



## Technological Innovations and Regional Security Control towards Sustainable Development in the G5 Sahel Region

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### Abstract

The Sahel region has suffered multiple security threats that have posed multiple challenges to the security of the entire region and other parts of the world. Following a buildup of security threats in the region since 2012, the US and EU have partnered to provide troops to bolster security and forestall the spread of radicalization into terrorism. This paper focuses on the role of technological innovations on security control and crime management, provides background to the study, with focus on the rise of technology on security control and crime management. The paper also discusses the history of the crisis in the Sahel, focusing on the G5 Sahel, and provides key recommendations on the use of technology as a panacea for security control and crime management in the G5 Sahel. The study was based on securitization theory and was carried out using case-study research design based on three objectives: to assess the current technological innovation infrastructure in use in the G5 Sahel region, evaluate the impact of technological innovations in crime management and security control in the G5 Sahel region and to assess the potential of emerging technological innovations in addressing crime and security management in the G5 Sahel and the broader Sub-Saharan Africa. Technological innovations are critical components of addressing cross border challenges. However, technology can also lead to insecurity challenges, where insurgents use them to perpetrate crimes, including using UAVs to strike at civilian targets. The researchers find that the use of technology has become consequential in the fight against crime and insecurity. They also find that technology has helped address emergent needs in crime and security management in the G5 Sahel. They recommend that there is need to re-imagine the G5 Sahel to increase coordination among member states. They also call for further studies on the impacts of “false flags” on social media, which could be used to negatively profile otherwise harmless civilians. They also call for greater and meaningful public participation to ensure the deployment of new technologies is supported by the public.

**Key words:** Technological innovations; Security control; Crime management; G5 Sahel region; Complex security dilemma

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## Introduction

The 21<sup>st</sup> Century has witnessed an explosion of advancements in different sectors including technological innovations. Across the world, criminal activities continue to be a major source of concern, with the COVID-19 pandemic exacerbating virtual crime such as fraud, espionage, identity theft, and phishing, among others (Scott, April 2021). Despite the rise in virtual crimes, traditional crimes such as human trafficking, terrorism and abuse among others, still remain a major concern. Crime management, defined as the attempt to deter or reduce crime and criminal elements, is not limited to reducing the offences, it is broadly concerned with the attempts to reduce and deter criminal activities. Security control on the other hand is defined as countermeasures that are employed to detect and minimize security threats. Whereas technological innovations are crucial for the management of crime and security control, it is also to be noted that it can fuel crime and insecurity. This could be as a result of the security dilemma concept. A (complex) security dilemma, as defined by (Butterfield, 1951), is considered as one of the biggest sources of conflicts in international relations. It is defined as status that sees a country X increase its defense spending in reaction to its neighbor's Y defense spending, which results in less security.

The rise in technological innovation continues to influence the understanding and dialogue around security control and crime management, a case in point is the G5 Sahel region. (Scherer, 2001) defines technological innovations as the process through which a new technology is introduced into consumption. Crime management and security control have evolved over the years across the world as societies attempt to address an age-old vice. Some of the forms of security control and crime management include community policing and intelligence-led policing among others. According to (Flanagin, 2002), the development of criminal activities owing to advancements in humanity have necessitated changes in crime management and security control. (Ratcliffe, 2008) opines that security is a diverse area which calls for innovative responses. The use of technological innovations to address crime and security is seen as a panacea to address cross-border crimes. Following the September 11, 2001 attack in the United States, the fight against insecurity was upgraded (DHS, 2011). The rise in terror attacks across the world demonstrated the need for far reaching changes in security control. Security control is now characterized as transnational crimes including by organized criminals, globalized terror



activities led by various groups such as ISIS, Boko Haram among others and domestic extremism such as in groups like white supremacists. In the modern world, surveillance has become an integral part of security control and crime management.

As globalization takes root, so do all the vices, including crime. This calls for the need to ensure the socio-political conditions of all countries are realized in an environment free of the vice of crime. Information collection, management of crime and security control are therefore core pillars of governance. (LeCates, 2018) argues that the rise in terror activities across the world led to the need for countries to enhance information gathering including but not limited to surveillance, which at times, has been challenged as unethical. Such technological innovations include body worn cameras, facial recognition, drone surveillance and artificial intelligence, all of which are being deployed to mitigate against criminal activities as well as in security control. Technological innovations can be used either to survey or detect crimes, for blocking attacks and in cases of immobilization and incapacitation of criminal elements.

Across the world, including in the G5 Sahel region, there are technologies such as radar guns and satellites used to detect over speeding vehicles as well as metal detectors that can be fitted in buildings to screen for metal objects including guns. As gun violence increases, some city authorities have invested in gunshot detection technologies to help detect when a gun fires (Travis, 1998). Other technologies include closed circuit television (CCTV). According to (Hou, et al., 2022), advances in science and technology have resulted in the positive exploitation of thermal and infrared technologies in security. These technologies have been employed to enhance adaptability of technological innovations for use in night time. Smith & Grabosky (2018) opined that with the growth of technology, various information securities related systems have been developed to respond to an ever-evolving web of telecommunications related wave of crime. The advent in technology such as artificial intelligence has also enhanced the ability to address crimes such as money laundering or to detect funds meant to support terror related activities. Worthman (1997) notes that the world has come from the situation where the Global Positioning System (GPS) was a preserve of security agencies, to now being widely accessible including on mobile phone technologies. This is playing a major role on crime management. In many airports across the world, the use of x-ray technology has become routine as countries



move to stem crime, including terrorism and drug smuggling using specially trained sniffer dogs as well as infrared spectroscopy. (Magnuson & Burnett, 2004) acknowledge that whilst using x-ray scanning, urine, hair and blood sampling to search for drugs has been seen as somewhat invasive, there is investment to use magnetic resonance imaging (MRI) and nuclear magnetic resonance (NMR) to identify drugs on drug carriers (mules) in a non-invasive manner. To address criminal elements within the banking sector, banks have developed exploding dye packs that are mixed with cash and are meant to explode if the cash is removed from the bank illegally. In the 21<sup>st</sup> century, security agencies are investing heavily on online communications tools such as Twitter to enhance crime management. For instance, the Directorate of Criminal Investigation (DCI) in Kenya uses wit and humor to communicate about crime management and security control in the country. The DCI also uses technology to gather intelligence including through toll free numbers and anonymous reports. To address more serious crimes, security agencies now rely on fingerprint scanning and DNA technology to not only nab criminal elements but also exonerate an accused person(s). In addition, iris (eye) scans are being included as a way to deter crime as well as help in tracking of persons, especially those that are under surveillance. Iris scans are also used to control access to secured buildings as well as for monitoring populations, for instance, in a refugee camp.

Technological innovations such as ballisto cardiogram (BCG) technology (Diegoli & Laudemann, 2018) is now being used to trace persons who may have been kidnapped and are stashed in vehicles, or who hide with the intent to commit crime, or those being smuggled out in case they have committed crime. For security agencies keen on stopping criminal elements, the use of short electromagnetic pulses to kill electronic components of cars comes in handy. Stun grenades or noxious aural stimuli elements to temporarily disorient can be employed to control crowds that are threatening to overrun a perimeter or turn rowdy.

### **Conceptual Literature Review**

The Group of Five for the Sahel (G5 Sahel) was founded in 2014 as a regional, intergovernmental organization. It provides an institutional framework to promote development and security within its five member countries: Burkina Faso, Chad, Mali, Mauritania and Niger. Organized crime has become one of the biggest challenges to development in the G5 Sahel

region for years. The Sahel conflict which started in 2012 in Mali by the Tuareg rebellion (AlJazeera, 2012) has been waging for years, impacting several countries in the expansive Sahel region. The conflict has morphed to include terror groups like Boko Haram and the Islamic State, which are continually working to expand their influence in the region and beyond. The conflict is deeply rooted in weak socio-economic aspects which are being exacerbated by climate change among other factors. The fight for natural resources coupled by other economic challenges bedeviling the countries in the G5 Sahel region have fueled the spread of jihadist groups by taking advantage of the faults to continually wage war. Weak institutional capacities in the Sahel region have also played a key part in fueling the conflict. This has allowed terror groups to take root (ENACT & ISS, 2019). In Nigeria for instance, the challenge of crime and insecurity has fueled the spread of the use of codeine and tramadol cough syrups whose proceeds have fueled corruption and the funding of terrorism (BBC, 2018).

The Sahel region suffers from a multiplicity of issues including a fast-growing population, instability, poverty, corruption, climate change and unresolved internal tensions that continue to simmer. According to the (USAID, 2020), smuggling and trafficking of migrant persons across the Sahara, illegal arms dealing, and drug smuggling are some of the most profitable crimes in the Sahel region. Since 2012, over 20,000 people have lost their lives in the G5 Sahel countries namely Burkina Faso, Mali, Niger, Chad and Mauritania. In addition, over a million people have been displaced in over 2,000 attacks, some of which have been very deadly (Savoye, Costard, Pravettoni, Fattori, & Laborde, 2020). According to the (UNODC, 2006), while it is not easy to quantify the cost of profits generated from illegal activities in the G5 Sahel region, it is estimated to be well over US\$ 300 million per year. Additionally, the United Nations Office on Drugs and Crime (UNODC) acknowledges that if intra-regional migration in the greater Sahel region is factored in, the cost could be considerably higher. By 2009, UNODC had estimated that illicit trade of drugs and illegal arms was costing around US\$ 3.9 billion per year. To address methamphetamine production and the smuggling of other hard drugs such as heroin and cocaine as well as medications that are abused such as Tramadol and Codeine, UNODC in collaboration with the Economic Commission for West African States (ECOWAS) released a Transnational Organized Crime Threat Assessment (TOCTA)(UNODC, 2013). The threats of these illegal activities have become a major destabilizing factor on governance for the entire region. The



funds raised from these activities have been used to fuel corruption as well as funding of terror activities, which is further worsening the situation in the region. Other crimes committed in the G5 Sahel include sex trafficking and use of children as soldiers especially in terror groups such as Boko Haram and Islamic State. According to (Hansrod, 2018), while Djibouti is far from the center of action in Mali, it has become a key player of arms smuggling as it serves as the gateway for weapon smuggling to the expansive Sahel region. Despite numerous interventions, the G5 Sahel region continues to be a major challenge as humanitarian issues coupled with insecurity provide fertile ground for criminal elements to thrive.

To address organized crime, especially one that transcends national boundaries, security agencies are guided by the UN Convention against Transnational Crime (UNTOC) of 2000 and related Protocols, the UN Convention against Corruption (UNCAC) of 2004 and other protocols. (Lacher, 2012) notes that by 2009, the smuggling of cigarettes, which has been thriving since the 1980s, from Mauritania to Morocco and the Algerian markets as well as through Cotonou in Benin and Lomé in Togo to the Libyan markets accounted for an estimated US\$240 million in the Libyan retail market and US\$228 million in the Algerian market. Another major crime that has taken root in the expansive Sahel (including the G5 Sahel) region is kidnapping of foreigners for ransom. In 2003, 32 European tourists were kidnapped in southern Algeria. Later, seventeen of these were released within the Algerian territory (DW, 2003) while the remaining captives were set free six months later in northern Mali. The attack, which had been carried out by the Salafist Group for Preaching and Combat, which later morphed into al-Qaeda in Islamic Maghreb, was seen as the first major move in organized kidnappings targeting foreigners. The attack was followed by a lull in kidnappings until December 2007 when four French tourists were killed in Southern Mauritania by the al-Qaeda in the Islamic Maghreb group (AQIM)(Prieur, 2011). This opened an avalanche of attacks such that by 2012, 42 foreign nationals had been attacked, with 24 released, thirteen still in hostage (2012) and five killed while being taken hostage. It is estimated that the release of the captives was through negotiated payments of ransom as well as the release of AQIM's soldiers. While there are no official records of the ransoms paid per hostage, anecdotal evidence indicates that governments paid between US\$1.5 and US\$4 million per hostage. Another major challenge has been noted as the collusion between certain Malian leadership and AQIM leaders (Gaye, 2018). Whilst the





challenge of the G5 Sahel is broad, it is estimated that the Mali crisis is at the centre of the G5 Sahel conundrum.

### **Role of Technological Innovations in Security Control and Crime Management**

Information sharing has become a key pillar of security control and crime management in the G5 Sahel region. In response to the crisis in Mali and its destabilizing effects across the region, the United Nations, ECOWAS and the African Union have put concerted efforts to ensure better information management to address this crisis. A key solution to the crisis is the reinforcement of coordination of cross-border surveillance and the strengthening of national actions to address the crisis. The African Union, in a bid to address the crisis, launched the AU Strategy for the Sahel (African Union, 2014) and the Nouakchott Process (African Union, 2014). Both sought to address the glaring gaps in cooperation and coordination among stakeholders. In addition, the African Union appointed a Special Envoy for the Sahel (African Union, 2022). However, success has been limited and shortcoming. The upheaval in the G5 Sahel seems to have morphed into a very complicated security dilemma that cuts across regions and that requires multiple actors to address the root and underlying causes.

With the last ministerial meeting taking place in 2015, the Nouakchott Process has largely faded. Attempts by the AU to address the climate and environmental crisis, which have been key drivers of the conflict, faded as more drivers brought in more ambitions. Within ECOWAS, there have been attempts to address the G5 Sahel crisis. During the Mali crisis, ECOWAS (Charbonneau, 2012) sought permission from the UN Security Council to send a mission to support the Mali government. Logistical challenges led to the collapse of the mission in northern Mali and the latter was folded under the UN Multidimensional Integrated Stabilization Mission in Mali (MINUSMA). According to (Grebe, 2018), a major downside of the mission was when ECOWAS underestimated the ability and size of the terror groups operating in Mali. The multifaceted challenges in the G5 Sahel require collective responses to address the complex web of issues. The G5 Sahel Joint Force, boasting of 5,000 contingent personnel from the five member countries is one of the other initiatives established to address the crisis. With calls to fully operationalize the joint force (United Nations, 2019), joint force finalized the issue of force mobility following the Ouagadougou summit. One of the key agreements includes the right to



foreign pursuit where the forces are allowed to pursue criminal elements up to 100 kilometers inside other territories (Çonkar, 2020). As noted (Çonkar, 2020), with the armed groups advancing beyond the purview of the G5 Sahel Joint Force, including in Togo, insecurity has continues to be a major issue. MINUSMA, established in 2013, and which requires annual renewal of its mandate by the UN Security Council, faces enormous challenges, with growing criticism that it is more concerned with its own security than that of civilians in the face of growing terrorist threats in northern Mali. With a budget of more than US\$1 billion, MINUSMA expends almost 80% of the budget on troop and infrastructure protection. Backing the efforts of the MINUSMA is the European Union's missions and operations.

According to (Davitti & Ursu, 2018), there was a push for the enhancing of security and development nexus in 2015 following an influx of migrants to the European Union. With growing concerns on illegal migration to the EU, Heads of States from Sahel, Lake Chad basin and the Horn of Africa convened in Malta to launch the Emergency Trust Fund for Africa (Macdonald, 2015) which sought to address the underlying root causes of illegal migration. Whilst these efforts have borne mixed results, the introduction of drone technology has instituted a new perspective on the fight against crime in the region. In December 2019, following trial runs in Niamey, Niger, where drones are used for surveillance, intelligence gathering and reconnaissance efforts by French troops in northern Mali, reports emerged that the troops had used the MQ-9 reaper drones to kill 40 terrorists in a weekend-long operation in central Mali (Brownsword, 2020). In addition to drones, the Sahel region has also witnessed the use of unmanned aerial vehicles such as the IAI Heron that is capable of medium altitude long endurance (MALE) operations. The IAI Heron is capable of providing advanced imaging on real-time basis and is also packed with laser guided missiles. Satellite imagery has also become a tool for security control and crime management in the G5 Sahel. (Welsh, 2020) notes that data from the Sentinel-2 has been very useful in not only mapping crop production in the expansive Sahel region, it has also been used to map the movement of armed groups, which have prevented farming efforts.

(Bloom & Clark, 2016) note that the development of cellular technology as a means to track the movement of persons of interest has become a new tool for surveillance. The use of cell site





location information (CSLI) is increasingly being deployed to track a person who is suspected of planning an attack, thus forestalling such attacks or in worst case scenarios, minimizing the damage. The use of the internet as a source of information gathering in counterterrorism, security control and crime management has also become an area of study by scholars. (Khader, Neo, Ong, Mingyi, & Chin, 2016) opine that while the internet is a treasure trove of information on crime management and security control, one area that remains understudied is the role of the internet on one's behavior, and how this can influence criminal activities. While individuals are likely to suffer from the "online disinhibition effect" where they become less inhibited and are likely to disclose sensitive information or at worst, engage in vices such as spreading of racist attacks or engaging in the promotion of terror activities online, often behind a pseudo names. (Suler, 2004) notes that anonymity often lends individuals to imagine they are invincible thus by committing such acts, are able to reveal their identities to security management officials who can trace and stop preplanned attacks. The dichotomy of technology in both civilian and military use has morphed into dual use where terror groups can use technological innovations to strike back at military targets. Improvised explosive devices are now a common threat facing military targets. (Houdaigui, 2021) opines that technology is helping to compensate for perceived weakness where military assets can strike at terror groups without having to be physically present on the ground. Indeed, this has been used by the US and French forces operating out of Niamey where they have struck at terrorists in Central Mali using drones equipped with hellfire missiles.

### **Theoretical Framework**

The securitization theory was first proposed by Wæver in 1995 before it was further expounded by the then Copenhagen Peace Research Institute (COPRI) that would later become the Copenhagen School. (Buzan, Wæver, & Wilde, 1998), in their work, gave impetus to the theory



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of securitization. (Williams, 2003), argues that securitization theory has become one of the most consequential approaches to the study of security matters post the Cold-War. This position is complemented by (Eroukhmanoff, 2018) who notes that an issue is not dangerous unless it is designated as so by actors (herein called securitization). Speech acts are key in the designation of an issue as a matter of concern. For instance, when an issue is designated as a matter of existential threat to the security of a country, it is therefore expected that agents of security will move to address the issue immediately. When the Mali crisis was viewed from the prism of a threat to France and the Western World, (Francis, 2013) notes that French President Hollande underscored the need to address the crisis, highlighting that France had no choice but to intervene to prevent the emergence of a terrorist network that would have major security threats to the Western world, including France. This intervention sparked what would become years of response to the crisis.

The proponents of the securitization theory contend that the notion of security is associated with a threat. The threat, as argued by the proponents, needs to challenge values that are cherished in society so as to be perceived as problematic and thus need to be addressed. In the case of the G5 Sahel, when the kidnappings and ransoms, as well as killings started, these were perceived as a threat to the democracy of nations and thus a threat to the stability of independent states. This necessitated the securitization of the threat hence the actions thereafter. According to (Gallie, 1956), the concept of security is “contested” hence subjective. This means there lacks a universally agreed definition of the term security. The definition therefore means security is understood by the one who defines it. In the case of the G5 Sahel, the use of technologies to address crime and security has often been seen to be benefiting the sending states and not the G5 Sahel members who continue to suffer the brunt of the attacks. According to the securitization theory, security is also a political term. This means that whilst states, the principal actors in state security, are equipped with all actors on security, have the will to address the challenge, and thus the problems are often political. It is thus noted that when a security problem threatens to cause maximum damage, it explains the use of extraordinary force to address the challenge. The securitization theory is pegged on the paradigm of human security. This paradigm focuses on security control and crime management, addressing the freedoms of both fear (of insecurity, terrorism, crime, poverty) and want. The paradigm concurs that for human security to be



achieved, there is need for all processes to be people centered, multi-sectoral, context specific and prevention oriented. The application of the securitization theory in this study is relevant. These researchers argue that the securitization theory has helped to define the bounds of security threats in the G5 Sahel. As noted by (Moderan, Bako, & Handy, 2021), military operations on counterterrorism have resulted in massive casualties on civilians, further advancing the insecurity agenda. The securitization of insecurity can also shape how relevant actors develop policy responses to address the challenges in the G5 Sahel. Additionally, it influences the allocation of relevant resources including human and financial resources. International cooperation can be enhanced when an issue is securitized, as it transcends boundaries.

### **Methodology**

This research paper seeks to answer the question of the role of technological innovations on security control and crime management in the G5 Sahel Region in Africa, and to propose areas for improvements. The researcher has chosen the desktop review (qualitative methodology) as it raises less ethical considerations while providing for the opportunity to maintain neutrality, objectivity and credibility of the data sets. To ensure the credibility of the data and forestall misrepresentation of facts, the researcher carefully triangulated all data sets to derive conclusions that could be translated.

### **Discussion**

The study notes that one of the major challenges of these technological innovations is the risk of misuse. While the use of technologies such as surveillance has proven critical to address crime and security control, it has also been used to pry on people's privacy, violating fundamental rights. Indeed, after the massive release of documents in 2014 by Snowden, there were calls from within the Committee on Human Rights of the UN for the body to designate certain electronic surveillance and intelligence gathering methods in the United States as violating fundamental rights to privacy among other civil and political rights (Human Rights Watch, 2014). The shocking details revealed at the Committee of Human Rights of the UN showed that the United States conducted massive communications surveillance in and outside of the country in clear disregard for privacy rights. The researchers find that there is need to ensure the technical integrity is ensured for accountability purposes. The use of unnamed aerial vehicles (UAVs) is



seen as a likely destabilizing factor in several African states. This is due to the use of UAVs being seen as furthering the national interests of the sending states, including on surveillance of other issues that are not security related, and which could lead to further destabilization of states. The researchers find that technology transfer is often not part of the deal(s) signed by countries and thus the deployment of these UAVs can also be a violation of the territorial sovereignty and integrity of states. The use of UAVs has also led to questions of accountability and transparency on the part of the foreign troops. While hundreds of unarmed civilians have been killed in covert drone strikes across the world, there have been questions of accountability (Office of the High Commissioner, 2014), and in most cases, accusations and counter accusations have been traded that these civilians were hiding terrorists.

The researchers find that despite technology aiding in the collection of information about perceived and real threats, there remains gaps in the prioritization of information for decision making. In the G5 Sahel, part of the challenge hampering efforts to address the crisis includes the infiltration of criminal elements within the society thus compounding efforts to address the challenges. Technological innovations can also be used to aid insecurity and crime. For instance, technology has aided in secure end-to-end communication for terrorists who use platforms such as Telegram and WhatsApp, which allow for the deletion of information upon complete information transfer. The dark web, which allows for untraceable and encrypted communication has become a tool for communication among criminal elements that thrive in the use of the untraceable assets. Terrorists using the dark web can therefore transfer money, purchase weapons and other tools with impunity, all to the detriment of security efforts.

While technology poses challenges, it has also opened new avenues to address these challenges. The use of retinal scanning and DNA technology are key assets that can be deployed in the fight against crime and in security control. It is important to recognize that while theoretical arguments have been posited as to how a person becomes radicalized and turns to terrorism, as(Sageman, 2004)opines, there is still no clear understanding of what leads a person to turn to political violence, thus, while technology in itself plays a role in the screening of who is likely to be committing a crime thus contributing to crime management and security control, it does not help one to understand who turns to terrorism and why they do so. These researchers argue that

while the securitization of technologies in the G5 Sahel may help ameliorate the challenges, it could also result in the worsening of the state of human rights for millions of people, who, in no fault of their own, have their right to privacy violated as security agencies, in a bid to screen and collect data for security control and crime management end up collecting data on unarmed civilians.

While the Agadez centre has been operational thus helping in streamlining issues of migration (IOM, 2016), migration is simply a very complex matter that requires multi-sectoral and multi-layered approach. With technology now enabling smugglers to operate with impunity, addressing the smuggling crisis simply as a security matter without addressing outlier factors will likely push the trade deeper underground whilst making it more challenging to crack down on the vice.

### **Conclusion and Recommendations**

The development of technologies should be done in such a manner as to ensure and guarantee, to the greatest extent possible, the reduction of risks associated with the use of such technologies. In addition, great care must be put to ensure that when such technologies fall into the wrong hand such as terrorists, their use cannot inflict any damage.

These researchers reckon that there is need for wider consultations on the part of security agencies before the deployment of new technologies. According to (Braithwaite & Pettit, 1990), technologies that can curtail an individual's rights must be deployed to the extent that it does not interfere with individual rights, and that it helps advance those rights.

There is need to re-imagine the G5 Sahel, which has faced many drawbacks and challenges since its establishment. A re-imagination of the G5 Sahel can help increase coordination among member states and other interested parties in a bid to address the security challenges of the expansive region. A re-imagination can also result in better coordination of development initiatives in and across the region, addressing one of the root causes of the conflict.

The integration of technological innovations such as satellite imaging can help monitor advancement of terror groups and establishment of terror camps in the expansive desert. Technology could help address major issues such as illicit trade of goods. This could be done at the ports of entry, ensuring that illicit goods, including smuggled weapons are seized.



Technology could also be employed to enhance intelligence gathering which helps to monitor and forestall attacks by armed groups.

Cyber-security services could be employed to address online radicalization and the spread of terrorist propaganda as well as the tracking of terror financing over the dark channels. These authors argue that there is need to conduct further studies on the impacts of “false flags” raised when individuals portent to commit crimes online, and yet in real sense, are sharing, out of sheer frustration, their challenges with a desire for their actions to gain meaning. The use of technology resources to address online criminal activities should be done in a manner that is prudent to ensure targeted interventions. Screening online activities could also result in enhanced threat assessments, which is necessary to forestall future attacks.

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