Biosafety is a narrower concept than biosecurity, but the two concepts are occasionally conflated. This is discussed in more detail below.

<sup>3</sup> An example of this phenomenon can be seen in an article discussing biosecurity in the context of workplace culture. In this article, the authors conflate “biosafety, laboratory biosecurity, and responsible conduct in the life sciences” and fail to discuss the individual concepts separately. The implication is that there is no significant difference in terms of implementation or practice between them. Perkins, D., Danskin, A., Rowe, E., and Alicia A. Livinski. 2019. “The Culture of Biosafety, Biosecurity, and Responsible Conduct in the Life Sciences: A Comprehensive Literature Review.” *Applied Biosafety*. 24(1). March. <https://www.liebertpub.com/doi/full/10.1177/1535676018778538>

to such materials. Various approaches are adopted to discussions of biosecurity. As nonexclusive examples there are the Three Biosecurity Elements (physical security, personnel reliability, and information security),<sup>4</sup> or the Five Pillars of Biosecurity (inventory process, physical security, a personal reliability program, transport programs, and information security processes).<sup>5</sup> Both of these examples include common elements, which will be discussed in greater detail below. These include, but are not limited to, **physical security** (e.g., physical barriers such as fences for facility-wide security of buildings and equipment, and key code locks on laboratory doors, refrigerators, etc. to where biological material or samples are kept); **information security** measures to prevent unauthorized access to facilities and data (e.g., technologies to protect access to information, etc.), accountability measures to monitor stocks of materials and track consumption or access (e.g., biological sample inventory logs, personnel logs, etc.), and **personnel reliability** (e.g., personnel screening and security training, personnel trustworthiness, etc.).<sup>6</sup>

The fundamental element is prevention of improper access to and security of biological materials.

### ***Biosafety***

This is a term used to encapsulate the combination of codified principles, technologies and practices that ensure safe handling of, and protect laboratory workers, the public, and the environment from **unintended exposure** to the infectious agents and toxins used in the laboratory. Examples, which will be discussed in greater detail below, include good laboratory practices (GLP)<sup>7</sup> and good microbiological practice and procedure (GMPP);<sup>8</sup> proper use and ample supply of personal protective equipment (PPE); mitigation and response measures if accidental release, exposure, laboratory-acquired infection (LAI) occur; and laboratory design, equipment, and maintenance appropriate to a facility's assigned

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<sup>4</sup> U.S. Department of Health and Human Services. 2015. "Biosecurity."

<https://www.phe.gov/s3/BioriskManagement/biosecurity/Pages/default.aspx>

<sup>5</sup> "Biosecurity." Office of Environmental Health and Radiation Safety (EHRS). University of Pennsylvania. <https://ehrs.upenn.edu/health-safety/biosafety/research-compliance/biosecurity>

<sup>6</sup> In addition, biosecurity includes such matters as management practices, transport security, risk assessments, biorisk assessments, threat assessments, response and mitigation plans, and biosecurity training and awareness.

<sup>7</sup> This refers to typical best practices such as wearing closed-toe shoes and not bringing food or drink into the laboratory workspace. The World Health Organization (WHO) expands on this in section 3.1.1 "Best Practice" in WHO's *Laboratory Biosafety Manual*, 4<sup>th</sup> edition. 2020.

<sup>8</sup> GMPP are best practices that go hand-in-hand with good laboratory practices and are meant to keep laboratory personnel safe while handling biological materials and agents, as well as the environment, and can be seen as forming the basis of biosafety practices. See section 3.1 "Good microbiological practice and procedure" in WHO's *Laboratory Biosafety Manual*, 4<sup>th</sup> edition. 2020. p. 27.

biosafety level (BSL). The fundamental element is prevention of unintentional exposure to, or release of, biological materials.

Note that biosafety is not the primary focus of this report, but it will occasionally be mentioned or discussed in the context of discussions of biosecurity.

### **Terminology differences: Biosecurity vs. Biosafety**

Although specialists may be familiar with the nuances of language used by the wide range of global and national organizations interested in or engaging with the field of biosecurity and biosafety, this may not be the case for all potential audiences. An unfortunate truth is that there is some overlap between biosecurity and biosafety that can complicate understanding and variations in definitions or specific language used can complicate understanding. These differences can become more impactful, especially when biosecurity or biosafety are being discussed in the context of specific applications. As an example, for policymakers, in terms of understanding basic principles, the differences in detail between research laboratories working with human and animal pathogens may be less important than understanding common underlying principles and practices. However, it is important to note that the application of biosecurity principles and measures are not exclusively limited to laboratories. Certainly, policymakers need to have an appreciation that use of terminology such as “biosecurity” may extend into fields other than the laboratory without being explicitly defined as doing so. It is important that they be able to recognize this breadth of application even if their responsibilities and concerns are narrower in focus.

### ***International Organizations***

At the international level, definitions of biosecurity and biosafety can differ depending on the mission and focus of the institution or non-governmental organization (NGO). The differences in definition and application can range from subtle shifts in terminology use from how we have defined them above, moderate to significant terminology overlap or fusion that can lead to concept conflation, or stark contrast. The starkest differences are typically seen around the agricultural and veterinary or animal health application of biosecurity and biosafety concepts. The following discussion will highlight key world organizations and institutions’ use of biosecurity and biosafety concepts, to help navigate the similarities and differences.

### World Health Organization (WHO)

The WHO is the leading international institution that produces standards and recommendations of best practices for biosecurity and biosafety for the health sector.<sup>9</sup> Its subsidiary and Regional Office to the Americas, the Pan American Health Organization (PAHO),<sup>10</sup> follows suit. WHO – and by extension PAHO – define and frame the concept of biosecurity as a narrow and complementary subset of “biosafety.” While WHO/PAHO maintains the fundamental distinction between biosecurity and biosafety that we adhere to in this report, the implementation of their standards and guidance can result in the two terms overlapping, potentially subsuming Biosecurity.

The clearest example of this concept overlap is encapsulated in their main publication of standards and best practice guidance, the *Laboratory Biosafety Manual*, now in its 4<sup>th</sup> edition, released in June 2020.<sup>11</sup> This manual, per its title, primarily includes standards for good laboratory practices, containment and biosafety measures, and designations that are core to biosafety specifically. However, their specific inclusion of biosecurity as a separate, important concept, only began with the 3<sup>rd</sup> edition (2004) with the understanding that global events had necessitated a dedicated focus on biosecurity as well as biosafety, and that biosafety was a core foundation for biosecurity.<sup>12</sup> Biosecurity, as they define it, is congruent with how we define the term in this report, yet their definition specifically emphasizes laboratory applications of biosecurity.

### Centers for Disease Control and Prevention

Within the United States, the U.S. Centers for Disease Control and Prevention (CDC) and the National Institutes of Health (NIH) play a central role in public health response and research and maintain a mirror biosafety and biosecurity advisory manual to the WHO’s *Laboratory Biosafety Manual*. This joint CDC/NIH publication is the “*Biosafety in Microbiological and Biomedical Laboratories*” (BMBL), currently in its 6<sup>th</sup> edition (2020). The BMBL categorizes biosecurity in line with the definition employed in this report and also recognizes that although biosafety and biosecurity are inter-related, complementary concepts, they

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<sup>9</sup> “Health” in this context is meaning animal and human health, particularly as it relates to communicable and non-communicable diseases. It is not serving as a comprehensive definition of all aspects of health that are also of importance to the international community (such as poverty, food insecurity, etc.).

<sup>10</sup> PAHO serves both as the WHO’s Regional Office of the Americas, as well as their health agency to the Inter-Americas System. See: Pan American Health Organization (PAHO). “Who We Are.” <https://www.paho.org/en/who-we-are>.

<sup>11</sup> *Laboratory Biosafety Manual*. (4th ed.). 2020. WHO. <https://www.who.int/publications/i/item/9789240011311>

<sup>12</sup> *Laboratory Biosafety Manual*. (3rd ed.). 2004. WHO, pg. 47.

nevertheless remain distinct. It also reiterates that a key component or foundation of biosecurity is to have robust and rigorous biosafety measures and protocols in place.<sup>13</sup>

In their efforts the CDC/NIH, via the BMBL, also briefly highlight terminology differences between different fields such as agriculture and veterinary practice, where biosecurity focuses on the impacts on and risks to animal populations, food supply, and environment.<sup>14</sup>

### European Union

The European Union (EU) employs a wide range of use for the terms biosecurity and biosafety, through their extensive interlocking network of national and regional legislation and associated regulations enacted since the late 1980s. Much of the EU's application of the term biosecurity focuses on international norms and treaties such as the Biological and Toxin Weapons Convention (BWC). Consequently "biosecurity" is mostly used in regulations and legislation intended for the control of imports, exports, customs, transnational shipment (to include mandating and defining secure packaging and transport), interdicting illicit use of pathogenic materials, and finally addressing worker protection.<sup>15</sup> The various translations of the term "Biosecurity" are of course also used in the context of regulation of laboratories and the various other institutions or industries that regularly work with microorganisms. In a much starker contrast, the EU also employs "biosecurity" to address plant and animal health, particularly around reducing the risk of unintentional introduction of invasive species or infectious diseases.<sup>16</sup> While an issue of critical importance in its own right, this use of "biosecurity" is quite expansive and has the potential to confuse those readers or listeners unfamiliar with the particular context of a discussion by conflating this issue with the narrower definitions that are the focus of this report. "Biosafety" is also expanded and conflated as well, additionally referring to food safety.<sup>17</sup> Due to the EU's extensive and interconnected regulation and legislation networks and the importance that trade plays, it is unsurprising that the focus on biosecurity would be conflated to include

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<sup>13</sup> The BMBL adds that "laboratories with good biosafety programs already fulfill many of the basic requirements needed to secure biological materials." See. 2020. BMBL, 6<sup>th</sup> edition. p. 119. Measures, protocols, etc. specific to biosecurity as we have defined are indeed needed (physical security, information security, personnel reliability), but as noted, good biosafety programs will set a good foundation.

<sup>14</sup> *Biosafety in Microbiological and Biomedical Laboratories*. (6<sup>th</sup> ed.). 2020. CDC/NIH, p. 119.

<sup>15</sup> Although not an exhaustive list, these export-control-related regulations and legislation can be found in Table 1 and 2 of Bielecka and Mohammadi's "State-of-the-Art in Biosafety and Biosecurity in European Countries" article, where Table 2 focuses more on international norms and guidance that the EU follows and implements, including regulation from INTERPOL. See: Bielecka, Anna and Ali Akbar Mohammadi. 2014. "State-of-the-Art in biosafety and biosecurity in European countries." *Archivum Immunologiae et Therapiae Experimentalis* (Warsz) 62: 171-174. DOI: 10.1007/s00005-014-0290-1.

<sup>16</sup> See: European Commission. "Plant health and biosecurity." [https://ec.europa.eu/food/plants/plant-health-and-biosecurity\\_en#international-cooperation](https://ec.europa.eu/food/plants/plant-health-and-biosecurity_en#international-cooperation).

<sup>17</sup> See: European Commission. "Biological safety." [https://ec.europa.eu/food/safety/biological-safety\\_en](https://ec.europa.eu/food/safety/biological-safety_en)

these areas. To further complicate the matter, they do incorporate WHO definition and guidance on biosecurity and biosafety as described here into subsequent EU regulations and legislation.

### World Organization for Animal Health

The World Organization for Animal Health (WOAH, founded as OIE) presents two prevailing approaches to how they define biosecurity and biosafety. The first is congruent to how we have defined and identified specific distinction between biosecurity and biosafety within this report. The second, particularly as it applied to their international guidance on animal health, significantly blends the two concepts of biosecurity and biosafety together under the umbrella of “biosecurity” but defined as management to prevent exposure of animals and the environment to harmful biological materials (or pathogens) and vice versa.<sup>18</sup>

### ***Industry differences?***

Internationally, the view of day-to-day lab work, like public health monitoring, is that it represents a low risk; thus, most of this work will only need to meet standard good laboratory safety practices (GP), and not fall within the need of high levels of risk assessment and mitigation that other work – such as research that requires the use of biological material with higher biosafety level designation – would necessitate.<sup>19</sup> In this context, biosecurity refers to the securing of biological materials from loss of control due to theft or unauthorized and/or accidental release of biological materials.

Agricultural sectors and industries tend to define biosecurity as protecting animal populations, colonies, or livestock of contamination by namely disease-causing microorganisms (pathogens), or from contamination in general.<sup>20</sup> This focus leads to such implementation as feed and water security measures, animal quarantine and isolation measures and veterinary treatments when sick, preventative vaccinations, etc.

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<sup>18</sup> The World Organisation for Animal Health (WOAH, founded as OIE) definition maps with the definition of “biosafety” as described in this report, rather than aligning with the definition of “biosecurity” herein. This also highlights the potential conflation problem as noted previously in the report, as well as highlighting a key difference in application of the definition of “biosecurity” across different industries (this case being animal health versus medical or human health). The WOAH’s definition of “biosecurity” described here can be found in their *Terrestrial Animal Health Code*, “Glossary” section: <https://www.woah.org/en/what-we-do/standards/codes-and-manuals/terrestrial-code-online-access/?id=169&L=1&htmlfile=glossaire.htm>.

<sup>19</sup> In comparison to lab work, or research whose design or subject biological material poses a significant risk (i.e. Biosafety Level (BSL) designation). The World Health Organization (WHO)’s *Laboratory Biosafety Manual, 3<sup>rd</sup> Edition* presents this comparison; see figure 2.2 of that manual.

<sup>20</sup> CDC/NIH. *Biosafety in Microbiological and Biomedical Laboratories*. 6<sup>th</sup> edition. June 2020. P. 119

These differences in the use and understanding of the concept biosecurity is crucial as countries develop and implement biosecurity legislations intended to address issues such as bioterrorism and biocrime.

### *Language differences*

Language translation of words and terms plays a critical role in the understanding and conceptualization of any topic and is critical to be aware of when discussing and advancing biosafety and biosecurity globally. The nuance of languages, and the cultures behind those nuances, are powerful and important, and in cases, there just are not ways to map one-to-one- word translation between languages to match those nuances. Examples of where this phenomenon plays a central role in conceptualization of biosecurity and biosafety can be found in Argentina's Asociación Argentina de Microbiología (AAM) or Argentina Association of Microbiology and the Organization of American States (OAS) publications.

The terms "*bioseguridad*" and "*bioprotección*" are Spanish-language terms used by both institutions to denote "biosafety" and "biosecurity," in that order. However, "*bioseguridad*" has been a widely used Spanish-language term to mean both biosafety and biosecurity. Another Spanish-language term used to mean biosecurity is "*biocustodia*," introduced by the Spanish government in 2008.

### **Risk, Threat, and Vulnerability**

Throughout this report, reference will be made to the terms risk, threat, and vulnerability. At times these terms will be used in a more specific way as biorisk and biothreat.

**Threat:** A natural or man-made occurrence, individual, entity, or action that has or indicates the potential to harm life, information, operations, the environment and/or property. When applied to facilities or processes, threats are frequently, and erroneously, understood as having an external origination. In truth, threats can be both external and internal in nature with the latter often described as an "insider threat." Threats may also include protected items themselves, depending on their intrinsic qualities. Threats, whatever their nature, exploit vulnerabilities to cause harm.

**Vulnerability:** A physical feature or operational attribute that renders an entity open to exploitation or susceptible to a given hazard. As such, a vulnerability represents a potential source of harm, failure or loss. In the absence of threats, vulnerabilities remain but have no current effect. They are nascent.

**Risk:** The potential for an unwanted outcome resulting from an incident, event, or occurrence, as determined by its likelihood and the associated consequences. As such, risk is a product of the dynamic interaction of threats, vulnerabilities, and consequences. Determination of the level of risk associated with a given facility or activity does not require that threats be active – they may simply be potential – or that vulnerabilities are being actively exploited.

Application of the concepts of threat, vulnerability, and risk to the biosecurity field remain under-developed.<sup>21</sup> Discussion is complicated by the use of terms such as biothreat or biorisk, which are not consistently defined or applied in literature or regulations, nationally or globally. In addition, usage of these terms frequently does not fully align with common understanding of the usage of concepts such as threat, vulnerability, and risk as detailed above.

**Biorisk:** This concept is widely used but not consistently defined, even in WHO usage. There are several basic definitions of “biorisk” in use. A 2006 definition refers to “[t]he probability or chance that a particular adverse event [...], possibly leading to harm, will occur.”<sup>22</sup> A 2022 definition describes “biorisk” as “[t]he risk that a biological event [...] will adversely affect the health of humans, nonhuman animals and the environment.”<sup>23</sup>

As a first observation, it is clear that these two definitions are measuring different phenomena. The first is concerned with the probability of an “adverse event” occurring. The second is concerned with the probability of an adverse event causing harm.

It should be noted that the concept of “biorisk” requires that multiple assessments (threat, vulnerability, and risk) have been undertaken as a first step to determining the actual level of biorisk.<sup>24</sup> Vulnerabilities and threats will have been clearly identified as part of the process of assessing a level of biorisk for a facility. This document will minimize use of the term biorisk, limiting it to circumstances in which it is clearly intended to describe the final product of an assessment process to determine risk in line with the 2022 WHO usage.

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<sup>21</sup> Burnette, Ryan N. and Chuck Tobin. 2021. *The Biothreat Assessment as a Foundation for Biosecurity*. In . *Applied Biosecurity: Global Health, Biodefense and Developing Technologies*, edited by Ryan N. Burnette, 13-35. Switzerland: Springer.

<sup>22</sup> “Biorisk Management: Laboratory biosecurity guidance.” WHO/CDS/EPR/2006.6. World Health Organization. 2006. p. iii.

<sup>23</sup> “Towards a global guidance framework for the responsible use of life sciences: summary report of consultations on the principles, gaps and challenges of biorisk management.” WHO/SCI/RFH /2022.01World Health Organization. 2022. <https://apps.who.int/iris/bitstream/handle/10665/354600/WHO-SCI-RFH-2022.01-eng.pdf>

<sup>24</sup> Assessments are discussed in more detail below.

**Biosecurity Threat:** The term biosecurity threat is used to discuss potential deliberate acts that could exploit biosecurity or biosafety gaps and/or failures. An example might be the theft of active biological materials from a vaccine production facility with the intent of using those materials to mount a bioterrorist attack.

In the context of this report, it should be noted that discussions of threat or risk are not focused on the intrinsic qualities of specific pathogens and their capacity to cause harm if deliberately or accidentally released. Although this is an important aspect of understanding the level of risk posed by any given facility, this element is most appropriately addressed as one component of the overall risk, or biorisk, assessment process discussed below.

### **Risk and Threat Assessment**

Although WHO and other international bodies have developed concepts such as biorisk assessments, the focus of these assessments is heavily influenced by the needs and requirements of biosafety. Most significantly, the emphasis is on determining the potential for harm inherent to a particular biological agent, after which the potential for release of that agent in the course of storage, transportation or handling is assessed, and appropriate mitigation strategies identified, mandated, and implemented.<sup>25</sup> At no point does the WHO biosafety manual mandate or encourage consideration of external threats or assessment of that might be exploited by external (for example, terrorists) and internal (for example, malicious insiders) threat actors. A key feature is the definition of hazard “as biological agents which have the potential to cause adverse effects to personnel and/or humans, animals, and the wider community and environment.”<sup>26</sup> Although this approach is appropriate to efforts to prevent the unintentional release of a bioagent, the core focus of biosafety, it is fundamentally inadequate for assessments of vulnerabilities or risks associated with biosecurity threats.

**Biorisk assessment:** This is a well-developed field of practice and is widely applied for the purposes of laboratory biosafety management. Regular biorisk assessments are an important element of overall laboratory management and contribute to effective biosecurity.

**Biothreat Assessment:** This is a developing field that seeks to address gaps in traditional biorisk assessment practices by combining traditional approaches of agent-focused biosafety or biosecurity risk assessment with a process focusing on threats directed at

<sup>25</sup> *Laboratory Biosafety Manual*. (4th ed.). 2020. WHO. “Risk Assessment.” <https://www.who.int/publications/i/item/9789240011311>

<sup>26</sup> WHO. 2020. *Laboratory Biosafety Manual*. 4<sup>th</sup> edition. p. x. Presented in their Manual’s “Glossary of Terms” section.

facilities in order to arrive at a holistic determination of overall risk. This approach is discussed in more detail in the *What Does Biosecurity Entail?* section of this report.

## Methodology

This study was divided into two phases: data collection and country risk analysis. Collected data was analyzed by the research team to produce an overall risk assessment for the country based on infrastructure and environmental factors at the country level and the country's capabilities. The following sections describe in more detail the methodologies utilized for each phase of the study.

### Data Collection

Data used in this country report were collected between June 30, 2021, and June 30, 2022. During this period, START collected data on each country for the date range of January 1, 2015, until June 30, 2022. The readers of this report, therefore, should consider the information and assessment "as of date" of this country report to be June 30, 2022.

The first step in data collection consisted of extensive open-source research that included querying electronic databases and using a variety of online search tools. Sources identified included academic articles, government and international agency reports, news stories, and industry publications and websites. Throughout the research and assessment effort the research team made a point of utilizing a mix of Spanish and English-language source materials. This stage of the data collection also entailed use of geographic information systems (GIS) and satellite imagery analysis. During this stage, researchers used multiple sources to corroborate the information, where possible.

As a rule, data collection emphasized contemporary materials or records addressing activities or events over the preceding 10 years (2012-2022). However, where necessary, for instance assessment of terrorist capabilities or identification of national biological warfare activities, data was gathered for longer periods reaching back as far as the 1990s.

### Threat Assessment Process

The threat assessment process employed for the generation of the country reports was purely qualitative in nature due to the fact that no relevant events of a biosecurity nature, such as biological warfare, biological weapons, or biological terrorism are known to have occurred in Colombia.

Accordingly, an approach was adopted whereby data was gathered on facilities or activities within Colombia with relevance to biosecurity as potential targets of biosecurity threats or present potential biosecurity vulnerabilities. It should be noted that this assessment does not address specific risk for individual facilities in Colombia.

In addition, we assessed factors such as internal conflict, external threat actors (state and non-state), particularly considering any indication of past or present engagement in activities that might indicate potential for interest in biological threat activities within Colombia's borders. Furthermore, we also examined factors such as organized and general criminal activity.

Additionally, we evaluated Colombia's legislative frameworks, biological incident response capabilities, and plans for introduction of new facilities – whether through government or commercial investment – in the context of current or potential threats.

Finally, we generated an overall country assessment for Colombia by taking all of the factors mentioned above into consideration.

## Country Overview

### Sociocultural Environment

#### *Geography and Demographics*

Colombia is located in northwestern South America and is the first country after crossing from Central America through Panama. Colombia is a uniquely situated country, with maritime borders from both the Atlantic and Pacific Oceans and Caribbean Sea, and five countries: Panama to its west, Venezuela and Brazil to its east, and Ecuador and Peru to its south. Colombia possesses a breadth of geographical terrain features, including high mountain peaks, lowlands, and plains, along with tropical climate, an ideal environment for crop and agriculture sectors. As such, 37.5 percent of Colombia's lands are utilized for agricultural crop cultivation, wherein 35 percent of that is permanent pasture. Colombia is also covered in vast forests, accounting for over 50 percent of the land. Colombia is also rich in natural resources including gold, which is often mined illegally, as well as petroleum, iron ore and copper.<sup>27</sup>

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<sup>27</sup> 2022. CIA World Fact Book. "Colombia." <https://www.cia.gov/the-world-factbook/countries/colombia/>.

The population of Colombia at the time of their 2018 census was 44,164,417 people.<sup>28</sup> As of 2022, their population is estimated to be 49,059,221 people, with a majority residing in the northern and western parts of the country where much of the agricultural lands, and subsequent agricultural economic and employment opportunities, exist.<sup>29</sup> Colombia's people are diverse, including their language. A majority of Colombian's population—87.6 percent—are Mestizo and White, with Afro-Colombian (includes Mulatto, Raizal, and Palenquero) accounting for 6.8 percent, Amerindian accounting for 4.3 percent, and the remaining 1.4 percent is unspecified (2018 est.). Although Spanish is the overwhelmingly predominant and official language in Colombia, there are also 65 Amerindian dialects that are reported to be spoken in the country.<sup>30</sup> Colombia also continues to face a significant refugee and migrant population influx since 2015, particularly from Venezuela.<sup>31</sup>

### *Religion*

The overwhelming amount of Colombia's population that identify with a religion identify as Christian, accounting for 92.3 percent of the population. Of this, Roman Catholicism is the predominant sect. The remaining 7.7 percent is unspecified, per 2022 estimates.<sup>32</sup> Smaller religious enclaves exist, such as 60,000 Baha'i, 5,500 Jews (who mostly reside in the Bogotá, the capital, and are part of the Confederation of Jewish Communities in Colombia (CJCC)), 9,000 Buddhists and around 85,000 Muslims.

Colombia's government and constitution uphold religious freedoms and ban discrimination based on religious affiliation. Through a series of legal initiatives, the Colombian legislature and government have supported and expanded legal rights including right to refusal of blood

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<sup>28</sup> This number was retrieved from Colombia's National Administrative Department of Statistics (DANE, for Spanish acronym) 2018 census database downloadable CSV/Excel file, "PERSONAS (Demográfico)", table "1PD", variables <TOTAL NACIONAL>, <TOTAL>. See: National Administrative Department of Statistics (DANE). 2018. "Censo Nacional de Población y Vivienda - CNPV 2018."

[http://systema59.dane.gov.co/redcol/CNPV2018/PERSONAS\\_DEMOGRAFICO\\_Cuadros%20CNPV\\_2018.XLSX](http://systema59.dane.gov.co/redcol/CNPV2018/PERSONAS_DEMOGRAFICO_Cuadros%20CNPV_2018.XLSX). Retrieved from DANE's main census website for General Tables of census data:

<http://systema59.dane.gov.co/bincol/RpWebEngine.exe/Portal?BASE=CNPVBASE4V2&lang=esp>.

<sup>29</sup> The agricultural industries and sectors in Colombia have maintained the second highest employment rates of sectors and industries at least since 2015. Comparison and historical data (2015-2020) is provided in the National Administrative Department of Statistics (DANE) interactive database, "VISUALIZADOR DE DATOS POBLACIÓN OCUPADA POR ACTIVIDAD ECONÓMICA," sub-table titled "Población ocupada por ramas de actividad económica," variable "Year (Año)" selected for each year 2015-2020. See: National Administrative Department of Statistics (DANE). 2021. "Visualizador de Datos: Población Ocupada por Actividad Económica." [https://sitios.dane.gov.co/poblacion\\_ocupada/](https://sitios.dane.gov.co/poblacion_ocupada/).

<sup>30</sup> 2022. CIA World Fact Book. "Colombia." <https://www.cia.gov/the-world-factbook/countries/colombia/#people-and-society>.

<sup>31</sup> 2022. CIA World Fact Book. "Colombia." <https://www.cia.gov/the-world-factbook/countries/colombia/#people-and-society>.

<sup>32</sup> 2022. CIA World Fact Book. "Colombia." <https://www.cia.gov/the-world-factbook/countries/colombia/>.

transfusions and ethical euthanasia for terminal illnesses to religious groups; however, there have been friction points in the last five years with high profile legal cases addressing these rights. There is less ground for religious exemptions from military service, although these exemptions have been the focus of recent advocacy group efforts.<sup>33</sup>

## Socioeconomic Environment

### *Economic Conditions*

Colombia's economy is currently recovering well from the economic impact of the 2020-2022 SARS-CoV-2 (COVID-19) pandemic. Colombia's economy recovered strongly from the COVID-19 economic shocks, growing by 10.7 percent in 2021<sup>34</sup> and 7.6 percent in 2022.<sup>35</sup> Despite these gains, Colombia still has large economic deficits and is vulnerable to global market shifts, particularly in the oil industry and market. When per barrel price of oil declined in 2017, Colombia's economy underwent a 2 percent contraction. This loss represents the second largest economic deficit for Colombia in the past ten years, second only after the recent 17 percent decline from the COVID-19 pandemic. Although poverty rates are declining, pre-pandemic poverty levels in Colombia are holding at 35.7 percent, with an estimate of an additional 2 to 3 million below the poverty line since 2020. Emergency government transfers mitigated some of this decline, but the resulting inflation coupled with lack of employment during the pandemic has significantly decreased household income.<sup>36</sup> Unemployment rates have also slowly eased, currently recorded at 11.4 percent.<sup>37</sup>

<sup>33</sup> United States Department of State, Office of International Religious Freedom. 2021. "International Religious Freedom Report: Colombia." <https://www.state.gov/report/custom/a4d5ae78c8-3/>.

<sup>34</sup> World Bank. 2022. "The World Bank in Colombia."

<https://www.worldbank.org/en/country/colombia/overview>. Also see: National Administrative Department of Statistics (DANE). 2020. "Boletín 1-4: Informe Sobre Cifras de Empleo y Brechas de Género: Cambios en el empleo en actividades de cuidado remunerado a raíz del COVID-19." October.

<https://www.dane.gov.co/files/investigaciones/boletines/ech/Informe-sobre-cifras-de-empleo-y-brechas-de-genero-10-2020.pdf>.

<sup>35</sup> Bocanegra, Nelson. 2023. Colombia economy grew 7.9% in 2022, ahead of reduced growth this year. *Reuters*. February 9. <https://www.reuters.com/world/americas/colombia-economy-grew-79-2022-ahead-reduced-growth-this-year-2023-02-09/>

<sup>36</sup> World Bank. 2021. "Poverty and Equity Brief, Latin American and the Caribbean: Colombia." April. [https://databankfiles.worldbank.org/data/download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/AM2020/Global\\_POVEQ\\_COL.pdf](https://databankfiles.worldbank.org/data/download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/AM2020/Global_POVEQ_COL.pdf). Also see: National Administrative Department of Statistics (DANE). 2022. "Pobreza Monetaria y Pobreza Monetaria Extrema."

<https://www.dane.gov.co/index.php/estadisticas-por-tema/pobreza-y-condiciones-de-vida/pobreza-monetaria>.

<sup>37</sup> National Administrative Department of Statistics (DANE). 2023. "Mercado Laboral: Empleo y Desempleo." <https://www.dane.gov.co/index.php/estadisticas-por-tema/mercado-laboral/empleo-y-desempleo>. Also see: Gobierno de Colombia, Ministerio del Trabajo. 2023. "Fuente de Información Laboral de Colombia (FILCO)." <https://filco.mintrabajo.gov.co/>.

### ***Industry, Trade, Commercial Flows***

Colombia's economy is primarily export and import based, with petroleum and natural minerals such as gold mining as its primary exports. A significant portion of these exports are sent to the United States, who accounts for 30 percent of Colombia's export partnerships, with China in second at 11 percent, and regionally, Panama and Ecuador at 6 and 5 percent, respectively. Although a major export, refined petroleum is also a major import for Colombia, making their economy vulnerable to market supply and price variability, as described above in the section "Economic Conditions," discussing the 2017 petroleum price per barrel decline.

Colombia continues to diversify its economic partnership as exemplified by the 2022 adoption of a memorandum of understanding with the UAE to facilitate energy-sector collaboration.<sup>38</sup>

### ***Infrastructure***

Of the transportation infrastructure throughout Colombia, roadways are the least developed, and are at the center of recent and current infrastructure funding and projects. Colombia possesses three main highways that run north-south along with an extensive network of secondary roads, together spanning 205,397 km, with only 70 percent adequately paved for safe travel, as of 2015.<sup>39</sup> Consequently, cargo shipments—although mostly transported via roadways—face higher transportation costs and duties to transit the country, including via waterways, to avoid unpaved roads.<sup>40</sup> The former Duque administration invested \$3.1 billion USD in maintenance, building, and connectivity projects for Colombia's roadways, including in indigenous communities.<sup>41</sup>

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<sup>38</sup> This MOU is between the Abu Dhabi (UAE) Department of Energy and Colombia's Ministry of Mines and Energy. United Arab Emirates (UAE), Department of Energy. 2022. "Abu Dhabi Department of Energy Explores Opportunities for Collaboration with Colombia's Ministry of Mines and Energy in New 5-year Agreement." July 5. <https://www.mediaoffice.abudhabi/en/energy/abu-dhabi-department-of-energy-explores-opportunities-for-collaboration-with-colombias-ministry-of-mines-and-energy-in-new-5year-agreement/>.

<sup>39</sup> World Data. "Transport and Infrastructure in Colombia." <https://www.worlddata.info/america/colombia/transport.php>. Also see: International Trade Administration (ITA). "Colombia – Country Commercial Guide: Infrastructure." <https://www.trade.gov/country-commercial-guides/colombia-infrastructure>.

<sup>40</sup> Departamento Nacional de Planeación. "Infrastructure and Logistics Policies in Colombia." [https://www.dnp.gov.co/DNPN/mision-internacionalizacion/Documents/English\\_Politics\\_Notes/Infrastructure\\_and\\_Logistics.pdf](https://www.dnp.gov.co/DNPN/mision-internacionalizacion/Documents/English_Politics_Notes/Infrastructure_and_Logistics.pdf).

<sup>41</sup> International Trade Administration (ITA). "Colombia – Country Commercial Guide: Infrastructure." <https://www.trade.gov/country-commercial-guides/colombia-infrastructure>. Also see: Ministerio de Transporte. 2022. "Reiniciaron los trabajos de la transversal del Paletará, proyecto que favorece a comunidades indígenas de Huila y Cauca." October 21. <https://www.mintransporte.gov.co/publicaciones/11204/reiniciaron-los-trabajos-de-la-transversal-del-paletara-proyecto-que-favorece-a-comunidades-indigenas-de-huila-y-cauca/>. Additional roadway and public transportation projects established and starting in the end of 2022 are also described here: Ministerio de

Ports and waterways are the major infrastructure in Colombia, and account for around 30 percent of commercial and cargo trade transport transported throughout the country—roadways account for about 67 percent. Colombia has two main ports on the Pacific Ocean border, and three on the Caribbean Sea/Atlantic Ocean border. Cienaga and Cartagena ports handle 40 to 80 million tons of cargo each year, making them the largest and heaviest trafficked ports in Colombia.<sup>42</sup> Buenaventura and Tumaco are the two ports residing on the country’s Pacific Ocean coast, and are significant import hubs, but are facing increasing challenges due to sediment buildup in port channels. Railroads are the other major method of cargo and trade transport throughout the country, but have effectively fallen into disrepair, and passenger travel via railroad is virtually non-existent since the 1990s. The administration of President Gustavo Petro is seeking to reinvigorate Colombia’s rail system by upgrading and expanding access corridors to include improving urban transportation networks.<sup>43</sup>

Public transportation is also heavily concentrated in the capital and urban metropolitan areas, namely Bogotá. With roadways in disrepair and lack of significant coverage in adequate paving and access across the country, much of the public transport and passenger transport is bus or bus metro lines.

### ***Public Health***

The extensive national public health structure in Colombia is managed and governed by the **Ministry of Health and Social Protection (*Ministerio de Salud y Protección Social*)**. The Ministry of Health dictates, orients, adopts, implements, and evaluates policies, plans, programs and projects in matters of public health. Additionally, it also manages and leads the surveillance system on public health; however, it does not have supervisory capacities

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Transporte. 2022. “33 innovadores presentaron nuevas tecnologías para desarrollar proyectos viales más armónicos con la naturaleza que impulsen una economía para la vida.” October 20. <https://www.mintransporte.gov.co/publicaciones/11203/33-innovadores-presentaron-nuevas-tecnologias-para-desarrollar-proyectos-viales-mas-armonicos-con-la-naturaleza-que-impulsen-una-economia-para-la-vida/>; Ministerio de Transporte. 2022. “Ministerio y Asonatur lograron acuerdos para mejorar la operación del Transporte Público Colectivo en el país.” October 18. <https://www.mintransporte.gov.co/publicaciones/11198/ministerio-y-asonatur-lograron-acuerdos-para-mejorar-la-operacion-del-transporte-publico-colectivo-en-el-pais/>.

<sup>42</sup> 2022. “Leading Ports in Colombia in 2019, by Throughput (in million metric tons).” Statista. <https://www.statista.com/statistics/813277/ports-throughput-colombia/>; 2021. “Volume of Cargo Handled in the Port of Cartagena, Colombia from 2006 to 2019.” Statista. <https://www.statista.com/statistics/813206/cartagena-colombia-throughput-tonnage/>. Also see: 2022. “Volume of Cargo Handled in the Port of Buenaventura, Colombia from 2006 to 2019.” Statista. <https://www.statista.com/statistics/813204/buenaventura-colombia-throughput-tonnage/>.

<sup>43</sup> 2022. “Colombia to Prioritize Rails Works in Petro’s Infrastructure Plan.” Bnamericas, August 30. <https://www.bnamericas.com/en/news/colombia-to-prioritize-rail-works-in-petros-infrastructure-program>.

on its implementation. The Ministry of Health oversees these aspects of health policy implementation across all of Colombia's 32 departments (states), and subsequent municipalities and districts. Within the Ministry of Health, the Department of Epidemiology and Demography is responsible for managing disease and public health surveillance, guidance on public health policy, and governs Colombia's territorial entities and institutions.

Central entities in addition to the Ministry of Health are Colombia's National Institute of Health (*Instituto Nacional de Salud, INS*) and the National Food and Drug Surveillance Institute (INVIMA).

#### **National Institute of Health (*Instituto Nacional de Salud, INS*)<sup>44</sup>**

Colombia's National Institute of Health (INS) is a scientific and technical entity with five technical directorates—three of which have research groups, discussed in further detail in the “Civilian Biological Infrastructure” section later in this report. These directorates serve several critical functions. First, INS' Directorate of Networks on Public Health runs Colombia's **National Reference Laboratory (*Laboratorio Nacional de Referencia or LRN*)**, a central component to Colombia's national public health structure. LRN manages and is comprised of eight (8) laboratories subunits that specialize in the following health topics: Genetics, Microbiology, Virology, Chemistry and Toxicology, Parasitology, Mycobacteriology, and Pathology, and Entomology. The LRN has been fundamental to Colombia's efforts to respond to, control and eradicate and eliminate such diseases as poliomyelitis, measles, yellow fever, dengue, and rabies.<sup>45</sup>

Second, INS administers and manages the **National Surveillance System on Public Health (*SIVGILA*)**, which gathers data, provides analysis and interpretations, updates, outreach and assesses information systematically on health events in order to orient actions for prevention and control of public health. SIVGILA also report on and define suspected cases, probable cases or confirmed cases for such events as established in protocols in reporting for disease outbreaks.<sup>46</sup>

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<sup>44</sup> Instituto Nacional de Salud (INS). “Reseña Histórica.” <https://www.ins.gov.co/conocenos/rese%C3%B1a-hist%C3%B3rica>. Also referenced here: 2021. “Partners’ HPSR Report – 2021.” AHPSR. <https://www.ahpsr.org/partners-hpsr-report/country-profiles/colombia/>.

<sup>45</sup> Instituto Nacional de Salud (INS). “Dirección De Redes En Salud Pública: ¿Qué hacemos?” <https://www.ins.gov.co/Direcciones/RedesSaludPublica/Paginas/default.aspx>. Also see: Instituto Nacional de Salud (INS). 2023. “Organigrama.” INS’ organizational chart is available for direct download at this page.

<sup>46</sup> Instituto Nacional de Salud (INS). “Vigilancia y Análisis del Riesgo en Salud Pública.” <https://www.ins.gov.co/Direcciones/Vigilancia/Paginas/default.aspx>

Third, INS also serves as the director of Colombia's **National Laboratory Network (*Red Nacional de Laboratorios, RNL*)**. The RNL provides Colombia with capacity and capability of diagnosing and addressing infectious disease outbreaks at all levels—nationally, regionally, and locally. Its purpose is to integrate and coordinate public health activities between various organizations, facilities, laboratories (both clinical and public health), and to support all aspects of public health (e.g., diagnostic services, discovery, mitigation and prevention of disease outbreaks, health services, and test capacities). The RNL is constituted by and has oversight authority for five main parts:

- The National Institute of Health (INS)
- The National Institute for Medicine and Food Surveillance (INVIMA)
- Regional public health laboratories in each of the 32 departments in Colombia, including 1 (one) in the Capital district of Bogotá
- Clinical Laboratories and other facilities with various specialties (e.g., cyto-histopathology, bromatology, reproductive medicine, blood banks and anatomic components)
- Additional laboratories that can and may perform analysis to support public health surveillance inquiry and for sanitary control.

Supporting the RNL, the Laboratory Register (Registro de Laboratorios – RELAB) maintains a record of and provides registration processes for all laboratories (public and private) that are a part of the RNL.<sup>47</sup>

### **National Food and Drug Surveillance Institute (INVIMA)**

An additional central component of Colombia's national public health structure is the National Food and Drug Surveillance Institute (INVIMA), the national regulatory agency that provides regulation and oversight of food, drinks, cosmetics, cleaning, pesticides and domestic hygiene products, and medical products to include medical devices, pharmaceutical drugs produced or imported, and biological products.<sup>48</sup>

Beyond this structure, Colombia is also seeking to expand its national public health capacity, particularly in research. In 2019 Colombia began the process of establishing the Ministry of

<sup>47</sup> RELAB is regulated by Resolution 561 of 2019. Correspondence with officials of the National Institute of Health (INS) authorized to speak on matter. See: Gobierno de Colombia, Ministerio de Salud y Protección. 2020. "ABECÉ Version 2: Registro de Laboratorios – RELAB." July 21. <https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/VS/ED/VSP/abece-relab.pdf>.

<sup>48</sup> Instituto Nacional de Vigilancia de Medicamentos y Alimentos (INVIMA). "Qué Hacemos." <https://www.invima.gov.co/que-hacemos>. Also see: American Association of Blood Banks (AABB). "Colombia." <https://www.aabb.org/regulatory-and-advocacy/regulatory-affairs/regulatory-for-cellular-therapies/international-competent-authorities/colombia#:~:text=The%20National%20Institute%20of%20Drug,tissue%20and%20bone%20marrow%20banking>.

Science, Technology and Innovation (Minciencias) to coordinate public policy in the area of science and technology, and to accelerate development in these areas. One area of planned activity is public health research. Historically, chronic underfunding has limited progress in both public health research and public health provision with Colombia performing very little domestic research and development. Minciencias investments are expected to support the development of public health capacity in Colombia.<sup>49</sup>

## Governing Environment

### *Government*

Colombia elected its new president in June 2022, wherein Gustavo Petro of the left-leaning Humane Colombia party won the presidency. This marks a significant departure from Colombia's right-leaning governments of the last several administrations.<sup>50</sup>

Colombia is a presidential system with three branches of government: executive, run by the presidency; legislative, run by the Senate and Chamber; and judiciary. Officials and representatives in both the executive branch and legislative branches are democratically elected via vote from the general populace. Additionally, presidents and vice presidents are elected on the same ballot, and election is two-staged: if no candidate reaches over 50 percent of the vote, there are second round elections with the top two candidates.

### *Law*

Significant concerns continue to be raised from both Colombia's citizenry and the government on human rights abuses stemming from police violence, with a recent example of fatalities during 2019 social protests against tax increases. This also follows a long history of impunity on the part of the country's judicial system, despite alterations to the system to remediate and eliminate these flaws.<sup>51</sup> Additionally, as of 2021, only 18 percent of surveyed Colombians believe the government supports the citizenry and is not self-benefiting to those governing, along with the sentiment that corruption is a major problem among elected officials.<sup>52</sup> Effort has been made since the election of Colombia's new president, Gustavo

<sup>49</sup> Wight, Andrew J. 2019. "Colombia Creates its First Science Ministry." *Nature*, January 9. <https://www.nature.com/articles/d41586-019-00087-z>.

<sup>50</sup> Arnson, Cynthia J. 2022. "U.S.-Colombia Relations: Continuity, Rupture or Something In-Between?" Wilson Center, June 17. <https://www.wilsoncenter.org/blog-post/us-colombian-relations-continuity-rupture-or-something-between>.

<sup>51</sup> 2021. InSight Crime. "Colombia Profile." <https://insightcrime.org/colombia-organized-crime-news/colombia/>.

<sup>52</sup> Arnson, Cynthia J. 2022. "U.S.-Colombia Relations: Continuity, Rupture or Something In-Between?" Wilson Center, June 17. <https://www.wilsoncenter.org/blog-post/us-colombian-relations-continuity-rupture-or-something-between>.

Petro, in addressing corruption in the government. One effort has to continue to support Colombia's Secretary of Transparency National Anti-Corruption Index (Índice Nacional Anticorrupción, INAC), which analyzes government entities' capacities on anti-corruption and access to information. Per its 2021 data, the National Anti-Corruption Index (Índice Nacional Anticorrupción, INAC) scored government entities as 70.9 on anti-corruption capacity (e.g., specific policy, practices, or activities implemented), and 73.6 on corruption risk management activities within these entities., identifying strengths, gaps, and weaknesses<sup>53</sup> Despite this INAC result, corruption is still reported by both Colombia domestic and international organizations as a major concern for the country. Colombia's National Administrative Department of Statistics (DANE) "2021 Political Culture Survey" reported that 63 percent of surveyed adults believe the national government is corrupt, particularly the legislative branch (70 percent).<sup>54</sup> Colombia's Secretary of Transparency office also reports several international surveys on their Corruption Perception webpage, with such organizations as Transparency International's "Corruption Perception Index" (2020) scoring Colombia at 39 out of 100, and the Latinobarometro 2021 public opinion survey reporting 17 percent were satisfied with the democracy of the country.<sup>55</sup>

### ***Foreign Policy***

With the release of their National Development Plan 2022-2026, presented in the National Development Plan Bill, Colombia's foreign policy transformations focus on five major goals and issues: land use planning around water resources, human rights and social justice, human right to food, transformative national and international climate action, and regional convergence. Supporting broader biosecurity advancements in Colombia, the goal of improving management of and sustainable use water and land promote and maintain biodiversity, ecosystem health, and human health.<sup>56</sup>

<sup>53</sup> Gobierno de Colombia, Secretaria de Transparencia. 2021. "Índice Nacional Anticorrupción." p. 6. <http://anticorrupcion.gov.co/medir/Documents/ABC-INAC.pdf>

<sup>54</sup> National Administrative Department of Statistics (DANE). 2021. "Political Culture Survey (ECP)." <https://www.dane.gov.co/index.php/estadisticas-por-tema/cultura/cultura-politica-encuesta>. This survey is located on this page at the following heading: "Municipios PDET- Información 2021," "Democracia," and "Percepción de corrupción Downloadable survey results file, "Anexo\_ECP\_21\_PDET\_percepcion-corrupcion", subtable "Cuadro\_1", variables "Cuál considera es el nivel de corrupción de los siguientes grupos o actores," "Total personas de 18 años y mas," "Gobierno nacional (Presidencia de la República, ministerios, departamentos administrativos, superintendencias, unidades administrativas especiales, entre otros)," "Es corrupto - Muy corrupto (4-5)," and "Congreso de la República (Cámara y Senado)," "Es corrupto - Muy corrupto (4-5)".

<sup>55</sup> Of this survey, Table "Satisfaccion Con La Democracia (Total LatinoAmerica 1995-2020 - Totales por Pais 2020) shows Colombia at 17 percent. This table is found on page 39. See: Latinobarometro. 2021. "Latinobarometro Informe 2021." <https://www.latinobarometro.org/lat.jsp>.

<sup>56</sup> Gobierno de Colombia, Departamento Nacional de Planeación. 2022. "Plan Nacional de Desarrollo 2022-2026." <https://www.dnp.gov.co/Paginas/plan-nacional-de-desarrollo-2023-2026.aspx>. Also see: Gobierno de Colombia, Departamento Nacional de Planeación. 2022. "ABeCé del PND."

Economic growth is also central to Colombia's foreign policy. Colombia has extensive global and regional partnerships (spanning from the Caribbean to Asia) both for trade as well as mutual aid and economic growth. Regionally, Colombia's main partnerships exist through the Latin American and Caribbean Economic System (SELA) and the Pacific Alliance/Lima Protocol (2011) for economic development between Chile, Colombia, Mexico, Peru and Panama.<sup>57</sup> Colombia does appear to have extensive global reach for their diplomatic corps, recording embassies and consulates in Asia, the Middle East, Europe and Africa.<sup>58</sup>

Prior government administrations focused heavily on combatting illicit trafficking, to include drugs, small arms and munitions, immigration, and disarmament. Colombia's decades-long instability due to domestic terrorism, guerilla and paramilitary activities, along with criminal organizations, and drug and human trafficking, continue to remain among issues in the country's foreign policy docket. To address these latter concerns, Colombia's Ministry of Foreign Affairs has and continues to build, maintain, and engage with international organizations to establish legal frameworks, programs, and initiatives in Colombia. As such, Colombia is a leading country to seek and establish a non-proliferation small arms treaty, banning the sale and transport of small arms and munitions.<sup>59</sup> Colombia is also party to several international committees such as: United Nations Global Plan of Action against Trafficking in Persons, United Nations Convention against Corruption, the Inter-American Convention against Corruption (MESICIC), United Nations Convention against Transnational Organized Crime, the Inter-American Convention against Terrorism, and the United Nations Global Counter-Terrorism Strategy.<sup>60</sup> This also includes engagement in and expansion of South-South collaborations and security agreements with its regional neighbors. As of 2019, Colombia has also re-established development plans and Comprehensive Immigration Policies (PIM) to manage migration flows, support expansion of labor rights and flow

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[https://colaboracion.dnp.gov.co/CDT/portalDNP/PND-2023/abece\\_pnd\\_2022\\_2023.pdf](https://colaboracion.dnp.gov.co/CDT/portalDNP/PND-2023/abece_pnd_2022_2023.pdf). For official text of the pending bill, please see: Gobierno de Colombia, Departamento Nacional de Planeación. "2023-02-07 Proyecto de Ley: "Por el Cual Se Expide el Plan Nacional de Desarrollo 2022-202 'Colombia Potencia Mundial de la Vida.'" [https://colaboracion.dnp.gov.co/CDT/portalDNP/PND-2023/2023-02-07-Proyecto-del-ley-PND-2022-2026-\(Articulado\).pdf](https://colaboracion.dnp.gov.co/CDT/portalDNP/PND-2023/2023-02-07-Proyecto-del-ley-PND-2022-2026-(Articulado).pdf)

<sup>57</sup> Gobierno de Colombia, Ministerio de Relaciones Exteriores. 2022. "Pacific Alliance." <https://www.cancilleria.gov.co/en/pacific-alliance>. Also see: Gobierno de Colombia, Ministerio de Relaciones Exteriores. 2022. "Latin America and Caribbean Economic System (SELA)." Last modified February 2023. <https://www.cancilleria.gov.co/en/latin-american-and-caribbean-economic-system-sela>.

<sup>58</sup> For the list of Colombia's current embassies and consulate offices, please see their Ministerio de Relaciones Exteriores website: Ministerio de Relaciones Exteriores. 2022. "Colombian Embassies and Consulates Abroad." Last modified February 2023. <https://www.cancilleria.gov.co/en/colombian-embassies-and-consulates-abroad>.

<sup>59</sup> Gobierno de Colombia, Ministerio de Relaciones Exteriores. 2022. "Disarmament and International Security." <https://www.cancilleria.gov.co/en/disarmament-and-international-security>.

<sup>60</sup> Gobierno de Colombia. 2022. "Crime Prevention." <https://www.cancilleria.gov.co/en/disarmament-and-international-security>.

controls, and expand human capital and social services provided to migrants. This has been a base of policy in Colombia since 2010, with the 2010-2014 Development Plan, “Prosperity for All”, and continues to play a central role in how Colombia seeks aid for and pursues immigration reform.<sup>61</sup>

### *Military*

Of its close regional neighbors, Colombia is the leading military force in personnel numbers as well as percentage of military expenditure in relation to overall government spending. Also, on average, Colombia’s military expenditure—9.8 percent of general government expenditure—is three times the regional average (3.5%), though second to Brazil who has South America’s largest armed forces in personnel numbers (762,000 personnel, 2019 estimate).<sup>62</sup> Colombia’s military consists of around 500,000 personnel that form the country’s navy, army and air force. Colombia’s military and civilian national police have worked extensively for decades with international partners such as the United States to combat insurgency, terrorism, and guerilla and paramilitary groups. Colombia’s military also maintains regular engagement with international organizations and fellow South American countries in international training for CBRN response, including the 2021 training with the Organisation for the Prohibition of Chemical Weapons (OPCW), which Colombia also hosted in 2015.<sup>63</sup>

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<sup>61</sup> Gobierno de Colombia, Ministerio de Relaciones Exteriores. 2022. “Comprehensive Immigration Policy.” <https://www.cancilleria.gov.co/en/comprehensive-immigration-policy>.

<sup>62</sup> Although Brazil’s GDP is much higher than Colombia’s, Colombia spends double the percentage of national GDP on military expenditure, and around \$10billion USD less than Brazil. Statistics gathered from the World Bank’s Databank World Development Indicators database, filtering variables to “military expenditure (% of GDP)”, “military expenditure (% of general government expenditure)”, “military expenditure (current USD)”, and “armed forces personnel, total”, filtering for Colombia and Latin America and Caribbean, years 2007 to 2021. Other countries also filtered for to provide comparison: Chile, Argentina, Brazil, Panama, Ecuador, El Salvador, Bolivia, Venezuela, Paraguay, Uruguay, Suriname, Guyana, and Peru. See: World Bank. 2022. “Databank World Development Indicators database.” <https://databank.worldbank.org/source/world-development-indicators>.

<sup>63</sup> For 2015 training, please see: CBRNe Central. 2015. “OPCW Chemical Defense Exercise in Colombia.” <https://cbrnecentral.com/opcw-chemical-defense-exercise-colombia/2937/>. For 2021 OPCW training, please see: OPCW. 2021. “CBRN Experts from Latin America and the Caribbean Expand Chemical Incident Response Capabilities.” May 20. <https://www.opcw.org/media-centre/news/2021/05/cbrn-experts-latin-america-and-caribbean-expand-chemical-incident>. Additional international collaboration is described in the following Colombian Army report: n.d. “Colombia’s Military Engineers Share Skills and Experiences, Through Training and Education to Other Armies.” [https://www.ejercito.mil.co/enio/recurso\\_user/doc\\_contenido\\_pagina\\_web/800130633\\_4/608051/article\\_tec\\_cides\\_ct\\_camilo\\_diago\\_english.pdf](https://www.ejercito.mil.co/enio/recurso_user/doc_contenido_pagina_web/800130633_4/608051/article_tec_cides_ct_camilo_diago_english.pdf).

### *Instability/Cleavages*

As discussed further in the section “Organized Crime” of this report, much of the instability and cleavages in Colombia stem from half of a century of guerilla and paramilitary group conflict, combatting the government for control of the country. The Colombian government and FARC reached a peace agreement in 2016 that has remained mostly intact, although it has not eradicated the problem of insurgency and resulting instability.

Economic constraints of the ongoing COVID-19 pandemic and resulting tax increases, along with allegations of previous election corruption have fueled continual political and social unrest and protests. The recent 2021 tax increase protest turned fatal, with unusual police action in response, which is currently under investigation by the Ministry of Defense.<sup>64</sup>

Finally, refugee and migrant influx from Venezuela into Colombia continues to increase and applies pressure on the country for resources to respond. Colombia was estimated to have 100,000 new persons enter the country each month since 2019, and now will likely have over 5 million refugees and migrants in country.<sup>65</sup> Colombia accounts for 36 percent of Venezuelans’ migration destination, the highest concentration across the region. Not only is this migrant influx concentrating in urban areas per 2019 data, displayed in the Figure 1 below, it is also adding additional pressure and demand for resources to include health services, housing, food, care and education for children, and increases in previously declining infectious disease cases such as measles.<sup>66</sup>

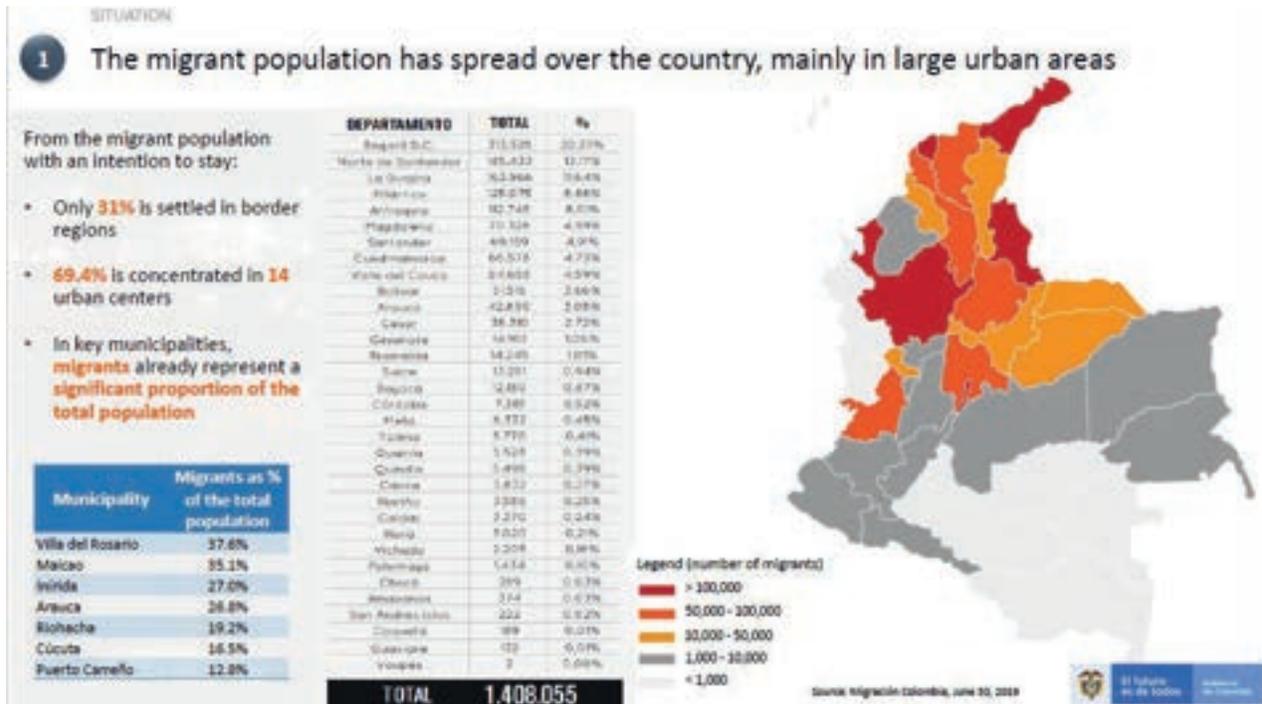
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<sup>64</sup> BBC World News. 2021. “Colombia: At Least 19 Dead and More Than 800 Injured in Protests Against Tax Reform.” May 3. <https://www.bbc.com/mundo/noticias-america-latina-56973896>. Also see: Polga-Hecimovich, John. 2022. “Colombia Seeks Radical Change by Electing Gustavo Petro as President.” GIS Reports, August 8. <https://www.gisreportsonline.com/r/colombia-presidential-election/>.

<sup>65</sup> Current estimates are difficult to find, but the most recent data from September 2019 was presented by the Government of Colombia representative, Felipe Muñoz (Advisor to the President of Colombia for the Colombian-Venezuelan Border) at the International Institute for Strategic Studies (IISS) event, publication titled: “Colombia and Migration Influx from Venezuela: Situation, Challenges, and Ways Forward.” This specific data is listed on slide 7 of the event PowerPoint Presentation, accessible for download here: <https://www.iiss.org/-/media/images/events/2019/09/felipe-munozs-presentation--eng.pdf?la=en&hash=7585F52CFE64726CF9618A43C784BCA8E68234C5>. Event details can be found here: <https://www.iiss.org/events/2019/09/colombias-response-to-venezuela#>.

<sup>66</sup> Government of Colombia, Felipe Muñoz. 2019. “Colombia and Migration Influx from Venezuela: Situation, Challenges, and Ways Forward.” International Institute for Strategic Studies (IISS). Slides 12, 13, 17, 21. <https://www.iiss.org/-/media/images/events/2019/09/felipe-munozs-presentation--eng.pdf?la=en&hash=7585F52CFE64726CF9618A43C784BCA8E68234C5>. Main IISS page for this event: <https://www.iiss.org/ja-IP/events/2019/09/colombias-response-to-venezuela/>.

Figure 1: Urban Concentration of Venezuelan Migrants in Colombia, 2019<sup>67</sup>



**Criminality**

Transnational and domestic organized crime pose the largest security challenges to Colombia. For additional discussion on the security challenge they pose to Colombia, see the section “Organized Crime” and “Organized Crime – Domestic Criminal Organizations” below in this report. Additional criminality challenges include homicide rates, which continue to increase in Colombia. Colombia is ranked second in South America with current homicide rates of 26.8 per 100,000 people, under Venezuela’s 40 per 100,000 people

**Assessment**

Colombia poses unique geographic location in the South American continent—with two oceans and five country borders—that makes it the gateway for migration and trade in and

<sup>67</sup> Government of Colombia, Felipe Muñoz. 2019. “Colombia and Migration Influx from Venezuela: Situation, Challenges, and Ways Forward.” International Institute for Strategic Studies (IISS). Slide 6. <https://www.iiss.org/-/media/images/events/2019/09/felipe-munozs-presentation--eng.pdf?la=en&hash=7585F52CFE64726CF9618A43C784BCA8E68234C5>. Main IISS page for this event: <https://www.iiss.org/ja-IP/events/2019/09/colombias-response-to-venezuela/>. This image was adapted in the above presentation from its original source: Migración Colombia. 2019. “Venezolanos en Colombia.” 30 June. p. [https://www.comillas.edu/images/OBIMID/infografias/INFOGRAFIA\\_VENEZOLANOS\\_EN\\_COLOMBIA\\_30\\_junio\\_2019.pdf](https://www.comillas.edu/images/OBIMID/infografias/INFOGRAFIA_VENEZOLANOS_EN_COLOMBIA_30_junio_2019.pdf).

out of the region. This physical feature is also used and taken advantage of to support illicit trafficking of drugs, goods, and people. Colombia is also an agricultural hub for crop development and export—which again is exploited for illicit crop cultivation and sale. Colombia’s vast, uninhabited forests and smaller mountain ranges also allow for guerilla groups to thrive unencumbered and illicit activities to continue, along with hindering transportation infrastructure development and economic growth. As such, Colombia still lacks holistic and adequate transportation infrastructure to support the demand for citizen and cargo travel via roadways, though this is center of current infrastructure spending.

## Terrorist/Insurgent Threat

### Overview

Colombia has a long history of internal violence in the form of insurgency and terrorism that was significantly reduced following the agreement and implementation of the 2016 Peace Accord. Despite the agreement, the frequency of violence continues to increase from a mix of dissidents and various criminal groups creating challenges for the government.<sup>68</sup>

### Terrorist / Insurgent Groups

#### *Foreign*

There is no indication that foreign terrorist or insurgent groups have operated or are currently operating within Colombia.

#### *Domestic*

Although formally dissolving after the 2016 Peace Accords with the Colombian government and being removed from the United States’ Foreign Terrorist Organization (FTO) list in 2021, dissident groups of FARC that refused the peace agreement, along with National Liberation Army (*Ejercito de Liberacion Nacional* or ELN), continue to be the primary domestic terrorist and insurgent groups operating within Colombia. As such, the United States has designated Revolutionary Armed Forces of Colombia – People’s Army (FARC-EP) and their rival, Segunda Marquetalia—the main dissident groups—as FTOs. ELN and these FARC dissident groups also appear to act across borders into Venezuela as well, and maintain areas of influence in Colombia, as shown in Figures 2 and 3 below.<sup>69</sup>

<sup>68</sup> United States Department of State. 2020. “Country Reports on Terrorism 2020: Colombia.” [https://www.state.gov/reports/country-reports-on-terrorism-2020/colombia\\_trashed/](https://www.state.gov/reports/country-reports-on-terrorism-2020/colombia_trashed/)

<sup>69</sup> Reported by Reuters, and also cited in: Posada, Juan Diego. 2019. “Implications of the Return to War of the FARC leaders.” InSight Crime, August 29. <https://es.insightcrime.org/noticias/analisis/implicaciones-del-regreso-a-la-guerra-de-los-lideres-de-las-farc/>. Also see: Reuters. 2022. “Colombia Military Kills FARC Dissident Leader Mordisco.” July 15. <https://www.reuters.com/world/americas/colombia-military-kills-farc-dissident-leader-mordisco-2022-07-15/>.

**Table 1: List of Active Domestic Terror/Insurgent Groups**

Group	Activity	Incident	Still Active	Biosecurity Relevant <sup>70</sup>
FARC-EP	Insurgency / Guerilla Actions / Abductions		Yes	No
Segunda Marquetalia (FARC-SM)	Insurgency / Guerilla Actions		Yes	No
ELN	Bombing / Explosives	Detonated an explosive device at the Ecopetrol Cano Limon-Covenas and Transandino Oil Pipelines; attributed though not claimed attacks	Yes	No
ELN	Bombing / Explosives	Suicide bomber detonated explosive device-laden vehicle at a police station, killing 22 (including the assailant) and injuring 67.	Yes	No

<sup>70</sup> Biosecurity relevance is based on whether the group has undertaken attacks against biosecurity relevant infrastructure, or alternatively demonstrated interest in pursuit or use of biological agents for use as weapons.

Figure 2: Areas of Influence – FARC Dissident Groups

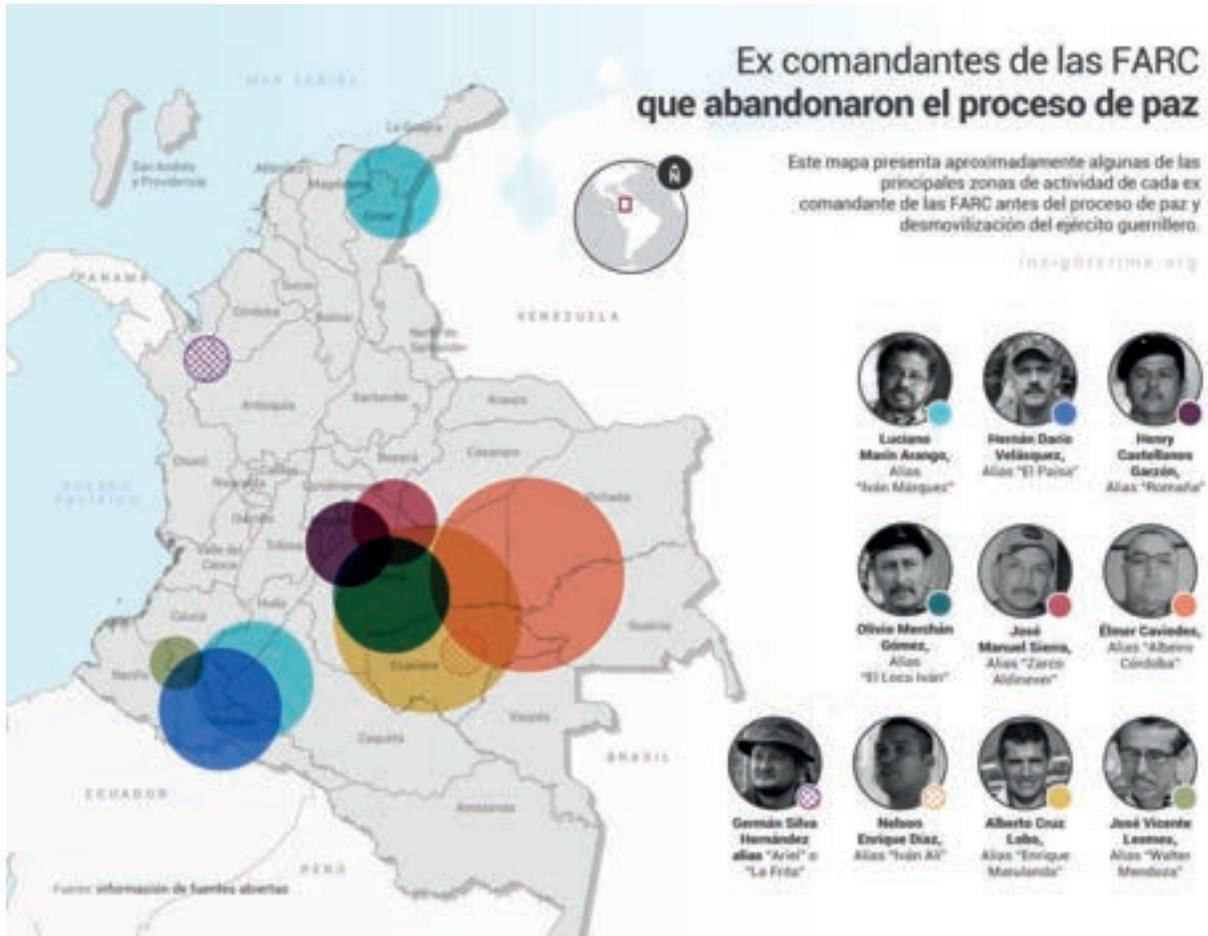
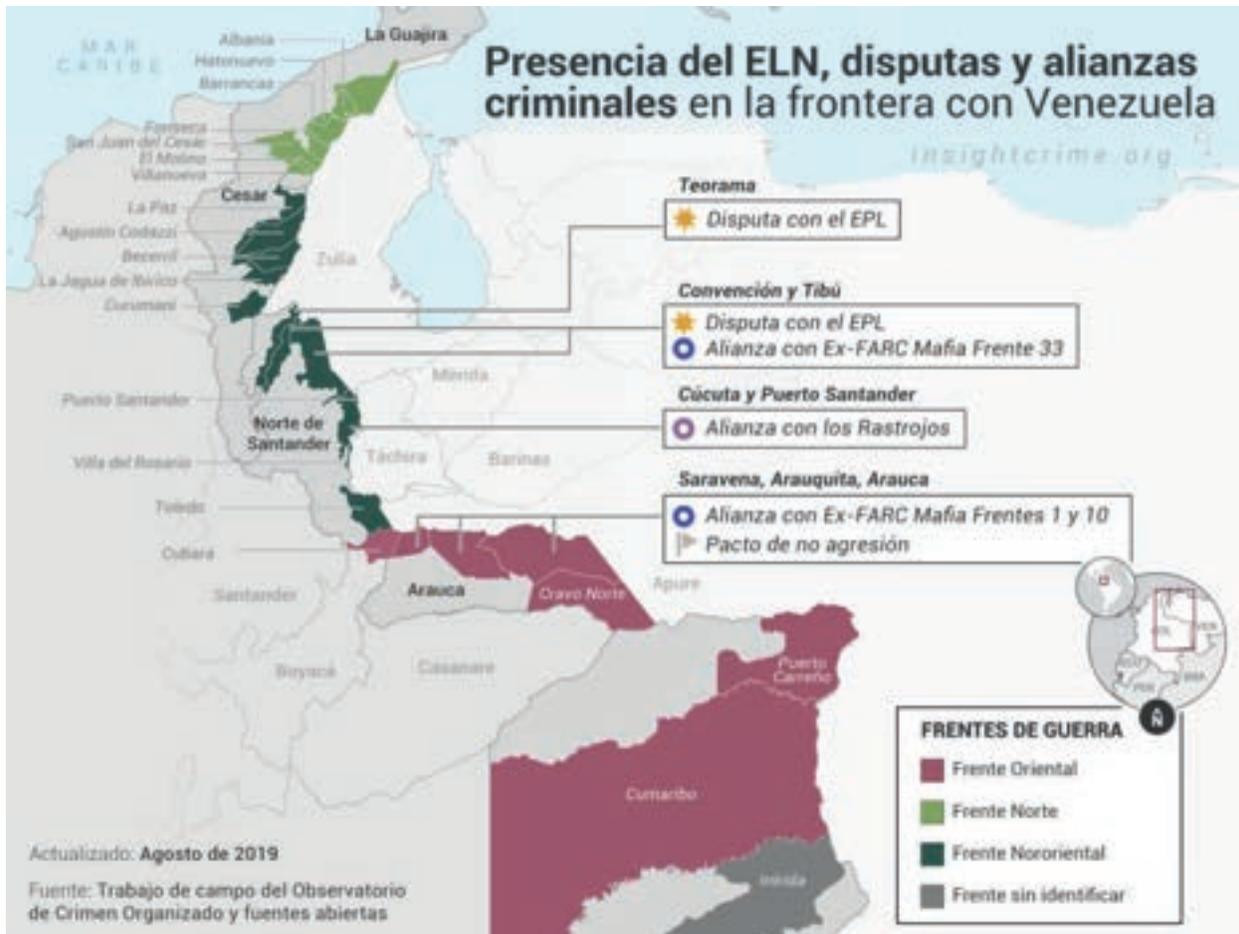


Figure 3: Areas of Influence - ELN



## Terrorist/Insurgent Incidents Since 2010

### *Conventional*

The 2016 Peace Accords between the Colombian government and FARC brought an albeit brief dip in terrorist and insurgent incidents in Colombia. Since, Colombia has faced a continual rise in incidents, although smaller-scale extremist violence, generally involving the use of small improvised explosive devices, or conducting kidnappings or assassinations. Since 2019—when a record number of 228 terrorist events occurred, in comparison to 2017’s 119 events—the predominant focus were oil or energy infrastructure and facilities, military and police personnel and facilities, abductions, and attacks against former FARC leadership. This spike is near on par with Colombia’s 2014 record when 231 incidents occurred.<sup>71</sup>

<sup>71</sup> These statistics and incident summaries are based off the metadata provided in the most recent released update of START’s Global Terrorism Database (GTD) (2019). This database was filtered to look at years 2017

### ***Support***

There is no publicly available sources or information indicating foreign terrorist or insurgent groups operating within Colombia, nor groups providing material or otherwise support for foreign groups within their national territory (of Colombia).

### ***Biological, or other WMD***

During the Colombian civil war there were a number of extremely low-grade incidents that can be loosely classed as bioterrorism. These involved the contamination of bullets with various biological substances to include human excrement.<sup>72</sup>

There was at least one incident reported in which “gas cylinders” were used in an attack but there is strong reason to suspect that these vessels contained propane or similar types of material used for incendiary or explosive purposes.<sup>73</sup>

Neither the FARC nor the ELN appear to have possessed any interest in pursuing WMD despite pursuing other advanced capabilities.

### **Assessment**

Terrorism and insurgent groups in Colombia are mostly domestic actors, that do not extend nor present a possible venture into any use of biological agents, rather sticking to conventional forms and weapon types. There is no indication that any foreign groups operate or occupy space within Colombia. FARC dissident domestic groups now labeled as terrorist organizations, along with ELN, continue to occupy Colombia as the primary terrorist and insurgent groups. These groups also apply pressure to the 2016 Peace Accords that are in place and are the main security concern within the country. As such, the terrorism and insurgency risk in Colombia remains elevated though limited.

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to 2019, inclusive, and incident location as Colombia. The date range was smaller here (rather than 2010 to 2019, inclusive) given the decades-long war with FARC and ELN, who reached a peace agreement with the government of Colombia in 2016. Post-Peace Accord of 2016 provides a comparative window into the current nature of terrorism and insurgency in Colombia, although it appears much of the same types of activity occurring. Disclaimer: there may be other sources or databases that include additional incidents as “terrorism”; these incidents listed and spoken of here are subject to the GTD’s inclusion criteria. The GTD inclusion criteria and codebook can be found here: <https://www.start.umd.edu/gtd/>.

<sup>72</sup> 2005. “EPL Claims Killing of Four Police Officers in Norte de Santander,” *El Tiempo*. 15 August.; 2005. EPL Used Cyanide-Tipped Bullets,” *El Colombiano* 15 August.

<sup>73</sup> 2002. “Colombia: Army Accuses FARC of Using Unspecified Chemical Weapons,” *El Espectador* via BBC Monitoring Latin America-Political. 15 May.

## Organized Crime

### Overview

Organized crime in Colombia is a pervasive problem posing unique challenges. Colombia has a vast and storied history of issues with organized crime groups and continues to host both some of the most powerful transnational criminal organizations and a plethora of domestic criminal organizations on a scale not seen elsewhere in South America.<sup>74</sup> These domestic groups include the National Liberation Army (Ejército de Liberación Nacional – ELN), the Revolutionary Armed Forces of Colombia (Fuerzas Armadas Revolucionarias de Colombia – FARC) (dissidents now after 2016 formal disbandment), the Popular Liberation Army (Ejército Popular de Liberación – EPL)<sup>75</sup>, the Clan del Golfo<sup>76</sup> and more. These groups range from highly organized, hierarchically structured, and professional organizations to more localized prison and street gangs. Many of the highly organized, currently operating criminal groups originated from paramilitary forces, that shifted to criminal activities as a means of financial stability.<sup>77</sup>

Colombia is uniquely situated geographically, with access to two oceans and bordering five countries, and therefore Colombia has developed as a major transit hub for both licit and illicit transportation, trafficking, and smuggling.<sup>78</sup> Due to their combination of a temperate climate advantageous for crop cultivation, extensive mountain ranges that provide protection and largely inaccessible swathes of land, Colombia continues to face an extensive problem with illicit drug production, particularly of cocaine and cannabis, that exploit these features.<sup>79</sup> Additionally, Colombia houses vast geographic areas where criminal organizations function essentially as the state, particularly in isolated rural areas and in the western and northern sections of the state, including Antioquia, North Santander, Nariño, Arauca, Choco, and Cauca.<sup>80</sup> Colombia's borders are also porous, with areas covered by rainforest, making securing those areas and borders difficult.<sup>81</sup>

<sup>74</sup> Tulchin, Joseph S. 2020. "Colombia: Organized Crime at the Heart of Unrest." GIS Reports Online, March 3. <https://www.gisreportsonline.com/r/colombia-organized-crime/>

<sup>75</sup> The Popular Liberation Army (Ejército Popular de Liberación – EPL) is also known colloquially as the "Pelusos" by authorities.

<sup>76</sup> Also known as Gaitanist Self-Defense Forces of Colombia, Los Urabeños, and Clan Úsuga

<sup>77</sup> InSight Crime. 2021. "Colombia Profile." <https://insightcrime.org/colombia-organized-crime-news/colombia/>. Accessed October 19, 2022.

<sup>78</sup> InSight Crime. 2021. "Colombia Profile." <https://insightcrime.org/colombia-organized-crime-news/colombia/>. Accessed October 19, 2022.

<sup>79</sup> Global Initiative Against Transnational Organized Crime. 2021. "Global Organized Crime Index: Colombia." <https://ocindex.net/country/colombia>

<sup>80</sup> Tulchin, Joseph S. 2020. "Colombia: Organized Crime at the Heart of Unrest." GIS Reports Online, March 3. <https://www.gisreportsonline.com/r/colombia-organized-crime/>

<sup>81</sup> Global Initiative Against Transnational Organized Crime. 2021. "Global Organized Crime Index: Colombia." <https://ocindex.net/country/colombia>

One of the principal issues surrounding security in Colombia is the lack of government control of or monopoly over violence. With private security companies, cartels, guerilla organizations, prison gangs, and local criminal groups all having access to weapons, violence has been a central and professional tactic in building and maintaining power within Colombian society.<sup>82</sup> This access to violence has led to Colombia's continued problems with criminality generally, accounting for high homicide rates, as well as corruption and violence against civilians.<sup>83</sup>

Additional potential biosecurity concerns in Colombia include widespread flora and fauna crimes including illicit wood production, animal trafficking, particularly of exotic birds and reptiles, and illegal fishing practices.<sup>84</sup> This includes ongoing ELN's cattle smuggling between Venezuela and Colombia, driving illegal market interest and profit for live cattle and meat, undermining legitimate sales.<sup>85</sup> These practices have the potential to introduce pathogens capable of affecting human and animal populations within Colombia and neighboring countries in addition to more distant destinations. In theory, for example, Colombia's 2018 foot-and-mouth disease outbreak could have originated with illegal movement of cattle from Venezuela that halted trade in live animals and meat between the two countries for a time, although there is no reporting to indicate they are linked.<sup>86</sup> Illegal goldmining remains a problem for Colombian officials and is anticipated to increase due to profitability.<sup>87</sup>

Colombia has made strides to combat its deep-rooted organized crime problem, with continued demobilization processes and security-development partnerships. However, violence is still a pervasive problem, alongside persistent corruption concerns and the continued criminal control of large swathes of Colombia.<sup>88</sup>

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<sup>82</sup> Calvani, Sandro, and Stefan Liller. 2006. "Violence, Crime and Illegal Arms Trafficking in Colombia." United Nations Office on Drugs and Crime, November. [https://www.unodc.org/pdf/Colombia\\_Dec06\\_en.pdf](https://www.unodc.org/pdf/Colombia_Dec06_en.pdf)

<sup>83</sup> Human Rights Watch. "Colombia." <https://www.hrw.org/americas/colombia>

<sup>84</sup> Global Initiative Against Transnational Organized Crime. 2021. "Global Organized Crime Index: Colombia." <https://ocindex.net/country/colombia>

<sup>85</sup> "ELN Oversees Rampant Cattle Smuggling Between Colombia and Venezuela." 2022. InSight Crime. <https://insightcrime.org/news/eln-oversees-rampant-cattle-smuggling-colombia-venezuela/>

<sup>86</sup> EFE. 2018. "Venezuela anuncia cierre comercial de frontera con Colombia por aftosa." El Tiempo, October 29. <https://www.eltiempo.com/mundo/venezuela/venezuela-anuncia-cierre-comercial-de-frontera-con-colombia-por-aftosa-287142>. For additional background, also see: InSight Crime. 2018. "Controles estatales en Venezuela propician contrabando de ganado hacia Colombia." October 31. <https://es.insightcrime.org/noticias/noticias-del-dia/controles-estatales-en-venezuela-propician-contrabando-de-ganado-hacia-colombia/>; "Contrabando de bovinos deja \$1 millón por animal." 2018. Vanguardia, October 21. <https://www.vanguardia.com/economia/nacional/contrabando-de-bovinos-deja-1-millon-por-animales-OBVL448402>.

<sup>87</sup> Global Initiative Against Transnational Organized Crime. 2021. "Global Organized Crime Index: Colombia." <https://ocindex.net/country/colombia>

<sup>88</sup> Transparency International. "Colombia." <https://www.transparency.org/en/countries/colombia>. Accessed October 19, 2022.

## Transnational Criminal Organizations

There is no evidence of foreign criminal groups having or seeking a territorial, permanent presence in Colombia. However, there are many groups that collaborate with Colombian domestic criminal organizations, particularly in drug trafficking and smuggling operations. This includes Brazilian prison gang First Capital Command (Primeiro Comando da Capital – PCC) that has reportedly enlisted FARC dissident members in drug trafficking efforts across the region, and into the United States and Europe.<sup>89</sup>

*Table 2: List of Active Transnational Criminal Organizations*

Group Name	Country of Origin	Area of Activity
Prison gangs	Brazil	Northern Colombia

## Domestic Criminal Organizations

Colombia is home to multiple historic transnational cartels, including the Medellín Cartel and the Cali Cartel. While these cartels have historically been distinct from guerilla and paramilitary groups, recently the lines between the two have blurred. Traditionally, cartels were primarily focused on financial gain, whereas the guerilla groups and subsequent paramilitary groups were much more ideologically and politically motivated and did not initially commit crime for financial gain. These guerilla groups, including FARC, ELN, M-19, and the EPL, eventually turned to criminal activities to finance their political operations through kidnappings, extortion, and taxing the drug trade. In the early 2000s the breakup of the Norte del Valle Cartel and the demobilization of the United Self-Defense Forces of Colombia (Autodefensas Unidas de Colombia – AUC) led to the rise of hybrid criminal and paramilitary groups.<sup>90</sup>

InSight Crime has broken down post-AUC Colombian organized criminal groups into four levels determined by structure and geographical reach. At the lowest level are “pandillas,” or street gangs, which are geographically limited to neighborhoods or city blocks, who engage in smaller-scale criminal activity including primarily burglary, drug dealing, and micro-

<sup>89</sup> Global Initiative Against Transnational Organized Crime. 2021. “Global Organized Crime Index: Colombia.” <https://ocindex.net/country/colombia>. Cárdenas, Juan Diego. 2023. “Brazil Gangs Behind Surging Violence on Colombia, Peru Tri-Border.” InSight Crime, April 4. <https://insightcrime.org/news/brazilian-gangs-lead-surge-violence-border-colombia-peru/>. “Born behind Bars, Brazil’s PCC Now South America’s Leading Criminal Gang.” 2022. La Prensa Latina Media, June 10. <https://www.laprensalatina.com/born-behind-bars-brazils-pcc-now-south-americas-leading-criminal-gang/>. Jelmayer, Vyas, and Pearson. 2017. “Brazilian Gang Enlists FARC Rebels for Drug Trade.” Wall Street Journal, January 31. <https://www.wsj.com/articles/brazilian-gang-enlists-farc-rebels-for-drug-trade-1485858609>.

<sup>90</sup> InSight Crime. “Colombia Profile.” <https://insightcrime.org/colombia-organized-crime-news/colombia/>. Accessed October 19, 2022.

extortion.<sup>91</sup> Slightly larger groups, referred to as combos or “bandas,” that hold neighborhoods but may operate in larger areas, partake in more complex criminal activities, but still function as local, unstructured criminal groups. “Oficina de cobro” refers to more multifarious groups that control territory ranging from city district and rural areas to entire cities. These oficinas generally have trained armed branches and possess advanced capabilities for money laundering and links to drug trafficking organizations.

The groups at the highest level of domestic criminal organizations are collectively known as BACRIM. These more recent drug trafficking groups are not considered by the government as paramilitary groups, but as “criminal bands,” (for the Spanish “bandas criminales” – BACRIM).<sup>92</sup> BACRIM are comprised of many cells, with a large geographic reach, either regionally or nationally, with specialized personnel across the network to provide services to transnational drug traffickers and infiltrate security forces and the government.<sup>93</sup> Considered the third generation of Colombian criminal organizations, these groups differ from previous organized crime organizations by being far less reliant on cocaine trafficking. Owing to a decreased income potential in the international cocaine market, due at least partially to the increased role of Mexican criminal groups in cocaine trafficking routes to the United States, these groups engage in a myriad of criminal activities including human trafficking, extortion, smuggling, and gold-mining.<sup>94</sup> BACRIM are fluid enterprises with dispersed leadership control, are less ideologically or politically motivated, and are much more secretive in nature than their predecessors. Their primary motivation is financial, and their method of violence is stealthier and more focused on assassinations, rather than outwardly paramilitary dedicated.<sup>95</sup> BACRIM cells additionally operate as hired guns for businesses, transnational criminal groups, and corrupt officials to target opponents.<sup>96</sup>

These groups generally do not have nearly the operational capacity, security power, or authority of previous organizations, but they do hold territory and “control movement

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<sup>91</sup> McDermott, Jeremy. 2014. “The BACRIM and Their Position in Colombia’s Underworld.” InSight Crime, May 2. <https://insightcrime.org/investigations/bacrim-and-their-position-in-colombia-underworld/>

<sup>92</sup> McDermott, Jeremy. 2014. “The BACRIM and Their Position in Colombia’s Underworld.” InSight Crime, May 2. <https://insightcrime.org/investigations/bacrim-and-their-position-in-colombia-underworld/>

<sup>93</sup> McDermott, Jeremy. 2014. “The BACRIM and Their Position in Colombia’s Underworld.” InSight Crime, May 2. <https://insightcrime.org/investigations/bacrim-and-their-position-in-colombia-underworld/>

<sup>94</sup> McDermott, Jeremy. 2014. “The BACRIM and Their Position in Colombia’s Underworld.” InSight Crime, May 2. <https://insightcrime.org/investigations/bacrim-and-their-position-in-colombia-underworld/>

<sup>95</sup> Uribe, Pablo Medina. 2016. “Explainer: After the FARC, Colombia Still Has to Face Bacrim.” Americas Society & Council of the Americas, January 6. <https://www.as-coa.org/articles/explainer-after-farc-colombia-still-has-face-bacrim>

<sup>96</sup> McDermott, Jeremy. 2014. “The BACRIM and Their Position in Colombia’s Underworld.” InSight Crime, May 2. <https://insightcrime.org/investigations/bacrim-and-their-position-in-colombia-underworld/>

corridors across the country.”<sup>97</sup> So, while BACRIM operate primarily within Colombia, many have direct links with external criminal organizations. In particular, the “Los Invisibles” in Medellin have direct links with Mexican cartels that utilize the armed BACRIM to secure the production and transportation of cocaine through Colombia to ports or other departure points.<sup>98</sup> However, in certain regions, particularly in Uraba and Cordoba, BACRIM still appear and function more similar to their historic paramilitary predecessors.<sup>99</sup>

The Clan del Golfo is the most powerful BACRIM currently in operation in Colombia. The group has recruited smaller gangs under their banner and has amassed vast power and geographic reach throughout Colombia.<sup>100</sup> Recently, in May 2022, Clan del Golfo members terrorized cities across Colombia during an armed strike to protest the extradition of their leader, Dairo Antonio Úsuga, also known as Otoniel. This caused widespread economic harm and paralyzed communities, hospitals, and society in general.<sup>101</sup> The group has virtually uncontested control of Urabá and of the shipments of cocaine in Chocó.<sup>102</sup> The group also has a vested interest in goldmining. Across Colombia, illegal goldmining has increased by 8 percent, mainly in the north and west of the country.<sup>103</sup> The Clan del Golfo’s mining efforts are not only harming legitimate mining operations, but also contributing to ecocide of local communities.<sup>104</sup>

Fighting between domestic criminal groups and with Colombian military and security forces continues regularly; however, efforts by the Colombian government to reduce the violence have increased following the presidential election in June 2022.<sup>105</sup> Peace processes are

<sup>97</sup> McDermott, Jeremy. 2014. “The BACRIM and Their Position in Colombia’s Underworld.” InSight Crime, May 2. <https://insightcrime.org/investigations/bacrim-and-their-position-in-colombia-underworld/>

<sup>98</sup> McDermott, Jeremy. 2014. “The BACRIM and Their Position in Colombia’s Underworld.” InSight Crime, May 2. <https://insightcrime.org/investigations/bacrim-and-their-position-in-colombia-underworld/>

<sup>99</sup> McDermott, Jeremy. 2014. “The BACRIM and Their Position in Colombia’s Underworld.” InSight Crime, May 2. <https://insightcrime.org/investigations/bacrim-and-their-position-in-colombia-underworld/>

<sup>100</sup> “United They Stand, Divided They Fall - Urabeños Losing Grip in Colombia.” 2022. InSight Crime, April 27. <https://insightcrime.org/news/united-stand-divided-fall-urabenos-losing-grip-colombia/>

<sup>101</sup> Schmidt, Samantha, and Diana Durán. 2022. “Cartel Shuts Down Much of Colombia Over Leader’s extradition to U.S.” The Washington Post, May 9. <https://www.washingtonpost.com/world/2022/05/09/colombia-clan-golfo-armed-strike-otoniel/>

<sup>102</sup> “United They Stand, Divided They Fall - Urabeños Losing Grip in Colombia.” 2022. InSight Crime, April 27. <https://insightcrime.org/news/united-stand-divided-fall-urabenos-losing-grip-colombia/>

<sup>103</sup> Tulchin, Joseph S. 2020. “Colombia: Organized Crime at the Heart of Unrest.” GIS Reports Online, March 3. <https://www.gisreportsonline.com/r/colombia-organized-crime/>

<sup>104</sup> Van Uhm, Daan P. 2020. “The Diversification of Organized Crime into Gold Mining: Domination, Crime Convergence, and Ecocide in Darién, Colombia.” *Illegal Mining*, October, p 105-146. [https://www.researchgate.net/publication/346101164\\_The\\_Diversification\\_of\\_Organized\\_Crime\\_into\\_Gold\\_Mining\\_Domination\\_Crime\\_Convergence\\_and\\_Ecocide\\_in\\_Darien\\_Colombia](https://www.researchgate.net/publication/346101164_The_Diversification_of_Organized_Crime_into_Gold_Mining_Domination_Crime_Convergence_and_Ecocide_in_Darien_Colombia)

<sup>105</sup> Acosta, Luis Jaime. 2022. “Colombia Says 10 Armed Groups Agree to Unilateral Ceasefire.” Reuters, September 28. <https://www.reuters.com/world/americas/colombia-says-10-armed-groups-agree-unilateral->

ongoing with a ceasefire being agreed to by 10 armed groups, including the Clan del Golfo, in September 2022.<sup>106</sup>

**Table 3: List of Active Domestic Organised Criminal Groups**

Group Name	Area of Activity
National Liberation Army (ELN)	Nationwide (Colombia)
Estado Mayor Central	Nationwide (Colombia)
Ex-FARC mafia cells	Southern Colombia and Venezuela
Clan del Golfo (Urabeños)	Northwest Colombia, Colombia-Venezuela border
Segunda Marquetalia	Primarily mountain areas along Colombia-Venezuela border
Los Puntilleros	Eastern plains of Colombia, Colombia-Venezuela border
Rastrojos	Colombia-Venezuela border (primarily Norte de Santander and State of Táchira)
Los Caparrapos	Bajo Cauca in Antioquia and south Córdoba, Colombia
Popular Liberation Army (EPL) dissidents	Norte de Santander, Colombia
Los Pachenca	Santa Marta, Colombia; northern Colombia
Sierra Nevada de Santa Marta Auto-Defenses	Santa Marta, Colombia; northern Colombia
Oficina de Envigado	Primarily in Medellín
La Empresa – Spartans and Shortas	Buenaventura

## Assessment

Despite the pervasive organized crime issues facing Colombia, there is little indication of any criminal activity that represents a direct biosecurity threat. Criminal groups operating in Colombia have not made use of, or sought to acquire, biological agents. There are no indications that Colombian criminal networks are engaged in activities supporting biological weapons proliferation by foreign states or terrorist groups. Illicit flora and fauna markets and networks, however, do raise a biosecurity concern due to potential for unintended animal disease spread through export of Colombia’s fauna to foreign countries or import from foreign countries, as well as potential for introducing invasive flora and fauna to

ceasefire-2022-09-28/

<sup>106</sup> Acosta, Luis Jaime. 2022. “Colombia Says 10 Armed Groups Agree to Unilateral Ceasefire.” Reuters, September 28. <https://www.reuters.com/world/americas/colombia-says-10-armed-groups-agree-unilateral-ceasefire-2022-09-28/>

Colombia through import.

## Non-organized Crime

### Overview

Colombia is a major hub for human trafficking, particularly to Asia and the Caribbean for sexual exploitation, as well as an extensive online human trafficking industry.<sup>107</sup> Additionally, many transnational criminal groups use Colombia as a migratory route for smuggling humans to either the United States or to the south.<sup>108</sup> Due to the immense number of criminal organizations throughout Colombia, its illicit arms market is booming. There is also a growing, yet still small-scale, synthetic drug production market fueled by the developing clubbing scene.<sup>109</sup> Homicide rates jumped in 2021 due to insurgent and gang conflict, along with retaliation during public protest, placing Colombia second among its fellow South American countries, with 26.8 per 100,000 population, second to Venezuela's 40 per 100,000 population.

### Industrial Espionage

There is no identifiable indication of industrial espionage relating to biosecurity occurring in Colombia.

### Biocrime

No information found.

### Assessment

There are no public, open-source indications that point to either industrial espionage or biocrime. However, Colombia still suffers from high rates of non-violent crime from human trafficking, illicit arms sales, and homicide rates.

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<sup>107</sup> Global Initiative Against Transnational Organized Crime. 2021. "Global Organized Crime Index: Colombia." <https://ocindex.net/country/colombia>

<sup>108</sup> Global Initiative Against Transnational Organized Crime. 2021. "Global Organized Crime Index: Colombia." <https://ocindex.net/country/colombia>

<sup>109</sup> Global Initiative Against Transnational Organized Crime. 2021. "Global Organized Crime Index: Colombia." <https://ocindex.net/country/colombia>

## Biological Programs and Infrastructure

### Overview

Colombia's biological research infrastructure is mostly housed at and in collaboration with universities, in addition to the key national public health entities that serve research and implementation functions. Colombia is employing its international partnerships to foster and grow its domestic vaccine production capability after the effects of the pandemic.

### Military Programs

#### *Offensive BW*

There is no evidence that Colombia pursues an offensive biological warfare capability.

*B. anthracis*, which is a common military biological warfare agent, appears to be endemic to portions of Colombia and affects cattle and other animals from time to time, though there are no indications of significant human infections. There is an ongoing effort to vaccinate cattle against anthrax.<sup>110</sup> There are no indications that any efforts have been made to exploit *B. anthracis* for military purposes at any point in Colombia's modern history.

In 1964 the Soviet Union levelled allegations that Colombia was collaborating with the United States of America in the use of biological warfare agents "against peasants."<sup>111</sup> There was no substance behind these allegations which were delivered as one element of a wider sustained Soviet disinformation campaigns directed at the United States during the Cold War.<sup>112</sup>

#### *Defensive BW*

There is no available evidence pointing to the existence of an active defensive biological warfare program operated by the Colombian military, or the Colombian state more generally. There is no evidence identified in open sources pointing to the existence of any equivalent historical medical or scientific efforts for the specific purposes of biological warfare defense.

In the early to mid-20<sup>th</sup> century Colombia, as was common, maintained a dedicated program for vaccination against smallpox, and maintained and operated a capacity for domestic production of vaccines up to 1999.

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<sup>110</sup> "Colombia tiene mínima prevalencia de ántrax vacuna." 2014. Contexto Ganadero, February 13. <https://www.contextoganadero.com/internacional/colombia-tiene-minima-prevalencia-de-antrax-vacuna>

<sup>111</sup> Leitenberg & Zilinskas. *The Soviet Biological Weapons Program: A History*. Harvard University Press. 2012. p. 411.

<sup>112</sup> Leitenberg & Zilinskas. *The Soviet Biological Weapons Program: A History*. Harvard University Press. 2012. Ch. 14 passim.

Colombian military personnel are required to receive a range of mandatory vaccinations. The vaccines administered are a subset of those administered to the general population, and there are no indications of unique military-only vaccinations being administered to troops on a systematic basis.<sup>113</sup>

The Colombian military maintained a dedicated unit (CBN Company) responsible for CBRN preparedness and emergency response as a subunit of the Disaster Attention and Prevention Battalion No. 80 "Brigadier General Álvaro López Vargas" attached to the Special Engineers Brigade in the period before 2015. More recent specific reference to this subunit has been identified, but CBRN defense continues to be located within the Special Engineers Brigade operating out of Fort Tolemaida.<sup>114</sup> Additionally, Colombia's National Police Counterterrorism Bomb Squad also retains the official authority regarding CBRN defense capabilities.

## **Military Biological Infrastructure**

### ***Research***

There are no open-source indications that Colombia maintains any military operated biological research institutions of significance. Military hospitals exist, but these do not appear to be conducting research on militarily relevant pathogens.

### ***Training***

Colombia's Special Engineers Brigade, as discussed in the section "Military Programs – Defensive BW" above, also engaged in training and technical capability exercises with the Mexican Army in 2015.<sup>115</sup>

The Colombian Army has partnered with the United States (U.S.) Army and South Carolina National Guard since 2012 in the National Guard's State Partnership Program. The Colombian Army has also joined the U.S. Army South at the 2017 International Technical Workshop on Military Engineering that was hosted in Bogotá, Colombia.<sup>116</sup>

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<sup>113</sup> "Circular 00001034. Lineamientos e instrucciones para el manejo de los subprogramas de Salud Operacional de Vacunación Operacional, Enfermedades Transmitidas por Vectores en las unidades militares." Ministry of Defense. April 13, 2020. [https://www.sanidadfuerzasmilitares.mil.co/recursos\\_user///DISAN%20EJERCITO/VIGILANCIA%20EPIDEMIOLOGICA/CIRCULAR%20001034.PDF](https://www.sanidadfuerzasmilitares.mil.co/recursos_user///DISAN%20EJERCITO/VIGILANCIA%20EPIDEMIOLOGICA/CIRCULAR%20001034.PDF).

<sup>114</sup> "Visita geo-estratégica internacional de la Escuela Superior de Guerra del Ejército." General Command of the Military Forces. September 16, 2018. Mexicano. <https://cgfm.mil.co/en/node/1716>

<sup>115</sup> "Visita geo-estratégica internacional de la Escuela Superior de Guerra del Ejército." General Command of the Military Forces. September 16, 2018. Mexicano. <https://cgfm.mil.co/en/node/1716>.

<sup>116</sup> Woode, Summer (Sgt.). 2017. "Army South Takes Part in First International Engineering Workshop Held in Colombia." Joint Base San Antonio (JBSA), U.S. Department of Defense. October 27.

The Military University of New Grenada (*Universidad Militar Nueva Grenada*, or UMNG)—once the Military University of Medicine—appears to remain the predominant military university training program in the area of health sciences and medicine, that includes offerings of undergraduate and graduate courses as well as medical research. It is unclear what else this program entails and if it includes in depth studies relating to biosecurity beyond the general descriptions of this program.<sup>117</sup>

The Regional Center for Strategic Security Studies (CREES) at the War College (Escuela Superior de Guerre – ESDEG) is a national and international collaboration research center that brings together security and defense sectors with academics and international partners to study regional and national security threats, mostly along the lines of transnational organized crime and geoeconomics. CREES does publicize that some of their work also focuses on the security threats of terrorism and weapons of mass destruction (WMD), which would be of interest in relation to biosecurity; however, their website detailing research projects does not indicate any current projects with a WMD, terrorism or biosecurity focus.<sup>118</sup> ESDEG has extensive national and international academic agreements, along with security and defense institutions that span from defense studies and research institutions to war colleges in South American and within the United States. With this level of collaboration and partnership, there is a high probability of extensive training on related terrorism, WMD, and biosecurity issues, although public information does not offer further detail beyond the mention of such studies.<sup>119</sup> ESDEG also houses the Center for Strategic Studies on National Security and Defense (CSEDN), which appears to also offer more vaguely related studies and research options of “scientific, technological and environmental development” and “nature of war, terrorism and new threats.” Biosecurity would likely fit within those research categories, but it is unclear in the information provided if this is actually the case.<sup>120</sup>

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<https://www.jbsa.mil/News/News/Article/1355753/army-south-takes-part-in-first-international-engineer-workshop-held-in-colombia/>.

<sup>117</sup> There is little detail provided publically beyond the general description of the program on the program website. See: Universidad Militar Nueva Grenada (UMNG). “Facultad de medicina y ciencias de la salud.” <https://www.umng.edu.co/web/guest/sedes/bogota/facultad-de-medicina-y-ciencias-de-la-salud>.

<sup>118</sup> It is also unclear from their website the specifics of the studies on WMD, terrorism, and biosecurity issues. Please see: Escuela Superior de Guerra “General Rafael Reyes Prieto” (ESDEG). “ESDEG – Research Projects, Year 2022.” <http://www.esdegue.edu.co/index.php/es/proyectos-de-investigacion-esdeg>.

<sup>119</sup> The list of defense and security institutions that ESDEG collaborates with is provided here: Escuela Superior de Guerra “General Rafael Reyes Prieto” (ESDEG). “Instituciones de Seguridad y Defensa.” <https://www.esdegue.edu.co/es/instituciones-de-seguridad-y-defensa>.

<sup>120</sup> Escuela Superior de Guerra “General Rafael Reyes Prieto” (ESDEG). 2022. “Centro de Estudios Estratégicos sobre Seguridad y Defensa Nacionales – CSEDN.” <http://www.esdegue.edu.co/es/centro-de-estudios-estrategicos-sobre-seguridad-y-defensa-nacionales-csedn>.

**Table 4: List of Military Biological Facilities**

NAME	LOCATION	PURPOSE	AGENCY
Escuela Militar de Cadetes General Jose Maria Cordova (ESMIC) <sup>121</sup>	Bogotá, Colombia	4-year military college	Ministry of Defense
Universidad Militar Nueva Granada (UMNG) <sup>122</sup>	Bogotá, Colombia	Military university. Includes Faculty of Medicine and Health Sciences <sup>123</sup>	Ministry of Defense
Regional Center for Strategic Security Studies (CREES) <sup>124</sup>	Bogotá, Colombia	Think tank, academic, security and defense sector collaborating research center focusing on national and regional security issues (e.g., illicit drug trade, terrorism, WMD, cyber warfare, etc.)	Escuela Superior de Guerra “General Rafael Reyes Prieto” (ESDEG) (War College)
Center for Strategic Studies on National Security and Defense (CSEDN)	Bogotá, Colombia	National defense sector and academic research center	Escuela Superior de Guerra “General Rafael Reyes Prieto” (ESDEG) (War College)

## Civilian Biological Infrastructure

### Research Facilities

#### Official

Much of Colombia national biological research infrastructure is concentrated within the country’s capital, Bogotá, and at national agencies or entities. The national public health entities at the core of this infrastructure include Colombia’s National Reference Laboratory (*Laboratorio Nacional de Referencia or LRN*) of the National Institute of Health (INS), as

<sup>121</sup> Translated to English, it is: Military School of Officers. <https://www.esmic.edu.co/esmic>.

<sup>122</sup> 2022. “Nueva Granada Military University.” Times Higher Education. <https://www.timeshighereducation.com/world-university-rankings/nueva-granada-military-university>.

<sup>123</sup> Universidad Militar Nueva Grenada (UMNG). “Facultad de medicina y ciencias de la salud.” <https://www.umng.edu.co/web/guest/sedes/bogota/facultad-de-medicina-y-ciencias-de-la-salud>.

<sup>124</sup> Escuela Superior de Guerra “General Rafael Reyes Prieto” (ESDEG). “Centro Regional de Estudios Estratégicos en Seguridad – CREES.” <http://www.esdegue.edu.co/es/centro-regional-de-estudios-estrategicos-en-seguridad-crees>.

previously discussed in the “Public Health” section of this report. The LRN manages and is comprised of eight (8) laboratories subunits that cover the following health topics: Genetics, Microbiology, Virology, Chemistry and Toxicology, Parasitology, Mycobacteriology, and Pathology, and Entomology.<sup>125</sup>

Although not responsible for research institution coordination, Colombia’s National Institute of Health (INS) does have three of its five directorates that contain research groups: Directorate of Networks on Public Health (with 8 groups) administered by the LRN; the Directorate of Research on Public Health (with 10 research groups) and the Directorate of Production (with one research group).<sup>126</sup>

Additionally, Colombia’s National Food and Drug Surveillance Institute (INVIMA), and Colombian Institute of Agriculture (ICA) also function as additional reference laboratories for their respective agencies (INVIMA for the Ministry of Health, and ICA for the Ministry of Agriculture). ICA designs and executes strategies to prevent, control and reduce health, biological and chemical risks for animals and plants that can affect agricultural production, forestry, fisheries, and aquaculture production.

Furthermore, the research centers of the National System of Science, Technology and Innovation (SNTI) of the Ministry of Science, Technology and Innovation comprise another important portion of Colombia’s biological research infrastructure. Research centers of this system provide leading educational research (both basic and applied) ranging from biotechnology, agriculture, security, engineering, and social and political sciences. These centers span all education grade levels, private and public agencies, and international and national research collaborations. Relevant entities that focus on biosecurity and studies across the biomedical, environment and agricultural sectors are included in Table 5.<sup>127</sup>

Aside from the national agencies and research institutes, a majority of this biological research infrastructure is housed at and in collaboration with the numerous universities in Colombia.

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<sup>125</sup> Instituto Nacional de Salud (INS). “Dirección De Redes En Salud Pública: ¿Qué hacemos?” <https://www.ins.gov.co/Direcciones/RedesSaludPublica/Paginas/default.aspx>. Also see: Instituto Nacional de Salud (INS). 2023. “Organigrama.” <https://www.ins.gov.co/Transparencia/estructura-organica-y-talento-humano/Paginas/organigrama.aspx>. INS’ organizational chart is available for direct download at this page.

<sup>126</sup> These groups are described in INS’ organizational chart, available for direct download. See: Instituto Nacional de Salud (INS). 2023. “Organigrama.” <https://www.ins.gov.co/Transparencia/estructura-organica-y-talento-humano/Paginas/organigrama.aspx>.

<sup>127</sup> Gobierno de Colombia, Minciencias. 2022. “About Colciencias.” <https://minciencias.gov.co/node/1434>. Also see: Minciencias. “ABC De Minciencias.” [https://minciencias.gov.co/sites/default/files/abc\\_de\\_minciencias\\_0.pdf](https://minciencias.gov.co/sites/default/files/abc_de_minciencias_0.pdf).

**Table 5: List of Official Civilian Research Facilities**

<b>NAME</b>	<b>LOCATION</b>	<b>PURPOSE</b>	<b>AGENCY</b>
Colombian Institute of Agriculture (ICA) <sup>128</sup>	Bogotá, Colombia	National Information System for Official Control Diseases (SINECO) (plant and animal diseases); reference laboratory for agriculture	Ministry of Agriculture and Rural Development
Laboratorio Nacional de Referencia (LNR) <sup>129</sup>	Bogotá, Colombia	National reference laboratory; disease surveillance and research, training, technology transfer (operative arm of Ministry of Health)	INS; Ministry of Health
Public Health Research Directorate (DISP) <sup>130</sup>	Bogotá, Colombia	Directorate within INS that manages public health research and innovation in biomedicine	INS
Directorate of Production <sup>131</sup>	Bogotá, Colombia	Directorate within INS that researches, develops and markets biotechnologies, reagents, biological and pharmaceutical products for public health	INS

<sup>128</sup> Instituto Colombiano Agropecuario (ICA). “Sub. Protección Animal.” <https://www.ica.gov.co/areas/pecuaria>. Also see their page on plant protection: “Sub. Protección Vegetal.” <https://www.ica.gov.co/areas/agricola>.

<sup>129</sup> Translated to English, it is: National Reference Laboratory. Instituto Nacional de Salud (INS). “Dirrección De Redes En Salud Pública.” <https://www.ins.gov.co/Direcciones/RedesSaludPublica/Paginas/default.aspx>.

<sup>130</sup> Instituto Nacional de Salud (INS). “Investigación en Salud Pública.” <https://www.ins.gov.co/Direcciones/investigacion/Paginas/default.aspx>.

<sup>131</sup> Insituto Nacional de Salud (INS). “Producción.” <https://www.ins.gov.co/Direcciones/Produccion/Paginas/default.aspx>.

NAME	LOCATION	PURPOSE	AGENCY
National Institute for Medicine and Food Surveillance (INVIMA) <sup>132</sup>	Bogotá, Colombia	National Regulatory Agency for food, medicine, cosmetics, and second operative arm of Ministry of Health; also serves as a national reference laboratory	Ministry of Health
International Training and Medical Research Center (CIDEIM) <sup>133</sup>	Cali, Colombia	Research, training (also academic), international collaboration; Research areas including Leishmaniosis, tuberculosis, malaria, vector control) <sup>134</sup>	Ministry of Science, Technology and Innovation (SNCTI)
Institute of Human Genetics <sup>135</sup>		Academic research (applied and basic)	SNCTI; Pontifica Universidad Javeriana
Institute of Biotechnology (IBUN) <sup>136</sup>	Bogotá, Colombia	Academic research and training	SNCTI; National University of Colombia – Bogotá Campus

<sup>132</sup> Instituto Nacional de Vigilancia de Medicamentos y Alimentos (INVIMA). “Quiénes Somos.” <https://www.invima.gov.co/web/guest/quienes-somos>.

<sup>133</sup> Translated to Spanish, it is: Centro Internacional de Entrenamiento e Investigaciones Medica (CIDEIM). CIDEIM also has several laboratories and supports units with the following focuses: immunology and cell biology, biochemistry and molecular biology, bacterial resistance, a BSL-3 biosecurity laboratory, entomology, malaria, and biostatistics and epidemiology. For further details and list of these laboratories, see: Centro Internacional de Entrenamiento e Investigaciones Medica (CIDEIM). “Laboratories and Support Units.” <https://www.cideim.org.co/cideim/en/our-research/laboratories-support-units.html>

<sup>134</sup> Research areas, see: Centro Internacional de Entrenamiento e Investigaciones Medica (CIDEIM). “Research areas.” <https://www.cideim.org.co/cideim/en/our-research/researchareas.html>.

<sup>135</sup> Gobierno de Colombia, Minciencias. “Actores Reconocidos: Centros / Institutos de Investigación.” [https://minciencias.gov.co/reconocimiento\\_de\\_actores/actores\\_reconocidos](https://minciencias.gov.co/reconocimiento_de_actores/actores_reconocidos)

<sup>136</sup> Universidad Nacional de Colombia. 2014. “IBUN, Biotecnología.” <http://www.ibun.unal.edu.co/>. IBUN is listed as part of the National System of Science, Technology and Innovation (SNCTI), see: Gobierno de Colombia, Minciencias. “Actores Reconocidos: Centros / Institutos de Investigación.” [https://minciencias.gov.co/reconocimiento\\_de\\_actores/actores\\_reconocidos](https://minciencias.gov.co/reconocimiento_de_actores/actores_reconocidos)

NAME	LOCATION	PURPOSE	AGENCY
Corporation for Biological Research (CIB) <sup>137</sup>		Health sciences, biodiversity and environmental biotechnology research	SNCTI
Federico Lleras Acosta Dermatological Center <sup>138</sup>	Bogotá, Colombia	Hospital; research and innovation in skin health and disease	SNCTI; University hospital of the National Order of Third Level; Ministry of Health
District Institute of Science, Biotechnology and Innovation in Health (IDCBIS) <sup>139</sup>	Bogotá, Colombia	Research is medical therapies (stem cell, advanced therapies), transfusion medicine and immunohematology	SNCTI; District Health Department
Center for Research into Sustainable Agricultural Production Systems (CIPAV) <sup>140</sup>		Agricultural production systems; livestock research; ecosystem restoration and aquatic systems	SNCTI
Colombian Corporation for Agricultural Research (AGROSAVIA) <sup>141</sup>	Colombia	Agriculture, plant and bioproducts research, laboratory services	SNCTI

<sup>137</sup> Gobierno de Colombia, Minciencias. “Actores Reconocidos: Centros / Institutos de Investigación.” [https://minciencias.gov.co/reconocimiento\\_de\\_actores/actores\\_reconocidos](https://minciencias.gov.co/reconocimiento_de_actores/actores_reconocidos)

<sup>138</sup> Gobierno de Colombia, Ministerio de Salud. Hospital Universitario Centro Dermatológico Federico Lleras Acosta E.S.E. 2022. “1.1 Misión, Visión, Funciones y Deberes.” March 17. <https://www.dermatologia.gov.co/transparencia/1-informacion-entidad/1-1-mision-vision-funciones-deberes-2&download=Y>

<sup>139</sup> Instituto Distrital de Ciencia, Biotecnología e Innovación en Salud (IDCBIS). “Quiénes Somos.” <https://www.dermatologia.gov.co/>

<sup>140</sup> CIPAV. “Quién Somos.” <https://cipav.org.co/quienes-somos/>

<sup>141</sup> AGROSAVIA has several research centers throughout Colombia. See: “AGROSAVIA Headquarters.” <https://www.agrosavia.co/nosotros/sedes>

NAME	LOCATION	PURPOSE	AGENCY
Center for the Study of Autoimmune Diseases (CREA) <sup>142</sup>	Bogotá, Colombia	Academic research and training; non-communicable chronic autoimmune disease research	SNCTI; Universidad del Rosario
Institute of Studies in Marine Sciences (CECIMAR) <sup>143</sup>	San Andrés, Colombia	Academic (postgraduate) training and research marine biology	SNCTI; Universidad Nacional de Colombia
Alexander von Humboldt Biological Resources Research Institute (IIRB Alexander von Humboldt) <sup>144</sup>	Colombia	National research center for biodiversity and ecology research	Ministry of Environment and Sustainable Development (MADS); SNCTI
Escuela de Microbiología <sup>145</sup>	Medellín, Colombia		Universidad de Antioquia
Decana Nacional Medicina Universidad Cooperativa de Colombia <sup>146</sup>	Medellín, Colombia		

<sup>142</sup> Universidad de Rosario. “Centro de Estudio de Enfermedades Autoinmunes CREA.” <https://urosario.edu.co/static/crea/inicio/index.html>

<sup>143</sup> Universidad Nacional de Colombia. “CECIMAR.” Hermes, Sistema de Información de la Investigación. <http://www.hermes.unal.edu.co/pages/Consultas/EnsayoLaboratorio.xhtml?idEnsayo=584>

<sup>144</sup> Translated to Spanish, it is: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt. This institute also is expanding to collaborate across the Latin American region, with the United States and U.S. Agency for International Development (USAID). See: Stockholm Environment Institute (SEI). 2022. “New Colombia Partnership Enables Joint Research, Capacity-Building.” <https://www.sei.org/featured/new-colombia-partnership-enables-joint-research-capacity-building/>. Also see the Alexander von Humboldt webpage: <http://www.humboldt.org.co/es/instituto/que-hacemos/acerca-del-instituto>.

<sup>145</sup> Translated to English it is, School of Microbiology. See: Cardona Arias, Jaiberth Antonio, Luis Felipe Higuera Gutierrez and Ana Maria Jaramillo-Caro. 2020. “Analysis of Internal Medicine Training in Colombia: An Essay Containing Health Economic Elements.” [http://www.scielo.org.co/scielo.php?script=sci\\_arttext&pid=S0120-24482020000100032](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0120-24482020000100032).

<sup>146</sup> Cardona Arias, Jaiberth Antonio, Luis Felipe Higuera Gutierrez and Ana Maria Jaramillo-Caro. 2020. “Analysis of Internal Medicine Training in Colombia: An Essay Containing Health Economic Elements.” [http://www.scielo.org.co/scielo.php?script=sci\\_arttext&pid=S0120-24482020000100032](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0120-24482020000100032).

NAME	LOCATION	PURPOSE	AGENCY
Research in Microbiology Laboratory, Faculty of Sciences <sup>147</sup>	Bogotá, Colombia	Research in pharmaceutical microbiology, drugs and disinfectants; biotechnology	National University of Colombia (UNAL)
Microbiology – Veterinary Laboratory, Faculty of Veterinary Medicine and Zootechnics <sup>148</sup>	Bogotá, Colombia	Research collaboration with the Ministry of Agriculture and Rural Development; teaching (undergraduate and graduate/PhD studies); zoonotic disease diagnostics laboratory	National University of Colombia (UNAL)
Avian Pathology Laboratory, Faculty of Veterinary Medicine and Zootechnics <sup>149</sup>	Bogotá, Colombia	Teaching; research; clinical laboratory for pathogen diagnosis of avian species; processing and diagnostics of birds and tissue samples	
Agricultural Microbiology Laboratory, Institute of Biotechnology (IBUN) <sup>150</sup>	Bogotá, Colombia	Research, cultivation and analysis of biofertilization and biological controls for agricultural crops	National University of Colombia (UNAL)
Laboratories Management <sup>151</sup>	Bogotá, Colombia	Several laboratories focusing on biological processes of evolutionary genetics, microbiome research and medicinal plants; accredited to analyze COVID-19 samples for diagnosis	

<sup>147</sup> National University of Colombia (UNAL). “Research in Microbiology.” <http://www.hermes.unal.edu.co/pages/Consultas/EnsayoLaboratorio.xhtml?idEnsayo=194>.

<sup>148</sup> National University of Colombia (UNAL). “Microbiology – Veterinary.” <http://www.hermes.unal.edu.co/pages/Consultas/EnsayoLaboratorio.xhtml?idEnsayo=506>.

<sup>149</sup> National University of Colombia (UNAL). “Avian Pathology.” <http://www.hermes.unal.edu.co/pages/Consultas/EnsayoLaboratorio.xhtml?idEnsayo=511>.

<sup>150</sup> National University of Colombia (UNAL). “Agricultural Microbiology.” <http://www.hermes.unal.edu.co/pages/Consultas/EnsayoLaboratorio.xhtml?idEnsayo=578>.

<sup>151</sup> There are three laboratories listed under this Laboratory Management program at the National University of Colombia (UNAL), found through their laboratory search database, Hermes Information System, which is described here: <http://laboratorios.unal.edu.co/?id=27294>. Their names are: 1. Biological Processes in

NAME	LOCATION	PURPOSE	AGENCY
Institute of Genetics <sup>152</sup>	Bogotá, Colombia	Accredited laboratory for testing and identification of human genomics	National University of Colombia (UNAL)
Biomedical Research Center (CIBUS) <sup>153</sup>	Bogotá, Colombia	Teaching, academic research programs, clinical microbiological research	Universidad de La Sabana
School of Biomedical Engineering <sup>154</sup>	Bogotá, Colombia	Basic and applied research; academic programs; collaborations with the School of Engineering on innovation research	Universidad del Rosario
School of Medicine and Health Sciences <sup>155</sup>	Bogotá, Colombia	Basic and applied research; academic programs in epidemiology and occupational health/safety	Universidad del Rosario
Agroindustrial Engineering <sup>156</sup>	Medellín, Colombia	Food science research (basic and applied); academic programs	Pontifical Bolivarian University (UPB)

Evolutionary Genomics of Specialized Metabolism -

<http://www.hermes.unal.edu.co/pages/Consultas/EnsayoLaboratorio.xhtml?idEnsayo=826>; 2. Biological Processes in Molecular Interactions of the Micro-biome -

<http://www.hermes.unal.edu.co/pages/Consultas/EnsayoLaboratorio.xhtml?idEnsayo=827>; and 3. Biological Processes in Endophytic Microorganisms of Medicinal Plants -

<http://www.hermes.unal.edu.co/pages/Consultas/EnsayoLaboratorio.xhtml?idEnsayo=828>.

<sup>152</sup> Universidad Nacional de Colombia. <http://www.identificacionhumana.unal.edu.co/>. This Institute of Genetics is among the thirteen accredited laboratories of affiliated with the National University of Colombia (UNAL). These laboratories are described and mapped on their interactive webpage map, as well as side toolbar options to click specific city links to see what laboratories are in that given area. See: Universidad Nacional de Colombia. "Mapa de Sedes." <https://laboratorios.unal.edu.co/laboratorios/mapa-de-sedes/>

<sup>153</sup> Universidad de La Sabana. "Universidad de La Sabana Biomedical Research Center (CIBUS)." <https://www.unisabana.edu.co/englishversion/research/research-groups-by-academic-unit/universidad-de-la-sabana-biomedical-research-center-cibus/>.

<sup>154</sup> Universidad del Rosario. "Ingeniería Biomédica." <https://www.urosario.edu.co/Programa-Ingenieria-Biomedica/Inicio/>.

<sup>155</sup> Universidad del Rosario. "Medical Specializations." <https://www.urosario.edu.co/Escuela-de-Medicina/Programas/Especializaciones/Especializaciones-Medicas/>.

<sup>156</sup> Universidad Pontificia Bolivara (UPB). "Ingeniería Agroindustrial en Medellín." <https://www.upb.edu.co/es/pregrados/ingenieria-agroindustrial-medellin>.

NAME	LOCATION	PURPOSE	AGENCY
Infectology Unit – Infectious Diseases Research Group, San Ignacio University Hospital <sup>157</sup>	Bogotá, Colombia	Infectious disease research; hospital	San Ignacio University Hospital (HUSI)
Molecular Biology and Biotechnology program, Faculty of Health Sciences <sup>158</sup>	Pereira, Colombia	Research, training, academic programs	Universidad Tecnologia de Pereira
Children’s Hospital Foundation, University of San Jose (FHI – USJ) <sup>159</sup>	Bogotá, Colombia	Clinical research, training, academic program, hospital services	(FHI-USJ) Fundación Hospital Infantil, Universitario de San José
Veterinary Clinical Laboratory <sup>160</sup>		Clinical research, training, academic program	Universidad de Santander (UDES)
Faculty of Agricultural Sciences and Agroindustry <sup>161</sup>	Pereira, Colombia	Research (basic and applied), training, academic program	Universidad Tecnologia de Pereira

<sup>157</sup> Hospital Universitario San Ignacio (HUSI). “Services and Clinical Specialties: Infectology Unit.” <https://www.husi.org.co/servicios-y-especialidades/especialidades-clinicas/infectologia;jsessionid=44FC1C9809E4EB3F538DD674FB05119E.nodo0>.

<sup>158</sup> Universidad Tecnologia de Pereira (UTP). “Master’s in molecular biology and biotechnology.” <https://salud.utp.edu.co/maestria-biologia-molecular-y-biotecnologia/>.

<sup>159</sup> Translated to Spanish, it is: Fundación Hospital Infantil, Universitario de San José.

<sup>160</sup> Universidad de Santander (UDES). “Doctorado en Enfermedades Infecciosas.” <https://bucaramanga.udes.edu.co/estudia/posgrados/doctorados/doctorado-en-enfermedades-infecciosas>.

<sup>161</sup> Universidad Tecnológica de Pereira. “Facultad de Ciencias Agrarias y Agroindustria.” <https://agroindustria.utp.edu.co/>.

### Commercial

Colombia’s commercial biological and biotechnological research infrastructure is small yet has been at the core of national development plans since 2011 with the release of the Plan Nacional de Desarrollo 2010-2014. Continued funding and expanse of scientific and technical expertise are key priorities to attract commercial investments to advance Colombia’s domestic capabilities. Currently, the main commercial biological research centers are CorpoGen, founded in 1995, supporting research and development of Colombia’s biotechnology base,<sup>162</sup> as well as Vecol, founded as Biocol in 1968. Although predominately specializing in veterinary vaccine production, Vecol also researches veterinary topical and oral medical treatments and vaccine research and development, discussed in the following section, “Production Facilities.”

**Table 6: List of Known Commercial Research Facilities**

NAME	LOCATION	PURPOSE
Vecol	Bogotá, Colombia	Veterinary oral and topical medical treatments; vaccine research
CorpoGen	Bogotá, Colombia	Genetic and biological research; testing capacity; also produces molecular tests for <i>Salmonella sp.</i>

### **Production Facilities**

Although Colombia possessed a significant national capacity for the production of vaccines for humans up to the 1990s, facilities were shut down in 1999.<sup>163</sup> Since the closing of the National Institute of Health’s vaccine production facilities there have been calls for restoration of a domestic capability for the development and production of vaccines.<sup>164</sup> Production has been expanding since, to include human and animal vaccines and medical countermeasures. This local production (13%) covers 7 percent of their national vaccine schedule (immunization schedule or program) needs.<sup>165</sup> Currently, the National Institute of

<sup>162</sup> CorpoGen. “Research.” <https://en.corpogen.org/investigacion>; “Insights About Biotechnology in Colombia: Successful Case of CorpoGen in Bogota, Colombia.” New European Economy. <https://neweuropeaneconomy.com/briefing/insights-about-biotechnology-in-colombia-the-successful-case-of-corpogen-in-bogota-dc-colombia/>. Also see: Gobierno de Colombia, Departamento Nacional e Planeacion. “National Plan 2010-2014.” <https://www.dnp.gov.co/Plan-Nacional-de-Desarrollo/PND-2010-2014>.

<sup>163</sup> Moisés Wasserman. “Así fue como Colombia dejó de producir vacunas.” El Tiempo. September 20, 2020. <https://www.eltiempo.com/amp/salud/covid-19-por-que-colombia-no-producira-su-propia-vacuna-538744>.

<sup>164</sup> Moisés Wasserman. “Así fue como Colombia dejó de producir vacunas.” El Tiempo. September 20, 2020. <https://www.eltiempo.com/amp/salud/covid-19-por-que-colombia-no-producira-su-propia-vacuna-538744>.

<sup>165</sup> This percentage is reported in on page 7 and in Table 7 of Ortiz-Prado et al. (2021). See: Ortiz-Prado, Esteban, Estefanía Espín, Jorge Vásconez, Nathalia Rodríguez-Burneo, Nikolaos C. Kyriakidis and Andrés López-Cortés. 2021. “Vaccine Market and Production Capabilities in the Americas.” *Tropical Disease, Travel Medicine and Vaccines* 7:7,12. As noted in footnote “a” of Table 7, page 16, “the percentage of self-sufficiency in vaccine production is estimated as the number of different types of vaccines produced by national manufacturers as a function of the number of vaccines in use by the immunization program.”

Health (INS) produces multi-purpose antiophidic serum, multi-purpose coral venom antidotes, biomedals, and necessary critical inputs for surveillance and control priority programs on public health. Moreover, the issue of domestic vaccine and medical production received renewed attention in the wake of the SARS-Cov-2 pandemic, during which Colombia has found itself at a marked disadvantage relative to other countries in terms of gaining access to suitable vaccines, particularly those capable of domestic vaccine production.<sup>166</sup> This has been a direct result of its dependence on the COVAX mechanism, in contrast to some other regional countries that have been able to initiate local vaccine production, most notably Brazil.<sup>167</sup>

In January 2022, Colombia announced the renewal of a domestic vaccine production capability with construction of a new facility undertaken as part of a partnership between the Colombian company VaxThera and Canadian Providence Therapeutics.<sup>168</sup> The facility will begin as a fill and finish plant but is intended to expand to full production of a range of vaccines.<sup>169</sup>

#### Animal

Colombia has sustained a domestic capacity for producing animal vaccines, particularly the Foot-and-Mouth veterinary vaccines produced by Vecol and Limor. Vecol's foot-and-mouth veterinary vaccines were utilized in Uruguay in 2001 as response and mitigation tools against the outbreak of foot-and-mouth, and again in 2017 where an outbreak occurred in Colombia.<sup>170</sup>

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<sup>166</sup> Multiple proposals and extensive public discussion. Recent example: “¿Qué tan lista está Colombia para producir su propia vacuna para la covid-19?” 2021. *Semana*. March 10. <https://www.semana.com/economia/inversionistas/articulo/que-tan-lista-esta-colombia-para-producir-su-propia-vacuna-para-la-covid-19/202147/>.

<sup>167</sup> UNICEF. 2021. “Colombia Receives Second Shipment of 912,000 COVID-19 Vaccines Through the COVAX Mechanism.” April 28. <https://www.unicef.org/lac/en/press-releases/colombia-receives-second-shipment-of-covid-19-vaccines-through-covax>.

<sup>168</sup> For information on VaxThera, please see: VaxThera. <https://www.vaxthera.com/Paginas/es/index.aspx>. For additional information on their partnership, please see: Grupo Sura. 2022. “Construction Begins on VaxThera Plant to Produce Vaccines and Biologicals for Colombia and the Rest of the Region.” February 2. <https://www.gruposura.com/en/noticia/construction-begins-on-vaxthera-plant-to-produce-vaccines-and-biologicals-for-colombia-and-the-rest-of-the-region/>

<sup>169</sup> Grupo Sura. 2022. “Construction Begins on VaxThera Plant to Produce Vaccines and Biologicals for Colombia and the Rest of the Region.” February 2. <https://www.gruposura.com/en/noticia/construction-begins-on-vaxthera-plant-to-produce-vaccines-and-biologicals-for-colombia-and-the-rest-of-the-region/>

<sup>170</sup> Vecol. “Información General: Historia.” <https://www.vecol.com.co/informacion-general/>. Also see: Limor. “Limor de Colombia: Corporate History.” <https://www.limorcolombia.com/limor-s-history.html>

**Table 7: List of Civilian Biological Production Facilities**

NAME	LOCATION	PURPOSE
Vitrofarma S.A.	Botogá, Colombia	Pharmaceutical drug production <sup>171</sup>
Instituto Nacional de Salud (INS)	Botogá, Colombia	Antivemon (Polyvalent Anticoral), testing services (sale), import culture media <sup>172</sup>
Vecol	Botogá, Colombia	Veterinary vaccine development and production to include foot-and-mouth and rabies vaccines <sup>173</sup>
Limor	Botogá, Colombia	Veterinary vaccine development and production (foot-and-mouth)

### **International Research Partnerships**

Prior to the 2019 SARS-CoV-2 outbreak Colombia was directing its limited research resources towards development of vaccines for tropical diseases directly impacting the country. A high-profile effort was development of a malaria vaccine,<sup>174</sup> which ultimately proved ineffectual.<sup>175</sup> Colombian researchers have also partnered with Swiss researchers in the development and testing of alternative malaria vaccines.<sup>176</sup> Colombian researchers have partnered with the Johns Hopkins University School of Medicine<sup>177</sup> and the Hospital Clínic

<sup>171</sup> One example of product is ONDANSETRON, which Colombia exports to Chile to Labvitalis S.A. See: INVIMA. 2014. “Alerta Sanitaria: Información para el producto Ondansetrón 8mg/4mL solución inyectable.” <https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/IA/INV/ALERTA%20SANITARIA%20ONDANSETRON.pdf>.

<sup>172</sup> Instituto Nacional de Salud (INS). 2022. “Producción.” <https://www.ins.gov.co/Direcciones/Produccion/Paginas/default.aspx>.

<sup>173</sup> Vecol is also a research facility, with veterinary oral and topical medications as main lines of research. Foot-and-mouth vaccine, see: Vecol. “Información General: Política de Calidad.” <https://www.vecol.com.co/informacion-general/>. Rabies vaccine information, see: Vecol. “Líneas de Investigación: Producción de Vacuna.” <https://www.vecol.com.co/lineas-de-investigacion/>. Vecol also researches and produces swine vaccines against such as *Mycoplasma hyopneumoniae*, porcine Circovirus type II, and *Escherichia coli*. See: Vecol. “Líneas de Investigación: Vacunas Porcinas.” <https://www.vecol.com.co/lineas-de-investigacion/>.

<sup>174</sup> Fundación Instituto de Inmunología de Colombia. <https://www.urosario.edu.co/Blog-de-medicina/Actualidad/Noviembre-2016/Vacuna-colombiana-contra-la-malaria-a-ensayos-en/>

<sup>175</sup> Consuelo Giménez Pardo. 2019. “Estamos por fin ante la vacuna definitiva contra la malaria?” The Conversation. April 29. <https://theconversation.com/estamos-por-fin-ante-la-vacuna-definitiva-contra-la-malaria-116190>.

<sup>176</sup> Arévalo-Herrera, M., Gaitán, X., Larmat-Delgado, M. *et al.* 2022. “Randomized Clinical Trial to Assess the Protective Efficacy of a *Plasmodium vivax* CS Synthetic Vaccine.” *Nature Communications* 13:1603. <https://doi.org/10.1038/s41467-022-29226-3>

<sup>177</sup> Beatriz Parra, Ph.D., Jairo Lizarazo, M.D., Jorge A. Jiménez-Arango, M.D., Andrés F. Zea-Vera, M.D., Ph.D., Guillermo González-Manrique, M.D., José Vargas, M.D., Jorge A. Angarita, M.D., Gonzalo Zuñiga, M.D., Reydmir Lopez-Gonzalez, M.D., Cindy L. Beltran, M.D., Karen H. Rizcala, M.D., Maria T. Morales, M.D., et al. 2016. “Guillain-Barré Syndrome Associated with Zika Virus Infection in Colombia.” *New England Journal of Medicine*. <https://www.nejm.org/doi/full/10.1056/NEJMoa1605564>

of Barcelona,<sup>178</sup> amongst others, as part of ongoing studies into the spread and progress of Zika virus.

Colombia is more actively engaged in research intended to benefit the animal husbandry industry, including research into tick-borne diseases such as babesiosis.<sup>179</sup>

Colombian researchers have supported trials of vaccines developed elsewhere, most notably the dengue fever vaccine, which was ultimately rejected in Colombia following field trials.<sup>180</sup>

**Table 8: List of International Research Partnerships**

NAME	Foreign Partner Org	PURPOSE	Foreign Partner Country
National University of Colombia		Malaria (Falciparum) vaccine (Colfavac 90-100) development	
Labvitalis Chile S.A.			Chile
Alexander von Humboldt Biological Resources Research Institute	SEI <sup>181</sup>	Support biodiversity, water ecology and health management, and ecology research	United States

### Future Development Plans

In the wake of the SARS-Cov-2 pandemic the Colombian government has decided to take

<sup>178</sup> Marbán-Castro, Elena, et al. 2020. "Acceptability of a Hypothetical Zika Vaccine among Women from Colombia and Spain Exposed to ZIKV: A Qualitative Study." *Vaccines* 8:850. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7711833/>

<sup>179</sup> Animal vaccine research will not be discussed further at this time as it is outside of the scope of the current research effort. Laura Esperanza Cuy Chaparro, Laura Alejandra Ricaurte Contreras, Anny Jineth Camargo Mancipe, Darwin Andrés Moreno Pérez. 2019. "Babesia bovis: Actualidad del desarrollo de una vacuna." *Revista Investigación en Salud Universidad de Boyacá* 6:2. <http://revistasdigitales.uniboyaca.edu.co/index.php/rs/article/view/349>

<sup>180</sup> Christian Julian Villabona-Arenas, Raquel Elvira Ocazonez Jimenez, Cinthy Lorena Jimenez Silva. 2016. "Dengue Vaccine: Considerations Before Rollout in Colombia." *PLOS Neglected Tropical Diseases*. <https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0004653>; Tania Melo Cortés. 2019. "Por qué el sistema de salud colombiano no tiene la vacuna contra el dengue?" RCN Radio, July 23. <https://www.rcnradio.com/salud/por-que-el-sistema-de-salud-colombiano-no-tiene-la-vacuna-contra-el-dengue>.

<sup>181</sup> Stockholm Environment Institute (SEI). 2022. "New Colombia Partnership Enables Joint Research, Capacity-Building." <https://www.sei.org/featured/new-colombia-partnership-enables-joint-research-capacity-building/>.

action to re-establish a robust domestic capability for both vaccine production and vaccine research. This decision has resulted in a number of initiatives. The first, announced in January 2022, was a partnership between the Colombian company VaxThera and Canadian Providence Therapeutics.<sup>182</sup> The partnership entails construction, and subsequent operation, of a state-of-the-art vaccine production facility. Construction commenced February 2, 2022, with a planned initial operational date of June 2022, although initial capacity is likely to be limited and the date may slip.<sup>183</sup> The plant will commence operations as a fill and finish plant but expand to full production of a wide range of vaccines in subsequent years.<sup>184</sup>

In addition, the Colombian government is working to establish partnerships with Indian and Chinese companies on similar lines to enhance the range of technology transfer and the capacity of Colombian industry.<sup>185</sup>

In the area of training for research and national agencies with laboratories and biological research facilities, Colombia has conducted several trainings on biosecurity and biosafety in 2021 and 2022. Colombia also has instituted and seeking to advance a framework of the Plan to Strengthen the National Network of Laboratories (RNL) in areas of diagnostics, confirmation, investigation, and surveillance of public health events, and build further compliance with international standards on biosafety, biocontainment and biosecurity (BBB),<sup>186</sup>

Finally, the Colombian government is seeking to build partnerships between Colombian universities, pharmaceutical companies, and foreign equivalents to enable or accelerate efforts to develop effective vaccines for a range of diseases such as dengue, chikungunya,

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<sup>182</sup> VaxThera. <https://www.vaxthera.com/Paginas/es/index.aspx>. For reference of their partnership, please see: Grupo Sura. 2022. "Construction Begins on VaxThera Plant to Produce Vaccines and Biologicals for Colombia and the Rest of the Region." February 2. <https://www.gruposura.com/en/noticia/construction-begins-on-vaxthera-plant-to-produce-vaccines-and-biologicals-for-colombia-and-the-rest-of-the-region/>.

<sup>183</sup> For discussion on the construction, please see: Grupo Sura. 2022. "Construction Begins on VaxThera Plant to Produce Vaccines and Biologicals for Colombia and the Rest of the Region." February 2. <https://www.gruposura.com/en/noticia/construction-begins-on-vaxthera-plant-to-produce-vaccines-and-biologicals-for-colombia-and-the-rest-of-the-region/>. For discussion on the initial operation date, please see: Kreab. 2021. "Colombia Bets on a Vaccine Production." <https://kreab.com/bogota/en/insight/colombia-bets-on-vaccine-production/>.

<sup>184</sup> Grupo Sura. 2022. "Construction Begins on VaxThera Plant to Produce Vaccines and Biologicals for Colombia and the Rest of the Region." February 2. <https://www.gruposura.com/en/noticia/construction-begins-on-vaxthera-plant-to-produce-vaccines-and-biologicals-for-colombia-and-the-rest-of-the-region/>.

<sup>185</sup> ProColombia. 2021. "Nueve farmacéuticas internacionales evalúan oportunidades de producción de vacunas en Colombia." December 23. <https://procolombia.co/noticias/nueve-farmaceticas-internacionales-evaluan-oportunidades-de-produccion-de-vacunas-en-colombia>

<sup>186</sup> Correspondence with personnel of the National Institute of Health (INS) authorized to speak on the matter.

yellow fever, influenza and Zika, all of which pose a significant threat to the Colombian people and the populations of South and Central America as well as the Caribbean.<sup>187</sup> As part of this effort VaxThera is expected to be operating a new biotech research center by 2023.<sup>188</sup>

## Assessment

Colombia's biological research infrastructure is mostly housed at, operates in and in collaboration with universities and at key national public health entities that also serve research, public health response, and implementation functions. As such, Colombia is also employing its international partnerships to foster and grow its domestic vaccine production capability after the effects of the pandemic.

## Legal Framework

### Overview:

Colombia possesses a critical core of biosecurity-related legislation and regulation that provide a breadth of application. In comparison, however, this critical foundation of biological and biosecurity legal framework (legislation and regulation) is much smaller than its expansive legislation and regulation to combat nuclear and radiological material proliferation.

### International Law relevant to Biosecurity.

#### *Treaties, Conventions and agreements:*

Colombia is a member of two key conventions and protocols relevant to biosecurity: Biological and Toxin Weapons Convention (BWC) and the Geneva Protocol of 1925. As an active member state party to the BWC, Colombia continues to regularly submit (yearly) Confidence Building Measure (CBM) reports and has done so since 2014.<sup>189</sup> They also engage with regional partners and international organizations for voluntary assistance and training. Examples of such engagement include their 2019 work with the BWC Implementation Support Unit (ISU) and the Organization of American States (OAS) in various BWC-support

<sup>187</sup> Grupo SURA. 2021. "Annual Report 2021." p.18. <https://www.gruposura.com/wp-content/uploads/2022/03/sura-grupo-annual-report-2021.pdf>

<sup>188</sup> Grupo Sura. 2021. "Colombia Signs an Agreement Governing the Co-Development of Vaccines Using mRNA Technology." December 16. <https://www.gruposura.com/en/noticia/colombia-signs-an-agreement-governing-the-co-development-of-vaccines-using-mrna-technology/>

<sup>189</sup> The earliest record of Colombia submitting a Confidence Building Measure (CBM) report is 1998. They did not submit another CBM until 2012. Although member state party CBM report submissions are inaccessible to the general public, a yearly submission record is provided that shows Colombia's long-time engagement with submitting CBMs since 1998, and sustained yearly since 2014. Accessed via: <https://bwc-ecbm.unog.ch/state/colombia>.

and relevant workshops.<sup>190</sup> Colombia has also partnered with Chile in recent years that resulted in “laboratory surveys and improved processing for collecting information from agencies.”<sup>191</sup> United National Security Council Resolution 1540 (UNSCR 1540) is a crucial resolution that extend to all countries, and through efforts to support this resolution, Colombia continues to partner with the UNSC 1540 Committee to improve their trainings, legislation enacted, and technical capabilities and capacities.<sup>192</sup> Throughout this engagement, Colombia has enacted an extensive set of laws and regulations to prevent non-state actors from engaging with, acquiring, and developing chemical, nuclear or biological agents or materials. These legislations and regulations are presented in Table 11, in the “Domestic Legislation/Regulation – Proliferation Restrictions” section of this report.

**Table 9: List of Relevant Treaties, Conventions and Agreements**

NAME	Signature	Ratification
Biological Weapons Convention (BWC)	19 December 1983	12 December 1983
Geneva Protocol of 1925	24 November 2015	24 November 2015
United Nations Security Council Resolution 1540 (UNSCR 1540) <sup>193</sup>	28 April 2004	28 April 2004

<sup>190</sup> BioWeapons Prevention Project (BWPP). 2019. “MSP Report 2 – The opening of the 2019 BWC Meeting of State Parties.” December 4. Accessed from the BioWeapons Prevention Project (BWPP) “Daily Reports from BWC Meetings,” correlated and written by Richard Guthrie. This specific report is located in the “3-6 December 2019 – Meeting of State Parties (MSP)” section, Report #2, with a clickable link that is direct download: <http://www.bwpp.org/reports.html>. Additional work with the ISU in 2013 on this matter featured the Verification, Research, Training and Information Centre (VERTIC) and the United Nations Regional Centre for Peace, Disarmament and Development in Latin America and the Caribbean (UNLIREC). See: United Nations, Office of Disarmament Affairs (UNODA). 2013. “UNLIREC and VERTIC assist the Government of Colombia in Implementation of Biological and Toxin Weapons Convention.” February 18. <https://unlirec.org/en/unlirec-and-vertic-assist-the-government-of-colombia-in-implementation-of-biological-and-toxin-weapons-convention/>.

<sup>191</sup> United Nations. BWC/MSP/2017/WP.24: “Report on BWC Relevant Developments by International Experts – Submitted by Malaysia and the United States of America.” Meeting of States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, 7 December 2017, Geneva. <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G17/357/20/pdf/G1735720.pdf?OpenElement>.

<sup>192</sup> Part of their country UNSC1540 Committee Approved Matrix 2020 submission, Colombia is actively seeking to expand its national capacity and capability to address security concerns that arise from terrorism, CBRN proliferation and detection and response to biological incidents. See: <https://www.un.org/en/sc/1540/documents/Colombia%20revised%20matrix.pdf>.

<sup>193</sup> United Nations, Office of Disarmament Affairs. “UN Security Council Resolution 1540 (2004)”. <https://www.un.org/disarmament/wmd/sc1540/>.

### **Organisations**

Colombia is an active member of several international organizations that work in the biosecurity space, including the World Health Organization (WHO), and its subsidiary, the Pan-American Health Organisation (PAHO), the World Organisation for Animal Health (WOAH, founded as OIE), and the Organization of American States (OAS).

**Table 10: List of Relevant International Organization Memberships**

Organizations
World Health Organization (WHO)
Organization of American States (OAS)
World Organisation for Animal Health (WOAH, founded as OIE)
International Maritime Organization (IMO)
INTERPOL
World Customs Organization (WCO) – WCO SAFE Framework
Proliferation Security Initiative (PSI)

### **Domestic Legislation/Regulation**

Colombia has an extensive history of legislation and regulation that cover several aspects of biosecurity, from national basic requirements for their National Network of Laboratories (RNL) for biosafety and biosecurity protocols and procedures, to import, export and transport controls on biological materials, to disease surveillance and bioethics for research. Among this extensive legal framework is legislation to address money laundering and combat terrorism and non-state actors.

#### ***Biosecurity in Law: General***

Colombia has several regulations and legislation in place that specifically address biosecurity issues at the national level, such as regulations governing all public health laboratories, bioethical standards in research, and controls for handling, researching, transporting, and producing living modified organisms (LMOs).<sup>194</sup> Although these regulations and legislation typically frame these issues in the sense of biosafety, they comprise a critical foundation for the Colombian state to address biosecurity issues as well. Several examples include:

- Resolution No. 2935 (23 October 2001) – GMO biosafety research guidelines and research information security,
- Resolution No. 3832 (1997) – Cross-border transport of biological materials,

<sup>194</sup> LMOs is a term specifically employed in the Convention on Biodiversity (CBD).

- Lineamientos Generales de Bioseguridad y Biocontención para los laboratorios de la Red Nacional de Laboratorios (2020) – Guidance for the National Network of Laboratories (RNL) on biosafety and biosecurity protocols.
- Decree No. 2323 (2006) – Creates the structure of the RNL network and mechanism to monitor activities,
- Decree No. 3518 (2006) – Creates and regulates the Surveillance System on Public Health (SIVGILA),<sup>195</sup>
- Resolution No. 1619 (2015) – Establishes a review process for laboratory self-assessments and reports to be submitted and evaluated.
- Law No. 489 (1998) – Oversight, adherence and compliance responsibilities and authorities to ministries and administrative departments
- Law 1955 (2019) – Oversees regulations and access requests to biological collections and genetic resources (Ministry of Environment)

As applicable to human health, Colombia's Ministry of Public Health and Social Protection is responsible for regulating all related matters at the national and territorial level, and technical expertise coordination for the National Network of Laboratories (RNL) is handled by the National Institute of Health (INS) and the National Institute for Medicine and Food Surveillance (INVIMA).

Applicable to the environment and biological research, the Ministry of Environment and Sustainable Development oversees regulating all matters concerning access to genetic resources, biological collections, and authorizations, licenses, and permits for import and export of specimens and biological resources, as well as wildlife species. Additionally, the Ministry of Environment has the national authorities to approve or deny permits, licenses or authorizations (the Regional Autonomous Corporations and the National Authority for Environmental Licenses – ANLA). This regulation is important since it complements export control measures in the framework of UN Security Council Resolution 1540 (2004) and the Convention of Biological Weapons.

### ***Proliferation restrictions***

Colombia possesses a solid though small base of legal framework that combat proliferation, to include a list of several regulations to control import, export, and transport of biological materials, as well as munitions.

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<sup>195</sup> Gobierno de Colombia, Ministerio de Salud y Protección Social. "Vigilancia en salud pública." <https://www.minsalud.gov.co/salud/publica/epidemiologia/Paginas/vigilancia-salud-publica.aspx>.

**Table 11: List of Applicable Domestic Legislation**

Legislative Category	Relevant Legislations (Text)	Level of Coverage	Provides For Enforcement
National	Political Constitution of Colombia (20 July 1991) <sup>196</sup>	Article 81 focuses on prohibitions	
National	Penal Code (Law (Act) No. 599 – 24 July 2000) <sup>197</sup>	Articles 27 (attempting to engage in transport, acquisition, transfer, use, manufacture of materials); 28-31; 323; 358; 367 against carrying (transport)	Yes Articles 28, 29, and 30 enforcement against participants that are accomplices
National	Code of Criminal Procedure (Law No. 906 – 31 August 2004) <sup>198</sup>		
National	Resolution No. 265 (5 November 2004) <sup>199</sup>	Adoption and implementation of UNSCR 1540 (2004)	Yes
National	Resolution No. 265 of Ministry of National Defense	Additional implementation of UNSCR 1540 (2004); prohibit access to CBRN by non-state actors	
National	Act No. 99 (22 December 1993)	Created the Ministry of Environment	Yes, Article 5, para.39 is the mandate
National	Act No. 10 (4 February 1980) <sup>200</sup>	Approved the Geneva Protocol and BWC and	

<sup>196</sup> National Gazette of 20 July 1991 as amended. UNSCR 1540 Approved Matrix Report. 2020. Colombia. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database: [https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Constitucion\\_Politica\\_de\\_Colombia.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Constitucion_Politica_de_Colombia.pdf).

<sup>197</sup> Penal Code, Ley No. 599 de 2000. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database: [https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Codigo\\_Penal\\_Colombia.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Codigo_Penal_Colombia.pdf).

<sup>198</sup> Ley No. 906 de 2004. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_CODIGO\\_PROCEDIMIENTO\\_PENAL.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_CODIGO_PROCEDIMIENTO_PENAL.pdf).

<sup>199</sup> Resolución No. 265 de 2004. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Resolucion\\_265\\_de\\_2004.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Resolucion_265_de_2004.pdf).

<sup>200</sup> Ley BWC, No. 10 de 1980. Accessed via Verification Research, Training and Information Center (VERTIC),

Legislative Category	Relevant Legislations (Text)	Level of Coverage	Provides For Enforcement
		incorporated them as part of their national set of laws	
National	Act No. 155 (2017)	Money laundering and terrorism financing. Article 1 c), 89 refers to the mandate of National Committee for money laundering and terrorism financing; Section II refers to Financial Intelligence Unit	Yes Enforcement responsibilities provided to Financial Intelligence Unit; Article 84, Chapter IV (sanctions)
National	Decree No. 1609 (31 July 2002) <sup>201</sup>	Regulates safe road transport of hazardous materials (Chapter V)	Yes Chapter VI
National	Colombian Aeronautical Regulation (RAC) No. 10	Aeronautic Rules on transport of dangerous goods; Sections 10.11.5; 10.13.1	Yes Chapter VII; Section 10.11.5 (sanctions)
National	Colombian Aeronautical Regulation (RAC) No. 13 (March 2020)		Yes
National	Colombian Aeronautical Regulation (RAC) No. 160	Secure transport (Chapter M)	
National	Colombian Aeronautical Regulation (RAC) No. 175	Secure transport (Section 175.025 S f)	
National	Decree No. 1079 (2015)	Ministry of Transport (methods/measures of transport); Articles 2.2.1.7.8.2.1. o) and 2.2.1.7.8.2.5.j	

BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Ley\\_BWC\\_10\\_1980.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Ley_BWC_10_1980.pdf)

<sup>201</sup> Decreto 1609 de 2002. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation

Database: [https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_1609\\_de\\_2002.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_1609_de_2002.pdf).

Legislative Category	Relevant Legislations (Text)	Level of Coverage	Provides For Enforcement
National	Decree No. 3518 (2006)	Regulating the public health disease surveillance system (SIVGILA); Article 45 (control of infectious agents and materials, toxins, vectors and reservoirs)	
National	Decree No. 2323 (2006) <sup>202</sup>	Regulates the National Network of Laboratories (RNL) (biosafety/biosecurity); Also partially regulates Decree No. 9 (1979)	Yes Article 26; Establishes enforcement ability with national health agencies for non-compliance
National	Resolution No. 561 (2019)	Ministry of Health and Social Protection (dealing with licensing, registration of facilities, entities, personnel use and handling of biological materials)	
National	Decree No. 1165 (2019)	Customs Code Articles 75 and 583; dealing with border control, detecting and deterring illicit trafficking); appears to apply to chemical, biological and radiological materials and agents	Yes Enforcement responsibilities given to the National Police: National Tax and Customs unit, and National Police Frontier Units
National	Resolution No. 46 (2019)	(connected to control of brokering) <sup>203</sup>	
National	Decree No. 1232/01	Ministry of Justice	
National	Act No. 1121 (2007)	Prevention, detection, investigation and sanction of	Yes

<sup>202</sup> Decreto 2323 de 2006. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation

Database: [https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_2323\\_de\\_2006.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_2323_de_2006.pdf). Also partially regulates Decree No. 9 (1979). See entry later in this table for information on Decree No. 9 (1979).

<sup>203</sup> Provided as area of connection on UNSCR 1540 Committee Approved Matrix 2020. Colombia. Page 16. #4.

Legislative Category	Relevant Legislations (Text)	Level of Coverage	Provides For Enforcement
		financing terrorism and other activities <sup>204</sup>	
National	Decree No. 324 (2000) <sup>205</sup>	Creates the Coordination Center for fight against Illegal Self-Defense Groups and other groups	
National	Decree No. 218 (15 February 2000) <sup>206</sup>	Modifying structure of Administrative Department of Security	
National	Ecological Insurance Law (Law No. 491 – 13 January 1999) <sup>207</sup>	Ecological insurance	
National	Decree No. 2535 (17 December 1993) <sup>208</sup>	How regulations are issued on weapons, ammunition and explosives	
National	Decree No. 1809 (1994) <sup>209</sup>	Regulates Decree No. 2535	
National	Resolution No. 1063 (2005) <sup>210</sup>	Regulates registration for persons importing, commercializing, researching, developing, and quality control of Genetically Modified Organisms (GMOs),	

<sup>204</sup> Per the UNSCR 1540 Committee Approved Matrix 2020, Colombia, this appears to apply to chemical, biological and nuclear export/shipment/proliferation. Page 17, #15.

<sup>205</sup> Decreto 324 de 2000. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_324\\_de\\_2000.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_324_de_2000.pdf).

<sup>206</sup> Decreto 218 de 2000. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_218\\_de\\_2000.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_218_de_2000.pdf).

<sup>207</sup> Ley No. 491 de 1999. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Ley\\_de\\_Seguro\\_Ecologico.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Ley_de_Seguro_Ecologico.pdf).

<sup>208</sup> Decreto 2535 de 1993. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_2535\\_de\\_1993.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_2535_de_1993.pdf).

<sup>209</sup> Decreto 1809 de 1994. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_1809\\_de\\_1994.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_1809_de_1994.pdf).

<sup>210</sup> Resolución 1063 de 2005. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Resolucion\\_1063\\_de\\_2005.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Resolucion_1063_de_2005.pdf).

Legislative Category	Relevant Legislations (Text)	Level of Coverage	Provides For Enforcement
		health and livestock production, derivatives and products	
National	Resolution No. 2935 (23 October 2001) <sup>211</sup>	Regulates and establishes biosafety procedure for introduction, production, release, marketing, research, development and quality control of GMOs, health and livestock production, derivatives and products	
National	Law No. 1252 (27 November 2008) <sup>212</sup>	Prohibitive regulations for environmental matters, residues and hazardous waste and related provisions (Ministry of Environment)	Yes
National	Decree No. 2141 (31 December 1992) <sup>213</sup>	Restructuring the Colombian Agricultural Institute	
National	Decree No. 1840 (4 August 1994) <sup>214</sup>	Regulates Article 65 of Law 101 of 1993; manages plant, animal, health, genetic material technical control	Yes
National	Law No. 9 (5 February 1979) <sup>215</sup>	Sanitary measures of the environment (applies to human, plant and animal/agriculture)	

<sup>211</sup> Resolución 2935 de 2001. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Resolucion\\_2935\\_de\\_2001.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Resolucion_2935_de_2001.pdf).

<sup>212</sup> Ley No. 1252 de 2008. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Ley\\_1252\\_de\\_2008.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Ley_1252_de_2008.pdf).

<sup>213</sup> Decreto 2141 de 1992. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_2141\\_de\\_1992.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_2141_de_1992.pdf).

<sup>214</sup> Decreto 1840 de 1994. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_1840\\_%20de\\_1994.pdf/](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_1840_%20de_1994.pdf/).

<sup>215</sup> Ley No. 9 de 1979. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Ley\\_9\\_de\\_1979.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Ley_9_de_1979.pdf).

Legislative Category	Relevant Legislations (Text)	Level of Coverage	Provides For Enforcement
National	Decree No. 2323 (12 July 2006) <sup>216</sup>	Regulates part of Law No. 9 (1979) in connection with the National Network of Laboratories (RNL); organizes and regulates the management of the National Network of Laboratories (RNL); Chapter I, Articles 1, 2, 4 1), 2); Article 5	Yes
National	Decree No. 2676 (22 December 2000) <sup>217</sup>	Regulates comprehensive management of hospital and similar waste	
National	Decree No. 919 (1 May 1989) <sup>218</sup>	Organized the National System for Disaster Prevention and Attention	
National	Law No. 841 (7 October 2003) <sup>219</sup>	Code of Bioethics, regulation of profession of bacteriology, and similar provisions	
National	Resolution No. 8430 (4 October 1993) <sup>220</sup>	Establishes standards for health research (scientific, technical and administrative)	Yes Also enforces the 2020 Lineamientos Generales de Bioseguridad y Biocontención para los laboratorios de la Red Nacional de

<sup>216</sup> Decreto 2323 de 12 de Julio de 200. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database:

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_2323\\_de\\_2006.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_2323_de_2006.pdf).

<sup>217</sup> Decreto 2676 de 2000. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database.

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_2676\\_de\\_2000.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_2676_de_2000.pdf).

<sup>218</sup> Decreto 919 de 1989. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database.

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_919\\_de\\_1989.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_919_de_1989.pdf).

<sup>219</sup> Ley No. 841 de 2003. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database.

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Ley\\_841\\_de\\_2003.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Ley_841_de_2003.pdf).

<sup>220</sup> Resolución No. 008430 de 1993. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Database.

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Resolucion\\_8430\\_de\\_1993.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Resolucion_8430_de_1993.pdf).

Legislative Category	Relevant Legislations (Text)	Level of Coverage	Provides For Enforcement
			Laboratorios (below)
National	Lineamientos Generales de Bioseguridad y Biocontención para los laboratorios de la Red Nacional de Laboratorios (2020) <sup>221</sup>	Guidance for laboratories and the National Network of Laboratories (RNL) on establishing biosafety and biosecurity protocols and procedures at facilities, including baseline requirements; enforced by legislations such as Resolution 8430 (1993)	
National	Decree No. 4525 (6 December 2005) <sup>222</sup>	Regulates Law No. 740 (2002); establishes regulatory framework for living modified organisms in accordance with provisions in Law No. 740 (2002)	
National	Law No. 740 (2002) <sup>223</sup>	Ratifies the Cartagena Protocol on Safety in Biotechnology of the Convention on Biological Diversity (CBD)	
National	Decree No. 2685 (December 1999) <sup>224</sup>	Establishes mechanisms for modification of customs legislation	
National	Decree No. 3518 (10 October 2006) <sup>225</sup>	Creates and regulates Public Health Surveillance System (SIVGILA)	

<sup>221</sup> Translated to English, it is: General Biosecurity and Biocontainment Guidelines for the Laboratories of the National Network of Laboratories.

<https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/VS/ED/VSP/psps03-lineamiento-bioseguridad-red-nal-lab.pdf>.

<sup>222</sup> Decreto 4525 de 2005. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database.

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_4525\\_de\\_2005.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_4525_de_2005.pdf).

<sup>223</sup> Decreto 4525 de 2005. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database.

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_4525\\_de\\_2005.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_4525_de_2005.pdf).

<sup>224</sup> Decreto 2685 de 1999. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database.

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_2685\\_de\\_1999.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_2685_de_1999.pdf).

<sup>225</sup> Decreto 3518 de 2006. Accessed via Verification Research, Training and Information Center (VERTIC), BWC

Legislative Category	Relevant Legislations (Text)	Level of Coverage	Provides For Enforcement
National	Decree No. 77 (13 January 1997) <sup>226</sup>	Regulation, technical-sanitary conditions and requirements for operating clinical laboratories	
National	Decree No. 4741 (30 December 2005) <sup>227</sup>	Partial regulation of comprehensive management framework of prevention and management of hazardous residues and waste	
National	Decree No. 101 (2 February 2000) <sup>228</sup>	Modifies structure of Ministry of Transportation	
National	Agreement No. 00013 (22 December 1998) <sup>229</sup>	Created the National Technical Council (CTN) for the introduction, production, release, and marketing of GMOs for agricultural use	
National	Decree No. 2200 (2005) <sup>230</sup>	Regulating pharmaceutical service, mandates requirements for prescriptions for antibiotic use (humans)	
National	Resolution No. 1023 (1997) <sup>231</sup>	Requires prescriptions for antibiotic use (animal); Article 4	

Legislation Database.

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_3518\\_de\\_2006.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_3518_de_2006.pdf). Decree <sup>226</sup> Decreto 77 de 1997. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database.

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_77\\_de\\_1997.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_77_de_1997.pdf). <sup>227</sup> Decreto 4741 de 2005. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database.

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_4741\\_de\\_2005.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_4741_de_2005.pdf). <sup>228</sup> Decreto 101 de 2000. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database.

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Decreto\\_101\\_de\\_2000.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Decreto_101_de_2000.pdf). <sup>229</sup> Acuerdo No. 00013 de 1998. Accessed via Verification Research, Training and Information Center (VERTIC), BWC Legislation Database.

[https://www.vertic.org/media/National%20Legislation/Colombia/CO\\_Acuerdo\\_00013\\_22\\_Dec\\_1998.pdf](https://www.vertic.org/media/National%20Legislation/Colombia/CO_Acuerdo_00013_22_Dec_1998.pdf). <sup>230</sup> Decreto 2200 de 2005. [https://www.icbf.gov.co/cargues/avance/docs/decreto\\_2200\\_2005.htm](https://www.icbf.gov.co/cargues/avance/docs/decreto_2200_2005.htm). Accessed via NTI, JHU. 2021. "Global Health Security Index." Data, section 1.1.2b).

<sup>231</sup> Resolución 1023 de 1997. <http://fenavi.org/wp-content/uploads/2018/04/RESOLUCION-1023-de-1997-1.pdf>. Accessed via NTI, JHU. 2021. "Global Health Security Index." Data, section 1.1.2.c)

Legislative Category	Relevant Legislations (Text)	Level of Coverage	Provides For Enforcement
National	Resolution No. 3832 (1997) <sup>232</sup>	Regulates cross-border transfer of biological material (human origin), requiring prior approval from Ministry of Health for transport	Yes Ministry of Health authorizes request for entry or exit requests
National	Lineamientos sobre la entrada y salida del territorio nacional de muestras biológicas y componentes anatómicos de origen humano <sup>233</sup>	Guidance from the Ministry of Health on Resolution No. 3823 (1997), discussing how to establish requests for transport authorization	
National	Decree No. 2240 (1996) <sup>234</sup>	Establishes required sanitary conditions for health service institutions (public and private)	Yes Article 19
National	Estrategia de Gestión Integral de Zoonosis (EGI-ZOONOSIS) <sup>235</sup>	National strategy 2015-2021 for surveillance and control of zoonotic diseases	Yes
National	Law No. 489 (1998)	Establishes oversight, adherence and compliance responsibilities and authorities to ministries and administrative departments; Article 59, sections 3 and 6	Yes

<sup>232</sup> Global Health Security (GHS) Index 2021 database, profile on Colombia, category indicator 1.3.5a) “Laws/regulations on cross-border transfer and end-user screening”.

<sup>233</sup> Translated to English, it is: “Guidelines on the entry and exit of the national territory of biological samples and anatomical components of human origin.” Accessed via the University of Sabana, Colombia: [https://www.unisabana.edu.co/fileadmin/Archivos\\_de\\_usuario/Documentos/Documentos\\_Investigacion/Docs\\_Comite\\_Etica/lineamientos-entrada-y-salida-territorio-nacional-de-muestras-biologicas-y-componentes-anatomicos-de-origen-humano-universidad-de-la-sabana.pdf](https://www.unisabana.edu.co/fileadmin/Archivos_de_usuario/Documentos/Documentos_Investigacion/Docs_Comite_Etica/lineamientos-entrada-y-salida-territorio-nacional-de-muestras-biologicas-y-componentes-anatomicos-de-origen-humano-universidad-de-la-sabana.pdf).

<sup>234</sup> Decreto 2240 de 1996.

[https://www.minsalud.gov.co/Normatividad\\_Nuevo/DECRETO%202240%20DE%201996.pdf](https://www.minsalud.gov.co/Normatividad_Nuevo/DECRETO%202240%20DE%201996.pdf).

<sup>235</sup> Gobierno de Colombia, Ministerio de Salud.

<https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/VS/PP/ET/egi-zoonosis-documento-ultimo.pdf>.

Legislative Category	Relevant Legislations (Text)	Level of Coverage	Provides For Enforcement
National	Decree No. 3570 (2011) <sup>236</sup>	Objectives and structure of the Ministry of Environment and Sustainable Development; In addition to Law No. 489 (1998), provides Ministry of Environment with several powers including guiding actions to prevent ecological risk, in coordination with the National System for Disaster Prevention and Attention; Article 2	Yes
National	Law No. 1926 (2018) <sup>237</sup>	Supplementary responsibilities and adherence related to the Cartagena Protocol; biodiversity and biosecurity	Yes
National	Law No. 1955 (2019)	Article 6	Yes

<sup>236</sup> Decreto No. 3570 de 2011.

<https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=65328/>

<sup>237</sup> Ley 1926 de 2018. <https://www.minambiente.gov.co/wp-content/uploads/2021/06/ley-1926-2018.pdf>

## Assessment

Colombia possesses a critical core of biosecurity-related legislation and regulation that provide a breadth of application. In comparison, however, Colombia has a much smaller, though critical, foundation of biological and biosecurity legal framework (legislation and regulation) than its expansive legislation and regulation to combat nuclear and radiological material proliferation.

This core of national legislation on biosecurity-related matters, however, provides Colombia with a foundational capacity to continue to expand the country's health, biosecurity and nonproliferation response activities. Critical focus is provided to monitoring imports and exports, providing controls and regulations for appropriate licensure, and for a level of compliance and implementation of national and international regulations to its vast National Network of Laboratories (RNL) at the national and local levels. These regulations support both biosafety and biosecurity requirements of these facilities and entities. Continual implementation of and training on biosecurity-related measures and regulations, as well as expanded legislative focuses on disease surveillance, reporting, and organizational collaboration for incident management would be areas of additional assistance to Colombia.

## Law Enforcement & Intelligence

### National Law Enforcement Capabilities

#### *Relevant Biosecurity Capabilities*

Two sections of the Colombian National Police engage in detection of biological incidents, particularly relating to illicit transport and customs/border violations: Frontier Units and National Tax and Customs Department.<sup>238</sup> It also appears that through the Ministry of Defense (Ministerio Defensa) and the National Police-DIJIN-NBQR have some responsibility and capability to remediate biosecurity and biological incidents, although it is not clear the extent of responsibility nor capacity.<sup>239</sup>

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<sup>238</sup> See the discussion above in the section "Domestic Legislation / Regulation – Proliferation Restrictions," table 11 entry for Decree No. 1165 (2019). Additionally, the National Police, National Tax and Customs unit managed the 2018 investigations into ELN cattle smuggling from Venezuela discussed in the section "Organized Crime – Overview" above, and subsequent Footnotes 45 and 46 of this report, above.

<sup>239</sup> UNSCR 1540 Committee Approved Matrix 2020, Colombia. Page 18, #3 lists requests for assistance to "support acquisition of equipment for the detection of chemical warfare agents destined for Min. Defensa – National Police-DIJIN-NBQR." There is also mention in the 2020 investigation manual of the National Police that references biological and (chemical, nuclear and radiological) response capacities. See: Policia Nacional. 2014. "Explosivos." Page 81. <https://policia.edu.co/esinc/wp-content/uploads/2020/07/LIBRO-EXPLOSIVOS.pdf>.

Outside of specific biosecurity capabilities, Colombian law enforcement is relatively large and well-equipped, with generous intelligence capabilities and organized crime units.<sup>240</sup> Colombia has historically taken a military-based approach to law enforcement due to the abundance of paramilitary and guerilla organizations, but there have been pushes for more modern, non-police strategies for dealing with criminal activity.<sup>241</sup>

### *Areas of Weakness*

Colombia law enforcement, particularly the National Police, have long suffered from low public opinion due to human rights abuses and the often militarization of law enforcement personnel units, as noted above. Long standing efforts have existed to address this issue with varied success, and renewed effort among the Colombia government in 2019 with the Framework Policy on Citizen Security and training collaboration with the United States and United Nations is taking hold.<sup>242</sup> In this vein, paramilitary and guerilla organizations, and their relative strength in the country, continue to fuel the first and largest threat to law enforcement success, coupled with corruption and human rights abuses.<sup>243</sup> A second detriment to law enforcement is Colombia's geography that impedes their ability to reach and maintain presences in large areas of Colombia.<sup>244</sup>

### **Border Security**

Per national Decree No. 1165 (2019), it appears that both the Frontier Units and National Tax and Customs department of the Colombian National Police engage in customs and border security relating to illicit trafficking that includes chemical and nuclear materials, and biological agents.

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<sup>240</sup> Global Initiative Against Transnational Organized Crime. 2021. "Global Organized Crime Index: Colombia." <https://ocindex.net/country/colombia>

<sup>241</sup> Global Initiative Against Transnational Organized Crime. 2021. "Global Organized Crime Index: Colombia." <https://ocindex.net/country/colombia>

<sup>242</sup> Devia-Valbuena, Nicolas, Carlos Hoyos and Keith Mines 2022. "Colombia Police Reform: The Critical Need to Include Rural Forces." United States Institute of Peace (USIP). <https://www.usip.org/publications/2022/01/colombia-police-reform-critical-need-include-rural-forces>.

Also see: Acosta, Luis Jaime. 2022. "U.S., U.N. Back New Human Rights Training for Colombia Police." Reuters, August 22. <https://www.reuters.com/world/americas/us-un-back-new-human-rights-training-colombia-police-2022-08-22/>.

<sup>243</sup> "Seven Colombia Police Killed in Deadliest Attack Since Leftist Took Office." 2-2022. Reuters, September 2. <https://www.reuters.com/world/americas/eight-colombia-police-killed-deadliest-attack-since-leftist-took-office-2022-09-02/>. Also see: <https://www.state.gov/reports/2021-country-reports-on-human-rights-practices/colombia/>.

<sup>244</sup> Global Initiative Against Transnational Organized Crime. 2021. "Global Organized Crime Index: Colombia." <https://ocindex.net/country/colombia>

## Intelligence Agencies

The lead intelligence agency in Colombia is their National Intelligence Directorate (DAS/DNI).<sup>245</sup> Additionally, every branch of the Colombian security forces, including the army, navy, air force, and police, has its own intelligence branch. These branches work with U.S. and European partners and cooperate on operations.<sup>246</sup> It is unclear in publicly available sources the extent to which these agencies have responsibility for counter-terrorism or non-proliferation, though it is imaginable there are degrees of responsibility given the immense issue of illicit trade (drug, etc.) that could make proliferation easy.

## International Law Enforcement Partnerships

Colombia has multiple international partnerships, most notably with the United States which approved \$461 million in aid in 2021.<sup>247</sup> The United States has served as an international partner to Colombia law enforcement since 2000, through the Plan Colombia program, to address guerilla and paramilitary groups and illicit drug trade.<sup>248</sup> Additionally, Colombia has significant engagement and relationship with INTERPOL, wherein dozens of trained Colombian units specialize and are trained to respond to counterterrorism and chemical, radiological and biological incidents.

## Training and Engagement

Colombia's law enforcement leverages several training programs related to biosecurity issues. First, through the UNSC 1540 Committee, Colombia has requested support for the Colombian National Institute of Health (INS) acquisition of diagnostic and identification equipment of biological agents and toxins to expand their capacity.<sup>249</sup> Second, Colombian law enforcement, along with the Colombian Ministry of Defense (to include ministry officials, specialist in security and defense and CBRN response units), and several other ministries have participated in subregional workshops on biosafety and biosecurity in the framework of UN Security Resolution 1540 (2004) carried out on November 2019 at the National Institute of Health (INS) in Bogotá, Colombia. These workshops were jointly organized by the Secretariat of the Inter-American Committee against Terrorism of the Organization of American States (OAS), the National Institute of Health and the Ministry of Foreign Affairs of Colombia. There were nine countries in representation at the workshop with delegates

<sup>245</sup> Direccion Nacional de Inteligencia – Colombia (DNI). <https://dni.gov.co/>.

<sup>246</sup> InSight Crime. 2021. “Colombia Profile.” <https://insightcrime.org/colombia-organized-crime-news/colombia/>. Accessed October 19, 2022.

<sup>247</sup> “World Report 2022: Colombia Events of 2021.” Human Rights Watch. <https://www.hrw.org/world-report/2022/country-chapters/colombia>. Accessed October 19, 2022.

<sup>248</sup> U.S. Global Leadership Coalition (USGLC). “Plan Colombia: A Development Success Story.” <https://www.usglc.org/media/2017/04/USGLC-Plan-Columbia.pdf>.

<sup>249</sup> UNSCR 1540 Committee Approved Matrix 2020, Colombia. Page 18, #3.

ranging from the health sector (ministries, immediate response squads, prevention and control, laboratories) to defense (ministries, specialist in security and defense and CBRN response units), agriculture (ministries, reference laboratories), first responders and chancelleries representatives from Argentina, Brazil, Colombia, Chile, Ecuador, Peru, Paraguay and Uruguay.

Colombian law enforcement is also engaged in multiple United Nations programs aimed to help farmers produce alternative crops to coca, thus away from illicit production. These programs include: Products of Peace and Forest-Warden Families Programme. While agriculture and crop production are a staple in Colombian economy, the illicit takeover of these sectors has proved to be a significant and ongoing challenge. These programs provide “support to monitor and implement the integrated and sustainable illicit crop reduction and alternative development strategy in Colombia.”<sup>250</sup>

### **Assessment**

Colombia’s law enforcement possesses units that engage in and have at least identifiable training engagements for responding to biological incidents. There are, however, fewer publicly available sources that provide in-depth detail on the nature and extent of this law enforcement capability in areas such as detection, mitigation and remediation of biological or biosecurity incidents. Unclear public information thus makes a complete analysis of Colombian law enforcement capabilities and capacities in these matters more difficult. Despite this gap in information, it is clear from available reporting and sources that Colombia, their various ministries, and law enforcement units continually leverage significant international engagement programs and partnerships to address these concerns. Colombian law enforcement engages both with regional and international partners, and domestic ministries through workshops and training on biological incident matters. This engagement is crucial to building, maintaining and testing capacity to respond and detect biological incidents, and inter-ministry collaboration also provides an important breadth to adequate response capabilities.

Colombian law enforcement continues to face significant challenges to not only authority but also to their capability to respond to public safety issues given the immense spread and coercive control organized crimes and paramilitary groups hold in the country. Political will, coupled with international aid, is establishing additional support, training and programs to be able to address these concerns. Geography also stands as a second significant impediment

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<sup>250</sup> United Nations, Office on Drugs and Crime (UNODC). “Colombia.”  
<https://www.unodc.org/unodc/en/alternative-development/colombia.html>

to Colombian law enforcement's capability to maintain presence in large swaths of the country.

## **Biosecurity Country Level Risk Assessment**

### **Assessment of Infrastructure and Environmental Factors**

Colombia's unique geographic location cements the country as a gateway into South America for trade, migration, and transport. Illicit drug, goods and human trafficking continues to exploit this unique feature, along with transnational criminal organizations' exploitation of rich agricultural lands to illicitly cultivate, transport, sale and ship coca and cocaine. Lack of adequate and paved roadways and transportation infrastructure also increases economic burden on trade companies who then need to turn to higher-cost port and waterway transport for goods and cargo.

### **Assessment of Country Capabilities**

Colombia's military and civilian national police have extensive capabilities to combat guerilla and insurgency groups, as well as counterterrorism given decades of civil war conflict with these groups, dozens of trained counterterrorism response units, and international training and support from the United States and international organizations to address these issues. Regular CBRN training is also conducted with the United States and international organizations, though information on specific military CBRN response capabilities is limited to only acknowledgements of the existence of response units within the Colombia Army.

Public health capacities appear to be more centralized at the national level. This also is the same regarding Colombia's biological research and development sectors, which is housed at a critical core of national agencies and laboratory networks, as well as research collaborations with dozens of universities across the country. Although information is not as readily available about the extent of regional and local public health capabilities, it is possible that there is a much more difficult level of access by Colombia's public to local facilities, with lack of adequate roadway paving and urban centralization as two contributing factors.

Domestic production of medical treatments (e.g., vaccines) and related biologicals is low, but in the wake of the SARS-Cov-2 pandemic the Colombian government has decided to take action to re-establish a robust domestic capability for both vaccine production and vaccine research.

## Overall Assessment

### *Identification of Gaps (Regulatory)*

Colombia possesses a critical core of biosecurity-related legislation and regulation that provide a breadth of application. In comparison, however, Colombia has a much smaller, though critical, foundation of biological and biosecurity legal framework (legislation and regulation) than its expansive legislation and regulation to combat nuclear and radiological material proliferation. This core of national legislation on biosecurity-related matters, however, provides Colombia with a breath of capacity to continue to expand the country's health, biosecurity and nonproliferation response activities. Critical focus is provided to monitoring imports and exports, providing controls and regulations for appropriate licensure, and for a level of compliance and implementation of national and international regulations to its vast National Network of Laboratories (RNL) at the national and local levels. These regulations support both biosafety and biosecurity requirements of these facilities and entities.

Expanded regulations to increase disease monitoring of imported animals and animal products to prevent invasive, introduced biological, or other materials from entering the country, as well as expanded regulations to increase disease monitoring within domestic livestock to ensure export viability are areas where expansion of regulations would provide significant added capability to Colombia's biosecurity posture. Indeed, Colombia does have a national strategy to monitor diseases originating from imported animals and animal products as well as domestic livestock; however, there is little visibility into any additional legislation or regulation beyond the national strategy. Expanded focuses on disease surveillance, reporting, and organizational collaboration for incident management, visible in legislation and regulation, would be areas of additional assistance to Colombia.

### *Threats*

The overall level of biosecurity threat in Colombia is assessed to be low to moderate at this time.

Although Colombia has a growing biological research and production infrastructure that will increase the potential biosecurity attack surface over time, there are no indications of active biosecurity threats.

Foreign terrorist groups—to include those with a history of interest in biological attacks—are not present in Colombia, nor have treated Colombia as a potential target space or a source for the acquisition of resources for targeting neighboring countries.

Domestic terrorist, guerilla, and insurgent groups, pose a larger, though still relatively small biosecurity threat. There is no evidence that the currently known groups—FARC dissidents and ELN—along with gangs, currently have, nor have at any time possessed, any interest in attempting bioterrorism or agroterrorism. The mainstream of domestic ideological violence is far-left extremism, which has the potential to introduce biosecurity threats if terrorist, or non-terrorist left-extremists identify biological research facilities as a target in anti-capitalist campaigns, particularly those directed at foreign businesses. There is little indication that FARC dissidents and ELN have interest in this area. One area of particular threat for Colombia to be aware of is the rise in ELN-perpetuated illicit cattle smuggling and sale between Venezuela and Colombia to smuggling groups and willing black-market buyers, both live animal and meat for further sale throughout Colombia and Venezuela. By extension, this illicit cattle market has a large potential to introduce biosecurity risk by introducing bovine (cattle) or other diseases that can infect domestic herds and humans as well, along with potential introduction of invasive flora and fauna. However, in the absence of traceable data of disease cases resulting specifically from illicit trade, given that illicit trade would not be recorded nor reported openly, the level of risk that illicit flora and fauna trade in theory could constitute a significant health risk.

#### ***Level of threat***

The overall level of biosecurity threat in Colombia is assessed to be low to moderate at this time.

## About the authors

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