MANAGING INTERNATIONAL BORDERS

Balancing Security with the Licit Flow of People and Goods

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National borders represent the geographic boundaries of a nation and define the territory where governments exercise legal jurisdiction over the structures, actions, and people that reside within the boundaries. The term *border* is often associated with a boundary established to control and, in some cases, to prevent the flow of people, goods, and services into a country. Hence, borders are frequently associated with establishing a security perimeter for controlling entry into the territory of a sovereign nation.

This Perspective takes a more expansive view of borders, introducing the concept of *border management*, which creates a balance between security and the licit flow of people and goods. This concept rests on the understanding that a tension exists between the need to prevent undesirable people and goods from crossing borders and the economic vitality that a country gains through trade and travel. Building on the concept of border management, this Perspective proposes opportunities to strengthen security while simultaneously improving the flow of licit travelers and goods through national policies, programs, regulations, and activities.

This Perspective does not attempt to be prescriptive or pertain to any specific border but rather highlights considerations that are relevant in exploring border management and the activities that occur in border regions. The balance between security and the licit flow of people and goods will undoubtedly vary depending on the perceived risks, threats, and vulnerabilities in the border area.

While increases in information, communication, and transportation have resulted in growing interconnectedness, a complementary increase in border activities—think trade and travel—has ensued. Over time, definitions of borders have expanded to include land border crossings, seaports, and airports, as well as the territory that connects these entities, such as a country's land borders, coastline, and airspace.

Three principles should serve to guide efforts to develop the delicate balance inherent in border management. First,

incorporating security and the licit flow of people and commerce should be considered for any border management system. Designing and building border management into systems is more effective and efficient when it is fully incorporated into border activities. Second, an integrated, layered approach to border management should be developed. No single physical structure or operational concept will be sufficient; rather, a comprehensive, integrated system; planning; appropriate equipment; and training and exercises are essential to border management. Finally, a national border management system requires establishing unity of effort across all relevant governmental and nongovernmental stakeholders with responsibilities or interests in what occurs at national borders.

While each border is unique and solutions cannot be applied in a rote manner from one country to the next, commonalities exist that provide insights and lessons learned that can be factored into a nation's border management approach. Command, control, and communications that allow for interactions and coordination among various interagency organizations and from the national to the local level are imperative to border solutions. While technology and equipment can be important additions to any border management system, they are only effective if properly incorporated into planned operational efforts, if life-cycle support and costs are provided (either through national resources or partner-nation support), and if cultural sensitivities are considered in their use. Experience also indicates that, in general, border communities must receive due consideration in the development of border management systems and are highly sensitive to changes to policies and regulations at border crossings and ports. These communities can form important economic,

political, and social relationships that must be factored into any border management system.

Building 21st-century border management requires the development of specific capabilities. Table 1 lists specific capabilities identified in this Perspective as essential to this process.

The origin of this Perspective was a study sponsored by the U.S. Department of State (DoS) to support a partner nation's efforts to strengthen its border management posture. The research identified opportunities for developing policies, systems, and programs that could enable the partner country to address a range of threats at its borders—land, maritime, and air ports of entry—while facilitating the legitimate flow of people and goods that routinely cross borders and contribute to economic vitality.

The final report on border management contains sensitive security information not suitable for public release. However, many of the fundamentals for effective border management that our work drew on are releasable and are contained within this Perspective.

Generalizing across all international borders is difficult to do because every country is in some sense unique. Stark contrasts certainly exist between the international borders of countries within the European Union, which have few delineations as one transits across national boundaries, and the highly militarized borders that exist today on the Korean Peninsula.

However, there are enough commonalities among countries to offer some fundamentals that can be incorporated into structures, organizations, and activities at borders. These commonalities serve as the departure point for this Perspective and for developing a modern border management system. We begin by providing foundations,

TABLE 1

Essential Capabilities of Border Management Capabilities

Capabilities

Building strategic foundations

- A national strategy for border management should be developed.

- Metrics for assessing border management are essential for measuring performance.

- System architectures should be developed for key functional areas, including national decisionmaking, intelligence, communications, and information.

Building operational excellence

- A national exercise program for border forces and organizations should be developed.

- Border management systems should be stress-tested to ensure that their capacity meets national requirements.

- Conducting joint operations should become the norm.

- Investigative procedures should be enhanced.

- On-site local training should be employed whenever possible.

Developing community cooperation

- Community engagement programs should be developed and supported.

- A trusted traveler program should be developed.

- Prosecutions for border infractions will serve to deter others and develop new norms for activities at borders.

a philosophical way to think about borders, and principles for border management. Lessons learned from other border management development initiatives provide insights into what has worked in the past and potential pitfalls to avoid. Finally, this Perspective provides concepts for building a comprehensive national border system that balances the need for security with the need for the movement of goods and people across borders. Such a balance is imperative for the security and economic vitality of a nation and is what is expected from a professional 21st-century border management system.

Foundations for Developing a Border Management Capability

Borders represent the physical manifestation of a nation's sovereignty. Nations are responsible for managing their internal affairs, which implies that they exercise control over flows of licit and illicit people and goods into and out of their countries.

Border management is the term used to describe the control exercised at a nation's borders and includes *border security*—preventing unauthorized crossings—and the

facilitative side of *border operations*, which seeks to support rapid transit with minimal interference for authorized people and goods. In the exercise of these authorities, the challenge is to expeditiously and accurately determine which category a potential border crosser is part of and to have the resources necessary to deal with either.

Developing a border management concept begins with defining national interests. Do nations in the region present a threat and therefore security becomes the priority? Or is the goal to encourage economic growth and vitality through trade across borders? The choice is not binary: A country can both seek security and facilitate the legitimate flow of people and goods. Furthermore, changes to the threat posture can alter a nation's priorities over time and can be adjusted to respond to changes in the perceived threats.

Several defining characteristics combine to make borders unique areas. First, borders are defined by physical

> Border communities may not differ much from one country to another and may have more in common with each other than with the nations to which they belong.

structures or demarcations. In some cases, such terrain features as rivers or mountains serve as natural boundaries, while in other cases, boundaries have been created by road networks, fences, walls, checkpoints, and ports (see Figure 1). The physical structures are supported by national and local law enforcement. Based on state prerogatives, military or paramilitary forces can be employed to patrol and enforce national sovereignty.

In most situations, border communities are vibrant areas where a mix of people live and work and flows of trade in goods and services transit on a regular basis. Many border communities share common languages, tribal affiliations, and family ties. They may not differ much from one country to another and may have more in common with each other than with the nations to which they belong.

In many cases, these communities have their own cultures, reflecting the melding of subcommunities on either side of the internationally recognized border. They are also highly sensitive to changes caused by variations in law enforcement, security postures, and customs requirements. In other words, attempts to close borders could be met with angry protests.

These communities are generally quite reliant on the commerce that flows across international boundaries and the informal networks that have developed as a result. Small changes in procedures can have a big effect on the daily lives of citizens, who have developed their own "rules" that may not reflect the letter of national laws. Even in cases where borders have been militarized and relations between communities do not permit regular interaction, commerce can flow to the benefit of both communities and nations. For example, at the border between Israel and

FIGURE 1
Melilla Fence on the Spanish-Moroccan Border

SOURCE: Photo by Acad Ronin via Wikimedia Commons (CC BY-SA 3.0).

Gaza, procedures have been established for the regular flow of goods.

Furthermore, these populations also have the potential to be valuable assets to security, defense, and intelligence officials. Local citizens have a vested interest in maintaining safe and secure communities, and cooperating with officials contributes to this outcome.

Border areas are unique and each area has nuances that must be understood and accounted for in developing a border management strategy and accompanying plan. Such nuances include the relationship between cross-border communities. Smuggling routes and procedures used in the trafficking of illicit goods must be factored into any border management strategy. A one-size-fits-all

strategy will likely not be successful. Rather, approaches that account for the communities and regions must be factored into any border management planning.

While security observers at borders tend to focus on the trade of weapons and drugs through border towns, a host of basic and practical goods are trafficked alongside them. Cooking oil, gas, drugs, food, clothes, shoes, and other goods are moved across borders where they are less expensive, thus creating an economic incentive for smuggling (or an informal trade system).

However, this smuggling must be seen within a broader context. Such activity constitutes the most significant portion of the economy in some border cities, where complex smuggling ecosystems extend through and across social, familial, and national boundaries. Broadly speaking, informal cross-border trade often can help reduce poverty and improve food security.

Simple attempts to enforce border controls and monitor borders more aggressively will not be effective in addressing informal trade, which is driven by distortions arising from subsidies and disparate tax regimes.[1] Not only would attempts to crush these economies be met with protest and resistance in dependent border communities, they would also indirectly affect many other citizens by driving up costs.[2] Some reports have also suggested that the decline in employment prospects in North African nations arising from border closures has contributed to migrant flows to Europe, as young men unable to earn incomes from smuggling seek better opportunities elsewhere.[3]

In comparing the relative strength of the authorities versus the local networks, one report indicates that both power and the perception of legitimate authority is held by the locals in control of the smuggling networks and the

goods that traverse them, not by the state authorities. The report observed: "People living in border zones—subaltern subjects like cross-border migrants and petty traders but also state officials and members of security agencies—engender their own conventions and regulations that exist parallel, conjointly and in opposition to state claims on space."[4]

Obviously, this varies between borders, with highly militarized borders having greater central authority and more-open borders relying more on local enforcement. For example, at the extreme, the border between North and South Korea is separated by a demilitarized zone (DMZ) and any crossings are tightly controlled. However, even in this case, workers from North Korea are permitted to provide labor at the Kaesong Industrial Complex just north of the DMZ, where some South Korean companies manufacture their products. The goods are shipped to South Korea for sale.[5] In contrast, the porosity of the national borders in West Africa (Guinea, Liberia, and Sierra Leone) was on

National and local authorities routinely work side-by-side at border crossings to collaborate and share information in the performance of their duties.

display during the Ebola crisis from 2014 to 2016. The lack of border controls complicated efforts to halt the spread of the virus.

Finally, borders are places where a wide variety of government officials at all levels operate. In fact, one can think of borders as a microcosm of the government at all levels. Between nations, coordination on border issues is normally conducted by the respective ministries of foreign affairs. National and local authorities routinely work side-by-side at border crossings to collaborate and share information in the performance of their duties.

A broad cross-section of the government is also normally represented at borders. To enforce border policies, national authorities from law enforcement, customs, health and agriculture departments, the judicial system, and immigration routinely operate to provide security and facilitate border crossings. Other government elements can be called on to support border operations on a case-by-case basis. Say that a border crossing is attempted, but potentially dangerous material has been discovered. In this example, one would expect that the environmental protection authorities would be requested to examine the shipment.

Because border management truly entails interagency operations, it requires the integration, coordination, and synchronization (ICS) of disparate organizations with different missions and authorities, many of which do not necessarily feel comfortable sharing their "sensitive information." Fusion centers can be useful mechanisms for bringing together liaison officers from various stakeholder organizations to conduct long-term and real-time ICS that is vital to balancing security and commerce across borders and ultimately managing border operations.

Principles for Border Management

While borders are unique in terms of terrain, relationships, cultures, and even types of traffic, all have the fundamental requirements for strengthening security and facilitating flows of licit people and goods. Therefore, in considering improvement to border management, three operational principles provide useful foundations for guiding the efforts:

- incorporating security and the licit flow of people and commerce
- developing an integrated, layered approach to border management
- establishing unity of effort across relevant government and nongovernmental entities.

Incorporating Security and the Licit Flow of People and Commerce

Any approach developed for border management must combine security and commerce into a single system that supports the national priorities of the country, as well as the political, economic, social, and cultural needs of the population. In most cases, building a seemingly impenetrable wall would violate this principle and could do significant damage to the informal economies that exist within border communities. Creating a balance between security and commerce is essential. This includes developing solutions that account for the movement of goods and people that have long linked border communities.

The nation's policies regarding security and commerce will serve to define the types of systems and operational capabilities that are in place. If the border in question is a major transit point for terrorists and criminals, the operational elements will likely include more law enforcement,

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paramilitary, and even military forces than a border that does not face these threats. If the crossing point or seaport serves as a major transportation hub for containerized cargo, specialized technologies and practices could be developed to effectively and efficiently manage the throughput. Of course, if the port is a petrochemical hub, additional security could be required.

Questions concerning the amount of smuggling to be tolerated will also need to be considered. If the goal is to eliminate all illegal smuggling, then physical barriers, robust patrolling, and intrusive inspections of all people

and vehicles crossing the border will be required, which would undoubtedly affect border throughput timelines.

In considering this issue, examining potential behaviors at the border can be useful, including such concepts as deterring unwanted and illicit activity. Important actions must also include deciding what levels of illegal border activity will be acceptable and the extent to which response capabilities will be funded. In short, government priorities and funding must be realistically aligned.

There are two basic components of deterring illicit behavior at borders: the intent and goals of the potential illegal border crosser and the posture of the government officials at the border. Table 2 provides examples of various border behaviors, actors, and government postures that could affect those behaviors. Examples are provided to enhance clarity and are intended to be illustrative rather than predictive.

Developing an Integrated, Layered Approach to Border Management

An integrated approach to border management requires a nation to consider multiple domains, coordinate among them, and make rapid and accurate decisions to resolve border situations that arise. A national border management approach should consider the land, maritime, and air borders of a nation.

Ultimately, an integrated approach to physical security, intelligence collection, policy, and military or police action is required. In the long term, none can be effective without the others. What necessarily begins with planning and the construction of a barrier—perhaps consisting of sand berms, a metal fence, a pyramid of barbed wire, and observation towers—will likely expand and become considerably more sophisticated. Over time, technology will likely be incorporated to augment physical structures.

TABLE 2

Potential Illegal Border Crosser Activities and Government Posture

Government Posture	Potential Activities	Potential Tools
Facilitate legitimate flow of people and material	Actor chooses to cross border for legitimate reasons via legal means	Policies and procedures conducive to smooth crossing (financial, throughput capacity, simplicity)
Influence actors' intentions—align incentives so that illegitimate crossing is not desirable	Illegitimate actor does not want to cross border	Incentives against smuggling, counter-radicalization
Demonstrate credible deterrence—create perception that government possesses capability and intent to counter illegitimate crossing	Illegitimate actor wants to cross border but chooses not to	Use of terrain, physical defense, support from locals, sensors, static/mobile security, and react forces (surfaces and gaps)
Establish posture favorable to detection and interdiction	Illegitimate actor attempts to cross at location that gives security forces tactical advantage	Ability to capture/kill before the would-be crosser reaches objective, ability to prosecute violators with support from locals

Day/night camera systems, unmanned aerial systems, and unattended ground sensors, for example, can provide situational awareness at border locations. Multiple-source intelligence feeds can support the development of situational awareness. Joint operations and intelligence centers can be incorporated for analyzing information and coordinating operations. Fusion centers that facilitate the daily dissemination of actionable information across the stakeholder community—to include the security offices in the field and in cities—can be established to ensure coordinated activities. Response forces provide a depth that extends from the border, providing the capacity to interdict threats and resolve issues even after a border crossing has been made.

People intending to illegally cross borders have developed a variety of strategies to circumvent authorities and gain illegal access. For example, in areas where walls or physical barriers prevent illegal crossings, tunnels have been used to ferry illegal aliens, goods, and narcotics. Where fences do not extend along the full length of the border, smugglers can attempt to go around areas perceived to be difficult to penetrate. Small, dark aircraft or watercraft have also been used to move illicit cargo through established defenses and security perimeters. Technology provides more capabilities for the development of these systems and for attempting illegal transit of borders. For example, drug traffickers do not necessarily need to cross the border to deliver their illegal product. Unmanned aerial systems have the capacity to move cargo over the border with little chance of detection, assuming caution is used in developing flight plans and avoiding detection capabilities.

There are two basic components of deterring illicit behavior at borders: the intent and goals of the potential illegal border crosser and the posture of the government officials at the border.

Barriers and equipment have little value without the development of plans, operational doctrine, and exercises that address how the border capabilities are to be employed. Therefore, developing a comprehensive border management system requires a structured approach to building a balanced system. The doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P) framework can be employed for this purpose.[6] Such an approach ensures that the border management system has the proper mix of capabilities.

In such a purposefully developed system, sensors and intelligence collection serve to alert response forces. Quick-reaction forces would respond to alerts, address threats, and report on activities that are occurring. Information collection and timely dissemination to decisionmakers in the security services and to policymakers in

the government are essential for managing uncertain and rapidly changing operational situations.

Operations centers would normally be established for monitoring situations and conducting all-source analysis using information collected by technical means at the border or by border guards with intelligence from other sources around the country. Inputs could also include reporting from police informants, signals intelligence, and foreign-liaison service reports to provide context and early warning of threats originating abroad. Operations centers would be manned by elements from across the government with responsibilities in border management.

The intelligence collection that feeds this system should be based on a prioritized set of national requirements tailored to the capabilities and purposes of each security-sector component. Police, for example, could

Building relationships is an essential part of information-gathering and early warning efforts. Without these relationships, border posts are blind to what is happening behind them, inside their country.

be responsible for reaching out to troubled communities around the country. The more militarized force (either gendarmerie, paramilitary, or military) could be responsible for doing the same thing along the border, the only difference being that it would focus primarily (though not exclusively) on the collection of tactical information related to the security of its units and the movement of locals and others near the border. Building these relationships is an essential part of information-gathering and early warning efforts. Without these relationships, border posts are blind to what is happening behind them, inside their country.

A comprehensive intelligence-collection requirements process consists of a strategic set of national requirements from which functional requirements are derived—for example, for human and signals intelligence. Tailored requirements for each segment of the border and for each security office location around the country are then drawn from these functional sets of directives, with military units reporting on their specific requirements and local police and intelligence units doing likewise in their areas. Their reporting becomes a daily feed into a central operation center whose officers are responsible for analyzing and disseminating the information, as well as for coordinating with senior policymakers on the actions that might need to be taken. As noted earlier, all of this requires significant support from senior leaders and buy-in from the organizations involved in the effort.

Establishing Unity of Effort Across Relevant Government and Nongovernmental Entities

Unity of effort will be essential to any border management system. An overarching national strategy for identifying

key organizations, their roles, and their responsibilities and authorities can be useful for deconflicting activities for border management. Given the need to balance competing national needs—securing borders and facilitating commerce—a broad cross-section of the government, the economy, and the populace should be involved in creating a border management system. Organizations from the national to the community level will also play important roles in border management activities. Gaining support from communities will be essential: They represent the "front lines" and must live with the border management system that is established.

A comprehensive border management system also requires a framework that facilitates the movement of information. Such a system should be accepted by each of the participating organizations and would instill a formal commitment to intelligence-sharing. To succeed, this type of endeavor must have buy-in from the most-senior levels of the government ministries involved in the nation's security, and it must be directed from the top (e.g., from the office of the president of the country).

Exercises from the national to the local level ensure that border management capabilities are adequately organized, trained, and equipped to address the myriad threats likely to be encountered. They also ensure that border management organizations' authorities and responsibilities are aligned toward a common purpose, understood, and coordinated throughout the stakeholder community.

More often than not, developing unity of effort requires putting aside differences among government entities to work for the common good.

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Lessons Learned in Border Management

Much can be learned by examining how other nations have implemented border management solutions and incorporated support from other governmental or non-governmental international donors. The broader lessons learned provide general considerations that could be either incorporated directly into or tailored to fit a nation's border management system.

In this section, we discuss good practices from a global counterterrorism forum and lessons learned from international border management systems from Jordan, Saudi

Arabia, Niger, and Morocco. The information on national border management systems was collected from a number of sources. In some cases, written assessments were available; in others, articles describing the state of the border contributed to these assessments and have been referenced. In the case of Jordan, the authors turned to a former DoD official in-country when that nation's border management system was developed.

Global Counterterrorism Forum Good Practices

The United Nations Counter-Terrorism Center (UNCCT) and the Global Counterterrorism Forum (GCTF) cooperated to produce a set of nonbinding "good practices" for border security and management. Their collaboration included a series of conferences and workshops in 2015 and 2016 to present lessons learned to help countries shape policies, programs, and approaches for border security and management. Table 3 includes the 15 best practices identified through these efforts.[7]

Jordan

The United States assisted in building Jordan's border management system beginning in 2008, launching a $20 million project to build surveillance towers along a 30-mile stretch of the border with Syria. This program was expanded to include a fully networked fence running along 275 miles of Jordan's borders with Syria and Iraq at a cost of more than $300 million (see Figure 2). By 2016, the system consisted of an advanced border monitoring network, equipped with an array of remote detection, surveillance, and command and control capabilities, which allowed the Jordanian Armed Forces to detect activity

five miles away on either side of the fence. The system funnels into a joint U.S.-Jordanian command center.[8] Additional work was being done to extend the fence to an area of the borders between Israel, Jordan, and Syria near the Golan Heights and was due to be completed in 2017.

Lessons learned from the Jordan experience include the following:

Command, control, and communications technology can provide the biggest "bang for the buck," but investments in technology come with significant sustainment costs.

- Command, control, and communications are essential to integrated border control. Redundancy should be designed into the system to ensure operational capability, even as repairs are made.
- Equipment and technology must be matched with training to validate operational plans and ensure that forces can employ the systems.
- Repair and replacement costs should be factored into program planning.

Developing a professional border management capability requires having appropriate training, education, and exercises for individuals and border units.

- Mobile training teams are most effective because they provide the opportunity to train on-site with an organization's available equipment, rather than paying to have small numbers of individuals come to centralized locations.
- Foreign (including U.S.) advisers play a critical role in developing border security capacity but must maintain a small footprint. Military Engagement Teams should be designed to visit posts, evaluate operational proficiency, and produce lessons learned.

TABLE 3
## Border Security and Management Good Practices

Good Practice	Description
1	Enhance intra-agency cooperation.
2	Enhance interagency cooperation.
3	Enhance international cooperation.
4	Develop and establish comprehensive remote border area surveillance programs.
5	Engage with and empower border communities as key contributors in border security and management.
6	Develop and implement border community policing programs.
7	Develop and implement border security and management information exchange programs and mechanisms.
8	Establish border cooperation centers.
9	Nominate and assign border liaison officers.
10	Conduct joint and coordinated cross-border patrols, as well as joint multi-agency and interdisciplinary operation exercises.
11	Define parameters for cross-border operational engagement.
12	Conduct effective risk analysis assessments.
13	Create national border management strategies and action plans.
14	Establish joint border crossing points.
15	Identify corruption as a serious risk for effective and robust border security and management.

- Comprehensive training programs can include sending local officials to such facilities as the U.S. Customs and Border Patrol training at the El Paso Intelligence Center.
- Training effectiveness in large measure depends on the quality of the trainees.

The establishment of a joint intelligence fusion center can improve border security, but it will require significant recurring costs.

- Fusion centers are important but costly to operate and maintain. They require specialized equipment and training for intelligence officers, Quick Reaction Forces (QRFs), and data analysts.
- Indigenous border forces may not be accustomed to information-sharing; additional training and longer timelines for achieving full operating capacity should be expected.

FIGURE 2
Jordan Border Security Overview
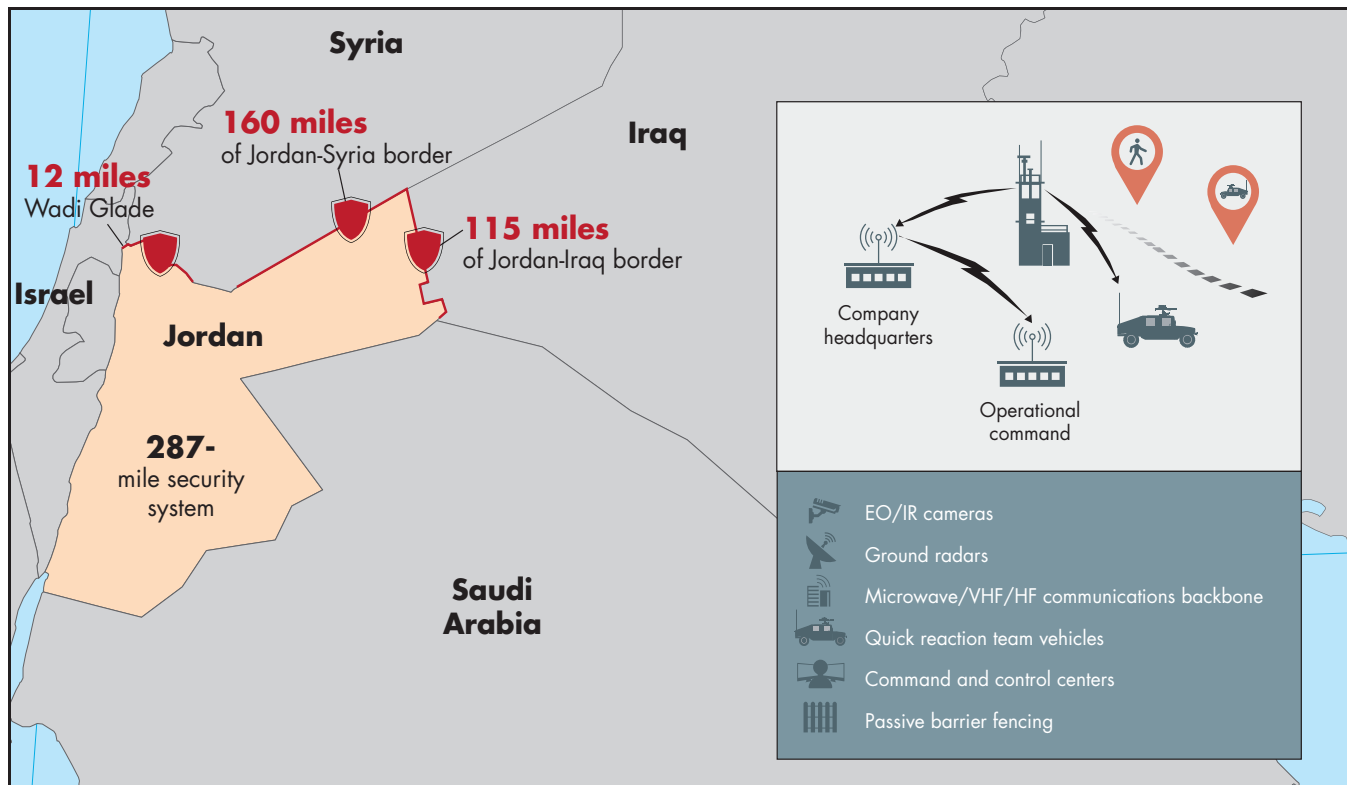
SOURCE: Adapted from Raytheon promotional materials; Barbara Opall-Rome, "Raytheon-Jordan Border Defense Against ISIS Enters Final Phase," *Defense News*, May 26, 2016.
NOTE: EO/IR = electro-optical/infrared. VHF/HF = very high frequency/high frequency.

- Fused intelligence must be available to all agencies. It is important to have representatives from the military, intelligence, internal security, and other groups in the fusion center.

Program planning and management are important to conducting a successful effort.

- Gaining a first-hand perspective on border security issues before final decisions are made on the implementation of new security programs can be invaluable.
- Maintaining continuity in program management experts provides stability in program development and execution.
- Coordination of border security forces, including soldiers conducting mobile patrols, air force assets, and QRFs, is essential.
- Incentivizing participation in the border forces (with higher pay or rations) can prove helpful in offsetting boredom and frustration with postings to remote locations. Deploying regular army units to the border to supplement border forces is also helpful.

Saudi Arabia

Saudi Arabia has disaffected minorities that are susceptible to outside influence and can help enemies breach the country's borders. The Shia communities of the Eastern Province and in the southern Asir Province, as well as tacit support among some of its Sunni population for ISIL and fundamentalist Islam, are of concern.[9] Additionally, Saudi Arabia has a history of internal terrorist attacks driven by external influences and internal receptivity to jihadist messaging, and it continues to face threats from inside and outside its borders, because of either domestic economic problems or aggressive and militaristic foreign policies.

The terrain along the land borders is desert with varying types of sand and terrain features. However, the border areas are generally open, vast stretches of desert that are inhospitable because of climate and lack of infrastructure. To secure their perimeters, the Saudis have built a fence and an earthen berm along both their northern border with Iraq and their southern border with Yemen. The construction of Saudi Arabia's border barrier began with considerations for sand berms, a metal fence, a pyramid of barbed wire, ultraviolet sensors with facial recognition software, and observation towers every 100 yards (see Figure 3).[10]
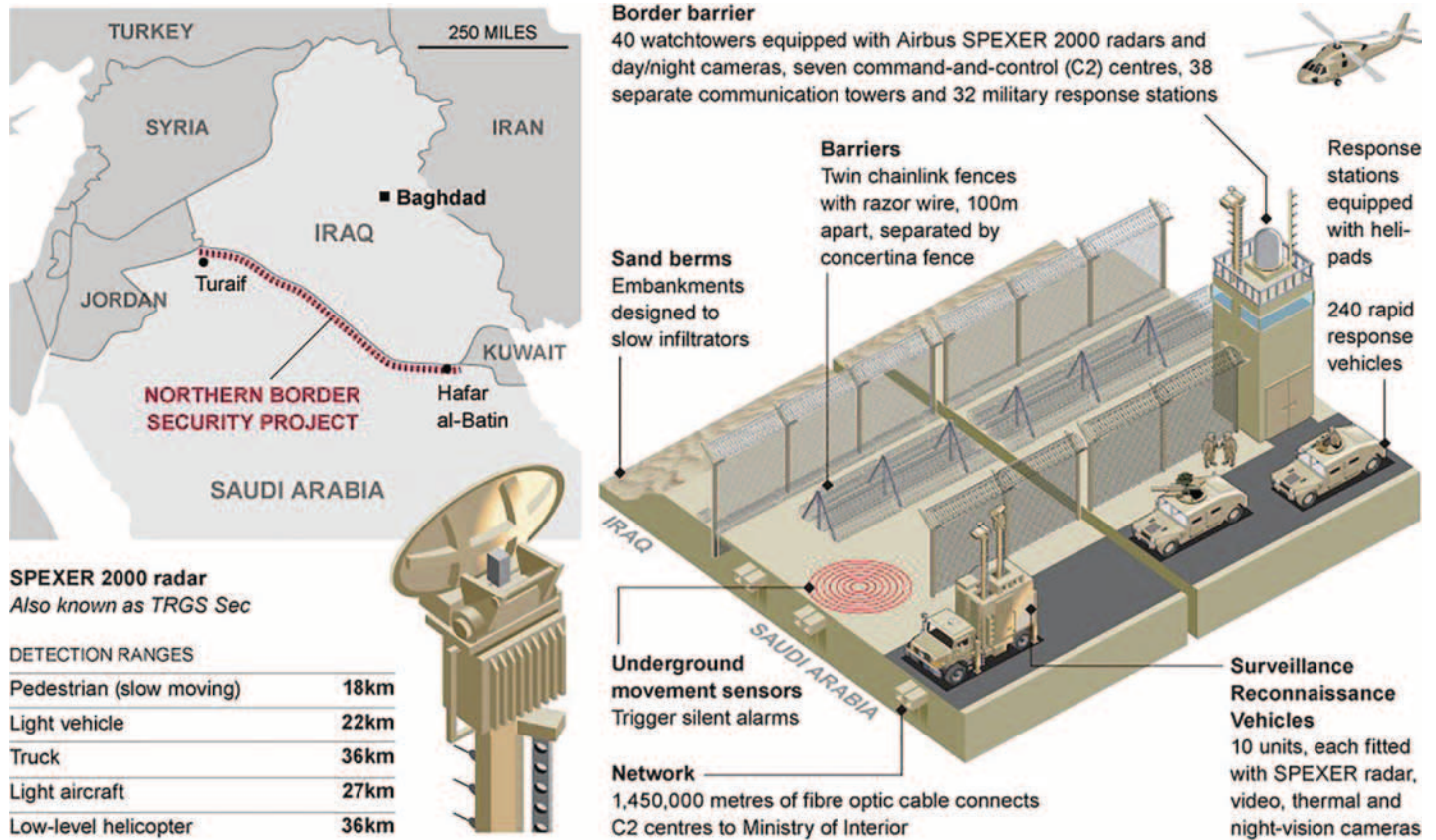
Lessons learned from the Saudi experience include the following:

Border security should be viewed as part of the broader antiterrorism portfolio and not just as a way to defend the country from larger nation-against-nation military assaults.

- Border management must include all land, air, and sea ports. This is a major challenge for the Saudis at airports, and in Mecca and Medina during the Hajj season.
- Knowledge of the border communities and human terrain (in this case, the interaction and relationships between people living on both sides of the border), as well as of the regular ground terrain and climate, are essential.
- The terrorist threat is often simultaneously local, regional, and international.

Sharing of security-related information among the naturally occurring departmental silos that exist within any government is vital to the success of border management efforts.

FIGURE 3

Saudi Arabia's Border Wall

SPEXER 2000 radar
Also known as TRGS Sec

DETECTION RANGES

Pedestrian (slow moving)	18km
Light vehicle	22km
Truck	36km
Light aircraft	27km
Low-level helicopter	36km

Border barrier
40 watchtowers equipped with Airbus SPEXER 2000 radars and day/night cameras, seven command-and-control (C2) centres, 38 separate communication towers and 32 military response stations

Barriers
Twin chainlink fences with razor wire, 100m apart, separated by concertina fence

Sand berms
Embankments designed to slow infiltrators

Response stations
equipped with heli-pads

240 rapid response vehicles

Underground movement sensors
Trigger silent alarms

Network
1,450,000 metres of fibre optic cable connects C2 centres to Ministry of Interior

Surveillance Reconnaissance Vehicles
10 units, each fitted with SPEXER radar, video, thermal and night-vision cameras

SOURCE: Jennifer Van Laar, "Saudi Arabia Unveils Badass Anti-ISIS Wall That Makes U.S. Border Look Like Swiss Cheese," *Independent Journal Review*, 2015. Used with permission from Graphic News.

- An integrated system of operations centers at the borders and at a central headquarters that has direct access to senior decisionmakers provides essential command and control linkages.
- International intelligence-sharing capabilities are critical to border security efforts. Outreach to allies is an effective way of learning about what is happening beyond the immediacy of security at the border and gaining early warning of a threat.
- Comprehensive situational awareness of security along the borders will depend on reaching out to allies and sharing information with other nations beyond a country's immediate neighbors.

New technologies and equipment are helpful, provided they are maintained and used properly and operators and forces are properly trained.

- The government requires an integrated information technology and communication system with coordinated procedures and processes. Without these, security forces will be unable to respond effectively in a crisis.
- Dust and rugged ground in the desert can wreak havoc on equipment, requiring the additional expense of replacing vehicle tires and engines more frequently than under normal working conditions.
- Once systems and physical security barriers and procedures are operational, practice and training are required to maintain adequate levels of proficiency. This is particularly true where new technologies, such as drones, biometrics, and pattern-recognition software are being used. Without practice and training, there will be a loss of agility in response time and an overall loss in system resiliency.

Niger

The Nigerien government's plan—the Sahel-Sahara Development and Security Strategy (SDSS or SDS)—takes a comprehensive view of border security management.[11] Efforts to control the vast northern desert zones cost U.S. $2.5 billion over five years and incorporated good governance and development projects at the local level, particularly directed at vulnerable youth populations. Determining success at this stage is premature; it could take years to be able to measure the full impact of the program. The European Union has also invested in supporting security-sector capacity-building and professionalization, and the United States is working to build an electronic system for identification collection at border-control areas. Transit centers run by the International Organization of Migration in Agadez and other migrant traffic transit points are helpful for identification tracking purposes (see Figure 4).[12]

Community engagement has been essential, with the assistance of the Nigerien security services, U.S. Special Operations Forces, and civil affairs teams from the non-governmental organization Spirit of America. Over time, these teams have been able to establish connections with residents in vulnerable border areas.[13]

FIGURE 4

Nigerien Border Security and Community Participants
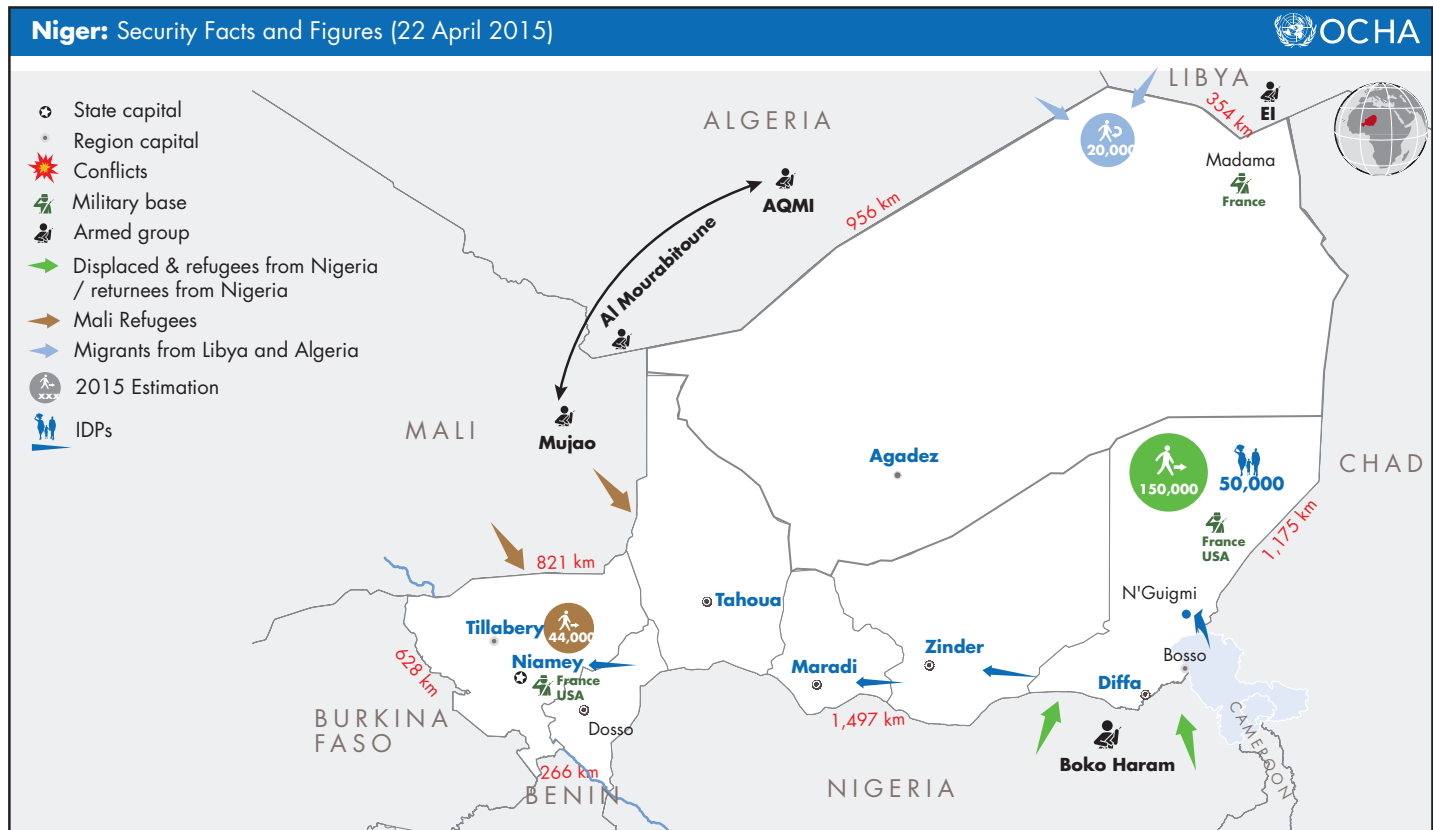
SOURCE: Adapted from the United Nations Office for the Coordination of Humanitarian Affairs.

Lessons from the Niger experience include the following:

Regional cooperation with neighboring countries and the coordination of security efforts with their border communities is essential to the long-term viability of the border management system.

- Border security equipment and technology can only be effective if it is properly employed and maintained.
- Authorities must enforce standards and regulations for the use of the equipment.

Community engagement and ownership should be encouraged by empowering the local authorities to provide their own security in conjunction with state mechanisms.

- Nongovernmental organizations can assist if perceived as distinct from the state and may be more capable of building trust where formal security services cannot.
- Civilian affairs teams that are distinct from state security services and are made up of people originally from the area can be established to interact with communities and assure residents that border protections are in their best interest.
- Representatives from the local population can be incentivized to act as "eyes on the ground." This includes employing locals from ethnic border communities that have links on both sides of the border.

Bribery at checkpoints undermines other security efforts and reduces potential tax revenue; oversight mechanisms may help to prevent this common phenomenon.

- Economic development and job training and creation directed particularly at youth populations reduces illegal cross-border trade.

- Youth job creation should run in tandem with border management efforts to prevent localized radicalization.

Morocco

Morocco's unique geopolitical position has given its borders an outsized prominence in regional relations. Three border areas in particular have posed unique challenges. First, the land borders with the Spanish enclaves of Ceuta and Melilla have been subject to intense pressure from migrants attempting to cross to European soil and from Spanish and European Union desires to see such crossings controlled. Irregular crossings through this Western Mediterranean route peaked in 2011, then dropped off before increasing again in 2014 and generating dramatic photos of migrants "streaming" over the fences.[14]

Second, the Moroccan-Algerian border has been closed since 1994, following escalating restrictions after a bombing in Marrakech, which Morocco claimed had been carried out with the support of Algerian intelligence services. This border has become increasingly securitized since 2015, including the addition of a barbed-wire mesh fence that is 2.5 meters high, gates on the Moroccan side, and a reciprocal ditch on the Algerian side, as well as the addition of more checkpoints on both sides.[15]

Finally, a series of mined and barricaded sand berms running from the southwest to the northeast of the disputed Western Sahara consolidated Moroccan gains against Polisarian guerillas in the 1980s and have frozen the conflict in place since then.[16] The berm features 10-foot walls, barbed wire, electric fencing, and sentries every seven miles.[17]

FIGURE 5
Moroccan Border

SOURCE: UN Photo/Evan Schneider.
NOTE: View of the sand wall that runs through southeastern Morocco and the Western Sahara from the United Nations Mission for the Referendum in Western Sahara.

Lessons learned from the Moroccan experience include the following:

Simple hardening and militarizing of the border tends to overburden the daily lives of ordinary communities rather than address underlying concerns.

- Statistics and threat assessments of both European and local governments should always be evaluated alongside objective data; diverse incentives and priorities can sometimes lead to inflated claims about security risks surrounding certain border areas.[18]

- Migratory pressures on borders are the result of numerous push-and-pull factors and often fluctuate in response to second- and third-order effects of political, economic, and social dynamics.

Liberalization of trade where feasible will encourage licit trade and allow for a focus on smuggling issues of greater concern.

- Price disparities exacerbated by commodity subsidies will continue to drive smuggling, even in the face of aggressive policing.[19]
- "Hyper-local solutions" and creative solutions for subsidies, such as sliding scales and vouchers, also have the potential to reduce both incentives for smuggling and illicit pressure on borders.[20]

Building a Comprehensive Border Management Capability

Building a comprehensive border management capability flows directly from the foundations, principles, and lessons learned from the experiences of others in attempting to develop 21st-century border systems.

These lessons learned are presented as guides and insights, rather than as directives, and should be tailored to meet the specific strategic and operational objectives of a nation. They must be sensitive to particular border situations, cultural norms, terrain, and local border communities. If not, strong negative responses that do not serve the broader goals of developing an effective national border system are likely.

Building Strategic Foundations

- **A national strategy for border management should be developed.** A national strategy (or

strategies) for border management—ground, air, and maritime—should be developed. The authorities, roles, and responsibilities for all border management organizations and communities must be clear and unambiguous. An accompanying border management plan should be developed to assign responsibilities and coordinate efforts.

- **Metrics for assessing border management are essential for measuring performance.** Based on the national plan, operational metrics to assess the degree to which strategic goals are being met should be established. This will also aid in developing interagency cooperation and will provide a framework for establishing measures of effectiveness to ensure continuous improvement in border management operations.
- **System architectures should be developed for key functional areas, including national decisionmaking, intelligence, communications, and information.**
  – Decisionmaking: to establish the relationships and ensure that key elements within the border management system understand their roles, missions, and authorities.
  – Intelligence: to develop comprehensive intelligence collection, coordination, and dissemination processes, including standardized intelligence products, for sharing across the government.
  – Communications: to develop need lines describing how ministries, operational commands, and front-line elements communicate internally and across the government.
  – Information: to identify how information should flow across the government and to external audiences.

Building Operational Excellence

- **A national exercise program for border forces and organizations should be developed.** The goal would be to integrate the organizations, equipment, and facilities into a coherent border management system that both provides security and supports the economic development and growth of border communities and associated institutions. Table-top, command post, and field training exercises at all levels (national, operational, and tactical) should support the development of professional border management organizations. Early exercises should focus on implementation of the national border strategy and mission assignments, deconfliction of roles and responsibilities, and decisionmaking.
- **Border management systems should be stress-tested to ensure that their capacity meets national requirements.** Exercises at the national and local levels to validate doctrine (e.g., the key system architectures and intelligence products described earlier) will be essential. "Penetration testing" at operational locations and red-teaming to examine potential operational vulnerabilities will add realism to the exercises.
- **Conducting joint operations should become the norm.** Joint and combined security actions (patrols, checkpoints, special operations), to include customs, police, intelligence, and armed forces personnel, must be conducted frequently. These disparate organizations must train together frequently, perfect processes and procedures, and ensure equipment interoperability.
- **Investigative procedures should be enhanced.** Expand the use of and expertise in special investigative techniques, such as wiretapping,

Building partner capacity requires the development of trusted relationships, an understanding of the host nation's goals and priorities, and patience to allow the effort to proceed at a pace that supports the host nation.

controlled deliveries, informants (e.g., human intelligence), and the legal basis and authority for advanced surveillance techniques.

- **On-site local training should be employed whenever possible.** Mobile training teams provide a superior ability for integrating new equipment, systems, and concepts of operations. Centralized training away from local facilities generally results in difficulty integrating the new capabilities.

Developing Community Cooperation

- **Community engagement programs should be developed and supported.** Several initiatives could be useful in building community-government relations. Examples might include (1) training programs to instruct law enforcement in how to improve outreach to local communities and best practices in community policing; (2) development of working groups (with a focus on the local level) that include main political parties, community leaders, business leaders, and tribal chiefs to reach a consensual, nonpartisan approach to border management and build trust among border community stakeholders; and (3) addressing the expansion of militant activities within the region by targeting criminal and terrorist organizations.

- **A trusted traveler program should be developed.** Such a program could assist with developing procedures designed to expedite the legitimate flow of travelers, goods, and services while allowing additional scrutiny for high-risk individuals.

- **Prosecutions for border infractions will serve to deter others and develop new norms for activities at borders.** Complete successful criminal prosecutions of acts associated with illegal crossings and terrorist support, specifically the financing of travel for foreign fighters and their families. This will serve as a necessary deterrent for terrorism and criminal behavior.

Potential Technology Insertions

Use of technology can provide operational benefits, either by incorporating them into the border management system or by increasing the use of existing systems (e.g., unattended ground sensors). Such technologies can have applications for either securing borders or managing the licit flow of people and commerce across a nation's border.

Table 4 lists some common technologies that have generally been useful in controlling borders. While such enablers are important, the most essential aspect is the

degree to which comprehensive systems are developed, government cooperation is achieved, and trained forces and law enforcement professionals act when called on. A direct infusion of equipment or technologies has not been the pivotal factor in building a successful border management capability in any of the cases examined. This also aligns with the U.S. experience along the southern border with Mexico.

Considerations for Assisting in Building Partner Capacity

Building partner capacity requires the development of trusted relationships, an understanding of the host nation's goals and priorities, and patience to allow the effort to proceed at a pace that supports—rather than pushes and directs—a host nation in the development of a national border management system.

The border management efforts in Jordan, Saudi Arabia, Niger, and Morocco provide important lessons for international stakeholders. Several themes have been identified for building partner nation capacity.

- **Capacity-building must be tailored to national requirements.** Any border management capability developed must respond to the needs of the country being supported and cannot be imposed on the nation by the partner. Accounting for national priorities, requirements, customs, and cultures will be more important than building what a partner nation might consider to be the "optimum" border management system.
- **A partner's ability to absorb new capabilities must be carefully considered.** The absorptive capacity of the partner nation must be understood and factored into any border management

TABLE 4

Security Technologies and Systems Common to Border Management

Facilities	Sensors	Aerial Systems	Operational Concepts	Other Capabilities
• Command and control nodes at national, regional, and local levels • Fusion centers • Real-time, assured communications; fixed and mobile communications • Obstacle plans (walls, fences, berms, barriers) • Fixed and mobile observation towers	• Camera surveillance systems • Radar and sonar • Unattended ground sensors for tipping and cueing • Biometric screening	• Border patrols • Persistent Surveillance System/Aerostat • Overhead imagery for coherent change detection • Unmanned aerial systems at all levels (national, regional, and local/unit) for a variety of missions	• Government unity of effort • Real-time information-sharing • Mobile patrolling • Trusted traveler programs • Rapid resolution of traveler/trade status	• Targeting systems for border management • Incorporation of intelligence into border operations, including human intelligence • Early warning systems • Quick-reaction forces • Predictive analytics for targeting

NOTE: This table is representative rather than comprehensive: These technologies are not meant to be all-inclusive.

system or planning timeline. While the pace might be frustrating at times, recipient nations could be experiencing bureaucratic, cultural, or technological issues that can hinder progress.

- **International efforts must be coordinated.** Recipients of capacity-building assistance are unlikely to efficiently coordinate multiple offers of assistance or to engage with numerous donors and stakeholders simultaneously. Rarely can they respond as quickly or efficiently as donor nations expect. The complexity of U.S. organizations supporting these efforts alone can be overwhelming to partner nations. Support normally extends across multiple departments and agencies, including DoS (and the United States Agency for International Development); DoD; and the Departments of Treasury, Justice, Homeland Security, and others, depending on the nature of the host nation's needs. In DoS alone, multiple offices support border programs: Counterterrorism, International Narcotics and Law Enforcement, Anti-Terrorism Assistance, and Export Control and Related Border Security. Other donor nations have similar offices supporting capacity-building. This support normally cuts across multiple disciplines—border security, counterterrorism, police reform, countering violent extremism, and other security-related assistance programs—which adds to host nation difficulties with coordination.

- **Developing operational capabilities is preferable to fielding equipment and technologies.** International donors tend to provide individual pieces of equipment rather than build end-to-end operational capabilities. In this way, a nation could be left with numerous types of patrol vehicles from different donor nations with different types of communications systems that are neither interoperable nor sustainable. Donor coordination meetings with the host nation must be held regularly to deconflict donations and harmonize capacity-building efforts.

- **Consolidating existing systems can be preferable to adopting new technologies.** External donors often provide an influx of new equipment and sophisticated technologies to recipient countries without consideration of the effort required to integrate the new systems with existing operations. This can lead recipient nations to become overwhelmed. A better approach to international assistance would be to identify existing programs that are successful and extend their scope or accelerate their schedules, as opposed to looking for new gaps to cover.

Conducting comprehensive assessments of a partner nation's existing border security capabilities, national priorities, institutional support structure, and absorptive capacity is essential in devising a targeted capacity-building plan. Such an effort must also consider a country's ability to integrate new technology and maintain and expand on its border management system over time.

Additionally, underpinning capacity-building efforts is the critical need for donors to gain situational awareness of other efforts (even other organizations within their own government) to ensure that efforts are effectively coordinated with local stakeholders in order to have a positive impact on partner nation capacity.

Conclusion

Developing professional 21st-century border management capabilities requires establishing a balance between security and the licit flow of people and trade. As a result, national goals and objectives and the threats and risks the nation perceives must translate into the policies and programs that undergird a nation's border management system.

How a nation develops and enforces border management speaks volumes about its priorities, objectives, societal norms, and culture. For licit travelers and traders, the ease and dignity with which they are treated at land, air, and sea borders can provide an important and lasting first impression. Likewise, for illicit activity, the border should present an obstacle and deterrent to illegal crossings and smuggling. Finding this balance will be vital to a nation's security and for supporting trade and travel.

Notes

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[5] "What Is the Kaesong Industrial Complex?" BBC News, February 10, 2016.

[6] DOTMLPF-P analysis is the first step in functional solutions analysis. This framework originated in the U.S. Department of Defense (DoD) but has gained wide acceptance across the U.S. government.

[7] GCTF, *Good Practices in the Area of Border Security and Management in the Context of Counterterrorism and Stemming the Flow of "Foreign Terrorist Fighters,"* New York, September 2016.

[8] William M. Arkin, "The Great Wall of Jordan: How the U.S. Wants to Keep the Islamic State Out," Vice News, February 24, 2016.

[9] The organization's name transliterates from Arabic as *al-Dawlah al-Islamiyah fi al-'Iraq wa al-Sham* (abbreviated as Da'ish or DAESH). In the West, it is commonly referred to as the Islamic State of Iraq and the Levant (ISIL), the Islamic State of Iraq and Syria, the Islamic State of Iraq and the Sham (both abbreviated as ISIS), or simply as the Islamic State (IS). Arguments abound as to which is the most accurate translation, but here we refer to the group as ISIL.

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[11] DoS, *Country Reports on Terrorism 2015*, Washington, D.C., June 2, 2016.

[12] International Organization for Migration, "Niger," webpage, undated.

[13] Spirit of America, homepage, undated.

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[16] Mark Rice-Oxley, Guardian Interactive team, and Guardian correspondents, "Why Are We Building New Walls to Divide Us?" *The Guardian*, November 19, 2013.

[17] Mitch Swenson, "The World's Longest Minefield Isn't Where You Think It Is: 1,500 Miles Through a Forgotten Wasteland," *War Is Boring*, July 8, 2014.

[18] London School of Economics and Political Science, "Policing Europe's Borders," webpage, May 30, 2014.

[19] Anna Boots, "Smuggling and Security on North Africa's Broken Borders," *Journal of Middle Eastern Politics and Policy*, December 23, 2016.

[20] Boots, 2016.

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About This Perspective

The concept of border management hinges on the tension between the need to prevent undesirable people and goods from crossing borders and the economic vitality that a country gains through trade and travel. Building on the concept of border management, this Perspective proposes opportunities to strengthen security while simultaneously improving the flow of licit travelers and goods through national policies, programs, regulations, and activities.

Lessons learned from border management efforts in Jordan, Saudi Arabia, Niger, and Morocco provide three operational principles that should serve to guide efforts to develop the delicate balance inherent in border management. First, incorporating security and the licit flow of people and commerce should be considered for any border management system. Designing and building border management into systems is more effective and efficient when it is fully incorporated into border activities. Second, an integrated, layered approach to border management should be developed. No single physical structure or operational concept will be sufficient; rather, a comprehensive, integrated system; planning; appropriate equipment; and training and exercises are essential to border management. Finally, a national border management system requires establishing unity of effort across all relevant governmental and nongovernmental stakeholders with responsibilities or interests in what occurs at national borders.

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