

# Scanning the Horizon: Drones and Counter-narcotics in Latin America

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## KEY POINTS

- Most Latin American states have generated some drone capabilities for military or security purposes, as well as scientific and environmental purposes, but their approaches have varied widely. This is also the case in terms of the policy aims that they seek to achieve. These vary between acute counterinsurgency or counter-narcotics problems and more diffuse longer-term foreign policy aims.
- The defence industrial approaches of the different countries range from the utilisation of already existing capacities to elaborate international co-development and co-production schemes. The deployment of drones, however, has contributed to the long-term process of blurring the lines between state activities (counter-narcotics, counterinsurgency, and border patrol).
- Drones have permitted governments in the region to expand their surveillance and 'remote' control over populations in both urban centres and (more) marginalised rural communities.
- Despite a few voices calling for weaponisation, drones remain unarmed and no Latin American government has carried out a kinetic operation. Drones, however, have participated in more indirect forms of violence (e.g. crop spraying) and the intelligence provided by drones has aided governments in kill/capture operations against drug traffickers, guerrilla members, and (illegal) border crossers.

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## INTRODUCTION

In the last ten years the proliferation of drones (or UAVs)<sup>1</sup> has extended to Latin America. Governments in the region have invested in drones both through the purchase of technology and finished products from abroad, and through the development of their own domestic industry, which have taken distinct paths. Some have developed smaller and lower altitudes drones for tactical missions, while others, particularly Brazil, have been working on drones to fulfil broader strategic ambitions. In terms of exports of technology to the region, two main actors emerge. Israel, particularly *Elbit Systems*, has provided most drones; their *Heron* drones are among the most widespread in the region. The United States has contributed by collaborating with local governments (e.g., Colombia and the *Scan Eagle* drone) and through the transfer of technology.<sup>2</sup>

While the focus of this report is primarily on their deployment for counter-narcotics purposes, drones in the region have performed a plethora of tasks. These could be broadly divided into three main categories. First, several countries in the region have developed and deployed drones for scientific research and environmental missions. They have helped in combating fires and managing natural disasters, as well as in mapping remote terrains. Second, several governments have deployed drones for counter-narcotics purposes. This has included surveillance and reconnaissance missions, as well as intelligence and counter-intelligence operations. Drones have been used to identify drug trafficking routes and drug traffickers, and to communicate this intelligence more rapidly to government forces. In this context, and due to the porous nature of several borders in the region, drones have permitted authorities to expand surveillance and interdict illegal border crossings and cross-country smuggling. Third, drones are increasingly understood by governments in the region as a method to expand state surveillance and control over the population. Surveillance and control are

extended over both (historically) marginalised and repressed communities, as well as over social movements and public demonstrations which might challenge the government. As Tyler Wall has argued in the context of the United States' domestic use of drones, the deployment of drones in this area can be understood as a form of 'pacification.'<sup>3</sup> The region's police and military forces have a long history of domestic deployment for the enclosure, 'normalization,' and exploitation of 'at risk' communities.<sup>4</sup> Drones, then, fit into (and escalate) this longer-term process.

With the increase in tasks performed by drones, especially in countries that have been heavily involved in the 'war on drugs,' this new technology is contributing to the already advanced blurring of boundaries between war and law enforcement. In Colombia, for example, drones (like other government forces) are involved in tasks that conflate counter-narcotics and counterinsurgency.<sup>5</sup> In Mexico, the picture is further complicated by the blurring of these two activities with border patrol.<sup>6</sup>

Like previous reports on the region,<sup>7</sup> this analysis finds that - despite some isolated voices calling for weaponisation - drones in the region remain unarmed. The surveillance and reconnaissance capabilities of drones, however, have permitted governments in the region to use the intelligence provided by drones to capture (and at times kill) drug traffickers, as well as members of guerrilla forces, even without direct kinetic operations. This technology, therefore, is already contributing to 'manhunts' in the context of local conflicts, thus transforming security (and potentially war) in the region.<sup>8</sup>

This report, while discussing the region in general, focuses primarily on four countries: Argentina, Brazil, Colombia, and Mexico. These are the countries with the largest drone programmes (Argentina and Brazil) and with

the heaviest involvement in counter-narcotics (Colombia and Mexico). Within each section the analysis explores the drone industry, the tasks drones have performed and the risks they might pose. The report uses primarily secondary sources: academic works, journalistic accounts and reports from NGOs and think tanks.<sup>9</sup> In Latin America, as in other regions, government activities, progress in the drone industry and the deployment of drones are often shrouded in secrecy.<sup>10</sup> Furthermore, drones are understood as an element of prestige, a status symbol that increases a country's global standing. Therefore, public announcements may suggest significant progress in domestic mastery of drone technology, while the details and possible (often exaggerated) operational benefits remain classified. This dynamic has two main consequences. First, it contributes to a drone arms race, with some countries acquiring and developing the technology because their neighbours appear to be doing the same. Second, for researchers, it makes it even harder to acquire solid and objective information on the development of drones and to distinguish a genuine development from propaganda.

## ARGENTINA

The Argentine security sector operates under circumstances somewhat different from that of most other Latin American countries. Historically, its military industry acquired significant indigenous capabilities, which manifested themselves in early designs of jet aircraft and, later, armoured vehicles. This development was initiated as part of a state-driven industrial growth strategy with the “*ley secreta*” of 1923, and the *Dirección General de Fabricaciones Militares* at one time during the Cold War constituted 15% of the country's economy.<sup>11</sup> The general tendency of Argentine military industry was to provide relatively sophisticated designs, yet with only marginal attention to cost-benefit calculations. The early investments in the aircraft industry also led to Argentina being the first Latin American

country which may claim to have produced an indigenous military drone design. The *I.A. X 59 Dronner* was a single-prototype, but functional, radio-guided drone propelled by a chainsaw engine, with a flight time of one hour and a speed of 340 kph, which was tested multiple times from 1972 on. It was able to carry photographic reconnaissance equipment or to tow aerial targets.<sup>12</sup> Other sources also mention further developments during the 1970s, resulting in a prototype of an improved version.<sup>13</sup>

The resulting technological abilities may have been judged sufficiently important to be resuscitated after the 1980s’ “unilateral disarmament” driven by “social condemnation” of the armed forces following the military dictatorship and its defeat in the Malvinas War.<sup>14</sup> Today, the Argentine military is running, often in cooperation with state-financed research institutions of various kinds, a number of drone programmes that have resulted in some interesting platforms. It is noteworthy that these programmes are, overall, not only more oriented towards the acquisition of national capabilities for eventual system integration, with less disposition towards international collaboration than in other South American states, but also that the Army, Air Force and Navy of Argentina have at times been managing at least partly competing drone projects.<sup>15</sup> It is hardly surprising that most of these projects are still in an experimental stage, and some have been controversially cancelled,<sup>16</sup> but it should be noted that they are accompanied by serious doctrinal and structural efforts to generate some organic UAV capabilities under conditions of financial austerity.

Of the competing programmes, the most advanced is the *Lipan* drone, which was developed by the Combat Intelligence Detachment 601 of the Argentine Army and has been in operational service since 2007. It is a light battlefield reconnaissance drone with two independent cameras, one fixed and one rotatory, giving the vehicle a 360-degree

day and night observation capability. In its overall performance parameters, the original *Lipan M3* variant is not too dissimilar from the 1980s-vintage *IAI Scout* drone, but represents a serious instance of domestic capacity development, with at least four and possibly up to ten being operational in the Army, according to current public sources.<sup>17</sup> Additionally, the updated version *Lipan XM4*, of which at least two prototypes have been manufactured, has both longer range and more sophisticated automation.<sup>18</sup>

Besides other drone programmes of unclear status undertaken by the Navy and Air Force, which are sometimes criticised for demonstrating an almost traditional lack of inter-service coordination,<sup>19</sup> there is *SARA* (*Sistema Aéreo Robótico Argentino* - Argentine Robotic Aerial System), which is one of the more ambitious drone programmes in Latin America at the moment. Being designed by a public-private consortium, which includes the successor to the military aviation company already involved in the 1970s' *Dronner* design as well as the satellite and systems engineering firm INVAP, the core element of *SARA* is expected to be a domestically-designed synthetic aperture radar that will be carried by a Class III drone with roughly one day of endurance.<sup>20</sup> These drones will therefore be extremely useful to the *Sistema Nacional de Vigilancia y Control Aeroespacial*, a fully integrated border surveillance system supported by a multitude of sensor carriers such as boats and tethered air balloons.<sup>21</sup> After having been temporarily defunded in favour of the importation of Israeli equipment by the Macri government, *SARA* is now being pursued again as a national project with multiple stakeholders and a high degree of media attention, which may generate political incentives for its completion.<sup>22</sup>

The impetus behind the contemporary reactivation of Argentine drone programmes can be seen in the combination of several factors.

First, the necessity for border surveillance and maritime security along long and sometimes scarcely inhabited frontiers, which are increasingly menaced by transnational organised crime.<sup>23</sup> Second, the possibility to use drones for agricultural purposes in the large-scale farms typical of the country.<sup>24</sup> And third, the need for long-range maritime surveillance and sea control in order to deter illegal fishing expeditions by extra-hemispheric powers - a problem that has already produced robust reactions from the Argentine Coast Guard, the *Prefectura Naval*.<sup>25</sup> With the considerable knowledge base already developed within different military and civilian research organisations, they will also see these projects as being both prestigious as well as relevant to important national security issues.

On the other hand, the relevance of drones for counternarcotics purposes will be reduced both by the absence of significant production and cultivation, as well as by a longstanding tradition of rejecting military involvement in the domestic security environment, which stems partly from the experience of military dictatorship. While the former Macri administration seemed to aim at the militarization of the drug problem,<sup>26</sup> this trend does not seem to have continued under the current government. The general characteristics of drug trafficking in Argentina, with many dispersed organizations possessing relatively low-level capabilities,<sup>27</sup> do not generally lend themselves to the intense securitization that would legitimize the introduction of new technologies associated with militarized law enforcement, such as drones.

Overall, Argentina has amassed considerable experience in the design and operation of drones, with serious ambition, conceptual and organisational underpinnings, including its own drone school and doctrinal integration of drones into the armed forces. The capacity of its national aircraft industry to design capable UAVs and to continually undertake relevant research and design projects have been demonstrated. Possible weak points

can be seen in a lack of prioritisation of programmes - besides the ones discussed here, the literature mentions several other programmes that were apparently ended without results, and furthermore, the lack of industrial expertise may hamper serial production as well as economic efficiency - problems that already haunted earlier attempts at the development of military industries in Argentina.<sup>28</sup> It remains to be seen how the situation will evolve. The increased incursion of drug trafficking organizations, the frequently changing economic situation of Argentina, as well as the evolving role of extra-hemispheric powers, particularly China, will all have an impact on the development of drone capabilities in the country. If the security trajectory of the country or of its immediate surroundings do not change drastically, it is likely that there will be a continuation of the domestic development of limited capabilities. In this scenario, these will be aimed at maritime and border surveillance, and will be only tangentially involved with counternarcotics.

## **BRAZIL**

Brazil is the perennial South American candidate for great power status. Despite having endured setbacks on the way towards its sometimes considerable strategic ambitions,<sup>29</sup> and despite its military having had lower funding priority since the end of the military dictatorship in 1985, even in comparison to the smaller regional powers it has generated a significant defence industry, and often accounts for more than half of the region's total spending.<sup>30</sup> These factors, as well as significant industrial capacities and funding for technological research, have also led to sometimes ambitious projects designed to acquire drone capabilities and associated technologies. In terms of their counter-narcotics applications, and in contrast to other states such as Colombia or Mexico, their use has been focused less on the interdiction of trafficking routes or the

surveillance of production areas, but rather on the suppression of urban violence connected with the flourishing consumer markets for narcotics that exist in Brazil.<sup>31</sup> The shooting down of police helicopters in urban security operations in 2009 and 2016, with several fatalities, may further have underscored the potential utility of drones in that context.<sup>32</sup>

There are also, besides these possibilities, more strategic national projects. While only a drone in the most extended sense of the concept, the “14-X Hypersonic Aerospace Vehicle” project, which has been underway for the last 15 years, represents the first and only attempt by a Latin American country to produce an unmanned hypersonic glide vehicle. It is a waverider-type fuselage, which will be propelled to hypersonic speed by booster rockets derived from sounding rockets developed within the Brazilian space programme, and at that stage, by a domestically developed scramjet. A prototype has been tested using the hypersonic shock tunnels constructed for this purpose at the *Henry T. Nagamatsu Laboratory of Aerothermodynamics and Hypersonics*, indicating a possible long-term commitment to the programme. Possible uses are seen mainly in the deployment of satellites.<sup>33</sup> However, it is not inconceivable that the capabilities achieved with a successful hypersonic glider might also raise non-proliferation concerns, especially in combination with Brazil's nuclear submarine design efforts. On the other hand, it is currently not clear how far the effort continues to be financed - an announced test flight has been repeatedly postponed, and it is also unknown whether production is even planned in case of successful testing.<sup>34</sup> In any case, the 14-X project demonstrates that issues beyond domestic security do influence some drone development in Latin America.

Other projects that seek to develop drone capabilities in Brazil are more in line with the experience of other countries in the region.<sup>35</sup> Overall, with five *Heron 1* heavy



reconnaissance UAVs (only two according to other reports) and five *Hermes 450* and *900* medium reconnaissance UAVs in service with the Air Force, the Brazilian inventory of drones is not unusually large, but does incorporate heavier equipment than usual in Latin America. The number of *Hermes* in service may rise to up to 15 according to a deal reported in the press. After some political debates over risks and responsibilities, drone control has been transferred to the Brazilian Air Force<sup>36</sup> from the National Police, which uses them for a variety of security operations with sophisticated intelligence, surveillance, target acquisition and surveillance equipment, and, somewhat uniquely in the region, is able to control them via satellite communications.<sup>37</sup> This capability, besides the size of the drones, may suggest a more strategic outlook on drones than just domestic security operations, but might also simply reflect the range advantages that may someday be crucial for patrolling the vast expanse of the Amazon region.

On the other hand, the ambitious project for territorial surveillance in that area, SIVAM (*Sistema de Vigilância da Amazônia* - “System for the Surveillance of Amazonia”), and its subdivision that manages the aerial part of that surveillance, CENSIPAM (*Centro Gestor e Operacional do Sistema de Proteção da Amazônia* - “Administrative and Operational Centre of the System for the Protection of Amazonia”) do not currently use drones beyond the local employment of quadcopters for observation purposes.<sup>38</sup> Instead, the capability of aerial surveillance in the region is maintained through the updating of *Embraer E-99M* airborne early warning and control (AEW&C) aircraft with a large synthetic aperture ground surveillance radar.<sup>39</sup> It is plausible to assume the nascent satellite control capability of the Brazilian Air Force is not yet sufficient for the reliable transmission of the large amounts of data generated from the long-range, high-resolution radars. Economic reasons may also play a role, both in terms of

sticking with an already established system, which furthermore is produced domestically by a ‘national champion’ business, and due to the heightened risk of losing an extremely expensive surveillance radar in a crash. This important national security project is therefore, currently, not an area where drone capabilities play a major role.

In Brazil as a country with a considerable commercial aircraft industry, there is naturally an interest in acquiring domestic design and production capabilities. Brazil has taken a somewhat more cooperative approach than, for example, Argentina, choosing to partner with Israeli enterprises in most cases. Early attempts to go it alone included the design and prototyping of the single-engine *Falcão* surveillance drone by domestic military aviation company *Avibras*, which appeared to belong to the same general category as the *Hermes* drones.<sup>40</sup> This project was then taken over by a consortium called *Harpia Sistemas*, formed by *Avibras*, the major Brazilian aerospace manufacturer *Embraer*, and the Brazilian-Israeli (*Elbit*) joint venture *AEL Sistemas*, only to be stopped in 2016 due to government spending cuts.<sup>41</sup> The consortium was then dissolved due to a lack of economic perspectives, but the partners announced that they would take care to maintain the knowledge generated through this cooperation.<sup>42</sup>

Another relevant joint venture is that of *Israel Aerospace Industries* with the Brazilian aerospace technology and service company *Avionics Services*. These businesses teamed-up in 2014 to produce the *Caçador* drone, a further development of the Israeli *Heron 1* already in service.<sup>43</sup> It is not known whether the presence of operational *Caçadors* has resulted in the discrepancies in the reported numbers of *Hermes* in service, since the aircraft seems to be very similar, and at least an operational prototype is reported to have been presented to Brazilian police forces for possible environmental and security surveillance operations, complete

with a satellite link capacity.<sup>44</sup> The possibility of arming the *Caçador* in the future, which would represent a first for Latin American armed forces, is at least discussed in Brazilian military publications.<sup>45</sup> While it is unclear what precisely will become of this project, it clearly demonstrates that the Brazilian security sector is interested in the further development of higher-level drone capabilities.

This is also underlined by the recent signing of an MoU by *Embraer* and the Brazilian Air Force for a joint study regarding the possible development of a “loyal wingman”-type drone, possibly involving the experience gained in the cooperation with *Saab* during the production of the *Gripen* fighter aircraft, as well as the knowledge derived from earlier cooperation with *Elbit*.<sup>46</sup> At the same time, the domestic security use of drones appears to be a possible growth sector as well, even though perhaps at a technologically less spectacular level; the national government even experimented with smaller drones to detect signs of slavery in agricultural enterprises.<sup>47</sup> The enormous discrepancy between strategic and technological ambition on the one hand, which is reflected in the *14-X* and *Caçador* programmes, and the great institutional deficits on the other, illustrate the diversity of challenges confronting contemporary Brazil. In an environment marked by uncertainty, Brazil seems to opt for a strategy of low numbers, but advanced capabilities, with a desire to localise as many technological capabilities as possible.

## COLOMBIA

Colombia has been at the forefront of the ‘war on drugs’ since the 1980s. Over time it has become one of main receivers of US aid as well as one of the staunchest US allies in the region. For the purposes of the report, important elements of this relationship have been the deployment of aircrafts for surveillance and the conduct of tactical counter-narcotic operations.

In 1986 the Reagan Administration approved National Security Decision Directive 221 ‘Narcotics and National Security.’ The document identified drugs not only as an endemic problem but as a threat to the stability of US allies in the region and, hence, to US national security. The document also explicitly connected drug trafficking to the activities of insurgents and terrorist groups.<sup>48</sup> This understanding paved the way for the militarisation of the war of drugs and it is understood as a clear escalation of the supply-side of the drug war. In this war, among other measures, the US government deployed a plethora of aircrafts in the Andean region in the hope of identifying and intercepting drug smuggling, by closing ‘radar gaps.’<sup>49</sup>

Towards the end of the 1980s, under the George H. W. Bush Administration, Congress approved the President’s \$2.2 billion Andean Initiative to hit the supply-side of the drug trade. At this point the hunt for ‘kingpin’ Pablo Escobar represented the Administration’s priority. Despite an initial reluctance, the Pentagon soon found itself at the forefront of this confrontation. As Russell Crandall has argued, the unprecedented deployment of US surveillance aircrafts in the hunt for Escobar represented a ‘precursor of the postmodern military and intelligence drone.’ In the search, the CIA deployed a *Schweizer SGM 2-37*, ‘a fixed-wing surveillance glider that could hover stealthily over a target for hours.’ Soon, US surveillance planes covered the Medellín sky.<sup>50</sup> Up until the 1990s, the institution receiving most of the U.S. aid was the National Police. Starting in 1999, and later with Plan Colombia, the Clinton Administration shifted most of the aid towards the Colombian military.<sup>51</sup> Of the \$2.4 billion given to Colombia between 1999 and 2002, for example, 83% went to the military.<sup>52</sup>

As in many other areas, contractors have played a prominent role in strengthening surveillance of the region. In 1998, *Northrop Grumman* started its work in Colombia by

developing and operating a 'Counter-narcotics Surveillance and Control System' to monitor cocaine distribution routes.<sup>53</sup> Other contractors such as *DynCorp* played a leading role in aerial fumigation operations.<sup>54</sup> The often-tragic difficulties encountered by the programme - such as the downing of Cessna aircrafts and the taking of US hostages - might well have contributed towards an early shift to drones.

As documents declassified by Wikileaks revealed, Colombia was one of the first countries to enter the drone age. In 2006, US Ambassador to Colombia William Wood requested the delivery of *Scan Eagle* drones to Colombia. The aim was to support US hostage rescue efforts as well as help the Colombian military in the pursuit of guerrilla leaders. Eventually, the memo continued, drones might also help in counter-terrorism operations.<sup>55</sup> Wood's memo is emblematic of the blurring of the boundaries between counter-narcotics, counterinsurgency, and counterterrorism that had started under Reagan. It is also emblematic of the blurring of the distinction between war and law enforcement that has long characterised the 'war on drugs' in the region.<sup>56</sup> It is in this context that drones have the potential to play a particularly controversial role.

The Colombian government has made drones a high priority. After the early use of the US-made *Scan Eagle* drone, the Ministry of Defence invested \$25 million in the acquisition of drones for counterinsurgency, counter-narcotics, and counter-terrorism operations. The Air Force acquired the small VTOL from *Neural Robotics*. This, however, was just part of a broader push that combined increased acquisitions and procurement from abroad with the development of a solid domestic industry.<sup>57</sup> As for foreign procurement, the Israeli *Elbit Systems* has been one of the main providers in the region. After secret negotiations, Colombia acquired *Hermes 450* and *Hermes 900*.<sup>58</sup> While private institutions such as the University of San Buenaventura

have recently participated in the production of drones, Colombia's domestic industry relies largely on the collaboration between the Air Force, the Ministry of Defence, and *Colombian Aeronautical Industry Corporation (CIAC)*, with the financial support of *INDUMIL* (Colombia's State weapons manufacturer).<sup>59</sup> Starting in 2013, Colombia also developed the first drone flight simulator to train a higher number of operators.<sup>60</sup>

One of the first models produced by *CIAC* was the *IRIS*. First flown in 2010, it was soon abandoned due to weight issues. After the failure of the *IRIS*, Colombia looked at international partners to strengthen its drone development and production. Between 2016 and 2019, it initiated and concluded an agreement with Spain for the development and production of a tactical Medium Altitude Long Endurance (MALE) drone, the *Atlante II*.<sup>61</sup> The drone is to be manufactured in Colombia and it is understood to be a replacement for the failed *IRIS* programme.<sup>62</sup> Beyond this international collaboration, Colombian authorities have provided clear signals of the importance of the drone industry for the military and industrial sectors. Maj. Rafael Alberto Velasquez Garavito, responsible for the Special Projects Division at *CIAC*, recently stressed how UAV will be one of the two main areas of investment for the company in the next 10 years.<sup>63</sup> The apparent aim is full independence through the development of an entirely national tactical UAV system. The latest project is the *Quimbaya*, a medium range drone first introduced at the 2019 *Expodefensa*, but according to recent reports it is still in the development and testing phase.<sup>64</sup> As *WOLA* has reported, Colombia aims to become a net exporter of weapons and the drone industry is likely to play a prominent role in reaching this objective.<sup>65</sup>

Despite a mixed track-record and development delays, drones are now pervasive among Colombian military and law enforcement, with the Army, Navy, Air Force and National



Police all making use of the technology. As in the rest of the region, drones have served a multiplicity of functions. These have included border patrol and the surveillance and protection of strategic infrastructure. The purchase of *Hermes* drones and the development of the *Quimbaya* drone, for example, were partly funded by *Ecopetrol*, with the understanding that the technology will be used for the protection of its pipelines and infrastructure.<sup>66</sup> Drones have played a prominent role in the realm of counter-narcotics, both in terms of identifying and tracking drug-traffickers and as a substitute for traditional (piloted) aircrafts used for the aerial fumigation of coca plantations. In the latter area, drones are seen as a less risky alternative. Unmanned aircrafts can fly at lower altitudes and deliver smaller amounts of herbicides thus better protecting neighbouring crops and - according to German Huertas director of operations of *Fumi Drones Sas* which has partnered with the Colombian government - destroying them more efficiently.<sup>67</sup> It has also been claimed that drones have the advantage of reducing the health risks for the targeted communities.<sup>68</sup>

In this context, the most controversial use has to do with the blurring of counter-narcotics and counterinsurgency. As the Colombian former president Santos admitted in his memoirs, the assassination of guerrilla leader Raul Reyes in 2008 was achieved through the interception via drones of communication and electronic signals.<sup>69</sup> More generally, drones are deployed as instruments of control in rural areas formerly controlled by the guerrilla. As one army commander explained: "Territorial control can't entail stationing a soldier every few feet, because it's impossible; Colombia is immense. We need to cover it with intelligence, with a network of collaborators, with drones. We need a combination of methods to maintain effective military control."<sup>70</sup> The commander's admission highlights one of the main critiques raised against the use of drones

in the region: that they have become a means of extending state control and surveillance. Especially in areas that have traditionally been outside the control of the government, drones permit states to monitor people remotely and without risking the deployment of personnel. As Arteaga Botello writes, drones transform individuals and large segments of the (rural) population into potential targets with the aim of controlling, monitoring and, in certain cases, displacing them.<sup>71</sup> Some evidence suggests that this might not be limited to rural areas. The Mayor of Bogotá has called for the use of drones for the surveillance of 'crowds' in cities,<sup>72</sup> and the police are showing an increasing interest in the development of drones and their employment in urban areas.

For now, drones in Colombia (as in the rest of the region) have not carried weapons. Recent history, however, suggests that, for a number of reasons, future weaponization might not be unthinkable. First, in recent years voices have emerged calling for the weaponisation of drones to be used against drug traffickers. (A precedent already exists: the targeting of Afghan Taliban-linked drug-traffickers by US drones.)<sup>73</sup> More generally, we have already seen a cross-pollination of practices between the 'war on drugs' and the 'war on terror.' Beyond training and financial support, this has extended, for example, to the use of FAST teams.<sup>74</sup> Second, Colombia, from the 'kingpin strategy' onwards, has a long history of conducting programmes of targeted killing against kingpins, drug traffickers and guerrilla leaders both independently and with US support. As the ground-breaking investigative reporting of Dana Priest has uncovered, this tendency was very much alive in the Bush and Obama years. A plan started under Bush and continued under Obama permitted the transfer to Colombian forces of a '\$30,000 GPS guidance kit that transforms a less-than-accurate 500-pound gravity bomb into a highly accurate smart bomb.' The programme seemingly violated the US ban on assassination, but it could rely on two legal findings approved

by Reagan: one for the conduct of operations against terrorist organisations,<sup>75</sup> and the other which authorised action against narco-traffickers. The Bush Administration's 'global war on terror' framework and the designation of the FARC as a terrorist organisation permitted the US government's involvement in the assassination of FARC leaders, since they were considered a threat to US national security. Operations included the controversial cross-border targeted killing of FARC leader Raul Reyes in Ecuador in 2008. Colombia justified the strike by adopting the rhetoric of pre-emptive self-defence against terrorism first developed by the Bush Administration - still the main rationale for drone strikes and targeted killings.<sup>76</sup> The strike caused an international outcry. Although the CIA initially maintained control over the encryption key inserted in the bomb, Colombian forces were given full control in 2010.<sup>77</sup> Already in 2013 the Council for Hemispheric Affairs warned that the region was presenting a 'mixed' picture on the issue of weaponisation.<sup>78</sup> And while no drone has been weaponised so far, 'killer drones' have started to appear at regional expositions.<sup>79</sup>

## MEXICO

In 1969 the Nixon administration saw the overflight of Mexican territory and the spraying of plantations as a key step in undermining the production and transport of illicit drugs.<sup>80</sup> Mexico's refusal to take part in the then recently launched US 'war on drugs,' pushed the US government to launch Operation Intercept, an effort to interdict drug trafficking along the land border dividing the two countries. The operation brought the border to a standstill and the Mexican government to its knees. While the anti-drugs results were meagre, as a pressure campaign Intercept succeeded.<sup>81</sup> Later, in Operation Cooperation, Mexico allowed US agents to work south of the border and in 1976, Mexico and the United States launched Operation Condor. The operation targeted the so-called Mexican 'golden triangle' (the states of Sinaloa, Durango, and Chihuahua) and the

DEA supplied planes for aerial spraying. As Ioan Grillo writes, the operation set three main precedents. First, aerial spraying became a key component of the 'war on drugs.' Second, the Mexican government was able to keep the hardware used for spraying, thus making the 'war on drugs' a valid pretext to expand its airpower. Third, taking advantage of counter-narcotics operations, Mexican authorities also rounded-up and killed suspected guerrillas, in the same blurring of the distinction between counter-narcotics and counter-insurgency operations that we have seen in other countries.<sup>82</sup> The 'war on drugs' returned to Mexico with a vengeance in the 1990s. The squeeze of the Colombian so-called 'cartels' (or drug trafficking organisations) led to what scholars describe as a key example of the 'balloon effect' that has long characterised the supply-side of the war on drugs.<sup>83</sup>

Starting in the 1990s, drones have played an increasingly prominent role in this war. Mexico is reportedly the largest market in the region; the largest buyer of drones and one of the main regional producers.<sup>84</sup> Several organisations, including the National Defence Secretariat (SEDENA), the Army, the air force and the attorney general's office fly drones.<sup>85</sup> In this context, two important observations arise. First, while the use of drones has contributed to the blurring between counter-narcotics and counterinsurgency, in the Mexican case, a third dimension should be added. Counter-narcotics and counterinsurgency have become enmeshed in border surveillance and in the apprehension of illegal crossers. Second, in the Mexican context, most uses of drones have been carried out by the US government either along the border or over Mexican territory. In the latter case, the Mexican government has agreed to this use. More recently, the Mexican government has also developed a domestic drone industry, but the bulk of technology and operations still rely on US hardware. This section briefly details US drone use in Mexico and will then consider the Mexican drone industry.

In 1990 Operation Alliance saw US Marines pilot UAVs in Texas along the US-Mexican border. While the stated purpose was drug interdiction, the operation also picked up unauthorised migrants.<sup>86</sup> In the aftermath of 9/11 the Department of Homeland Security increased its use of drones along the border. After successful testing by Homeland Security, US Customs and Border Protection started to fly *Predator B* along the border in 2004.<sup>87</sup> While surveillance, intelligence, and counter-narcotics played a prominent role in the Bush Administration's Merida Initiative, drones did not.<sup>88</sup> Interestingly, according to Dana Priest, as the situation in Mexico worsened, President Felipe Calderon had requested the deployment of armed US drones in Mexican skies, but the Bush Administration refused.<sup>89</sup>

The use of (unarmed) drones expanded under the Obama Administration as the situation in Mexico markedly deteriorated. In 2009, the US flew an unarmed *Predator* drone over Mexican territory after the killing of US Immigration agent Jaime Zapata. According to Priest, an agreement was reached between the two countries for the flight of drones: 'U.S. pilots sitting in the States would control the planes remotely, but a Mexican military or federal police commander would be able to direct the pilot within the boundaries of a Mexico-designated grid.'<sup>90</sup> In 2011, investigative reporters from the *New York Times* revealed that the US government had also started regularly flying high-altitude unarmed drones, including the *Global Hawk* over Mexico. Drones were used to collect information for Mexican law enforcement agencies. They also contributed to find suspects linked to the murder of Zapata.<sup>91</sup>

At the time, Obama and Calderon also agreed to create intelligence 'fusion centers' for the exploitation of human and signal intelligence in Mexico, not unlike the one the US used with local allies in Afghanistan and Iraq.<sup>92</sup> In particular, two fusion centres were created: one run by the CIA in Mexico City, and another run

by the DEA in Monterrey. The use of drones and the creation of fusion centres meant that the 'United States had been given near-complete entrée to Mexico's territory and the secrets of its citizens.'<sup>93</sup> These measures represented a historic turn of events considering Mexico's traditional reluctance to host US forces on its territory and its concerns surrounding sovereignty.<sup>94</sup> Fusion centres were not the only practice transferred from the 'war on terror' to the 'war on drugs.' The hunt for 'high-value targets' that characterised much of the US targeted killing programme was redeployed in Mexico. US authorities used 'used real-time intelligence against kingpins on a Mexican-U.S. priority list – including cell phone geolocation, wiretaps, electronic intercepts and tracking of digital records – to help Mexican authorities target them.'<sup>95</sup> This allegedly contributed to the capture of several kingpins.

These successes reportedly convinced Mexican authorities of the importance of drones. Mexican requests, however, encountered the expansion of the drone wars under Obama, and US resource constraints convinced Mexico of the need to both expand its commercial partners and strengthen the domestic drone industry. When purchases were made, Mexico, like many other countries in the region, relied on the Israeli *Elbit Systems*. It first acquired the *Orbiter* in 2009<sup>96</sup> and then the *Hermes 450* and *Hermes 900*, the latter is used by the Mexican SEDENA for reconnaissance and surveillance.<sup>97</sup>

Mexican-made drones first emerged in 2002 with the development of the *S3Manta*, a short-range tactical drone. The success of the drone led to the establishment of a new company, *Hydra Technologies*, in 2005. The company has been at the forefront of Mexican drone production. A follow-up to the *S3*, the *S4Ehecatl* had a slightly longer range.<sup>98</sup> By 2013 the Mexican government had over 100 drones and additional companies had joined in production. *SOS Global* and *Sonora Technical Institute* now produce drones. The government

has also moved from short to medium range drones. These include the *G1 Guerrero*, *Ehecatl*, *Gavilan* and *S45 Bala*, all produced by *Hydra Technologies*.<sup>99</sup>

In this context, Mexican authorities have also invested in anti-drone technologies such as anti-drone rifles like the *Hikvision UAV jammer*.<sup>100</sup> This technology has been used for three main

purposes. First, they have been deployed during public events and demonstrations, like the Women's march. Second, they have been used for the protection of state official, although it appears SEDENA has cancelled a public tender for an anti-drone system to be installed at the top of the Presidential Palace.<sup>101</sup> Finally, they have been used to combat the use of drones by so-called cartels (see text box).

### **NARCO-DRONES: CARTELS, DRONES AND KINETIC OPERATIONS**

The proliferation of drones, the accompanying technological innovation and the ensuing reduction in costs have raised concerns regarding their use by violent non-state groups, such as terrorist groups and drug trafficking organisations.<sup>102</sup> Ever since Escobar's narcosubmarines, so-called cartels have invested in technology for drug trafficking. Like the governments of the region, the cartels use drones for a multiplicity of tasks. They have diversified their production of drones and have shown innovation in repurposing and modifying drones to suit the mission. For example, since 2014, cartels have been commissioning the construction of small drones to local workers.<sup>103</sup> In this as in many other contexts, cartels behave like 'vicious' logistics firms.<sup>104</sup>

For cartels, drones help to spot counter-narcotics forces and subsequently re-direct drug trafficking. They are deployed to prevent counternarcotic raids, since the availability of the technology makes them cheaper than traditional human 'lookouts'.<sup>105</sup> They also helped in establishing new avenues and routes for drug trafficking, especially across the border into the United States. As one journalist quipped, drones are 'the perfect drug mule, they are expendable and will never talk to the authorities'.<sup>106</sup> Meanwhile, the development and deployment of narcosubmarines has continued, including large electric models with an estimated cost of \$1.5 million.<sup>107</sup>

Recently, cartels have also crossed the threshold into kinetic operations. A leading innovator has been the *Cártel Jalisco Nueva Generación (CJNG)*. The cartel guided by Nemesio Oseguera Cervantes, who is known as *El Mencho*, has over 5,000 members worldwide. According to US sources, the cartel is 'estimated to control a third of the drugs consumed in the US'.<sup>108</sup> US Federal Drug agents have watched the cartel develop 'a large and disciplined army, control of extensive drug routes throughout the U.S., sophisticated money-laundering techniques and an elaborate digital terror campaign'.<sup>109</sup> It has also seemingly institutionalised the use of weaponised drones. In 2017, the cartel prepared a drone fitted with an IED - known as 'papa bomba' (or potato bomb) - and a remotely controlled detonator. In 2018, the same cartel carried out a drone attack against the public safety secretary of Baja California. In 2021, the cartel carried out two further attacks using drones fitted with explosives against both police, military officials and rival cartels.<sup>110</sup> While so far not deadly, these attacks are used to send signals and for propaganda purposes both against the state and against rivals (such as the *Nueva Familia Michoacana*, main rival of the *CJNG*).<sup>111</sup> In 2021, members of a second cartel, the *Cartel Santa Rosa de Lima*, were also arrested after being found guilty of fitting drones with explosives.<sup>112</sup> These developments seems to signal the possibility that small, weaponised drones could become a key component of both violence against the state and of intra-cartel wars.

In terms of use, Mexican drones have been used for a variety of missions. These have included counter-narcotics, counterinsurgency, border surveillance, management of national disasters and, more recently, the surveillance and control of demonstrations and social movements. In 2013, for example, drones were used for surveillance of the demonstration of the 'normalistas' in Michoacan and the *YoSoy* movement. Mexican authorities have explicitly stated that drones are preferable for the control of specific areas that are considered at particularly high risk of criminality.<sup>113</sup> Such a development is concerning, especially considering Mexico's long history of targeting and killing individuals taking part in protests and demonstrations.<sup>114</sup> The transformation of civilians into targets has featured prominently in border surveillance. The border region has been turned into a militarised area, one of complete surveillance and control. This, once again, has been influenced by developments in the United States. In recent years, with deployments in Iraq and Afghanistan winding down, the Department of Homeland Security established a programme to repurpose military equipment previously deployed in those two countries. These have included towers, aerostats, helicopters and drones.<sup>115</sup> As *The Intercept* has reported, this programme also included the repurposing of the NSA RT-RG mass surveillance system from Iraq and Afghanistan to the Mexico border. This technology has brought to border surveillance practices - such as pattern of life analysis - usually deployed in war.<sup>116</sup> Scholars have correctly criticised<sup>117</sup> this approach, highlighting the US government's historical overconfidence in technology as a 'fix' to solve human and social problems. As in other countries, Mexican drones remain unarmed. Calderon's request and other voices in the country, however, seemingly suggest that the use of armed drones, especially against high-level drug traffickers, might be under consideration.<sup>118</sup>

## OTHER COUNTRIES

The coverage of Latin American drone use in this report is not comprehensive. Obviously, other Latin American countries also operate, and in some cases, manufacture drones for security and military purposes. For several reasons, the cases covered above display the most important facets of the phenomenon. There are, however, other countries in the region that deploy drones. **Chile** uses three *Hermes 900* drones.<sup>119</sup> The Chilean government has used the *Hermes* drones for the surveillance of national airspace and, more recently, to help with fires and other natural disasters.<sup>120</sup> Major cities in Chile, as in other countries in the region, also reportedly use drones for urban surveillance.<sup>121</sup> **Ecuador** is the only country besides Brazil to deploy two *Heron* drones, along with smaller *Trackers*,<sup>122</sup> and uses them for maritime narcotics interdiction.<sup>123</sup> These capabilities are controlled exclusively by the Ecuadorian Navy, which makes it South America's foremost naval drone operator. Ecuador has also used drones for scientific missions and disaster management. More recently, the Joint Group for Monitoring and Electronic Reconnaissance (GMREC) has used drones in intelligence and counter-intelligence operations as well as for the interdiction of smuggling operations (primarily of natural resources).<sup>124</sup> **Peru** does not utilize large drones for military or security purposes, though it has experimented with the development and deployment of smaller UAVs for reconnaissance or surveillance purposes.<sup>125</sup> Reportedly the country also 'worked with South Korea to develop a training simulator for drone pilot instructions.'<sup>126</sup> Of interest in the region is **Venezuela's** cooperation with Iran (see textbox). The Venezuelan government uses drones for surveillance, the monitoring of infrastructure and for drug interdiction.<sup>127</sup> Beyond the cases mentioned above, no use of Class III drones or above for military or security purposes by Latin American countries has been commonly reported.



## THE IRANIAN CONNECTION AND DRONES IN VENEZUELA

Venezuela’s geopolitical reorientation has led to curiosity, condemnation and a large amount of sometimes sensationalist speculation on the strategic significance of its - real or imagined - new affiliation. Besides the great-power competition issues inherent in Russian and Chinese engagement with Venezuela,<sup>128</sup> the one connection that has generated the most intrigue is probably the Bolivarian Republic’s relationship with Iran. Beyond issues such as oil, crime and terrorism, drones have also formed part of the panoply of “anti-imperialist” projects.<sup>129</sup> In 2012, in response to U.S. investigations, Hugo Chávez stated that Venezuela was indeed building a small drone with surveillance capabilities in cooperation with, among other countries, Iran, and announced its use in resource surveying.<sup>130</sup>

The actual results of the Iran-Venezuela cooperation on drones falls somewhere between the extremes, at least in terms of what can be verified. There has been some limited use of 12 *Mohajer-2* UAVs, delivered as kit from Iran to Venezuela, for territorial surveillance. Some sources also mention the evaluation of Russian drones, with unknown results.<sup>131</sup> The licensed production of *Arpía* had been announced in 2012 but has not led to any concrete evidence of success.<sup>132</sup> According to some reports, three of the imported drones crashed shortly after delivery. Overall, the actual activities connected to the drone programme seemed so minor that there was speculation that the drone facilities might serve the purpose of hiding other types of clandestine activities.<sup>133</sup> In 2020, president Maduro claimed again that Venezuela might soon produce drones, this time the missile-carrying *Mohajer-6* variant, of which he displayed two static models.<sup>134</sup> Considering the fate of other frequently publicised Venezuelan projects, such as the Venezuelan Kalashnikov factory that has been announced from time to time since 2006,<sup>135</sup> this announcement is unlikely to raise fears among Venezuela’s neighbours. It is, however, an indicator of the facility with which drones can be used for misinformation due to the mystique that appears to surround them.

## CONCLUSION

This report has provided an overview of drone operations and capabilities in Latin America. It has focused on four main countries: Argentina, Brazil, Colombia and Mexico. These are the countries with the largest drone programmes, and they have made extensive use of the technology. The report has focused on two main areas: first, the conditions of the drone industry in each country; second, the rationales for the deployments of drones and the tasks they have completed. In terms of acquisition, design, development and production capabilities, the four main cases above hint at the possible construction of four different ideal types of industrial drone strategies.

		Industrial focus	
		domestic	international
Policy focus	diffuse	Argentina	Brazil
	acute	Mexico	Colombia

Figure 1 Drone Industrial Strategies in Latin America

Some countries, exemplified here by Argentina, choose to leverage the capabilities of their domestic industries more for industrial reasons, or with wider or more diffuse policy objectives, rather than to address concrete and urgent security threats. In contrast, others, exemplified by Colombia, count on international collaboration in combination with the pragmatic development of domestic industrial capabilities in order to address acute security problems. Furthermore, as in Mexico, some countries leverage their existing domestic industry in order to address acute problems. And finally, there are cases such as Brazil, which aims at realizing international industrial cooperation for a wide variety of diffuse long-term policy aims. It would be interesting to study the reasons why certain strategies were adopted. In any case, neither the country's security situation nor its industrial potential seems to play a dominant role alone. Issues such as strategic culture, civil-military relations, foreign policy ambitions and social perceptions of technology might all be considered to explain the political choices discussed above.

Beyond industrial strategies, the analysis above confirms that the UAV sector is rapidly expanding in the region. This proliferation is at least partially driven by an arms race that goes beyond the practical uses of drones. As Franke pointed out when looking at other regions, drones have come to represent a status symbol and an element of prestige for governments in the region, especially in their international relations.<sup>136</sup> While many of the programmes are secret, information is surely available within policymaking circles in the region. As mentioned in the introduction, the 'prestige' of drones also makes it harder to distinguish between actual drone programmes and propaganda activities.

As to their deployment, drones and UAVs are often used for scientific, environmental and disaster management/prevention activities. As

scholarship on 'drones for good' has pointed out, drones clearly provide advantages in terms of costs, ease of deployment and geographical reach.<sup>137</sup> For governments in the region, counter-narcotics remains one of the main rationales behind the use of drones. This includes the deployment in surveillance and reconnaissance operations, the use of drones for the collection of electronic and image intelligence and the use for the spraying of illegal crops.

There are, however, clear indications that drones are also helping governments in the region to extend surveillance and control of the population. This process is not new, and it did not start with drones. As several scholars have pointed out, aerial surveillance has often played a prominent role in domestic and foreign campaigns of pacification.<sup>138</sup> Most scholarship on the topic focuses on US politics and foreign policy. In this context, some have understood this process as a blurring of the distinction between the realms of law enforcement and war and, therefore, a blurring of the distinction between the functions of the military and those of other institutions.<sup>139</sup> Others, looking at the history and the violence of US policing, have argued that drones better permit us to understand that 'war and police have long been sutured together in the name of security.' In this understanding, the process is not one of blurring of boundaries, but of revealing the long and violent history of the deployment of military force abroad and the policing of undesirables domestically. Drones are not so much a novelty, but the latest technological fix unveiling this continuity.<sup>140</sup> The same argument can be extended to Latin America and its violent history of policing and counterinsurgency.

Furthermore, starting in the early 2000s, and following US examples and directives, many governments in the region approved vague counter-terrorism legislation. This legislation has often been exploited for the deployment of violence against protestors and social demonstrators. This has developed hand in hand

with an increase in the deployment of military forces for domestic policing tasks.<sup>141</sup> Drones build on these precedents and fit into a pattern of expanded and militarised state control. They have permitted governments to further extend surveillance, control and pacification of traditionally out-of-reach areas. As Arteaga Botello noted, drones have contributed to turning the individuals living in these areas into targets, criminals, and, at times, enemies.<sup>142</sup> This pattern of control has also extended to urban centres, especially with the surveillance of social movements and demonstrations.

In this context, it should be pointed out that, in spite of few and so far, isolated voices, drones in the region remain unarmed. However, they still have the potential to increase the state apparatus for repression as well as the resentment felt by marginalised individuals and communities. Finally, the report highlights the proliferation of drones among violent non-state groups with a focus on the Mexican cartels, who have shown the ability to deploy somewhat rudimentary weaponised drones.

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