
The City as a System: Future Conflict and Urban Resilience

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INTRODUCTION

A decade of messy wars is creaking to a close. American troops have left Iraq, Osama bin Laden is dead, and the conflict in Afghanistan is entering a new phase. The U.S. Government's attention is shifting away from these wars, while many Americans—even some members of Congress—have already checked out.

President Obama highlighted this shift in his strategic guidance to the Defense Department in January 2012. “As we end today’s wars,” he wrote, “we will focus on a broader range of challenges and opportunities, including the security and prosperity of the Asia-Pacific.”¹

“In the aftermath of the wars in Iraq and Afghanistan, the United States will emphasize non-military means and military-to-military cooperation to address instability and reduce the demand for significant U.S. force commitments to stability operations. U.S. forces will nevertheless be ready to conduct limited counterinsurgency and other stability operations if required, operating alongside coalition forces wherever possible. Accordingly, U.S. forces will retain and continue

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to refine the lessons learned, expertise, and specialized capabilities that have been developed over the past ten years of counterinsurgency and stability operations in Iraq and Afghanistan. *However, U.S. forces will no longer be sized to conduct large-scale, prolonged stability operations.* [emphasis in original]²

Leaving aside the inconvenient reality that the Afghan war is far from over, this guidance reflects a large dose of wishful thinking. It can be summarized, only slightly unkindly, as saying that since Americans hated the experience of military occupation in Iraq and Afghanistan—and hope never to do it again—we don’t plan to engage or prepare for these types of conflict. Instead, we will structure our forces for the wars we want to fight—the military will be “smaller and leaner, but will be agile, flexible, ready, and technologically advanced. It will have cutting edge capabilities, exploiting our technological, joint and networked advantage.”³ This sounds a little like the U.S. military that romped to an incomplete victory in the 1991 Gulf War, yet proved ill-suited to irregular conflict in Iraq and Afghanistan, a mismatch that cost many lives and dollars and demanded heroic feats of adaptation under fire.

Of course, the policy shift makes fiscal and political sense given today’s economic problems. But its projection of future needs ignores historical

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patterns in U.S. overseas interventions. On average, the United States has conducted one major peacekeeping, counterinsurgency, or stabilization operation every 25 years, and a small or medium-sized one every five to ten years over the past century and a half.⁴

This pattern appears to be independent of policymakers’ partisan affiliation or personal preferences. Indeed, presidential desire (or lack thereof) to undertake stability operations appears to have no detectable impact on the

frequency of interventions. President Lyndon Johnson considered Vietnam a distraction from his domestic goals, yet presided over an escalation that drew almost 600,000 U.S. troops into the war at its peak in 1968. President Bill Clinton came into office with a domestic focus and a desire to avoid overseas nation-building entanglements. He delayed committing troops to the Balkans, and avoided a U.S. military commitment in Rwanda altogether, scarred by a failed humanitarian operation in Somalia.

Yet he ultimately sent troops to Bosnia, Kosovo, Macedonia, Haiti, Liberia, and elsewhere. President George W. Bush, who as a presidential candidate opposed stability operations and “nation-building,” nevertheless led the United States into its largest military intervention since Vietnam, its largest nation-building effort since World War II, and the largest NATO stabilization operation ever.

More broadly, we might ask how well President Obama’s stated policy tracks with what is known about the future conflict environment, the sorts of wars we might need to fight, and whether we want to or not. To answer this, we must first examine that environment, and the threats we might encounter.

THE FUTURE ENVIRONMENT: URBAN, LITTORAL, AND CONNECTED

Just as climate predictions say nothing about tomorrow’s weather, predictions about the conflict environment say little about specific future wars. However, they do suggest a range of conditions—a set of systemic parameters—within which future conflict will arise, even though outliers will still occur and specifics will be hard to predict. The available evidence suggests that three main drivers (sometimes called “megatrends”) will shape the conflict environment over the next few decades. These are:

- **Urbanization** (the accelerating tendency for humans to live in cities),
- **Littoralization** (the propensity for these cities to cluster on coastlines), and
- **Connectedness** (the increasing connectivity—especially networked connectivity—among populations, wherever they live).

None of these trends is new, but their pace is accelerating, they are mutually reinforcing, and their intersection will influence not just conflict but every aspect of life on Earth in coming decades.

Population Growth and Urbanization

More people are living in larger cities, and the greatest growth is in the underdeveloped areas of Asia and Africa that are least equipped to handle it.

At the start of the Industrial Revolution in 1750, the world’s population stood at 700 million. This figure doubled 150 years later, reaching 1.5 billion people in 1900. The population had doubled again by 1960, this time taking only sixty years to reaching 3 billion, despite the effects of both World Wars. Population growth continued to accelerate, with the population doubling again in thirty-nine years to 6 billion by 1999, and adding

another billion in just one decade to reach today's total of 7 billion. The United Nations currently predicts that there will be 9.1 billion humans on the planet by 2050.⁵

As the world's population has grown, the pace of urbanization has been accelerating. In 1800 only three percent of people lived in a city of one million or more; by the year 2000, it was forty-seven percent. In 1950 there were only eighty-three cities worldwide with populations over one million; by 2007 there were 468. In April 2008, the world passed the fifty percent urbanization mark, and in December 2011 the world's most populous nation, China, announced it had reached a level of 51.3 percent urbanization. Richard Saul Wurman estimates that "the world's urban population will double every 38 years ... today's urban population of 3.2 billion will rise to nearly 5 billion by 2030, when three out of five people will live in cities. By 2050 two-thirds of the world's population will live in cities." Wurman argues that "the rise of supercities is the defining megatrend of the 21st century." Roughly 1.4 million people across the world migrate to a city every week.⁶

This unprecedented urbanization is concentrated in the least developed areas of Asia, Latin America, and Africa. The United Nations noted in 2009:

"Between 2009 and 2050, the world population is expected to increase by 2.3 billion, passing from 6.8 billion to 9.1 billion... At the same time, the population living in urban areas is projected to gain 2.9 billion, passing from 3.4 billion in 2009 to 6.3 billion [in] 2050. Thus, the urban areas of the world are expected to absorb all the population growth expected over the next four decades while at the same time drawing in some of the rural population. ...Furthermore, most of the population growth expected in urban areas will be concentrated in the cities and towns of the less developed regions. Asia, in particular, is projected to see its urban population increase by 1.7 billion, Africa by 0.8 billion, and Latin America and the Caribbean by 0.2 billion. Population growth is therefore becoming largely an urban phenomenon concentrated in the developing world."⁷

To put it another way, these data show that coastal cities are about to be swamped by a human tide that will force them to absorb—in less than 40 years—almost the entire increase in population across the whole planet in all of recorded human history up to 1960. Furthermore, virtually all of this urbanization will happen in the world's least developed areas, by definition the poorest equipped to handle it: a recipe for conflict, and crises in health, education, governance, food, energy, and water scarcity.

Littoralization

These new cities are concentrated on the world's coastlines.

This urban growth is not evenly spread. As we consider its geographical distribution, it is clear that urbanization is clustered in littoral (that is, coastal) areas, within a few dozen miles of the sea. Already, in 2012, eighty percent of humans on the planet live within sixty miles of a coast, while seventy-five percent of large cities are on a coastline.⁸

In the Mediterranean basin alone, between 1970 and 2000, the urban coastal population grew by 40 million people, with three quarters of that growth occurring in North Africa and the Middle East.⁹ This led to the “progressive creation of megacities on a European scale (Barcelona, Marseilles, Rome, Athens, Genoa, Naples, Alexandria) or a world scale (Cairo [with] 15-16 million inhabitants, Istanbul [with] 13-14 million inhabitants). This should not obscure the fact that the Mediterranean coast also harbors eighty-five cities with a population of between 300,000 and 1 million inhabitants.”¹⁰ Olivier Kramsch, the distinguished human geographer, has described this process of urbanization and littoralization in the Mediterranean as one that has been mirrored in many parts of the developing world:

“It is instructive to view the region itself as a highly urbanized area, one currently [in 2006] flanked by thirty cities each containing over 1 million inhabitants. A prominent feature of this pattern of urbanization, particularly accentuated in the recent period, is the heightened concentration of cities and population along the strips of land directly abutting the sea, as opposed to the hinterlands of nation-states (the former commonly referred to as “littoralization”). Measured as a percentage of national population, the countries of the Maghreb in general demonstrate high rates of urban littoralization, striking examples being Libya (eighty-five percent), Tunisia (seventy percent), Morocco (fifty-one percent) and Turkey (fifty-two percent).”¹¹

It is worth noting that the two most urbanized and littoralized of Kramsch’s examples (Tunisia and Libya) were the most affected by popular revolutions during the Arab Spring of 2010-2011, while the uprisings in Egypt during the same period occurred almost entirely in the urban littoral

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triangle formed by the cities of Cairo, Alexandria and Port Said, all of which lie within one hundred miles of the sea.

The use of cell phones, flash mobs, web-based social media, SMS organizing tools, the leveraging of diasporas, and the international media during the Arab Spring highlights the third driver of the future conflict environment: the new coastal cities are highly connected and networked.

Connectedness

Coastal cities are networked internally, connected to the rural hinterland, and linked with ethnic diaspora populations and global networks.

If you fly in a helicopter above any large coastal city in the developing world—Mogadishu, Lagos, Karachi, Basra, or Tripoli; or above a slum (like the enormous La Rocinha *favela* outside Rio de Janeiro, or the Tivoli Gardens district in Kingston, Jamaica)—the most obvious rooftop feature is the forest of satellite dishes, TV antennas and radio masts. This is just the most prominent visual indicator of the connectedness of urban areas.

Indeed, in peri-urban areas (the slums and townships around the margins of growing cities, which account for a high proportion of new immigrants from the countryside) people can connect with national and international information flows to an unprecedented degree, irrespective of how effective their governments are in providing such services. For example, a 2011 study found that Somalia, a country that has been experiencing near-anarchy and state collapse for twenty years, has rates of cell phone usage approximately equal to its neighbors, including well-administered Ethiopia:

“Market forces, particularly the thriving telecommunications industry, are certainly the most influential factor—and the same is true of the lively, privately owned radio sector... despite the ongoing violence, there has been a remarkable proliferation of telecom companies, offering inexpensive and high-quality services in the areas where they operate, including internet access, international calls, and mobile connectivity. Some of them are closely connected with the remittance industry, represented by companies such as Dahabshiil, the owner of Somtel.”¹²

Connectivity between populations in cities like Mogadishu, Somalia’s largest urban area, and the Somali diaspora (numbering 812,700 people worldwide and representing almost 9.3 percent of the total Somali population)¹³ allows urban Somalis to tap into global and regional networks that pass money and information, engage in trade, and pursue legitimate business. The same networks enable illicit activity like the smuggling of people, weapons and

drugs, piracy, terrorism, and charcoal exporting (an environmentally devastating activity banned by the United Nations in February 2012 due to its connection with the Shabaab terrorist organization).¹⁴ Indeed, in a failed state like Somalia, concepts like “illicit networks” are rather hollow—networks themselves are neither licit nor illicit.

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But greater connectedness is just the tip of the iceberg: the new urban populations may appear marginalized (they literally live on the city’s margins, and may be sidelined in economic terms), but cell phones, the internet, radio, television and financial networks such as banking and remittance systems connect them with people in their home villages, and with relatives and friends overseas.

And because large transportation nodes (airports, inter-modal logistics hubs, container terminals, free trade zones, and sea ports) are often located in peri-urban areas from which they draw their workforce, peri-urban populations are closely connected with international trade, and with transportation and migration both internally and externally.

This means that the apparently marginalized populations of the new urban sprawl are not marginal at all, but rather central to key aspects of the global system as we know it. At the level of the city itself, workers from peri-urban areas often perform the menial, manual, or distasteful work that keeps their city functioning, and they sit astride key communication nodes that connect that city to the external world as well as to its food, energy, and water supplies. Wealthy neighborhoods, often in city cores, rely on services (public transport, cleaners, shopkeepers, food servers, maintenance staff, police, firefighters, medical personnel, and ambulance drivers) from workers who cannot afford to live where they work, and thus commute from peri-urban areas. The same peri-urban areas represent social, connective tissue between a country’s urban centers and its rural periphery, and connect that rural periphery to international networks (much as, say, the port facilities in the coastal city of Karachi connect Pakistan’s hinterland with the enormous Pakistani diaspora). Similarly, at the global level, these areas play a connective role in patterns of transportation, migration, finance, and trade.

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THE CITY AS A SYSTEM

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..... millions of rural people across the Asia-Pacific region to migrate to cities over the coming decades:

“Geography, compounded by high levels of poverty and population density has rendered Asia and the Pacific especially vulnerable to the impacts of climate change. The region is home to more than 4 billion people and some of the fastest growing cities in the world. By 2020, 13 of the world’s 25 megacities, most of them situated in coastal areas, will be in Asia and the Pacific. Climate change will likely exacerbate existing pressures on key resources associated with growth, urbanization and industrialization.”¹⁵

The food security effects are equally severe, as pollution from coastal urbanization imperils fish stocks, and peri-urban areas surround city cores whose infrastructure is scaled for populations far smaller than they now support. This newly settled peri-urban land was once used for farms, market gardens and orchards, but as cities expand into this space, the distance between the city core and its food sources increases significantly. Food must now be produced further away and transported over ever-greater distances, increasing transportation and refrigeration costs, raising fuel usage and carbon emissions, exacerbating traffic problems, and creating “food deserts”

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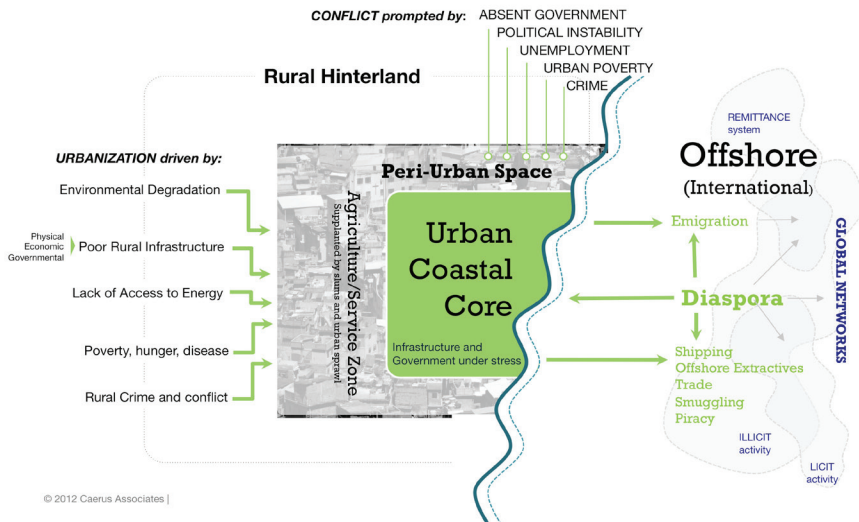
Consider, for example, the interaction between climate change and coastal urbanization. Rural environmental degradation prompts migration to coastal cities, putting more people in low-lying regions, where the slightest rise in sea level can cause major disruption. Indeed, the Asian Development Bank estimated in 2011 that drought, desertification, and soil salinity, exacerbated by climate change, will prompt

in urban areas. Likewise, many cities are running out of water, a problem that will only increase as populations swell, and as urbanization covers rainfall catchment areas, pushing cities further from their water sources.

The growing size and complexity of cities also strains the infrastructure of governance and security; police, district administrators, courts, hospitals, schools, and maintenance services. In particular, government presence can be extremely limited in peri-urban areas, allowing the emergence of safe havens for criminal networks or non-state armed groups, or creating a vacuum filled by local youth, who do not lack for grievances arising from their new urban circumstances or from their home villages. Even in developed cities like Paris and London, rioting, youth unrest, and crime in peri-urban districts reached significant levels on several occasions over the past decade. In underdeveloped regions, the problem is even worse.¹⁶

It is useful to think of urban migration from the rural hinterland—driven by rural environmental degradation, energy poverty or conflict—as the supply side of a population-flow system whose demand side includes the problems of urban overstretch, crime, scarcity, and conflict. The city is a system which, in turn, nests within a larger national and global system, with coastal cities functioning as an exchange mechanism that connects rural hinterlands with urban populations, and with international networks. We can represent this graphically, along with the key trends we have been discussing, as follows:

THE CITY AS A SYSTEM



In this model, the coastal city is the center of a larger system, with rural factors in the city's hinterland—including environmental degradation, poor rural infrastructure, and rural conflict—prompting rapid urbanization. This creates *ad hoc* peri-urban settlements where slums and shantytowns displace land formerly used to provide food and other services to the city, and cover the rainfall catchment area for the city's water supply. The city's growth puts its infrastructure under stress so that both the old urban core and the new peri-urban areas experience weak governance and increased levels of crime, urban poverty, unemployment and conflict. Shortages of food, fuel, electricity and water exacerbate these problems. In turn, the city's connectedness allows its population to tap into licit and illicit activities offshore, and to connect with global networks, including diaspora populations, an interaction that affects both local and international conflict dynamics.

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the system parameters within which future conflict is likely to occur and suggests that the majority of such conflict seems likely to be urban, networked, and littoral.

THE FUTURE THREAT: IRREGULAR, HYBRID, AND NESTED

Within this environment of connected, developing-world coastal cities under stress, likely threats to the wellbeing of cities and communities across the planet can be summed up in three similarly broad concepts: irregular actors and methods, hybrid threats, and nested networks.

Irregular actors and methods

The primary threat will be from irregular actors (non-state armed groups) and irregular methods (those that avoid directly confronting our military strength).

Military planners use the term “irregular warfare” to describe conflict against non-state armed groups: combatants who do not belong to the regular armed forces of nation-states. More broadly, the term describes methods (terrorism, guerrilla warfare, cyber war) that the international community considers irregular. These methods typically call for avoiding direct confrontation with the military power of governments. Instead, they pit the irregular’s competitive advantages of stealth, small size, tactical initiative and local knowledge against conventional militaries, which though large and powerful, tend to lose their agility and situational awareness in the complex environment of overcrowded, under-governed, urban coastal areas. Non-state armed groups include insurgents, terrorists, pirates, smugglers, gangs, bandits, and organized crime networks, but may also include the state sponsors of such groups, or government organizations (usually special forces and intelligence services) who adopt similar methods themselves.

Irregular threats are the most likely (though not necessarily the most dangerous) in the future conflict environment. Irregular warfare, including civil war, is the commonest and most widespread form of conflict, accounting for roughly eighty-three percent of wars since 1815, and there is no reason to suspect that this pattern will change in the future.¹⁷ Non-state armed groups will continue to choose asymmetric methods to confront more militarily powerful nation-states. The renewed U.S. focus on conventional warfare will only reinforce this tendency, since America’s unprecedented military supremacy means that no rational enemy would choose to fight the United States using conventional means. Moreover, networked and overpopulated coastal cities will experience conflict among civil populations (ethnic groups, socio-economic classes, and immigrant communities) and between those populations and state representatives (police, the military, emergency services, and local administrators). Proxy groups, sponsored by foreign states or their representatives, will also adopt irregular methods as formal interstate warfare continues to decline and states use asymmetric methods to further their interests.

One recent example of this new pattern of conflict is the November 26, 2008, Mumbai attack in which members of a non-state armed group (the Pakistani terrorist organization Lashkar-e-Taiba) carried out an appallingly

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effective seaborne raid on India's largest city, killing 164 people and wounding 308 over a three-day period, in several widely dispersed locations. The raiders exploited seaborne economic networks and legitimate traffic patterns by inserting themselves into a coastal fishing fleet to cover their approach to the target. They landed from the sea in the urban core of Mumbai city, but allegedly received assistance from a reception party operating in the city's peri-urban areas. They drew on support from (allegedly "retired") members of the Pakistani Inter-Services Intelligence (ISI), who trained them prior to the attack and continued to act as mentors, supporters, and coaches during the raid. Handlers in Pakistan walked individual terrorists through specific actions step by step over satellite phones, monitored Indian news channels and the Internet, and used Google Earth for targeting. The terrorists and their sponsors monitored the progress of the attack in real-time via Twitter.¹⁸ On the Indian side, overstretched police and counterterrorism units took a long time to react to the size and complexity of a seaborne terrorist attack targeting several locations simultaneously in a cluttered downtown coastal area. They were also hampered by the need to seek bureaucratic approval from distant officials in the capital city, New Delhi.

In Mumbai, then, a hybrid organization involving both state and non-state actors, attacked national and international targets, and leveraged both local and remote networks for support. Combined with the difficulties of an overstretched public safety and policing infrastructure in a heavily populated, highly complex, networked urban littoral environment, Mumbai may represent one future face of conflict.

Even under conditions of interstate war between major powers—wars that might in theory be called "conventional"—the fact that such a high proportion of the world population lives in coastal cities will tend to push future conflict in an "irregular" direction, toward small unit hit-and-run attacks, ambushing, sniping, bombings, and other tactics traditionally used by non-state actors. This would very obviously be the case in the event of war with Iran, given Iran's use of proxies and irregular forces across its region and beyond. Even the most stereotypically "conventional" cases, such as a war on the Korean Peninsula or a hypothetical conflict between the United States and China, would not remain conventional for long. North Korea would almost inevitably be defeated in a conventional fight, and could be expected to resort to guerrilla and irregular methods (as well as weapons of mass destruction) almost immediately. Even in the event of a rapid North Korean collapse, the requirement for stabilization and humanitarian operations would be immense and protracted. And in the even more unlikely case of war with China, a conflict that neither the United States nor

China appears to want, the war would also almost certainly take an irregular turn. China is now more than fifty-one percent urbanized, its largest urban centers are clustered along its coastline, and Chinese officers literally wrote the book on irregular tactics, defining the future of the country's national security strategy (the classic 1998 treatise *Unrestricted Warfare* by Qiao Liang and Wang Xiangsui of the Chinese People's Liberation Army).¹⁹

In the future, non-state armed groups—because of greater connectedness—will also draw on civilian populations whose access to advanced technologies greatly enhances their military potential. These technologies may include both weapons systems and dual-use technologies (such as infrared

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or radio remote control devices repurposed as triggers for roadside bombs, or industrial chemicals repurposed as chemical weapons; both used in Iraq). In addition, urban and peri-urban populations can access factories and workshops where they can fabricate weapons and other technologies (as in Libya in early 2011, when technically skilled but militarily inexperienced rebels used workshops in coastal urban areas around Benghazi to build and modify weapons and vehicles).

Hybrid Threats

Different threat categories—state and non-state, military and criminal, conventional and asymmetric, local and global—will increasingly merge.

As mentioned in the previous section, because major powers are likely to maintain their superiority in conventional conflict, all future adversaries (whether states or non-state armed groups) will continue to have strong survival-based incentives to adopt irregular and asymmetric methods.

But the future threat is not likely to be divisible into neat categories (irregular versus regular, state versus non-state, domestic versus internal, or military versus law enforcement). Like the Mumbai example, it will be hybrid, including irregular actors and methods, but also state actors who use irregulars as proxies, or adopt asymmetric methods to minimize detection and avoid retaliation from other states. This is nothing new; Pakistan's use of the Afghan Taliban and groups like Lashkar-e Taiba, Iran's use of Hezbollah and the Quds Force, and the sponsorship of dozens

of insurgencies and terrorist groups by regimes like Muammar Gadhafi's Libya, Saddam Hussein's Iraq, and indeed the Soviet Union, go back over many decades.

But besides the state/non-state overlap, the future hybrid threat will also bring intersections between criminal and military actors and between domestic and international threats. For example, there is evidence of strong connectivity among piracy syndicates, organized crime networks in Europe, and Somalia's al-Shabaab insurgency.²⁰ Clans and criminal networks, in Mogadishu and in

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rapidly urbanizing Somali coastal areas like Kismaayo and Haraadhere, draw little distinction between their military and political activities on the one hand, and their business interests (both legitimate and criminal) on the other. Conflict entrepreneurs—like crime networks that set up refugee camps around Mogadishu to divert humanitarian assistance into the black market or to Shabaab—operate along a continuum ranging from legitimate business, through illicit activity, outright crime, terrorism, and insurgency.

Governments like the United States that draw sharp legislative distinctions between warfare and law enforcement, and between domestic and overseas authorities, cannot operate

with the same agility. Capabilities that combine policing, administration, and emergency services with sufficient military capability to deal with well-armed non-state adversaries—capabilities traditionally associated with constabulary, *Gendarmerie*, *Carabinieri*, or coast guards—are likely to be more effective against these hybrid threats than conventional armies or navies.

Nested Networks

Future threats will be nested in the complex urban littoral environment, illicit activities will nest within licit networks, and local threat networks will be nested in networks at the regional and global levels.

Under these circumstances, threat actors will be able to nest within a complex environment, avoiding detection by remaining beneath the

“clutter” of dense urban development and overpopulation. Because of the connectedness among threat networks, peri-urban communities and the broader systems on which the city runs, it will be virtually impossible to target a threat network without also harming the community within which it nests, and this will deter some governments while making it harder for those who do act to eliminate these threats.

One recent example of this type of network was found in 2010 in Kingston, Jamaica, where a transnational gang, the Shower Posse, headed by Christopher “Dudus” Coke, operated from a stronghold in the overpopulated and under-governed coastal urban slum of Tivoli Gardens. The gang is responsible for offshore drug and weapons trafficking as far afield as Toronto, New York, and New Jersey, and Mr. Coke was wanted for extradition by the United States on narcotics conspiracy charges. However, his gang was so deeply nested within its environment—providing community services and benefits to the local population in Tivoli Gardens, and allegedly with allies among the authorities in some parts of the Jamaican establishment—that penetrating the district became a major military undertaking. In response, the Jamaican Defence Force (JDF) conducted a detailed study of counter-insurgency methods in Afghanistan,²¹ received training from Canadian and U.S. specialists, and acquired advanced technologies such as surveillance drones and communications intercepts.²² Beginning in May 2010, the JDF mounted a major military effort, provoking significant community backlash and unrest, with the resulting state of emergency leading to over 500 arrests and 73 lives lost. The JDF engaged in over several weeks of intensive stabilization and control operations before finally capturing and extraditing Mr. Coke in June 2010.²³ The connectedness of Tivoli Gardens with the rest of Kingston, as well as with national and international financial, political, business, and criminal networks, meant that the effort to extradite a single crime boss from an urbanized, networked, littoral environment quickly evolved into something more like counterinsurgency and stabilization operations than law enforcement.

As well as nesting in the urban environment, networks can nest within legitimate international and national systems, including international transportation networks, financial networks such as the remittances industry, and even humanitarian assistance programs. For example, as the investigative journalist Matt Potter has uncovered from a range of official and academic sources, as well as local and eyewitness accounts, some of the very same air charter companies that operate humanitarian assistance flights into drought-stricken or conflict-affected areas such as the Horn of Africa are also involved in smuggling weapons, drugs, and other contraband for illicit

networks. Humanitarian aid workers and NGOs are well aware of this, but both they and the governments involved in relief efforts are unable to shut down these trafficking networks, since these are the very same networks on which they rely in order to move their humanitarian cargo.²⁴

IMPLICATIONS

This analysis of the future conflict environment suggests that the recent U.S. shift away from protracted stabilization and counterinsurgency operations toward conventional conflict, conflict prevention and military-to-military assistance, is somewhat unrealistic. American policymakers, not for the

American policymakers, not for the first time, have expressed a strong preference for avoiding messy conflicts like those of the past decade. Nonetheless, as we have seen, policymakers' preferences seem to have little effect on the frequency of overseas interventions, a historical pattern which suggests that the United States is likely to undertake one major stabilization or counterinsurgency operation (on the scale of Iraq, Afghanistan, or Vietnam) every generation, and smaller operations (on the scale of Bosnia or Kosovo) every five to ten years, for the foreseeable future.

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While this pattern is likely to endure, the environment in which such interventions occur is shifting. The three megatrends of urbanization, littoralization, and connectedness suggest that conflict is increasingly likely to occur in coastal cities, in underdeveloped regions of the Middle East, Africa, Latin America, and Asia, and in highly networked, connected settings. Adversaries are likely to be non-state armed groups (whether criminal or military) adopting asymmetric

methods. Even the most conventional hypothetical war scenarios will turn out, when closely examined, to involve very significant "irregular" aspects.

Whether irregular or state-based, adversaries in the future conflict environment will exhibit hybrid characteristics (combining state and non-state, domestic and international, military and criminal, and licit and illicit elements) and will be able to nest within the complexity of urban environments, as well as within legitimate national and international systems.

The implications for the U.S. military are reasonably obvious, although difficult to act upon in the current fiscal environment. Capabilities such as Marine amphibious units and naval supply ships, as well as facilities for expeditionary logistics in urbanized coastal environments, are fairly obvious requirements, as are rotary-wing or tilt-rotor aircraft, precise and discriminating weapons systems, and the ability to rapidly aggregate or disaggregate forces to operate in a distributed, small-unit mode, while still being able to concentrate their mass quickly against a major target. Combat and construction engineers, civil affairs units, intelligence systems capable of making sense of the clutter of urban areas, and constabulary (*gendarmerie*) and coast guard capabilities are also likely to be important. The ability to operate for a long period of time in a city without drawing heavily on that city's water, fuel, electricity, or food supply will also be important.

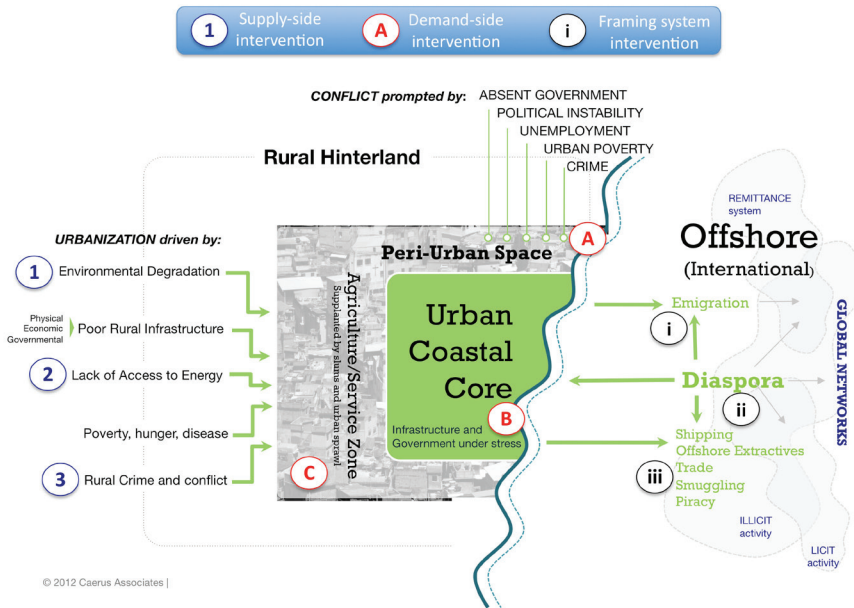
Many of the implications for civilian agencies of government are also obvious; the ability to expand social services, city administration, and rule of law into peri-urban areas are clearly important, as are investments in infrastructure to guarantee supplies of fuel, electricity, food, and water. Less obvious, but equally important, are investments in governance and infrastructure in rural areas, as well as efforts to mitigate the effects of rural environmental degradation that cause unchecked and rapid urban migration. Given the prevalence and increasing capability level of threat networks, policing capabilities will need to embody a creative combination of community policing, constabulary work, criminal investigation and special branch (or police intelligence) work, potentially in close collaboration with the military. Local city managers, district-level officials and ministry representatives may need capabilities that allow them to operate in higher-threat, and opposed-governance environments.

The implications for business, civil society, and the general public go well beyond either of these rather narrowly scoped considerations. In the first place, the environmental shifts outlined above represent far more than a future theory of conflict—indeed, they are a “theory of everything” in the sense that the three key megatrends identified here (urbanization, littoralization, and connectedness) will affect every aspect of life on the planet in the next few decades. Caerus Associates' systems design approach for

developing urban resiliency and mapping conflict²⁵ and the IBM Smarter Cities project²⁶ are two examples of businesses and civil society organizations taking a holistic approach to the city as a system, and thereby seeking to anticipate and address the full range of future issues that cities will confront.

More broadly, the city-as-a-system approach described earlier can be applied as a methodology to identify how complex problems that may appear unrelated—rural soil salinity, urban crime, piracy, and diaspora-sponsored terrorism, for example—interact with each other in the context of a given city or threat network. Taking this approach may allow planners to identify emergent patterns within the complex system of a relevant city, make sense of the system logic, and begin to design tailored interventions. These would begin in a consciously experimental way, seeking to identify and reveal the complex interactions between different parts of systems, and among systems nested in larger systems, but would rapidly increase in effectiveness as each experimental intervention would generate new data that would enhance the effectiveness of the next.

CITY-AS-SYSTEM INTERVENTION POINTS



As the diagram above shows, we might further break such interventions down into supply-side interventions, (which ameliorate drivers of rapid urbanization and thus relieve some of the pressure on the city and its infrastructure), demand-side interventions (which improve the city's

resiliency and thus its ability to cope with the pressures on its systems), and framing-system interventions (which seek to alter the context within which the city develops, by changing its interaction with larger national and transnational systems).

CONCLUSIONS

In conclusion, given the difficult last decade of wars, stabilization, and expensive nation-building efforts, it is perfectly natural that U.S. political leaders and the public are turning away from these types of activities, as shown by the recent policy shift toward conventional warfare capabilities, and away from those needed for large-scale, long-term stabilization and counterinsurgency. While there is an obvious and sensible political and financial basis for the administration's current approach, it nevertheless fails to account for the historical pattern of frequent U.S. overseas interventions going back to the middle of the nineteenth century or earlier. Given the overwhelming conventional military superiority of countries like the United States, it seems likely that any rational potential adversary (state or non-state) will continue to pursue irregular and asymmetric methods, so that the demand for these types of operations is unlikely to diminish any time soon. In any case, as we have seen, policymakers may or may not have any particular desire to get involved in this messy form of intervention, but this seems to have no impact on the frequency with which the military is called upon to do it.

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More broadly, the future conflict environment is likely to be characterized by rapid population growth, increasing urbanization, accelerating littoralization, and greater connectedness. Thinking of the city as a system seems to make the most sense as a way to understand this environment, and the irregular, hybrid, and nested threats that we are likely to encounter within it. The implications for the military and for civilian government are fairly obvious, but in broader terms a city-as-system approach may also allow urban planners, city managers, businesses, and communities themselves to understand their environment and develop tailored interventions to deal with it.

We are still likely to experience wars between nation-states, and conflict in remote areas such as mountains, jungles, and deserts will still undoubtedly occur. But the trends are clear: more people than ever before in history will be competing for ever-scarcer resources in poorly-governed areas that lack adequate infrastructure. These areas will be more and more closely connected to the global system, so that conflict will have immediate and wider implications. The future is hybrid and irregular conflict combining elements of crime, urban unrest, insurgency, terrorism, and state-sponsored asymmetric warfare—more Mumbai, Mogadishu, and Tivoli Gardens—and we had better start preparing for it. ■

ENDNOTES

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- 2 *Ibid.*, 12 (emphasis in the original).
- 3 *Ibid.*, 5.
- 4 Punctuated only by major conventional wars, large-scale interventions involving irregular warfare, stability operations or counterinsurgency have occurred approximately once every 25 years in U.S. history since the Mexican War of 1846–48. They included the Indian Wars against Native American peoples throughout the second half of the 19th Century, the Philippine Insurrection of 1899–1902, the Banana Wars in the Caribbean in the 1920s and 1930s, the Vietnam War, and the wars in Iraq and Afghanistan. Even major “conventional” wars during this period, including the Civil War, the First and Second World Wars, and the Korean War involved significant elements of stability operations and nation building. In terms of minor stability interventions, the Defense Science Board Summer Study of 2004 highlighted a long-standing five-to-seven-year cycle of intervention in stabilization and reconstruction operations, imposing an increasing burden on the U.S. military. See Defense Science Board, 2004 *Summer Study on Transition To and From Hostilities*, <<http://www.acq.osd.mil/dsb/reports/ADA430116.pdf>, 14> (Accessed 12 February 2012).
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- 12 Iginio Gagliardone and Nicole Stremlau, *Digital Media, Conflict and Diasporas in the Horn of Africa*, Mapping Digital Media Program of the Open Society Foundations, December 2011, 9-10.
- 13 World Bank, *Migration and Remittances Factbook 2011*, quoted in Gagliardone and Stremlau, *op. cit.* 12.
- 14 See “UN Bans Trade in Charcoal from Somalia” in *The East African*, February 25, 2012, <http://www.hiiraan.com/news4/2012/feb/22927/un_bans_trade_in_charcoal_from_somalia.aspx> (accessed April 16, 2012).
- 15 See Asian Development Bank, *Climate-Induced Migration in Asia and the Pacific*, September 2011, <<http://beta.adb.org/features/climate-induced-migration-asia-and-pacific>> (Accessed April 16, 2012).
- 16 Widespread rioting and civil unrest in outlying and peri-urban areas struck Paris (and several other French cities) in 2005 and again in 2007 and 2010, while large-scale rioting and looting occurred in parts of London in 2011.
- 17 See David J. Kilcullen, *Counterinsurgency*, (New York: Oxford University Press, 2010), xi-xii.
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