

IDA Research Notes



IDA STUDIES AND ANALYSES CENTER

SPRING 2010

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Issue Overview

In recent years, IDA's research has focused increasingly on support for ongoing military operations. Our analysts have deployed to war zones to help U.S. commands assess and formulate approaches to countering insurgents and to maintain stability. At home, IDA researchers have examined a wide variety of related issues, such as improving U.S. capabilities to detect improvised explosive devices (IEDs). Other studies have been aimed at understanding emerging security challenges, building partner capacity, and examining threat financing and potential counters. This edition of Research Notes highlights some of these efforts.

Dr. Tom Allen and Dr. Michael Fischerkeller lead off with an overview of IDA's in-theater support of current operations in Central Command's area of responsibility. Since 2001, more than 70 IDA researchers have worked in Iraq and Afghanistan, some serving in-theater for a year. Our analysts support U.S. efforts to counter IEDs, while other IDA researchers have been stationed in various command headquarters, where they have helped address broad issues important to senior commanders.

Erik Rosen describes IDA efforts in support of the development of improved sensors to detect IEDs, which have been the largest cause of death and injury to U.S. and allied forces, in Iraq and Afghanistan. Erik reviews the results of a recently completed field test of a vehicle-mounted, ground penetrating radar in Afghanistan.

Dr. Wade Hinkle, Jason Dechant, and Charles Fletcher describe IDA's contributions to DoD efforts to build partner capacity. Our

researchers have worked with partner countries to help them establish or reform government institutions and processes for managing defense resources. The results of these efforts have enabled some countries to shoulder a larger share of the international security burden. Similarly, a synthetic simulation environment developed by IDA has been used successfully in post-conflict situations to help local government and business leaders develop paths to strengthen economic development and security.

Among the most insidious threats facing developed and developing countries alike are those posed by narcotics-centered criminal activity and its intersection through money laundering and finance with transnational terrorist movements and rogue regimes. Dr. Jack Cann and Christopher Ploszaj describe the scale of that problem through the prism of a largely unseen counter-drug war being waged on both sides of the South Atlantic.

Dr. Barry Crane and Dr. Amy Alrich describe their work in support of the United Nations, applying lessons from the drug war in Colombia to the broader challenge of synergistic criminal and insurgent activity.

Dr. Richard White reinforces that body of work by examining the security implications of threat finance and the mechanisms available to counter illicit economic and financial activities.

Dr. S. K. Numrich and Tara McGovern describe the socio-economic context for one of the world's trouble spots through an analysis of the civil wars underway or simmering in Sudan, where China, al Qaeda, and the United States compete for influence.



The Institute for Defense Analyses is a non-profit corporation that operates three federally funded research and development centers to provide objective analyses of national security issues, particularly those requiring scientific and technical expertise, and conduct related research on other national challenges.

Supporting Warfighting Commands

Dr. Tom Allen and Dr. Michael Fischerkeller

Since 2004, two programs have directly engaged IDA's work force in supporting the senior warfighting commands in Iraq and Afghanistan. In a pilot effort in 2004, IDA researchers, sponsored initially by the Joint Improvised Explosive Device Task Force, went to Iraq to analyze the effectiveness of efforts countering the improvised explosive device (IED) threat. Each year since, IDA researchers, sponsored by the Joint IED Defeat Organization, have deployed to Iraq for tours of up to 12 months, performing tactical and operational analyses of the IED threat for Multi-National Corps-Iraq (MNC-I) and its subordinate commands. In 2005, the Joint Advanced Warfighting Program (JAWP)¹ at IDA began deploying analysts on four-to-six-month tours to help Multi-National Force-Iraq (MNF-I), and later U.S. Forces-Afghanistan (USFOR-A), frame and analyze strategic choices. To date, more than 70 IDA analysts have deployed to war zones under these programs, contributing to the effectiveness of military operations and gaining valuable insight and experience.

Iraq

Beginning in 2004, IDA analysts helped establish an IED-specific data management capability in Iraq and developed products to inform commanders and staffs of trends, capability gaps, challenges, and opportunities. Leveraging these products, researchers at IDA mined the data to inform systems development, training, and force structure deliberations. IDA analyses also illuminated emerging tactics and activity patterns of insurgent networks, identified sources and motivations of their civil support, and helped track their finances and anticipate their operations. One detailed IDA field analysis highlighted the vulnerabilities of tactical vehicles to IEDs and the comparative effectiveness of Mine Resistant Ambush Protected (MRAP) vehicles (example right). Another analysis tracked the effects of the troop surge, showing dramatic changes in patterns and levels of violence. This work contributed to the MNF-I Commander's testimony to Congress. IDA also identified critical performance characteristics of explosively formed penetrators, identified channels of external support to insurgent groups, tracked the development

of homemade explosives, and characterized the counter-IED capabilities and limitations of Iraqi Security Forces.



Photo courtesy of U.S. Government

Figure 1: Testing of a Cougar Mine Resistant Ambush Vehicle.

In 2007 and 2008, two IDA researchers served on the MNF-I staff as embedded analysts. One analyst applied state-of-the-art political science research on nation-state instability to provide a strategic framework for characterizing and assessing success. This work helped to inform choices on troop strength and resource allocation. The same analyst also explored the interaction of a small set of salient factors: assertion of sovereignty, re-emergence of socio-cultural norms, and the introduction of non-normal constructs (e.g., democracy, market economy) in shaping Iraq's political evolution. Another analyst developed a campaign assessment framework, applying it to the detainee release program. The detainee program results were reported directly to operators in the field and later to a broader community of interest through an article in *Joint Forces Quarterly*. Other IDA research examined how the structure of the Iraqi state is likely to develop in terms of federalism and power sharing. The analysis identified key unresolved political questions and generated alternative scenarios based on how they might evolve. Then, based on the history of and academic literature from democracy building in post-conflict, multi-ethnic states, the analysis

¹ The JAWP, a unique mix of IDA analysts and military officers serving on joint duty assignments, is funded by the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics and overseen by a government board of directors chaired by the Deputy Commander of Joint Forces Command and includes flag-level representatives from the Joint Staff, OUSD-AT&L, and OUSD-Policy.

derived predictions and policy implications for what types of political structures might be more or less conducive to stability and democracy in Iraq.



Figure 2: Co-author Dr. Michael Fischerkeller meets with General David Petraeus.

Afghanistan

In 2004, the first IDA researcher deployed to Afghanistan established the primary database for examining enemy IED attacks and Coalition responses. Based on experience in Iraq, IDA researchers then helped convert the Afghan database to meet a new Central Command standard. Subsequent IDA analyses identified trends, differentiated by security conditions in various parts of the country, and analyzed high-casualty IED events. The latter study was shared directly with units in the field to help inform training improvements and responses when under attack.

In 2009, JAWP support to current operations shifted its focus from Iraq to Afghanistan, attaching an IDA analyst to USFOR-A's Directorate of Strategic Communications in Kabul. Among the resulting products was a geographic



Figure 3: Defunct Soviet tanks just outside of Kabul, Afghanistan.

lay-down and description of performance characteristics (type media, range, emitter strength, etc.) of the array of communications systems through which information can be disseminated in Afghanistan from within and outside the country by both the Coalition and insurgent groups. A second analyst has since been sent to Kabul to advise the Director of Intelligence on regional threat finance strategy. The JAWP also deployed a team of military and civilian analysts to explore opportunities for reducing the in-country support footprint, improving the efficiency of fire support, and reducing reliance on Afghan roads and forward operating bases. Yet another JAWP-led team deployed to Afghanistan to perform a force optimization analysis.

Conclusion

IDA's support to warfighting commands, sustained with volunteers for over five years, continues to produce important insights and options for warfighters, while simultaneously giving IDA's work force an unparalleled opportunity to both learn from and contribute to military operations.

Detecting Improvised Explosive Devices

Erik Rosen

To help counter the improvised explosive devices (IEDs) used by insurgents in Iraq and Afghanistan, DoD has been developing improved systems to detect and neutralize buried IEDs and mines. For more than a decade, IDA has provided objective analyses of systems designed to detect buried objects as they were tested at various government sites. One of these systems recently completed a successful assessment in Afghanistan.

Detection Systems

The most mature sensors for mine and IED detection include metal-detector coils, infrared (IR) cameras, and ground-penetrating radars (GPR). Depending on the type and depth of the target, each of these systems has advantages and limitations.

- Metal detectors can detect targets deeper than a GPR can, but cannot reliably detect low-metal targets.
- GPRs can detect metal and low-metal targets, but do not perform as well against deeply buried targets.
- IR cameras can provide contrast between targets and the surrounding soil, but are ineffective during thermal crossover points (dawn and dusk).

Most GPRs designed to detect shallow targets work at frequencies between 200 MHz and 5,000 MHz. The lower frequencies allow radar energy to penetrate the soil, and the higher frequencies provide the resolution needed to discriminate targets from clutter. A response in the radar return depends on the contrast in dielectric properties of the target and the surrounding soil. Soil moisture plays a critical role in detection. It can enhance the contrast between the target and the soil, but can also hinder the radar waves' penetration of the ground, thereby degrading the GPR's detection capabilities.

Comparing different GPR systems has been a challenge because performance depends

on factors such as target type, target burial depth, soil conditions, and algorithms. Ideally, competing systems should be tested side by side under the same conditions, though this is rarely achieved due to differences in program schedules. To help overcome this barrier, IDA developed software to compare the raw data collected from many GPR systems and compute performance metrics as a function of several key parameters. By using the raw data and building a graphic user interface (GUI) in which algorithms can be applied to the data one step at a time, we were able to compare different systems at the same processing point. This enabled separating sensor performance from total system performance.

Figure 1 shows the output of IDA's GPR sensor analysis tool when applied to three different developmental GPR systems. The target of interest was a plastic-cased low-metal anti-tank mine buried 1 inch deep. White pixels correspond to high ratios of signal to clutter, based on an IDA-developed metric. The data images are essentially bird's-eye views of the ground, with the x-axis corresponding to meters down-track and the y-axis corresponding to meters across-track. White arrows indicate the location of the target in the data. The data image generated by System 1 has the highest signal-to-clutter ratio. The target appears as a white ellipse of pixels. Using System 2, the target is visible as a smaller white circle, but there are many other white circles that give rise to false alarms. For System 3, the target is barely visible and appears only as a few faint pixels. System 1 was an early model of the GPR that would become the Husky Mounted Detection System (HMDS).

Comparing Performance

To conduct timely performance assessments of mine and IED detection devices, IDA developed the Mine and IED Detection Assessment and Scoring (MIDAS) tool. This suite of software computes detection probabilities, false-alarm rates (FARs), and

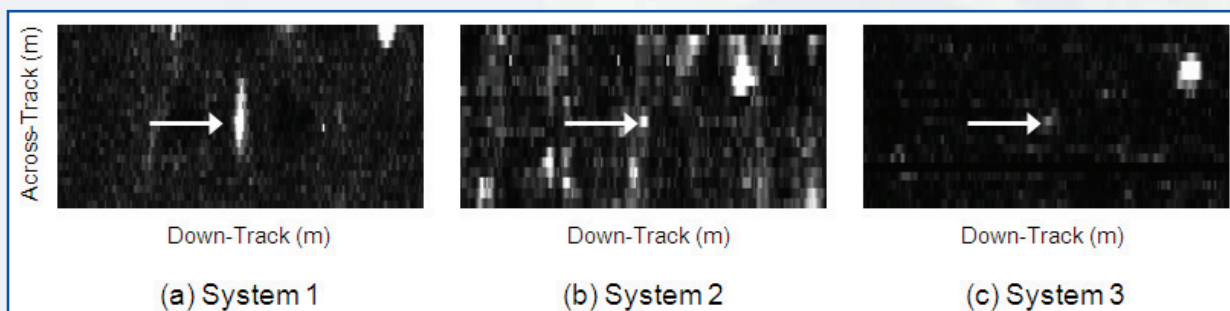


Figure 1: Outputs of IDA's sensor analysis tool for three developmental GPR systems.

system biases. It creates receiver-operating characteristic (ROC) curves as well. IDA researchers have participated in the HMDS Algorithm Working Group—where MIDAS is used to track algorithm improvements.

Figure 2 compares ROC curves for two different GPR systems. ROC curves show the trade-off between probability of detection (P_D) and false-alarm rate (FAR). Ideally, a system would provide a P_D of 1.0 and a FAR of 0 (corresponding to the top-left corner of the graph). System 1 performs far better than System 2. At a FAR of 0.001 m^{-2} , System 1 has detected nearly all the targets, but System 2 has detected only ~40% of them. ROC curves such as these are one of the primary measures our researchers use to assess the detection performance of mine and IED detection systems. In addition to comparing systems, ROC curves can shed light on performance as a function of target type and burial depth, as well as determine which algorithm is most effective.

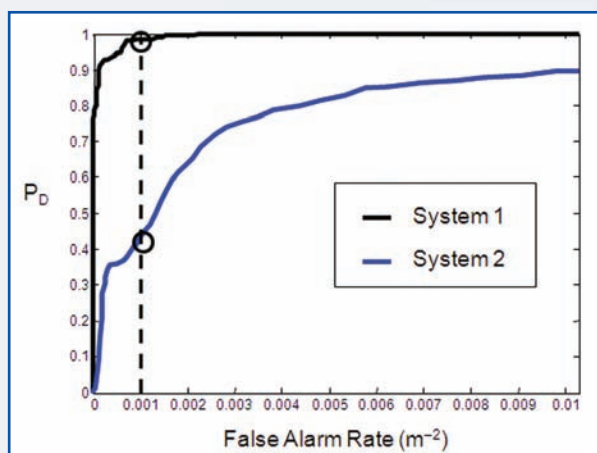


Figure 2: ROC curves for two GPR systems.

A Sample Test

Recently, HMDS was evaluated in Afghanistan. HMDS consists of a down-looking GPR designed to automatically detect buried mines and IEDs in roadways. Figure 3 depicts HMDS as deployed in Afghanistan. The 4-panel, 51-channel GPR is mounted at the front of a Husky vehicle, which has a V-shaped hull to deflect IED blasts. The vehicle's single occupant monitors a GUI within the cab while conducting route-clearance missions. The GUI provides real-time visualization of the GPR data, while an algorithm alerts the operator with an audio alarm if a target is detected. With the vehicle stationary and the GPR over the suspected target, the operator presses a button causing the marking bar to paint the ground over the target for the explosives ordnance disposal teams.

Before fielding, HMDS was tested to determine whether it was compatible with a set of jamming technologies that would ultimately operate in proximity to the GPR. IDA designed a test and used MIDAS to compare the detection performance as a function of separation distance between HMDS and the jamming systems. We analyzed the raw GPR data and developed metrics to determine if HMDS was being interfered with. IDA identified the minimum separation distance at which detection performance was unaffected by jammer noise. In addition, we found that the Husky vehicle itself provided significant shielding when the jamming system was following HMDS. By quantifying the effect, IDA provided the information needed to operate both systems optimally when they are used for route-clearance missions in Afghanistan.

Figures 4 and 5 show HMDS GPR data with and without jammer noise present. The black line in Figure 4 is the radar response in the absence of jammer noise. The x-axis can



Figure 3: HMDS in Afghanistan.

be thought of as depth, where for increasing time sample number, the radar is penetrating deeper into the ground. Other than the peak that occurs when the radar wave reflects off the ground, the response is flat. The blue line in Figure 4 is the radar response that occurs when the jammer is relatively close to HMDS. Note that the response in the presence of the jammer is not flat. Instead, the noise produces peaks and valleys in the GPR data. Our researchers used the standard deviation of the late-time radar response as a metric for determining the extent of noise in the GPR data. Figure 5 reveals what the radar effectively sees under

the ground. Figure 5a corresponds to the case when no jammer was present, while Figure 5b corresponds to the case when a jammer was nearby. The ground response appears as a white-black horizontal band, and the target as an inverted hyperbola. The peaks and valleys of the blue line in Figure 4 appear as an alternating pattern of light and dark pixels in Figure 5b. The noise caused by the nearby jammer is primarily confined to channels 1–12 in the HMDS data. The responses in channels 13–50 are largely unaffected by the jammer due to the Husky's aforementioned shielding effect, on which the GPR is mounted.

IDA continues to support the ongoing assessment of HMDS as soldiers use it to clear roadways of mines and IEDs. Data collected in theater and sent back to the United States are being analyzed so that the system can be improved. For example, we are now examining why the system's false-alarm rate is higher in theater than in tests in the United States.

Summary

The IED defeat challenge has existed since makeshift land mines and explosive booby traps first came into use. Today, IEDs are

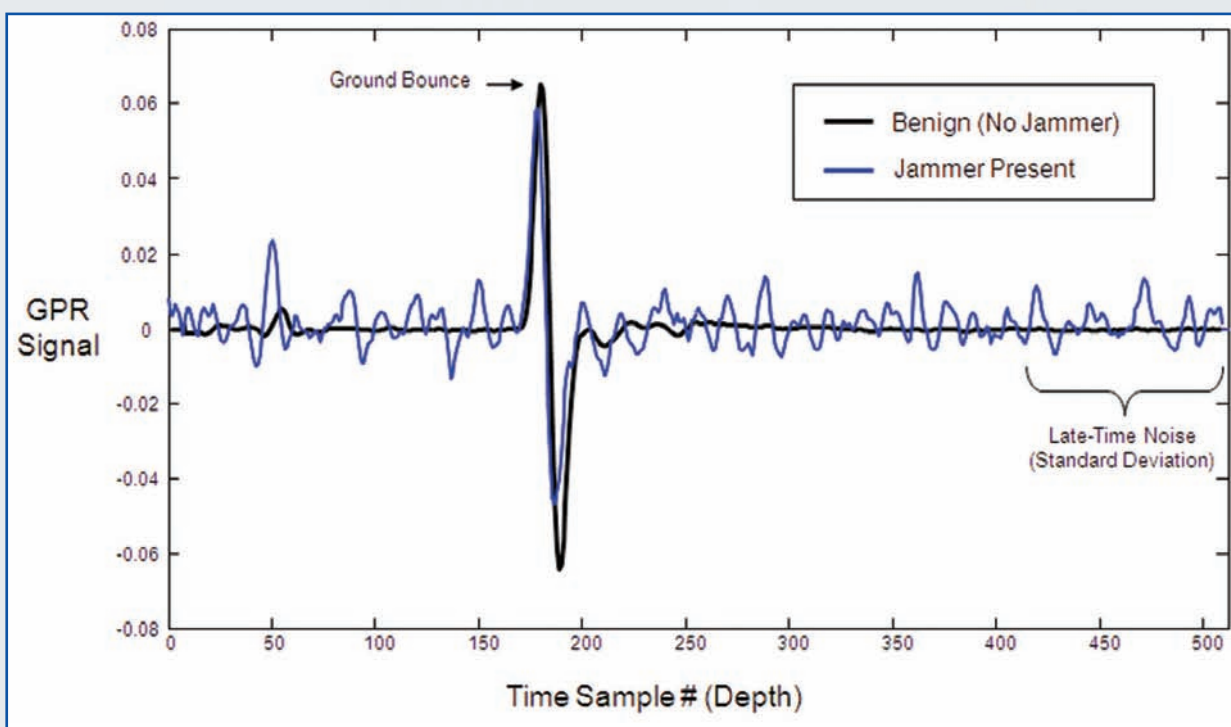


Figure 4: HMDS GPR data, radar response.

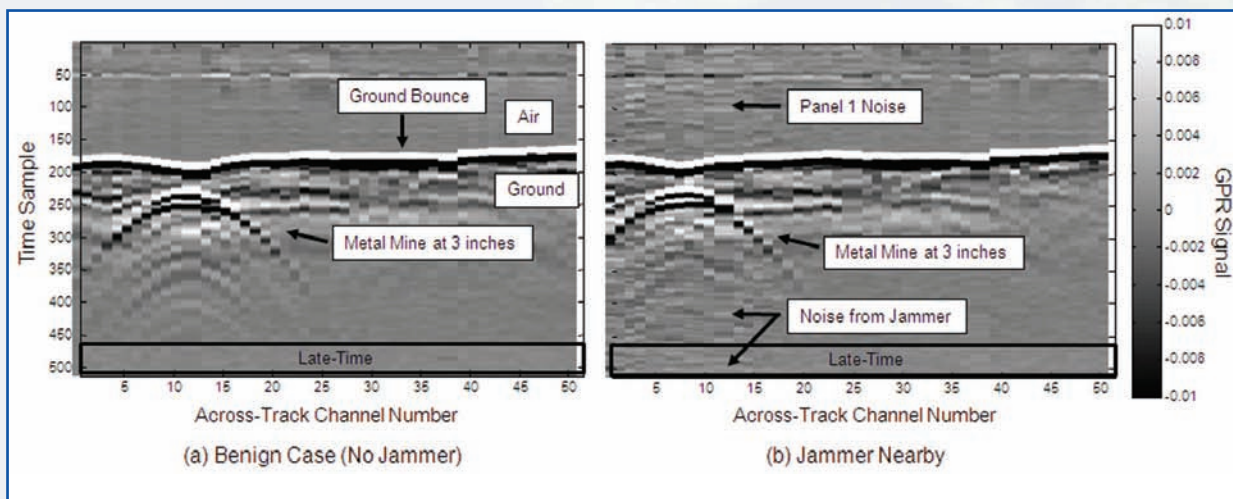


Figure 5: HMDS GPR data, radar response.

used regularly by insurgents, and grow more sophisticated and more dangerous each year. The IED war is one of constantly changing tactics, technologies, and countermeasures in which neither side keeps an advantage

for long. Sustained, rigorous, independent, and timely analyses are required to continue improving U.S. troops' capabilities for detecting mines and IEDs. Our researchers help provide that analytical capacity.

Building Partner Capacity

Dr. Wade Hinkle, Jason Dechant, and Dr. Charles Fletcher

Where possible, our strategy is to employ indirect approaches—primarily through building the capacity of partner governments and their security forces—to prevent festering problems from turning into crises.

— Secretary of Defense Robert M. Gates, National Defense University, 29 September 2008

U.S. security strategy depends upon creating adequate governmental and military capabilities in partner nations to enable them to address security challenges with a minimum commitment of U.S. forces. As Secretary of Defense Gates noted, the existence of such capabilities helps prevent regional security problems. Thus, developing effective mechanisms to help partners improve governmental and military capabilities is a priority for the United States.

IDA provides the Department of Defense (DoD) with a number of tools for building partner capacity. Two of those efforts are the Defense Resource Management Studies project (DRMS) and the Synthetic Environment for National Security Estimates (SENSE) project. During the past 16 years, DRMS has helped 31 countries improve their abilities to plan and manage their national defense organizations. And for just over a decade, SENSE has helped leaders in more than a dozen countries grapple with the political, military, and economic complexity of sustaining peace in post-conflict environments. Together, these IDA programs have helped build management capacities in key security partners around the world. This article will discuss where and how DRMS and SENSE have been engaged, what they have accomplished, and what lessons have been learned that might make similar U.S. Government efforts in this area more effective.

DRMS

In some countries, partner military capabilities can be improved simply by providing modern equipment, specialist training, and access to the American military's education and schools system. In other countries, the lack of modern management techniques and tools, especially

in resource management, inhibits capability improvements, fosters corruption, and provides emerging civil governments few measures to control their militaries in ways those militaries will not perceive as threatening. No military force in the world has resources sufficient to reduce military risk to zero; it is this reality that makes resource planning critical. Creating that capability requires introducing modern analytical techniques, developing skilled and appropriately organized staffs, and using decision-making processes to set priorities and allocate scarce resources. It also requires effective performance evaluation to strengthen transparency and accountability.

The DRMS program was initially conceived to support NATO expansion. As part of increasing its membership, NATO required candidates to improve their defense resource management. Initially, this work focused on introducing technical tools and software for analytic uses like cost analysis. DRMS engagements became broader and more sustained, evolving into the modular approach used today. In 2003, the Deputy Secretary of Defense directed DRMS to focus on key partners in the war on terrorism. During the past 12 months, DRMS teams have been active in Cambodia, Indonesia, the Philippines, southern Sudan, and Thailand.

Every country's needs with respect to resource management are unique. So DRMS teams, working with host nation counterparts, tailor a process appropriate to the scale and needs of each host nation. Their recommendations are grounded in the principles and concepts used by the United States and other defense ministries that employ modern management practices and that are advocated by many international institutions that specialize in public resource management.

DRMS uses a four-phase building block methodology (Figure 1). The building blocks use assessment instruments, concept briefings, skill-building exercises, computer-assisted management simulations, and analytic workshops, in addition to one-on-one consultations with senior civilian and military leaders. A modular approach ensures that a host

country need not initially commit to completely revising its management process. The country can use results from the first phases of the study to determine the desirability and scope of further changes to its management practices.

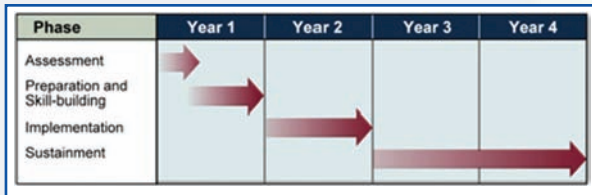


Figure 1: DRMS modular design timeline.

One of the most important technical competencies required in defense resource management is the ability to estimate the cost of military capability, and the cost of changes to capability. For that purpose, IDA has developed software called the Force-Oriented Cost Information System (FOCIS) (Figure 2).

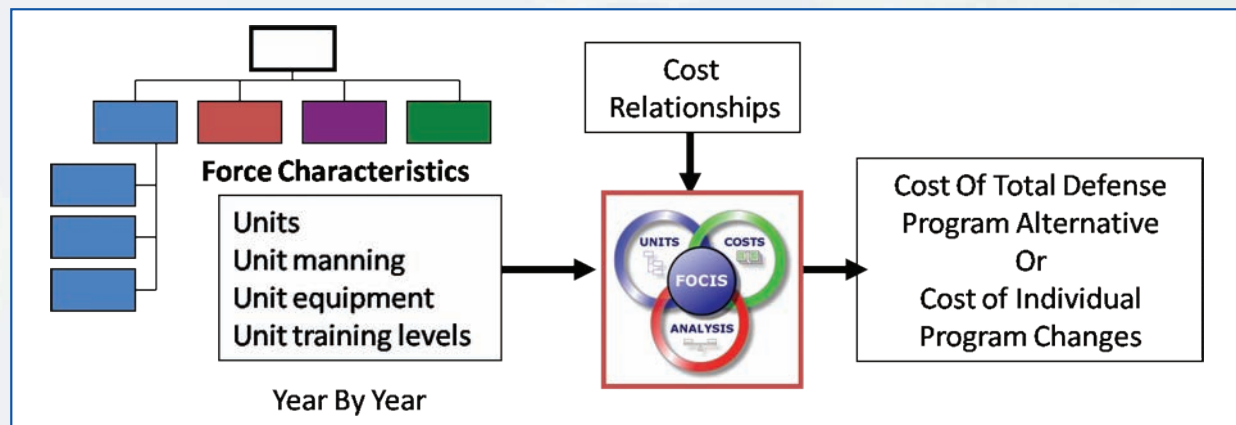


Figure 2: FOCIS provides the ability to link force characteristics to resource requirements.

The DRMS project recorded a number of notable achievements in 2008 and 2009. The Philippines has completely revamped its management systems encompassing strategic, capability, and acquisition planning, as well as multi-year programming and budget and program implementation reviews. The new management process has been used to identify important shortfalls in areas critical to internal security operations (ammunition, operating support, and Special Forces force structure) and to personnel quality of life (housing). In Cambodia and southern Sudan, FOCIS is being used to produce the first-ever cost estimates of long-term defense plans and to examine affordable options. And in

Indonesia and Thailand, DRMS continues to build the technical skills needed to implement new resource management processes.

SENSE

The process of nations transitioning from one phase to another is complex and difficult to manage. Missteps can be catastrophic. Recognizing this, in 1998 General Wesley Clark, then Supreme Allied Commander of Europe, asked IDA to develop a synthetic simulation environment to place foreign leaders in a simulated post-conflict situation, thus permitting them to test policies, make mistakes, and learn lessons without risking real-world repercussions. The result was the SENSE simulation.

At the core of the SENSE simulation is computer software built upon a fictitious country. The simulated environment includes both (virtual) human-computer interactions and (live) human-human interactions. In a SENSE

simulation each participant is situated in his or her own simulation cell where updates on their progress according to the virtual simulation are injected; simultaneously they are also directly engaged by other simulation participants as part of their decision-making process.

The SENSE software is an econometric model that processes all participant interactions. In its current form, between 40 and 80 players may participate in a simulation where they assume a role in one of four player types: government (executive or legislative branch), firms (local and multi-national), banks (local and national), or international organizations (foreign nations, donors, banks) (see Figure 3). The history of the fictitious country

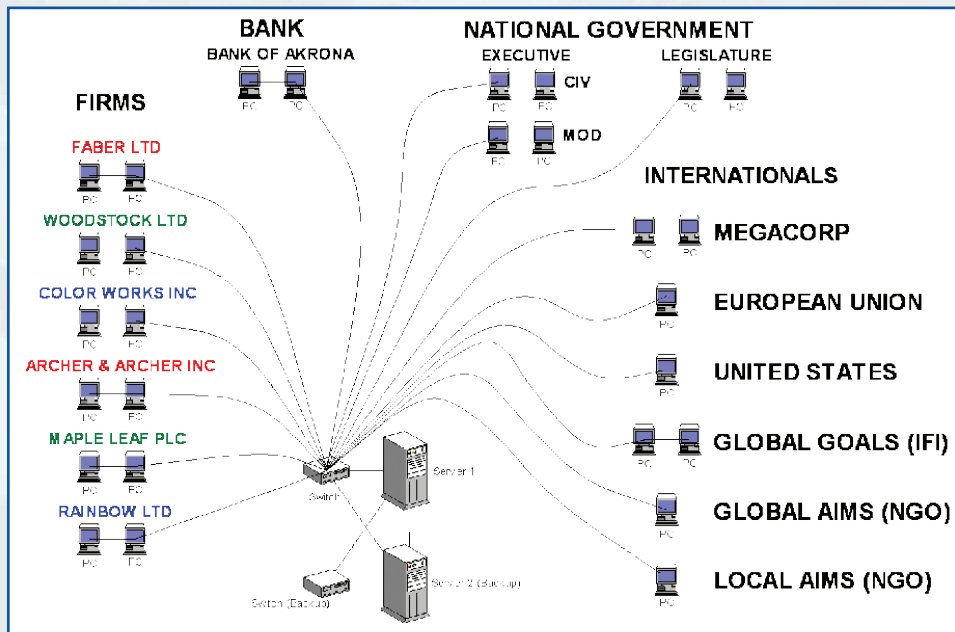


Figure 3: Financial flow model.

and the participants' roles assumed are givens, but everything else in the simulation results from participants' decisions. The entire simulation plays out to 10–12 years post-conflict, and it records the accumulated results of player actions throughout the simulation (a few examples appear in Figure 4).

A full SENSE simulation involves the SENSE software, subject-specific companion seminars, and regular after-action reviews. This multi-faceted approach creates a learning environment where participants can see the results of their interactions in real time and can discuss their implications. The simulations frequently involve participants from the highest levels of the public and private sectors

as well as their staffs, thus permitting constructive dialogue between echelons of decision making and decision support.

Since its debut in 1999, SENSE has been used in five countries with target audiences from more than a dozen nations. Originally designed as a training tool for senior leaders from the Balkans, it was also employed at the cabinet and subcabinet levels in the Republic of Georgia. Shortly afterwards, it was

reoriented as a training tool for early- to mid-career officials from various U.S. departments and agencies. In 2002, the United States Institute of Peace (USIP), which became SENSE's primary sponsor, has successfully employed it around the globe, has installed it in the National Defense University-equivalent in Poland, and is conducting monthly simulations in Baghdad with Iraqis.

IDA is currently modifying the SENSE software to better emulate conditions in Afghanistan. Since its inception, SENSE has received favorable reviews from participants and sponsors alike, which is why it continues to be used today as a tool for exposing

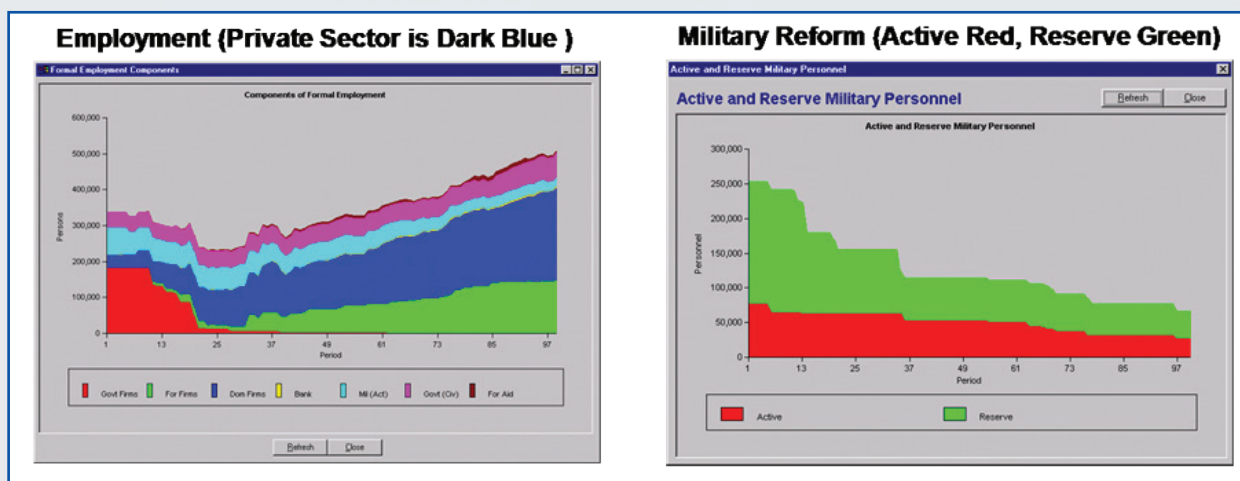


Figure 4: Examples of accumulated results of player actions throughout the SENSE simulation.

participants to the complex dynamics of post-conflict societies.

Lessons Learned

DRMS and SENSE have different specific objectives, but the two programs share an approach. Both form teams of experts to study effective approaches to management and planning, adapt those approaches to security issues in foreign cultural settings, and deliver advisory assistance to local decision makers and experts to implement those approaches.

The two programs provide a valuable opportunity for considering which factors may be most important when fashioning similar efforts to strengthen host government capacities that support stability and security. Experience from the DRMS and SENSE projects suggests three central factors:

- Commitment from senior leadership in partner countries is essential;
- Improving management capacity requires engaging at both the technical and policy-making levels; and
- The U.S. Government must send the right people to do the job, and they must be allowed time to do it properly.

Resource planning and economic policy deal directly with the questions of who gets what and who decides who gets what. Proposing changes in the answers to those questions is stressful within any organization and are even more so when money is tight. Thus it is not surprising that DRMS and SENSE have worked best in countries where the senior leadership is already committed to improvement. In some cases, the motivation is external (such as the possibility of NATO membership). In others the motivation has come from recognizing that improved planning is essential to solving internal problems. The lesson for U.S. policy making is that capacity-building will succeed most often when linked to incentives that local leaders value or when they perceive that help from the United States will advance their own policy objectives.

Many U.S. assistance efforts are premised on the assumption used in the first years of the DRMS program: that capability shortfalls result from inadequate technical or functional

analysis. As a result, the tendency is to focus on analytic tools and techniques. This helps in some instances, but not when shortfalls result from an inability to prioritize and correct systemic imbalances between programs and prospective funding. When devising approaches to capacity-building, U.S. planners need to recognize that any set of desired improvements must be affordable and that local decision makers must be able to understand the future costs of current decisions. In those instances where improvement in resource management is indicated, there should be equal emphasis on technical and analytic skills and senior-level decision making processes.

Successful capacity-building requires assembling teams of qualified advisors and giving them enough time to accomplish their objective. U.S. advisors should have a combination of technical skills and work experience. The advisory team needs experts in functional areas, program and cost analysis, and management science. In addition, team members should have observed top-level resource decision making processes. They will need sufficient stature with local senior leaders to gain acceptance as advisors. Because the objective is to introduce management improvements that continue beyond the assistance effort, team members should remain to advise and assist when new techniques and processes are first used. The U.S. advisory team needs to be committed to a host country for a minimum of two years in order to follow the process from strategic planning to budget submission. The DRMS team supporting the Philippines has spent an average of four months per year for the last five years in Manila working with senior Defense Department officials and staff to develop and institutionalize a new management system.

Conclusion

IDA has developed and employed effective tools to help DoD achieve its strategy through building partner capacity. Among them are the DRMS project and SENSE simulation, which connect decision making to outcomes to help partner countries strengthen their overall capacity for managing transitions. Through its experience employing these and other tools, IDA has learned and conveyed to DoD sponsors important lessons for building partner capacity.

Combating the Trans-South Atlantic Drug Trade

Dr. Jack Cann and Christopher Ploszaj

There is a little-noticed war underway, overshadowed by events elsewhere and waged on both sides of the South Atlantic. “West Africa is under attack” is how Antonio Maria Costa, Executive Director of the United Nations (UN) Office on Drugs and Crime, described the effects narcotics smuggling is having on the region.¹ He cited Guinea-Bissau as being in particular jeopardy because corruption caused by the booming illicit drug trade is undermining the government’s sovereignty.² Costa’s deputy, Philip de Andres, went further by describing a link between the financing of terrorism and the activities of cocaine dealers in West and Central Africa.³ In West and Central Africa, well-organized, well-equipped, and well-funded drug trafficking networks are manipulating and corrupting weak governments, which is creating an environment where extremists operate unencumbered and where they exploit otherwise unrelated criminal enterprises to facilitate their operations.⁴



Photo courtesy of USCG

Figure 1: U.S. Coast Guard boarding a “go-fast” drug runner.

Diagnosis

While drug smuggling out of Latin America through Africa to Europe has created opportunistic organizational and financial links between criminal organizations and extremist networks, these links get scant attention by government officials because they fall between policy, organizational, and geographic “seams.”

Crime and extremism tend to be compartmented into separate missions and organizations. Since 9/11, resources and manpower have been diverted from “traditional” law enforcement priorities, such as counternarcotics, to efforts to counter extremists. There has been little attempt to coordinate the two missions. Sophisticated criminal and extremist organizations are agile, able to identify and exploit the limitations and weaknesses of U.S. national institutions and the preoccupations of the U.S. Government. Moreover, both criminals and extremists are adaptive and innovative in exploiting globalization. They use some of the same methods and facilitators to finance their operations and have some of the same goals, engaging in loose partnerships of convenience that probe and exploit the seams of traditional intelligence, law enforcement, and military domains.

The growing trans-South Atlantic drug trade is particularly troublesome because there is not a clear strategy for countering it. While the movement of drugs through West Africa to Europe does not threaten the United States directly, it undermines weak African governments and U.S. NATO allies alike. This trade is overlaid on existing extremist and criminal networks that smuggle diamonds,

¹ “Cocaine Trafficking in West Africa: The Threat to Stability and Development (With Special Reference to Guinea-Bissau),” United Nations Office on Drugs and Crime, December 2007, www.unodc.org/documents/data-and-analysis/west_africa_cocaine_report_2007-12_en.pdf, accessed 3 Sept 2008.

² The recent assassination of Guinea-Bissau’s president Joao Bernardo Vieira highlights the extent to which the government’s sovereignty is undermined by illicit trade. “President of Guinea-Bissau Assassinated,” CNN (2 March 2009), www.cnn.com/2009/WORLD/africa/03/02/guineabissau.general/, accessed 9 April 2009.

³ Ofeibe Quist-Arcton, “A Small Nation Tries to Tackle Big Drug Traffickers,” National Public Radio, 23 October 2007, www.npr.org/templates/story/story.php?storyId=15152837, accessed 3 Sept 2008.

⁴ For the purposes of this paper, *extremist* refers to both religious and political entities who “(1) oppose—in principle and practice—the right of people to choose how to live and how to organize societies and (2) support the murder of ordinary people to advance extremist political purposes.” Chairman of the Joint Chiefs of Staff, *National Military Strategic Plan for the War on Terrorism* (1 February 2006).

launder money, enslave humans, and traffic in illicit arms. The United States has not yet focused sufficient resources to shut down this activity.

Petri Dish

The security environment in the trans-South Atlantic region provides a petri dish for examining the effectiveness of current U.S. Government efforts to coordinate interdiction of criminal networks that facilitate extremist ends. Understanding criminal networks provides important visibility into extremist networks, offering greater interdiction opportunities.

There is no better example of the extremist-criminal link than Hezbollah. Drug enforcement and African experts increasingly link Hezbollah to the trafficking pipeline that delivers drugs to European markets from Latin America via West Africa or from Latin America into U.S. markets. Using the Lebanese Diaspora as cover for front companies, human couriers, and real estate transactions, Hezbollah has established a trans-South Atlantic pipeline for drugs.⁵ In October 2008, law enforcement officials from the United States and Colombia exposed this pipeline with the arrest of Chekry Harb and 36 associates in Bogota. The case began as a joint investigation between the Drug Enforcement Administration (DEA) and Colombian police who suspected Harb of laundering money for Colombian drug traffickers. Through informants and wiretaps, the investigators turned the money laundering case into an international drug trafficking case that linked Harb and his associates to the transfer of drugs and money from the Colombian cartels to Hezbollah.⁶ Harb's network used Venezuela as a launching point to move Colombian cocaine to the United States or through the trans-South Atlantic pipeline to Europe.⁷ Besides facilitating the movement of drugs, Harb laundered money for the cartels, sending 12 percent of his profits, mostly cash, to Hezbollah.⁸

IDA research in this area originated as a study of lessons from interagency efforts to protect and advance U.S. national security

interests. The analysis was intended to answer the question *What can a Regional Combatant Commander do to facilitate greater interagency cooperation, coordination, and collaboration in the implementation of U.S. policy and programs in his area of responsibility?* What emerged was a mixed picture of how interagency players implement strategy and policy. Particularly successful examples are the Joint Interagency Task Force-South (JIATF-South) and DEA Special Operations Division (SOD). JIATF-South's way of doing business is unconventional. Part military command center, intelligence fusion center, law enforcement coordination center, and mini-UN, it has a unique cross-organizational culture that contributes to its effectiveness. SOD targets the command and control of drug trafficking organizations that cross jurisdictional boundaries by integrating intelligence into investigations to create seamless law enforcement operations.

Our work suggests that distributed transnational criminal organizations, some of which have loose ties to extremist networks, dominate the illicit trade of narcotics, nuclear fissile materials, people, arms, and commodities. These criminal organizations have little in common with the extremist networks beyond a financial incentive to cooperate, but do so because the partnership opens previously untapped markets. Such transnational activity has been observed in the Horn of Africa, including traffic crossing the Gulf of Aden from Yemen; in the Sahel and Maghreb regions of Africa; across the South Atlantic between South America and Africa; and along Russia's periphery. Sometimes millennia-old smuggling routes used by criminal networks rooted in ancient tribal, clan, and family relationships are put to new uses. These criminal enterprises destabilize already fragile government institutions, and in some cases challenge state sovereignty. They also facilitate extremist capability by providing ready-made networks for generating wealth and for moving that wealth, as well as people and weapons, around the globe in the shadows of the legitimate global commercial and economic system.

⁵ "Confronting Drug Trafficking in West Africa," hearing before the Committee on Foreign Relations, United States Senate (23 June 2009), <http://foreign.senate.gov/hearings/2009/hrg090623a.html>, accessed 27 July 2009, in particular see the testimonies from DEA Chief of Operations Thomas Harrigan and International Assessment and Strategy Center analyst Douglas Farah; Sara A. Carter, "Hezbollah Uses Mexican Drug Routes into U.S.," *The Washington Times* (27 March 2009); Alain Rodier, "Notes D'Actualité N° 168: Les Trafics de Drogue du Hezbollah en Amérique Latine," *Centre Français de Recherche sur le Renseignement* (14 April 2009); "17 Arrested on Curacao for Involvement in Hezbollah-linked Drug Ring," *The Guardian* (29 April 2009).

⁶ Chris Kraul and Sebastian Rotella, "Colombian Cocaine Ring Linked to Hezbollah," *Los Angeles Times* (22 October 2008); Personal interviews with senior DEA officials (30 October 2007 and 13 December 2007).

⁷ While the United States and Europe represent the largest markets for Colombian cocaine, some of the cocaine moved by Harb's network also ended up in the Middle East.

⁸ Kraul and Rotella, "Colombian Cocaine."

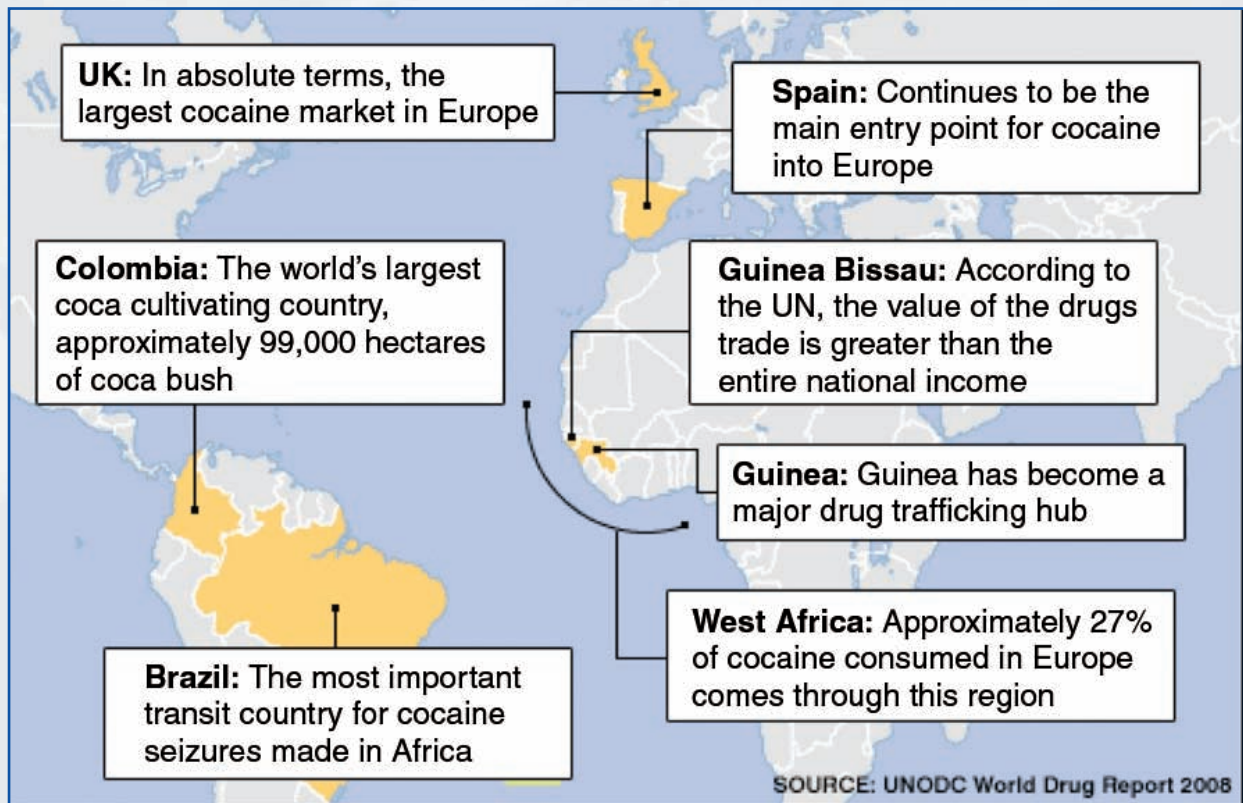


Figure 2: Key countries in the Transatlantic Drug Trade.

Prescription

Our research suggests that increased U.S. attention to this problem could result in 1) the prosecution of extremists for criminal behavior; 2) greater visibility into transnational terror networks and their state sponsors; and, 3) compromising criminal networks, raising their operational costs and increasing the risk of doing illicit business.

Focusing efforts on criminal investigation and more fully integrating them into defense and intelligence community activities could increase threat network visibility, inhibit extremist ability to leverage criminal networks, and increase the financial and logistics burden on extremists, their organizations, and their supporters.

Countering Transnational Criminal Insurgents

Dr. Barry Crane and Dr. Amy Alrich

Since the mid-1990s, IDA has assisted international and interagency efforts to understand the connection between insurgencies and transnational crime, especially narcotics. An example is a series of technical conferences that IDA facilitated for the United Nations Office on Drugs and Crime (UNODC) in Vienna, Austria. The conferences involved participants spanning both theory and praxis from universities, law enforcement agencies, research institutes, and non-governmental organizations. The initial conferences focused on international narcotics markets, while later technical workshops examined the impact of transnational crime and narcotics markets on insurgencies and regional instability.

Lessons

The connection between transnational crime, trafficking and insurgent groups—first so prominent in Colombia and now a feature of instability across South America, Africa, South Asia, and the Middle East—is a complex problem in search of an international and interagency solution. To advance the understanding of illicit markets and anti-government groups, the UNODC hosted the conference “Countering the Effects of Violent Transnational Crime” in December 2007. The event was sponsored by the U.S. Department of State’s Bureau of International Narcotics and Law Enforcement. Seminar topics included histories of the links between transnational crime and anti-government groups, similarities between criminal and terrorist network operations, the underlying organizational principles governing their behavior, and viable strategies for defeating them. The Colombian narco-insurgency and criminal activities in the surrounding regions were examined as the largest case study of successes in countering criminal-based anti-government groups. Colombian efforts to combat the narco-insurgency included establishing a government presence in all provinces and districts, substantially narrowing insurgents’ freedom of

action. Colombia’s successful counternarcotics campaign offers a set of principles that could prove useful in Afghanistan and elsewhere.

Stimulated by developments in Afghanistan, the United Nations sponsored a technical conference in April 2009, called “Building the evidence base for drug control in Afghanistan: Working toward an actionable, collaborative research agenda.” Topics emphasized the complexity of the situation in Afghanistan and the neighboring region and how that complexity affects the potential for success. Workshop participants concluded that coordination, cooperation, and unity of purpose are needed to foster workable regional security arrangements and a viable state. Those attributes remain elusive, arguing for a more granular understanding of the region’s societal and economic complexities.

The UNODC map in Figure 1, which depicts the areas where there are high-risk security conditions and opium poppy cultivation, suggests a close relationship between violence and opium.¹

As a foundation for the April UNODC workshop, IDA developed an integrated, synchronized strategy² that relies both on combat operations derived from analyses of Coalition counterinsurgency data from Iraq, and “economic operations” that undermine the narcotics trade’s “business” viability, thereby reducing the resources available to finance insurgency.³ The strategy consists of three components: 1) engage the opium market to drive the price of opium below cost, 2) subsidize and create an alternative licit market, and 3) provide security and transportation to move licit crops to market. The basic components of this strategy are being implemented in Afghanistan. IDA’s research produced the following findings:

1. A direct relationship exists between the illicit opium industry and the failure of international aid programs and reconstruction efforts. As the drug economy grows, it fuels the reconstitution of anti-government forces; the resulting

¹ Afghanistan Opium Survey 2008, UNODC.

² Crane, et al, *An Integrated, Synchronized Strategy for Afghanistan*, IDA Document D-3586 (Alexandria, VA: Institute for Defense Analyses, August 2008).

³ So called “Deep Battle” operations to remove the Taliban’s illicit “industrial base.”

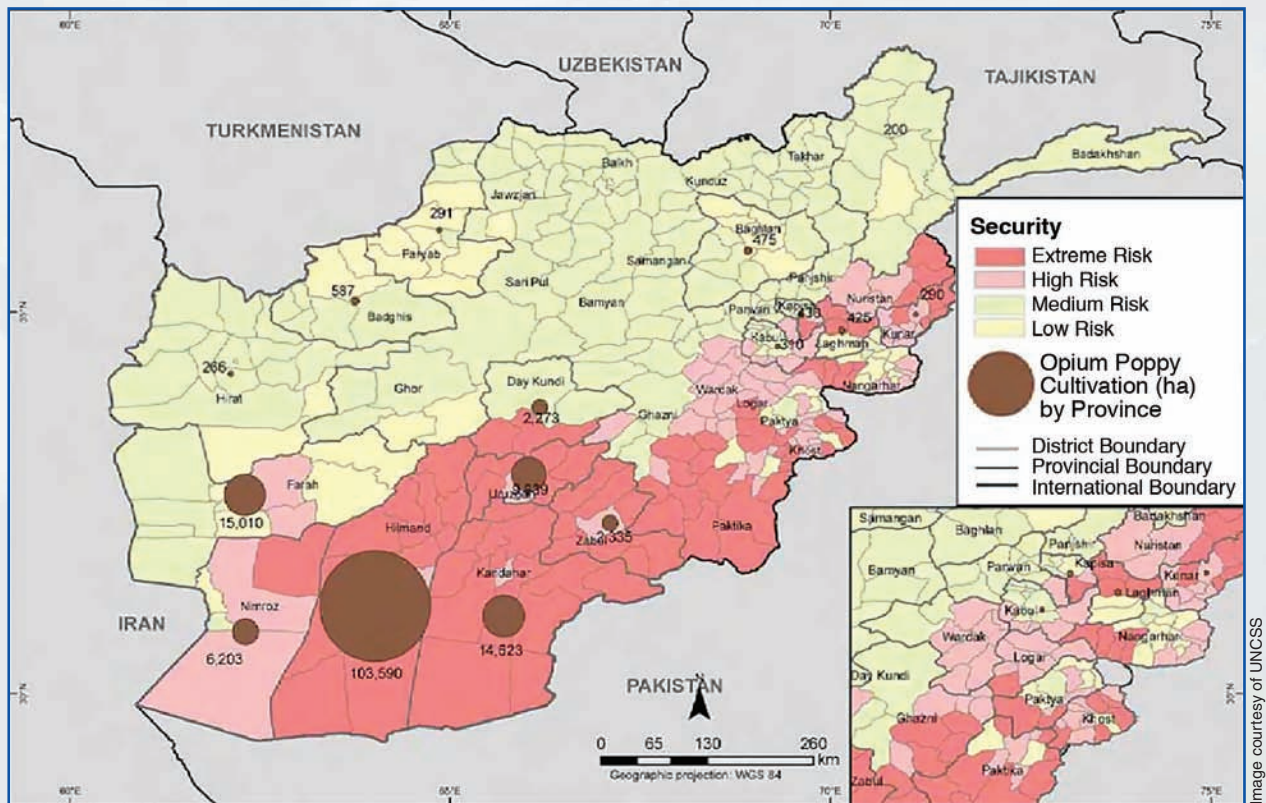


Figure 1: Security map (as of 12 June 2008) and opium poppy cultivation in Afghanistan by province, 2008.

environment is one in which stability and rule of law cannot flourish.

2. No single element of government by itself has the capacity to achieve an enduring regional security arrangement and viable Afghan state.
3. The opium industry is increasingly controlled by anti-government groups.
4. While poppy cultivation has been contained in some areas, it has expanded rapidly in those provinces with the lowest security levels.
5. Without a properly executed, integrated, synchronized strategy, pro-government armed forces will likely continue to suffer increasing casualties, while enemy forces regain their strength and sustain their efforts.
6. Synchronized efforts among law enforcement, economic and political development groups, and the armed forces must engage the illicit opium industrial base as a target set. Goals include driving down the price of opium, substantially

reducing the value of stockpiled opium, and eliminating insurgents' ability to reconstitute and recruit.

7. Eradicating poppy crops is a complementary strategy, but should be conducted only after the underlying opium value is reduced to near or below cost.
8. Law enforcement operations are needed to prosecute criminals for corruption, extortion, and drug trafficking in order to publicly identify the criminal nature of the insurgency. However, current law enforcement operations do not have the capacity to ruin either the underlying drug business or to substantially cripple anti-government groups.
9. When the opium industry collapses, key agencies and donors must be prepared to provide economic assistance to the population.

Implementing this approach is not straightforward, because it requires governments, agencies, and inexperienced host nation forces to cooperate extensively. From its analysis

of Colombian counter-narcotics efforts, IDA developed—in cooperation with UN experts—a set of basic operational principles applicable across many kinds of asymmetric war situations.

1. Intervention thresholds, i.e., minimum operational levels that need to be achieved and sustained to reap huge deterrence benefits, exist.

2. Criminal organizations resist such interventions by fragmenting into smaller, less capable elements. A key variable, dependent on local conditions, is the reconstitution time (adaptability) of militarized criminal organizations. Short reconstitution times are particularly demanding, requiring government units with the latitude to exploit opportunity and that are dispersed widely to restrict opponent's freedom of movement.

3. A potentially fatal flaw of transnational anti-government organizations is their

criminality, which can be used to delegitimize them.

4. There continues to be an urgent need for technical and professional experts to characterize how reconstitution of violent transnational criminal groups occurs, both quantitatively and qualitatively. To date, with limited data, only sustained pressure across more than ten reconstitution cycles has proven effective. It is difficult to keep complex alliances focused on tasks for long periods. Making reconstitution more difficult is a more promising path to success.

Summary

IDA's analyses of Colombia's experience against militarized criminal groups, its work with UNODC, and its on-site insights into challenges posed by the situation in Afghanistan have improved understanding of these complex criminal insurgencies.

Using Economic and Financial Leverage

Dr. Richard White

Using economic levers to influence or attack an adversary is millennia old. While using these economic levers is reasonably direct, the repercussions of manipulating global marketplaces can be complex and difficult to project *a priori*.

Economic Levers of Power

In the late 1990s, IDA was asked to perform an



analysis of the economic levers of power and their potential use against both the United States and its adversaries. Based on insights from this initial body of work, IDA has continued performing economic influence analyses, whose thrust is summarized below.

Economic influences can be usefully segregated according to the textbook definitions of real and money economies. Real economy (economic) refers to the production of tangible goods and services, including manufacturing, agriculture, and raw material extraction. Money economy (financial) refers to the activities of the financial, banking, and insurance sectors.¹ Changes in the real economy take months and years to play out; changes in the money economy,

due to the pervasiveness of communications, can be almost instantaneous.

Because of the intricate symbiosis between the real and money components, the geographic dispersal of interdependent production processes worldwide, and the multi-faceted layering of investment expectations and derivatives markets, there exists a wide range of opportunities to influence the course of economic and financial events. Therefore, thoroughly understanding the nature and implications of such opportunities could provide decisionmakers with prospects for choosing and even fine tuning the outcomes of various types of stimuli and aligning them with policy objectives.

From an operational perspective, the key to any effort to influence either the real or money components of economies, or to orchestrate effects that target both simultaneously, is to understand how they function. Therefore, developing a knowledge base and human capital familiar with the details of such systems is indispensable. IDA's work in threat finance has helped develop such a knowledge base and related human capital. Perhaps most challenging is the need to develop an interdisciplinary approach to understanding the interaction of social, economic, and political processes that characterize today's world.

Changing Global Realities

The end of the Cold War offered opportunities for radical reductions in international geopolitical tensions. As societal barriers anchored by the bi-polar relationships of the two great superpowers subsided, greater access to national and international markets accelerated movement toward creating a "borderless" worldwide economic enterprise. Termed globalization, increased capital mobility and information-sharing capabilities afforded unprecedented access to pools of cheap labor internationally, and new trade regimes enabled increasingly efficient extensions of market influence. Although the potential increased for all nations and peoples to benefit from the spread

¹ Including real estate, as in the often used acronym FIRE (Financial, Insurance, Real Estate).

of economic opportunities across the globe, these changes also led to myriad secondary effects, not all of which have been positive.

Increases in market penetration and improvements in communications technologies, especially during the past two decades, have exposed large segments of the world's population to alternative philosophies, lifestyles, and opportunities. Not all of these alternatives were welcomed, and many called into question traditional norms and values. It should come as no surprise that the changes brought by globalization have engendered dissatisfaction among various segments within society and led to backlashes. Moreover, many of the complaints have deep historical roots in movements and philosophies generations or even centuries old.

Riding on the new wave of prosperity have been illicit activities taking advantage of rising incomes, innovative technologies, and opportunities to extract "rents" from newly profitable enterprises. Kleptocracy continues to grow in developing nations, and pariah states such as North Korea have learned to use the international financial system to support their counterfeiting and smuggling operations. International traffickers have insinuated themselves within burgeoning trade flows and continue to make inroads in marketing illicit narcotics, counterfeit goods, and the transporting of human beings.

The confluence of anti-establishment and illicit activities is problematic. Environments conducive to harboring and nurturing criminal organizations may be similarly well-suited for terrorists and insurgents. Moreover, criminal pursuits, such as drug trafficking, may provide

the income necessary for anti-establishment entities—collaboration among groups with widely differing beliefs and objectives should be expected wherever a profit is to be made.

Framing the Challenge

A framework for addressing and countering both anti-establishment and illicit activities—"asocietal" activities—must therefore consider both simultaneously. This framework should be sufficiently flexible to provide insights within and across widely differing environments, and it should be empirically robust so that forthcoming recommendations may be properly resourced.

Operational applications of financial and economic power include overt actions (such as trade sanctions) to influence adversaries' well-being and perceptions, and covert, clandestine, and undercover operations that could, given appropriate authorities, be conducted by intelligence, law enforcement, or the military. Ultimately, as with any proposed operation to achieve national policy objectives, the intended effects would be to influence, and in some cases compel, adversaries' behavior. In this regard, IDA's role is to help decision-makers understand the likely effects of "classes" of potential actions. IDA research gives particular attention to understanding the predictability of threat finance operations—the ability to project a specific outcome bounded by alternative outcomes that may or may not satisfy policy objectives. These efforts, gathering evidence from a fast-changing international security environment, are illuminating new challenges and opportunities for national defense.

Understanding the Conflict in Sudan

Dr. S. K. Numrich and Tara McGovern

In 2006, U.S. Central Command (CENTCOM) determined that civil order in Sudan had deteriorated to a point where it could become a major problem for the already strained command. At CENTCOM's request, the Joint Staff and the Office of the Secretary of Defense (OSD) assembled a multi-agency team to develop a socio-cultural understanding of Sudan's situation. IDA's role was to provide the socio-cultural context using only unclassified sources.

The Challenge

CENTCOM identified three main issues: 1) mitigating conflict that could have an impact on the rest of the Horn of Africa; 2) alleviating human suffering, especially in Darfur; and 3) denying terrorists a safe haven in Sudan. IDA researchers also considered the question of Sudan's viability as a nation since Southern Sudan will hold a referendum in 2011 to decide whether to remain part of the country or form an independent nation.

To accomplish the task, the IDA researchers interviewed regional experts, Sudanese government officials and expatriates, and international organizations to build a comprehensive picture of the situation. The interviews complemented open-source reporting, historical documents, and reports from non-governmental providers of humanitarian aid. Sub-studies of the multiple on-going peace processes, the impact of U.S. sanctions, Sudan's economic status, the role of international partners, and the troubling behavior of *Janjaweed* militias filled out the complex mosaic. What became apparent is that Sudan's contradictions must be understood in order to formulate sound policy and strategy recommendations.

Historical Dynamics

Sudan has only existed as a nation since 1956. From 1821 to 1956, it was part of Egypt and then a ward of the United Kingdom, with only a brief period of independence before the turn of the century. Before this, the territory was a patchwork of mini-kingdoms and autonomous



Figure 1: Map showing Sudan's major regions.

tribes. In Southern Sudan, these tribes retain a strong influence. At no time before the creation of the Republic of Sudan was the territory a unified entity. Under British rule, the country was sub-divided into northern and southern administrations. The northern government maintained close ties with Egypt and received economic and educational support from abroad. People living in the south continued basic agricultural activities, had little outside contact, and received little development assistance.

Sudan is also divided ethno-linguistically and religiously. Before the eleventh century, when Islam spread to most of what is now Northern Sudan and Darfur, the people practiced a mixture of Christian and traditional beliefs. Today, people in these areas practice Sunni or Sufi Islam, while southerners still practice Christianity or traditional animist religions.¹ The government supports Shari'a law and demands strict adherence to Islamic beliefs, bringing it into conflict with the South.

¹ According to the *CIA World Factbook*, Sudan's religious breakdown is 5% Christians, 70% Sunni Muslim, and 25% indigenous beliefs, <https://www.cia.gov/library/publications/the-world-factbook/geos/su.html>.

Conflict and Reconciliation

The differences between the North and the South became apparent in the mid-1950s as independence approached. The first Sudanese Civil War began before independence in 1955. Peace and reconciliation talks between the two sides led to the Addis Abba agreement in 1972, by which Sudan's government promised the South substantial autonomy. In 1983, Khartoum attempted to circumvent the agreement and authorized Shari'a law to be practiced throughout the entire country instead of just in the North.

This ignited the second civil war, which lasted until 2005. John Garang, a U.S.-educated Southern Sudanese military officer, led the Sudanese People's Liberation Army (SPLA) against the North. He also led the peace process for the South throughout 2003 and 2004, which led to the Comprehensive Peace Agreement (CPA). The CPA laid the foundation for a new political structure based on shared resources and political power; however, participation was directed to the South and did not include the other regions, Darfur and the East, thereby further fracturing an already divided nation.

Provisions of the CPA included a national election followed in three years by a plebiscite through which the South would have the opportunity to choose independence. Originally, the government planned to hold the election in mid-2009, but its inability to conduct a nationwide census pushed the date out to 2010. While the CPA set forth a path leading to a plebiscite, there was no plan for any post-election evolution for the South, either as a part of the nation or as a separate entity. This lack of planning is particularly troublesome because of the distribution of natural resources. The rich oil reserves lie in the South but the country's sole pipeline runs through the North. It is guarded by China and terminates at Port Sudan on the Red Sea. Controversy over oil rights is a continuing problem that can easily escalate into an international crisis should the pipeline or well sites be threatened.

Darfur

Just as the North and the South began to resolve their differences, civil order began unraveling in the western part of the country. When most people hear about Sudan today, they hear about



Figure 2: Dr. John Garang, who was the first Vice President of the Republic of Sudan, first president of South Sudan, and Chairman and Commander in Chief of the SPLA/M.

Darfur. Conflict here dates back centuries as sedentary farmers (largely African Muslims) and nomadic herders (more Arab) quarreled over water and grazing rights.

Traditionally, tribal elders settled disputes like these through customary tribal law. Years of drought, accompanied by increasing desertification in the region's northern reaches, and coupled with the proliferation of automatic weapons among local militias, drove these disputes beyond the influence of traditional tribal justice. The *Janjaweed* militia, composed of black, Arabic speaking nomadic camel herders and thieves, are a presumed surrogate of the government in Khartoum. They ruthlessly attack the farming villages of sedentary tribes, seeking to intimidate them through brutality to flee to neighboring Chad. They are not, however, a cohesive group. Bands of *Janjaweed* have their own local agendas and coalesce opportunistically, while the government stands by unwilling or unable to control them.

Several groups are fighting the government and the *Janjaweed*. The largest of these, the Sudan Liberation Movement, originally named the Darfur Liberation Front, participated in the May 2006 Darfur peace process and signed the Darfur Peace Agreement. The agreement failed to end the conflict because several groups continued to fight, most notably the Justice and Equality Movement (JEM). Members of JEM produced a book in 2000 that illuminated inequalities in Sudan. In May 2008, JEM attacked Khartoum, with both sides claiming victory. Darfur is caught in a deadly



Figure 3: Militia in el Geneina, Darfur.

spiral of environmental deterioration, starvation, and civil and tribal warfare, while plagued by the neglect of a government whose leaders have been charged with war crimes.

The Terrorist Connection

Although Sudan sheltered Al-Qaeda and Osama bin Laden in the 1990s and remains on the State Department's State Sponsors of Terrorism list, the Sudanese government has actively cooperated with the United States in the war on terror and, at some risk, has removed government officials who supported Al-Qaeda. The foremost issue is the potential for terrorist groups to move into minimally governed parts of the country.

If unrest in Darfur spreads or if anger over high-handed government policies and broken promises sparks a return to Civil War in the South, the government's ability to retain sovereignty

over its territory or remain in power without an external prop will falter. In that environment, it would become easier for terrorists to recruit, set up training camps, and use Sudan as a launching pad for ventures elsewhere. That possibility is greatest in sparsely populated Muslim areas in the North and Northwest. Although Osama bin Laden issued a call for foreign jihadists to go to Sudan in 2006 to confront an international peacekeeping force, it is doubtful that the general Sudanese populace, historically wary of their lighter-skinned Arab neighbors to the north and east, would support Al-Qaeda.

Conclusions

Sudan is a nation marked by deep and intensifying divisions, starting with its geography and resources and extending throughout its diverse ethnic origins as manifested in the political and religious evolution of its people. The existence of separate peace agreements with the South, Darfur and with the Eastern Front is testimony to the fissures that still exist between the government and the diverse population it must serve. Generations of warfare have sapped Sudan's human capital and infrastructure at a time when the nation is most in need of strong, creative leadership to build a government responsive to the rights and needs of all its peoples. The presence of significant foreign investment, including construction and security forces within Sudan, has the potential of escalating a skirmish between Khartoum and the South into an international incident. The future of Sudan is uncertain. The Comprehensive Peace Agreement holds within its provisions both the promise of unity and the potential for secession.



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- provides practical, timely, rigorously objective evaluations of systems and capabilities, advanced technologies, forces and strategies, and resource and support challenges; and
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4850 Mark Center Drive • Alexandria, VA 22311-1882

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