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A Comprehensive Approach to Multidimensional Operations

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Abstract

Peacekeeping and crisis response missions face novel challenges in the modern era. Disruptive changes, including economic globalization, mass communications and access to information, and the emergence of powerful and influential non-state agents require a better understanding of the mission space and the political, economic, and social conditions that impact stabilization efforts. The comprehensive approach is

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among the most recent functional models for coordinating the efforts of the broad assortment of actors involved in addressing complex crises or conflicts. The principles of a comprehensive approach are widely accepted, but mechanisms for practical application are still evolving. Moreover, the benefits realized through coordinated efforts may be limited by organizational constraints. In some cases, mission conditions may also restrict comprehensive approaches. For example robust military engagement in conflict zones may compromise humanitarian access to vulnerable populations; or neutral administration of aid to factional groups might run counter to military actions against named threats. Despite these challenges, mission leaders agree that a comprehensive approach is vital to mission success. Multidimensional peacekeeping, campaigns to combat piracy, and energy security provide useful models for achieving better situational understanding and mission effectiveness via a comprehensive approach. Each of these examples demands political leadership, protection and advocacy for affected or underserved populations, enhanced development, and military intervention to guarantee security.

Keywords

comprehensive approach – complex crisis – multidimensional peacekeeping – combatting piracy – energy security – situational understanding

1 Introduction

The notion of a comprehensive approach is not new. Armed conflicts are seldom resolved with military victories, but rather when political, economic, or cultural discord is resolved or reconciled. In the modern area, disruptive changes create both opportunities and vulnerabilities in previously established societies and regimes. A globalized economy, mass migrations, unprecedented access to information, and ubiquitous and novel communications mechanisms challenge entrenched traditions and weaken the stabilizing controls usually imposed by nation-states. While state-on-state warfare is not extinct, other threats in the international security environment pose immediate challenges. To better understand the implications of conducting multidimensional operations, three selected cases—peacekeeping missions, combatting piracy, and energy resources—are considered herein to describe the principles and methods of a comprehensive approach.¹

¹ The author wishes to acknowledge contributions on the comprehensive approach by a number of colleagues whose selected cases are found in this article, namely, George T. Hodermarsky on the principles and mechanisms, Jeffrey E. Kline and Lyla Englehorn on

The *comprehensive approach* is among the more recent functional models for coordinating efforts to respond to such challenges. Defining this term may be elusive, but it is possible to describe the methods and principles of a comprehensive approach. What is more, although no consensus has emerged on the objectives of a comprehensive approach, any discussion requires identifying the *coherent multidimensional response*, or fundamental mechanism of this approach. Absent a precise definition, the phrase *mobilizing the resources of an entire society* encapsulates the meaning. It builds on a whole-of-government approach and the assets of intergovernmental and nongovernmental bodies, academe, the private sector et al.

The principles and methods of a comprehensive approach are widely employed. Moreover, the lessons learned from stability and peace operations demonstrate the benefits of this approach as well as the serious challenges to its implementation. Based on experiences in the Balkans and Afghanistan, the North Atlantic Treaty Organization (NATO) issued a Comprehensive Approach Action Plan in 2012. The tasks enumerated in this plan are executed by a combined civil-military task force that includes the relevant agencies and commands.

NATO does not stand alone in its adoption of a comprehensive approach. Other examples include international support for the Dayton peace accords on Bosnia and Herzegovina in 1995, the United Nations (UN) mandate for the NATO campaign in Kosovo that commenced in 1999, the peacekeeping intervention in Sierra Leone from 1999 to 2000, and the multinational efforts conducted by the European Union to counter piracy off Somalia.

There are several different interpretations of a comprehensive approach. For example, the NATO Strategic Concept in 2010 highlighted contributions by the Alliance to such an approach while acknowledging a lack of the requisite civilian resources to execute the concept on its own. Allied joint doctrine endorses the commitment to this approach by taking it beyond the strategic level. By invoking the term *international partners*, NATO acknowledges the broad participation needed to accomplish a range of missions.

Although the United Nations does not use the term *comprehensive approach*, its integrated strategic framework is "the guiding principle for all conflict and post-conflict situations where the [United Nations] has a country team and a multidimensional peacekeeping operations, whether or not these presences

combating piracy, and Daniel A. Nussbaum on energy security. For more details, see Scott Moreland and Scott Jasper, eds., *A Comprehensive Approach to Operations in Complex Environments* (Monterey, CA: Center for Civil-Military Relations, Naval Postgraduate School, March 2014). A digital version of this handbook is available at <http://www.ccmr.org>.

are structurally integrated."² What is more, it has identified three levels of civilian and military activities: cooperation, coordination, and coexistence. While cooperation is attained in peacetime, the divide between civilian and military organizations in conflicts reduces coordination to coexist and de-conflict. UN Civil-Military Coordination (CIMIC) is the system of interaction involving exchanges of information, negotiation, mutual support et al. on every level among military and humanitarian organizations and local populations.

2 Principles of a Comprehensive Approach

While the term *comprehensive approach* is ill defined, its principles must be considered. For the sake of that analysis, a comprehensive approach is taken to mean *the employment of unified principles in planning and conducting integrated operations focused on cooperation and coordination with all relevant actors in an increasingly complex environment*. The purposes of such an approach are cooperation among partners when feasible and integration of capabilities when possible to develop both a shared vision of strategic objectives and an end state, requiring mutual awareness of threats, risks, and actions of participants.

The value of coordination and cooperation may appear self-evident, but putting these principles into practice requires some significant cultural shifts. This is particularly true in organizations like the military, where directive guidance and a 'take charge' mindset accompany a sense that time is too precious a resource to expend on tedious negotiation and building consensus with organizations that fall outside the chain of command.

Because employing a comprehensive approach to operations is challenging, its cost, risks, and level of effort must be justified by its benefits. Here the theory of *comparative advantage* developed by the economist David Ricardo is relevant. In simple terms, he argued that a nation should concentrate on industries in which they are most competitive and trade with other nations when local production of a desired commodity is not competitive or feasible. Transferring this theory to crisis management, organizations that are better suited to assist refugees or provide humanitarian relief, such as the UN High Commissioner for Refugees and Medicins sans Frontières, should assume those tasks, while the military should focus on security, strategic transport, and other capabilities associated with their craft. With a comprehensive

² United Nations, Economic and Social Council, 24th Plenary Meeting, Resolution 2008/24, 'Strengthening Prevention of Urban Crime: An Integration Approach', 24 July 2008.

approach, organizations are tasked to do things they do best. Proper application of this concept could yield efficiencies in allocating resources and reducing duplication of effort. These principles are not a panacea for all problems in a multidimensional environment, but even modest gains in facilitating interaction justify the effort of this approach. Although acknowledging the complexities and challenges, developing a framework to enhance cooperation may lessen distrust and hesitancy among the participants, boosting the number of organizations willing to accept responsibilities in cooperative missions.

The United Nations has identified four principles of a comprehensive approach. First, a shared vision for mission outcomes may be stated in a mandate or derived through coordination among principle agents. This *unity of purpose* facilitates reaching consensus on strategic objectives, though the interpretation can vary. Second, congruence is defined as *agreeing* or *coinciding*—as a state of *compatibility* or *conforming*. Those terms are useful because they are more likely to be acceptable or preferable than formal terms such as *integration* and *interaction*. Third, cooperation and coordination can enhance effectiveness. Fourth, successfully employing a comprehensive approach requires the knowledge of the roles, missions, and capabilities of partners.

Nongovernmental organizations are valuable in a comprehensive approach to operations, but their proliferation and varied backgrounds pose challenges. In Afghanistan it was estimated that some 1,300 organizations operated at various times. Predictably, each organization had specific mandates and objectives. By the same token, governmental agencies with unique cultures and procedures also pose challenges. Some welcome cooperation and interaction while others prefer or even demand to work independently. As a result, such factors often preclude implementing a common *modus operandi*.

Globalization has produced complex operational environments that were not encountered in the past. For different reasons, organizations are reluctant to enter into long-term agreements, which makes cooperation ad hoc and contingency dependent. This process may enable flexible and tailored coordination once a mission begins, but lack of pre-crisis contact among partners causes initial glitches. For example, pre-mission coordination builds trust and confidence and may alleviate reluctance to share critical information on security measures, humanitarian activities, land mines, population movements, relief operations, and post-crisis assessments. Pre-mission prioritization and provision of access to scarce resources such as transport and logistics assets can reduce complications and possible friction in the field. In addition, the management of relief and reconstruction

funding requires the commitment of all parties to provide infrastructure and resources to carry out oversight.

The benefits of pre-crisis interaction and training are obvious. However, event sponsorship, funding, and associated opportunity costs limit both the number and scope of training activities. Typically militaries invest in pre-deployment training, but nongovernmental organizations usually do not have resources for intensive training of this type. Effectively sharing information, albeit limited by organizational practices, requires both compatible hardware and institutional procedures, essential tools with inherent costs.

The value of pre-deployment training has piqued interest in military-facilitated training in civilian agencies as well as humanitarian and development organizations. Civil-military training activities, especially in peacekeeping and crisis response, are recognized as important tools in validating a comprehensive approach in a realistic but controlled environment. Experimental concepts and unproven procedures and systems that might be too risky to explore in an actual mission can be objectively tested and assessed in training exercises.

Because the military has both the resources and expertise to conduct training, it is often considered the natural facilitator of interagency exercises. Indeed, the military has a vested interest in expanding its training to include civilian partners in order to build the capacity for coordinating a comprehensive approach. However, caution must be exercised. One common pitfall in military-led interagency exercises is the tendency to regard civilian participants as training aids rather than training partners. Just as the military relies on training to develop its proficiency in essential tasks, civilian partners are likewise seeking to hone their core skills. Ideally, civil-military exercises should be jointly planned and designed to ensure participants achieve their objectives, which facilitates the initial civil-military interaction and coordination that are required to employ the comprehensive approach.

The CIMIC paradigm is helpful in explaining principles that can facilitate a mechanism used to achieve common goals. However, it should be noted that CIMIC and a comprehensive approach are not synonymous. As NATO doctrine states, the application of CIMIC principles will contribute to a comprehensive approach by guiding the direction of military activities as well as the civil-military relationship. Moreover, the principles inform military processes and support civil-military relations. It should also be remembered that comprehensive approaches assists in furnishing an awareness of the complexities of crises, identifying actors and evaluate their contributions, understanding motives and objectives, relying on mutual trust and respect, deferring to

civilian authority even when the military is the major participant, and promoting effective communication.

Both governments and institutions have developed infrastructure to enable communication, cooperation, and coordination, which take various forms. Their functions have ranged from near-traditional command and control to limited information-sharing. Distinctions among structures are often distorted, but there are multiple candidates that serve as models. Importantly, most of these examples are civilian structures with the military playing a critical albeit supporting role. The CIMIC framework takes account of conflict prevention, peacemaking, peace enforcement, peace keeping, and peace building while the United Nations Humanitarian Civil-Military Coordination (UN-CMCoord) facilitates civilian and military interaction, promotes humanitarian goals, avoids competition, reduces incongruity, and pursues common goals.

Notwithstanding organizational structures, comprehensive approaches must be guided by best practices based on prior experience. These structures are composed of people with requisite knowledge and skills. At best most operations are unorganized and often chaotic, especially in the early days. The effects of this disorder can be mitigated by developing mutually understood terms of reference, which are critical to shared awareness. Furthermore, in determining military action, the effects on others must be considered. Pre-crisis training and a shared lexicon could reduce many risks associated with a comprehensive approach. The United Nations and other organizations offer programs to enhance operations that use a comprehensive approach. Finally, the undesirable effects of military action must be considered as well as perceptions of independence and neutrality that distinguish cooperating organizations.

3 Peacekeeping

Among the various missions that provide opportunities to apply the comprehensive approach are peacekeeping operations, which are implemented not only to maintain security but also to restore public order, protect civilians, impose the rule of law, and reintegrate warring parties into society. The United Nations Security Council authorizes peacekeeping operations in crises and conflicts that threaten international stability. Peacekeepers may be deployed as blue helmets controlled by the United Nations or as part of a coalition or unilateral command authorized by a UN mandate. Multidimensional peacekeeping can further political, economic, and humanitarian development efforts by securing operational space during crises and in conflict zones. Security operations are generally coordinated among official bodies but

include ways to facilitate ad hoc arrangements among peacekeeping forces and nonaligned humanitarian actors, support local authorities, and intervene in such crises at the tactical level.

The United Nations has not accepted the *comprehensive approach* as a matter of doctrine, though that is largely an issue of semantics. Nonetheless, the *multidimensional approach* has been defined in a UN Security Council resolution³ as a coherent operational model for synonymous concepts that link a comprehensive approach to peacekeeping. While attempting to implement this approach, the United Nations faces many of the problems that weakened NATO efforts in Afghanistan. In addition, missions in other crises such as Darfur, Democratic Republic of the Congo, and Syria are threatened by changing security environments and a dearth of legitimate and effective local authorities that are essential to establish sustainable peace. UN peacekeepers are intended to provide interim security and stability that enables other mission agents and associates to work with local authorities to build just and capable sovereign governance.

The term *peacekeeping* is identified with unarmed or lightly armed forces that separate opposing sides in a conflict if they agree to stop fighting. In the past, such operations were normally conducted between two nations. By contrast, some recent conflicts have involved factions within the same country that often target civilians and do not observe the law of war. South Sudan is a tragic example of factional violence spawned by ethnic rivalries that has left over 1000 dead and nearly 200,000 displaced. In Mali, UN troops are directly targeted by insurgent groups, who have killed 30 peacekeepers and wounded 90 in the first 15 months since the mission started in July 2013.⁴ Likewise, regional and transnational 'hybrid threat' groups such as the Islamic State (IS) flaunt international laws with the wholesale slaughter of Iraqi army forces with so-called 'conventional' weapons and tactics, even as they brutally target civilians and ethnic minorities in globally-publicized terror campaigns characterized by beheadings and mass executions.

Given the risks associated with these operations, a more robust set of capabilities is often required. *Peace enforcement* refers to situations covered under Chapter VII of the UN Charter entitled "Action with Respect to Threats to the Peace, Breaches of the Peace, and Acts of Aggression". Accordingly, it is normally reserved for violent conflicts and departs somewhat from traditional

3 United Nations Security Council, Security Council Resolution 2086 (2013) [on highlighting the role of multidimensional peacekeeping missions], 21 January 2013, S/RES/2086 (2013), available at: <http://unsct.com/en/resolutions/2086> [accessed 8 October 2014].

4 Per official UN PKO statistics. <http://www.un.org/en/peacekeeping/resources/statistics>.

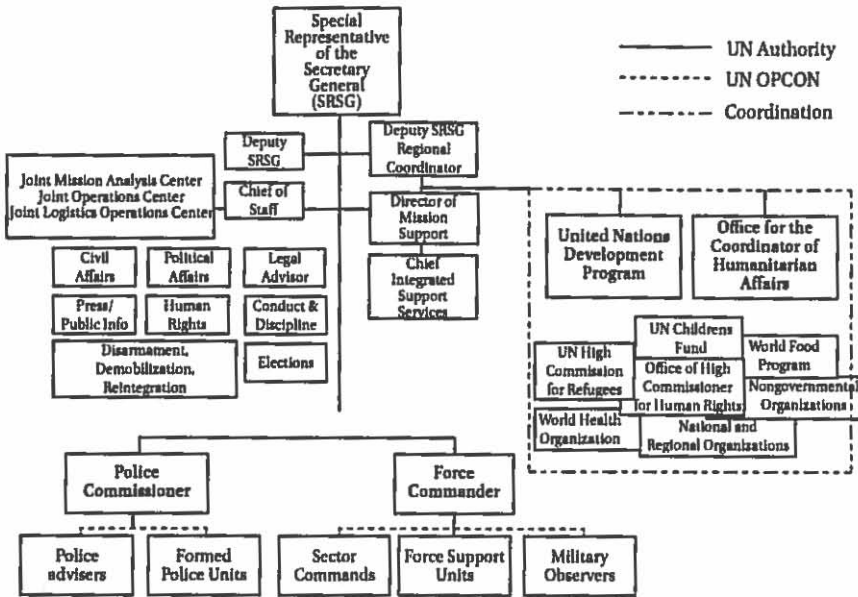


FIGURE 1 Model UN mission organizational structure.

peacekeeping operations, which have taken on a new face in the past decade. A lack of funding, equipment, and troop contributions limits blue helmet operations.

To realize a competitive advantage in modern missions, UN peacekeepers must have adequate resources. New police and military force structures such as intervention brigades and formed police units offer tactical benefits, agility, and deterrent effects. Together with satellite mapping and collaborative information networks, these elements furnish the stakeholders with more realistic prospects of success, though specialized forces and capabilities are unavailable to many nations. Accordingly, the United Nations must depend on partners with warfighting rather than peacekeeping capabilities to accomplish its mandates. As the world body increasingly relies on external capabilities, its mandates must specify actions that maintain legitimacy and provide transitions to sovereign authority without hampering mission effectiveness.

UN peacekeeping involves military and police forces, political support, civil affairs, legal advice, election monitoring, human rights, humanitarian aid, reconstruction, public information et al., which are essential in any multidimensional missions. Peacekeeping provides time and breathing space for diplomatic efforts to address the cause of a conflict and utilizes military power to create conditions conducive to pursuit of a political solution. Modern conflicts involve a complex mix of domestic and international influences, which may be

internal but complicated by cross-border actions by states or other players with interests in the conflict. As a result, the structure of peacekeeping has changed.

The UN Integrated Mission Planning Process of 2006 called for a shared vision among all the actors with respect to the strategic objectives of common presence at country level. In recent crises, traditional command and control has been challenged. Peacekeeping operations form one element of campaigns that also require the participation of the host nation and external governments, international and regional organizations, and nongovernmental and private agencies. Because the military cannot impose leadership on these diverse partners, leaders must pursue coordination and consensus through trust and shared information. Military leaders must not lose sight of the fact that operational space is also humanitarian and developmental space.⁵

Attempts to impose rigid organizational structures and operational models on integrated missions have proven to be difficult and counterproductive. Contemporary research has shifted from standardized mission templates to more agile analyses of operational requirements and design of a suitable mission structure. As the integrated mission concept has moved to the field, conflicting organizational principles and requirements have emerged that have necessarily imposed barriers on integrating mission actors. For example, safeguarding humanitarian impartiality and neutrality supersedes efficiencies and enhanced security that may be gained by cooperating with peacekeepers. Full mission integration may be affected by credibility, legitimacy, and national ownership. Mission leaders must remember that coordinated efforts only enhance effectiveness when orchestrated to uphold the legitimacy of the mission and its actors.

Performing military and humanitarian functions in the same operational environment poses challenges to multidimensional peacekeeping. Peace enforcement missions especially may place security requirements in competition with humanitarian needs. Recent operations have indicated that providing assistance through quick impact projects or command-directed local development efforts can be important components of military operations. As a result, military commanders are more involved in delivering relief aid while humanitarian agencies rely on the military to protect their staffs and activities as well as provide access to the target populations.

5 Victoria Metcalfe, Alison Giffen, and Samir Elhawary, 'UN Integration and Humanitarian Space' (London: Humanitarian Policy Group, Overseas Development Institute, and Washington, DC: Stimson Center, December 2011).

Many humanitarian actors perceive an inherent dilemma between the need for a coherent approach by all UN entities and the need for humanitarian operations to maintain neutrality and impartiality. When military assistance has tactical objectives that influence security conditions, humanitarians typically go where the need is the greatest, regardless of political considerations. Some actors classified as threats might be seen by nongovernmental organizations as legitimate channels in providing humanitarian access to communities within their region. If humanitarians interact too closely with the military, there is concern that their legitimacy and impartiality may be compromised. Moreover, the militarization of foreign aid can result in unanticipated security consequences. Expedient measures lead to a perception that one affected population is favored over others, inflaming tension and threatening security. Coordination among peacekeepers and humanitarian agents may alleviate mission overlap, facilitate situational awareness, and avoid unintended consequences of poorly executed military-led assistance efforts.

The shift from conflict to sustainable peace is delicate and arduous and demands a range of simultaneous and mutually supporting activities that enable accountable governance to occur. Multidimensional peacekeeping missions require united and sustained political leadership as well as a mandate and donor backing to provide requisite authority, finances, expertise, and resources.⁶ Peacekeeping operations are fraught with scant resources and difficult conditions that necessitate focusing on essential tasks. The UN publication *Principles and Guidelines for UN Peacekeeping Operations*, known informally as the Capstone Doctrine, identifies core strategic tasks to create respect for the rule of law and human rights, facilitate political processes to promote dialogue and support institutions of governance, and provide a structure to ensure that UN and other actors pursue activities at country level in a coherent manner. Operationalizing these tasks requires aligning several activities in a comprehensive plan. Key functions are stipulated in a broader campaign that includes support, coordination, or at least mutual cognizance among uniformed peacekeepers and other lead agencies and organizations.

4 Combating Piracy

The challenges of governance within the maritime domain exemplify the complex environment in which a comprehensive approach is essential. Even

⁶ For more on the importance of leadership, see International Forum for the Challenges of Peace Operations, *Considerations for Mission Leadership in United Nations Peacekeeping Operations* (Stockholm: Edita Västra Aros AB, 2010).

in the territorial waters of a single nation, maritime governance coordinates activities among many organizations that share information to establish awareness, agree on legal authorities, and deploy assets to patrol and counter threats in the commons. When disputes or conflicts occur on the open sea or within ungoverned territorial waters, the situation can be aggravated by legal, historical, and cultural issues.

The incentives to overcome maritime challenges arise from international recognition of the common benefit of the oceans as highways of trade, mediums of communication, and sources of food and natural resources. The concept of a maritime common is established by the freedom of the seas doctrine that initially appeared in 1609 in *Mare Liberum*, by Hugo Grotius. His thesis on the right of the Dutch East India Company to exploit colonies in Southeast Asia drew on ancient free trade traditions and became the basis of international law that identifies the oceans as global commons. This settled admiralty law has been codified in the United Nations Convention on the Law of the Sea and the International Convention on the Safety of Life at Sea.

The value of the oceans is measured in trade and resources. The United Nations has reported that over 9 billion tons of international cargo, or more than 80 percent of trade, is transported by sea.⁷ Additionally, the UN Food and Agriculture Organization indicates that fisheries and aquaculture provided nearly 160 million tons of fish in 2012 with more than 85 percent consumed as food products.⁸ In addition, 550,000 miles of undersea cables transmit the bulk of cyberspace communications.⁹ The oceans also provide energy resources for many nations through oil drilling, wind power, and wave motion. Moreover, they constitute natural frontiers that connect 80 percent of the nations in the world and serve as conduits for humanitarian response and logistics.

International treaties protect the oceans as a common good by enforcing a comprehensive approach that provides legal frameworks, resource allocation, commercial regulation, mitigation, and myriad provisions. They challenge states, organizations, and corporations to meet standards of conduct, protect interests, and resolve conflicts while not preventing competition. With rival claims in economic exclusion zones (EEZs), offshore resources, and fishing grounds as well as threats by criminals and terrorists, the maritime domain is not lacking in challenges. However, nations do not use oceans in identical

7 United Nations Conference on Trade and Development (UNCTAD). *Review of Maritime Transport 2013*, UNCTAD/RMT/2013 (New York and Geneva: United Nations, 2013), pp. xi, 6–7.

8 Food and Agriculture Organization of the United Nations. *The State of World Fisheries and Aquaculture: Opportunities and Challenges* (Rome: United Nations, 2014), p. 4.

9 Todd Lindeman, 'A Connected World', *Washington Post*, 6 July 2013.

ways. National maritime police, coast guards, customs and border patrols, naval forces, commercial and tourist agencies, and fishery authorities can exercise overlapping jurisdictions and interests in offshore and international waters.

Organizations such as the United Nations International Maritime Organization (IMO) and the International Maritime Bureau (IMB) of the International Chamber of Commerce offer both frameworks and mechanisms for public and private sector interests to work together to mitigate risks from weather to piracy. Although their members control the actions and resources of these organizations, they provide global assets including a communications umbrella for the maritime domain, such as collaborative IMO and IMB activities that institute best practices for safe navigation and countering piracy across the commercial sector. Other organizations concentrate on mitigating the threat, such as the Contact Group on Piracy off the Coast of Somalia that was established in January 2009 by a UN Security Council resolution.

Nonstate threats include smuggling, poaching, polluting, and illegal immigration, and both terrorism and piracy endanger state and nonstate users. Actors fall into different categories based on location, intentions, and profiles. One man's fisherman might be another man's poacher, and environmental

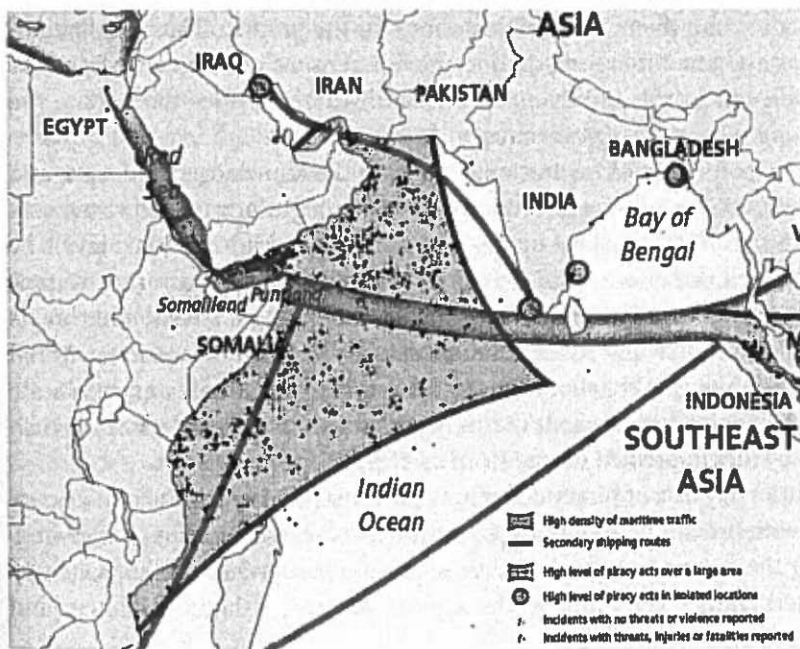


FIGURE 2 Somalia piracy threat.

SOURCE: UNOSAT GLOBAL PIRACY OVERVIEW 1995–2013

activists are seen alternately as watchdogs or disruptive forces operating outside the law and threatening legitimate maritime enterprises. For instance, Russia charged members of Green Peace with piracy for boarding an oil rig in the Arctic Ocean, then reduced the offense to hooliganism.¹⁰ Despite diverse interpretations of the legitimate use of the oceans, a comprehensive approach representing a dependable range of users is needed to respond to crises.

Widely accepted principles establish and preserve maritime governance in territorial waters and on the high seas. For the purpose of this discussion, *governance* is defined as mitigating risks related to using the oceans in ways described above or responding to emergencies with activities such as search and rescue. In addition, it requires integrity on the part of organizations engaged in maritime governance. For example, smuggling becomes hard to interdict when customs agents are bribed to look the other way. As a consequence, integrity cannot be presumed in all cases and must be addressed in the planning of a comprehensive approach.

The first principle of maritime governance is acquiring maritime domain awareness, which is the product of information gathered from intelligence sources and sensors that is analyzed and shared in response to emerging issues. The difficulties involved in establishing maritime domain awareness are functions of the ocean area concerned, resources needed to collect and analyze the information, and the number of customers for the product. Platforms including ships and aircraft are required to provide sensors, conduct visual patrols, and intercept, board, and detain potential threats, activities that define the enforcement capacity of governance.

With a foundation of institutional integrity, the knowledge, platforms, and laws to establish maritime governance appear straightforward. However, executing the principles may be opposed at national and international levels by overlapping jurisdictions, rival claims, resource shortages, ungoverned waters, mistrust between nations and organizations, competing interests, and threats that exploit these seams. At a minimum, establishing governance in territorial waters requires the collaboration of nations, organizations, and non-state actors. A hopeful development in this regard was the successful effort to crush the piracy that flourished off the Horn of Africa.

Traditionally acts of piracy occur in ungoverned land space and on insecure waters with proximity to shipping lanes and resources (men, arms, and boats). Finding the means to counter piracy requires a comprehensive approach by the international community. The United Nations, Atlantic Alliance, and

10 Steven Lee Myers, 'Russia Reduces Charges against Greenpeace Activists', *New York Times*, 23 October 2013.

European Union follow the principles of the comprehensive approach to piracy off the Horn of Africa. Pirate attacks and hijackings have decreased in the Indian Ocean and around the world since 2010. The International Maritime Bureau cites preemptive naval actions against pirate mother ships, private security teams on board merchant vessels, and the application of best practices as factors that deter and defeat pirate attacks.¹¹

The extent of cooperation that has been developed among navies from the shared objective of establishing maritime governance is unprecedented. More than two dozen nations have made contributions to deployments such as Combined Task Forces 151, Operations *Atalanta* and *Ocean Shield*, and activities by Chinese, Indian, and Russian units. While deployments take place under national guidance with varied rules of engagement, their common purpose has resulted in Shared Awareness and De-confliction meetings to promote mutual awareness. These meetings coordinate information exchange, address communications, de-conflict operations, and present options to the Contact Group on Piracy off the Coast of Somalia. With UN resolutions as a basis, many navies apply principles of maritime governance in a comprehensive approach.

Although merchant transit rerouting has been used to avoid or minimize exposure to pirates from Somalia, the Indian Ocean remains a major highway for world trade. With transit planning and additional IMB best practices, however, ships can make themselves hard targets. These best practices include increasing transit speed through risky waters, weaving during pirate attacks, creating physical deterrents to boarding, increasing freeboard, and having post-boarding response plans. In addition, private security companies aboard merchant ships in pirate waters have been successful in deterring attacks. The IMB Piracy Report Centre in Malaysia shares awareness worldwide on near real-time attacks to help vessels avoid danger.

The activities of nongovernmental organizations are loosely coordinated with international and national efforts to introduce maritime governance in the shipping lanes of the Indian Ocean. For example, the International Recommended Transit Corridor in the Gulf of Aden was instituted by the Subcommittee on Safety of Navigation of the UN International Maritime Organization to protect ships passing through high-risk areas. Merchants voluntarily report on convoy schedules, the entrance into and exit from the sea lanes, and incidents en route.

11 Maalik Som, 'East Africa: Maritime Piracy Falls to Lowest Level in Seven Years, Report IMB' (Shabelle Media Network-Mogadishu, October 18, 2013).

In January 2013 the European Parliament adopted a resolution on the EU Strategy for the Horn of Africa. It acknowledged traditional concerns attributable to poverty, food scarcity, and lack of governance, which has enabled pirates to find safe havens and recruit poor locals to man their boats in Somalia. The Council of the European Union provided a strategic framework and established the European Union Special Representative for the Horn of Africa to coordinate the strategy, organizations, and partners needed to support regional efforts.

International responses to piracy illustrate the application of comprehensive approaches to the maritime domain. Though acknowledged as a *common good*, continued access to the oceans implies that legal, political, and other implications must be carefully considered before any approach to mitigate threats to sea lanes, resources, and infrastructures can be successfully implemented.¹² Understanding the principles of maritime governance and addressing threats to the global commons are the first steps to ensuring that the oceans remain available to all mankind.

5 Energy Security

Because of the growing demand for energy resources, threats to supplies are increasing and will become more dangerous in the future. Data gathered by the International Energy Office on 2013 as well as estimated demands over the next two decades indicate growth in energy consumption and the increased vulnerability of energy supplies will be significant. One study defined *energy security* as reliable access to sufficient, affordable energy supplies to fuel economic growth. The "4-As" model qualifies energy security in terms of availability, accessibility, affordability, and acceptability. Although the concept of affordability is meaningful, it is complex and difficult to explain. As a result, the Military Operations Research Society gathered experts to research the challenges to affordability, using affordability analyses to improve decision making. It also offered background on affordability analyses and created a framework to develop a manual for affordability analysts in reviewing strategic goals, desired outcomes, and capabilities required to achieve affordable and acceptable levels of energy security. For operational planners, Gawdat Bahgat has offered a more simplified definition of *affordability*: "The uninterrupted

12 Susan Page Hovevar, 'Building Collaborative Capacity for Maritime Security', in *Conflict and Cooperation in the Global Commons: A Comprehensive Approach for International Security*, Scott Jasper, ed. (Washington, DC: Georgetown University Press, 2012).

availability of energy sources at an affordable price with little environmental footprint.¹³

Threat assessments are important elements of planning for energy security. Risks arise from many sources including conflict, natural disasters, acts of sabotage, national traumas, contested international space (from challenges to Kuwaiti sovereignty to navigational rights through the increasingly accessible Northwest passage), high levels of volatility in energy commodity prices, and flash transnational currency flows. Another critical but often overlooked threat to energy security is the aging or sabotage of infrastructure. *Infrastructure* refers to procedures and hardware occupying a position between generating energy (such as oil wells, power plants, and photovoltaic solar arrays) and consuming energy (government, commercial, and consumer end-use agents). Therefore, infrastructure serves as the bridge between supply and demand within the energy enterprise. The aging or sabotage of infrastructure deserves attention not only because of its criticality to the enterprise, but because it is a known and noticeably weak link. Infrastructure vulnerabilities have consequences for energy security and, importantly, secondary and tertiary consequences with less apparent implications. An understanding of infrastructure encompasses three major components: generation (oil, gas, coal, nuclear, hydro, solar, wind, and geothermal power plants), transmission (independent system operators that coordinate, control, and monitor the electrical power system within a given nation or region), and consumption (commercial, consumer, public, and defense sector use). Each infrastructure component possesses vulnerabilities that may expose the entire system to disruption or failure.

In 2013, Damascus suffered a major blackout after an insurgent attack on a major gas pipeline that supplied power stations in southern Syria. Another major outage took place in 2013 in the United States as the result of small arms gunfire on transformers and infrastructure at the Medford substation of Pacific Gas and Electric in San Jose, California. These simply executed, low-tech attacks highlight the vulnerability of electric grids to sabotage and demonstrate the importance of understanding the context of an attack including determining whether it is a precursor to broader attacks.

Vulnerabilities are not limited to physical attacks on infrastructure. Unfortunately, the introduction of 'green energy' initiatives and so-called 'smart' networks have exposed the energy grid to increasing numbers of cyber attacks. Consumer and small-scale wind and solar energy production is linked

¹³ Gawdat Bahgat, *Energy Security: An Interdisciplinary Approach* (Chichester, UK: Wiley, 2011).

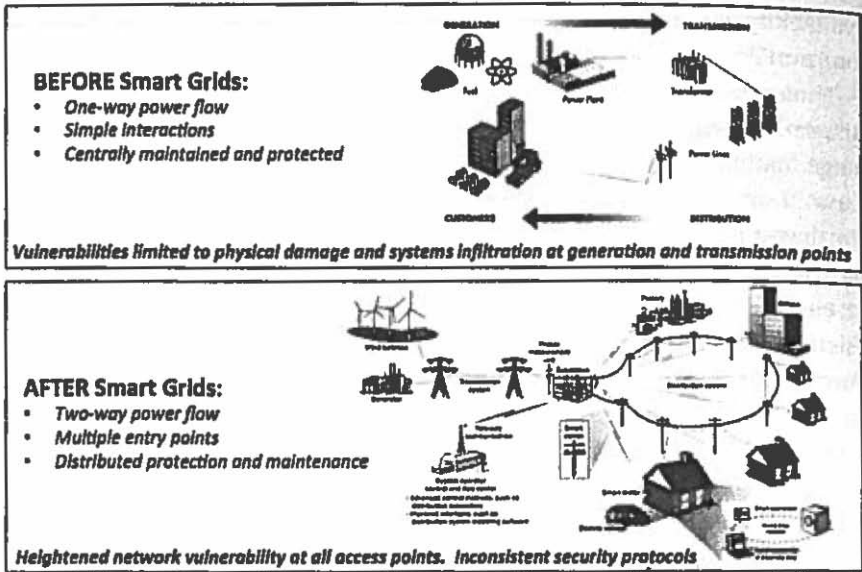


FIGURE 3 *Traditional and smart grid comparison.*

SOURCE: US GOVERNMENT ACCOUNTABILITY OFFICE

to the energy distribution system via electronic meters that provide real-time power usage data, but also provide insufficiently monitored portals for computer hackers to infiltrate the grid. Over the past few years, organized and well-funded groups such as “Dragonfly” and “Energetic Bear” have illicitly accessed energy networks in the US and Europe to inflict equipment damage and disrupt service by exploiting access points and software vulnerabilities in newly installed ‘smart’ meters. These attacks are rarely publicized to avoid disclosing current vulnerabilities, but power and utility companies must spend millions annually on cyber security measures to counter these rapidly evolving cyber threats even as they cede control over grid access to energy-conscious consumers and small-scale alternative power generation interests.¹⁴

Although every sector of society relies on energy, it is necessary for the purpose of analysis to have a rough taxonomy of generalized sectors with interests in maintaining energy security, each with their own subcategories. For the purpose of understanding the comprehensive approach to energy security, the following cluster of interested groups is proposed: civilian and military components of government, commercial entities, and private sector

14 Symantec. *Dragonfly: Cyberspying Attacks against Energy Suppliers*. Symantec Security Response. Version 1.21, 7 July 2014, pp. 6–8.

organizations. Each of these is required to address issues associated with energy security at one time or another.

The modern world is dynamic and interconnected. Depending on external circumstances, some or all elements of the society will be affected by active threats or risks to energy security. Moreover, energy vulnerability has the potential to escalate rapidly from no participants, to some participants, to many participants, to all participants simultaneously.

The term *critical infrastructure* describes essential assets necessary for the economy to function. Because threats to critical infrastructure are focused on the nexus of cyber and energy supplies, the policy debates over cybersecurity obviously impact on the protection of resources. Cyber attacks interfere with electrical systems, pumps that transport liquid fuel, and machinery dependent on liquid fuel. Thus governmental, industrial, and private sector consumers who are affected care about threats to energy supplies. The same cyber attacks can lessen the ability of the navies or other national maritime security forces to refuel ships at sea, for example, thus impacting on combat and maritime security operations. It is also possible to imagine first responders hindered by a loss of power for their communications. Thus small-scale attacks may threaten the equities of many stakeholders.

The complexity of energy security requires using the comprehensive approach, especially in light of the fact that some nationalized energy providers may be disposed to control oil and gas distribution to exert political pressure. Preplanned exercises offer fruitful ways to analyze energy security considerations. On the civilian side, an excellent example is the International Energy Agency's large-scale Emergency Response Exercise (ERE), which prepares participant countries for disruptions in the global oil supply.¹⁵ For the military, energy security has emerged in exercise programs sponsored by national militaries as well as regional security arrangements such as NATO. The prospective use of the military to guarantee energy security provokes serious debates, and it is generally regarded by allies as a contingency effort for employment only after political and economic measures falter.

Depending on external circumstances, challenges to the availability of energy supplies have the potential to escalate from affecting selected consumers to impacting global markets. A military approach to such circumstances might consider a *continuum of military operations* that has six stages: shaping the environment, deterring the threat, seizing the initiative, dominating the enemy, stabilizing the environment, and enabling civil authorities. Preplanned

15 More information on the ERE and other IEA-hosted training activities is available at <http://www.iea.org/training/>.

exercises that incorporate energy security considerations are useful tools to ensure that military actions in support of energy security consider aspects of both humanitarian assistance and disaster relief operations and ensure that escalation triggers and measures are carefully analyzed and planned.

Given the complexities of the interaction among multiple parties, the requirement exists to accommodate such relationships and diverse or even contradictory interests lest the complexity of energy security leads to a reaction against cooperation. Finally, the realm of energy security presents unanswered questions based on the inherent complexity of the subject. There is no way to address this complexity other than as part of a comprehensive approach.

6 Conclusion

Globalization has led to a number of complex security conditions that were not encountered in the past. As the foregoing examination of international environment reveals, a comprehensive approach can be applied to meet challenges posed by peacekeeping, combatting piracy, and energy resources. These operations go beyond multidimensional operations and involve a variety of participants and stakeholders that represent governmental and nongovernmental organizations, international agencies, private sector and corporate interests, social media et al.

The phrase *mobilizing the resources of an entire society* encapsulates the meaning of a comprehensive approach and expands upon a whole-of-government approach to include private sector and non-governmental contributors. Similarly, a resolution passed by the United Nations described the *multidimensional approach* as a coherent operational model for synonymous concepts that link the comprehensive approach to peacekeeping missions.¹⁶

The shift from conflict to sustainable peace is delicate and arduous, requiring both simultaneous and mutually supporting activities to facilitate accountable governance. Moreover, the challenges of governance in the maritime domain reveal the complex environment in which a comprehensive approach is essential. Because the international environment is interconnected, it relies on external factors that pose threats to energy resources. In response, a comprehensive approach to multidimensional operations brings together a variety of partners based on their shared interests, opportunities, and procedures.

¹⁶ United Nations, Security Council Resolution 2086, S/RES/2086 (2013), p. 3, item 5.