REMOTE CONTROL
AERIAL ELIMINATION OF THE PKK'S TERRORIST LEADERS AND OPERATIVES

SİBEL DÜZ, MUHAMMET İSMAİL ÜZEN

SETA | REPORT

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SETA

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مركز الدراسات السياسية والاقتصادية والاجتماعية

CONTENT

ABSTRACT

In this meticulous inquiry, we undertake an exhaustive assessment of the extant and conceivable role of Unmanned Aerial Vehicles also known as UAVs, in the efficacy of counterterrorism operations. Our scrutiny revolves around their application in military and operational spheres, while conscientiously considering the inherent advantages and plausible risks they entail. Of particular interest is Türkiye's invaluable experience in combating the notorious PKK terrorist organization, as we attribute significant importance to comprehending the operational and strategic implications of employing UAVs in this context.

Delving into the core of this study, we leverage data derived from two distinguished repositories—*the Terrorism Analysis Platform* and *Türkiye's Enemy Killed in Action Dataset*—to compose an authoritative report. Our focus lies on the profound examination of the intricate effects of UAV deployment in counterterrorism endeavors, particularly pertaining to the PKK's organizational structure, command hierarchy, recruitment of skilled human resources, access to essential material resources, and the dynamic tactical metamorphosis undergone by the terrorist organization. Through this rigorous analysis, we aim to shed illuminating light on the multifaceted role of UAVs and their profound impact on the protracted battle against terrorism.

INTRODUCTION

Unmanned aerial vehicles became one of the world's most popular weapon systems after the United States and others started using them in counter-terror operations in the twentieth century.[1] According to the available data, at least 95 countries have UAV systems at their disposal and no less than 24 nations manufacture drones for military purposes.[2] Furthermore, the United States, China, France, the United Kingdom, Iran, Israel, Russia and Türkiye remain among countries with indigenous UAV programs.[3]

It is important to note that one would typically encounter drones in almost all conflict zones worldwide. In this context, military operations against terrorist organizations and non-state actors in Afghanistan, Iraq, Libya, Pakistan, Somalia, Syria and Yemen have been striking examples of UAV activities in conflict zones. In light of the Second Karabakh War (2020) and the Russo-Ukrainian War (2022), UAVs are expected to play a more prominent role in wars and other conflicts among states.[4]

1 This report refers to all armed and unarmed unmanned aerial vehicles as UAVs to avoid confusion over specific concepts. The terms drone and unmanned aerial vehicle are used interchangeably.

2 Dan Gettinger, *The Drone Databook* (The Center for the Study of the Drone, New York: 2019).

3 "Who Has What: Countries Developing Armed Drones", New America, https://www.newamerica.org/international-security/reports/world-drones/who-has-what-countries-developing-armed-drones/, (Accessed: 11 August 2022).

4 Sibel Düz, *Unpacking the Debate on Turkish Drones*, (SETA, Istanbul: 2022).

Although American, Chinese and Israeli UAVs have a significant market share, it is possible to observe that Türkiye emerged as a heavyweight in recent years thanks to the success of the Bayraktar TB2 and ANKA drones. Specifically, Turkish UAVs played an active role in Iraq and Syria as well as became a game-changer in the Second Karabakh War. Furthermore, they provided air cover to the Government of National Accord, Libya's UN-recognized government, during that country's civil war and, most recently, was used extensively in the Russo-Ukrainian War. In the wake of those developments, they attracted attention in conflict zones and debates over military doctrine.[5]

Furthermore, Türkiye uses indigenous drones actively in its efforts to neutralize terrorist threats against its internal and external security. Specifically, the country took advantage of UAVs as part of counter-PKK operations in reconnaissance and surveillance missions in border regions as well as rural and urban areas. Drones also proved to be an effective tool for the elimination of the terrorist organization's so-called senior leaders. That is because UAVs not only marked and monitored targets for the Turkish security forces but also carried out airstrikes against pre-determined targets. Moreover, drones enabled Turkish troops to hunt down and eliminate their targets in challenging terrain. In this sense, it became possible for the Turkish army to conduct security operations in almost all places where terrorists used to be able to hide by taking advantage of geography.[6]

This report analyzes the role that Turkish drones have played in counter-terror operations (specifically the elimination of so-called PKK leaders and operatives) based on the Terrorism Analysis Platform's findings and testimony offered by terrorists who surrendered to the Turkish authorities. For this purpose, it will review the academic literature on the use of drones before discussing the advantages and risks of using drones in counter-terror operations. This study will also reflect on Türkiye's use of UAVs in its fight against terrorism by providing detailed information about the purposes and targets of drones as well as their impact on PKK's strategy, organizational and command structures, qualified human resources, main material resources and operational capabilities. Last but not least, it shall analyze the strategic impact of drone use on the security forces.

5 David Axe, "Turkey Has Quickly Emerged as a Drone Power", National Interest, 1 Aralık 2021, https://nationalinterest.org/blog/reboot/turkey-has-quickly-emerged-drone-power-197251, (Accessed: 11 August 2021); Düz, Unpacking the Debate on Turkish Drones.

6 *Türkiye'nin Stratejik Silah Kapasitesi* [Türkiye's Strategic Weapon Capacity], ed. Abdullah Erboğa, (SETA Publishing, Istanbul: 2019), pp.179-180.

This report takes advantage of the TAP database which makes available relevant information in different categories based on public statements by the Interior Ministry and the Ministry of National Defense as well as news reports and open sources. It categorizes each operation according to "date and geographical location," "security environment," "security unit," "operational unit," "operational target type," "operation type" and "casualties" in addition to sorting information into sub-categories.[7]

Another source, the Türkiye's Enemies Killed in Action database, sorts information from public statements by the Interior Ministry and the Ministry of National Defense as well as the mainstream media regarding neutralized and publicly identified terrorists based on their age, gender and place of birth as well as the time and place of the relevant operation and that operation's unit, type and category. It also establishes to which group they belonged and which role they played.[8] This report highligts that:

- Whereas the civilian use of UAVs continues to become commonplace, the relevant vehicles were originally built for military and defensive purposes. A closer look at the military use of UAVs reveals that their activities primarily relate to intelligence, surveillance and reconnaissance (ISR) missions. Furthermore, countries take advantage of the payload of UAVs to use them in airstrikes, target acquisition, electronic warfare and special missions.
- The use of UAVs in counter-terror operations is not a new phenomenon. However, countries came to utilize them more frequently over the last three decades in a tactical and operational sense thanks to technological advancements. In this context, typical examples of drones being used to fight terrorists include U.S. operations against Al Qaeda in Afghanistan, Pakistan, Somalia and Yemen. Türkiye, in turn, uses drones in counter-PKK operations at home and abroad (e.g. Iraq and Syria).
- The main reasons why UAVs emerged as an effective tool in the fight against terrorism include various advantages that they offer users as well as their suitability to flexible and multi-dimensional operations, their ability to per-

7 For TAP's data collection and classification method, see "Our Metodology", TAP, https://tap-data.com/category/ yontem-3, (Accessed: 28 March 2023).

8 Türkiye's Enemy Killed in Action (EKIA) Dataset. Public statements by the Interior Ministry and the Turkish Armed Forces, along with the personal information of terrorist neutralized in counter-terror operations and operational details, were classified based on 14 parameters. Coordinated by Sibel Düz, this study rests on open-source information and remains under development within the context of a project titled "Türkiye's Disposition Matrix." That information is not shared with third persons and institutions. We extend our gratitude to Elif Cerrahoğlu and Mehmet Salah Devrim for contributing to the data collection process.

form sensitive operations by avoiding military and diplomatic crises, and their psychological impact.

- The security forces of many countries, including Türkiye, use UAVs in military missions for tactical and strategic intelligence, surveillance, target acquisition and reconnaissance as well as close air support, force protection, preventive, punitive and destructive attacks, and countering propaganda.
- UAVs play a supportive and complementary role in Türkiye's successful fight against terrorist organizations.
- It is possible to observe that the use of drones provides Türkiye with offensive advantages and superiority in its counter-terror campaign.
- The use of drones has notably undermined the terrorist organization PKK's ability to maneuver and carry out terror attacks.
- Air/UAV or air-supported/UAV-supported operations catalyzed Turkish efforts to grant geographical depth to its counter-terror operations in Iraq.
- Numerically speaking, air power and UAV-supported operations have increased the security forces' relative capacity for destruction.
- It is possible to observe that PKK's so-called senior leaders have become a strategic target of UAV operations – proof that Türkiye has incorporated drones into its counter-terror operations and strategy as a matter of principle.
- Although Türkiye attempts to focus its counter-terror operations on foreign territory as part of its national security strategy, the majority of airstrikes against so-called senior leaders continue to take place within the country's borders.
- The use of UAVs plays a significant role in mounting pressure on terrorist operatives, dictating the direction of violence, and pushing terror attacks away from the Turkish territory. Accordingly, Türkiye continues to combat terrorism at its source and in forward positions to keep its territory safe.
- Türkiye uses drones to eliminate the PKK's central command structure and deprive the organization of operatives with critical technical expertise in strikes against its qualified human resource. Furthermore, UAVs create a significant advantage for the detection and destruction of the terrorist organization's main material resources.
- In an attempt to escape UAVs, terrorists have been forced to revise their tactics, develop avoidance and protective mechanisms, and come up with counter-offensive moves.

THE MILITARY APPLICATIONS OF UAVS

Drones are most commonly known as "remotely piloted aircraft following a pre-determined flight path that do not have pilots or passengers aboard."[9] The main characteristics of those vehicles include being controlled remotely, the ability to perform flight maneuvers, and being suitable for re-use unlike single-use items like missiles and rockets.[10]

However, the U.S. Federal Aviation Administration (FAA) defines UAVs as "an aircraft that is operated without the possibility of direct human intervention from within or on the aircraft" – which might include some planes and helicopters as well.[11] Furthermore, drones are equipped with cameras, sensors, communication tools and disposable load. They are remotely controlled by a pilot or follow a pre-determined flight path autonomously.

Notwithstanding, there are many types of UAVs in terms of their weight, range, maximum flight time, payload, purposes and technical attributes. In this context, it is possible to make a distinction between very small, small, medium-sized and large drones (based on their dimensions) or based on their range, maximum flight time and weight.

9 Handbook of Unmanned Aerial Vehicles, ed. Kimon P. Valavanis and George J. Vachtsevanos, (Springer Reference, New York: 2015), p. 44.

10 Michael J. Boyle, The Drone Age: How Drone Technology Will Change War and Peace, (Oxford University, Oxford: 2020), p. 8.

11 "Unmanned Aircraft", Pilot/Controller Glossary, https://www.faa.gov/Air_Traffic/publications/atpubs/pcg_html/glossary-u.html, (Accessed: 11 August 2022).

According to another method of categorization, there are three kinds of UAVs: strategic, operational, and tactical. In this sense, experts describe drones like the Global Hawk, which are high-altitude, long-endurance (HALE) UAVs, as strategic drones. After all, those aircraft conduct reconnaissance and surveillance operations above enemy territory thanks to their long range. Operational drones like the Reaper and the Predator, in turn, may engage in reconnaissance activities or be used for offensive purpose by arming them. Finally, tactical UAVs operate at low altitudes and have a shorter range. They are controlled remotely or follow a pre-determined flight path. Tactical drones are commonly used for crowd control and border security as well as for offensive purposes.[12]

Meanwhile, NATO makes a distinction among unmanned aerial vehicles based on three classes: Class I refers to micro, mini and small UAVs while Class II consists of tactical systems. Finally, medium-altitude long-endurance (MALE) and high-altitude long-endurance (HALE) drones constitute Class III.[13]

TABLE 1. NATO UAS CLASSIFICATION TABLE

Class	Category	Normal Employment	Normal Mission Radius	Normal Operating Altitude
Class I (< 150 kg)	Micro	Tactical Subunit	<5 km (LOS)	<200 ft AGL
	Mini	Tactical Subunit	<25 km (LOS)	<3000 ft AGL
	Small	Tactical Unit	<50 km (LOS)	<5000 ft AGL
Class II (150 kg-600 kg)	Tactical	Tactical Formation	200 km (LOS)	<18000 ft AGL
Class III (> 600 kg)	MALE	Operational	Unlimited (BLOS)	<45000 ft MSL
	HALE	Strategic	Unlimited (BLOS)	<65000 ft MSL
	Attack	Strategic	Unlimited (BLOS)	<65000 ft MSL

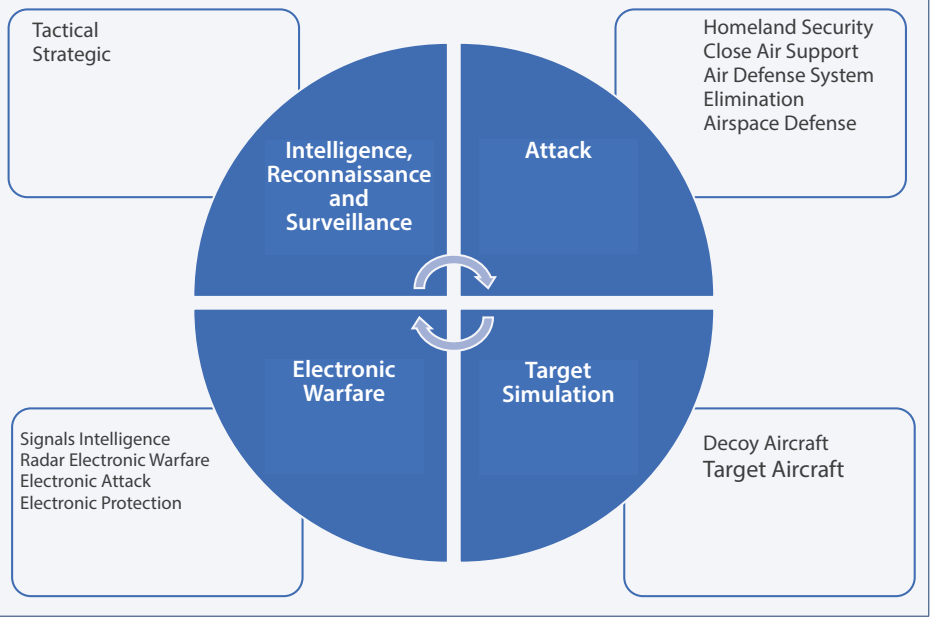
Source: Joint Air Power Competence Centre (JAPPC)

Although civilians use UAVs more and more frequently today, it is important to recall that those aircraft were originally developed for defensive purposes. A closer look at the military deployment of drones, however, reveals that countries use them primarily in ISR missions. Notwithstanding, drones are not exclusively used for ISR purposes. Their payload makes it possible for operators to use them in attacks, target acquisition, electronic warfare and special missions.

12 Prem Mahadevan, "The Military Utility of Drones", CSS Analyses in Security Policy, No: 78, (2010).

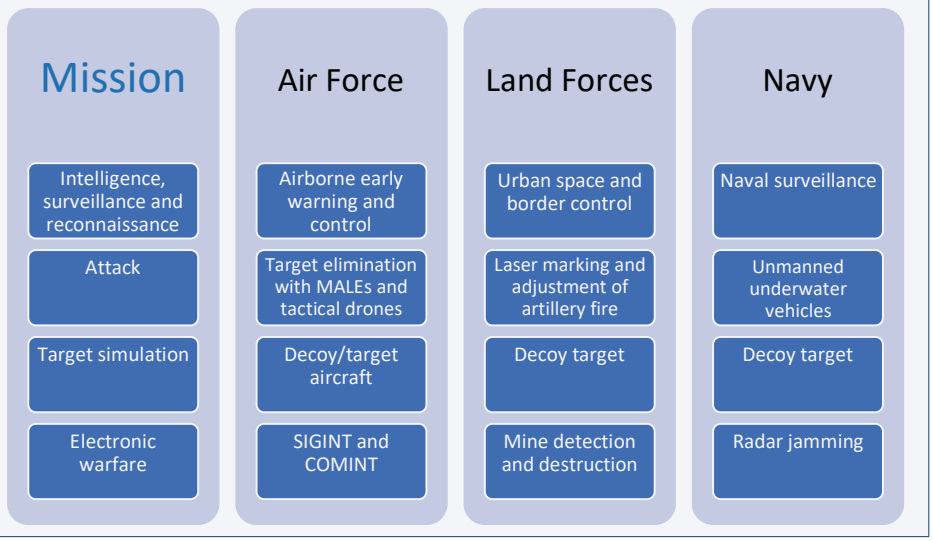
13 "A Comprehensive Approach to Countering Unmanned Aircraft Systems", JAPPC, (January 2021), https://www.japcc. org/books/a-comprehensive-approach-to-countering-unmanned-aircraft-systems/, (Accessed: 28 March 2023).

FIGURE 1. UAV MISSION CHART



Source: Türkiye İHA Sistemleri Yol Haritası (2011-2030)

FIGURE 2. UAV MISSION CHART BY FORCE



Source: Compiled by the authors.

Unmanned aerial vehicles most frequently engage in ISR activities for military units in conflict zones. In this context, intelligence operations involve gathering, processing, integrating, assessing, analyzing and interpreting information about (potential) enemies as well as their actual or potential areas of operation.

Reconnaissance missions, in turn, serve to gather information about the enemy's activities and objectives by using various methods. Moreover, determining the meteorological, hydrographic or geographical attributes of a given area would fall within the scope of reconnaissance missions. Finally, surveillance refers to the visual, audible or electronic tracking of a specific area, region or individual in a systematic manner. In other words, ISR missions are viewed as the syncronization of those three types of activity and an integrated sort of operation.[14] In this regard, UAVs serve as the eyes of military units and decision-makers in real time as part of ISR missions. Accordingly, ISR missions remain the most basic activity as part of UAV operations.[15]

Experts make a distinction between ISR missions as tactical and strategic operations. Whereas tactical missions aim to provide military units with real-time images and mark targets for artillery, strategic missions are about generating imagery intelligence for a long time, over a large area and at a high altitude.[16] It is important to recall that countries have traditionally used warplanes in ISR missions which operated largely without hindrance prior to the development of advanced radar technology. Especially since the 1950s, the development of air defense and missile systems made it more important for warplanes to reach higher altitudes and speeds in addition to decreasing their radar signatures.

Today, ISR missions regularly feature unmanned aerial vehicles alongside warplanes because their sensors and payload enabled them to play a key role in the collection of imagery intelligence (IMINT) and signals intelligence (SIGINT).[17] Furthermore, their ability reach high altitudes and their low radar signature enables drones to conduct secret missions (as opposed to warplanes) where air defense systems operate.[18]

The second military use of UAVs is to attack the enemy. To accomplish that mission, drones must be equipped with laser designators or precision guided munitions. Such capabilities enable states to minimize collateral damage by striking

14 "Intelligence, Surveillance, and Reconnaissance", Department of Defense Dictionary of Military and Associated Terms", 8 November 2010, https://irp.fas.org/doddir/dod/jp1_02.pdf, (Accessed: 11 August 2022).

15 Strategic Concept of Employment for Unmanned Aircraft Systems in NATO, (JAPCC, UAS CONEMP Report, 2021).

16 Türkiye İHA Sistemleri Yol Haritası (2011-2030) [Türkiye's Roadmap for UAV Systems, 2011-2030], (Savunma Sanayii Müsteşarlığı, Ankara: 2011), pp. 28-29.

17 Jack Watling, Routledge Handbook of Air Power, Airborne Intelligence, Surveillance and Reconnaissance, (Routledge, London: 2018), p. 112.

18 Strategic Concept of Employment for Unmanned Aircraft Systems in NATO.

their targets, which are marked by drones, from the ground.[19] Moreover, imagery intelligence collected during internal security operations, which may be seen as part of ISR activities, would serve to destroy targets of opportunity. To get results, countries need to use fixed-wing UAVs fit for their purpose.[20] Other offensive missions include close air support, the destruction of air defense systems and airspace protection. Whereas close air support enables countries to strike ground targets, which are marked in advance or real time, and suppress them with active firepower, UAVs are equipped with electronic warfare systems to discover the location of and destroying air defense systems. Finally, airspace protection is a type of mission that drones might accomplish in the long term depending on technological developments.[21]

Furthermore, unmanned aerial vehicles also carry out assault missions against stationary and moving targets. Whereas stationary targets ordinarily include ammunition depots, military bases and headquarters (or critical infrastructure marked in advance), moving targets typically require drones to identify, mark, track and strike them.[22]

The third task that UAVs carry out in the military context is target simulation. That task has two sub-categories: target aircraft simulation and decoy aircraft simulation. Whereas target aircraft missions relate to anti-aircraft weapon or missile training, decoy aircraft simulation is about tricking air defense systems by using the radar signature of various types of aircraft. Its purpose is to keep air defense systems occupied so that they exhaust their ammunition and reveal their location – which results in their destruction. Furthermore, decoy aircraft simulation also involves the use of multiple decoys for the purpose of misleading air defense systems.[23]

The fourth use of UAVs in the military domain is electronic warfare. To accomplish that goal, it is necessary to use drones that are equipped with suitable electronic warfare systems. That enables the drone to collect signals intelligence from the target by monitoring its radar and communication systems. For this purpose, it is necessary for the UAV to be able to reach high altitudes and have long endurance. In addition to SIGINT collection, this mission's objectives include jam-

19 Sertaç Aksan, "SİHA'lar İşaretleyecek Topçu Birlikleri Vuracak" [Armed drones to mark targets, artillery to strike them], TRT Haber, 31 August 2020.

20 Türkiye İHA Sistemleri Yol Haritası (2011-2030), pp. 28-29.

21 Türkiye İHA Sistemleri Yol Haritası (2011-2030).

22 "Unmanned Aerial Vehicles: Implications for Military Operations", DTIC, https://apps.dtic.mil/sti/pdfs/ADA425476.pdf, (Accessed: 11 November 2022).

23 İHA Sistemleri Yol Haritası (2011-2030), pp. 30-31.

ming the radars of air defense systems to prevent the detection, tracking and misleading of the aircraft. Moreover, while jamming missions aim to undermine the combat systems of the targets, jamming missions targeting data links also prevent information transfer. Last but not least, UAVs may detonate remote-controlled explosives for preventive purposes with the help of electronic warfare systems.[24]

In addition to the above-mentioned missions, unmanned aerial vehicles may participate in various special missions. In this regard, countries use drones to identify chemical, biological, radioactive and nuclear (CBRN) weapons as well as facilitate communications, detect landmines and explosives, transport cargo, and contribute to search-and-rescue missions.[25]

24 İHA Sistemleri Yol Haritası, (2011-2030).

25 İHA Sistemleri Yol Haritası, (2011-2030).

USING UAVS IN COUNTER-TERROR OPERATIONS: ADVANTAGES AND RISKS

Whereas the involvement of drones in counter-terror operations is not a recent phenomenon, technological developments significantly increased their tactical and operational use over the last three decades. In this context, some typical examples of drones being used in counter-terror operations include U.S. airstrikes in Afghanistan, Pakistan, Somalia and Yemen against Al Qaeda as well as Turkish airstrikes at home and abroad (Iraq and Syria) against PKK. The academic literature on that subject primarily focuses on the U.S. drone operations in an attempt to reach conclusions about the level of UAV activity as part of those operations.[26] Specifically, the United States conducted 376 UAV operations in Yemen, 273 operations in Somalia, 414 operations in Pakistan and 550 operations in Libya. (Graph 1)

Historically speaking, Washington's drone operations in Afghanistan date back to the George W. Bush administration. Indeed, UAVs played a key role in military operations that the United States conceptualized as the war on terror at the time. Specifically, political trends in the United States and the Barack Obama administration's efforts to reduce U.S. military footprint overseas added to the importance of drones.

26 See Patrick B. Johnston and Anoop K. Sarbahi, "The Impact of US Drone Strikes on Terrorism in Pakistan", International Studies Quarterly, Vol:60, No:2, (2016), pp.203-219; Asfandyar Mir and Dylan Moore, "Drones, Surveillance, and Violence: Theory and Evidence from a US Drone Program", International Studies Quarterly, No:63, (2019), pp.846–62; Aqil Shah, "Do U.S. Drone Strikes Cause Blowback? Evidence from Pakistan and Beyond", International Security, No:42, (2018), pp.47–84.

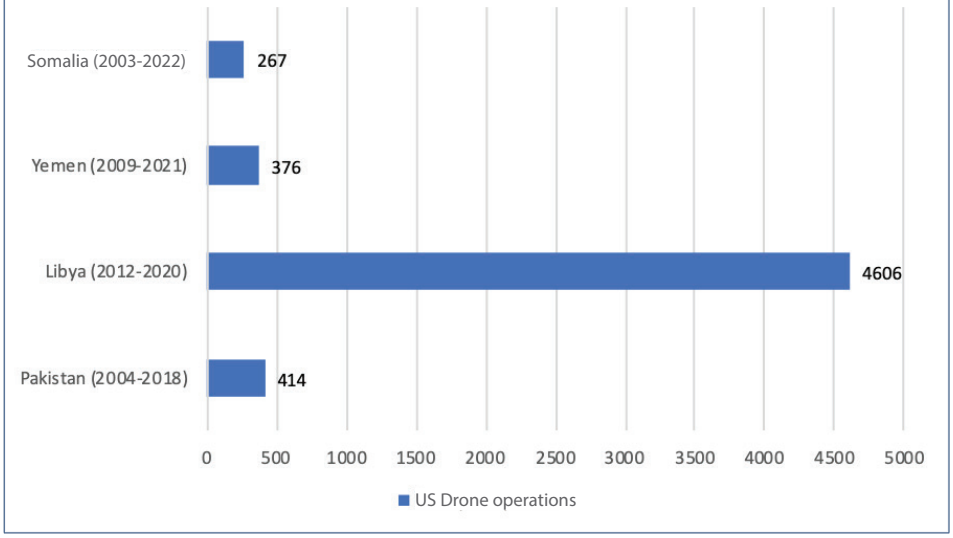
The first drone operation in Pakistan occurred in 2004 in the South Waziristan district, killing at least six, including two civilians. Whereas most operations took place in the Federally Administered Tribal Areas (FATA), they primarily targeted the Pakistani Taliban and the Haqqani Network.[27]

Whereas U.S. military operations in Somalia date back to 2001, that country's first UAV operation took place in 2011 against two Al Qaeda affiliates.[28]

Last but not least, drone operations in Yemen started in 2002, as U.S. Hellfire missiles from a Predator UAV struck six Al Qaeda affiliates riding in a vehicle heading from the south of the capital to the city of Ma'rib.[29]

The role of U.S. UAV operations in the fight against terrorism, their effectiveness and the number of civilian casualties in the relevant countries remains the subject of heated debates in academic circles.

GRAPH 1. U.S. DRONE OPERATIONS (2003-2022)



Source: CSIS

The various advantages that UAVs provide to their operators have been among the main reasons why they emerged as an effective tool against terrorists. Operationally speaking, the main advantage would be flexibility and multi-dimensional deployment. Specifically, countries can use drones for intelligence,

27 Johnston and Sarbahi, "The Impact of US Drone Strikes on Terrorism in Pakistan", pp. 203-219.

28 "Press TV's Somalia Claims 2011-12", TBIJ, 2 December 2011, https://www.thebureauinvestigates.com/stories/2011-12-02/press-tvs-somalia-claims-2011-12, (Accessed: 3 November 2022).

29 "The War in Yemen", New America, https://www.newamerica.org/international-security/reports/americas-counterterrorism-wars/the-war-in-yemen, (Accessed: 3 November 2022).

surveillance, target acquisition, reconnaissance and strike purposes without subjecting themselves to the limits of human physiology. Moreover, the ability of UAVs to conduct 3D missions[30] make it easier for them to accomplish major military missions.[31] Furthermore, the availability of drones makes it easier for countries to use the manpower at their disposal more efficiently. For example, a single pilot can operate multiple UAVs – which is not the case for conventional warplane pilots.

Another advantage that UAVs give to states relates to their ability to operate at high altitudes, engage in surveillance activities for an extended period of time, and evade radars and sensors to a large extent. Thanks to their technical equipment, drones perform their tasks in hostile airspaces and against enemy aircraft in a relatively concealed and quiet manner. Able to deeply penetrate the adversary's airspace, UAVs represent a force multiplier for security forces fighting terrorists at home and abroad – even though they haven't actually replaced warplanes altogether.[32]

Furthermore, UAVs offer additional situational awareness to military units in conflict zones at the tactical level to alleviate risks and make it possible for military units to conduct operations in a more efficient manner.[33]

In addition to the above-mentioned operational advantages, unmanned aerial vehicles have the significant advantage of being a low-cost military option. For example, taking advantage of drones in an area, where the security forces intend to perform certain tasks, instead of using local military elements would appear to be the lower-cost option. Another important point is that it costs less to manufacture drones than warplanes. It is also easier to replace damaged drones and UAVs consume less fuel.[34] Another major upside is the low cost of training drone

30 Drones may perform dull, dirty and dangerous (3D) tasks without placing human lives at risk. They are suitable for long-term, boring and chemically dangerous areas and missions that might endanger humans. See Düz, Unpacking the Debate on Turkish Drones.

31 Mehmet Fevzi Dörtbudak, "Unmanned Aerial Vehicles (UAVs): A New Tool in Counterterrorism Operations?", Sensors, and Command, Control, Communications, and Intelligence (C3I) Technologies for Homeland Security, Defense, and Law Enforcement XIV, Vol: 9456, (2015).

32 Salih Akyürek, Mehmet Ali Yılmaz and Mustafa Taşkıran, İnsansız Hava Araçları Muharebe Alanında ve Terörle Mücadelede Devrimsel Dönüşüm [Unmanned Aerial Vehicles: Revolutionary Changes in the Battlefield and the Fight Against Terrorism], (Bilgesam, Ankara: 2012).

33 Michael Mayer, "The New Killer Drones: Understanding the Strategic Implications of Next-Generation Unmanned Combat Aerial Vehicles", *International Affairs (Royal Institute of International Affairs 1944-)*, Vol: 91, No: 4, (2015), pp. 765-780.

34 Relly Victoria and Virgil Petrescu, "Some Aspects of Modern Drones", Journal of Aircraft and Spacecraft Technology, Vol: 5, (2021), pp. 21-40.

pilots. Furthermore, drone operators work on the ground – which means that the conflict zone does not pose any threat to their lives.

Thanks to UAVs, countries can conduct sensitive aerial operations without civilian casualties. Accordingly, sensitive missions can be accomplished with minimal loss of life. After all, drones are capable of eliminating their targets with pinpoint accuracy through precision-guided munitions as well as tracking their targets for extended periods of time in the air. In this sense, they can wait for the best possible moment to strike in order to prevent harm to civilians.[35]

Yet another advantage of deploying drones is to prevent military and diplomatic crises. The number of military units in conflict zones, where a given country opts for long-range drone attacks at the expense of local forces, are reduced significantly. The deployment of a smaller military force, in turn, decreases the amount of weapons and ammunition sent to the relevant area. Such developments enable the country, which conducts the operation, not to escalate tensions with the other country, where the operation takes place.[36] Although UAV operations may be perceived as a threat to the host country's sovereignty, they are less controversial than the deployment of warplanes or ground units to the same location.[37]

Finally, another major advantage of drone operations appears to be the residual psychological devastation that terrorist organizations experience after counter-terror campaigns. If used for offensive purposes, UAVs provide an asymmetrical superiority to their operators as they eliminate the enemy's qualified human resources and destroy logistical supply lines to limit its ability to mobilize, thus mounting psychological pressure on terrorists.

Whereas experts argue that there are many strategic, tactical and operational advantages of using drones which, they say contribute to the performance of various actions in conflict zones and enable the conduct of counter-terror operations with greater effectiveness, some make the opposite case. In this context, the first line of criticism is that UAV operations entail civilian casualties. Especially during the U.S. drone campaign in Afghanistan, Pakistan, and Yemen, those critics note that not only terrorists but also some civilians who were believed to have

35 Daniel Byman, "Why Drones Work: The Case for Washington's Weapon of Choice", Foreign Affairs, Vol: 92, No: 4, (2013), pp. 32-43.

36 James Igoe Walsh, "The Rise of Targeted Killing", Journal of Strategic Studies, Vol: 41, No:1-2, (2018), pp. 143-159.

37 Byman, "Why Drones Work", pp. 32-43.

connections with those Al Qaeda members were eliminated on the grounds of direct membership to Al Qaeda. It is important to note that the accuracy of these claims and the impact on civilians are subjects of another debate. They also posit that drone operations mount psychological pressure on the civilian population by rendering the political leadership of those countries, where such operations take place, weak in the public eye.[38]

TABLE 2. UAV OPERATIONS AND CIVILIAN CASUALTIES IN PAKISTAN, LIBYA, YEMEN AND SOMALIA

	Civilian Casualties		Total Casualties	
	Min.	Max.	Min.	Max.
Pakistan (2004-2018)	245	303	2366	3702
Libya (2012-2020)	637	930	1867	2482
Yemen (2009-2021)	125	151	1390	1779
Somalia (2003-2022)	33	120	1483	1965

Source: CSIS

Another line of criticism is that UAV operations fail to end terrorism. The argument goes that many women and children lost their lives in such operations, which radicalized the general population out of a sense of vengeance against the United States.[39] Indeed, some authors posit that the decapitation of so-called leaders of Al Qaeda and other terrorist entities was not enough to eradicate such organizations[40] – that such losses facilitated propaganda and recruitment efforts by the relevant groups.[41] As a matter of fact, some make the case that decapitation not only fails to end terrorism but possibly encourages the spread of violence and more violent attacks.

Likewise, another study concludes that the U.S. drone campaign yielded quantitative results (in terms of the number of terrorist leaders, senior figures and ordinary members eliminated) yet could not undermine Al Qaeda's propaganda

38 Michael J. Boyle, "The Costs and Consequences of Drone Warfare", International Affairs, Vol: 89, No: 1, pp. 1-29.

39 Boyle, "The Costs and Consequences of Drone Warfare"; "Obama's Drone War a 'Recruitment Tool' for Isis, Say US air Force Whistleblowers", *The Guardian,* 18 November 2015.

40 In *How Terrorism Ends: Understanding the Decline and Demise of Terrorist Campaigns*, Audrey Kurth Cronin identifies 'decapitation' as a counter-terror strategy. In her opinion, *decapitation* represents a strategy that specifically targets terrorist leaders. Cronin's book explains how decapitation may be achieved through assassinations, arrests and surrenders.

41 Audrey Kurth Cronin, "Why Drones Fail: When Tactics Drive Strategy", Foreign Affairs, Vol: 92, No: 4, (2013), pp. 44-54.

efforts since such operations yielded negative political results, including deepening anti-American sentiment, in the relevant places.[42]

42 Megan Smith and James Igoge Walsh, "Do Drone Strikes Degrade Al Qaeda? Evidence from Propaganda Output", Terrorism and Political Violence, Vol:25, No:2, (2013), pp.311-327.

USING UAVS IN TÜRKİYE'S COUNTER-TERROR OPERATIONS

Türkiye started using unmanned aerial vehicles in counter-terror operations in the late 1980s. As drones became more prominent globally, the country took an interest in such vehicles as well. Accordingly, the Turkish government bought the Banshee drone from the British manufacturer Meggitt and added it to the Turkish Armed Forces (TAF) inventory. It also purchased the GNAT 750 in 1994 and the I-GNAT in 1998 from the U.S. manufacturer General Atomics. The latter remained operational until 2005. Between 2007 and 2010, Israeli companies sold Heron, Searcher and Aerostar drones to Türkiye.[43]

Whereas the above-mentioned foreign drones contributed to Türkiye in various ways, the country could not use them efficiently for bureucratic and political reasons. Furthermore, some of them eventually crashed and became inoperable. It is important to recall that political tensions between Türkiye and Israel in 2008-2010 encouraged Tel Aviv to delay the delivery of the Herons. Meanwhile, the Turkish government attempted to buy RQ-1 Predator or MQ-9 Reaper drones from the United States. Yet the two countries could not reach an agreement.[44] In the wake of those developments, Türkiye began to develop its indigenous UAVs due to their valuable contributions to counter-terror operations.

43 Cengiz Karaağaç, Geleceğin Hava Kuvvetleri: İHA Sistemleri Yol Haritası 2016-2050 [The Future Air Force: Roadmap for UAV Systems, 2016-2050], (STM, Ankara: 2016).

44 Tolga Tanış, "ABD Hala Bu Silah Sistemlerini Türkiye'ye Vermiyor" [The weapon systems that the U.S. continues to deny Türkiye], *Hürriyet*, 8 October 2015.

The effective use of UAVs for military purposes continues to expand the Turkish security forces' sphere of operational influence. In September 2016, the Bayraktar TB2 completed its first mission by neutralizing five members of the terrorist organization PKK near Çukurca, Hakkari. Within two years of their integration into counter-terror operations, drones eliminated no less than 405 terrorists. Having conducted a support mission during Operation Euphrates Shield in north of Syria in 2016, the Bayraktar drones guided the Turkish warplanes as they struck five Daesh targets.[45] Türkiye also used those drones actively as part of the Olive Branch and Peace Spring operations. It is possible to argue that Operation Spring Shield, which started on 27 February 2020, was one of the most striking operations that the Turkish military conducted in recent years. Indeed, the innovative use of Turkish drones attracted global attention.

During that operation, the Bayraktar TB2 and ANKA UAVs were stationed alongside a number of electronic warfare systems. In addition to serving as fighter aircraft at the time, the Bayraktar TB2 and ANKA-S also detected targets for the Turkish Armed Forces and the Turkish Air Force Command. Furthermore, those drones delivered images and coordinates to air and artillery units with the help of communication systems. Briefly put, UAVs can serve as artillery forward observers, forward air controllers or fighter aircrafts.

Moreover, the Turkish Armed Forces put on a network-centered warfare show with early warning and control planes, warplanes and air-to-air missiles.[46] By using the aforementioned tactics effectively as part of Operation Spring Shield, Türkiye was able to eliminate many targets in Syria. That operation resulted in the neutralization of 3473 regime elements, 93 tanks, 67 howitzers/MRLSs, 36 armored vehicles, 10 air defense systems, eight helicopters, three planes and a drone altogether.[47]

The Turkish Armed Forces carried out counter-terror operations in Iraq as well as Syria. As part of that effort, Türkiye launched the Pençe (Claw) operations and destroyed many PKK headquarters, ammunition depots, so-called leaders and housing spaces in north of Iraq with the help of UAVs.[48] In this regard, Operation Pençe-Kaplan (Claw-Tiger) began in June 2020 with the involvement of drones.

45 Sibel Düz, "The Ascension of Turkey as a Drone Power | History, Strategy, and Geopolitical Implications ", SETA Analysis, No: 65, (July 2020).

46 Düz, "The Ascension of Turkey as a Drone Power | History, Strategy, and Geopolitical Implications ".

47 "Bahar Kalkanı Harekatı" [Operation Spring Shield], T.C. Milli Savunma Bakanlığı, https://www.msb.gov.tr/tr-TR/BaharKalkani, (Accessed: 28 March 2023).

48 Sarp Özer, "Milli Savunma Bakanlığından 'Pençe Kartal-2 Harekatı' Açıklaması: 33 Terörist Etkisiz Hale Getirildi" [National Defense Ministry Statement on Operation Claw Eagle-2: 33 Terrorists Neutralized], Anadolu Agency, 12 February 2021.

The Turkish military proceeded to announce that it had established outposts as far as 40 kilometers away from the Türkiye-Iraq border and seized control of strategically-important hills in the relevant region.[49] Consequently, PKK's training camps as well as spheres of influence and rear bases gradually came under the TAF's control. The terrorists were thus compelled to retreat further south within Iraq's borders. It is important to recall that Mustafa Karasu, a so-called senior leader of PKK, acknowledged that UAVs had given Türkiye the upper hand and announced that they were trying to tilt the balance of power.[50]

To sum up, Türkiye took its dominance over the operational theater to the next level by preventing the PKK from operating in the relevant region and forcing the terrorists to adopt a defensive stance. Indeed, Salih Muslim, a senior leader of the PKK's Syrian branch (YPG/PYD) admitted that Operation Pençe-Kilit (Claw-Lock) in 2022 caused the organization's sphere of dominance to shrink and resulted in many casualties.[51] Accordingly, the successful results that the Claw operations yielded deprived the terrorists of their maneuvering room, strengthened the Turkish military presence in the relevant area and deepened the intelligence dimension of counter-terror operations.[52]

Last but not least, Türkiye's intelligence agency and military carried out a joint operation to eliminate Ismail Özden, a senior member of PKK/KCK, in August 2018 in Sinjar, Iraq with the help of precision strike capabilities – a surgical operation. As part of that operation, the National Intelligence Agency (MIT) completed the initial surveillance before F-16 fighter jets and Bayraktar TB2s successfully destroyed their target. The precision strike performance of indigenous drones established that the Turkish security forces develop a new capability.[53]

THE OPERATIONAL APPLICATION AREAS AND OBJECTIVES OF TÜRKİYE'S UAVS IN COUNTER-TERROR OPERATIONS

The Turkish security forces have been using UAVs in various military missions including tactical and strategic intelligence, surveillance, target acquisition and re-

49 Namık Durukan, "İşte Irak'ın Kuzeyindeki Mehmetçik Pençesi! TSK 37 Noktada Üs Oluşturdu" [The army's claw in northern Iraq: TAF establishes 37 bases], Milliyet, 8 July 2020.

50 Çağatay Balcı, "Pençe Harekatlarının PKK ve Uzantılarının Stratejik Pozisyonlarına Etkisi" [The Impact of the Claw Operations on Strategic Positions of PKK and its Extensions], Anadolu Agency, 13 July 2020.

51 "PKK Elebaşı Salih Müslim Hezimeti İtiraf Etti: Her Gün Kayıplar Veriyoruz" [PKK Ringleader Salih Muslim Admits Defeat: We suffer losses every day], Sabah, 18 May 2022.

52 Sibel Düz, "Türkiye'nin Askeri Varlığının Derinleştirilmesi ve Pençe Kilit Harekatı" [The Deepening of Türkiye's Military Presence and Operation Claw Lock], Sabah, 23 April 2022.

53 Düz, "The Ascension of Turkey as a Drone Power | History, Strategy, and Geopolitical Implications " .

connaissance – also known as ISTAR. With the help of aerial imaging technology and visual data collection capabilities, drones help pilots take advantage of electro-optical systems' advanced capacities whilst searching and tracking potential targets. Accordingly, drones gather intelligence about the adversary's behavioral patterns (e.g. family ties, connections and daily activities) as they hover at a high altitude and remain invisible from the ground. Furthermore, UAVs can conduct reconnaissance and patrol flights over long periods of time and represent effective tools for collecting large amounts of visual data.

Furthermore, UAVs can maximize the duration of reconnaissance operations by staying in the air for longer periods than traditional manned aircraft allowing for continuous surveillance and patrol missions. They can also distribute obtained intelligence with ease. Specifically, images from drones are delivered via satellite to pilots at military bases. Since the entire process is electronic, it is possible to deliver intelligence anywhere with a satellite connection.[54] In this sense, the security forces derive maximum benefits from that military platform in counter-terror operations by increasing their operational efficiency and pace.

Another area, where security forces take advantage of UAVs, consists of close air support and force protection strikes. During military operations, land forces maximize their effectiveness thanks to close air support and additional fire power from drones. That enables ground forces to accomplish their missions with minimal casualties as drones serve as a deterrent against the adversary.

In recent years, the security forces have also used UAVs for preventive and punitive strikes. Experts believe that drones participate in counter-terror operations for the purpose of preventing terror attacks or ensuring the asymmetrical superiority and deterrence of the security forces in the wake of an assault. A recent case in point was the security operation that Türkiye conducted following the September 2022 martyrdom of a Turkish soldier in Suruç, Şanlıurfa with a rocket launcher. Likewise, the country's intelligence service destroyed a YPG-operated vehicle in motion near Tal Jamal, Hasakah following an attack on the police compound in Tece, Mersin.[55]

54 Alexander Farrow, "Drone Warfare as a Military Instrument of Counterterrorism Strategy", *Air & Space Power Journal*, Vol: 28, No: 4, (2016).

55 ConflictTR, Twitter, 18 September 2022, https://twitter.com/ConflictTR/status/1571469620632231936?s=20&t=Nz6WRbxhsK8jKBBrS-dpUw, (Accessed: 3 November 2022);
Gazali, Twitter, 27 September 2022, https://twitter.com/gazali_a1/status/1574777961361903617?t=XMT5rqd7UjvFMFuxQBEvww&s=19, (Accessed: 3 November 2022).

Türkiye continues to carry out targeted drone strikes against the terrorist organization's senior leadership, qualified human resource and material resources. At the same time, the security forces undermine that organization with their offensive strike capabilities by destroying crucial operatives, positions and fortification points as well as their chain of command. As a matter of fact, they targeted operational units to weaken the terrorist organization and deprive it of flexibility, maneuvering capability and area control.[56]

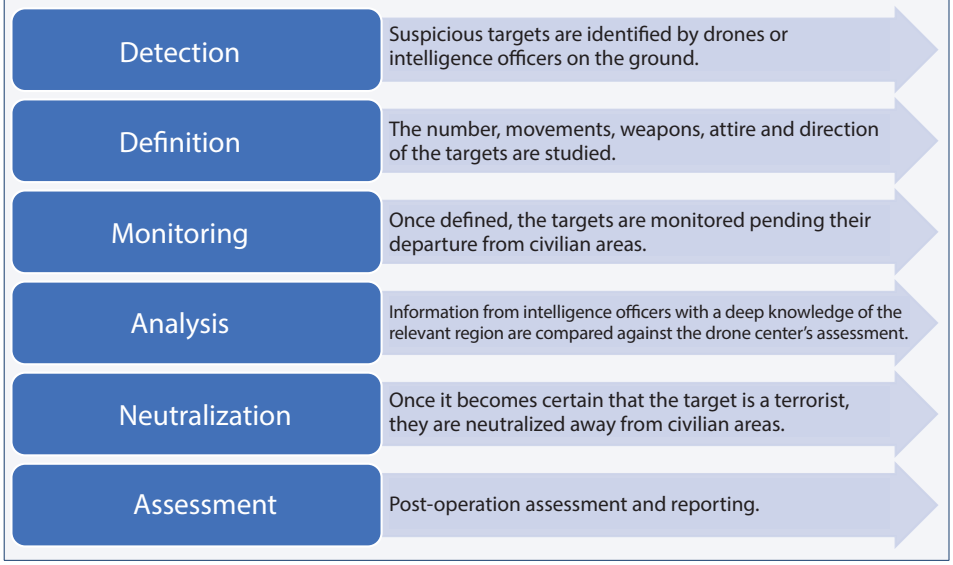
The Turkish authorities have been carrying out operations against the terrorist organization's senior leadership and qualified human resources[57] in a very careful manner. The initial stage of a UAV operation consists of detecting the suspicious target with the help of tips from intelligence officers on the ground or based on the reconnaissance and surveillance capabilities of drones themselves. Following target detection, the authorities define the target based on information obtained by drones – including the number of terrorists, whether they are armed, what they wear, where they are headed and if they pretend to be civilians. Once the target is defined, it is tracked by UAVs. That process takes between several hours and several days based on the identity and whereabouts of the target as well as the nature of their activities. The analysis stage involves planning the target's elimination. In this context, the authorities take into account whether the target moved away from the civilian population and if there are any civilians inside the operational theater. Furthermore, they compare tips from intelligence officers on the ground with data from the UAV headquarters. In light of all the available information, the authorities establish that the target is indeed a terrorist and that there are no civilians near that target before ordering UAV operators to carry out an airstrike. Upon the target's neutralization, the assessment stage begins for an official report to be filed. That step also marks the completion of the operational cycle.[58]

56 Sibel Düz, "Türkiye'nin Terörle Mücadelesinde Etki Temelli Operasyonel Yaklaşım ve Örgütsel Etkileri" [The Impact-Based Operational Approach in Türkiye's Counter-Terror Campaign and its Organizational Impact], Kriter, Vol: 6, No: 66, (2022).

57 We provide detailed information about this subject under "The Impact of Türkiye's UAV Employment on PKK: A Strategic Analysis" below.

58 Geert de Cuber, "Explosive Drones: How to Deal with This New Threat?", International Workshop on Measurement, Prevention, Protection and Management of CBRN Risks (RISE), https://zenodo.org/record/2628752#.Y1fnxHZBy8c, (Accessed: 28 March 2023); Charles Faint and Michael Harris, "F3EAD: Ops/Intel Fusion 'Feeds' the Sof Targeting Process", Small Wars Journal, (2021), https://smallwarsjournal.com/jrnl/art/f3ead-opsintel-fusion-yüzde E2yüzde 80yüzde 9Cfeedsyüzde E2yüzde 80yüzde 9D-the-sof-targeting-process (Accessed: 3 November 2022); "En Hassas Görev" [The Most Sensitive Mission], *Yeni Şafak,* 3 January 2022.

FIGURE 3. TARGET CYCLE OF UAV OPERATIONS



Source: Compiled by the authors.

Türkiye also comes across 'targets of opportunity' during operations targeting the terrorist organization's senior leaders and operatives. For example, the Turkish intelligence eliminated one of the PKK's top female leaders and her bodyguards in an April 2022 airstrike in Ayn al-Arab, Syria. Likewise, the Turkish intelligence and military jointly neutralized Zeynel Erocağı, the PKK's so-called governor of the Zap province, and his four bodyguards during Operation Claw-Lock in north of Iraq.[59] Türkiye also eliminated the co-chair of PKK's so-called autonomous administration in Syria, Hüseyin Şibli (a.k.a. Ferhat Derik), and Delal Azizoğlu (a.k.a. Raperin), a member of the KONGRA-GEL presidency council, in Sulaymaniya, Iraq – some 275 kilometers away from the Turkish-Iraqi border.[60]

Turkish operations targeting the PKK's financial resources, headquarters, training camps and bases, arms depots and logistical support lines deprive that organization of cash as well as shelter and reinforcement areas. They also destroy logistical support lines to undermine coordination and communications and weaken the PKK's control over any territory. It is particularly important that Tür-

59 "ABD'lilerle Görüşen Üst Düzey PKK'lı Öldürüldü" [Senior PKK Member, Who Met With Americans, Killed], Sözcü, 21 April 2022; "20 Mehmetçiğin Katili, PKK'nın Zap Sorumlusu Öldürüldü" [PKK's top man for Zap, killer of 20 soldiers, dead], Sözcü, 19 April 2022.

60 "MİT, Terör Örgütü PKK'nın Sözde Üst Düzey Yöneticisi Hüseyin Şibli'yi Etkisiz Hale Getirdi" [Turkish Intelligence Kills PKK's So-Called Senior Leader Hüseyin Şibli], Anadolu Agency, 19 June 2022.

kiye targeted terrorists in Haftanin, a transit route from Sinjar, Metina and Zap to the Turkish territory.[61]

The terrorist organization's so-called senior leadership, qualified human resource and main material resources are also targeted to elicit a psychological response. Aggressive counter-terror operations stop terrorist groups from perpetrating complex attacks and encourage them to use their limited resources, manpower, physical facilities and other assets to ensure their survival. Accordingly, they serve to contain the threat of terrorism. In the absence of a consolidated source of inspiration, rhetoric, leadership and strategy, a terrorist organization merely amounts to a number of weak and unmotivated individuals.[62]

TABLE 3. THE MISSIONS, TARGETS AND STRATEGIC USE OF UAVS IN TÜRKIYE'S COUNTER-TERROR OPERATIONS

Operational Area		Operational Target	Operational Strategy
ISTAR		Target detection and tracking	Operational efficiency, cost effectiveness
Close Air Support and Force Protection		Maximizing force and fire power	Asymmetrical deterrence
Attack Operations	Preventive Operations	Minimizing attack capacity	Preventing attacks by confronting threats in advance positions
	Punitive Operations	Legitimate self-defense and countering attacks	Psychological damage
	Destructive Operations	Destroying the terrorist organization's commanders, territorial control, mobilization, recruitment and organizations resources	Eliminating the terrorist organization's strategic and operational capacity
Counter-Propaganda Operations		Preventing black propaganda and perception management operations	Preventing the terrorist organization from receiving international support and developing arguments Stopping discourse and political activities

Source: Compiled by the authors.

Last but not least, Türkiye discovered a new potential role for UAVs in conflict zones by using drones to counter black propaganda and perception management operations by terrorist organizations. For example, during Operation Olive Branch in Afrin, Syria in 2018, Türkiye captured an attack carried out by the PKK/

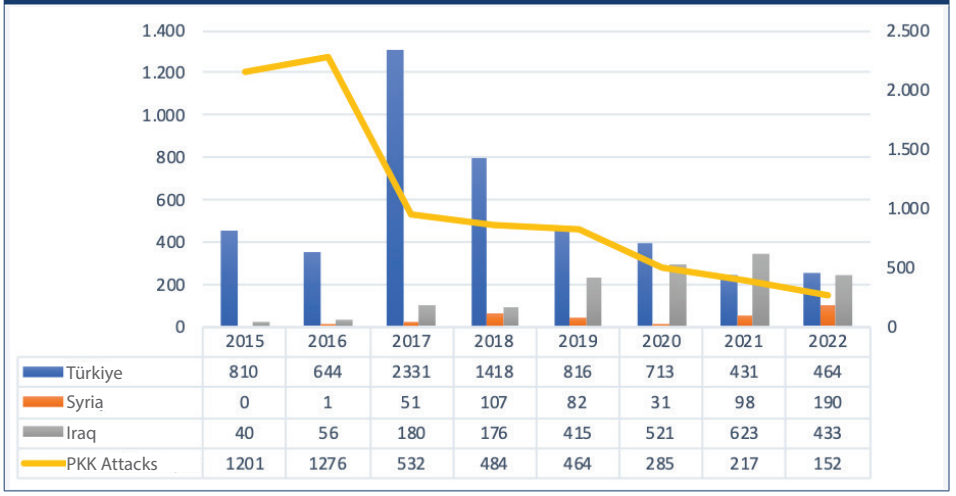
61 "PKK'nın Lojistik Yolları Felç Edildi" [PKK's Logistics Lines Crumble], İHA, 18 June 2020.

62 Farrow, "Drone Warfare as a Military Instrument of Counterterrorism Strategy".

YPG terrorists disguised in civilian attire after monitoring them with the Bayraktar TB2s. This successful operation prevented a possible disinformation against Türkiye which conducts sensitive operations with utmost precision, prioritizing the safeguarding of civilian lives and minimizing harm to non-combatants.[63]

According to TAP, the Turkish security forces carried out 7627 counter-terror operation in Türkiye, 560 operations in Syria and 2444 operations in Iraq between 2015 and September 2022. During the same period, PKK perpetrated 4611 attacks.

GRAPH 2. COUNTER-TERROR OPERATIONS IN TÜRKIYE, IRAQ AND SYRIA (2015-SEPTEMBER 2022)



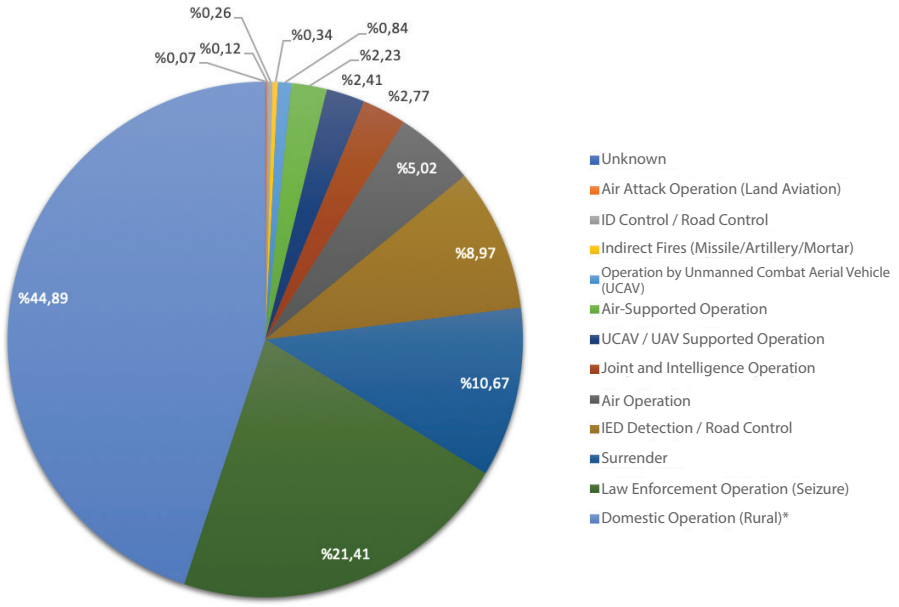
	2015	2016	2017	2018	2019	2020	2021	2022
Türkiye	810	644	2331	1418	816	713	431	464
Syria	0	1	51	107	82	31	98	190
Iraq	40	56	180	176	415	521	623	433
PKK Attacks	1201	1276	532	484	464	285	217	152

Source: TAP

A comparison between different years reveals that counter-terror operations in Türkiye and Iraq became more frequent since 2017. The frequency of operations in Syria, in turn, spiked in 2018. Following the 'trench' operations in 2015-2016 in Türkiye's eastern and southeastern provinces, the country conducted the Euphrates Shield and Decisiveness operations to identify Syria and Iraq as primary counter-terror theaters. Since 2017, the Turkish security forces mounted pressure on PKK operatives in Syria, Iraq and Türkiye – which resulted in a notable decrease in the frequency of terror attacks.

63 Bayraktar TB2 SİHA'lar Görüntüledi, TSK Sivillerin Arasına Saklanan Teröristlerin Karargahını Havaya Uçurdu" [TAF Blows Up Headquarters of Terrorists Hiding Behind Civilians After Bayraktar TB2 Drones Detect Them], TRT Haber, 13 February 2018.

GRAPH 3. DISTRIBUTION OF OPERATIONS IN TÜRKIYE (2015-SEPTEMBER 2022, %)



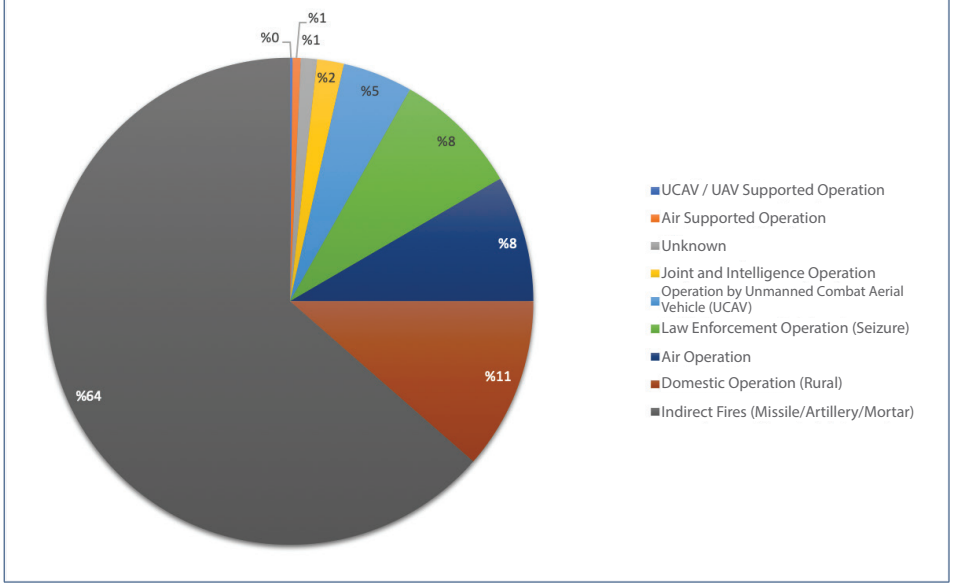
Source: TAP

* It is also referred to as 'ground operations'.

Between 2015 and September 2022, 44.89 percent of all security operations in Türkiye were ground operations. Whereas 21.41 percent consisted of law enforcement operations, 10.67 percent involved the voluntary surrender of terrorist operatives. Furthermore, 11 percent of all operations were air/UAV or air-supported/UAV-supported operations. In this sense, the Turkish security forces relied heavily on ground forces in the fight against terrorism.

However, there has been a notable uptick in the number of UAV operations in recent years. It is possible to argue that the deployment of drones and conducting UAV-supported joint operations restricted the PKK's ability to move and perpetrate terror attacks.

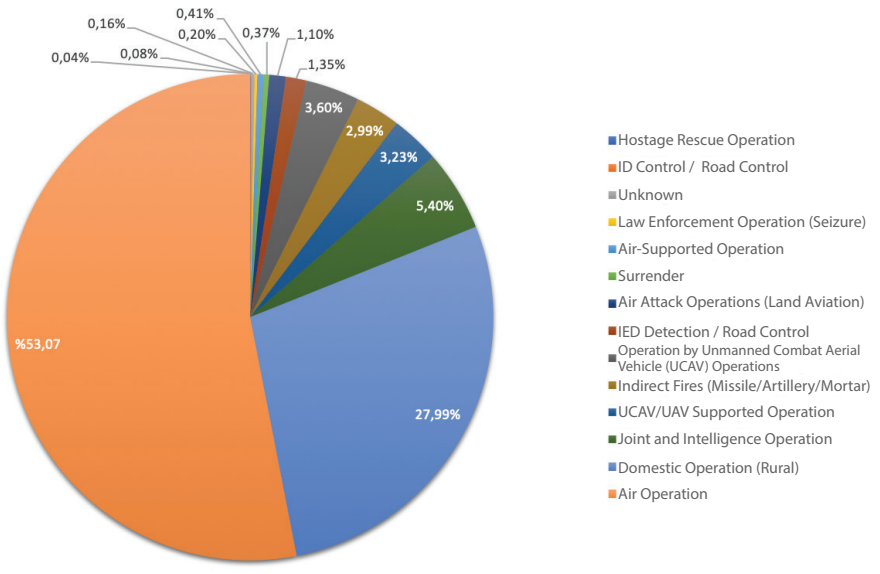
GRAPH 4. DISTRIBUTION OF OPERATIONS IN SYRIA (2015-SEPTEMBER 2022, %)



Source: TAP

The Turkish security operations in Syria between 2015 and September 2022 included indirect fires (64%), ground operations (11%) and air strikes (8%). Altogether, air/UAV or air-supported/UAV-supported operations constituted 14 percent of all operations. Those numbers suggest that Türkiye made a tactical choice to strike targets in Syria from a far instead of engaging in close combat. Long-range strikes appear to be the preferred method in places where the security forces detect hybrid or unanticipated threats.

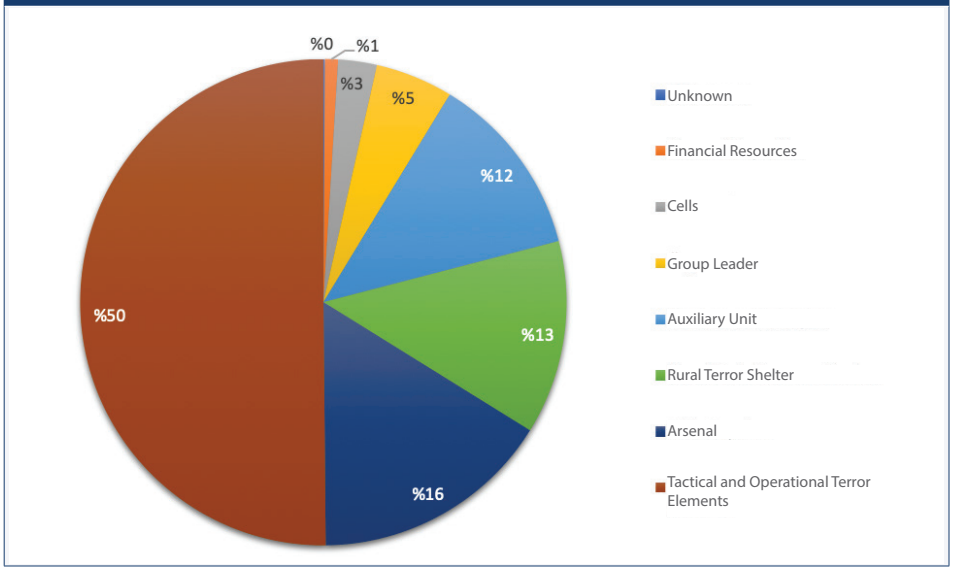
GRAPH 5. DISTRIBUTION OF OPERATIONS IN IRAQ (2015-SEPTEMBER 2022, %)



Source: TAP

During the same period, Turkish operations in Iraq consisted of air operations (53.07%), ground operations (27.99%) as well as joint operations or intelligence operations (5.4%). It is important to note that air/UAV or air-supported/UAV-supported operations constituted 60 percent of all operations. In this sense, one might conclude that Türkiye's preferred tactical method in Iraq remains aerial power.

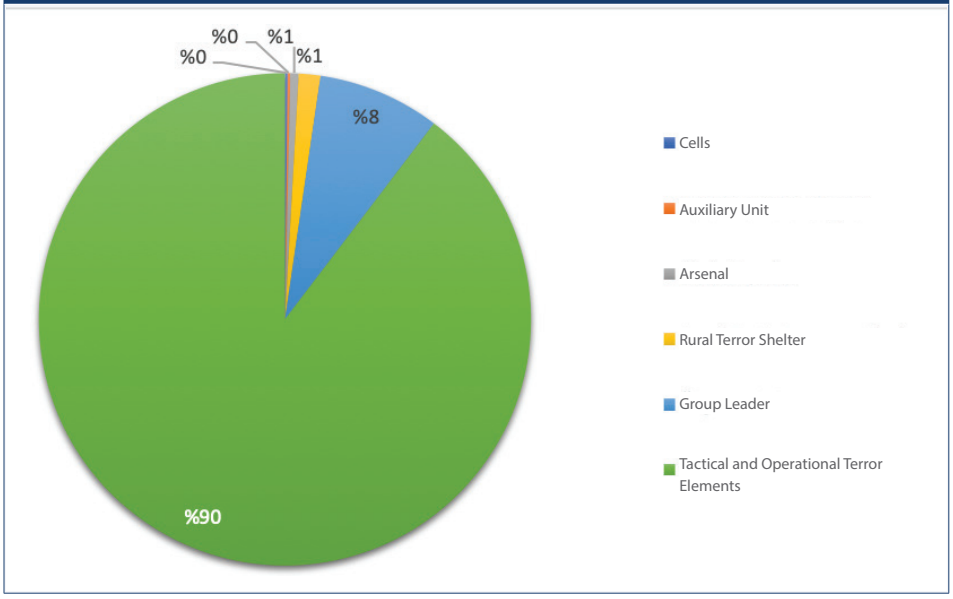
GRAPH 6. DISTRIBUTION OF OPERATIONS IN TÜRKIYE BY TARGET TYPE (2015-SEPTEMBER 2022, %)



Source: TAP

A closer look at the types of targets in Turkish operations reveals that tactical and operational terrorist elements constituted 50 percent, arsenal amounted to 16 percent, rural shelter areas referred to 13 percent and the terrorist organization's so-called group leader represented 5 percent. Those numbers suggest that the terrorist organization's tactical and operational presence remains intact whereas the vast majority of its material resources and so-called senior leaders are located outside of Türkiye's borders.

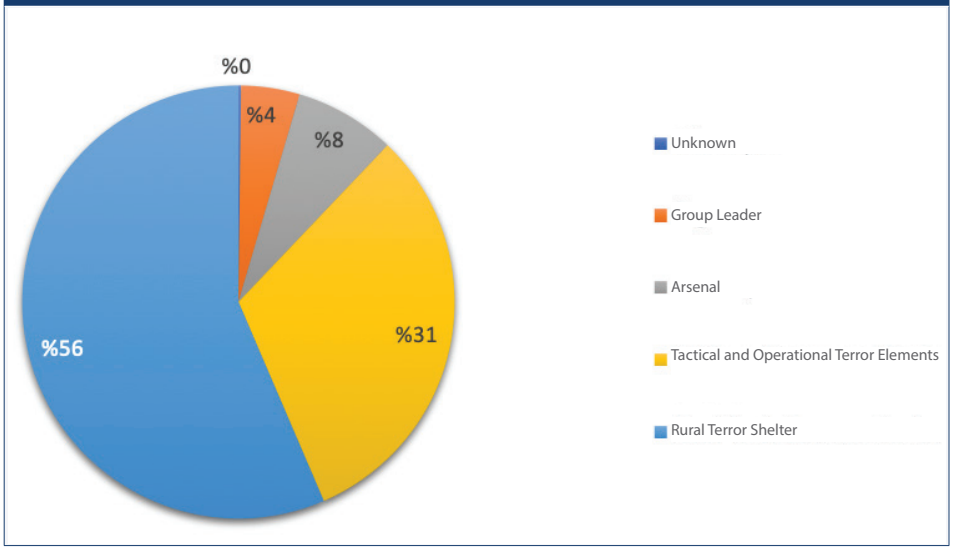
GRAPH 7. DISTRIBUTION OF OPERATIONS IN SYRIA BY TARGET TYPE (2015-SEPTEMBER 2022, %)



Source: TAP

Upon analyzing the targets of Turkish operations in Syria, one concludes that 90 percent were tactical and operational terrorist elements, 8 percent were the organization's so-called group leader and 1 percent consisted of terrorist shelter areas. Whereas the primary objective of the relevant operations was the elimination of the terrorist organization's human resources, it was noteworthy that many operations targeted its so-called leaders in Syria. Those numbers confirm that the terrorist organization's so-called senior leaders mobilize outside Türkiye and mainly in the Syrian theater. At the same time, that data highlights the close organizational connection between PKK and its Syrian component, YPG/PYD – including in command and control terms.

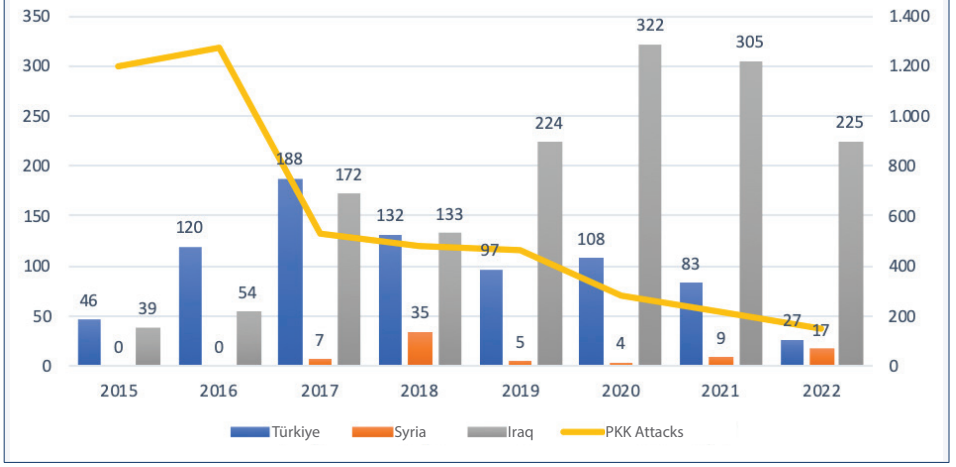
GRAPH 8. DISTRIBUTION OF OPERATIONS IN IRAQ BY TARGET TYPE (2015-SEPTEMBER 2022, %)



Source: TAP

Meanwhile, 57 percent of counter-terror operations in Syria targeted rural terror shelter areas whereas tactical and operational terrorist elements represented 31 percent, arsenal constituted 8 percent and the terrorist organization's so-called group leader corresponded to 4 percent. It is possible to assume that Türkiye made a strategic choice by destroying terrorist bases and reinforcement positions based on the assumption that those facilities enabled the terrorist organization to preserve its ability to carry out attacks.

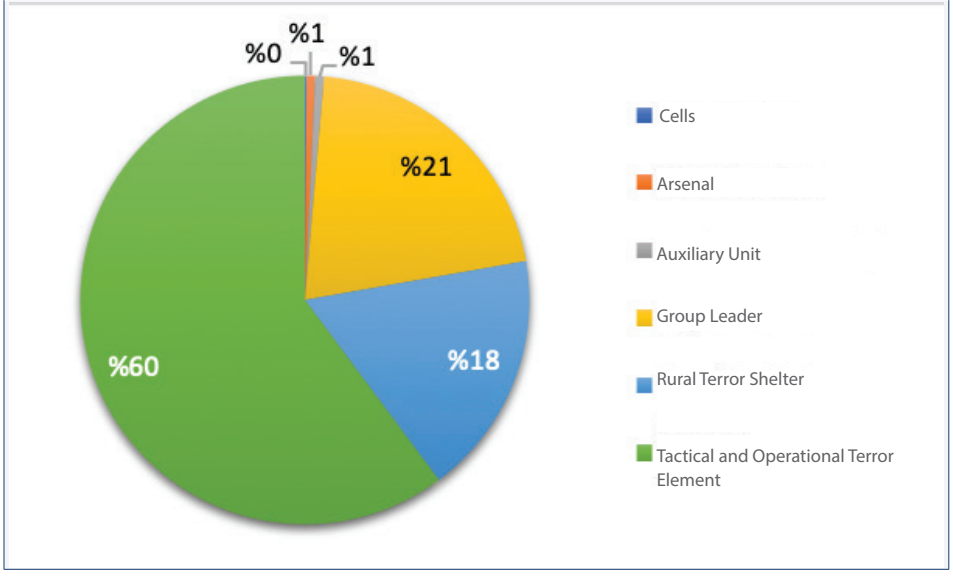
GRAPH 9. AIR/UAV AND AIR/UAV SUPPORTED OPERATIONS IN TÜRKİYE, SYRIA AND IRAQ (2015-SEPTEMBER 2022)



Source: TAP

Based on the analysis of air/UAV operations or operations with air/UAV support between 2015 and September 2022, 801 operations took place in Türkiye. By contrast, there were 77 operations in Syria and 1474 operations in Iraq. A closer look at the frequency of those operations reveals that there was an uptick in Türkiye in 2017 and a spike in Syria in 2018. The real momentum, however, was observed in Iraq in 2020 with 322 operations. It is possible to argue that air/UAV operations and operations with air/UAV support expedited efforts to increase the geographical depth of counter-terror operations within Iraq's borders.

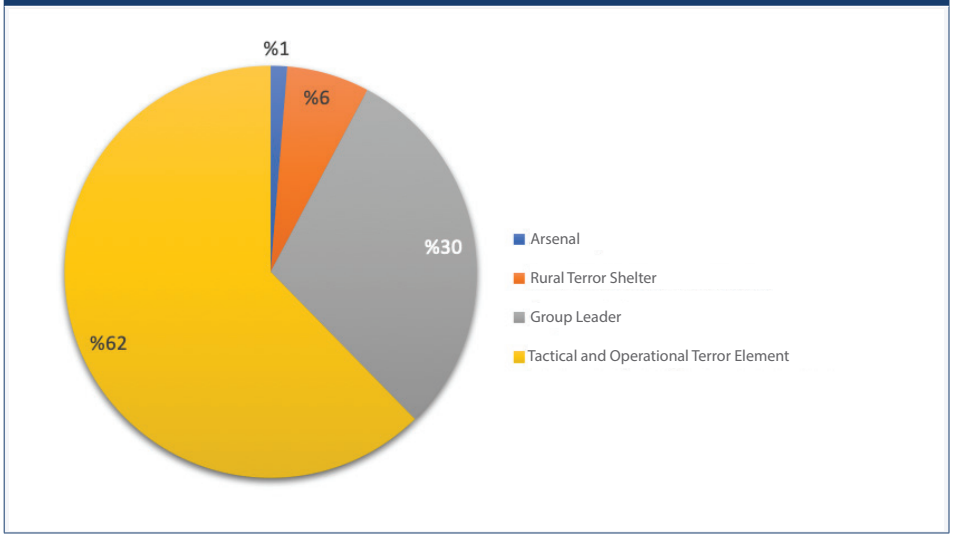
GRAPH 10. DISTRIBUTION OF AIR/UAV AND AIR/UAV-SUPPORTED OPERATIONS IN TÜRKİYE BY TARGET TYPE (2015-SEPTEMBER 2022, %)



Source: TAP

A closer look at the types of targets reveals that tactical and operational terrorist elements accounted for 60 percent of counter-terror operations in Türkiye, whereas 21 percent consisted of so-called group leaders and 17 percent targeted rural terror shelter areas. It is possible to argue that the primary objective of those operations is to deprive the terrorist organization of its qualified personnel and material resources.

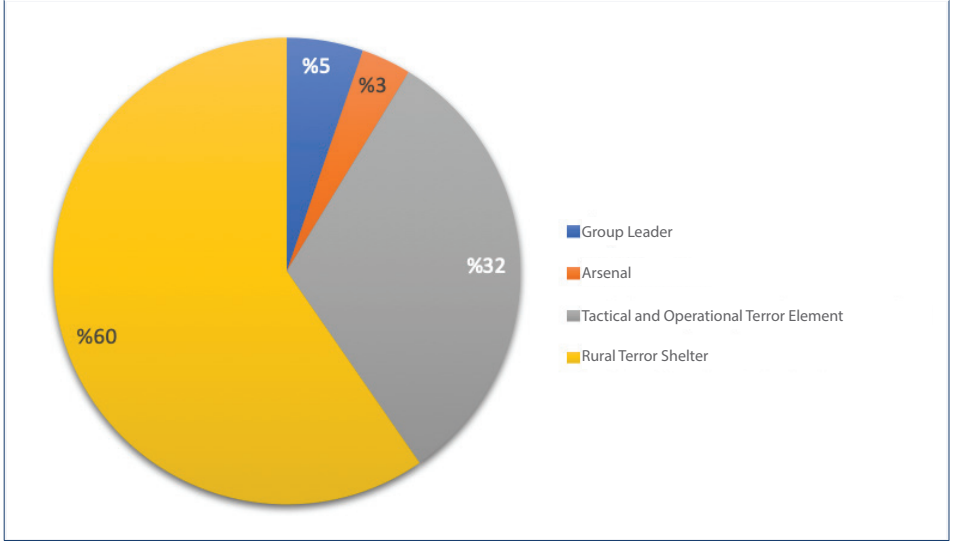
GRAPH 11. DISTRIBUTION OF AIR/UAV AND AIR/UAV-SUPPORTED OPERATIONS IN SYRIA BY TARGET TYPE (2015-SEPTEMBER 2022, %)



Source: TAP

Meanwhile, 62 percent of all air/UAV or air-supported/UAV-supported operations in Syria targeted tactical and operations terrorist elements – with 30 percent targeting so-called group leaders and 7 percent targeting rural terror shelter areas. It is possible to argue that the distribution of targets in Syria is similar to the distribution of targets in Türkiye.

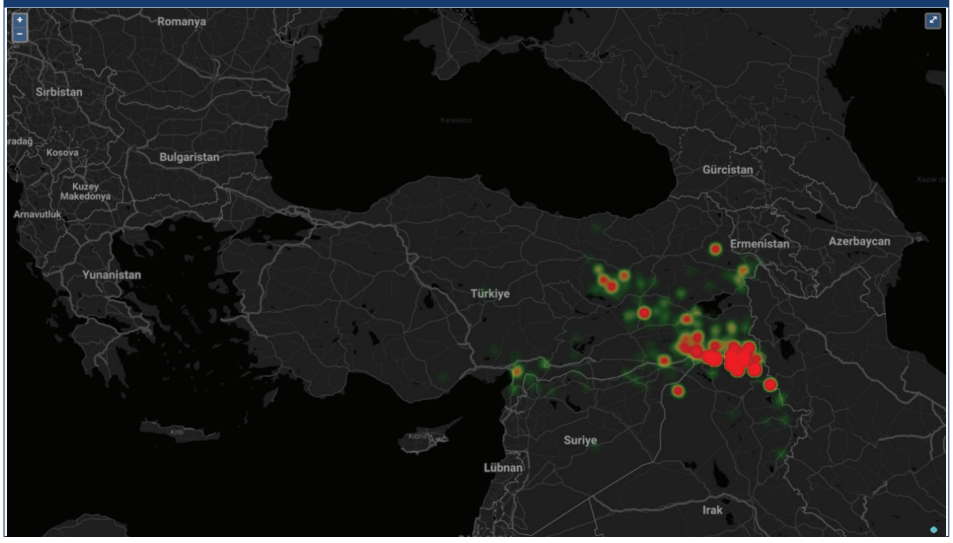
GRAPH 12. DISTRIBUTION OF AIR/UAV AND AIR/UAV-SUPPORTED OPERATIONS IN IRAQ BY TARGET TYPE (2015-SEPTEMBER 2022, %)



Source: TAP

Meanwhile, the distribution of targets in air/UAV and air-supported/UAV-supported operations in Iraq appears to differ from similar operations in Syria and Türkiye. Specifically, the relevant operations targeted the terrorist organization's rural terror shelters (60%), tactical and operational elements (32%) and so-called group leaders (5%). There is reason to believe that eliminating the terrorist organization's material resources represented the top priority in Iraq.

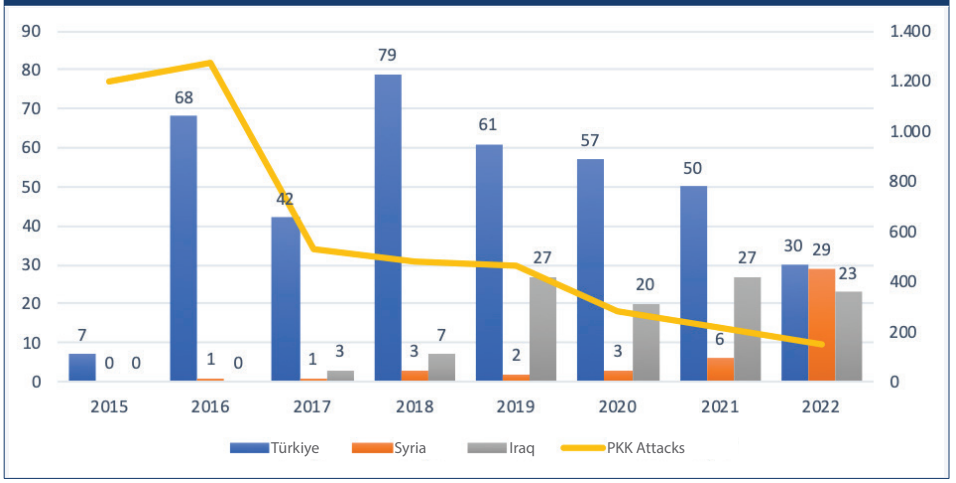
MAP 1. TARGETS NEUTRALIZED IN AIR/UAV AND AIR/UAV-SUPPORTED OPERATIONS (2015-SEPTEMBER 2022)



Source: TAP

A closer look at air/UAV and air-supported/UAV-supported operations reveals that the majority of operations in Türkiye took place in the country's southeastern provinces like Hakkari, Şırnak and Tunceli. It is also possible to state that the greatest number of terrorists were neutralized around that area. In the meantime, operations in Iraq primarily targeted northern provinces like Duhok, Erbil and Nineveh – where the greatest number of terrorists were neutralized. It is important to note that operations in Syria occurred less frequently compared to Türkiye and Iraq, as terrorists were neutralized in various places including Aleppo, Hasakah and Raqqa. Within the regional context, one might conclude that the relevant operations mainly targeted those areas where the terrorist organization kept its active human resource and reinforcements as well as mobilization channels and logistical communication lines.

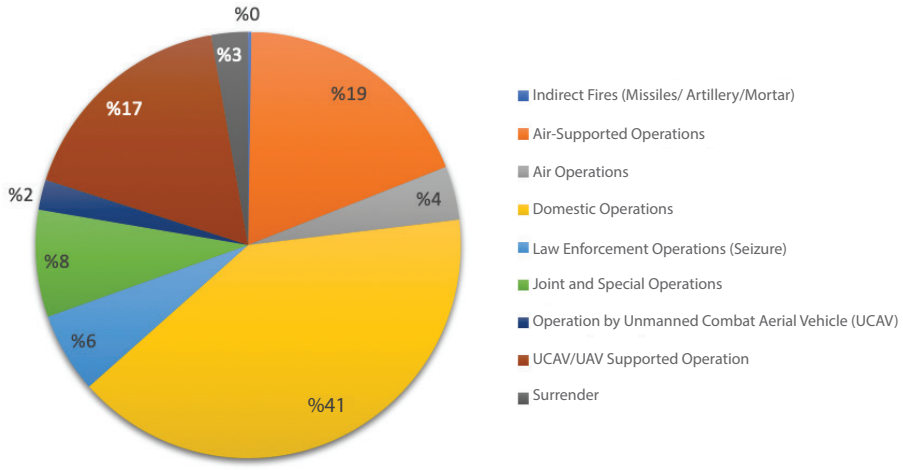
GRAPH 13. OPERATIONS AGAINST SO-CALLED TERRORIST LEADERS IN TÜRKİYE, SYRIA AND IRAQ (2015-SEPTEMBER 2022)



Source: TAP

A closer look at another focal point of this study –operations targeting the terrorist organization's so-called leaders and important operatives between 2015 and September 2022— reveals that 394 operations took place in Türkiye – compared to 107 in Iraq and 45 in Syria. There was a notable uptick in the frequency of operations in Türkiye since 2018. Furthermore, the number of similar operations in Iraq increased since 2019 and operations targeting the terrorist organization's so-called leaders in Syria become more frequent since 2022. Those numbers prove that the terrorist organization's so-called leaders became a strategic target and that the principles of Türkiye's counter-terror strategy have adapted to changing circumstances. Another important point is that it become easier to conduct similar operations in Syria and Iraq as of 2021 and 2022, as the country began to seize operational opportunities over there.

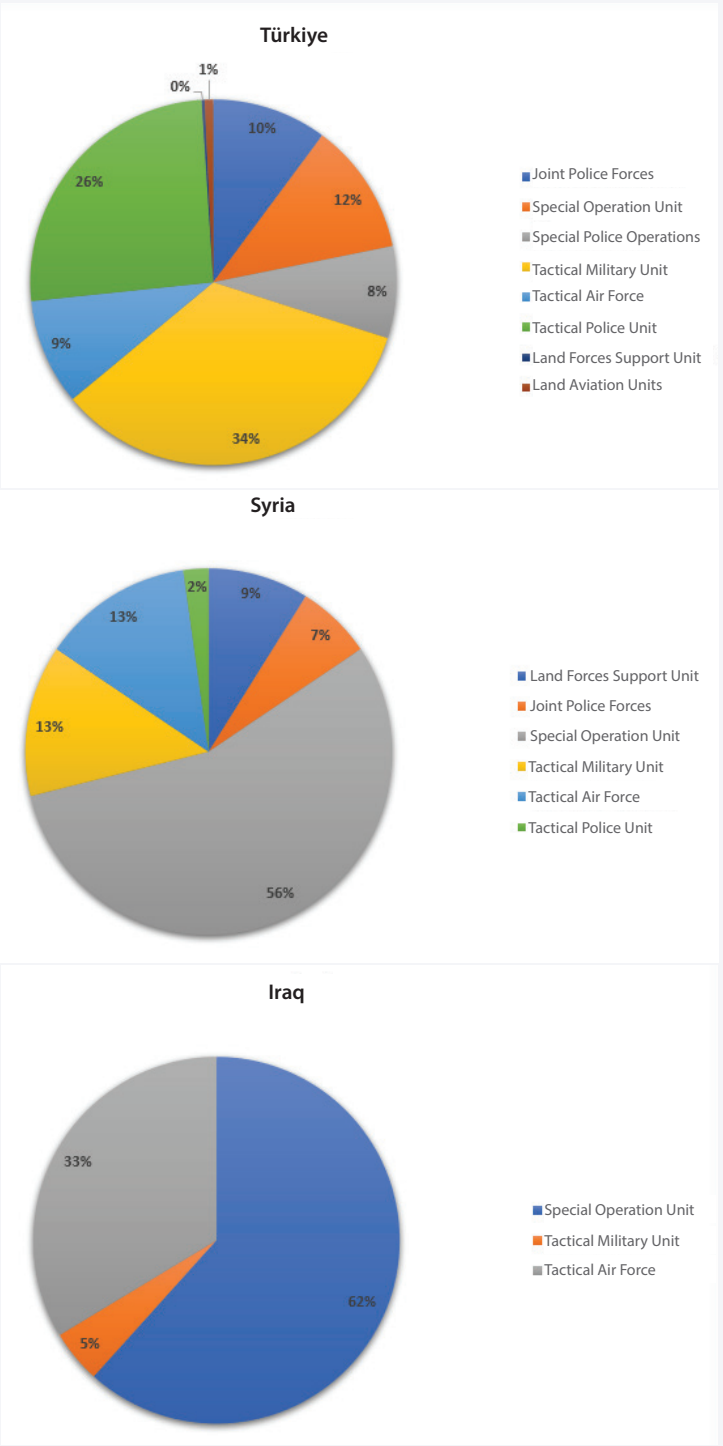
GRAPH 14. DISTRIBUTION OF OPERATIONS AGAINST SO-CALLED TERRORIST LEADERS IN TÜRKIYE, SYRIA AND IRAQ BY TYPE (2015-SEPTEMBER 2022)



Source: TAP

Upon analyzing the methodology of operations targeting the terrorist organization's so-called leaders in Türkiye, Syria and Iraq, it is possible to conclude that 41 percent consisted of ground operations, 19 percent were air-supported operations and 17 percent were UCAV/UAV-supported. Those numbers support the conclusion that the country does not exclusively rely on ground forces and instead supports its ground operations with air power. Another important point is that internal security agencies (Turkish National Police and Gendarmerie), the Turkish Armed Forces and the National Intelligence Organization (MIT) conducted 8 percent of all relevant operations jointly. That number highlights the progress that Türkiye made vis-à-vis interagency coordination and cooperation as well as offers insights into the expansion of agency capabilities and capacity, along with strategic priorities, in operations targeting the terrorist organization's so-called leaders.

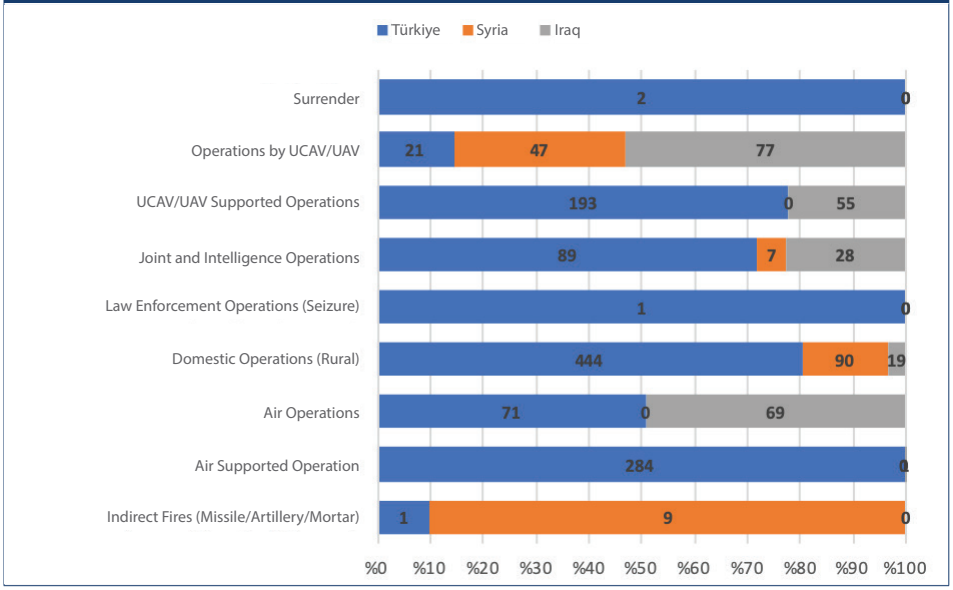
GRAPH 15. DISTRIBUTION OF OPERATIONS AGAINST SO-CALLED TERRORIST LEADERS IN TÜRKİYE, SYRIA AND IRAQ BY OPERATIONAL UNIT (2015-SEPTEMBER 2022)



Source: TAP

A closer look at the distribution of units and elements conducting operations against the terrorist organization's so-called leaders and major operatives in Türkiye reveals that tactical military units were responsible for 34 percent of all operations – compared to tactical police units (26 percent) and special operation units (12 percent). It is important to note that ground forces remain primarily responsible for operations in Türkiye, yet the distribution in Syria and Iraq is notably different. In Syria, special operators were involved in 56 percent of all operations while tactical air forces and tactical military units conducted 13 percent of operations and fire support units participated in 9 percent of all operations. In Iraq, special operators conducted 62 percent of all operations – compared to 33 percent by tactical air units and 5 percent by tactical military units. Türkiye used the Special Forces to add military depth and MIT to add intelligence depth to counter-terror operations in Iraq and Syria. It also utilized air elements frequently.

GRAPH 16. DISTRIBUTION OF OPERATIONS AGAINST SO-CALLED TERRORIST LEADERS AND TERRORISTS NEUTRALIZED IN TÜRKIYE, SYRIA AND IRAQ BY METHOD (2015-SEPTEMBER 2022)



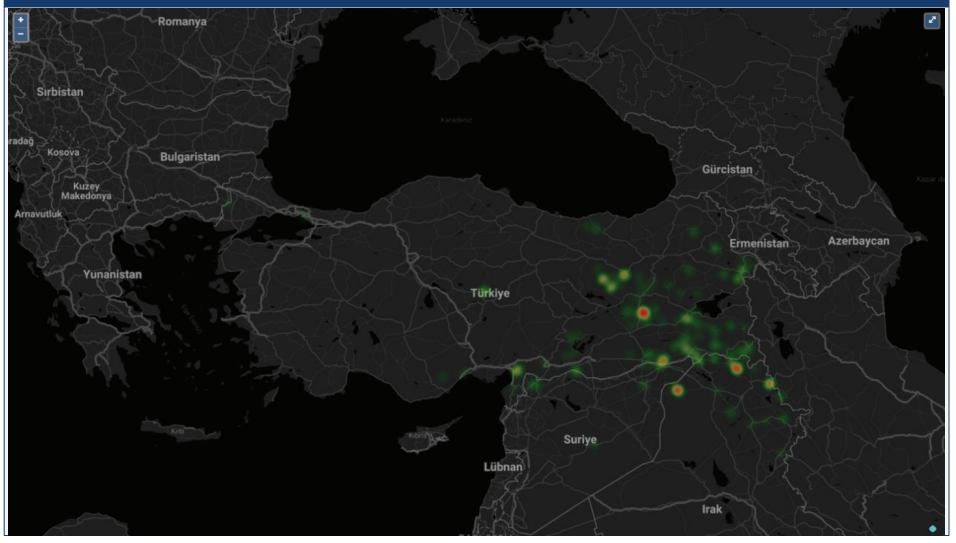
Source: TAP

The distribution of targets eliminated in counter-terror operations against the terrorist organization's so-called leaders shows that 1106 senior leaders or experienced operatives were eliminated in Türkiye – as opposed to 153 in Syria and 249 in Iraq.

In Türkiye, 193 of the terrorist organization's so-called leaders or experienced operatives were neutralized in UCAV/UAV-supported operations where-

as 21 were neutralized by UCAV/UAV operations. Furthermore, 47 terrorists were neutralized in UCAV/UAV operations in Syria. An additional 77 terrorists were neutralized in UCAV/UAV operations and 55 terrorists were neutralized in UCAV/UAV-supported operations in Iraq. Whereas rural operations remain an important part of the elimination of the terrorist organization's human resources, air power has been playing an increasingly significant role in recent years.

MAP 2. TERRORISTS NEUTRALIZED IN OPERATIONS AGAINST SO-CALLED TERRORIST LEADERS IN TÜRKİYE, SYRIA AND IRAQ (2015-SEPTEMBER 2022)



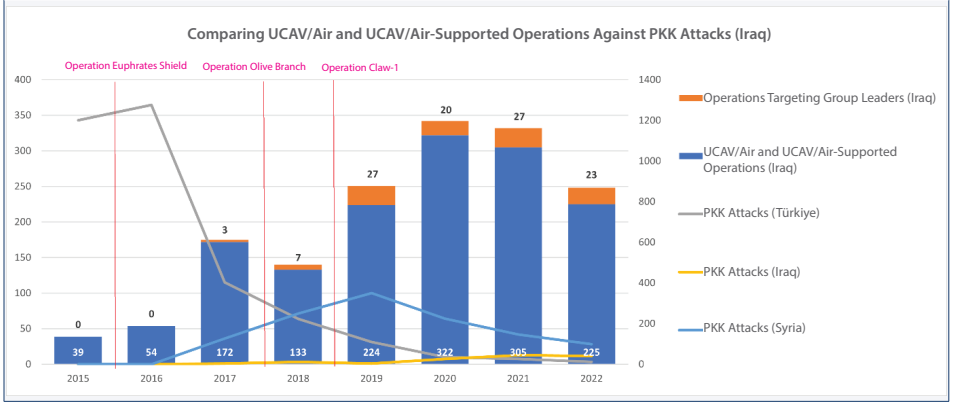
Source: TAP

Numerically speaking, the security forces tend to cause more damage during operations backed by air power or drones. It is necessary to take into consideration several factors that interact with each other and make it possible for Türkiye to make such great impact and get results. Technological progress, which expands the precision strike and destruction capacity of the security forces, and the expansion of institutional capacity and capabilities as well as the tactical superiority stemming from operational flexibility are among those factors.

The geographical analysis of operations against the terrorist organization's so-called leaders reveals that most operations in Türkiye took place in Diyarbakır, Tunceli and Şırnak. The authorities note that those provinces were where the largest number of terrorists were neutralized. Most operations in Iraq, in turn, took place in Duhok, Erbil and Nineveh – which was where most terrorists were neutralized. Last but not least, Aleppo and Hasakah represented the focal point of operations in Syria. Despite Türkiye's efforts to focus its counter-terror operations abroad as part of its strategy, the majority of operations intended to

eliminate the terrorist organization's so-called leaders continues to take place within Türkiye's borders.

GRAPH 17. COMPARISON BETWEEN OPERATIONS AND PKK ATTACKS, IRAQ SAMPLE



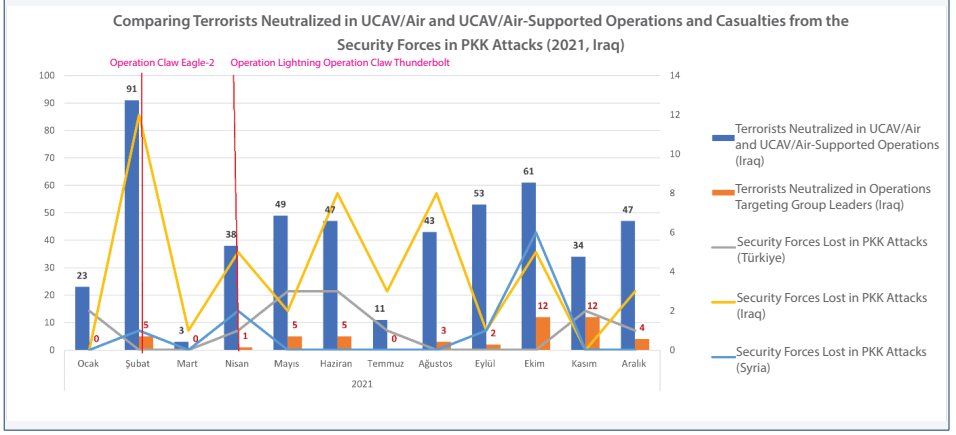
Source: TAP

That is partly due to the gradual increase in the number and frequency of such operations in Türkiye since 2016, in Iraq since 2019 and in Syria since 2022. Meanwhile, there are still some challenges involved in detecting, tracking and eliminating the terrorist organization's so-called leaders and operatives in Syria. By contrast, there are more and more opportunities in Iraq – as in Türkiye.

A closer look at Iraq as a primary site of drone or air-supported operations against the terrorist organization's so-called leaders would reveal that the increased frequency of counter-terror operations in 2019, 2020 and 2021 caused an uptick in PKK counter-attacks in Iraq. In other words, although it is possible to expect such operations to have a certain psychological impact (as in a decline in PKK attacks), the available data does not support that claim. Furthermore, there is insufficient evidence to establish whether the aforementioned uptick in PKK attacks represented a reaction to the elimination of so-called terrorist leaders. Nonetheless, the available data shows that the terrorist organization increased the volume of attacks in response to drone or air-supported operations. Specifically, it is possible to observe in the terrorist organization's propaganda activities and ecosystem that they described various types of attacks against Turkish soldiers in Iraq's countryside as "revenge." That depiction suggests that the terrorist organization has been carrying out attacks as a reaction to Türkiye's growing emphasis on counter-terror operations. Even if there were a decline in violence, it is possible to conclude that such fluctuations would occur in the short run and have a limited geographical impact.

Generally speaking, security operations resulted in mass fatalities for the terrorist organization, which was compelled to operate elsewhere. It is possible to argue that PKK made different decisions regarding the area, where it would increase its attack volume, at different points in time. In this regard, the terrorist organization attempted to respond to operations in Iraq by with attacks in Syria and Türkiye. The authorities assume that Syria remains an area of opportunity for the organization to increase its attack volume mainly because the security situation there makes activization and military convenience easier. To sum up, drone or air-supported operations have been influential over the direction of organizational violence.

GRAPH 18. TAKING STOCK OF OPERATIONS (IRAQ, 2015-SEPTEMBER 2022)



Source: TAP

There is an overlap between those months in 2021, when operations in Iraq became more frequent, and the obliteration of the terrorist organization's qualified human resource. Similarly, upticks in the intensity of security operations overlap with Turkish military casualties in PKK terror attacks. Whereas the terrorist organization tended to increase its attack volume in Syria, the Turkish security forces have been suffering losses mostly in Iraq. That is arguably because Iraq has become an area where the terrorist organization and the security forces frequently come in close contact. Although Türkiye conducted the Euphrates Shield, Olive Branch and Peace Spring operations in Syria, it prefers remote military operations in a tactical sense – which limits the losses of the Turkish security forces compared to Iraq. Whereas drone or air-supported operations in Iraq gave Türkiye a tactical advantage, close contact by the Special Forces continues to represent the backbone of the counter-terror campaign.

THE IMPACT OF TÜRKIYE'S UAV EMPLOYMENT ON PKK: A STRATEGIC ANALYSIS

The low financial and political cost of using unmanned aerial vehicles had a strong impact on the transformation of UAVs into a surgical tool in counter-terror operations.[64] Furthermore, it is important to recognize the impact of that highly effective and devastating platform on the terrorist organization's so-called senior leaders, qualified human resources, main material resources and operational capabilities.

Specifically, UAVs play an active role in security operations designed to crack down on the terrorist organization's so-called senior leadership to eliminate its central command and control capacity. In this regard, the organization's hierarchy is considered a primary target to encourage terrorist operatives to shelter themselves from the lethal impact of counter-terror operations and to cause problems with coordination and communications.

At the same time, military operations targeting the terrorist organization's qualified human resources result in the elimination of senior leaders and operatives – which deprives the entity of technical expertise. Seizing the psychological advantage in the fight against terrorism in this way, Türkiye also targets the organization's operational capabilities and recruitment efforts.

Moreover, unmanned aerial vehicles give the country a significant advantage for detecting and destroying safe havens, financial resources, training camps and arms depots. After all, drones are highly capable of detecting and neutralizing terrorists hiding in the mountains as well as ammunition depots, training bases and supply lines through ISR activities. That is why terrorists are compelled to put in place new mechanisms to shelter themselves from UAVs.

Another major objective of neutralizing senior leaders or operatives is to weaken the potential threat posed by the terrorist organization's so-called leadership. Such operations, however, are known to influence how the organization picks its targets. In this sense, successful operations that undermine the organization's leadership tend to result in attacks against civilians by making the organization less selective about its targets. In this regard, there is reason to believe that such security operations encourage indiscriminate violence and forces the organization to undergo tactical transformation.[65]

64 Javier Jordan, "The Effectiveness of the Drone Campaign against Al Qaeda Central: A Case Study", Journal of Strategic Studies, Vol: 37, No: 1, (2014), pp. 4-29.

65 Max Abrahms and Jochen Mierau, "Leadership Matters: The Effects of Targeted Killings on Militant Group Tactics", *Terrorism and Political Violence*, Vol:29, No:5, (2017), pp.830-851.

Some studies concluded that U.S. drone strikes against Al Qaeda's senior leaders and experienced members resulted in their deaths yet that development led to the promotion of less experienced operatives to higher ranks and weaken the terrorist organization's operational memory.[66] UAV operations against the terrorist organization's so-called leaders causes terrorist operatives to go into hiding and to take additional precautions before communicating with others. That response, in turn, weakens operatives' loyalty to their so-called leaders and encourages low-ranking leaders to seek greater autonomy and take more initiative.[67] Furthermore, the constant need to hide makes it harder for terrorist organizations to create safe havens, train militants and integrate them into the broader organization.[68] Similarly, U.S. drone strikes in Pakistan's tribal areas specifically targeted several terrorist groups including Al Qaeda, the Tahreek-e Taliban Pakistan (TTP) and the Haqqani Network. It was possible to observe that U.S. airstrikes against the terrorist organization's senior leaders and key members in Pakistan undermined its ability to perpetrate attacks. Some empirical studies also concluded that the rising number of UAV operations significantly contributed to reducting terrorist violence in the region.[69]

Organizational Structure and Command Hierarchy

Türkiye uses UAVs to directly target the terrorist organization's organizational structure and command hierarchy to eliminate its experienced members and reduce its human resources.[70] Drone operations cause terrorists to go into hiding and feel threatened – which is why they relocate frequently and find it more difficult to communicate with others. In this sense, UAVs enable the Turkish government to size the psychological advantage against terrorists as well as deprive the group of operational capabilities and flexibility.[71] Furthermore, studies on punishment and deterrence show that the certainty of punitive action is a stronger deterrent than its strength.[72] Considering the certainty and magnitude of counter-terror opera-

66 Bryce Loidolt, "Were Drone Strikes Effective? Evaluating the Drone Campaign in Pakistan Through Captured al-Qaeda Documents", Texas National Security Review, Vol:5, No:2, (2022), pp.53-79.

67 Max Abrahms and Philip B. K. Potter, "Explaining Terrorism: Leadership Deficits and Militant Group Tactics", International Organization, Vol: 69, No: 2, (2015), pp. 311-342.

68 Daniel Byman, "Buddies or Burdens? Understanding the Al Qaeda Relationship with Its Affiliate Organizations", *Security Studies*, Vol: 23, No: 3, (2014), pp. 431-470.

69 Johnston and Sarbahi, "The Impact of US Drone Strikes on Terrorism in Pakistan", pp.203-219.

70 Farrow, "Drone Warfare as a Military Instrument of Counterterrorism Strategy".

71 Byman, "Why Drones Work", pp. 32-43.

72 William C. Bailey ve Ronald W. Smith, "Punishment: Its Severity and Certainty", The Journal of Criminal Law, Criminology, and Police Science, Vol: 63, No: 4, (1972).

tions featuring drones, it is possible to argue that terrorists find themselves under vast psychological pressure.

The contributions of armed and surveillance drones played a key role in the elimination of PKK's so-called senior leaders, which took a toll on that entity's operational capabilities. The elimination of so-called leaders creates a shortage of experienced members and gradually erases the terrorist organization's memory.[73] At the same time, it is possible to observe that low-ranking members with no operational skills have risen through the ranks – a development that renders the organization's attacks less complex and undermines its decisionmaking process.

Furthermore, the elimination of PKK's so-called leaders disrupts that entity's hierarchy and takes a toll on its ability to carry out attacks.[74] After all, the group's ringleaders go into hiding far away from attack sites and attempt to communicate with other members by using radio, letters and video messages. Problems with communication tend to disrupt its chain of command and undermines the authority that the so-called senior leaders have over low-ranking terrorists.[75] Indeed, communication problems tend to encourage more members to abandon the group and surrender to the security forces. Moreover, studies show that PKK terrorists cannot leave their caves because they fear detection – which effectively grants additional autonomy to low-ranking terrorist elements and undermines the authority of their so-called leaders.[76] In this context, the terrorist organization reportedly disobeys orders from the top and a growing number of members express frustration over the conduct of their superiors. In this sense, intercepted radio communications among PKK members show that many terrorists have stopped heeding their instructions.[77] Due to the losses suffered, the terrorist organization's members ostensibly engage in armed clashes with each other. With the PKK losing experienced members in counter-terror operations, fresh recruits have been ending up on the front lines – a significant source of frustration.[78]

73 Kemal Karadağ, "MİT'in Operasyonunda PKK/KCK'nın Sözde Üst Düzey Yöneticisi Etkisiz Hale Getirildi" [PKK/KCK So-Called Senior Leader Killed in Intelligence Operation], Anadolu Agency, 14 May 2020.

74 Durdu Mehmet Özdemir, "2021 Türkiye Terörizm İndeksi: PKK" [2021 Türkiye Terrorism Index: PKK], TAP, 11 January 2022, https://tap-data.com/article/2021-turkiye-terorizm-indeksi-pkk, (Accessed: 11 August 2022).

75 Karadağ, "MİT'in Operasyonunda PKK/KCK'nın Sözde Üst Düzey Yöneticisi Etkisiz Hale Getirildi".

76 "Terör Operasyonları PKK'nın İletişim Ağlarını da Kesti" [Counter-terror operations cut off PKK's communication lines], Türkiye Cumhuriyeti İçişleri Bakanlığı, 23 October 2021, https://www.icisleri.gov.tr/teror-operasyonlari-pkknin-iletisim-aglarini-da-kesti, (Accessed: 11 August 2022).

77 "Terör Örgütü PKK Çöküşte! 82 Terörist Daha Öldürüldü, Emir Komuta Zinciri Darmadağın…" [Terrorist Organization PKK Crumbling! 82 More Terrorists Killed, Chain of Command in Ruins], Sabah, 19 November 2020.

78 "TSK'dan Açıklama: 'PKK'lılar Kendi Aralarında Çatışıyor'" [TAF Statement: PKK Members Fighting Each Other], CNN Türk, 15 November 2016.

TABLE 4. NEUTRALIZED TERRORISTS, A SAMPLE

Target Analysis				Operational Analysis				Strategic Analysis			
Organization	Terrorist	Gender/Age/ Birthplace/ Code Name	High Value Target	Category	Operational Area	Date	Location	Type of Operations	Location	Unit	Impact
PKK/KCK	Tuğba Tambahçeci	F, 29, Van, Evindar Kevok	✓	Orange	Terrorist Operative	2022-08-16	Van, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Devlet Taşir	F, 25, Van, Eylem Sipan	✓	Grey	Terrorist Operative	2022-08-16	Van, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Mehmet Şirin Özmez	M, 31, Diyarbakır,	✓	Orange	Terrorist Operative	2022-08-16	Hakkari, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Necati Utku Kiraz	M	✓	Orange	Terrorist Operative	2022-07-17	Diyarbakır, Türkiye	UCAV/UAV Supported	Rural	POLICE, Gendarmerie	Operative Loss
PKK/KCK	İzzettin İnan	M, 55, Malatya, Dersim Malatya	✓	Orange	Political Leader, Training Responsible	2022-07-17	Gara, Iraq	UCAV	Rural	MİT	Loss of experienced operative
PKK/KCK	Osman Yıldırımçakar	M, 28, Van, Argeş Botan	✓	Orange	Organizational Leader	2022-07-06	Van, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Şehmiran Karahan	F, 27, Mersin, Jiyan Eruh Miran	✓	Orange	Organizational Leader	2022-07-06	Van, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Şükran Alp	F, 29, Mardin, Arin	✓	Grey	Women's responsible and mine specialist	2022-06-19	Siirt, Türkiye	UCAV/UAV Supported	Rural	POLICE, Gendarmerie	Operative Loss
PKK/KCK	Mehmet Süleymanoğlu	M, 32, Diyarbakır, Doktor Dilşad	✓	Orange	Middle Field Ape Musa Responsible, Assassin	2022-06-17	Diyarbakır, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Loss of experienced operative

PKK/KCK	Beraat Boztemir	M,29, Adıyaman, Armanç Nesimi	✓	Grey	Terrorist Operative	2022-05-24	Osmaniye, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Hakim Bedri	M, 46, İran, Agit-Kotol	✓	Green	Amanos Responsible	2022-05-24	Osmaniye, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Removal of terrorists from Amanos
PKK/KCK	Mehmet Halil Doğal	M, 25, Şırnak, Fırat	✓	Grey	Mine Specialist	2022-05-23	Şırnak, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Mehmet Erdoğan	M, 51, Ağrı, Ahmet Rubar	✓	Red	Hakurk and Avaşin Responsible, Planner	2022-05-21	Mahmour, Iraq	UCAV	Rural	MİT	Loss of experienced operative, territorial gains
PKK/KCK	Mehmet Doğan	M, 52, Şırnak, Dilhaz Gabar	✓	Blue	Kirkuk Front Responsible	2022-05-21	Sulaymaniyah, Iraq	UCAV	Rural	MİT	Loss of experienced operative
PKK/KCK	Faysal Yılmaz	M, 32, Hakkari, Rohat Dengdar	✓	Grey	Zap Responsible	2022-05-19	Zap, Iraq	UCAV/UAV Supported	Rural	TAF	Potential attack prevented, Loss of experienced operative
PKK/KCK	Ayhan İnalhan	M, 36, Diyarbakır, Mirza	✓	Orange	Terrorist Operative	2022-05-18	Metina, Iraq	UCAV/UAV Supported	Rural	TAF	Operative Loss
PKK/KCK	Semih Sayılğan	M, 29, Bitlis, Reber	✓	Orange	Hakkari Responsible	2022-04-28	Hakkari, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Betül Diler	F, 21, Erzurum, Elif Avesta	✓	Grey	Terrorist Operative	2021-12-15	Mardin , Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss

PKK/KCK	Deniz Orak	F, 36, Mardin, Hîra Ulaş	✓	Green	YPS Responsible	2021-12-15	Mardin , Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Loss of experienced operative
PKK/KCK	Mervan Bedel	M, Dijwar	✓	Uncategorized	So-Called Sinjar Responsible	2021-12-07	Sinjar, Iraq	() UCAV	Rural	MİT	Loss of experienced operative
PKK/KCK	Erhan Mingsar	M, 33, Kars, Soreş Kars Roni	✓	Orange	Terrorist Operative	2021-11-22	Bitlis, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Leyla Şeyho	F, Unknown, Baharin Afrin	✓	Green	Among Female Responsibles	2021-11-22	Bitlis, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Ali Haydar Kaytan	M, 69, Tunceli, Fuat	✓	Red	So-Called PKK Founder	2021-11-18	Tunceli, Türkiye	UCAV	Rural	MİT-TAF	Destruction of command structure
PKK/KCK	Songül Özgün	F, 30, Mardin, Ruken	✓	Grey	Terrorist Operative	2021-10-23	Mardin , Türkiye	UCAV/UAV Supported	Rural	POLICE	Operative Loss
PKK/KCK	Veysel Akkuş	M, 36, Diyarbakır, Herdem Amed	✓	Grey	Operations at the Level of Responsible	2021-10-21	Siirt, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Firat Gizlenç	M, 25, Diyarbakır, Sidar Farkin Amed	✓	Grey	Facilitating border crossing of terrorists and providing IED/ bomb training	2021-10-15	Şırnak, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Reducing organization's logistical and training capabilities
PKK/KCK	Taybet Bilen	F, Şırnak, Şilan Guyi	✓	Uncategorized	Responsible for Female Terrorists in Gara	2021-10-08	Kirkuk, Iraq	UCAV	Rural	MİT	Operative Loss

PKK/KCK	Mehmet Hatip Arıtürk	M, Delil Siirt	✓	Uncategorized	Kirkuk Field Responsible	2021-10-01	Sulaymaniyah, Iraq	UCAV	Rural	MİT-TAF	Destruction of operational capabilities
PKK/KCK	Engin Karaaslan	M, 63, Muş, Haydar Varto	✓	Red	Member of PKK central committee	2021-09-28	Qamishli, Syria	UCAV	Rural	MİT	Destruction of command structure
PKK/KCK	Mehdi Uysal	M, 24, Şırnak, Zagros Cudi	✓	Grey	So-Called Responsible for Botan State	2021-09-22	Şırnak, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Mazlum Mat	M, 35, Şırnak, Kendal Cizir	✓	Orange	Among responsibles of PKK/KCK's so-called special force unit	2021-09-19	Siirt, Türkiye	UCAV/UAV Supported	Rural	MİT-TAF	Loss of experienced operative
PKK/KCK	Fidan Kurtpınar	F, 21, Van, Rojin Amed	✓	Grey	Assassin in so-called Botan state	2021-08-19	Van, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Hasan Said Hassan	M, Seyit	✓	Uncategorized	So-called general responsible of YBŞ	2021-08-16	Sinjar, Iraq	UCAV	Rural	MİT	Loss of experienced operative
PKK/KCK	Süleyman Öztürk	M, 25, Mardin, Cilo Reşo	✓	Grey	Terrorist Operative	2021-08-06	Mardin, Türkiye	UCAV/UAV Supported	Rural	POLICE-Gendarmerie	Operative Loss
PKK/KCK	Ulaş Doğan	M, 43, Tunceli, Ulaş Dersim	✓	Red	Among general responsibles of Iraq Self-Defense Forces	2021-06-22	Qandil, Iraq	UCAV	Rural	MİT	Loss of experienced operative
PKK/KCK	Hasan Adır	M, 59, Şırnak, Salih Cizre	✓	Uncategorized	Mahmour Responsible	2021-06-11	Mahmour, Iraq	UCAV	Rural	MİT	Damage to command structure hierarchy

PKK/KCK	Selman Bozkur	M, 49, Batman, Doktor Hüseyin	✓	Uncategorized	Mahmour General Responsible Recruitment and Training Responsible	2021-06-06	Mahmour, Iraq	UCAV	Rural	MİT	Damage to recruitment and training capacity
PKK/KCK	Selahattin Dede	M, 39, Hakkari, Zagros Glort	✓	Grey	Syria-Iraq Transfer Responsible	2021-05-29	Dohuk, Iraq	UCAV	Rural	MİT	Loss of experienced operative
PKK/KCK	Aydın Şimşek	M, 44, Diyarbakır, Agit Bismil	✓	Red	Terrorist Operative	2021-05-18	Diyarbakır, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Halef El Muhammed	M, 52, Syria, Sofi Nurettin	✓	Red	Syria General Responsible	2021-05-17	Gare, Iraq	UCAV/UAV Supported	Rural	MİT	Damage to command structure
PKK/KCK	Mazlum Kizil	M, 25, Mardin, Agir Qoser	✓	Grey	Terrorist Operative	2021-05-08	Mardin, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Serhat Ericek	M, 26, Mardin, Rızgar Koçer	✓	Grey	Responsible for Mardin State's Bogok area	2021-05-08	Mardin, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Latife Hanibi	F, Unknown, Berfin Nucan	✓	Orange	Responsible for women in Lice region	2021-04-29	Diyarbakır, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Loss of experienced operative
PKK/KCK	Aynur Ulugana	F, 32, Bitlis, Ronahi Tamara	✓	Blue	So-called responsible of special forces	2021-04-29	Diyarbakır, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss
PKK/KCK	Dilan Silinsin	F, 28, Manisa, Avent Feda	✓	Grey	Terrorist Operative	2021-04-29	Diyarbakır, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss

PKK/KCK	Suna Taş	F, 37, Siirt, Nujin Amed	✓	Red	Responsible for women at Middle Field HQ	2021-04-29	Diyarbakır, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Loss of experienced operative
PKK/KCK	Dalokay Şanlı	M, Tunceli, Sinan Mirhan	✓	Red	PKK/KCK Executive Committee Member	2021-04-24	Gare, Iraq	UCAV	Rural	MİT	Damage to command structure
PKK/KCK	Ömer Aydın	M, 34, Siirt, Renas Aydın	✓	Uncategorized	Responsible for East Force customs	2021-03-29	Qandil, Iraq	UCAV/UAV Supported	Rural	MİT-TAF	Undermining drug trafficking, human trafficking and arms smuggling
PKK/KCK	Hasan Mahmudi	M, 44, Erdabil, Hevram Havraman Avyer	✓	Red	General responsible for Mardin	2021-03-29	Mardin, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Loss of experienced operative
PKK/KCK	Teyyüp Çam (Eyyüp Çam)	M, 37, Mardin, Reber Kurdistan	✓	Orange	Area responsible for Mardin Bagok	2021-03-29	Mardin, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Loss of experienced operative
PKK/KCK	Kurban Pehlivan	M, Muş, Poyraz Bulanık	✓	Orange	So-called responsible for Bitlis region	2021-01-11	Bitlis, Türkiye	UCAV/UAV Supported	Rural	Gendarmerie	Operative Loss

Source: Türkiye's Enemy Killed in Action Dataset
* *high-value target*

Qualified Human Resource

Türkiye neutralized many PKK terrorists in counter-terror operations at home and abroad. The above-mentioned operations cause surviving terrorists to fear death and encourage them to flee the organization. For example, a PKK operative known as Ö.T., who was captured by the security forces, reported that UAV operations had taken a toll on their living standards – which encouraged some operatives to escape and discouraged potential recruits. They also added that some members committed suicide due to mounting pressure and poor conditions – a development that PKK has been trying to conceal.[79]

Likewise, a PKK terrorist known as M.D., who surrendered to the Turkish Armed Forces, stated that members were taught how to avoid UAVs and recalled that the terrorists lived in constant panic due to the high level of drone activity in the relevant area.[80] After all, Turkish drones actively monitor all places in Türkiye and abroad, where PKK members are known to operate, and the security forces carry out operations based on that information to neutralize all terrorists.

Fearing death and unable to move around due to UAVs, many terrorists have been experiencing psychological problems. For example, a PKK member known as K.M. surrendered to the Turkish military and noted that they had to hide in a cave for multiple days due to an ongoing security operation – which, they said, was psychologically challenging.[81] Another PKK member, O.Z., was apprehended en route to Greece and told the Turkish authorities that the deaths of many terrorists had taken a toll on the mental health of surviving PKK operatives.[82] It is also important to note that the terrorist organization's so-called leaders, not just low-ranking members, experience fear.[83]

At the same time, Türkiye uses drones to ensure the safety of its borders. UAVs are known to crack down on the PKK's recruitment efforts by spotting individuals trying to cross into Turkish territory from neighboring Iraq and Syria. That is why terrorists continue to look for ways to cross the Turkish border. Un-

79 "İHA ve SİHA'lar, PKK'nın Psikolojisini Bozdu" [UAVs and Armed Drones Undermine PKK's Morale], Anadolu Agency, 18 May 2019.

80 "İHA ve SİHA'lar, PKK'yı Psikolojik Olarak Perişan Etti" [UAVs and Armed Drones Devastate PKK Psychologically], Anadolu Agency, 1 February 2019.

81 Hasan Namlı, "Örgütten Kaçıp Teslim Olan Kişi Yaşadıklarını Anlattı" [PKK Defector Tells Their Story], Anadolu Agency, 27 August 2020.

82 Hakan Mehmet Şahin, "İHA'lar PKK'nın Hareket Alanını Sıfıra İndirdi" [Drones reduce PKK's maneuvering room to zero], Anadolu Agency, 26 June 2019.

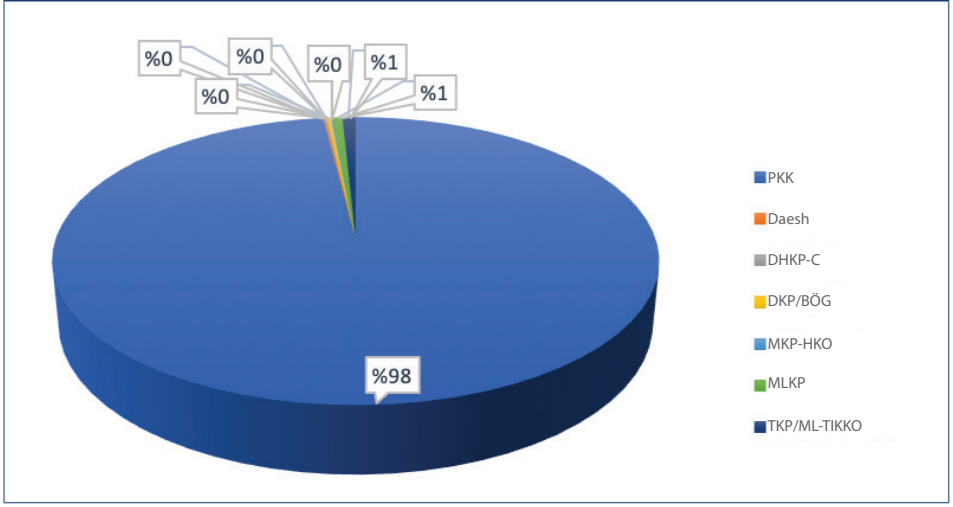
83 Muhammed Nuri Erdoğan, "Terör Örgütü PKK'da Tepeden Tırnağa Korku ve Panik Havası Hakim" [Fear and Panic Overwhelm Terrorist Organization PKK], Anadolu Agency, 6 December 2020.

able to find any power vacuum in Türkiye's eastern and southeastern provinces, PKK has been looking for recruits in European countries.[84]

According to a list of 408 counter-terror operations that Türkiye carried out in 2015-2022 (which was compiled by the Enemy Killed in Action Dataset), at least 853 PKK terrorists were eliminated and identified based on open source information. A closer look at that list would reveal that 836 of those terrorists were PKK members. The rest consisted of Daesh (1), DHKP-C (1), DKP/BÖG (2), MKP-HKO (1), MLKP (5) and TKP/ML-TIKKO (7) members. It is important to note that the above numbers relate to targeted killings in 2015-2022 as opposed to all terrorists killed in action.[85] Furthermore, the available data shows that the primary objective of Türkiye's counter-terror operations is to combat PKK terrorists.

Another important point is that the country continues to face a threat from traditional terrorist groups according to that data set. Indeed, traditional terrorist organizations like PKK/KCK, DHKP-C, TKP/ML-TIKKO, MLKP and MKP-HKO continue to have members whom they can mobilize at will.

GRAPH 19. DISTRIBUTION OF NEUTRALIZED TERRORISTS BY AFFILIATION (2015-SEPTEMBER 2022, %)



Source: Türkiye's Enemies Killed in Action

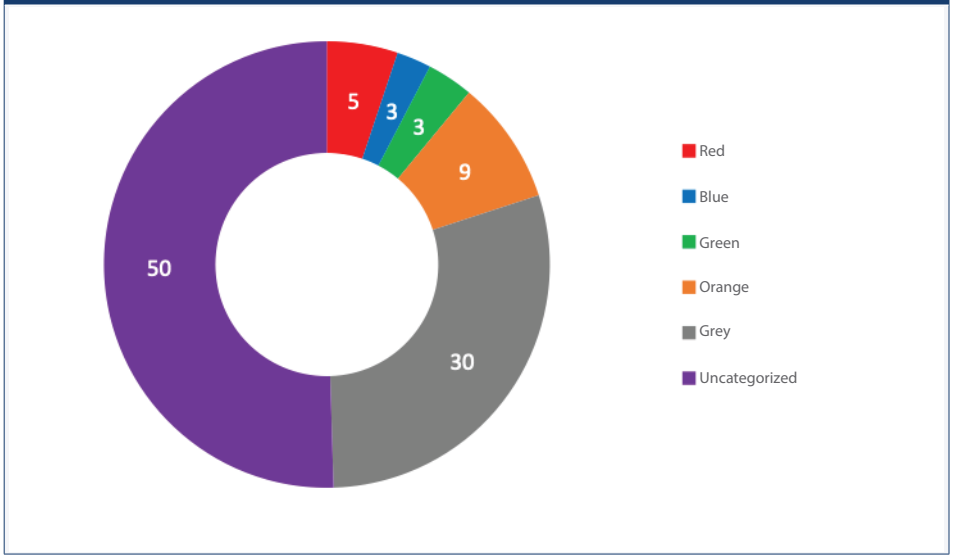
84 Adsız Günebakan, "Yurt İçinden Katılım Bulamayan Terör Örgütü PKK, Yüzünü Avrupa'ya Çevirdi" [Unable to Find Recruits, PKK Turns to Europe], Anadolu Agency, 7 May 2021.

85 Whereas UAV operations remain in the majority, other types of operations are also recorded here. The main principle was that the identity of the primary target was known in advance. In addition to the primary target, other targets, who could be identified, were recorded.

Türkiye's Interior Ministry offers cash rewards to persons helping the authorities discover the whereabouts of wanted terrorists featured in the red list (10 million TL), the blue list (3 million TL), the green list (2 million TL), the orange list (1 million TL) and the grey list (500,000 TL).

A closer look at the PKK terrorists neutralized and in which category they were featured reveals that 5 percent were in the red list, 3 percent were in the blue list, 3 percent were in the green list, 9 percent were in the orange list and 30 percent were in the grey list. The remaining 50 percent were not listed in any category. The list of wanted terrorists enables the identification and elimination of some notable terrorists with known activities. It makes it possible for the security forces to prevent acts of terrorism by adding names to color-coded lists independently of the terrorist organization's hierarchy and based on what each terrorist specifically does and the true impact of their actions.[86] By analyzing the list of wanted terrorists, one might conclude that the grey list primarily consists of operative terrorist elements. That 30 percent of all neutralized terrorists were featured in the grey list suggests that counter-terror operations mostly result in the elimination of operative terrorist elements.

GRAPH 20. NEUTRALIZED TERRORISTS BY CATEGORY (2015-SEPTEMBER 2022, %)

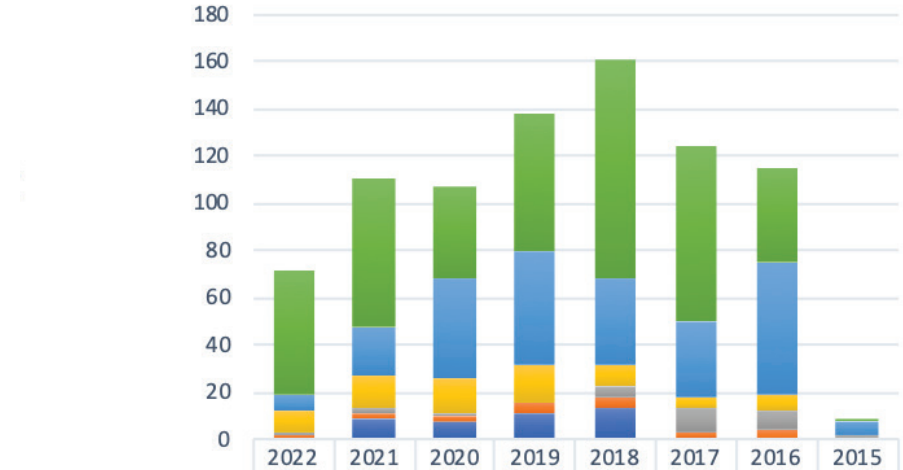


Source: Türkiye's Enemies Killed in Action

86 Pınar Demirci, Türkiye'nin Terörden Arananlar Listesi [Türkiye's List of Wanted Terrorists], (TAP, 2021).

Looking at security operations that resulted in the elimination of PKK terrorists over time, it is possible to conclude that the intensity of terrorist elements neutralized upon being identified as targets increased after 2016 and gradually decreased since 2019 after reaching a climax in 2018. That situation might be rooted in Türkiye's increased level of cross-border military activity after 2016. Furthermore, the country neutralized so-called senior PKK leaders, who embodied that organization's institutional memory and were actively involved in its decision-making processes, since 2018 as well. By 2022, there was a notable decline in the relevant numbers – which suggests that senior PKK operatives grew more cautious due to Turkish security operations, carefully avoiding any exposure and going into hiding.

GRAPH 21. NEUTRALIZED TERRORISTS BY CATEGORY (2015-SEPTEMBER 2022)

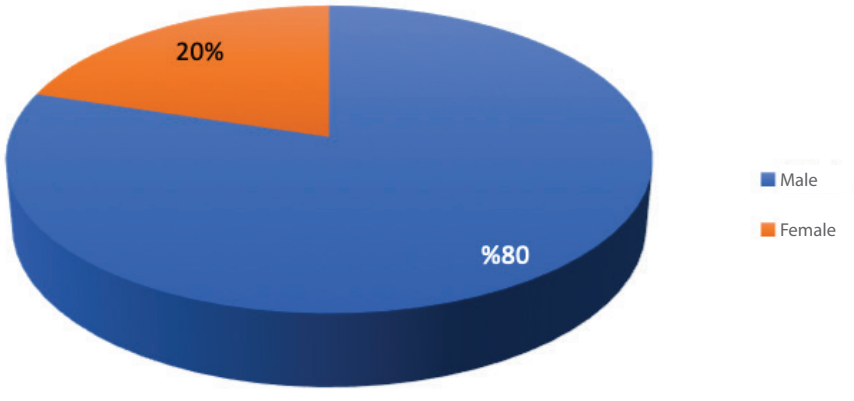


	2022	2021	2020	2019	2018	2017	2016	2015
Uncategorized	53	63	39	58	93	74	40	2
Grey	7	20	42	48	37	32	56	5
Orange	9	14	15	16	9	5	7	0
Green	1	2	1	0	4	10	8	2
Blue	1	2	2	5	5	2	4	0
Red	1	9	8	11	13	1	0	0

Source: Türkiye's Enemies Killed in Action

According to the available data, 80 percent of PKK terrorists neutralized were male. Based on that information, it is possible to conclude that female terrorists tend to assume roles, which do not necessarily involve violent confrontation with the security forces, or that the organization adopts a selective approach to recruitment and the allocation of assignments.

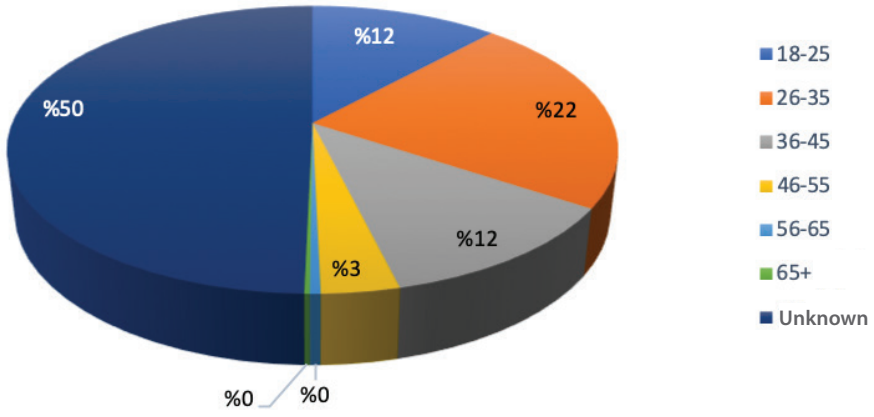
GRAPH 22. NEUTRALIZED TERRORISTS BY GENDER (2015-SEPTEMBER 2022, %)



Source: Türkiye's Enemies Killed in Action

The Turkish authorities attach special importance to eradicating the terrorist organization PKK's qualified human resource to maximize the tactical and strategic effectiveness of counter-terror operations. In this regard, the elimination of junior operatives (between the ages of 18 and 45) tends to have a tactical impact and therefore bears importance. It is possible to observe that 12 percent of all operatives neutralized in 2015-2022 were between the ages of 18 and 25, whereas terrorists between the ages of 26 and 35 constituted 23 percent. Yet another 12 percent consisted of operatives between the ages of 36 and 45. By contrast, the neutralization rates was very low for experienced operatives above the age of 45. It is possible to account for that difference with reference to selective and strategic target selection by the security forces. Nonetheless, the neutralization of experienced senior PKK members like Engin Karaaslan, Ali Haydar Kaytan and Ismail Özden, who were featured in the red list due to their ability to influence the organization's decision-making processes, had tactical as well as strategic outcomes.

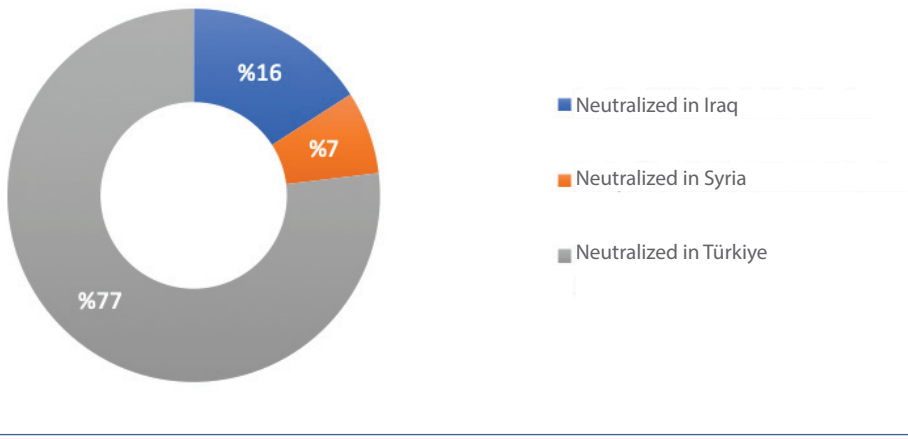
GRAPH 23. NEUTRALIZED TERRORISTS BY AGE GROUP (2015-SEPTEMBER 2022, %)



Source: Türkiye's Enemies Killed in Action

Although the Turkish security forces became more active across their country's southern border in recent years, it is possible to observe that the majority of counter-terror operations continue to take place in Türkiye. A closer look at where 836 PKK operatives were targeted and eliminated in 2015-2022 reveals that 77 percent were within Türkiye's borders, 16 percent were in north of Iraq and 7 percent were in north of Syria.

GRAPH 24. NEUTRALIZED TERRORISTS AND OPERATIONAL AREAS (2015-SEPTEMBER 2022)

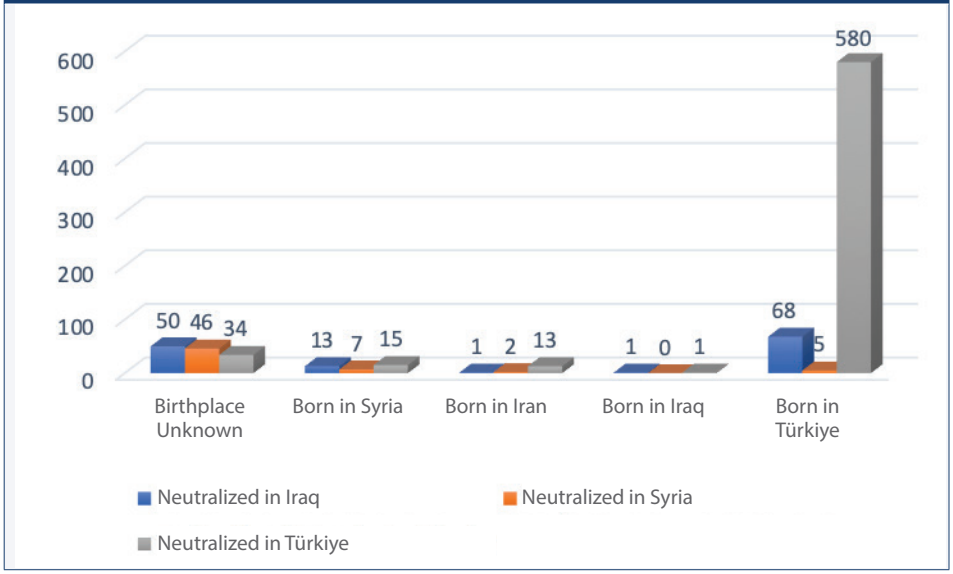


Source: Türkiye's Enemies Killed in Action

It is also possible to observe that the majority of PKK terrorists, who were born in Türkiye, were eliminated within their native country's borders. Others were neutralized in Iraq and Syria.

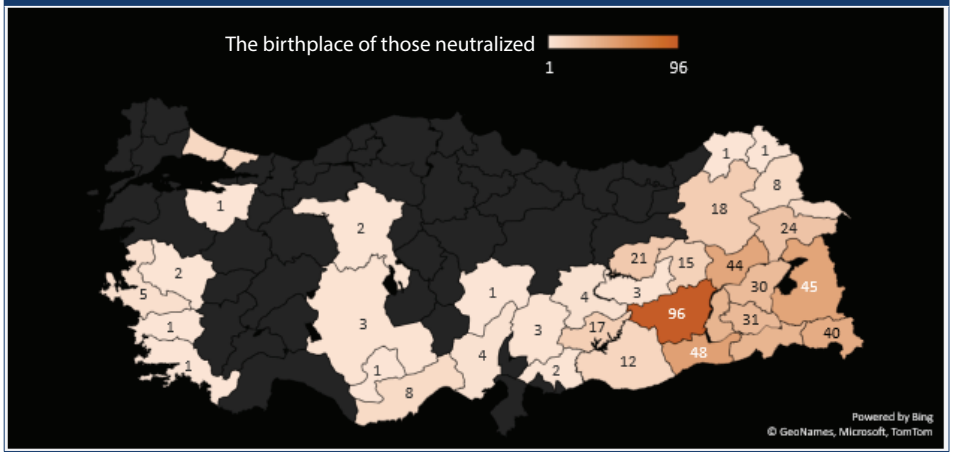
Another interesting finding is that terrorists born in Syria were mostly eliminated in Iraq and Türkiye. That information offers insights into the terrorist organization's mobilization strategy.

GRAPH 25. NEUTRALIZED TERRORISTS AND PLACES OF BIRTH/OPERATION (2015-SEPTEMBER 2022)



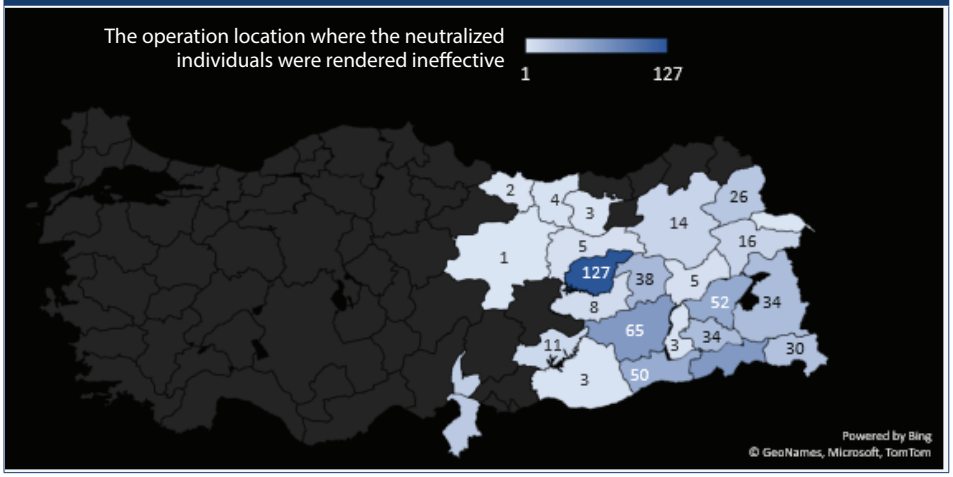
Source: Türkiye's Enemies Killed in Action

MAP 3. BIRTHPLACES OF TERRORISTS NEUTRALIZED IN TÜRKİYE (2015-SEPTEMBER 2022)



* Excluding terrorists born in Syria, Iraq and Iran
Source: Türkiye's Enemies Killed in Action

MAP 4. TERRORISTS NEUTRALIZED IN TÜRKIYE AND OPERATIONAL AREAS (2015-SEPTEMBER 2022)



Source: Türkiye's Enemies Killed in Action

Depleting Main Material Resources and Operations Capabilities

Turkish operations against PKK's financial resources, headquarters, positions and reinforcement areas, training camps and arms depots directly impact that organization's ability to carry out attacks as well as its methodology of violence. Indeed, the group was compelled to revise its tactics, avoid confrontation, seek shelter and develop counter-attack methods in response to the military superiority of UAV operations. Some of those new methods include reducing the size of armed groups to avoid detection, carrying out attacks on foggy, rainy and snowy days to take advantage of terrain and weather conditions against electro-optical systems and the use of commercially available items like aluminum folio and umbrellas to avoid detection.

According to a document that the terrorists released on 9 August 2022, the use of smartphones and all sorts of electronic devices by all operatives, including high-ranking members, as a precaution against the Turkish intelligence service's special operations and Turkish UAVs. The terrorist organization's so-called defense ministry announced that it would confiscate any cell phones that violated the aforementioned ban and fine the relevant persons 300,000 Syrian liras. At the same time, operatives were instructed to relocate from small towns to major cities to shelter themselves from airstrikes and the so-called senior leaders were asked to use traditional cell phones as opposed to smartphones.[87]

87 "Sincar'da Nokta Operasyon! PKK'nın Sözde Yöneticilerinden Bedirhan Abi Öldürüldü" [Surgical Strike in Sinjar! PKK's So-Called Senior Leader, Bedirhan Abi, Killed], *Milliyet*, 4 September 2022.

Another major impact of the above-mentioned operations was that the terrorists began to feel the need to hide constantly. Fırat Şişman, a PKK operative featured in the Turkish interior ministry's red list, acknowledged that fact before urging all terrorists to surrender.[88] That is because UAVs have the ability to monitor terrorist shelters, training grounds, headquarters and caves. Accordingly, the terrorists cannot stay anywhere for an extended period of time and are compelled to move around.[89]

Another PKK terrorist known as O.Z. surrendered to the Turkish authorities and stated in his testimony that the organization's members immediately suspended all operations upon realizing the arrival of UAVs and attempted to hide under umbrellas purchased from north of Iraq. He also recalled that such tools could not stop Turkish drones from detecting PKK operatives with their thermal cameras – which is they would attempt to stand still or run into caves to save themselves.[90]

Other terrorists, who surrendered to the Turkish authorities, also noted that UAV-supported military operations made it more difficult for PKK operatives to live in open spaces and caused them to go into hiding. According to the diaries of two female terrorists, who were reportedly captured in Bingöl by the Gendarmerie Special Forces also recount that many PKK members were eliminated in Turkish operations and the increasing frequency of military operations forced them to hide – which took a toll on morale. They wrote that they merely tried to stay alive.

Such developments fuel hopelessness and lack of morale among PKK terrorists, encouraging them to survive rather than plot future attacks.[91] At the same time, Turkish drones made it more difficult for the organization to perpetrate terror attacks – which is why it shifted its focus to the harassment of Turkish security forces with snipers, ATGM and mortars from a long range at the expense of raids, ambushes and infiltration.[92]

88 Orhan Onur Gemici, "Yaralı Olarak Yakalanan Terörist Şişman, Örgüt Mensuplarına 'Teslim Olun' Çağrısında Bulundu" [Terrorist Captured Wounded Calls on PKK Members to Surrender], Anadolu Agency, 19 June 2021.

89 "Pençe-Kartal'ın Perde Arkası TRT Haber'de" [TRT Haber Reveals Background of Operation Claw Eagle], TRT Haber, 16 June 2020.

90 Hakan Mehmet Şahin, "İHA'lar PKK'nın Hareket Alanını Sıfıra İndirdi" [Drones Reduce PKK's Maneuvering Room to Zero], Anadolu Agency, 26 June 2019.

91 Muhammed Boztepe, "Teröristlerin Umutsuzluk ve Karamsarlığı Günlüklerine Yansıdı" [Terrorists' Diaries Reflect Hopelessness and Pessimism], Anadolu Agency, 29 November 2019.

92 Ali Kemal Erdem, "SİHA ve Termal Kamera Korkusu PKK'ya Kıyafet Değiştirtti" [The Fear of Armed Drones and Thermal Cameras Force PKK to Change Clothes], Independent Türkçe, 17 August 2020.

It is possible to observe that the organization's so-called leaders, like low-ranking members, remain concerned about the threat of UAVs. In this sense, PBS News correspondent Simona Foltyn went to the Qandil mountains to interview PKK operatives yet the organization's spokesman could not leave their hideout due to Turkish drones. Accordingly, Foltyn told viewers that the constant surveillance by UAVs compelled PKK leaders to go into hiding – which is why she could not interview the PKK spokesman.[93] Moreover, it has been revealed that PKK terrorists have been using multispectral sniper camouflage (even in their training camps) to escape UAV sensors.[94] Indeed, Murat Karayılan appeared before cameras to make a statement whilst wearing such clothes – a sign that even the terrorist organization's so-called senior leaders feel the UAV threat.[95]

IMAGE 1. MURAT KARAYILAN AND PKK TERRORISTS IN CAMOUFLAGE

Source: *Milliyet*

93 "Kandil'in Büyük Korkusu ABD Basınında: PKK'lı Yöneticiler Mağaradan Kafalarını Bile Çıkaramıyor" [U.S. Media Covers Qandil's Biggest Fear: PKK Leaders Unable to Stick Their Heads Out of Their Caves], *Sabah*, 31 December 2021.

94 "Son Dakika... SİHA Korkusu PKK'ya Bunu da Yaptırdı! Görüntüler Ortaya Çıktı" [Breaking: The Fear of Armed Drones Compelled PKK to Do This! Images Revealed], *Milliyet*, 21 March 2021.

95 "Son Dakika! Terör Örgütü PKK Üyelerini Özel Kamuflaj da Kurtaramadı!" [Breaking! Even Special Camouflage Cannot Save PKK Members], CNN Türk, 3 September 2020.

THE MILITARY IMPACT OF TÜRKIYE'S UAV EMPLOYMENT

The long-term strategic versus short-term tactical achievements of unmanned aerial vehicles (just like other weapon systems and armed military platforms) remain the subject of ongoing debates. Many countries prefer UAVs due to their munition capacity, sensitivity and ease of deployment – rather than long-term strategic planning. Furthermore, experts highlight the role of drones in curbing civilian casualties following their integration into an active counter-terror operation.[96]

Accordingly, identifying the objectives of Türkiye's counter-terror operations is key to grasping the strategic impact of UAV operations. The framework of the country's counter-terror strategy influences the military and political results that the authorities expect from the deployment of UAVs. If the expected result amounts to the strategic military and political defeat of PKK and its affiliates as well as that organization's entire structure, then it would be reasonable to expect UAVs to be used within the context of counter-terror operations in the long run. It is important to recall, however, that very few terrorist organizations have either suspended or ended the use of violence due to the elimination of their so-called leaders. If Türkiye aims to suppress the enemy, dictate the course of PKK violence and drive away that organization from its sovereign territory, however, the currently available data shows that the country has already met that target by pushing imminent threats emanating from terrorists away from its borders.[97] Finally, if the Turkish government's strategic objective is to ensure the safety of the Turkish people, then it is necessary to take into account that UAV operations decreased the level of violence in certain places. However, that conclusion applies to the short term and a limited geographical area.

Assuming that drones transformed certain military norms and practices by assuming a crucial role in counter-terror operations, it would be useful to identify their military impact in three areas. Primarily, UAVs arguably bring offensive advantages and superiority to the table. Their accomplishments in air-ground missions and the toll that success has taken on the enemy showcase the relative skills, capabilities and talents of the relevant parties in military terms.[98] The active use of

96 Audrey Kurth Cronin, "The Strategic Implications of Targeted Drone Strikes for US Global Counterterrorism", Drones and the Future of Armed Conflict: Ethical, Legal, and Strategic Implications, ed. David Cortright, Rachel Fairhurst and Kristen Wall, (Chicago Scholarship Online, Chicago: 2015).

97 Sibel Düz, *Türkiye'nin PKK Terörüyle Mücadele Stratejisi: Bastırma ve Yok Etme* [Türkiye's Strategy to Combat PKK Terrorism: Pressure and Destruction], (SETA Rapor, Istanbul: 2022).

98 Antonio Calcara, Andrea Gilli, Mauro Gilli, Raffaele Marchetti and Ivan Zaccagnini, "Why Drones Have Not Revolutionized War", *International Security*, Vol:46, No:4, (2022), pp.130-171.

UAVs was not only the result of investments in the defense industry but also an outcome of military professionalization and the development of more advanced skills. It is also possible to argue that drones eliminated the physical distance on the modern battlefield and removed all obstacles before limitless power projection. Some experts posit, however, that Türkiye's deployment of UAVs might force PKK terrorists to adopt new methods (like access to air power and the use of sophisticated weapons and anti-drone systems to carry out ground-to-air attacks) to minimize the current asymmetry.

The second requirements is the need for complementary technological elements, starting with command-and-control and communication infrastructure to enable the effective utilization of UAVs. It is therefore necessary to develop some integrated systems like advanced radars, sensors, fire support assets and combat systems.[99] Accordingly, experts argue that UAVs encourage states to use advanced military technology.

Last but not least, the argument goes that the deployment of UAVs theoretically make it easier to carry out remote military operations and long-range surgical operations, decreasing the importance of capacity and capability expansion since drones might render close combat unnecessary in conventional ground operations.[100] Still, it is necessary to underscore that Türkiye makes a strategic choice regarding UAVs in place where it remains (or might become) militarily active. Since the Special Forces or intelligence officers on the ground continue to represent the main pillar of military operations in which UAVs are used as a strategic asset, there is reason to believe that close combat capacity and capabilities shall remain important.

99 Calcara, Gilli, Gilli, Marchetti and Zaccagnini, "Why Drones Have Not Revolutionized War", pp.130-171.
100 Calcara, Gilli, Gilli, Marchetti and Zaccagnini, "Why Drones Have Not Revolutionized War", pp.130-171.

CONCLUSION

As a popular form of military technology, unmanned aerial vehicles continue to be used increasingly commonly. Specifically, drones emerged as a major tactical force multiplier in counter-terror operations due to the possibility of using them in a flexible and multi-dimensional manner, their cost-effectiveness and their ability to damage terrorist organizations psychologically. Accordingly, security forces have been adopting drones as qualified tools.

At the same time, there is growing demand for UAVs as countries attempt to address their needs – which expands the global drone market. Accordingly, countries like Türkiye and Iran have entered that market, which the United States, China and Israel used to dominate. Specifically, the accomplishments of Turkish UAVs in the battlefield enabled Türkiye to become an emerging power in that market.

With regard to counter-terror operations, drones have notably complemented the Turkish military's existing capabilities. The country has been using drones actively since 2015 for intelligence, surveillance and reconnaissance (ISR) as well as target acquisition and offensive strikes. Those operations resulted in the destruction of terrorist reinforcement areas, the elimination of so-called senior leaders and the undermining of terrorists' offensive capabilities by targeting their operational elements. All in all, UAVs remain a crucial force multiplier in attempts to eliminate the terrorist organization's strategic and operational capacity. Furthermore, the ability to mount pressure on terrorists and dictate the direction of

violence helps drive terror attacks away from Türkiye. In this sense, the country aims to ensure the safety of its territory by targeting terrorism at its source and in forward positions.

Finally, assessments based on the TAP database suggest that UAVs play a supportive role, instead of representing the primary strike power, for the security forces in counter-terror operations in Türkiye, Syria and Iraq – judging by the distribution of various kinds of strikes. After all, it is possible to establish that ground operations are most common within Türkiye's borders as opposed to indirect fires (with missiles, artillery or mortar) in Syria and airstrikes in Iraq. That UAVs continue to play a complementary role in counter-terror operations suggests that the Special Forces and intelligence officers are primarily in charge of such operations as well as that close combat continues in the fight against terrorism.

SETA | REPORT

REMOTE CONTROL
AERIAL ELIMINATION OF THE PKK'S TERRORIST LEADERS AND OPERATIVES

SİBEL DÜZ, MUHAMMET İSMAİL ÜZEN

In this meticulous inquiry, we undertake an exhaustive assessment of the extant and conceivable role of Unmanned Aerial Vehicles also known as UAVs, in the efficacy of counterterrorism operations. Our scrutiny revolves around their application in military and operational spheres, while conscientiously considering the inherent advantages and plausible risks they entail. Of particular interest is Türkiye's invaluable experience in combating the notorious PKK terrorist organization, as we attribute significant importance to comprehending the operational and strategic implications of employing UAVs in this context.

Delving into the core of this study, we leverage data derived from two distinguished repositories—*the Terrorism Analysis Platform and Türkiye's Enemy Killed in Action Dataset*—to compose an authoritative report. Our focus lies on the profound examination of the intricate effects of UAV deployment in counterterrorism endeavors, particularly pertaining to the PKK's organizational structure, command hierarchy, recruitment of skilled human resources, access to essential material resources, and the dynamic tactical metamorphosis undergone by the terrorist organization. Through this rigorous analysis, we aim to shed illuminating light on the multifaceted role of UAVs and their profound impact on the protracted battle against terrorism.

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