Several Afghan government ministers and an advisor from USAID review proposed amendments to the national law governing land management in an effort to secure and develop land. PHOTO BY SERGEANT APRIL CAMPBELL, INTERNATIONAL SECURITY ASSISTANCE FORCE HQ PUBLIC AFFAIRS.

The role of economics in the generation and mitigation of grievances is well documented and understood. Likewise, the reliance on economic documents forms the basis for credible economic systems worldwide. For the Special Operations Forces (SOF) professional, however, the issues of property rights, economic development, and the generation of wealth are more nuanced and central to the successful completion of SOF missions in failing and failed states. As Colonel Bill Mandrick demonstrates in this monograph, a nation-state's failure to have in place a system for the equitable access to and the sharing of economic activity is a guarantor of grievances, anger, and instability. So too is the failure to enforce an existing system of property rights and economic opportunity. He argues that an awareness of the economic records of a nation-state provides useful insights into its stability and can provide important intelligence to expand SOF situational awareness and support SOF mission planning.

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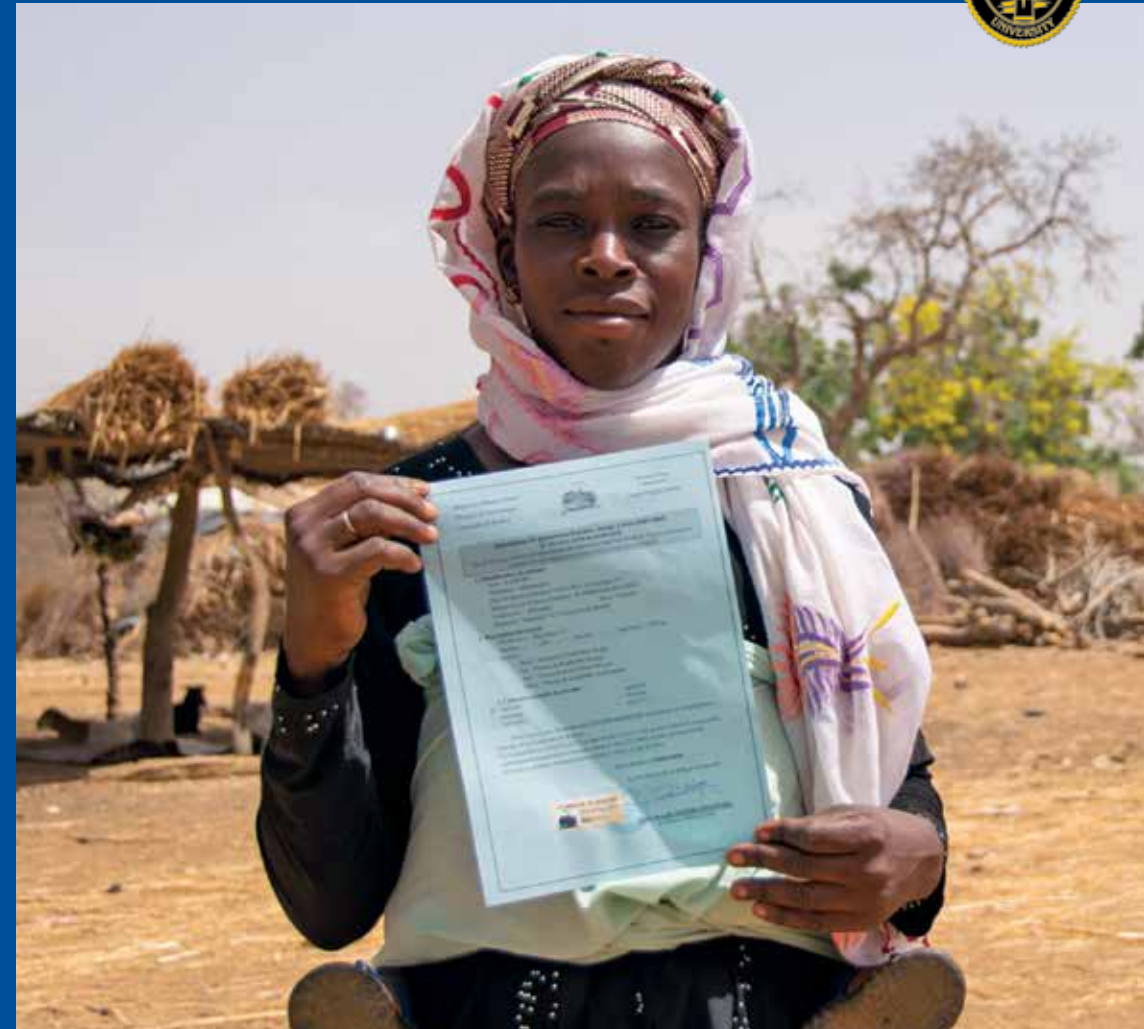https://jsou.libguides.com/jsoupublications

JSOU Report 17-9

Property Rights and Social Justice as an Indicator of Stability

Mandrick

# JOINT SPECIAL OPERATIONS UNIVERSITY



## *Property Rights and Social Justice as an Indicator of Stability: The SOF Nexus*

**Bill Mandrick**

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## Joint Special Operations University and the Center for Strategic Studies

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# *Property Rights and Social Justice as an Indicator of Stability: The SOF Nexus*

## *Bill Mandrick*

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**On the cover.** A young woman in Burkina Faso holds her Certificate of Rural Land Ownership issued after a change in the law that moved the country from state ownership of all land to municipal and individual ownership. SOURCE: JEREMY GREEN/ USAID.

**Back cover.** Several Afghan government ministers and an advisor from USAID review proposed amendments to the national law governing land management in an effort to secure and develop land. PHOTO BY SERGEANT APRIL CAMPBELL, INTERNATIONAL SECURITY ASSISTANCE FORCE HQ PUBLIC AFFAIRS.

# Contents

# Foreword

The role of economics in the generation and mitigation of grievances is well documented and understood. Likewise, the reliance on "economic documents" is standard practice in the so-called 'core' countries as defined by Thomas Barnett and forms the basis for credible economic systems world-wide. For the Special Operations Forces (SOF) professional, however, the issues of property rights, economic development, and the generation of wealth are more nuanced and central to the successful completion of SOF missions in failing and failed states. Who owns the land and the means of production? Are local and national economic policies inclusive, or do they exclude most of the people to the benefit of a small minority? Are there systems of property rights in place? Are they enforced fairly? In those cases where they are not, how does the public express their frustrations over their alienation from the economic life of the nation-state?

This monograph, written by Colonel William S. Mandrick, argues that an awareness of the economic records of a nation-state provides useful insights into its stability and can provide important intelligence to expand SOF situational awareness and support SOF mission planning. A failure to have in place a system for the equitable access to and the sharing of economic activity is a guarantor of grievances, anger, and instability. So too is the failure to enforce an existing system of property rights and economic opportunity. Colonel Mandrick asserts that the stability of any state can be assessed by analyzing its body of economic documents and their connection to higher-level economic policies and laws and describes how these documents and records, "have a powerful strategic communications effect, whereby the population gains confidence in the government's ability to enforce property rights for all members of society."

This well-researched monograph addresses the "Elements of a Stable State" (human security, economic and infrastructure development, and rule of law) and emphasizes the importance of the "formalization of property" in building credible governance. The emotional demands of squatters on an ancient hillside for government roads, water, and electricity are likely to be ignored and could lead to angry demonstrations and even violence. It is important to understand the rights—if any—that are granted to such

squatters. Is their occupation of the land the consequence of long-entrenched systems of inequitable access to property ownership?

Colonel Mandrick clearly traces how absent, neglected, or mismanaged systems of property rights create the dissatisfaction and instability that lead to conflict. He also lays out techniques for understanding the levels of governance credibility by analyzing the state of economic documents. In addition to SOF, the U.S. Agency for International Development and other interagency partners share concerns about property rights and social justice and can provide important skills, resources, and experience to shared efforts to create stability within a given nation-state. The SOF professional will find that what follows provides important information about the role of economic issues—especially property rights—in assessing economic health and the state of social justice. Specific applications to SOF missions, with appropriate examples, animate the importance of the economic element of national power to SOF operations.

Boyd L. Ballard
Director, Center for Strategic Studies

# About the Author

Bill Mandrick, Colonel, U.S. Army Reserves, is a senior fellow at Joint Special Operations University. He also currently serves as the Operation Inherent Resolve branch chief at United States Central Command's Coalition Coordination Center. Prior to this, he was a senior concept developer at the Institute for Military Support to Governance within the U.S. Army John F. Kennedy Special Warfare Center and School, Fort Bragg, NC. He has also taught courses in philosophy, military science, and security studies at the State University of New York (SUNY) College at Brockport and Angelo State University in Texas. As a graduate student, he studied the ontology of geographic objects, conflict, and institutional reality. He holds a master's degree and Ph.D. in philosophy from the SUNY University at Buffalo.

Colonel Mandrick previously served as an active duty infantry officer, and presently serves in the U.S. Army Reserves as a civil affairs officer. At the initiation of the global war on terrorism, he served as an assistant team chief in the remote regions of northeast Afghanistan, where he helped plan and lead numerous civil reconnaissance, foreign internal defense, and foreign humanitarian assistance missions. He later served as a civil affairs company commander, where he planned and coordinated civil-military operations in support of 4th Brigade Combat Team, 2nd Infantry Division in Central Iraq during the 2008 surge.

In his civilian role, Dr. Mandrick works as a senior ontologist for the intelligence community, developing ontologies for use in supporting information retrieval, analysis, and integration. His work covers a broad range of domains to include geospatial and geopolitical objects, organizational and social structures, human phenotypes, and human activities to include social interaction and conflict processes.

# Introduction

Every developing and transition country actually has some form of formal property system; however, a majority of the citizens don't have access to it. The law protects the elites under the 'bell jar.'[1]

One way of assessing the stability of a nation-state is by analyzing its body of economic (social) documents and their connection to higher-level economic policies and laws. The documents contain information pertaining to the presence of property rights, discrimination against certain groups of people, rule of law, and potential drivers of conflict. Furthermore, a society can be made more stable by enhancing or creating a body of economic (social) documents that are connected to, and enforced by, a set of higher-level economic policies and laws.[2] Where needed, laws must be revised or created to formalize property rights, ownership, and equality, with the intent of connecting informal, local economies to the extended economy (i.e., globalization). Formal property rights create incentives for and protection of profit by establishing ownership over capital assets—land, equipment, ideas, etc.—but if the system isn't fair and open to all, grievances may continue. Jillian Keenan describes the challenges involved in formalizing property laws and registering private land:

> Under colonialism, official land deeds and titles were few and far between, which meant that Burundians often could not prove that they owned acreage. In the early 1960s, as independence loomed, the government began offering land registration to parties that requested it, which, for the most part, were foreign businesses such as hotels. Families also had the option to register their land, but because the centralized system was inaccessible for most farmers and required a huge tax payment, few did. So land plots quickly fell into two categories: those with boundaries recognized by the state, and those with borders determined by custom—that is to say, residents understood trees, rocks, paths, creeks, and huts to mark de facto property lines.[3]

As will be shown, the lack of formal property systems serves as a driver of conflict, so that the formalization and strengthening of economic documents, such as titles, deeds, cadastre, etc., have several positive effects at the grass-roots or tactical level. For example, when connected to a higher set of provincial and national policies, these documents—and the very process of creating, implementing, and enforcing them—have a powerful strategic communications effect, whereby the population gains confidence in the government's ability to enforce property rights for all members of society.[4] Furthermore, the information produced by both formal and informal property systems serves as a valuable source of intelligence for the operations planner and analyst. One caveat is that legitimate grievances may continue if the elite attempt to exert control through the formal system and the disenfranchised continue to exert control through 'squatting' or possession/actual use of the property. The grievance may continue within the informal community with members who believe they should formally own the property.

*Furthermore, the information produced by both formal and informal property systems serves as a valuable source of intelligence for the operations planner and analyst.*

As Special Operations Forces (SOF) work toward the long-term stabilization of a failed or failing state, they require a constant flow of information for planning and decision making. A state's body of economic documents provides a treasure trove of information that can be used by SOF for intelligence, planning, and operational design—"which broadly describes the actions the joint force needs to take to reach the political and military end state."[5] Economic documents portray social realities such as ownership of valuable parcels of land, influential persons or organizations, discriminatory practices, normative dissonance, and other drivers of conflict and instability. These elements can be portrayed as nodes and links within political, economic, and social systems. Such analysis is a critical step in identifying centers of gravity, and helps planners formulate stability operations' end states, as well as the metrics—indicators and measurements—used to determine success.

Information obtained through the analysis of property documents contributes to the planning and conduct of special operations core activities. More specifically, property rights information feeds into the planning and successful conduct of special reconnaissance, foreign internal defense

(FID), counterinsurgency (COIN), military information support operations (MISO), and civil affairs operations (CAO). How economic and property intelligence contributes to each of these core activities will be addressed in what follows. For example, FID refers to U.S. activities that support a host nation's (HN's) internal defense and development strategy and programs, and are designed to "free and protect its society against subversion, lawlessness, insurgency, terrorism, and other threats" to its internal security and stability.[6]

# 1. Defining the Problem

> Competition over land and the resources found on land drives much conflict around the world. Conflict over land is far more likely to escalate and become violent when land tenure and resource rights are weak, insecure, and non-negotiable and when the land governance systems in place are ineffective, corrupt, or otherwise dysfunctional. Efforts to protect land records, to mediate land disputes between and among displaced persons and settlers, and to rebuild capacity in the land governance systems can help reduce tension, stabilize a locale, and set the stage for productive investments and growth, which, in turn, can decrease conflicts.[7]

The 2014 Fragile States Index ranks 138 of 178 countries worldwide as being less than stable.[8] These failed and failing states are addressed in the 2015 National Security Strategy, which states that "the nexus of weak governance and widespread grievance allows extremism to take root, violent non-state actors to rise up, and conflict to overtake state structures."[9] The strategy is to partner with those fragile states that have a genuine political commitment to establishing legitimate governance and providing for their people. According to the strategy, the focus of U.S. Government efforts will be on areas such as inclusive politics, enabling effective and equitable service delivery, reforming security and rule of law sectors, combating corruption and organized crime, and promoting economic opportunity. It is critical that planners and analysts understand the interdependence of each of these elements, and how they are related. In addition to describing how property rights affect stability, this monograph provides a framework for organizing all of the elements that make up the political, economic, and social systems in any area of responsibility.

SOF are employed globally, planning and conducting operations in failed and failing states. They work toward long-term stability, which includes the establishment of end-states such as a safe and secure environment, rule of law, stable governance, a stable economy, and social well-being.[10] Joint military doctrine acknowledges that success in stability operations is not only defined in military terms; it also involves: "rebuilding infrastructure,

supporting economic development, establishing the rule of law, building accountable governance, establishing essential services, and building a capable HN military responsible to civilian authority."[11] According to the U.S. Joint Chiefs of Staff, stabilization is: "the process by which military and nonmilitary actors collectively apply various instruments of national power to address drivers of conflict, foster HN resiliencies, and create conditions that enable sustainable peace and security."[12]

As depicted in figure 1, the elements of a stable state include (a) economic and infrastructure development, (b) the establishment of governance and rule of law, and (c) overall human security. However, it is not enough to develop these elements independently. Rather, they must be developed interdependently for long-term stability to take hold, which requires analysis and understanding of the operational environment (OE) as a complex system of interdependent systems—political, military, economic, social, infrastructure, and informational (PMESII). This type of analysis allows planners and decision makers to see connections between nodes in the disparate, but interrelated, PMESII systems. This monograph is a contribution toward the analytical processes required for making sense of the countless elements and flux that make up any complex OE.
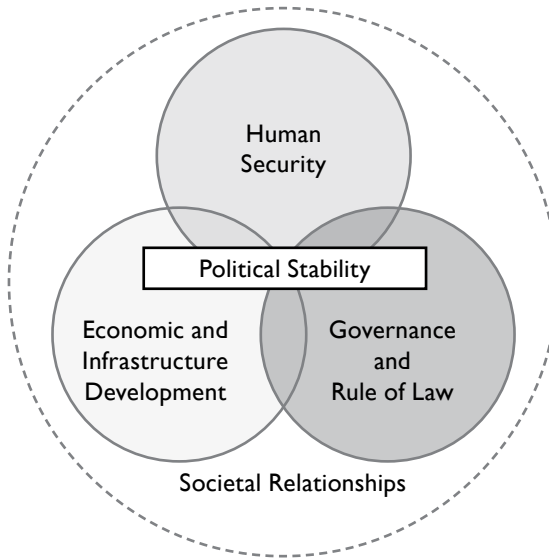


Figure 1. Elements of a stable state. SOURCE: U.S. JOINT CHIEFS OF STAFF[13]

It will be argued in what follows that the formalization and representation of property rights affects all three elements of a stable state by clarifying and strengthening land rights; mitigating drivers of conflict associated with property disputes; connecting informal, local economies to the formal, global economy; and legitimizing higher-level governmental policies. However, the formalization of property is more than simply creating land titles, deeds, and cadastre maps. Formalization is a process that includes numerous hours of interviews with stakeholders, verification of property boundaries, creation of standardized documents, and alignment with higher-level policies that may be under revision at the same time. Planners may learn about the context of the operating environment in this way, but they probably won't be able to fix the root causes at the national level. Geoffrey Demarest argues that, "the most defensible goals of human development: freedom of expression, association, movement, worship, material prosperity, and non-violent resolution of conflict, are more likely achieved where rights and duties associated with land are formalized—regardless of the name given the overall system."[14] A system that effectively supports property rights is probably a system that supports all these positive outcomes.

Evidence suggests that the interrelated processes of understanding, clarifying, documenting/formalizing, registering, and enforcing land rights have powerful stabilizing effects on all members of a society, not just the elite class. These processes expose the economic policies and practices of a developing state to its citizenry for their consideration. This type of transparency is required for building trust at the tactical level of society—where instability and insurgency take root. However, if the system does not fairly represent the disenfranchised, then the conflict will continue. The revision of economic policies, and the alignment of local property to the extended (legal) market, results in increased confidence in the government. Without popular support and confidence in the legitimate government, the population is vulnerable to extremist messaging. No amount of strategic com-

*Without popular support and confidence in the legitimate government, the population is vulnerable to extremist messaging.*

munications or counter-messaging by an HN government can overcome perceptions of corruption and unfair property rights. Popular support is only gained by providing and enforcing a fair property rights system, which is the de facto strategic messaging program of the HN government. Furthermore,

Evidence suggests that

## Understanding, Clarifying & Enforcing Land Rights
can have a powerful impact on all members of society, especially women.

In Tanzania, women with strong land rights were 3 times more likely to work off-farm and more likely to have higher earnings.

**+3x**

In China, the probability of investment increased by 76% with land registration.

**+76%**

In Ethiopia, women's caloric intake and body mass index improved in areas where land rights were certified, and an increase in land allocated to women decreased household food insecurity by 36%.

**-36%**

In Nicaragua, after land titling, there were significant gains to productivity of over 50%.

**+50%**

In Uganda, plots without risk of eviction had 63% higher productivity.

**+63%**

In Burkina Faso, productivity dropped by 40% when households had concerns regarding land disputes.
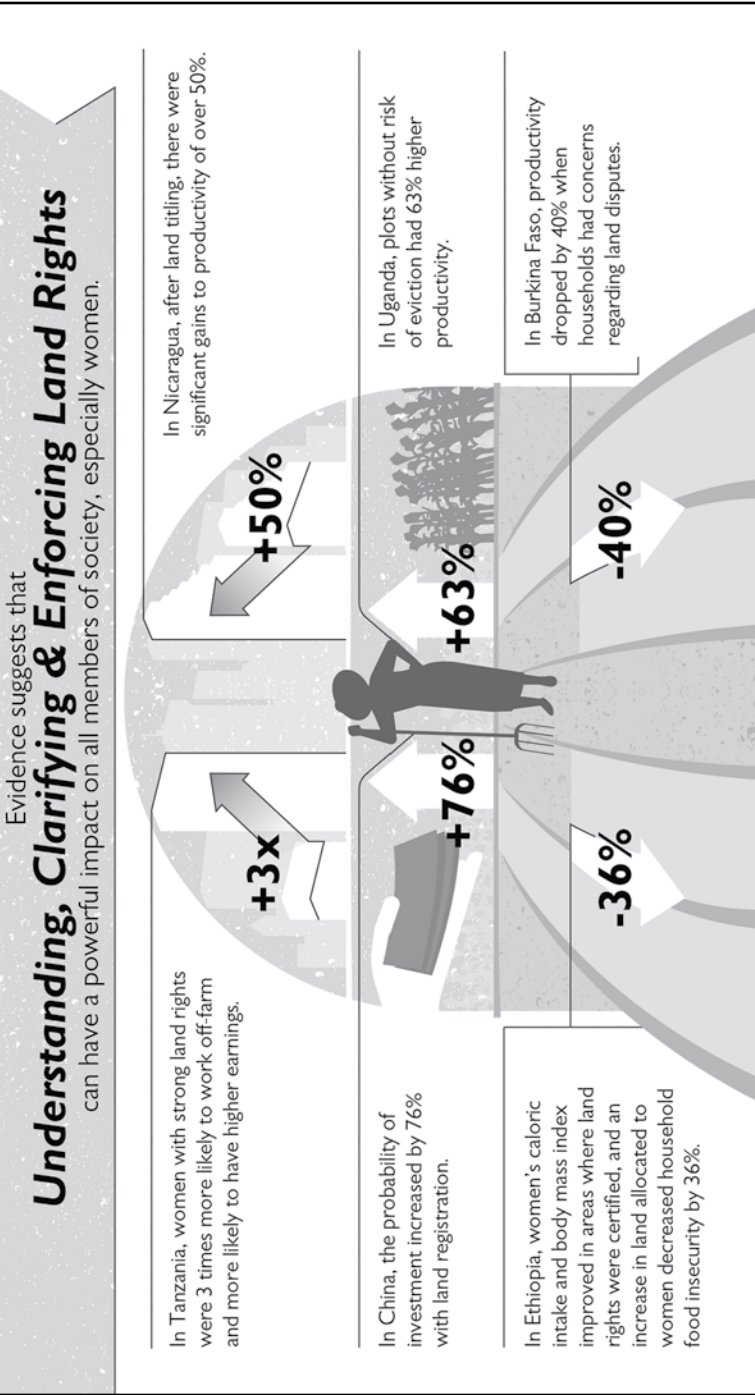
**-40%**

Figure 2. Positive impacts of normalized and codified property rights.

SOURCE: U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT[15]

the cascading positive effects of normalized and codified property rights include dramatically increased productivity, investment, and even caloric intake (see fig. 2). These effects result in a more powerful counternarrative to the anti-government forces, who will claim to be the force needed to bring stability to the population.

For these reasons, experts in the field of land tenure and property rights (LTPR) argue that property formalization may be more important than other stabilizing activities such as holding elections, passing laws, or building schools. Efforts to establish strong land rights, register formal titles, and resolve land-related disputes have the second-order effect of infusing confidence and trust across a citizenry. The confidence that one's land is rightfully owned, and not subject to confiscation, creates an incentive to improve and increase productivity. In this regard, Demarist argues that, "comprehensive, precise, transparent expression of real property is a necessary precondition of peace; places outside the lines of formal property necessarily slump toward possession by force."[16] In order to be consistently enforced, property rights need to be formally expressed, transparent, and accessible by every category of person and group. Without the formal expression (representation) of property rights, the bad actor (insurgent, revolutionary, or thug) can continue to operate unfettered by a set of standards that illuminate their criminal actions.

The next chapter presents the case that peaceful and democratic societies necessarily describe and formally represent the ownership of property in documents such as titles, deeds, and cadastre maps. Formal descriptions of property rights, the documentation of land ownership, registration of property in a common management system or cadastre, and enforcement of property laws are required elements of enduring stability. Economists such as Hernando de Soto prescribe methods for analyzing, formalizing, extending, and enforcing property rights, in order to increase the presence of formal economies while reducing property-related drivers of conflict. Informal economies drive conflict and instability because they are disconnected from higher-level enforcement mechanisms—property laws and economic policies—and fail to protect property rights at the local level.

# 2. Hernando de Soto: Formal and Informal Economies

> Markets were never intended to be anarchic: It has always been government's role to police standards, weights and measures, and records, and not condone legalized sleight of hand in the shadows of the informal economy. To understand and repair one of mankind's greatest achievements—the creation of economic facts through public memory—is the stuff of nation-builders.[17]

In order for people to participate in the legal and global economy, they must have the ability to create economic facts, such as the fact that someone owns (has a claim over) some piece of property or the fact that someone has a debt (an obligation to repay a loan). Furthermore, these economic facts must be representable in a standardized system of economic knowledge. Like any successful knowledge system, an economic knowledge system is one where economic facts are gathered, organized, standardized, recorded, continuously updated, and made accessible to others. A system of economic information records and classifies knowledge of both (a) intangible entities such as stocks, commercial paper, deeds, ledgers, contracts, patents, companies, and promissory notes, and (b) tangible assets such as parcels of land, buildings, and machines. States that fail to develop such economic knowledge systems have a majority population that lacks access to the extended, global market.

Most people in developing countries operate within an informal economy, which consists of extralegal arrangements based upon informal consensus. The result is that their physical assets—land, buildings, and other facilities—are not formally represented by economic documents that are tied into a formal system of property laws. In every country that de Soto's team researched, they found that some 80 percent of the land parcels were not protected by up-to-date records or held by legally accountable owners. This means that in developing countries, there is no representation of assets in the form of titles, deeds, or contracts. With no proof of ownership, people cannot legally protect their property or leverage it to improve their situation. Hernando de Soto states that "living in the informal sector means

for 80% of the world population that their savings, investments in housing and businesses cannot be used to generate capital, which they can use to create a better living and to escape from poverty."[18]

*With no proof of ownership, people cannot legally protect their property or leverage it to improve their situation.*

In contrast, a formal economy is characterized by a body of formal property laws and procedures, expressed in documents, which represent the 'invisible' properties of a physical object, such as ownership or transferability. In other words, property documents make the invisible become visible. These hidden properties of physical assets, represented by economic documents, are what connect a physical object to the formal economy, and make an economy run. Connecting assets to the formal, extended economy makes them more valuable, because knowing who owns an asset, and fixing that information in public records, makes it possible for investors to infer value, take risks, and track results. The economic facts created through property documents that represent assets in a common registry are what connects those assets to the extended market. Metaphorically speaking, the process of connecting property to the extended, legal market brings those dead assets to life. An article in *The Economist* states that:

> According to de Soto's research, based on interaction with extra-legal communities in several countries, such informal property rights cover assets—notably, land and housing—worth many billions of dollars. Informal systems of property rights usually make such assets "dead capital", meaning that it is hard to use them as collateral for a loan, which might be used to start a business, for example. Bringing these rights into the formal legal system will unleash this capital and spur growth, says Mr. de Soto: an efficient, inclusive legal system preceded rapid development in every rich country.[19]

So we are left to wonder why so many people, entire populations even, continue to live and operate within the informal sector, while the 'elite' minority operate within a bell jar wherein there exists a body of codified laws and policies which transform physical objects into transferable property in the formal marketplace. According to de Soto, access to the formal sector in developing countries is made nearly impossible by the insurmountable number of administrative procedures required to register property or start a

business. People attempting to enter the formal sector face an impenetrable wall of rules, which serves as a driver of conflict and instability. Enduring stability requires that this impenetrable wall be broken down, streamlining the number of steps involved and adopting existing common practice as much as possible into the formal property system, resulting in the integration of the informal sector into the formal sector. As will be described, de Soto's strategies for integrating the formal and informal economies should be viewed as critical tasks in COIN and stability operations lines of effort (LOEs)[20]—specifically the Support to Economic and Infrastructure Development LOE (see fig. 3).
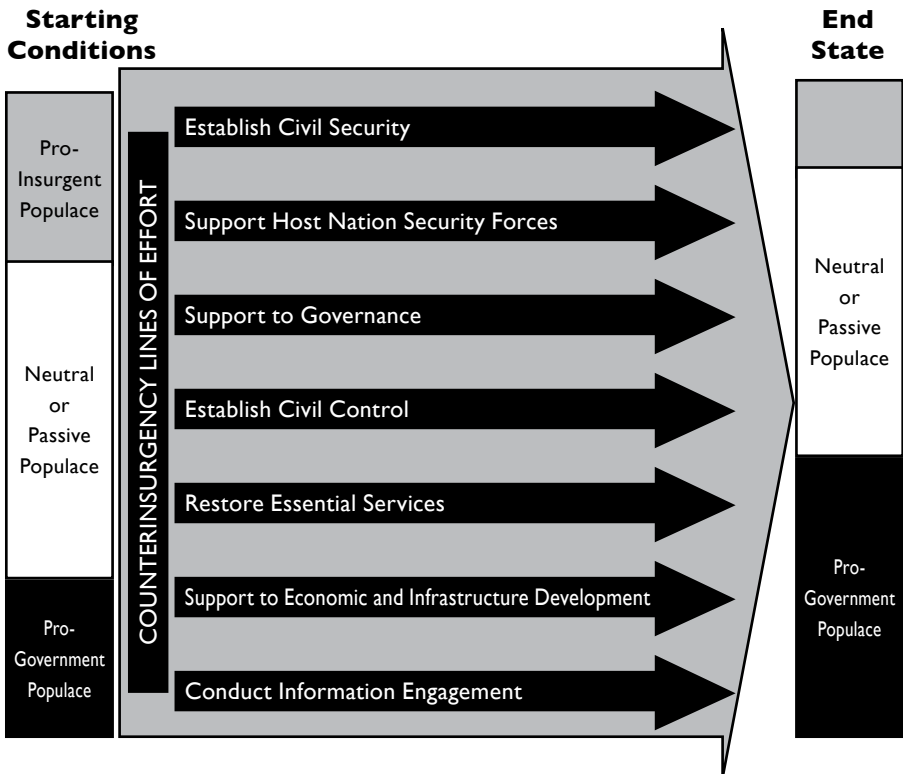
Figure 3. LOEs in COIN operations. The tasks involved in integrating local economies into the extended (legal) economy support all of the COIN LOEs.
SOURCE: U.S. ARMY [21]

French historian Fernand Braudel argues that formal markets in developing countries are only accessible to an elite minority, who participate in an economy that is isolated from the majority. He states that "the key problem is to find out why that sector of society of the past, which I would not hesitate to call capitalist, should have lived as if in a bell jar, cut off from the rest: why was it not able to expand and conquer the whole society?"[22] In his book, *The Mystery of Capital*, de Soto similarly argues that most people living in developing countries are excluded from the legal economy by a highly complex, impenetrable legal and administrative system, which serves as a bell jar keeping them out of the formal economy. These exclusive economies, operating within a bell jar, drive conflict by forcing a majority of the population into the extra-legal economy, which causes resentment, unresolvable land disputes, and a lack of economic opportunity.

In contrast to exclusive economies that force most of the population into the extralegal sector, a sustainable economy is defined as: "the ability of the people to pursue opportunities for livelihoods within a system of economic governance bound by law."[23] In stability operations, a sustainable economy

Table 1. Tasks that support the Economic and Infrastructure Development LOE.[24]

| |
|---|
| 1. Identify, locate, and classify extralegal assets (i.e., dead capital) |
| 2. Quantify the actual and potential value of extralegal assets (i.e., dead capital) |
| 3. Analyze the interaction of the extralegal sector with the rest of society |
| 4. Identify the extralegal norms that govern extralegal property |
| 5. Ensure that the highest political level assumes responsibility for capitalization of the poor |
| 6. Put into operation agencies that will permit rapid change |
| 7. Remove administrative and legal bottlenecks |
| 8. Build consensus between legal and extralegal sectors |
| 9. Design and implement field operation strategy procedures, personnel, equipment, offices, training, and manuals that enable government to recognize and process individual property rights in the extralegal sector |
| 10. Implement communications strategies using appropriate media to encourage participation of the extralegal sector, support in the business community and government sector, and acquiescence among those with a vested interest in the status quo |
| 11. Reengineer the record-keeping organizations and record-keeping processes so that they can pull together all the economically-significant records |

is a desired end state that is attained through the LOEs listed in figure 3. In *The Mystery of Capital*, de Soto prescribes specific tasks that contribute specifically to the Support Economic and Infrastructure Development LOE (see table 1 for examples).

Leveraging many of the techniques listed in table 1, the USAID Office for Land Tenure and Property Rights works around the world to establish and document property rights. They are currently involved in 29 active LTPR projects in South America, Africa, and the Middle East. In Colombia, for example, armed conflict, illegality, and the illicit economy are inextricably linked to weak state presence. In response, USAID and Chemonics have partnered to implement the Consolidation and Enhanced Livelihood Initiative–Northern and Southern Regions to strengthen state presence as the government of Colombia recovers territory and creates a minimum level of permanent territorial security. Using satellite imagery, community members in El Bagre work together as part of a workshop to facilitate zoning and identify property boundaries (see fig. 4).

A sustainable economy, where the population has access to the legal economic sector, requires more than a set of economic documents intended to represent claims and obligations between parties. Property documents need to be registered in a common registry and supported by laws that make them enforceable. Furthermore, there must be rule of law (ROL), which is the condition or state of affairs wherein the people of some state or nation "have equal access to just laws and a trusted system of justice that holds all per-



Figure 4. Mapping, documenting, and recording parcels of property into a consolidated record directly contributes to increased investment, productivity, and even caloric intake. PHOTO CREDIT: CHEMONICS INTERNATIONAL[25]

sons accountable, protects their human rights, and ensures their safety and

security."[26] ROL requires full accountability to the laws, procedural transparency, equal enforcement, and public promulgation. According to the U.S. Army Peacekeeping and Stability Operations Institute, ROL consists of five necessary conditions, which include: just legal frameworks, public order, accountability, access to justice, and a culture of lawfulness. Each of these are described in table 2.

Table 2. Conditions for the ROL[27]

| |
|---|
| 1. Just Legal Frameworks is a condition in which laws are consistent with international human rights norms and standards, are legally certain and transparent, are drafted with procedural transparency, are equitable, and are responsive to the entire population, not just powerful elites. |
| 2. Public Order is a condition in which laws are enforced equitably; the lives, property, freedoms, and rights of individuals are protected; criminal and politically motivated violence has been reduced to a minimum; and criminal elements (from looters and rioters to leaders of organized crime networks) are pursued, arrested, and detained. |
| 3. Accountability to the Law is a condition in which the population, public officials, and perpetrators of past conflict-related crimes are held legally accountable for their actions; the judiciary is independent and free from political influence; and horizontal and vertical accountability mechanisms exist to prevent the abuse of power. |
| 4. Access to Justice is a condition in which people are able to seek and obtain a remedy for grievances through formal or informal institutions of justice that conform with international human rights standards, and a system exists to ensure equal and effective application of the law, procedural fairness, and transparency. |
| 5. Culture of Lawfulness is a condition in which the general population follows the law and seeks to access the justice system to address its grievances. |

Without ROL, property rights and land tenure issues cannot be fairly resolved, and individuals or groups in positions of power will prosper at the expense of those who lack such power, e.g., ethnic and religious minorities. Without ROL, people will resort to extralegal remedies to solve land disputes and crimes related to land tenure. This is why it is critical to identify the connections between individual nodes in each of the LOEs. Success in one LOE reinforces successes in the others. Progress along each LOE contributes to attaining a stable and secure environment for the HN. Once a measure of stability is achieved, achievements in other LOEs follow, such as popular recognition of the HN government's legitimacy, improved governance, and progressive, substantive reduction of the root causes that led to the instability. A recent example of the importance of diplomatic achievements

undermining the root causes of an insurgency can be studied in the return to stability and peace in Northern Ireland during the 1990s. After more than 30 years of turmoil, "British civic action programs, political arrangements, and the diplomatic initiatives with the Republic of Ireland brought about a cessation of conflict in Northern Ireland."[28]

No single list of LOEs applies to all situations. Field Manual 3-24.2, *Tactics in Counterinsurgency*, states that:

> Commanders select LOEs based on their understanding of the nature of the instability and what the force must do to counter it. These lines can be customized, renamed, changed altogether, or simply not used. Commanders may combine two or more of the listed LOEs or split one LOE into several. For example, some commanders may combine the LOEs Support to Governance, Conduct Information Engagement, and Support to Economic and Infrastructure Development into one LOE.[29]

The development and integration of LOEs requires a robust information management system that organizes incoming data, facilitates analysis, produces situational awareness, and disseminates information products to the appropriate consumers. Civil information management (CIM) is the process whereby data relating to the civil component of the OE is collected, collated, processed, analyzed, rendered into knowledge products, and then disseminated to planners and decision makers.[30] The next chapter provides a semantic framework for CIM, which facilitates the organization of data into categories for faster processing: collation, analysis, and dissemination. The semantic framework is based upon the basic formal ontology (BFO), which is a small, upper-level ontology that is designed for use in supporting information retrieval, analysis, and integration in scientific and other domains.[31]

# 3. An Enhanced Civil Information Management Framework for Analyzing the Complex Operational Environment

> In these complex settings, the U.S. military often creates and operates off of dubious facts. This is because we operate in VUCA environments: environments that are volatile, uncertain, complex, and ambiguous … But without requisite knowledge and timely, reliable feedback mechanisms, the ability of a staff to advise a commander is a challenge, and course adjustments themselves may not be grounded in reality.[32]

Analysts, operations planners, and command staff members are charged with making sense of the complex OE, which is doctrinally defined as "a composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander."[33] The PMESII and ASCOPE (areas, structures, capabilities, organizations, people, and events) mnemonics help information managers, analysts, and planners make sense of the countless operational variables that make up any OE. Combining the two mnemonics results in category terms (e.g., political area, military structure, economic capability, social organization, etc.), which act as bins for managing information. These category terms (information bins) can be greatly enhanced if mapped to an ontological framework with more precise category terms, definitions, and standardized relationships.

The practice of ontology is the disciplined process of defining entities, placing them into a hierarchical taxonomy, and making the relationships between the entities explicit—which results in the integration of other closely related ontologies. It is helpful to think of any ontology as an exhaustive nomenclature system of types or classes and intelligence processes as an accounting of those things in reality—i.e., the OE. An operational environment ontology (OEO) contains more precise category terms for the physical objects, events, capabilities, functions, and roles that the commander and planning staffs must come to understand. Standardized relationships then facilitate human and computer reasoning with the OEO elements.

This monograph is specifically concerned with the OE variables (i.e., conditions, circumstances, and influences) that emanate from an HN's property rights, associated property documents, property tracking systems, and their enforcement through the ROL. The information or data produced from analyzing property rights, property documents, and enforcement mechanisms feeds into the CIM process, which is doctrinally defined as:

> the science of using procedures and information systems to collect, process, store, display, disseminate, and protect data that is intrinsic to CAO and the operations process. It is the provision of relevant information to the right person at the right time in a usable form to facilitate situational understanding and decision making.[34]

Information management processes are supported by ontological representations of the types (classes) of physical objects, occurrent processes, and realizable properties that make up any domain, such as an OE.

The OEO, fully described in Appendix A, serves as a semantic framework intended to enhance the CIM process and assist analysts in analyzing, defining, and representing the elements (the nodes and links) that make up an OE. Furthermore, the OEO provides an extendable vocabulary to which any data source or information element that describes some aspect of the OE could be translated. In order to provide coverage of any aspect of an OE, the chosen strategy was to build a framework which would both be sufficient to express general-level facts (e.g., that some organization is the bearer of some capability), and that could also be easily, consistently, and uniformly extended to ontologies having finer-grained content, as needed (e.g., some militant organization is the bearer of some lethal capability).

*Ultimately, the OEO is designed to assist analysts and planners in identifying potential sources of continuing violent conflict and instability, and to organize those things in a consistent framework.*

Ultimately, the OEO is designed to assist analysts and planners in identifying potential sources of continuing violent conflict and instability, and to organize those things in a consistent framework. To do this, the OEO extends from the BFO, which is a genuine upper ontology designed to serve data integration in scientific and other domains.[35] A thorough discussion of the OEO and BFO is included at the end of this monograph in Appendix A.

# 4. Joint Intelligence Preparation of the Operational Environment

> In 'low intensity' combat situations, property information may fuel the most powerful kind of intelligence able to uncover enemy whereabouts, associations, wealth and lines of communication.[36]

The following section describes how economic information, such as property information, feeds into intelligence processes and assists the analyst in identifying nodes and links (relationships) that connect disparate PMESII systems within the complex OE. Economic information is very important for the joint intelligence preparation of the operational environment (JIPOE), which is defined as "the analytical process used by joint intelligence organizations to produce intelligence assessments, estimates, and other intelligence products in support of the joint force commander's decision-making process."[37] Property information is critical for JIPOE because it identifies valuable parcels of land, influential persons who control access to land, groups that are denied access to vital resources, the level of property rights enforcement (an indication of the level of ROL), and other potential drivers of conflict. This type of intelligence contributes to defining the total OE and describing the effect of the OE on adversary, friendly courses of action.

In order to define the complex OE, JIPOE analysts and civil information managers adopt a systems perspective to understand the significant relationships between nodes within the interrelated PMESII and other systems. The systems perspective, representable with nodes and links in a graph, facilitates understanding of the "continuous and complex interaction of friendly, adversary, and neutral systems."[38] For example, it is important to understand how the elements of a property system (property rights, property owners, parcels of property, attitudes and behaviors towards property, property documents, etc.) and the elements of a legal system (laws, policies, legal documents, persons in legal roles, etc.) are related to each other, and to the other elements of a stable state (economic stability, infrastructure development, human security, etc.). Therefore, the goal of any civil information manager or analyst is to disseminate products that show relationships between the elements of

a civil society, including assessments of sociocultural factors and network analysis diagrams associated with PMESII and other systems (see fig. 5).
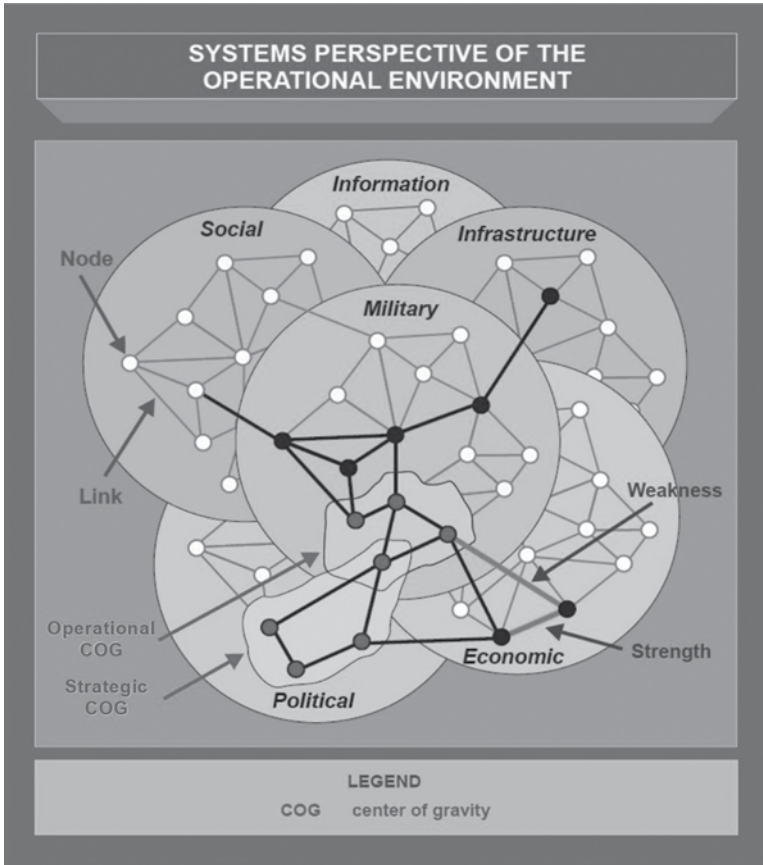


Figure 5. The connection between nodes in disparate systems. Each node represents some continuant entity or occurrent process. Each link represents the relationship between the nodes (e.g., some political leader is a participant-in some political process, such as passing land reforms). SOURCE: U.S. JOINT CHIEFS OF STAFF[39]

There are hundreds of possible links/relationships between the nodes in a graph. Drawing a line that resembles a relationship between two nodes leaves out all of the details that make up that relationship, and this is where the analysts must focus their effort. For example, the line between two people or two organizations will represent a long history, sometimes decades, that makes up the relationship—think of a line that an analyst would draw connecting

two rival war-lords in a tribal region. To be sure, it may not be the nodes that are the most important thing to focus upon, but rather the relationships (history) between them. A small sample of the hundreds of possible relationships that can be used to link nodes in a graph are shown in figure 6.

- familial relationship
  - father of
  - mother of
  - sibling of
    - brother of
    - sister of
- is about
  - describes
  - designates
  - prescribes
  - represents
- mereological relationship
  - has part
  - part of
  - temporal part of

- professional relationship
  - boss of
  - commander of
  - employee of
- process relationship
  - result of
  - has result
- spatial relationship
  - has location
  - located at
- social relationship
  - acquaintance of
  - associate of
  - enemy of
  - friend of

Figure 6. A sample of relationships between nodes in a graph (i.e., elements in reality)

Existing title deeds and cadastral maps provide the JIPOE analyst with critical nodes and links that make up PMESII systems (e.g., valuable or contested parcels of land, access issues, indications of discrimination, names of influential landowners, etc.). More importantly, some of the nodes will inevitably be linked to nodes in other PMESII systems, which may indicate a center of gravity (e.g., an influential political figure who controls access to land with valuable resources). Most operations require commanders and other leaders to engage key local and regional leaders in order to affect their attitudes and gain their support. The J-2's JIPOE should "include identification of key enemy and neutral leaders, as well as key friendly leaders who are not in the commander's usual sphere of influence."[40] Gaining situational awareness of property-related nodes and links will help to identify key leaders and expose drivers of conflict, such as historical grievances based upon ethnic or tribal discrimination. To this point, Demarest proposes a property intelligence methodology that seeks to:

understand the rights and duties at issue, the rules that might apply, the identities of interested parties, their objectives, resources and vulnerabilities. It is a method not so distant from military strategy. It is very cognizant of physical geography, but in terms of the many overlapping sets of rights and duties associated with space, and of the many possible identities and alliances that pertain.[41]

# 5. Operational Design and Stability Operations End States

> Successful conflict transformation relies on the ability of intervening entities to identify and reduce the primary drivers of ongoing or future violent conflict and instability in a region or individual HN, while building regional and HN capacities to manage them.[42]

Information acquired and organized in accordance with the OEO framework will assist analysts in identifying drivers of conflict, and contribute directly to the operational design (OD) process. OD is the process of defining a military end state, as well identifying the supporting intermediate objectives, LOEs, and desired effects. Establishing LOEs is essential to the OD process when "positional references to an enemy or adversary have little relevance, such as in counterinsurgency or stability operations."[43] The first order of business for OD, prior to establishing activities that make up the LOEs, is to identify institutional weaknesses in fragile states. Joint Publication 3-07, *Stability*, states that:

> Whether that fragility is caused by the removal of state institutions in military actions, ongoing systemic issues of economics or governance, a sudden onset disaster, or any other circumstances that may upset the balance of the elements of a stable state, the Joint Force Commander must understand the context in which stability operations are executed.[44]

It is the job of analysts and civil information managers to help commanders and their staff understand the context in which stability operations are executed. The OEO framework is a tool to help analysts and information managers describe and represent the complex OE where stability operations are being conducted. This chapter describes stability operations end states and some of the indications and measurements used to assess progress toward stability in a failed or failing state. The chapter then describes how

*It is the job of analysts and civil information managers to help commanders and their staff understand the context in which stability operations are executed.*

certain special operations core activities (FID, COIN, MISO, and CAO) contribute to stability operations end states and supporting LOEs.

When supported by higher-level economic policies and ROL, economic documents indicate the existence of property rights, effective policy-making, and an ability to govern at various levels. In contrast, the absence of these documents is an indication of weak economic policies and insufficient property enforcement mechanisms/ROL. These are important factors that will provide insights for course of action development when planning for special operations core activities intended to establish desired stability operations end states.

## End States

SOF gather intelligence, analyze the OE, and plan and conduct operations that contribute to the accomplishment of desired end states. A military end state is defined as: "The set of required conditions that defines achievement of the commander's objectives."[45] In stability operations, desired end states include the establishment of a safe and secure environment, rule of law, stable governance, a sustainable economy, and overall social well-being. These end states are defined in the *Guiding Principles for Stabilization and Reconstruction*, published by the United States Institute of Peace Press, as follows:

- A safe and secure environment is defined as the ability of the people to conduct their daily lives without fear of systematic or large-scale violence.
- ROL is defined as the ability of the people to have equal access to just laws and a trusted system of justice that holds all persons accountable, protects their human rights, and ensures their safety and security.
- Stable governance is defined as the ability of the people to share, access, or compete for power through nonviolent political processes, and to enjoy the collective benefits and services of the state.
- A sustainable economy is defined as the ability of the people to pursue opportunities for livelihoods within a system of economic governance bound by law.
- Social well-being is defined as the ability of the people to be free from want of basic needs and to coexist peacefully in communities with opportunities for advancement.[46]

Obtaining desired end states in stability operations requires the ability to measure progress toward clearly identified intermediate objectives. The *Measuring Progress in Conflict Environments (MPICE) Metrics Framework* is used for identifying goals, indications, and measurements toward their achievement. The MPICE provides "a system of metrics that can assist in formulating policy and implementing strategic and operational plans to transform conflict and bring stability to war-torn societies."[47] Table 3 shows a sample of MPICE indicators, measures, and methods of measurement that pertain to the establishment of ROL and property rights. These indicators, measures, and methods are derived from multiple sources, such as Bertelsmann Stiftung's Transformation Index, which assesses 17 criteria (ROL, political and social integration, private property, etc.) and more than 40 indicators that are required for political and economic transformation.

Table 3. A sample of indicators, measures, and methods from the MPICE, used to measure a country's transformation toward ROL and property rights[48]

| Indicator | Measure | Method of Measuring |
|---|---|---|
| Do national and local law enforcement agencies enforce the law and maintain public order (by province or equivalent locality)? | Use of public/private institutions, such as schools, banks, etc., for their intended purposes | Quantitative data and expert knowledge |
| Does the legal system (formal and informal) provide a non-violent mechanism for the resolution of disputes (by identity group)? | Percentage of citizens who say that they have access to and are willing to use formal court systems to resolve criminal disputes (by identity group) | Survey or polling data |
| Are judges, prosecutors, lawyers, and penal system employees held accountable? | Perceptions of the public about the integrity of judges, prosecutors, lawyers, and penal system employees | Survey or polling data |
| Is the law applied equally? | Perception of the population that the judicial system and law enforcement agencies apply the law equally to all identity groups | Survey or polling data |
| Are property disputes resolved and contracts enforced? | Perception of parties involved with property disputes that the process was fair and the case resolved satisfactorily (by identity group and province) | Survey or polling data |

The indicators and measurements listed in table 3 are about the people, organizations, processes, and attributes that make up the OE. People and organizations are participants in relevant events that unfold through space and time within the OE. All of these elements that make up the complex OE can be portrayed as nodes and links in a graph (see fig. 5) or on a map overlay. The OEO described in appendix A provides a framework of categories and relationships to organize and analyze the individual nodes that make up some complex OEs. The systems perspective facilitates the identification of nodes and links within and between systems, which are the data points used in planning and decision-making processes (e.g., lethal and non-lethal targeting). The primary reason for employing the systems perspective is to gain an understanding of the significant relationships between nodes that make up the PMESII and other systems.

## Property Information Supports Special Operations Core Activities

Intelligence that is gleaned from property documents feeds the planning and decision-making processes of special operations core activities, such as FID, COIN, MISO, and CAO. FID operations are planned and executed in order to obtain stabilization end states, as defined in *Guiding Principles for Stabilization and Reconstruction*. They include: "U.S. activities that support an HN IDAD [Internal Defense and Development] strategy designed to protect against subversion, lawlessness, insurgency, terrorism, and other threats to their security, consistent with U.S. national security objectives and policies."[49] A survey of property documents and associated property rights, as well as their enforceability, will provide insights pertaining to the presence of ROL, stable governance, and a sustainable economy. Property rights and ROL indicate the presence of just legal frameworks, public order, accountability to the law, access to justice, and a culture of lawfulness, which are end states for a successful FID campaign. Identifying gaps in a nation's body of property documents and property rights enforceability, which are indicators of ROL, stable governance, and a sustainable economy, will provide a baseline for planning FID operations.

COIN, as a subset of FID, is defined as: "comprehensive civilian and military efforts designed to simultaneously defeat and contain insurgency and address its root causes."[50] Situational awareness of property rights, and their

level of enforceability under the ROL, is critical for the successful planning and conduct of COIN operations. Knowledge of property rights provides valuable information pertaining to the root causes of insurgency, such as current land rights discrimination or long-standing historical grievances pertaining to land tenure. Analysis of a country's property rights and the ROL will result in the identification of societal gaps that lead to corruption, injustice, and discrimination (drivers of instability and insurgency). Field Manual 3-24, *Insurgencies and Countering Insurgencies*, states: "Understanding the conditions that may affect the stability of a nation or region assists commanders as they focus on a specific operational environment to determine the root causes that led to an insurgency."[51] For example, unresolved land disputes are drivers of conflict, and serve as rallying cries for opposing ethnicities such as the Tutsi and Hutu.[52]

This means that one of the metrics for measuring the effectiveness of a COIN campaign includes the percentage of local people with secure title to their houses and land, and the related enforcement mechanisms created by ROL. COIN expert David Kilcullen states:

> A key element of public confidence and perception of stability is having secure title to land and other property. Therefore, the percentage of people in a given district who have secure title to their property can be an indication of stability, whereas a large number of unresolved or power-locked land or title disputes can indicate potential for instability and insurgent exploitation.[53]

In contrast, increased economic activity that is spurred by secure property rights and ROL indicates an atmosphere of enduring stability and security. Kilcullen also states: "Experience of Islamist insurgency in North Africa, the Middle East, and Southeast Asia has shown that a revival of local economic activity in a given area indicates a lessening of insurgent influence."[54] As the elements of a stable state come together, the possibility of an enduring peace comes into focus, which provides the HN government with a strategic message that effectively counters the insurgent narrative. This is the nexus between property documents and MISO.

MISO are: "planned to convey selected information and indicators to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately to influence the behavior of foreign governments, organizations, groups, and individuals in a manner favorable to the originator's

objectives."[55] HN efforts toward the establishment of property rights, economic stability, and ROL create a complementary information campaign that will influence emotions, motives, and reasoning down to the grass-roots level (i.e., the same target audience that both insurgent and counterinsurgent need to influence). By exposing property laws to the public, and ensuring that they are fair and enforceable, the HN can leverage a strategic message that reaches down to the grass-roots level and portrays a government that is working toward everyone's benefit.

As described earlier, Mr. de Soto's prescriptions for stabilizing the economy go well beyond simply inventorying the assets (i.e., dead capital) that make up the extralegal sector and then creating documents to represent them in the legal market. Rather, stabilizing an economy requires an information campaign that effectively describes participation by the highest levels of government, the extralegal sector (i.e., most of the population), and the business community. The information campaign must also describe acquiescence among those with a vested interest in the status quo; economic policies that favor one group over another create tension and serve as drivers of conflict in many fragile states. The target audience will be positively affected by a strategic message that effectively describes the HN government's ability to (a) influence those with a vested interest in the status quo, and (b) change the practices that prevent most people from participating in the legal sector.

Another subset of FID activities are CAO, which include actions "that enhance awareness of, and manage the interaction with, the civil component of the operational environment; identify and mitigate underlying causes of instability within civil society; or involve the application of functional specialty skills normally the responsibility of civil government."[56] Assessing property rights, the formal documentation of property, and how land disputes are settled under ROL are civil affairs responsibilities, and will help the analyst identify underlying causes of instability in a complex OE. Property intelligence will also help civil affairs forces coordinate with U.S. Government interagency partners to enable a whole-of-government approach to stabilizing the civil environment.[57] Property intelligence will expose gaps in the HN government's ability to establish property

*Property intelligence will expose gaps in the HN government's ability to establish property rights, enforce property law, and stabilize the economy.*

rights, enforce property law, and stabilize the economy. Identifying these gaps in an HN's ability to govern is a critical first step in the planning and conduct of CAO.

CAO produce civil information, which is defined as "relevant data relating to the civil areas, structures, capabilities, organizations, people, and events of the civil component of the operational environment used to support the situational awareness of the supported commander."[58] The process of gathering and analyzing property intelligence may produce an overwhelming amount of civil information related to the geography, infrastructure, people, and institutions within the complex OE. This information needs to be organized into distinct nodes with a set of standardized relationships that facilitate both human and machine reasoning. As described earlier, CIM doctrine has developed several semantic frameworks (e.g., ASCOPE and PMESII) intended to provide analysts, planners, and operators with simple categories for organizing civil information. The OEO (see Appendix A) provides more precise categories and relationships so that it can be used to more quickly link nodes from disparate PMESII systems.

# 6. Challenges to de Soto's Techniques: The Problem of Institutional Transfer and the Transplant Effect

Critics of Mr. de Soto contend that he is selling a simplistic universal solution to many different, often culturally specific, obstacles to capitalism or sources of terrorism. What, for instance, do the disaffected rich Arabs of al-Qaeda, motivated by heavenly virgins, have in common with the brutal Marxists of the Shining Path? Can there be a common cure? Mr. de Soto concedes that it was lucky the Shining Path were so cruel to their potential supporters among the poor; Che Guevara would have been harder to beat, as "he was a nice guy". Yet he believes that most poor people, given the chance to participate fairly in the capitalist system, would do so rather than stay outside. And although not all terrorists are from poor backgrounds, or motivated by materialistic goals, most tend to survive—as did the Shining Path—by hiding among the world's excluded.[59]

By definition, failed and failing states require the institutional transfer of political, social, legal, and economic policies, and these institutions must be integrated to ensure mutual support. However, institutional transfers have been mostly disappointing. Some economists have argued that the "transplant effect" results when imported policies and laws lack effectiveness. In order for transplanted institutions to take hold and be truly effective, there must be an initial level of familiarity within the populace or the new institutions must be successfully adapted to local legal norms.[60] Daniel Berkowitz, Katharina Pistor, and Jean-Francois Richard state that:

Our basic argument is that for legal institutions to be effective, a demand for law must exist so that the law on the books will actually be used in practice and legal intermediaries responsible for developing the law are responsive to this demand. If the transplant adapted the law to local conditions, or had a population that was already familiar with basic legal principles of the transplanted law,

then we would expect that the law would be used. However, if the law was not adapted to local conditions, or if it was imposed via colonization and the population within the transplant was not familiar with the law, then we would expect that initial demand for using these laws to be weak.[61]

Both Hernando de Soto's prescriptions and the efforts of USAID's Land Tenure and Property Rights Office call for the institutional transfer of free market economic principles, which are adapted to local practice and enforceable by higher-level ROL. Connecting these disparate aspects of the human terrain—clarifying and documenting property rights, ensuring their social acceptance, and making them legally enforceable—is the only way to ensure long-term stability. However, re-creating interdependent, transparent, and mutually supporting institutions in a failing state is complicated by the local conditions and context that led to failure in the first place. This means that the expeditionary economist will have to deal with local conditions that consist of normative dissonance, land scarcity, corruption, and historical grievances that drive conflict.

Existing land registration systems may be too complex and expensive for people to participate in, meaning that most parcels of land remain subject to local custom rather than formal representation. To make matters worse, many failing states have a growing population, exacerbated by returning refugees who may have claim to some occupied parcel of land. In addition to overly complicated land registration systems, high tax schemes, and bulging populations, the perception of ethnically motivated, discriminatory economic policies results in polarization and the increased potential for conflict. In countries where property rights are obscure, the acquisition of land by one group from another creates resentment. Keenan states that, "Murky, controversial land policies have at times led to interethnic violence. In 2013, riots broke out in Bujumbura when the police tried to evict a Tutsi family from the house it had owned for 40 years in order to give the house back to its previous Hutu residents."[62]

## Normative Dissonance

Normative dissonance happens when coexisting bodies of law of different origins are poorly harmonized, and are leveraged by parties in contention. Property disputes may be caused when newly forming state-level laws

come into conflict with local practices. For example, there may be normative dissonance between evolving state-level institutions and local customary norms, such as tribal codes, like Pashtunwali, which literally means "the way of the Pashtuns."

*Property disputes may be caused when newly forming state-level laws come into conflict with local practices.*

Pashtunwali consists of the rules, regulations, and laws of the Pashtun tribe, which is the world's biggest tribal society. This set of rules is responsible for the survival of the Pashtun tribes for more than 2,000 years.[63] Therefore, any newly codified laws in the Pashtun region of Afghanistan must be harmonized with this longstanding set of rules, regulations, and laws.

Normative dissonance can be a driver of conflict, as it was in the failure of successive Liberian governments to recognize customary land rights. According to a USAID Issue Brief, this was an important factor that contributed to the overthrow of the civilian government by the military in 1980, and the issue remains divisive in Liberia.[64] However, the tension between evolving state-level policies and local norms may not be insurmountable. When carefully crafted, there are ways to harmonize state-level policies—intended to connect with the global economy—with local-level norms intended to keep a tribe safe from outside forces. Peter Tomsen states:

> Before the communist era, which began in 1978, Afghanistan enjoyed four decades of stability and slow but steady modernization. The country owed its progress largely to a unique relationship between the central government and traditional tribal structures in the regions. The government in Kabul did not possess a monopoly of power in the country but shared it with moderate tribal groups and clerics in rural areas. The government provided services such as schools, clinics, and roads to the regions, whose tribal elders administered their communities according to ancient codes and customs, maintained security, and participated in parliamentary conclaves in Kabul.[65]

The USAID Land Tenure and Property Rights Office is conducting institutional transfer in Afghanistan, whereby they are harmonizing national-level economic policies, which are outward-facing to the global economy, with local norms intended to serve tribal-level interests. Property documents at the tactical level are being aligned with higher-level economic policies

that support their enforcement. In turn, these higher-level economic policies emanate from an even higher-level constitution, which provides the legal foundation for their enforcement. Furthermore, there is a thread that connects the Afghan population's worldview, and all of the associated sentiments that come with it, to its constitution; the constitution of any population should be an expression of its closely held beliefs and sentiments.

More specifically, the Afghan constitution's legal framework for property rights is explicitly supported by an Islamic worldview. This support can be found in their sacred documents. For example, the Islamic view on property rights is clearly presented in the Prophet Muhammad's Last Sermon, wherein he states, "O Men, your lives and your property shall be inviolate until you meet your Lord. The safety of your lives and of your property shall be as inviolate as this holy day and holy month."[66] Furthermore, the Qur'an states: "And do not wish for that by which Allah has made some of you exceed others. For men is a share of what they have earned, and for women is a share of what they have earned. And ask Allah of his bounty. Indeed Allah is ever, of all things, Knowing."[67] These passages appear to directly support the enactment of the 2004 Afghan constitution described in the USAID Country Profile:

> A new Constitution enacted in 2004 established a legal framework for property rights that safeguards the right of individuals to own property. A 2007 Land Policy addressed bottlenecks in land rights administration and the overlapping authority of institutions, and was followed by the 2008 Law on Managing Land Affairs, which lays out principles of land classification and documentation, governs settlement of land-rights, and encourages commercial investment in state owned agricultural land with opportunities for long leases. The Ministry of Justice, however, estimates that 90% of Afghans continue to rely on customary law and local dispute-resolution mechanisms. More than 30 years of conflict have decimated the centuries-old customary land dispute resolution mechanisms. Those systems that are functioning are stressed by the need to manage the layers of competing interests: populations have moved to urban areas to avoid conflict, and populations displaced by earlier conflicts have made efforts to reclaim both rural and urban properties.[68]

The preceding quote describes a hierarchical structure for creating institutional facts that emanate from Afghanistan's national-level constitution. The constitution describes the rights of Afghan citizens, and Article 40 of Afghanistan's Constitution, which was ratified in 2004, covers individual property rights, stating:

> Property shall be safe from violation. No one shall be forbidden from owning property and acquiring it, unless limited by the provisions of law. No one's property shall be confiscated without the order of the law and decision of an authoritative court. Acquisition of private property shall be legally permitted only for the sake of public interests, and in exchange for prior and just compensation. Search and disclosure of private property shall be carried out in accordance with provisions of the law.[69]

Notice that this constitutional mandate starts with wording that is quite similar to wording in the Prophet Muhammad's Last Sermon, where it describes the inviolate nature of property. This wording in the constitutional mandate harmonizes deeply held sentiments while providing the lead-in for Chapter 2 of the Land Management Law of the Islamic Emirate of Afghanistan. These prescriptive writings serve as the foundation for title deeds, which include the following documents:

1. A deed issued by a court in respect of purchase, conveyance, gift, inheritance, division, land exchange, letter of quittance, letter of correction as well as document of the ultimate decision issued on the basis of property deeds and containing the following conditions:

   a. To have been registered with a judicial court. A legal deed without being registered with a judicial court can be valid if confirmed by a competent court.

   b. A valid legal deed or a decree without superseding deed or documents.

   c. The land under legal deed, if subject to Emirate taxation, shall be recorded in the tax book.

2. Emirate (State) decree, council of ministers (prime ministry's) decree and a deed in respect of purchasing land from Emirate's (State) landed properties with the following conditions:

a. To have been issued by a competent organization.

b. Legal deed and other valid documents without superseding deed or documents.

c. To have been recorded in the tax book if the land is subject to tax payment.

3. The tax payment document having the following conditions:

a. Legal deed or a valid decree without a superseding deed or decree.

b. To have been registered in the principal book of properties and tax.

4. The water rights document having the following conditions:

a. It is without a superseding document.

b. Is registered in principal book of properties and tax.[70]

## Land Scarcity

> Due to legal constraints on access, skewed distribution among users, or an absolute shortage of land in relation to demand, scarcity can leave many with little or no land and create intense competition for land. This scarcity can result from generally very high person/land ratios but can also be distributional, where one group has appropriated most land, leaving land a scarce good for most others. It can be influenced by demographic shifts and factors such as climate change and can be either national or local. Resentment and economic hardship related to land scarcity in Rwanda are often cited as contributing factors to the 1994 genocide.[71]

Even if a nation's constitution enumerates property rights, and its property laws are represented by property documents, there may simply be too little land to support the demand. Bulging populations can be caused by unfettered birthrates and the return of formerly displaced persons after years or decades. For example, in Burundi, the population growth rate is more than twice the average global pace, and the average Burundian woman has 6.3 children. Moreover, roughly half a million refugees who fled the country's 1993–2005 civil war or previous ethnic violence had come back as of late 2014.[72]

The problems associated with land scarcity and growing populations are further exacerbated by direct investment. According to a USAID report, the last decade has seen a dramatic increase in the global demand for land, driven by growing demand for agricultural products, biofuels, carbon sequestration, and conservation uses. This creates an opportunity for the governments of developing countries to attract direct investment. The problem is that many governments in developing countries consider unregistered lands to be allocated for investors. However, sometimes, what appears to be vacant and sparsely settled lands are, in fact, claimed by local communities.[73]

> *Even if a nation's constitution enumerates property rights, and its property laws are represented by property documents, there may simply be too little land to support the demand.*

## Historical Grievances

> Land-related conflicts also find expression in ways that fail to capture international headlines, or that play out in more local, more systemic ways. In Cameroon, local political authorities expel "non-indigenous" farmers from localities so that ethnic insiders can take their land, and prevent them from voting. Across the Sahel, the incidence of farmer-herder conflict has increased steadily over the past two decades. In parts of Ghana, chiefs who sell off communities' land can stoke protest against the abuse of political authority for private gain.[74]

A grievance is any prior action, deemed to be a wrong, which forms the basis for a complaint. Most often rooted in earlier displacements and land takings, historical grievances can generate a demand for redress that can fuel conflict. Grievances that focus upon land rights, expulsion, or exclusion serve as propaganda for all parties involved, and drive groups toward conflict. For example, a USAID issue brief reports that, "After 2000, in Zimbabwe, earlier colonial land takings and the resentment these engendered sparked widespread land occupations. Post-conflict situations are often rife with grievances based on displacements of some communities during the conflict."[75] The root causes of land-related grievances (e.g., a land taking) can be graphically portrayed with nodes and links, which will help analysts visualize drivers of conflict in time and space. The persons, groups, events,

and relationships that make up an injustice will become visual, and gaps in our understanding can be filled in or at least identified.

It may be argued that land takings, conducted by one group at the expense of another, can only be prevented through the establishment of property rights, the documentation of private property, and the registering of property in a common registry that is enforceable by the ROL. Certainly, this is how land disputes and land-related grievances are mitigated, and altogether avoided, in most developed states. However, in failed states, where ROL and property rights may be weak or non-existent, there are problems associated with sorting out the history of land tenure. A violent history, where valuable parcels of land changed hands numerous times, will not be easily resolved through the creation of property documents and a common cadastre. Some populations may even point to newly minted property rights policies, title deeds, and cadastre as evidence of continued mistreatment.

## Lawlessness and Disorder

> The 21st century … could well become a period of lawlessness and disorder—a century in which states are in long-term decline; new violent actors challenge states and one another; resources such as food, water, and energy become a central focus of violent competition and of large illicit markets; demographic and environmental trends pose challenges to sustainability, security, and stability; and the severity of problems is significantly increased by the interconnections and often perverse interactions among them.[76]

In his book, *The Pentagon's New Map*, Thomas Barnett describes a bifurcated world consisting of a core of economically advanced states and a gap where failing and failed states reside. He goes on to prescribe an optimistic strategy for leveraging market-globalism to reach into "gap" states and pull them into the extended global economy. Similar to de Soto's prescriptions, Barnett argues that gap states in South America, Africa, and the Middle East can be integrated into the core of advanced economies via the forces of globalism and fixed rule sets, which will result in lasting political and economic stability.

In contrast, other theorists describe a world where lawlessness and disorder are increasing. Whereas core states are characterized by expanding network connectivity, freedom of the press, economic stability, stable

governments, and rising standards of living, gap states suffer from increased illicit activities, collapsing civil order, and reduced political legitimacy. Robert D. Kaplan, a senior fellow at the Center for a New American Security, states:

> West Africa is becoming the symbol of worldwide demographic, environmental, and societal stress, in which criminal anarchy emerges as the real "strategic" danger. Disease, overpopulation, unprovoked crime, scarcity of resources, refugee migrations, the increasing erosion of nation-states and international borders, and the empowerment of private armies, security firms, and international drug cartels are now most tellingly demonstrated through a West African prism. West Africa provides an appropriate introduction to the issues, often extremely unpleasant to discuss, that will soon confront our civilization.[77]

# 7. Conclusion

This monograph prescribes methods for assessing the stability of a nation-state by analyzing its body of economic documents, and their connection to higher-level economic policies and the ROL. Property documents contain information pertaining to the presence of unseen drivers of conflict, such as a lack of property rights and ROL. Mr. de Soto argues that most people in developing countries operate within an informal economy, which consists of extralegal arrangements based upon informal consensus. The result is that their physical assets—land, buildings, and other facilities—are not formally represented by economic documents, which are tied into a formal system of property laws. In every country that de Soto's team researched, they found that some 80 percent of the land parcels were not protected by up-to-date records or held by legally accountable owners.

As SOF work toward the long-term stabilization of a failed or failing state, they require a constant flow of information for planning and decision making. A state's body of economic documents provides a treasure trove of information that can be used by SOF for intelligence, planning, and OD. Economic documents portray social realities such as ownership of valuable parcels of land, influential persons or organizations, discriminatory practices, normative dissonance, and other drivers of conflict and instability. These elements can be portrayed as nodes and links within political, economic, and social systems. Such analysis is a critical step in identifying centers of gravity, and helps planners formulate stability operations end states and the metrics used to determine success.

*A state's body of economic documents provides a treasure trove of information that can be used by SOF for intelligence, planning, and OD.*

In order to gain situational understanding of the unseen drivers of conflict (normative dissonance, lacking property rights, oppressive bureaucracies, etc.) the special operations enterprise will need enhanced tools and methods for gathering, analyzing, and rendering vast amounts of information. This monograph also provides a framework to be used for gathering, analyzing, and rendering such information. If gathered in accordance with this framework, property information can inform intelligence processes, enhance systems-nodal analysis, and provide data for predictive analytics.

# Appendix A. Operational Environment Ontology

This appendix describes the OEO, which is a semantic framework intended to enhance the CIM process and assist analysts, planners, and decision makers in analyzing, defining, and relating the elements that make up an OE. It is designed to assist analysts and planners in organizing information and identifying potential drivers of violent conflict and instability. Civil information that is organized in accordance with this semantic framework will be in a format that will assist analysts in identifying critical nodes (persons, organizations, events, locations, etc.) and analyzing the relationships that make up the complex OE.

The OEO proposed here consists of a small set of ontologies, which are more effective for organizing information because they consist of more specific categories than those that make up the PMESII and ASCOPE mnemonics. For example, one of the rules for developing a BFO-compliant ontology prohibits the use of mass terms (conflict, economics, extremism, terrain, infrastructure, etc.), and instead requires the use of singular nouns (act of conflict, economic process, act of violence, terrain feature, infrastructure artifact, etc.). This simple rule results in the ability to develop proper hierarchical taxonomies—the basic frameworks of any ontology. The addition of standardized relationships then facilitates human and computer (automated) reasoning.

Ontology is the disciplined study of what is, of the kinds and structures of objects, properties, events, processes, and relations in every area of reality. From this philosophical perspective, ontology seeks to provide a definitive and exhaustive classification of entities in all domains of being. As a theoretical discipline, it is concerned with accurately rendering the taxonomy of all things that exist. Applied ontology offers "a strategy for the organization of scientific information in computer-tractable form, drawing on concepts not only from computer and information science but also from linguistics, logic, and philosophy."[78]

The OEO extends from the BFO, which is a small, upper-level ontology that is designed for use in supporting information retrieval, analysis, and integration in scientific and other domains. BFO is a genuine upper ontology

designed to serve data integration in scientific and other domains.[79] It consists of only 40 classes, 17 of which are employed in the OEO, as depicted in figure 7. BFO depicts reality as consisting of (1) continuants, which are entities that continue or persist through time, such as objects, qualities, and functions, and (2) occurrent events (i.e., happenings) in which the continuants participate. The subtypes of continuant and occurrent entities are represented in BFO as shown in figure 7.

```
• Entity (bfo)
  - Continuant Entity (bfo)
    • Independent Continuant Entity (bfo)
      - Material Entity (bfo)
        • Physical Object (bfo)
        • Object Aggregate (bfo)
      - Site (bfo)
    • Dependent Continuant Entity (bfo)
      - Generically Dependent Continuant Entity (bfo)
        • Information Content Entity (Information Artifact Ontology)
      - Specifically Dependent Continuant Entity (bfo)
        • Quality (bfo)
        • Realizable Entity (bfo)
          - Disposition (bfo)
          - Function (bfo)
          - Role (bfo)
  - Occurrent Entity (bfo)
    • Process (bfo)
    • Process Aggregate (bfo)
```

Figure 7. The BFO categories that form the foundation for an OEO. All OEO categories extend from this framework. Standardized relationships then facilitate human and computer reasoning.

The BFO provides the categories needed to decompose and analyze the complex OE. Analysis starts with decomposition, which is the process of separating some composite entity (e.g., some economy, organization, violent activity, etc.) into constituent parts or elements. Decomposition of the OE is done by (a) layers and (b) categories (types) of entities that would be found on each layer. This decomposition exposes individual elements, which serve as nodes in a graph, as well as the relationships between them. The result is a semantic framework that facilitates the organization of data about the OE. It is populated with instance-level data that refers to the actual objects,

attributes, events, and relationships within the OE. Its purpose is to assist in the organization of data in such a way that it becomes useful for reasoning and decision-making. The semantic framework will also help to identify gaps in the analyst's knowledge of the OE.

As already stated, development of the OEO starts with a layered, or stratified, approach to representing the OE. The layered approach is directly related to map layers used to depict (a) physical elevation, (b) terrain features, (c) land use or human terrain, and (d) other geospatially tied phenomena (see fig. 8). Where map layers provide graphic symbols that represent landforms or terrain features, the OEO consists of the terms and the relationships used to describe and reason about the elements that make up the layers. Each layer is further decomposed into categories for material (physical) entities, object aggregates, processes, and realizable entities (e.g., the disposition of a field to flood, contractual agreements, person roles such as commander, artifact functions, and organizational capabilities).
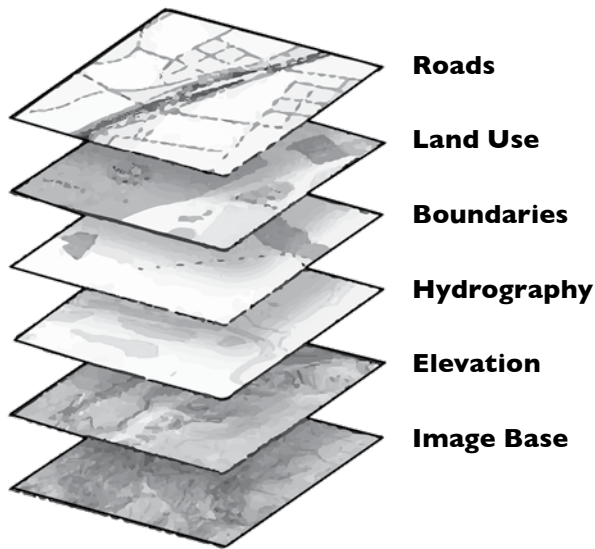


Figure 8. Each map layer represents physical objects and object aggregates that make up the physical terrain. SOURCE: CHRIS EVAVOLD[80]

Put another way, each layer or stratum consists of physical objects, object aggregates, processes, and realizable entities such as states of affairs, capabilities, qualities, and dispositions. The first layer (base layer) above the map

image consists of (1) elevation landforms (BFO: physical objects), (2) the geologic processes or events (BFO: processes) that form them, and (3) the attributes, properties, and dispositions (BFO: realizable entities) of the landforms and geologic processes. The second layer consists of the physical terrain features (hydrographic features, forests, etc.) and natural processes that take place on top of the base layer. The third layer consists of the human terrain, or social reality, where human agents act and interact to create physical artifacts, aggregate artifacts, and social facts; the kind that constitute states of affairs such as marriages, obligations, contractual agreements, business partnerships, etc. Each layer will be discussed in order.

## Base Layer: Landforms and Geologic Processes

A common approach to decomposing the "conditions, circumstances, and influences" that make up a complex OE starts with analysis of the physical layers, which are representable on map overlays or other graphic depictions. The OE's base layer consists of landforms, which are the physical expression or contours of the land surface, including plains, plateaus, hills, and mountains composed of different types of soil and rock. Landforms such as these are BFO: independent continuants, and within each of these categories of landform, there are surface features of a smaller size, such as flat lowlands and valleys. Minor terrain features include high ground (e.g., swell, knoll, mound, knob, hummock, spur, ridge, butte, mesa, and dune) and depressions (e.g., gully, draw, gulch, wadi, ravine, gorge, arroyo, canyon, and basin).[81] In

- Independent Continuant Entity (bfo)
  – Material Entity (bfo)
  • Physical Object (bfo)
    – Landform (oeo)
    • High Ground Landform (oeo)
      – Hill (oeo)
      – Knoll (oeo)
      – Mountain (oeo)
        ◊ Mount Noshaq,
          Afghanistan
    • Geographic Depression
      Landform (oeo)
      – Canyon (oeo)
      – Ravine (oeo)
      – Valley (oeo)
        ◊ Diyala River Valley, Iraq
    • Plain (oeo)
      ◊ Al Ghab Plain, Syria

Figure 9. Landform categories with instances depicted by triangles.

addition to the landforms, there are the naturally occurring geologic processes or events that produce changes to the geographic features. A sample

landform framework is represented in a taxonomical hierarchy in figure 9, where BFO terms are in black, OEO terms are in gray, and instances are designated by a diamond.

The next major category in BFO is dependent continuant, which includes entities that are dependent upon independent continuant entities (bearers) for their existence (they inhere in, or are borne by, other entities). Dependent continuants may be specific or general. Specifically dependent continuants (SDCs) exist as an attribute of some specific independent continuant. In other words, an SDC is dependent upon a specific independent continuant for its existence. Examples include the mass of a vehicle, the elevation of a hilltop, or the volume of a container. It is always the case that an SDC has some independent continuant as its bearer. This means that *has bearer* is one of the standardized relationships in the OEO. The sample taxonomy in figure 10 lists examples of SDCs that fall under the type quality.

• Entity (bfo)
  – Continuant Entity (bfo)
    • Dependent Continuant Entity (bfo)
      – Specifically Dependent Continuant Entity (bfo)
        • Quality (bfo)
          – Circumference
          – Elevation
          – Mass
          – Shape
          – Temperature
          – Volume
          – Weight

Figure 10. SDCs that fall under the quality type.

A process is an occurrent entity that has temporal parts that happen, unfold, or develop through time. It is always the case that an occurrent process will have a continuant object as a participant, so that the relationships *has-participant* and *participant-of* are standardized in the OEO. For example, an earthquake (BFO: occurrent process) has-participant some terrain feature (BFO: continuant object). The sample taxonomy in figure 11 lists examples of BFO: occurrent processes that pertain to the base layer of the complex OE.

The next BFO category to be considered pertains to information that is produced when observing, assessing, measuring, or rendering elements that make up the base layer of any OE. An individual datum or piece of information is categorized as an information content entity (ICE), which is a generically dependent continuant (GDC) in the BFO hierarchy. GDCs are entities that can exist in more than one object at the same time (e.g., a certain PDF that exists in several different hard drives at the same time). ICEs are the subject of their own information artifact ontology, which is currently being developed.[83] Figure 12 provides a sample of ICEs that are about geographic features, as well as their specifically dependent attributes.

- Occurrent Entity (bfo)
  – Process (bfo)
    - Natural Process (bfo)
      – Geological Process (bfo)
        - Avalanche (oeo)
        - Earthquake (oeo)
        - Landslide (oeo)
        - Volcanic Eruption (oeo)
        - Tsunami (oeo)

Figure 11: A sample of geological processes[82] that occur upon the base layer.

- Dependent Continuant (bfo)
  – Generically Dependent Continuant Entity (bfo)
    - Information Content Entity (iao)
      – Descriptive Information Content Entity (iao)
        - Landform Description (iao)
        - Natural Process Description (iao)
      – Designative Information Content Entity (iao)
        - Name (iao)
          – Landform Name (iao)
          – Geologic Process Name (iao)
        - Location Designation (iao)
          – MGRS Grid Coordinates (iao)
          – Latitude and Longitude Coordinates (iao)
        - Time Designation (iao)
          – Date (iao)
          – Time Stamp (iao)
    – Measurement Result (iao)
      - Depth Measurement Result (iao)
      - Temperature Measurement (iao)
      - Width Measurement Result (iao)

Figure 12: A sample of ICEs that are about the base layer (i.e., landforms).

## Second Layer: Terrain Features and Natural Processes

The second layer of the complex OE consists of naturally occurring terrain features and occurrent processes, such as the weather events, that take place upon the landform base layer. These things are often portrayed on information artifacts such as a modified combined obstacle overlay,[84] or other types of map overlays intended to show physical terrain features and natural events. A sample of naturally formed terrain features is shown in figure 13.

- Material Entity (bfo)
  – Physical Object (bfo)
    • Geographic Terrain Feature (oeo)
      – Hydrographic Feature (oeo)
        • Harbor (oeo)
        • Lake (oeo)
        • Water Course (oeo)
          – River (oeo)
          – Stream (oeo)
      – Natural (Terrestrial) Habitat (oeo)
        • Grassland (oeo)
          – Meadow (oeo)
          – Pasture (oeo)
        • Woodland (oeo)
          – Forest (oeo)
            • Rainforest (oeo)

Figure 13. A sample of terrain features that make up
the second layer of an OE.

These naturally formed terrain features are participants in, perhaps the location of, occurrent natural processes such as weather events, which are depicted in the sample taxonomy in figure 14. For example, rivers are participants in flooding events and pastures are the location of germination processes. The terrain features, as well as the occurrent processes they participate in, can be rendered on maps or described in reports, which results in the creation of terabytes of data.

Geographic terrain features such as those listed in figure 13 are also the bearers of SDC qualities. For example, a valley will have the disposition to flood during rainstorms and a pasture will have the disposition to germinate

• Occurrent Process (bfo)
  – Natural Process (oeo)
    • Growth Process (oeo)
      – Germination Process (oeo)
      – Budding Process (oeo)
      – Flowering Process (oeo)
    • Weather Event (oeo)
      – Drought (oeo)
      – Flood (oeo)
      – Heat Wave (oeo)
      – Storm (oeo)
        • Hurricane (oeo)
        • Snowstorm (oeo)
          – Blizzard (oeo)
          – Ice Storm (oeo)
        • Thunderstorm (oeo)
        • Tornado (oeo)

Figure 14. A sample of natural processes (weather events).

and blossom in the spring. Furthermore, a river, forest, or desert may also serve as a fiat boundary between tribes, states, or kingdoms. A sample of geography-related SDCs are depicted in figure 15.

Naturally formed terrain features, their SDC attributes, and the processes they participate in can be described with various types of data. The GDC ICEs for the second layer include geospatial coordinates, descriptions in drop-down menus, images, symbols, time stamps, place names, event names, measurement results, terrain feature names, etc. These individual bits of information describe, designate, measure, and represent geographic terrain features, their attributes, and related occurrent processes. A sample taxonomy is depicted in figure 16.

• Specifically Dependent Continuant (bfo)
  – Quality (bfo)
    • Capacity
    • Depth
    • Velocity
  – Realizable Entity (bfo)
    • Disposition (bfo)
      – Disposition to Dehydrate
      – Disposition to Flood
      – Disposition to Flourish
    • Role (bfo)
      – Boundary Role
      – Food Source Role

Figure 15. A sample of SDCs for the second layer of the OE.

```
• Dependent Continuant (bfo)
  – Generically Dependent Continuant Entity (bfo)
    • Information Content Entity (iao)
      – Descriptive Information Content Entity (iao)
        • Geographic Feature Description
        • Measurement Result
          – Length Measurement Result
          – Mass Measurement Result
          – Temperature Measurement Result
        • Natural Process Description
          – Weather Event Description
      – Designative Information Content Entity
        • Name
          – Extreme Weather Event Name
          – Geographic Feature Name
        • Location Designation
          – MGRS Grid Coordinates
          – Latitude and Longitude Coordinates
        • Time Designation
          – Time Stamp
          – Date
      – Graphic Representation
        • Geographic Feature Symbol
        • Weather Event Symbol
```

Figure 16. A sample of ICEs for the second layer of the OE.

## Third Layer: The Human Terrain and Human Actions

[There is a] continuous line that goes from molecules and mountains to screwdrivers, levers, and beautiful sunsets, and then to legislatures, money, and nation-states. The central span on the bridge from physics to society is collective intentionality, and the decisive movement on that bridge in the creation of social reality is the collective intentional imposition of function on entities that cannot perform these functions without that imposition.[85]

The third layer is commonly referred to as the human terrain or social layer. It consists of the human-created continuant objects that rest upon, and human-involved occurrent processes that unfold upon, the two physical layers. This layer is where human agents participate in intentional human actions and interactions, which results in the creation of physical artifacts,

aggregate artifacts, social facts, and ultimately, institutional reality. Individual actions may result in works of fine art, implements, or tools. Collective intent can result in the design and creation of physical entities such as buildings, urban areas, and high-tech artifacts. Decomposition of this layer starts by representing the human and organizational elements of the human terrain in a taxonomical structure as shown in figure 17.

• Material Entity (bfo)
  – Agent
  • Person
  • Organization
    – Political Organization
    • Government
      – Islamic Shura
    – Military Organization
    – Economic Organization
    – Social Organization
    – Non-Governmental Organization

Figure 17. Agents who act and interact on the third (human) layer.

Persons and organizations participate in activities that result in the creation of physical products, artifacts, social arrangements, and institutions. Artists paint, sculpt, and compose; engineers design new artifacts; and lawyers establish contracts between parties. The creation of non-physical social facts takes place every time one person borrows money from a friend and promises to repay the loan. In this simple transaction, a new state of affairs (social fact) is created—a new claim and obligation exists until the loan is repaid. A sample of creative activities is rendered in the figure 18 taxonomy.

• Process (bfo)
  – Intentional Human Act
  • Act of Planning
    – Act of Design
  • Act of Production
    – Act of Artifact Creation
    – Act of Building (Construction)
  • Social Act (Interaction)
    – Act of Entering an Agreement
    • Act of Contracting
    • Act of Promising
    • Act of Organizing

Figure 18. A sample taxonomy of creative activities.

The intentional human actions and interactions listed in figure 18 always have some output or product (some physical artifact or collectively created object). While some of these products are physical artifacts created by an individual, others are the result of collective interaction between numerous people. These interactive acts of creation may result in humanly constructed geographic features, geopolitical territories, and

organizations. These types of objects have a physical structure, as well as a social, or fiat, structure. Searle describes collective creation as follows:

> Consider for example a primitive tribe that initially builds a wall around its territory … [S]uppose the wall gradually evolves from being a physical barrier to being a symbolic barrier. Imagine that the wall gradually decays so that the only thing left is a line of stones. But imagine that the inhabitants and their neighbors continue to *recognize* the line of stones as marking the boundary of the territory in such a way that it affects their behavior … The line of stones now has a function that is not performed in virtue of sheer physics but in virtue of collective intentionality … The line of stones performs the same *function* as a physical barrier but it does not do so in virtue of its physical construction, but because it has been collectively assigned a new *status*, the status of a boundary marker.[86]

Artifacts are things created by humans usually for a practical purpose, resulting from a particular human institution, period, trend, or individual. As Searle's example illustrates, artifacts can be physical or intangible. The wall is a physical barrier and it has the status of fiat boundary. Both the wall and its intangible properties are artifacts. Physical artifacts can be placed on a spectrum, which includes: (a) simple implements created by individuals (e.g., a stick used to gather and eat bugs), (b) works of art, (c) collectively created use-objects such as shelters, and (d) high-tech gadgets. Such artifacts are represented in the OEO as shown in figure 19.

Still another category of artifact is the human constructed geographic feature. Such artifacts are of particular importance for CIM in the OE. Human constructed geographic features have a dual nature whereby they occupy physical space, but they also bear institutional realities such as customs, laws, language, and borders. A sample of human

- Material Entity (bfo)
  – Artifact
    • Implement
      – Instrument
      – Tool
    • Facility
      – Building
      – Road
    • Technical Artifact
      – Improvised Explosive Device
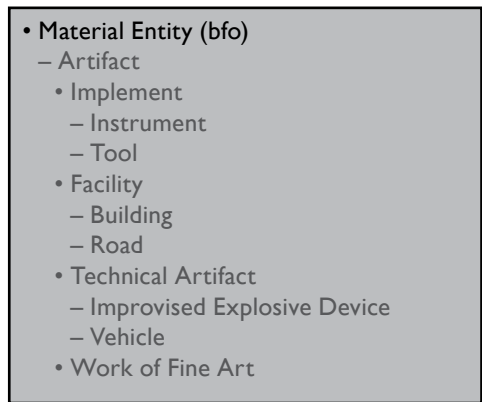      – Vehicle
    • Work of Fine Art

Figure 19. A sample taxonomy of physical artifacts.

constructed geographic features is represented in a sample taxonomy in figure 20.

```
• Object Aggregate (bfo)
  – Human Constructed Geographic Feature
    • Agricultural Area
      – Cropland
      – Plantation
      – Vineyard
    • Industrial Complex
    • Marketplace
    • Urban Area
    • Megacity
    • Land Parcel (Lot)
      – Residential Land Parcel
      – Commercial Land Parcel
      – Public Land Parcel
    • Fiat Boundary
      – Property Line
      – State Boundary
    • Geopolitical Territory
      – Formally Governed Territory
        • State Territory
      – Informally Governed Territory
        • Ethnic Enclave
        • Tribal Area
```

Figure 20. A sample of human-constructed geographic features, as defined by UNESCO.[87]

Human interaction can also result in the creation of institutional facts, which are intangible states of affairs. In the case of social artifacts, the spoken or written word does more than simply describe the world, ask a question, or express some thought. This point was made by the late J. L. Austin when he described *performative* speech acts that do not describe anything, but rather create some new state of affairs (knighthood, marriage, property, claim, obligation, etc.).[88] Similarly, Oakley and Tobin state, "The written word and technologies for producing, saving, and sharing written artifacts are tools for extending thought and agency into the world. They are not just the outcome of cognition, but a site in which thinking and meaning take place."[89] These performative speech acts create something new in the world, and they are represented with various documents that act as records of the act.

Social facts are BFO: realizable entities that come into existence when two or more people enter into an agreement, such as a promise to repay a debt. From this type of transaction, one person has a claim over the other, who has incurred an obligation to pay off the debt. It is from these simpler transactions, resulting in social facts, that institutional reality is built. Individuals and groups enter into agreements, creating social facts that are the building blocks of institutional reality. Ultimately, statehood is obtained when all social facts, institutions, regulations, norms, and laws cohere into a politically organized body of people occupying a definite territory. A sample of realizable entities (social facts) are arranged into a taxonomy in figure 21.

• Realizable Entity (bfo)
 – Social Fact
  • Agreement
   – Treaty
  • Claim
  • Obligation
  • Promise
  • Right
   – Human Right
   – Property Right
  • Agent Role
   – Politician
   – Military Commander
    • Warlord
   – Religious Leader
    • Mullah
    • Cleric
   – Elder

Figure 21. A sample taxonomy of social facts.

## The Taxonomy of Socio-Economic Documents

> As durable, reproducible, and quotable linguistic artifacts, embedded in social structures of circulation, documents enact cultural practices across time and space.[90]

Through the performance of speech acts—acts of promising, announcing, marrying, accusing, baptizing, etc.—we change the world by creating claims, obligations, rights, relations of authority, debts, permissions, names, and a variety of other sorts of entities that make up the social world. In most cases, it is not enough to simply speak social facts into existence, such as when I promise to repay my debt. In the case of more complex social facts, such as the fact that I own my house, some type of physical document serves as a representation of the social act (a real estate transaction) and the resulting social fact. We must distinguish between the physical document (the bearer of information) and its content (what the document is about). The information artifact ontology distinguishes between the class of information bearing entity, which is some physical medium, and the class of information content entity, which is the actual information. Likewise, the *Merriam-Webster.com*

*Dictionary* makes this same distinction between the information bearer and information content in the following set of definitions for "document":

- an original or official paper relied on as the basis, proof, or support of something
- something (as a photograph or a recording) that serves as evidence or proof
- a writing conveying information, or
- a material substance (as a coin or stone) having on it a representation of thoughts by means of some conventional mark or symbol.[91]

Documents have a dual nature where their physical makeups, consisting of paper and ink (or a magnetic disc and digital byte arrays), are the bearers of meaning. Documents also have a structure consisting of headers, sections, margins, conclusions, effective dates, titles, subject lines, directives, etc. Furthermore, they serve numerous functions, such as describing the world, reporting events, providing instructions, confirming obligations, establishing a contract, or prescribing behavior. Document elements denote time and location or designate by name or unique identifier.

Some documents create social facts, such as claims and obligations. *Black's Law Dictionary* defines a legal instrument as "a formal or legal document in writing, such as a contract, deed, will, bond, or lease."[92] We distinguish here the physical bearer of information (paper, digital, etc.) from its content (the set of statements that create a claim or obligation). These types of information aggregate documents are represented in a sample taxonomy shown in figure 22.

- Generically Dependent Continuant (bfo)
  - Information Aggregate
  - Document
    - Legal Instrument
      - Bond
      - Contract
      - Employment Contract
      - Purchase Contract
      - Copyright
      - Deed
      - Identity Document
      - Incorporation Document
      - Lease
      - License
      - Partnership Agreement
      - Patent
      - Receipt
      - Statement of Accounts
      - Title
      - Trademark
      - Will

Figure 22. Information aggregate documents that create new states of affairs such as claims, obligations, rights, etc.

Legal instruments alone do not create claims, obligations, rights, etc. Their enforceability requires the ROL, which is defined as "the authority and influence of law in society, especially when viewed as a constraint on individual and institutional behavior; hence the principle whereby all members of a society, including those in government, are considered equally subject to publicly disclosed legal codes and processes."[93] Joint Publication 3-07, *Stability*, states that the ROL function:

> refers to programs conducted to ensure all individuals and institutions, public and private, and the state itself are held accountable to the law, which is supreme. The rule of law in a country is characterized by just legal frameworks, public order, accountability to the law, access to justice, and a culture of lawfulness. Rule of law requires laws that are publicly promulgated, equally enforced, and independently adjudicated, and that are consistent with international human rights principles. It also requires measures to ensure adherence to the principles of supremacy of law, equality before the law, accountability to the law, fairness in applying the law, separation of powers, participation in decision making, and legal certainty. Such measures also help to avoid arbitrariness as well as promote procedural and legal transparency.[94]

The *Merriam-Webster.com Dictionary* defines a law as: "a rule of conduct or action prescribed or formally recognized as binding or enforced by a controlling authority."[95] Individual laws make up bodies or sets of laws, which can be categorized by type (see fig. 23). For example, criminal laws are the rules and statutes that define prohibited conduct and establish the punishment for the commission of such acts.[96] Administrative laws are intended to regulate the operation and procedures of government agencies. Property laws are the "principles, policies, and rules by which disputes over property are to be resolved and by which property transactions may be structured."[97] Titles, leases, wills, and other legal documents that represent changes in the social world are founded upon formal laws.

- Dependent Continuant (bfo)
  - Generically Dependent Continuant (bfo)
    - Information Content Entity
      - Descriptive Information Content Entity
        - Landform Description
        - Natural Process Description
      - Designative Information Content Entity
        - Name
        - Location Designation
        - Time Designation
      - Prescriptive Information Content Entity
        - Law
          - Administrative Law
          - Criminal Law
          - Property Law
            ◊ Afghan Constitution, Article 40

Figure 23. A small sample of prescriptive information content entities, which emanate from some authority and prescribe behaviors. They include organizational directives, medical prescriptions, commands, orders, and state laws. As depicted here, Article 40 of the Afghan Constitution is an instance of a property law.

# Appendix B. List of Acronyms

| | |
|---|---|
| **ASCOPE** | areas, structures, capabilities, organizations, people, and events |
| **BFO** | basic formal ontology |
| **CAO** | civil affairs operations |
| **CIM** | civil information management |
| **COIN** | counterinsurgency |
| **FID** | foreign internal defense |
| **GDC** | generically dependent continuant |
| **HN** | host nation |
| **ICE** | information content entity |
| **JIPOE** | joint intelligence preparation of the operational environment |
| **LOE** | line of effort |
| **LTPR** | land tenure and property rights |
| **MISO** | military information support operations |
| **MPICE** | measuring progress in conflict environments |
| **OD** | operational design |
| **OE** | operational environment |
| **OEO** | operational environment ontology |
| **PMESII** | political, military, economic, social, infrastructure, and informational |
| **ROL** | rule of law |
| **SDC** | Specifically Dependent Continuant |
| **SOF** | Special Operations Forces |

# Endnotes

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