ON THE ROAD TO A FULLY INDEPENDENT AND PROSPEROUS TÜRKİYE THE CASE OF BAYKAR

Haluk BAYRAKTAR

#MİLLİ TEKNOLOJİ HAMLESİ

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Haluk BAYRAKTAR[1]
BAYKAR

Abstract

Turkish society has sought to become a contemporary civilization for centuries, from the Ottoman Empire to the Republic days. It has been understood that, to achieve this goal, it is a prior necessity to become advanced in defense and technical fields. However, international, and domestic obstacles have made it difficult to achieve this goal. In particular, the unbudging mentality that accepted surrender within the domestic realm, stood against the breakthroughs that were trying to be achieved. Therefore, a clear and holistic change of opinion had to be put forward. The trigger for this change was Cyprus Peace Operation. In 1974, Türkiye experienced an important paradigm shift in technology development thinking. The National Technology Initiative, which has become a tangible target today, was initiated for a fully independent Türkiye and foundation companies such as Aselsan, which would operate in the field of defense, were established. It had also been understood that Türkiye's goal for full independence was possible with developing a high technology national defense industry. Eventually, the defense industry would act as a locomotive in Türkiye's development. The transition of defense expenditures from imports to Research and Developments and subsequently to the defense industry infrastructure would also support economic growth. Technological progress in the defense industry has also positively affected civilian use. Positive feedback had begun to be received, too. On the other hand, in the defense field, the export-import balance has changed in favor of exports. Unmanned aerial vehicle development studies, which started with the ideals of creating a spark effect in the early 2000s (H. Bayraktar and Bayraktar, 2004), have become a symbol for Türkiye. Armed / Unmanned Aerial Vehicles (A/UAVs) developed nationally and indigenously by Baykar achieved a significant export success. Acting as game-changing force in the operations in which they are used, these tools have led to a different perspective and transformation in combat doctrines (Nast, 2022). With the Native and Indigenous Manufacturing Model created by Baykar within the scope of National Technology Initiative, the R&D studies carried out in the field together with the security forces made it possible to develop high-tech, effective and up-to-date products in a short time period. While counterterrorism efforts came almost to an end in the domestic realm, Türkiye's struggle against terrorism on abroad had transformed into a new level. In addition, Bayraktar TB2 UAVs continue to be actively used in humanitarian missions such as in natural disasters. The development and production activities are carried out within the scope of national and indigenous development model, starting with the smallest class Bayraktar Mini Unmanned Aerial Vehicles, continuing with Bayraktar TB2 UAV, Bayraktar Akıncı Unmanned Combat Aerial Vehicle (UCAV), and further with the new generation Bayraktar TB3 UAV and Bayraktar Kızılelma Unmanned Combat Aerial System (UCAS).

Keywords

Bayraktar TB2 A/UAV, Native and Indigenous Manufacturing Model, National Technology Initiative, Fight Against Terrorism, Defense Expenditures, Defense Industry

[1] CEO of BAYKAR and Chairman of SAHA (Turkish Defense Cluster) | haluk.bayraktar[at]baykartech.com.tr

Introduction

For a country to exist and survive, it must have the power and ability to protect itself from external threats. Therefore, efforts in the field of defense have been one of the main efforts of societies aiming to lead a peaceful life from past to present. As such, defense-oriented studies have become one of the most important efforts of Turks struggle for existence throughout the history.

Over the centuries, from simple spears to composite springs and later on to firearms, the Turks have endeavored to make their own defense production. While weapons developed in certain periods had the most advanced technology of the era, especially in the last three centuries domestic production declined and there was a dependency for foreign suppliers. Being dependent to foreign sources in a strategic realm such as defense prevents one from being fully independent in foreign policy. This was especially the case in the last period of the Ottoman Empire. Although the Ottoman Empire made efforts to create a domestic and national defense industry in the nineteenth century, having missed the Industrial Revolution it could not catch a level that could compete with Western states. It was only at the beginning of the twentieth century that defense products developed in another country, as in the case of Mauser-Kırıkkale, could be produced in Türkiye (Mete, 2012, s. 130-133). However, the production of domestic and national products had not been made possible from the idea stage to the production one.

In the first years of the Republic, although entrepreneurs such as Şakir Zümre, Nuri Demirağ, Nuri Killigil, Vecihi Hürkuş made efforts to contribute to the defense industry and aviation fields, they could not achieve success. They did not get the necessary support from the society and the state governing bureaucracy, and even more because they were cut off with simple excuses. Türkiye would only later realize the cost of failing to succeed in these breakthroughs made in the first years of republic's history. Türkiye, which had to approach the US politically in a world where the Cold War was taking place, with the Marshall Aids that came after the Truman Doctrine, left the domestic defence industry in the second plan. As a result, it became externally dependent even in the simplest product. In 1964, when willing to protect the rights of the Turkish Cypriots by intervening in the island after the Bloody Christmas Events, Türkiye realized the mistake. The American President of the time, Johnson, conveyed to Prime Minister İsmet İnönü that they did not approve of an operation to be carried out with the weapons they gave themselves and for which Türkiye could pay a price. Türkiye, which decided to intervene in the island after 10 years, had once again experienced the lack of domestic and national technologies in the most painful way. The lack of nationally developed communication tools had created many communication problems during the operation. The insecurity resulting from this situation even caused the sinking of its own ship, TCG Kocatepe (Kapucu, 2020, s. 94).

The necessary lessons have started to be taken from therein. It became obvious that the defense industry can be easily thwarted when a non-national country tries to protect its own interests. It is very difficult for a country whose defense is dependent to pursue an independent foreign policy. Necessary investments have started to be made on these developments. Institutions and organizations that would develop domestic and national technologies, especially Aselsan, have started to be established. These institutions led into an important paradigm shift in domestic and national defense industry technologies. Instead of importing their aim is to develop domestic products, and instead of an

establishing assembly industry to develop products whose intellectual and industrial rights belongs to Türkiye. Regardless of how slow, there has been made progress in domestic defense industry until the 2000s. However, the co-production concept, grasped as easier one in this period compared to developing original products, became widespread. In this way, partial knowledge and technical infrastructure were gained. Since the beginning of the 2000s, a new era started with the decision to transfer defense expenditures to domestic and national production. Today, the first steps for welfare and peace of our society which has been put forward by National Technology Initiative have been taken with this vision of "nationalization". The first objective is to strengthen Türkiye's existence as a free and sovereign state. Therefore, Türkiye will better explain the principles of "justice and compassion for humanity", which are the most important values of its civilization towards the world. It will also contribute to world peace by setting an example for other countries.

Development of Bayraktar Unmanned (Combat) Aerial Vehicles

Baykar's Unmanned Aerial Vehicle (UAV) adventure begins at this point. Established in 1986, Baykar started to carry out R&D studies in defense technologies, which are important for Türkiye's ideal to become a fully independent country (S. Bayraktar and Bayraktar, 2005). Baykar's field of work is a niche area of aviation – Unmanned Aerial Vehicles. It develops domestic and national UAV systems with its own resources and original ideas in parallel with the vision of nationalization. The adventure that started with Bayraktar Mini UAV (H. Bayraktar and Bayraktar, 2006) continued with the Malazgirt Rotary Wing UAV system (Ü. Bayraktar, 2011). Baykar team, led by the company's founder Özdemir Bayraktar, has advanced its technology development activities by working proactively with the security forces within regions that hosted counterterrorism operations. The development process of the Bayraktar TB2 A/UAV platform, which the whole world admires today, has matured following these studies. Bayraktar Akıncı UCAV, which will have a strategic multiplier effect, has recently entered Turkish Armed Forces (TAF) inventory. The success of the systems developed by Baykar is recognized worldwide today. After effective use in border and cross-border operations, it has also demonstrated its power in conventional wars in Libya, Azerbaijan, and Ukraine. The advanced developed technology did not only bring military success but also an economic and industrial one. It has also been used in natural disasters such as earthquakes, floods, and forest fires. In short, the development of defense industry is essential for the freedom of the country and leads to success in other areas.

Public institutions and organizations are important in the defense industry, but private initiatives add dynamism to this area and prepare the ground for exponential growth. This dynamism leads to the emergence of a more productive and sustainable defense industry. Baykar, on the other hand, continues to work as one of the initiatives that provides such dynamism. Baykar company contributed to the establishment of Türkiye's domestic and national UAV family for the first time with Bayraktar Mini UAV. Bayraktar Mini UAV, which entered the inventory in 2007, is a simpler and smaller system compared to today's vehicles. However, it is of great importance for it is the very first unmanned aerial platform in Türkiye to enter inventory and be developed completely nationally, from scratch. Bayraktar Mini UAV was also exported to Qatar in 2012 (BaykarTech, 2022), therefore marking the first export success. Later, with the special request of the soldiers in charge of the border posts, Malazgirt, which can make rotary-wing and vertical landing and take-off,

was developed. Civilian engineers and end-user soldiers worked together in the development of Malazgirt. The platform officially entered the TAF inventory in 2008, one year after Bayraktar Mini UAV. Due to baseless software malfunction claims and reasons that were not fully explained it was left out of use by some bureaucrats of the time who had an outdated understanding of authority.

It should be noted that this is likely the signature of ill-intentioned mentality, which may be concerned that Türkiye's dependence on foreign sources will decrease through such means. Some bureaucrats, stuck with the idea of "learned helplessness" caused by this mentality and by traditional understanding of authority, often tried to prevent Baykar's technology development efforts. The adventure of Bayraktar TB2, the platform that introduced Baykar to the world, begins with the development process in 2007. In 2009, the first prototype performs a fully automatic take-off-cruise-landing flight. Same year, even though the aircraft conducted a successful flight and fulfilled all the expected requirement in front of an official delegation, the same mentality stated above, claims that the landing was not held fully automatically. Subsequently, the signing of the contract and the ordering process got delayed. The contract is signed in 2010 and the platform enters the inventory for the first time four years later in 2014 (H. Bayraktar et al., 2014). In 2015, weapon integration is provided to Bayraktar TB2. In the same year, the platform actively took part in Operation trenches carried out by the security forces. The following year, in 2016, it did so in Operation Euphrates Shield. Having made the first Bayraktar TB2 export to Qatar in 2018, as of today export agreements have been signed with 22 countries (Codur and Tunca, 2016).

The Importance of Defense Industry

It would be a wrong approach to treat the main platforms developed by the defense industry, including unmanned aerial vehicles, as a single product. While developing a main platform such as a UAV, many subcomponents have to be produced. Such a high-tech platform is made up of a wide range of products, from the simplest seal to the million-line software, to come together and work in harmony. It is difficult for a firm to develop all subcomponents by itself. For this reason, when the decision to develop a high-tech main platform is taken, the development and supply process of many products begins as well. For this reason, defense industry institutions and organizations should work in harmony and within a common plan. The institution to have developed the main platform is like a locomotive, especially in the defense industry; it carries forward initiatives operating in various fields and a large ecosystem. This would bring about a holistic development. With companies complementing each other, and with technological development, up to one hundred percent indigenousness can be achieved. Export successes follow up upon achieving that. Such is the case in Türkiye.

If we take the example of Baykar, the company works with more than 1300 suppliers, 750 of which are active ones. Bayraktar TB2, which was developed with the participation of 93% of the domestic industry, is exported with the ammunition integrated into the platform. Since the Mini Intelligent Ammunition (MAM) family developed by Roketsan gives Bayraktar TB2 the Armed UAV feature, the ammunition is also exported along with the platform. Increasing domestic production not only strengthens exports, but also reduces import figures. Türkiye will be able to establish the general import-export balance by developing products with high added value in the defense industry. This balance was

achieved to a large extent in defense expenditures; even the export side began to dominate. This situation is also reflected in the reports of international institutions and organizations.

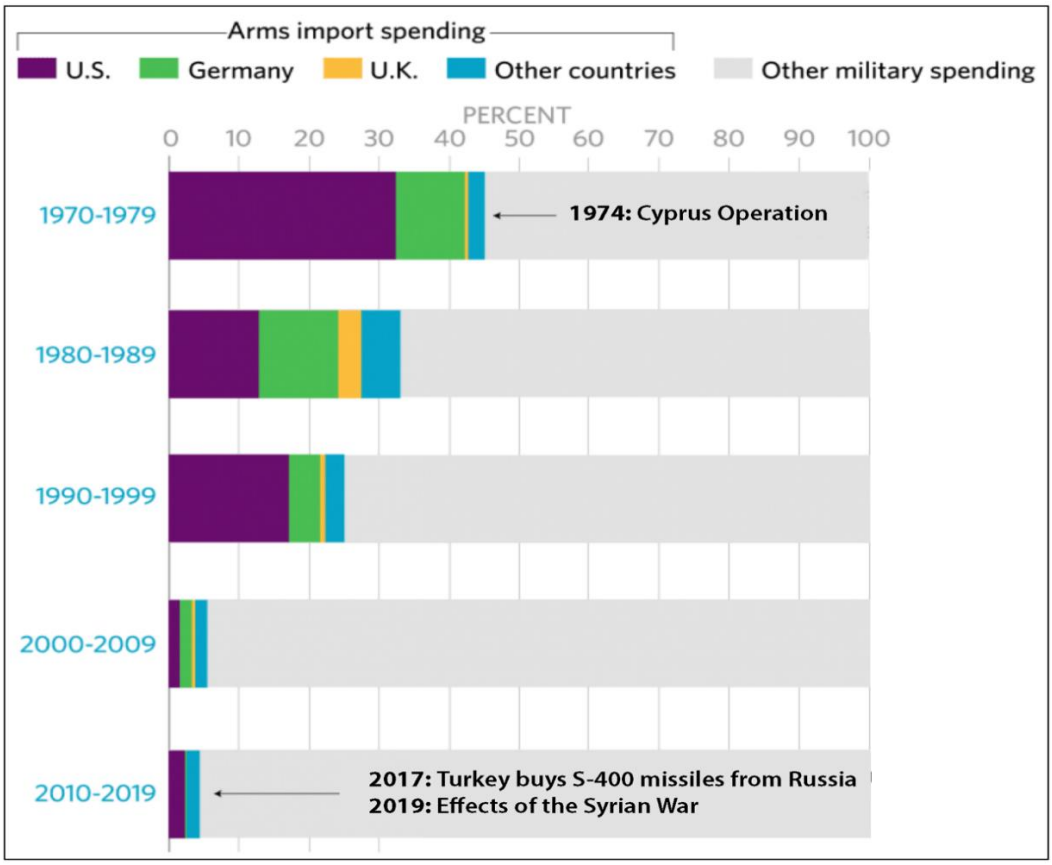


Figure 1. *Türkiye's status in defense expenditure (the US Congressional Research Center, 2020)*

As seen in the graphic above, the nature of defense industry expenditures shows that Türkiye's carried out National Technology Initiative yielded its fruits. With the transformation emerging from the Cyprus Peace Operation, the import rate in defense expenditures decreased between 1970 and 2019. Thanks to the vision of nationalization put forward in the early 2000s and the National Technology Initiative that followed along, import-based defense expenditures have declined to less than 25% in the last two decades. In addition, the defense industry in Türkiye is indeed a positive example for others. The path followed during the development and production of the main platforms with sub-components is a successful structure that could be followed by industrialists working in the civil field. Additionally, defense industry is also the sector to invest the most in R&D in Türkiye (TÜDOKSAD, 2022). It comprises more than half of the R&D investments in Türkiye.

Countries develop and progress rapidly in technological fields by spending their energy, their capital and their efforts in defense investments. This progress then spreads to other areas, and advances in security technology that helps one society gets ahead of the others.

The vast majority of devices and applications such as mobile phones, internet and GPS (Global Positioning System), which are the most basic technological tools we frequently use in today's communication and in transportation are the reflection and result of a technology developed for security in other areas. For the developments in the field of security to fully contribute to other areas of society, technological progress and production in the field of security should be under the control of the society; hence, it must be national. It is only possible for the Turkish society to come to a fully independent and prosperous position today by establishing its security with its own developed technology. Today Türkiye aims toward this goal through National Technology Initiative. For Türkiye's development and progress in every field, it is essential that it proceeds with national defense solutions in security technologies. It is also important that technological developments resulting in a country be adopted and supported by the society. Domestic and national technological initiatives that take social support behind them can move forward with more confident and stronger steps. Initiatives that can receive the support of society will also contribute to the latter's development – leading to the emergence of a power that is mutual and carrying each other forward. In case such a strong ecosystem is put into practice, the development of the society as a whole will be strengthened accelerated.

The rise of Baykar like initiatives will not only benefit the military but also have positive effects on the economy. Defense industry expenditures may increase depending on terrorist threat. Other external factors also have the potential to have an increasing effect on defense expenditures. The constant feature is that defense expenditures are included in the budget as an important item for all countries. For this reason, many studies on the effect of defense expenditures on the general economic picture have been made and a projection was attempted to be put forward. Although different opinions have been expressed, it has been largely agreed that if defense expenditures are not based on imports, it will have a positive effect on the economy. Defense expenditures, which will improve production and R&D activities in the country, will contribute to the development of social welfare. Considering the example of Türkiye, an important event such as the Cyprus Peace Operation is an external cause that affects the quality of defense expenditures positively. In the last forty years, terrorist incidents have been one of the important factors affecting the development of the defense industry in Türkiye. During the fight against terrorism, Türkiye gained great experience and succeeded in transferring this experience to the defense industry. This transfer of experience is clearly seen in Baykar developed UAVs (Topal, 2020).

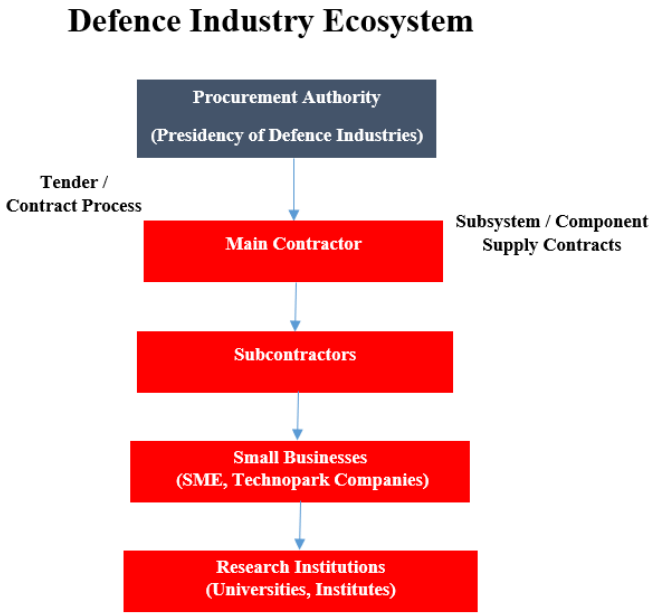


Figure 2. *Turkish defense industry ecosystem*

(SAHA Istanbul MBA Program Presentation, 2021)

The development and production of advanced technology products in the defense industry has led to an increase in the need for qualified human resources. This situation has emerged with the replacement of simple mechanical weapons and ammunition by electronic, digital, artificial intelligence and much more sophisticated systems. In order to develop new generation military products and to use them effectively in the field, it is necessary to operate in order to increase the number and quality of training activities in this field. The recent efforts to train software developers, technicians and to carry out studies for the training of skilled labor in the necessary fields in Türkiye are a result of this. Türkiye Technology Team (T3) Foundation, which was founded under the leadership of Baykar's founder Özdemir Bayraktar and its managers Haluk and Selçuk Bayraktar, and which continues its activities without accepting external donations, is a good example in this area. T3 Foundation works to train the designers, software developers and engineers of the future with both training and financial support. With its Experiment Technology Workshops, the Foundation gives young people of all ages the opportunity to implement their ideas and projects, starting from the secondary school level. Another example is the "42" software school, under the names of 42 Kocaeli and 42 Istanbul in Sarıyer. It provides training in the Informatics Valley, which is an important center for Türkiye's technology initiatives. It provides advanced training on software to those who want to improve themselves in the field of software. A new generation education model is put forward with free working environment concept in mind. The Ministry of Industry and Technology also supports the Continuing Education Centers within universities and leads the training of qualified human resources in the fields needed by the industry. On 11 January 2018, the Ministry of Industry and Technology and research universities signed a protocol to organize trainings in "Project

Management", "R&D, Technology and Innovation Management" and "Information Technology Management" (R&D and Design Centers). Qualified human resources trained here will ensure the development of the National Technology Initiative with firm steps in the future.

Native and Indigenous Manufacturing Model and Bayraktar TB2's Success

Baykar developed UAVs have been used effectively in the fight against terrorism since the first day. The high technology developed by Baykar starting with Bayraktar Mini UAV to Bayraktar AKINCI UCAV has proven itself strongly in the field. Amid factors that ensure Baykar's success are the latter's consideration of military personnel operational needs while developing national and unique A/UAV platforms and the fact that Baykar team carries out the development process in the field together with the soldiers. Baykar engineers, including the founders and administrators, have worked with soldiers for years at points where counter-terrorism operations were conducted. The shortcomings of the developed platforms were identified firsthand, and the necessary corrections were addressed quickly. Not only the deficiencies, but also the necessary improvements were made in the platforms according to the needs within the operation; therefore, new features were gained. One of the best examples is the development of the ability of A/UAVs to engage moving targets during an operation carried out by the TAF. Having conducting field R&D work with 7-8 engineers at the beginning of the process, Baykar now takes place in Türkiye's major operations for R&D and technical support with hundreds of engineers and technicians. Engaging in R&D activities with soldiers, who are the end users in the field, will make the newly developed products much more effective. In this way, the most up-to-date product can be used quickly in the field and the possibilities in Türkiye's hands would increase constantly. Therefore, Türkiye is positively differentiated from its competitors in this field. Baykar's model for nearly 20 years is defined as Native and Indigenous Manufacturing Model. If this model is taken as an example by initiatives in different fields would bring benefits both to enterprises and to Türkiye.

Baykar's successful examples so far have created very positive expectations all over the world for the newly developed Bayraktar TB3 UAV and Bayraktar KIZILELMA UCAS. The greatest success belongs to Bayraktar TB2, which has reached a flight time of more than 500 thousand hours. For the last eight years, the platform has proven its worth both as an UAV and Armed UAV led missions in every geography where Türkiye has been operating. When looking back in time, not even 15 years ago, to UAV platforms that could not be procured from abroad at full capacity, only enough to establish a fleet, the fact that today dozens of A/UAVs – Bayraktar TB2 – are always in the sky for the security of the homeland shows how much progress has been made in this field. Bayraktar TB2 A/UAV was successfully used to eliminate the threats against our country in the 2016 Euphrates Shield, 2018 Olive Branch, 2019 Peace Spring and 2020 Spring Shield operations in Syria. Especially during Operation Spring Shield, it went down in the history of world war by flying in fleets with the concept of joint operations – a concept been tried before. Thus, A/UAVs, which have been assigned as a combat support element in operational planning, have become the primary element of combat for the first time in the world.

Bayraktar TB2 A/UAV and later Bayraktar AKINCI UCAS have been actively used and continue to be used not only in Syria, but also in Turkish-led operations in Iraq, where the separatist terrorist organization inflicted heavy casualties. In addition, Bayraktar TB2s perform important tasks in the Blue Homeland struggle carried out by Türkiye in the Eastern Mediterranean. The Turkish Armed Forces is considered by the professionals that shape the world defense sector as the army using the new hybrid/hybrid combat concept, which includes UCAVs, most actively and operationally. Security personnel, who actively use high technology in the field, also provides a very important development in its duty processes and is positively differentiated from their colleagues in the world. Thanks to the unmanned aerial vehicles, which is one of the most important results of the National Technology Initiative, the backs of terrorists who aim to disturb the peace of our society have been broken.

Bayraktar TB2 did not show only in Türkiye that it is a world leader in its class. First of all, Türkiye's interests were used in Libya in accordance with the Blue Homeland Doctrine, which is indispensable for our society's future prosperity. The plans of the militia affiliated with the putschist Haftar, which attacked the legitimate government supported by Türkiye and recognized by the United Nations, failed with an operation in which Bayraktar TB2 served in. The latter made important contributions to first liberating the capital Tripoli from siege, and then retaking strategic points such as the Vatiyye Air Base under the control of the legitimate government (Öztürk, 2020). Thus, our rights in the Eastern Mediterranean were protected by ensuring that the "Agreement on the Limitation of Maritime Jurisdiction in the Mediterranean" signed between the legitimate government of Libya and Türkiye remains in force. Later in time it showed outstanding success in the liberation of Azerbaijan's lands occupied by Armenia in the nineties, which is known as the II. Karabakh War. Nearly 75% of the tanks, armored vehicles, air defense systems and rocket-cannon batteries shot down during the war were destroyed by Bayraktar TB2 Armed UAV (Stijn Mitzer, 2020). After terrorist operations, the number of countries that want to buy Bayraktar TB2 which has proven itself to the whole world in conventional warfare, is increasing day by day. Today, it has become one of the most important symbols of the independence struggle of the Ukrainian people. Even songs were written for Bayraktar TB2 UAV, and it became a cultural object for Ukrainians. Peoples of countries including Lithuania, Ukraine, Poland, Norway and Canada started Bayraktar TB2 purchase campaign to donate to Ukraine (Fundraising Campaigns for Purchase of Türkiye's Bayraktar TB2 Drone Spreading in West, 2022). Baykar donated the UAVs, which were intended to be purchased in campaigns that reached the target, to Ukraine for free and donated the collected aid to be used for the benefit of the Ukrainian people (Baykartech, 2022). As illustrated above, Baykar developed UAVs have become a tool used by nations, especially Türkiye, trying to exercise the right to self-determination. This is the most important feature that distinguishes Bayraktar TB2 from military vehicles used for imperialist purposes.

Use of Bayraktar TB2 in Humanitarian Activities

Technologies developed in the defense industry affect and lead the developments in the civilian field, be it directly and/or indirectly. In addition, a product developed for defense purposes does not only provide benefits in the military field. Bayraktar TB2 UAV was basically developed as a defense tool, but it is also used in many humanitarian activities

nowadays. The primary area for its use is cases of natural disasters. Owing to its night vision and infrared camera developed with advanced technology Bayraktar TB2 UAVs are actively involved in search and rescue operations in case of natural disasters such as earthquakes, avalanches, floods, fires and landslides. In the Elazig earthquake that took place on August 4, 2020, during which many buildings were damaged, Bayraktar TB2 started to transmit images to the disaster coordination center from earthquake affected locations only 17 minutes after its occurrence. It is very important for a UAV to transfer images to the center so quickly provided that after an earthquake communication and transportation infrastructures are damaged. To find out the situation in the settlements with broken news flow was made possible by unmanned aerial vehicles that reached the region quickly. Certainly, a UAV cannot be a direct solution to a settlement in urgent need. However, it takes an active role in determining which settlement needs urgent intervention. It prevents concentrating on an area with no urgency. It also helps to coordinate the logistics activities properly. Thus, the most accurate and beneficial intervention can be made by rapidly mobilizing the available resources.

An unmanned aerial vehicle such as Bayraktar TB2 can be used to find someone lost in difficult terrain conditions. Bayraktar TB2 can easily identify a person lost in the forest, canyon and mountain, just as it can distinguish terrorists in terrorist operations by virtue of its advanced technology cameras and sensors. As a matter of fact, security forces are actively using Bayraktar TB2 for this purpose. An example of this was experienced in Uludağ last New Year's Eve. Yusuf Sepehizade, a Danish national who came to Bursa, could not return while he was going to Uludağ for a walk and thus disappeared due to the worsening weather conditions. The Gendarmerie Search and Rescue Battalion Command (JAK) and Disaster and Emergency Management Presidency (AFAD) teams started working in the region upon lack of news from him, but as the conditions got worse, UAV support was requested. Part of Gendarmerie General Command's inventory, Bayraktar TB2 took off from Aydın and located the missing person. Thereupon, rescue teams saved the missing person without being frozen to death. This event went down in history as the first one marking UAV use for search and rescue activities in our country (Seymen, 2022).

For three years, Baykar developed UAVs have been performing important tasks for rapid response to forest fires. With the increase in the possibility of forest fires in the summer season, Bayraktar TB2 UAV is constantly airborne in the risky areas of deployment, performing the task of detecting possible fire at the onset. In the first stage of the fire, it is ensured through infrared camera that the unusual heat (hot spot) is noticed in the forest and then the teams quickly intervene in the determined location. As such, the path to extinguish the fires is cleared by controlling them before they grow. Bayraktar TB2 UAVs flew a total of 1413 hours in order to support the General Directorate of Forestry between 1 June and 4 July in 2021. 103 forest fires were initially detected and extinguished without growth between these dates (Yıldırım, 2021).

Unmanned aerial vehicles are very suitable for preventing irregular migration and detecting irregular migrants. Bayraktar TB2 is actively used in both the eastern and western borders of Türkiye for this purpose. Thanks to the rapid detection of border violations, the fight against irregular migration becomes easier. The platforms are also used to detect and rescue irregular migrants, including children, women and the elderly, who are being inhumanly

dragged to death in the Sea of Islands by the Greek Sea (maybe naval) constituents. Thanks to Bayraktar TB2 monitoring of international crimes committed by the Greeks the defense of Türkiye's justified arguments is gaining strength.

As a result, the defense industry has become one of the most important building blocks of Türkiye. It will act as a locomotive in Türkiye's development path. Economic growth will be supported by the transition of defense expenditures from imports to R&D and defense industry infrastructure. Technological progress in the defense industry will also positively affect civilian areas. At this point, positive feedback has started to be received. Export-import balance has changed in favor of exports in defence industry. Unmanned aerial vehicles have become the symbol of Türkiye in this path. Baykar's nationally and indigenously developed UAVs have achieved significant export success. Baykar's R&D model, defined as Native and Indigenous Manufacturing Model made it possible to develop effective and up-to-date products in a short time. Bayraktar A/UAVs have entered the new era in the fight against terrorism at home and abroad. While terrorism has ended at home, it has also been suppressed abroad. In addition, Bayraktar TB2s are actively used in humanitarian aid activities and in the fight against natural disasters. In short, A/UAVs developed by Baykar are always working to protect the interests of Türkiye in the Homeland, Blue Homeland and Green Homeland. While protecting its national interests with the National Technology Initiative, Türkiye's respect for the rights of other nations sets an exemplary humanitarian model in the international arena.

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About Author

Haluk BAYRAKTAR | CEO of BAYKAR and Chairman of SAHA (Turkish Defense Cluster) | halukbayraktar[at]baykartech.com.tr

Haluk Bayraktar is the CEO of Baykar, Türkiye's premiere autonomous technology company. Haluk began his tenure at Baykar in 2004 as an engineering manager when Baykar's autonomous technology efforts were still nascent. He has since been involved in every aspect of the business from engineering to project management to logistics support and business development. Haluk is also one of the founders of the Turkish Technology Team (T3) Foundation, an initiative intended to foster technology education among Turkish youth through entrepreneurship, competitions, and supplementary technology education. Additionally, Haluk was one of the founders and chairman of the board of Türkiye's Aerospace and Defense Cooperative (SAHA Istanbul), which includes over 580 companies and 16 universities. Haluk was awarded with a state medal (order of merit) of Ukraine at the Presidential Palace in Kiev by President Volodymyr Zelenskiy for his service to Ukraine and Ukraine-Türkiye relations. Haluk is a graduate of Middle East Technical University in Industrial Engineering and Columbia University in Financial Engineering. He is an avid fisher, frequently appears on Turkish television and in university conferences, but above all enjoys spending quality time with his wife and three children. Haluk Bayraktar was also awarded the Karabakh Order by the President of the Republic of Azerbaijan, İlham Aliyev, for the contribution of the indigenous Bayraktar TB2 UCAVs to the liberation of Karabakh from the occupation of Armenia.