

# Measures of Merit for Defense Resource Planning of Small Scale Contingencies

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## ABSTRACT

This paper provides an introduction to the chapter on measures of merit included in the “Code of Best Practices for Analysis of Smaller Scale Contingencies (SSCs)” prepared by NATO Studies, Analysis, and Simulation Panel 027 (SAS-027). The paper first describes the post-cold war operational environment that creates the conditions for small-scale contingencies. It then describes some important metrics and measures of merit developed by the civilian partners. The paper also develops a proposed hierarchy of military measures of merit (MoMs) that can be used in studies supporting planning of future military force structures or equipment acquisitions for these types of operations.

Although this panel’s effort is not intended to support decisions at the operational level or analysis of ongoing operations, objectives of a newly formed panel (SAS-044), the framework should equally apply to those problems. The proposed hierarchy of interrelated measures begins with dimensional parameters, and extends to measures of performance and measures of effectiveness. The framework then takes into account two additional MoMs; measures of force effectiveness, where the force may be either a civilian or military organization with coherent direction; and measures of policy effectiveness that focus on how well the overall objectives of the mandating organization are achieved. The paper illustrates the MoM framework applied to three types of SSC operations. It then alerts the practitioners to potential conflicts that may occur among the various criteria, the use of surrogate MoMs, and the interrelationships among the measures and between metrics and objectives.

## INTRODUCTION

The North Atlantic Treaty Organization (NATO) research group concerned with Studies, Analysis, and Simulation (SAS) established in April 2000 a panel (SAS-027) to develop a code of best practices for the analysis of small-scale contingency (SSC) operations. This work builds on earlier efforts of SAS-026 that addressed long-term defense planning and the effectiveness of command and control on force effectiveness. This paper provides an introduction to the panel's development of measures of merit (MoM) applicable to analysis of SSCs. Although this panel's effort was focused on analysis of long-term defense planning issues, the hierarchy of measures proposed should work equally well when analyzing operational issues or ongoing operations, the focus of SAS-044.

This paper is organized in three sections. The first section describes the operational environment that has evolved since the end of the Cold War, which fosters the growing number complex emergencies experienced over the past several years. The second section introduces to the military reader some of the important initiatives that have been developed by the civilian partners encountered in these types of operations. The final section introduces the reader to the panel's proposed military measures of merit.

### SMALL-SCALE CONTINGENCY OPERATIONAL ENVIRONMENT

Today's security environment is no longer shaped by concerns over global war between two superpowers, but instead is based on the potential for less likely major theater wars (MTWs) and more frequent and wide ranging Small-Scale Contingencies (SSCs).<sup>1</sup>

The global security environment is still dominated by the system of sovereign nation states, but the number has grown from 54 when the United Nations (UN) Charter was signed in 1945 to 190 today. In the past half century, the operating environment was relatively stable on the surface because it was dominated by the two superpowers and their allies.

Turbulence and periodic crises generally occurred in countries where the superpowers competed for influence. Many nations faced internal political and economic challenges caused by local political crises, civil or regional wars, and man-made or natural disasters. These often less visible situations were frequently handled by neutral members of the international community or by surrogates of the superpowers or various international organizations.

In today's environment, the direct competition between superpowers has essentially disappeared, and these regional or local situations, termed complex contingencies – situations involving both conflict and humanitarian components—have become more visible to the entire international community. Interventions today are not based on declarations of war, but rather on UN Security Council resolutions. They typically occur when an internal conflict threatens regional stability or when abuses of human rights become so widespread that

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<sup>1</sup> Small Scale Contingencies are civilian-led interventions that may or may not employ military resources. When military resources are used during a Small Scale Contingency, the forces conduct military operations other than war (MOOTW).

fleeing refugees or internally displaced persons create large-scale, man-made humanitarian disasters affecting an entire region.

### MULTI-DIMENSIONAL SOLUTIONS

Many situations require intervention, but there are no internationally agreed criteria for determining when an intervention will be carried out. When necessary, interventions require the application of multidimensional resources based on the specific needs of the affected nation. Figure 1 represents one template that is used by the U.S. Government (USG) to plan and conduct these types of operations when they are deemed necessary. It establishes eight sectors, with military forces leading only one sector but supporting civilian agencies in the other sectors.

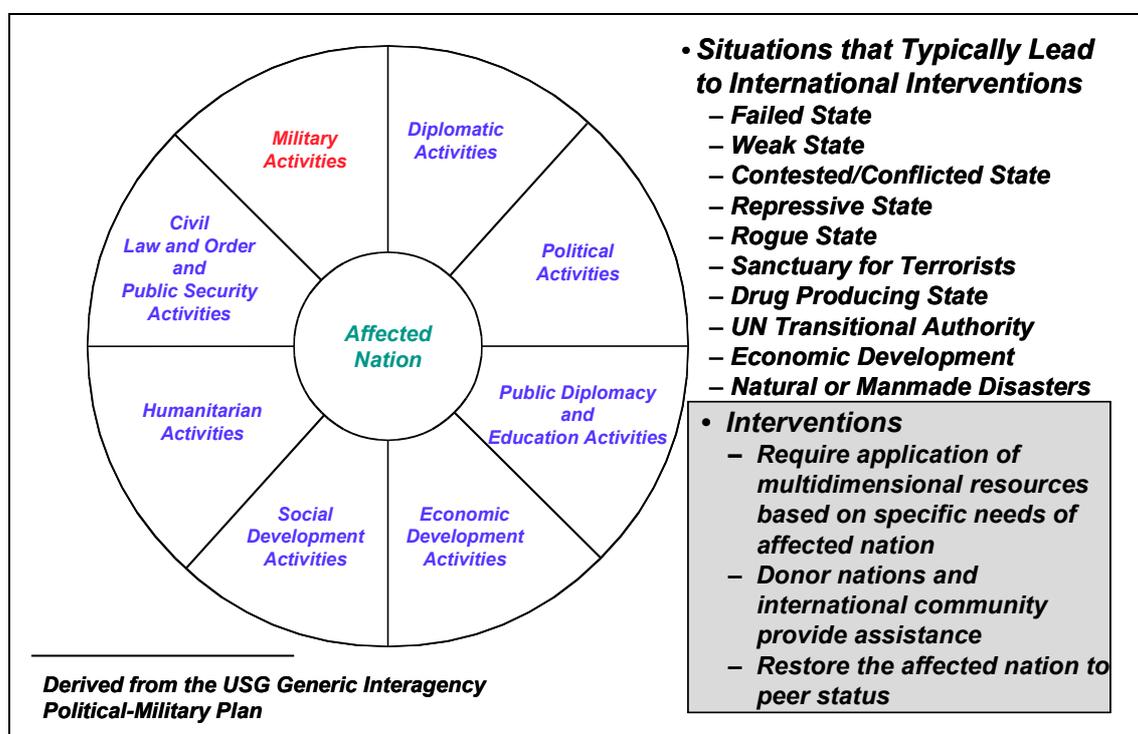


Figure 1: Multi-dimensional Sectors of National Power.

### POTENTIAL GLOBAL PARTNERS

The environment is further complicated by the plethora of players typically found in SSC operations. In the past, if a political situation became intractable and war was declared, the role of the military was dominant. In today's environment, the role of the military is generally one of support to civilian authorities. Political leaders retain control and apply military resources along with civilian resources to achieve their objectives. To carry out its assigned tasks, the military must coordinate and collaborate with a large number of civilian organizations from the donor nations, the UN and other Inter-Governmental, International, and Non-Governmental Organizations (IGOs, IOs, or NGOs), as well as with firms from the

private sector hired to perform selected tasks. Each of these participants brings unique capabilities and resources to the operation, and all efforts must be coordinated to achieve unity of effort. Figure 2 overlays these organizations on the affected nation, but places them in their respective semi-circle: Governmental or Non-Governmental, and Civilian or Military.

Potential global partners, other than sovereign nations, are typically divided into four categories: IGOs, IOs, NGOs, and commercial businesses. The mandates, authority, and responsibilities of the many partners also vary based on the characteristics of the partner summarized in Table 1. IGOs are consultative bodies formed and governed by member governments. IOs and NGOs are directed by private citizens, but IOs have unique sovereign status based on international law. NGOs are non-profit and governed by private citizens, but do not have the other status held by IOs. Commercial businesses are governed by private citizens with a goal of making a profit.

It is important to note that those organizations falling in the Governmental semi-circle in Figure 2 are the entities with responsibility and authority for carrying out a mandate from the interested and willing donor nations. The organizations in the Non-Governmental semi-circle may support governmental entities through contracts or grants, but otherwise typically have no formal authority or responsibility, and usually operate independently. These relationships often make unity of effort difficult.

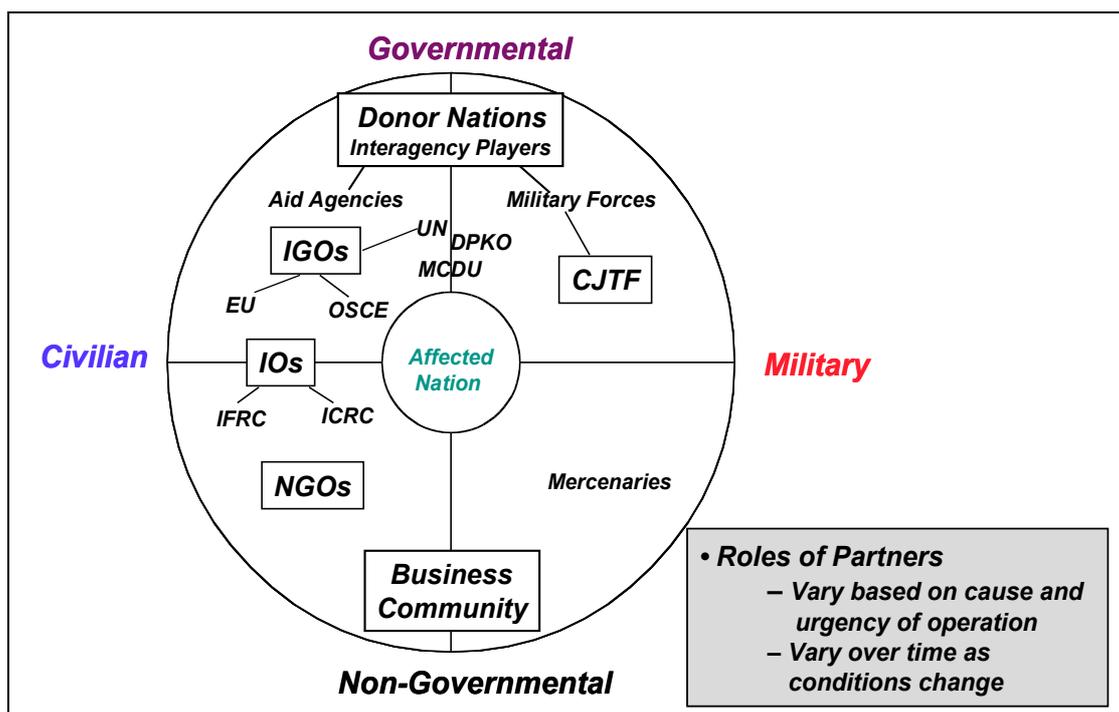


Figure 2: Potential Global Partners During International Interventions.

<b>Characteristics</b>	<b>IGO</b>	<b>IO</b>	<b>NGO</b>	<b>Business</b>
Formed for a specific purpose	X	X	X	X
Consultative body of National Governments	X			
Formed under International Humanitarian Law or Custom and Recognized as a sovereign entity		X		
Directed by representatives of National Governments	X			
Directed by private citizens		X	X	X
Funded by National Governments	X	X	X	X
Funded by private institutions or individuals		X	X	X
Not for profit entity	X	X	X	
For profit entity				X

*Table 1: Key Characteristics of Potential Global Partners (Source: IDA Document D-2349).*

Because there is neither a central authority nor a set of common objectives for a multinational contingency operation, it is more difficult to achieve unity of effort during SSC operations. Civilian agencies operate through a horizontal process of coordination unlike the vertical military command and control hierarchy. Both civilian and military organizations must share information and intelligence in this environment if common understanding and unity of effort are to be achieved.

Security is another characteristic that is different. Many of today's contingencies require the application of military force to establish military security in the region. Military security often can be accomplished quickly, using a superior military force that is capable of separating the factions and demobilizing their military capabilities. Public security and civil law and order, another requirement of the security sector, are more difficult to establish because the institutions upon which they are based frequently must be rebuilt. Unless both components of security are in place, stability and progress towards restoring the affected nation to peer status will be elusive and continued military presence will be required.

Capacity is another concept that must be understood in this environment. Few organizations or governments can devote the financial resources to maintain robust standby capabilities to respond to these situations. The capabilities they do have are usually already committed to ongoing contingencies. Consequently, military forces may be the only resources immediately available for an urgent humanitarian response.

## TYPES OF INTERVENTIONS

When this paper was prepared, there were 34 ongoing complex emergencies recognized by the UN.<sup>2</sup> While civilian organizations are involved in all of them, the military is only employed in 16 of these contingencies. Civilian-led interventions usually accomplish humanitarian or developmental goals with the concurrence of the affected nation. If the

<sup>2</sup> See: Complex Emergencies at [[http://www.reliefweb.int/ocha\\_ol/](http://www.reliefweb.int/ocha_ol/)] for current status.

institutions of the affected nations are capable and trustworthy, donors will provide bilateral assistance through the governmental agencies. On the other hand, when the institutions are weak or corrupt, major donors are likely to provide assistance through multilateral channels such as IGOs, IOs, or NGOs to ensure the resources reach the needy.

When military force is necessary, it is typically because peace and security must be restored or to ensure compliance with the mandate for the affected nation. These operations may or may not have the concurrence of the affected nation, but usually require the consensus of other peer nations and authorization from the UN Security Council.

The UN Security Council is assigned responsibility for maintenance of international peace and security under Article 24 of the UN Charter. Resolutions are the formal expression of opinion, will, or intent voted by the Security Council members to carry out its responsibilities. Under Article 25, member nations agree to accept and carry out the Security Council decisions conveyed in its resolutions.

The mandate is the authoritative command derived from the UN Security Council Resolution (UNSCR) that establishes the legal basis and the specific actions authorized by the Security Council to be taken by the civilian and/or military partners to carry out the resolution. The mission for a military force is derived from the mandate. Although there are many definitions for a military mission, it is generally a clear, concise statement of the task assigned to the command, that together with the purpose, indicates the action to be taken and the reasons for taking the action. The military mission must be accomplished within the broader context of the mandate in coordination with other civilian partners. The mandate and mission assigned to a military force may involve several types of operations other than war during a single SSC, although national doctrines<sup>3</sup> vary somewhat.

The various types of MOOTW may be conducted simultaneously or sequentially. Often, the military force is called upon during an emergency until sufficient civilian capacity can be deployed because the forces are capable of providing a rapid response. In other situations, they may be employed until security is established under civilian control and military responsibilities are handed off to appropriate civilian authorities.

When military intervention is necessary, it typically occurs into an ongoing civilian-led intervention. Complex emergency interventions usually have several phases that are likely to occur nearly simultaneously and have considerable overlap. Military redeployment is possible only when threat of fighting is reduced and law and order and public security have been restored. Another unique characteristic of these operations is that the roles and responsibilities of the military and civilian partners change with each phase, as shown in Table 2. The recent operations in East Timor and Kosovo can serve to illustrate the dynamic and complex nature of these interventions.

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<sup>3</sup> For example, U.S. Joint Pub 3-07 identifies the following types of MOOTW when the application of military resources is required: arms control, combating terrorism, support to counter-drug operations, enforcement of sanctions, maritime intercept operations, enforcing exclusion zones, ensuring freedom of navigation and overflight, humanitarian assistance, military support to civil authorities, nation assistance, support to counterinsurgency, non-combatant evacuation operations, peace operations (including peacekeeping, peace enforcement, preventative diplomacy, peace making, and peace building), protection of shipping, recovery operations, show of force, strikes and raids, and support to insurgency.

<u>Phase</u>	<u>Role</u>	<u>On-Scene Responsibility</u>
<b>Stop Fighting</b>	<b>Peace Enforcement</b>	<b><i>Military Lead</i></b> <b>– Others Support</b>
<b>Separate Factions</b>	<b>Peacekeeping</b>	<b><i>Military and Civilian Share Lead</i></b>
<b>Impose Law and Order</b>	<b>Policing, Judiciary, and Penal Institution Operation</b>	<b><i>Civilian Mission Lead</i></b> <b>– Military and Others Support</b>
<b>Restore Economy and Governance</b>	<b>Economic and Governance Development</b>	<b><i>Civilian Mission Lead</i></b> <b>– Others Support (limited Military)</b>
<b>Institutions</b>		
<b>Nurture Society</b>	<b>Social Development</b>	<b><i>Civilian Mission Lead</i></b> <b>– Others Support (limited Military)</b>

Table 2: Complex Emergency Phases, Roles, and On-Scene Responsibilities

### INTERVENTION IN EAST TIMOR

The UN Mission East Timor (UNAMET)<sup>4</sup> was a civilian-led intervention to oversee the vote on independence and a transition period pending implementation of the decision of the East Timorese people. As a result of voting held on 30 August 1999, a large majority of East Timorese decided to transition to independence. Pro-integration militias, with the support of Indonesian security forces, opposed this decision and launched a campaign of violence. The International Military Force (INTERFET)<sup>5</sup> was a military intervention into an ongoing civilian-led mission (UNAMET). Its mandate was to:

- Take all necessary measures to restore peace and security in East Timor.
- Use force as necessary (authorized under Chapter VII of UN Charter).
- Bring an immediate end to aggression .
- Protect UNAMET in carrying out its tasks.
- Facilitate within force capabilities humanitarian assistance to the affected population.

A number of factors impacted on the INTERFET mission. These included an affected population of 600,000 that required protection, food, and adequate shelter, and 250,000 internally displaced persons (IDPs) who were to be returned to East Timor from other locations in Indonesia.

The UN Transition Authority East Timor (UNTAET),<sup>6</sup> a combined civilian and military organization, became responsible for the administration of East Timor in January 2000. It was empowered to exercise all legislative and executive authority, including the

<sup>4</sup> UNSCR 1246 dated 11 June 1999.

<sup>5</sup> UNSCR 1264 dated 15 September 1999.

<sup>6</sup> UNSCR 1272 dated 25 October 1999.

administration of justice, essentially placing East Timor under UN trusteeship. The mandate included the following:

- Provide security and maintain law and order.
- Establish an effective administration.
- Assist in the development of civil and social services.
- Ensure the coordination and delivery of humanitarian assistance, rehabilitation and development assistance.
- Support capacity-building for self-government.
- Assist in the establishment of conditions for sustainable development.

UNTAET was authorized an organizational structure with four entities that included civilian personnel, civilian police, and military forces operating under the authority of the Special Representative of the Secretary General (SRSG). The four components included:

- A governance and administration component.
- An international police force of up to 1,640 officers.
- A military component with up to 8,950 troops and 200 military observers.
- A humanitarian assistance and emergency rehabilitation component.

## INTERVENTION IN KOSOVO

With the concurrence of the Government of the Former Republic of Yugoslavia (FRY), the civilian Verification Mission<sup>7</sup> in Kosovo, directed by the Organization for Cooperation and Security in Europe (OCSE), was operational from 24 October 1998 to 20 March 1999. Because of alleged abuse of the Albanian majority by government authorities in Kosovo, and the inability to reach a peaceful settlement among the parties, the mission was withdrawn and NATO's Operation Allied Force conducted a bombing campaign against FRY from 23 March to 10 June 1999.

When the political authorities of FRY agreed to withdraw from Kosovo, UNSCR 1244 of 10 June 1999 authorized early and rapid deployment of effective civil and security presence in Kosovo. Unlike UNTAET, this arrangement retained a separate civilian-led UN Mission in Kosovo (UNMIK) and a military force named the Kosovo Force (KFOR).

KFOR deployed on 12 June. Its mandate included: (1) establishing and maintaining a secure environment, including public safety and order; (2) monitoring, verifying, and, when

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<sup>7</sup> UNSCR 1203 dated 24 October 1998.

necessary, enforcing compliance with the conditions of the Military Technical Agreement and the Kosovo UCK<sup>8</sup> Undertaking; and (3) providing assistance to UNMIK, including core civil functions, until they were transferred to UNMIK.

UNMIK officially started its operations when the acting Special Representative of the Secretary General (SRSG) arrived on 13 June, but the SRSG did not arrive until 15 July. Its mandate included the following:

- Promote establishment of substantial autonomy and self-government in Kosovo.
- Perform basic civilian administrative functions.
- Facilitate a political process to determine Kosovo's future.
- Support reconstruction of key infrastructure and humanitarian and disaster relief.
- Maintain civil law and order.
- Promote human rights.
- Assure the safe and unimpeded return of all refugees and displaced persons.

UNMIK was established with four sectors, also known as "pillars." Pillar I involved humanitarian affairs and was managed by the UN High Commissioner for Refugees (UNHCR). This operation completed its resettlement and relief efforts in June 2000. Pillar II operated the civilian administration and was staffed from UN personnel, including civilian police, judicial and civil affairs functions. It was authorized an international police force of up to 4,700 officers. The responsibility of Pillar III was building institutions, including human capacity, democratization, and human rights. This pillar was assigned to OSCE. The European Union was assigned responsibility for Pillar IV, which involved reconstruction and economic development including shelter, utilities, transportation, communications, and agriculture.

KFOR was the military component with an initial authorized strength of up to 50,000 troops provided by NATO member and partner nations, and other allies. Several factors impacted on the KFOR mission. There were many refugees to return to Kosovo: 230,000 from Macedonia, 430,000 from Albania, 64,000 from Montenegro, 21,500 from Bosnia, and 61,000 from other countries. Of the residual population in Kosovo, 580,000 were homeless. The resettlement was somewhat chaotic and by 3 August more than 750,000 refugees had returned to Kosovo, mostly adding to the homeless and increasing the humanitarian needs. Another problem was the slow deployment of the international police to relieve KFOR from the civil law and order and public security task. By 7 September, only 1,000 international police were in Kosovo, and only about 76 percent of the authorized strength was deployed by May 2000. A positive outcome, however, was that UNMIK, KFOR, and the Kosovo

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<sup>8</sup> The Kosovo Liberation Army in Albanian: *Ushtria Clirimtare e Kosove*.

Liberation Army (KLA) met as the Joint Implementation Commission starting on 22 June 1999.

### **METRICS AND MEASURES OF MERIT USED BY CIVILIAN PARTNERS**

While the military was contending with the cold war, the civilian organizations were engaged in a number of complex contingencies, disaster relief, and humanitarian assistance operations. They had to establish standards and measure progress to justify their expenditures of resources. This section describes some of the more recent metrics and measures of merit (MoM) developed and used by key civilian organizations involved in these operations.

#### **RED CROSS MOVEMENT CODE OF CONDUCT**

This Code<sup>9</sup> outlines performance standards for non-governmental humanitarian agencies (NGHA) when they respond to disasters or provide humanitarian relief. The document was created in September 1995 by the Red Cross Movement and other interested parties. It establishes 10 points to guide how humanitarian assistance will be rendered during disaster relief operations. It addresses providing humanitarian assistance impartially, without regard to race, creed, or nationality, or being contingent upon political or religious beliefs. It also encourages building local capacity by involving the beneficiaries in management of relief aid and reducing future vulnerabilities. It ensures that information and publicity recognize the victims as dignified humans and not as hopeless objects.

The Code also recommends to nations and IGOs their responsibilities to the NGHA when the responders agree to comply with the Code. For example, nations affected by disasters should grant responders rapid and impartial access to victims. Donor nations should recognize responders as independent bodies, and respect the independence and impartiality of responders. The IGOs must respect the independence and impartiality of responders, and UN Agencies should consult with the responders when preparing relief plans. The Code: (1) establishes an agreed civilian framework that establishes how NGHAs will provide humanitarian assistance during disaster relief operations; (2) outlines responsibilities for nations and IGOs; and (3) emphasizes building local capacity.

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<sup>9</sup> See: [<http://www.ifrc.org>]to access the Code. It was prepared by the International Committee of Red Cross (ICRC) and International Federation of Red Cross (IFRC), with support from Caritas International, Catholic Relief Services, Save the Children, Lutheran World Federation, Oxfam, and the World Council of Churches.

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## OSLO GUIDELINES

In response to a 1991 UN General Assembly resolution (46/182) to evaluate whether the use of military and civil defense assets for international disaster relief operations could be formalized, a joint meeting, sponsored by the UN Department of Humanitarian Affairs (DHA) and NATO, was held in Brussels in 1992. The participants concluded that appropriate arrangements could be formalized and established a Standing Coordinating Group to implement the recommendations. Norway hosted a high level international conference in 1994 and 45 nations and 25 IGOs, IOs, and NGOs participated. The group produced the “Oslo Guidelines” to ensure the highest possible standards for international disaster relief assistance.

The 1994 Guidelines establish principles, procedures, legal status, and measures for coordinated use of both Military and Civil Defense Assets (MCDA) during international disaster relief operations. They also outline responsibilities for assisting, transit, and affected nations. Because of the increasing number of complex emergencies, Switzerland recently circulated a proposal to extend these Guidelines to include complex emergencies. Several nations are working with the UN Office for the Coordination of Humanitarian Affairs<sup>10</sup> to produce an agreed draft in late 2002.

Currently, the MCDA procedures identify capabilities required in 11 functional categories.<sup>11</sup> Modules are described by the specific capability required during disasters that can be provided by either military or civil defense assets. Some IOs and NGOs have already organized response capacities in accordance with “service module” capabilities. A few national military forces have identified similar modules within their structures, but others should do so as well. Three examples follow:

- *AV-04B Airport Ground Handling – Capability:* For a specific airfield, provide manpower and support equipment to load and unload aircraft on a 24 hour per day basis during humanitarian relief operations in coordination with local airport authorities; establish and operate marshalling yard; capabilities include handling 400 metric tons of cargo and 100 passengers per day with a maximum of 30 aircraft per day.
- *EN-03 Site Preparation and Development — Capability:* Provide civil engineering capability to prepare and develop as many as 20 refugee camp sites (5,000 person capacity per site) at a rate of two camps per week on undeveloped land; includes site preparation, construction, maintenance with planned camp life of two years.
- *LG-03A Warehousing and Store Keeping – Capability:* Provide self-contained stand-alone warehousing facilities and store keeping for food and non-food items and other goods and materials for up to 250,000 aid recipients.

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<sup>10</sup> Formerly the Department for Humanitarian Affairs.

<sup>11</sup> MCDA modules are listed on the ReliefWeb. Categories include: Aviation Operations (6 modules), Command and Control (5 modules), Communications (4 modules), Explosive Ordnance Disposal (3 modules), Engineering (11 modules), Logistics Support (9 modules), Medical (3 modules), NBC Support (7 modules), Search and Rescue (4 modules), Surface Transportation (5 modules), Water Supply and Distribution (5 modules).

The MCDA procedures and service modules establish metrics that help to quantify tasks and provide measurable standards. The modules currently focus on disaster relief, but also serve as the basis for determining civilian and military resource substitutability. The modules for medical, command and control, search and rescue, and other functions could use further refinement. In addition, the same process could be extended under the Swiss proposal for complex contingencies by linking it with the UN Department of Peace Keeping Operations (DPKO) Standby Arrangement System<sup>12</sup> (SAS) for peacekeeping operations, and adding unique functions required during complex contingencies such as constabulary forces, civilian police forces and observers, information and public diplomacy support, and civil-military cooperation.

## THE SPHERE PROJECT

This project,<sup>13</sup> now in its fourth year, is an effort of the civilian humanitarian community. It provides a humanitarian charter and sets minimum standards for disaster response in five categories: water supply and sanitation, nutrition shelter, health services, food aid, and site planning. The charter identifies key indicators or “signals” that show whether the standards have been attained. It also provides guidance notes that include specific points to consider when applying the standard in different situations, guidance on tackling practical difficulties, and advice on priority issues. The notes may also include critical issues relating to the standards or indicators, and describe dilemmas, controversies, or gaps in current knowledge. These metrics provide a way of measuring and communicating both the impact, or result, of programs, as well as the process or methods used. The indicators may be qualitative or quantitative, and apply when conducting assessments, providing support, and building local capacity.

## DONOR NATION DEVELOPMENT AGENCIES

Donor nation international development agencies such as U.S. Agency for International Development (USAID) or the United Kingdom’s Department for International Development are concerned with metrics for their development programs. USAID’s Handbook of Democracy and Governance Program Indicators<sup>14</sup> is used for strategic planning and performance monitoring. It establishes a framework of agency goals and objectives. Objectives are then broken down into intermediate results (IRs) and sub-intermediate results (sub-IRs). Quantitative and qualitative indicators for IRs and sub-IRs include definition and units of measure, relevance of the indicator, data collection methods and approximate costs, and target setting and trend line interpretation issues. An example of the framework for one objective is shown in Figure 3.

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<sup>12</sup> The SAS identifies more than 100 tables of organization and equipment that are common to Chapter VI peacekeeping operations. See: <http://www.un.org.depts/dpko>.

<sup>13</sup> See: “The Sphere Project: Humanitarian Charter and Minimum Standards in Disaster Response,” at <http://www.sphereproject.org>.

<sup>14</sup> See “Handbook of Democracy and Governance Program Indicators, 11 August 1998 and “Managing Democratic Electoral Assistance: A Practical Guide for USAID.”

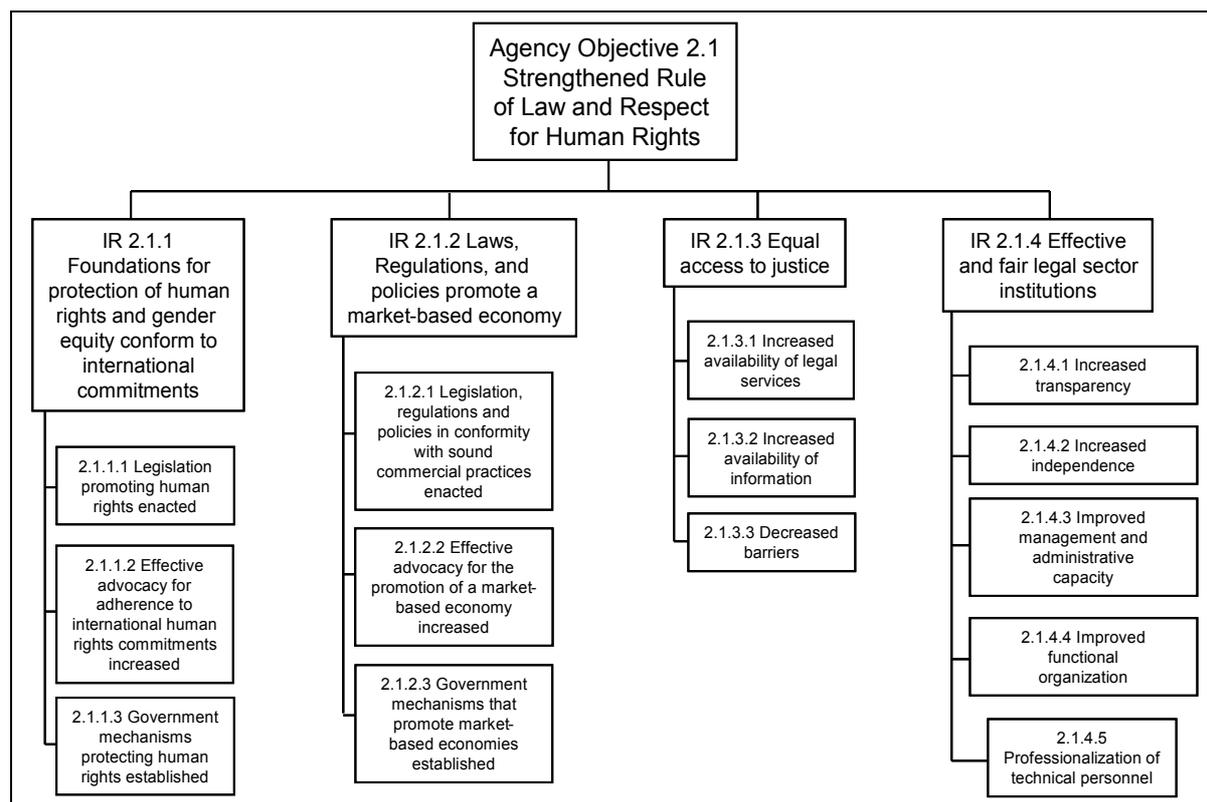


Figure 3: Illustration of U.S. Agency for International Development Framework of Governance Program Indicators

### WORLD BANK LOGICAL FRAMEWORK

Created by USAID in 1969 and used widely throughout the donor community, the Logical Framework, or LOGFRAME, has been used by the World Bank since 1997.<sup>15</sup> It is the Bank's central methodology for operations planning, supervision, and implementation. It serves as a tool to communicate the essential elements of a complex project clearly and succinctly by defining a set of relationships among providers and users. It also provides a monitoring and evaluation system for specific operations by defining the level, people, events, process, documents, and information to be used. Performance indicators measure operation impact, outcomes, and outputs to be monitored, and provide forecasts, early warning, and insights into the validity of assumptions and risks. The LOGFRAME template is displayed in Table 3 and shows the relationships vertically between goals, objectives, outputs and components, and horizontally between performance indicators, monitoring and evaluation supervision, and important assumptions.

<sup>15</sup>

See: <http://www.worldbank.org/html/oed/evaluation/html/logframe.html>.

<b>Narrative Summary</b>	<b>Performance Indicators</b>	<b>Monitoring/ Evaluation Supervision</b>	<b>Important Assumptions</b>
<b>Goal:</b> Higher objective to which this project, along with others, will contribute.	Indicators (increasingly standardized) to measure program performance.	The program evaluation system.	<b>(Goal to Super Goal)</b> Risk regarding strategic impact.
<b>Direct Objective (DO)</b> The impact of this project. The change in beneficiary behavior, systems or institutional performance because of the combined output and key assumptions	<b>Impact</b> Measures that describe the accomplishment of the Program DO The value, benefit and return on investment.	People, events, processes, sources of data for organizing the project evaluation system.	<b>(DO to Goal)</b> Risk regarding program level impact.
<b>Outputs</b> The project intervention. What the project can be held accountable for producing.	Indicators that measure the value added of implementation of the components.	People, events processes, sources of data – supervision and monitoring system for project implementation.	<b>(Output of DO)</b> Risk regarding design effectiveness.
<b>Components</b> The main component clusters that must be undertaken in order to accomplish the Outputs.	<b>Input/Resources</b> Budget by component. Monetary, physical, and human resources required to product the Outputs.	People, events, processes, sources of data and monitoring system for project design.	<b>(Component to Output)</b> Risk regarding implementation and efficiency.

Table 3: The World Bank’s Logical Framework Template.

## PROPOSED MILITARY MEASURES OF MERIT HIERARCHY

This section describes the proposed hierarchy of MoM for military analysis in SSCs. Although constructed to examine long-term defense planning issues such as equipment acquisition and force structure requirements, the same hierarchy should be equally applicable to operational issues encountered by commanders and staff engaged in MOOTW.

There is no agreed definition of metrics used for military analysis. The NATO Research Technical Organization report (Technical Report 8), however, provides a useful hierarchical framework for defining MoM for analysis of command and control. This framework has been used as the basis for defining more broadly applicable metrics for use in military analysis of SSCs.

- *Dimensional Parameters (DP)*: the properties or characteristics inherent in the physical systems or force elements.
- *Measures of Performance (MoP)*: measure how well a system or force element accomplishes a defined task. It is assessed by the combination of Dimensional Parameters in an appropriate model.
- *Measures of Effectiveness (MoE)*: measure how well systems or force elements accomplish their assigned tasks within an operational context.
- *Measures of Force Effectiveness (MoFE)*: measure the degree to which a force meets its objectives. In this context, a force may be any organization or

group of organizations, civilian or military, generally under coherent direction.

- *Measures of Policy Effectiveness (MoPE)*: measure how well the overall objectives of the mandating authority are achieved.

It is important to note that the DP and MoP may be assessed independent of any scenario because they measure how well a system or force element accomplishes a defined task independent of operational context. When the system or element is assigned a task within an operational context — as is the case with MoE, MOFEs, and MoPEs — the evaluation must be accomplished within a scenario. Examples of the military MoM hierarchy applied to three types of MOOTW in different scenarios are illustrated in Table 4.

Operation	Example	DP	MoP	MoE	MoFE	MoPE
Non Combatant Evacuation	Sierra Leone	Helicopter 1. Passenger capacity 2. Range	Rate of evacuation for a single helicopter as a function of range and density altitude	Rate for a unit of helicopters to evacuate people in a non-permissive environment	1. Time to complete evacuation 2. Percentage of people evacuated	1. Total casualties among evacuees and military forces 2. People still at risk
Coercion (Strikes and Raids)	Deliberate Force (Kosovo)	Range and payload of an aircraft	1. Circular error probable of a system 2. Daily sortie rate	1. Number of targets hit per day 2. Collateral damage based on accuracy of delivery	1. Time to destroy all targets/total collateral damage 2. Own force casualties 3. Percentage of targets that can be destroyed	1. Response of opponent 2. Extent of collateral damage
Peace Support	Bosnia	1. Rate of movement of patrols 2. Number of patrols per company per week	1. Area covered by patrol per day 2. Expected casualties if patrol attacked 3. Frequency of patrol visits	1. Reduction in murder rate in patrolled areas 2. Patrol casualties 3. Time to next incident after a patrol	1. Murder rate 2. Number of violations of ceasefire agreement 3. Displaced person returns 4. Percent of crimes solved	1. Percentage of civil authority functions conducted by local people 2. Percentage of popular support for government 3. Support by factions 4. Duration of military deployment 5. Intervention force casualties

*Table 4:* Examples of Proposed Measures of Merit for Military Operations Other Than War.

The selection of appropriate MoMs is not always an easy task, generally becoming more difficult as one moves up the hierarchy from DP through MoPE. The selection will depend on a number of factors. The physical properties or characteristics of the system or force element will determine the DPs. The type of task assigned to the system or force element will provide the MoPs. MoEs will be selected based on the types of operations in which the systems or force elements will operate and the scenario-dependent tasks they are assigned. The force mission will determine the MoFEs, while the mandate for the operation will serve as the basis for MoPEs, and these must be carefully coordinated with the civilian partners to ensure appropriate interrelationships are understood.

There are a number of desirable characteristics for MoM, but they may not all be achievable in any single measure. They should be valid, mission-oriented, reliable, sensitive, and measurable. One should also seek MoMs that are meaningful, objective, discriminatory, inclusive, realistic, and simple.

Care should be taken to understand interrelationships among MoMs. Decision-makers need to know how resource allocations impact outcomes. The analyst's goal is to be able to demonstrate causality and at least some degree of predictability between lower and higher level MoM. For some types of operations involving only military elements, this is relatively easy. It becomes much more difficult when both civilian and military tasks interact with the

affected nation population and government institutions. For example, rapid disarmament and demobilization by the military can exacerbate civilian reintegration efforts and result in an increase in criminal activities, prolonging achievement of the mandate.

Surrogate MoMs may be required, especially for MoPE. Policy frequently is not clearly articulated and end states may evolve instead of being well-documented milestones. The leaders often use abstract or intangible terms such as stability, normality of life, or freedom of movement to describe these aims. The analyst will have difficulty finding appropriate direct measures because the civilian and military partners' tasks are intended to influence the population and change the government of the affected nation, not to defeat an "enemy." Either quantitative or qualitative performance indicators can identify outputs to be monitored that will measure the operational impact on the policy or force objectives.

The analyst should expect conflicts among MoMs. Multiple, complex, and often conflicting strategies are usually at work in these complex emergencies, and they typically are being carried out on different time lines. For example, increased force protection may restrict delivery of food or medical aid. Urgent infrastructure restoration by intervening forces could delay civilian-led economic development and improvement in the affected nation's own capacities. In some situations, there may be a need to select a primary MoM to be maximized, but subject to minimum values established for others.

As we noted earlier, SSCs involve continuous but parallel civilian and military campaign planning. Roles may change, for example, from provider to facilitator, and responsibilities may pass from military to civilian to affected nation as conditions improve. The MoMs need to account for these changes and should be continuous, not binary, so that trends can be monitored.

The primary interest at the national strategic level is to ensure appropriate military resources are available when and where they are needed to carry out assigned missions, and in sufficient quantities to ensure the success of the operations. To determine future SSC military force structure and equipment requirements, the analyst must bound the uncertainties concerning types of future SSCs in which the national military forces will be employed, the size and duration of military force involvement, and the role of military forces and their civilian partners. This requires the analyst to examine a robust but plausible set of scenarios within which the MoMs can be developed.

Subsequent papers by the members of NATO SAS-027 panel will develop MoMs for a specific example, and illustrate how they might be used.

## CONCLUSION

In summary, the paper has described the changes in the global operational environment that have established conditions that increasingly place military forces into SSCs. The environment also is more complex because of uncertain end states, the multi-dimensional application of resources, the large number of potential partners, and the less clearly articulated goals. Moreover, the objectives are carried out on different timelines with changes in roles and responsibilities occurring at difficult to measure thresholds. We have also seen that the civilian partners have considerable experience with these types of operations and have established agreed frameworks and standards, and have defined and applied a number of metrics and MoMs to evaluate conditions in these complex environments. The military analyst should draw upon the knowledge and experience of the civilian partners where possible, and share with them the military experience and knowledge applied to these types of operations. The proposed military hierarchy of MoMs builds upon earlier work, and has been adapted to the unique characteristics of SSCs. Because MoPE involve both civilian and military contributors, it is essential that both communities work together to achieve a common understanding with a view to achieving greater unity of effort.

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