Irregular Warfare Analysis Workshop
WG 1: Global Engagement

Military Operations Research Society

Working Group Out Brief

3-6 February 09

Chairs: Andy Caldwell, Col Tom Feldhausen

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Agenda

- Working Group Purpose/Charges
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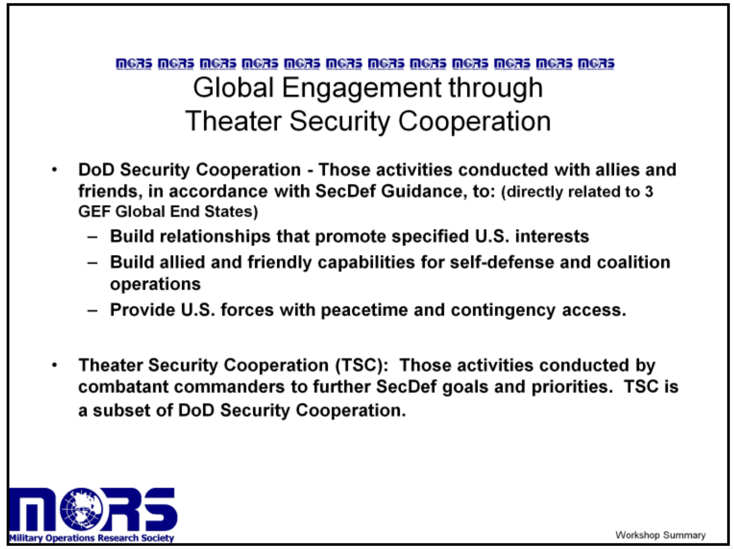

Global Engagement is a vast topic and for it to be tackled in a two-day workshop it was necessary to focus on a specific aspect. As an analytical community we have applied our resources to gain a better understanding of COIN, SSTR and IW. The majority of our efforts have focused on winning the nation’s wars and being prepared for the next set of operations. But we also have to focus on taking actions now that will allow us to avoid having to undertake all but the most necessary enduring future operations of this nature. Global engagement requires us to consider prevention as well as cure. Many parts of the U.S. government, international organizations and regional partners take part in this activity. It includes ensuring the provision of basic services, effective governance, the rule of law, social justice and security. The DoD contribution is through Security Cooperation and Theater Security Cooperation is the name for the role of the Combatant Commands in this challenge.

Charges

WG1: Global Engagement: **Provide recommendations on appropriate analytical techniques to prioritize, plan, and assess Theater Security Cooperation activities to assist the COCOMs in addressing the analytical challenges that they currently confront.**

1. **What tools are available to assist in the identification and development of activities to support objectives?**
2. **In a resource constrained environment, what tools would aid in the prioritization of TSC events to obtain maximum benefit?**
3. **How do I assess the results of TSC activities?**
4. **How do I appropriately evaluate progress towards objectives?**

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As part of the preparations for the workshop the Chairs for the working group visited three combatant commands, SOUTHCOM, AFRICOM and PACOM. Interviews with each commands' Strategy, Assessment and Engagement divisions provided an understanding of the Theater Campaign Plan (TCP) planning cycle and specifically the analytical challenges confronted by each command in planning, assessing and measuring their progress in meeting the TCP's objectives. Maybe unusually for an OSD and Joint Staff visit to the COCOMs we were interested in taking away the problems the commands face rather than just asking for the answers.

Participants

- Clark Heidelbaugh, JS J7
- Larry Young OPNAV N81
- Steve Goode CAA
- Tony Durant   Culmen Int'l
- George Rollins OSD PA&E
- Ben Runkle RAND
- John Benedict JHU APL
- Tom Feldhausen JS J5
- Andy Caldwell OSD PA&E
- Brad Nissal CENTCOM
- Mary Cerniglia-Mosher AF/A9
- Tim Hope WBB
- Joseph Adams AT&L
- Paul Works TRAC
- Herman Orgeron CAA
- Martin Lidy IDA

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Workshop Summary

Having collected some elementary data from the COCOMs about planning and prioritizing TSC activities the Chairs presented the working group members named here with the problems the COCOMs identified. The working group consisted of serving military officers, representatives from the special forces community and Operations Research Analysts from the DoD and other institutions.

WG1 - Agenda

- Wednesday, 4 Feb 09
  - **1040-1130**
    - **Presentation on PACOM, AFRICOM and SOUTHCOM TSC/theater campaign planning processes, supporting analytical methods and analytical challenges –** Andy Caldwell (OSD/PA&E) / Col Tom Feldhausen (JS/J5)
  - **1130-1300 LUNCH**
  - **1300-1430**
    - **Distribute master question list for workshop participants**
    - **Group discussion on one topic – Andy Caldwell to facilitate**
  - **1430-1445 BREAK**
  - **1445-1530**
    - **Feedback/group discussion and recommendations on question discussed**
  - **1530-1615**
    - **Presentation on Global Maritime Security Update (SECRET REL to USA AUS CAN GBR). Recent efforts by OPNAV N81G to determine the U.S. Navy's steady-state demand signal for execution of Global War on Terror and Theater Security Cooperation mission sets.**
      - CDR Larry Young (USN), N81GD

WG1 - Agenda

- Thursday, 5 Feb 09
  - **0800-0830 Review progress from previous day**
  - **0830-0900**
    - **CASE STUDY: "AFRICOM Interagency Mission Analysis" Presentation on linking resourcing priorities to interagency partners and identifying goals and objectives.** Martin Lidy (IDA)
  - **0900-1000 Group work on master question list –session 2**
  - **1000-1015 BREAK**
  - **1015-1045**
    - **METRICS & MOE: "How are we doing?" Presentation on linking activities to objectives and developing MOE for CJTF HOA and OEF - Philippines.** Ben Runkle (RAND)
  - **1045-1200 Group work on master question list – session 3**
  - **1200-1300 LUNCH**
  - **1300-1345**
    - **ASSESSMENT & ANALYSIS: "Nodes or Networks? Instability Assessment Meets the Global Economic Crisis". Presentation on the value of system dynamics in measuring instability.** Col Tom Feldhausen (JS/J5)
  - **1345-1430 Group work on master question list – session 4**
  - **1430-1445 BREAK**
  - **1445-1630 Consolidation/discussion of recommendations from the master question list**
- Friday, 6 Feb 09
  - **0800-1045 Complete out brief materials for plenary**

Presentations

- PACOM, AFRICOM and SOUTHCOM TSC/theater campaign planning processes, supporting analytical methods and analytical challenges. (UNCLAS) – ***Andy Caldwell (OSD/PA&E) / Col Tom Feldhausen (JS/J5)***
- Global Maritime Security Update. Recent efforts by OPNAV N81G to determine the U.S. Navy's steady-state demand signal for execution of Global War on Terror and Theater Security Cooperation mission sets. (UNCLAS). ***CDR Larry Young (USN), N81GD***
- AFRICOM Interagency Mission Analysis. Linking resourcing priorities to interagency partners and identifying goals and objectives. (UNCLAS). ***Martin Lidy (IDA)***
- "How are we doing?" Linking activities to objectives and developing MOE and Metrics for CJTF HOA and OEF – Philippines (SECRET-REL). ***Ben Runkle (RAND)***
- Nodes or Networks? Instability Assessment Meets the Global Economic Crisis. The value of system dynamics in assessing instability. (UNCLAS). ***Col Tom Feldhausen (JS/J5)***

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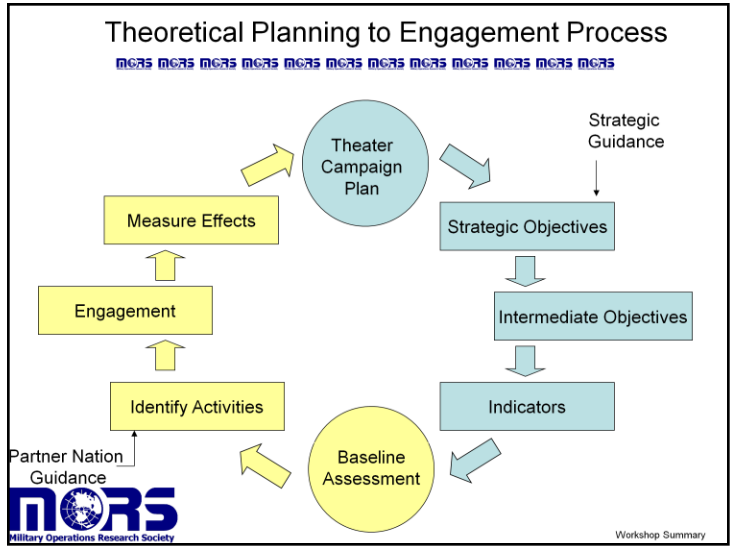
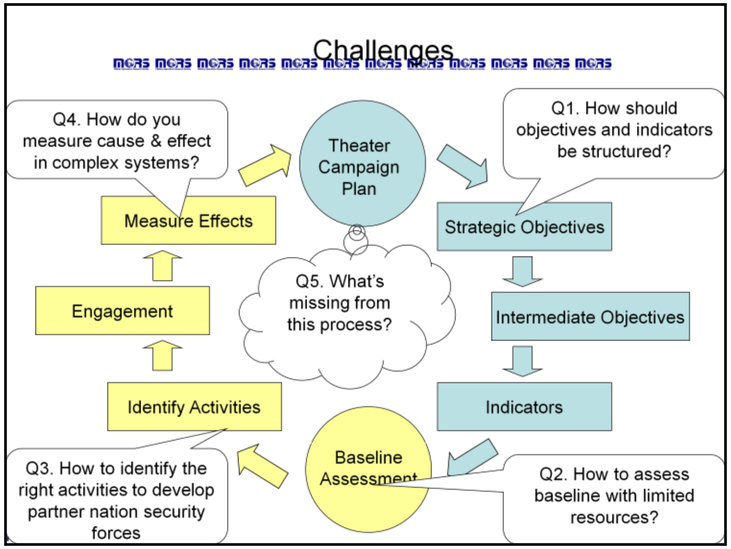
Workshop Summary

In addition to the working group breakout sessions there were 5 presentations. The first, given by Andrew Caldwell from OSD and Col Tom Feldhausen from the Joint Staff presented the information collected from the COCOMs in preparation for the workshop. The second presentation by Cdr Larry Young covered USN analysis designed to calculate the demand signal for naval platforms in support of TSC activities across the six geographic COCOMs. Martin Lidy, from IDA, presented on an analysis of the potential missions AFRICOM could contribute to through its TSC activities and cross-walked that with the Interagency partners that have equities in those issues. The breakdown of partners was below the Departmental level, so different divisions or agencies that operate in Africa were identified, along with a long list of programs across government. The key takeaway here is that many people contribute to building stability in Africa and planning needs to move beyond including just those close Interagency divisions and agencies that have traditionally worked with the COCOMs. Ben Runkle from RAND presented a study that developed a set of measures for evaluating progress in the GWOT. The study mapped national strategic objectives down to sub-regional campaign plan activities and identified a set of MOE and MOP to evaluate them. Critical to the work was the discipline to generate a small and manageable set of measures and to ensure that there was a clear distinction between MOE, those measures that evaluate progress towards strategic objectives with measures of performance MOP, that may be measuring one part of the system but are not in themselves sufficient on their own to identify progress towards strategic objectives. Finally, Col Feldhausen presented some recent work on using system dynamics to evaluate country instability. Traditional approaches have identified that infant mortality, regime type and international trade are good indicators of the risk of instability. But forecasting whether a country is in danger of entering that risk zone requires the monitoring of the rule of law, political stability and violence, and control of corruption.



From interviews with the COCOMs the cycle is a simplified representation of the TSC planning process. In an ideal world (and do note the phrase "theoretical" in the title to this chart) there is already an existing Theater Campaign Plan. Although all the commands, with the exception of AFRICOM, have previously created similar plans the creation and maintenance of a theater campaign plan is a new construct, and at the time of interview only PACOM had sign-off on their plan. The fact remains that TSC activities have taken place before in the area of operations and there is institutional knowledge or documentation on the objectives of those activities, even if that documentation does not yet conform to the template for the new Theater Campaign Plans. In reviewing the previous plan it is necessary to review the strategic objectives. Strategic guidance from OSD is provided through the Guidance for the Employment of the Force (GEF), which lists a number of end-states that each Command is responsible for achieving. However, other documents or inputs provide additional guidance which needs to be considered. The Joint Strategic Capability Plan (JSCP) is one such document. The Combatant Commander himself is another input as he has regional situational awareness on priorities, for example which countries are in the greatest need or the most able to contribute towards reaching the GEF end-states. The Strategic Objectives are a composite of these requirements. After identifying the strategic objectives a number of intermediate objectives are identified. Importantly, the COCOMs include Interagency participation early in the process. But, building upon Martin Lidy's analysis (see previous slide) there may well be other Interagency partners who have significant equities at this stage of the process who are not yet in the room. CENTCOM focused their intermediate objectives on targets about 2 or 3 years away whereas SOUTHCOM placed their intermediate objectives at the 3 to 5 year range. Once the Intermediate Objectives are identified indicators are established so that measurements towards the objective can be made to calibrate and adjust the plan. This is normally where handoff occurs from the Strategy division to the Assessment division, with the assessment division taking responsibility for identifying the indicators and assisting with prioritizing the intermediate objectives.

The blue part of the chart is a top-down process. Strategy into operational language and measures, a process which is fairly mature or maturing in all the Commands. That is not to say it is perfect but generally speaking decomposing strategy into smaller objectives and measures is a fairly well understood approach. It is also resource unconstrained, the objectives focus on what is required to meet the end-states. This is important because once we enter the yellow part of the chart above we are entering a resource constrained, essentially bottom-up process. The first constraint is the resources the assessment division has to determine the baseline. In theory examining the baseline and the objectives together should result in a logical determination of which activities will add the most value. But collecting the data for the baseline, even if that data is available, is a significant task. It is ofter necessary to move to the next stage of the process with an incomplete baseline analysis. The "identify activities" box is where that determination takes place. EUCOM and AFRICOM hold Theater Security Cooperation Working Groups (TSCWGs). These week-long conference also includes partner nation comments on what they would like, or be prepared to accept, along with the contribution of a range of other Interagency partners, allies and other subject matter experts. The problem here is that selecting activities that make the most progress towards objectives assumes that it is possible to understand cause and effect in complex systems. Another reality is that your activities may already largely be constrained by the need to continue doing what you started in previous years. TSC is a long-term game. Building relationships and trust requires continuous contact and radically changing the game plan, year to year, may lead to a deterioration in some relations over the longer-term. Finally, there is a physical limit to the available forces and money. Although new authorities can be created or widened or additional forces assigned this is a difficult process. The authorities that exist were mainly constructed for developing national defense rather than internal security and social well-being. Those with greater latitude and flexibility are typically limited to Iraq and Afghanistan. That is not to say there is a complete mis-match but the authorities available have limitations. The final stage of the planning process is to conduct the engagement and measure the value of the activity. But, again the assessment division is limited in its resources and with an understanding of cause and effect in complex systems any analysis may be limited to collecting input and output measures, not necessarily those all important MOE that describe your progress towards strategic objectives.



From the interviews with the COCOMs and for the reasons I outlined on the previous slide the following 4 chalenges were presented to the working group.

Q1. How should objectives and indicators be structured?

Q2. How does an assessment division with 4 to 10 people measure and maintain the baseline?

Q3. How can you determine the right activities to support partner nations while making the most progress towards desired end-states.

Q4. Is it possible to measure cause and effect in a complex system?

There is a 5th question, posed to the group by the Chairs. Q5. What is missing from this process?

Objectives/Measures Comparison

	PACOM	AFRICOM	SOUTHCOM	CENTCOM
GEF End-States	3 to 7 GEF end-states, depending upon the COCOM			
Strategic Objectives	**7 Strategic Objectives**	**6 Theater Strategic Objectives**	**6 Strategic Goals**	**6 Strategic Objectives**
Intermediate Objectives	**95 Objectives (duplication)**	**25 to 30 Effects**	**30 Intermediate Military Objectives**	**26 Effects**
Indicators or measures	**Measures of Effect**	**215 Indicators**	**130 – 150 Indicators**	**86 Indicators (of which 56 are healthy)**

Multiplied by the number of countries this requires tens of thousands of data items

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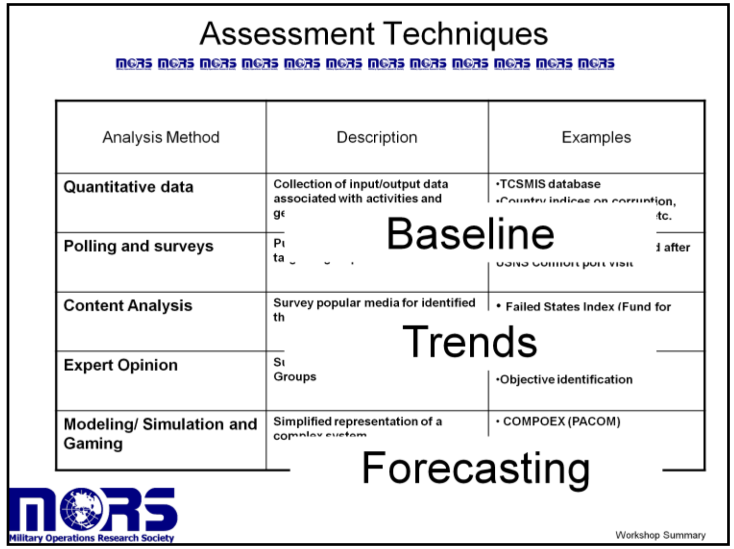
Workshop Summary

To orientate you before we discuss potential solutions or recommendations to those five questions the next three slides provide additional context collected from interviews with the COCOMs. The chart above provides a read-out of the number of strategic, intermediate objectives and indicators each command currently uses. The first observation is that regardless of the number of GEF end-states given to the COCOM the number of strategic objectives listed is typically six. Not each of these will be to do with TSC, for example of AFRICOM's six only two relate directly to TSC. Six seems to be the magic number. Although we cannot determine whether that is best-practice it is certainly common practice and this number of strategic objectives unconsciously drives the cascade of intermediate objectives. With one exception, the typical number of intermediate objectives is 25 to 30. A ratio effect of 1 to 5 between strategic and intermediate objective determination. And, although PACOM has 95 the reason for that is that the regional break-down is included at this level of the planning process, so we see the same objective repeated several times amongst the 95 but focused on a different region. The other commands produce regional plans where this duplication of common intermediate objectives takes place. Taking this into account PACOM is in the same region of about 25-30 different Intermediate objectives. At the indicator level though there are real differences. CENTCOM has just made its first pass through this process and has found data (or the resources to populate the indicators) for 56 indicators out of 86 identified. SOUTHCOM has a few more, at 130 to 150 and AFRICOM has 215. In AFRICOM's case the Assessment division acknowledges this is too many and like CENTCOM they will identify how many can be populated before making a decision on trimming the number of indicators they intend to monitor. The final point to note is that when you multiply this number of indicators by the number of countries in each region you generate a requirement to collect, assess and maintain thousands, if not tens of thousands of data items. A significant task for your average mid-sized Assessment Division!



Interviews with the COCOMs identified 5 techniques currently in use. The collection or creation of quantitative data mainly focused on inputs and outputs, most of which were recorded in the Theater Security Cooperation Management Information System (TSCMIS). The collection of quantitative data might also include basic country facts such as GDP or crime statistics. This information is used to inform the baseline, or as inputs to other decisions or a record of activities and outputs (but not necessarily outcomes) achieved. Polling, surveys and content analysis were also techniques mentioned by the COCOMs. Although content analysis was mentioned no specific examples in the COCOMs were identified. One example might be the Failed States Index, an open source measure of country instability. The methods used here are applicable to the COCOMs and potentially greater use of these techniques (or tailoring the outputs of other content analysis providers) may be valuable. Polling, survey and content analysis are useful techniques for identifying trends. Finally there was heavy use of expert opinion and some attempts (not always successful) to conduct modeling, simulation and gaming. Both expert opinion and modeling are used for forecasting. These are being used to identify how a variable may react to engagement activities or other factors. Baseline, Trends and Forecasting. None of these techniques is perfect (or even close to perfect if we consider the challenges with forecasting) but those techniques in use cover the recording of basic data for assessments, monitoring performance over past years and analysis (mainly Subject Matter Expertise) to identify which activities will move the COCOM closer to achieving its end-states.

The final slide to orientate you covers the 14 engagement tools or activities through which the COCOMs currently conduct TSC. These tools are the ones in use by SOUTHCOM and this generic list is given in the GEF.

Findings-- Suggestions

Q1.How should objectives and indicators be written, structured and prioritized?

- Ideally, a comprehensive set of metrics should be identified, where that is not possible indicators should be MOE rather than MOP.
- Beware, decomposition can be endless. "If you can't measure the objective then you have no objective!"
- Involvement of the analyst in structuring the specific language used in objectives is essential. It must mean something analytically. Embed analyst in the strategy division?
- SME qualitative indicators. Are they valid and consistent between different experts? May not be able to trend the data, there will be limits here. Prefer something that is quantitative but don't take judgment out of the process.
- Consider prioritizing indicators, on basis of which are most important, not by which are easiest to collect. (Embedded analyst can assist).
- Don't forget to re-evaluate what indicators you are using. Iraq experience of looking at MOP rather than MOE to assess progress. And reframe the problem at the objective level, reprioritize when necessary, goals should be achievable.

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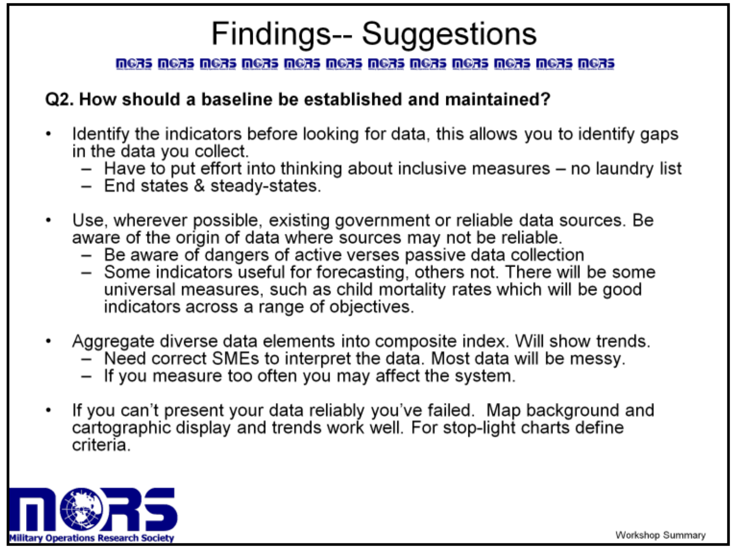
Workshop Summary

The working group considered the first question. How should objectives be written, structured and prioritized? There are some objectives which may neatly break down into a comprehensive and exclusive set of indicators. For example, WMD management breaks down into about six activities or measures, response time being an example of one of those. If you can measure all six of those indicators you can form a comprehensive assessment of a country's capability (and therefore your progress towards intermediate objectives). However, not all problems break down easily into comprehensive and exclusive sets of indicators. For example, a health service can be measured by the number of available clinics, available doctors and nurses, and patients treated. But, you might miss one key indicator, for example the availability of prescription medicines and without that critical indicator you could report good progress whereas in fact the opposite were true. This is what happened in Iraq, where the CPA was using MOP, measures of performance, measures that told you something about a sub-system but which did not tell you about progress towards strategic goals. So, where you cannot identify a comprehensive and exclusive set of MOP you need to turn to MOE, measures of effectiveness. In this example maybe child mortality rates coupled with one or two other MOE that may allow you to identify whether changes in mortality are down to the performance of the health system or some other variable, such as the outbreak of civil conflict or disease. Decomposition of indicators can be endless. Considerable design needs to go into which MOE and MOP tell you the most about your objectives while minimizing the number of data items you need to collect. Using someone with an Ops Research background can assist with structuring the language and the scope of objectives. The key point here is that if you can't measure progress towards an objective then you may as well not have it because how will you be able to tell whether anything you are doing is making a difference? Those in the strategy area would disagree with that, as it is still a requirement of the Command, even if it is difficult to measure. But assessment resources are limited and prioritizing what you are going to measure is vital to making the best use of the assessments staff. In AFRICOM, the strategy division is currently considering adding one Ops Research Analyst to their staff to perform exactly this function. Even if this is not possible the involvement of the assessment staff in structuring the objectives is important. Where this happens you are more likely to have a set of objectives that you can evaluate after conducting engagements, and that allows confidence when it comes to resource reprioritization.

The working group was unable to reach any firm conclusion on the use of qualitative indicators. Some objectives will not lend themselves well to numeric expression. In fact, SOUTHCOM found this was the case and expressed qualitatively the values of some of their indicators. The danger here lies in how the SMEs are used to judge the level achieved against an indicator. Judgment is important but there needs to be some scientific rigor in how qualitative values are calculated. If the SME changes there should not be significant difference in interpretation of what's good and what's bad. There needs to be consistency between experts. You can test this by asking 10 experts the same question individually. If they each choose the qualitative value (say out of a list of 4 available) then your value bands are well defined. If there is variability you will need to tighten the language. Finally, even if you successfully populate your indicators don't just revisit them next time through the cycle. Take time to identify whether the indicators were useful, whether the list can be changed (or slimed down) and whether it is the best set to evaluate your objectives. We all fall in the trap of thinking about measures when we design them initially but then not thinking about them again until someone asks the question "why do we collect that again? What do we use this data item for?". Keep thinking. We're paid to think every time we look at a set of indicators, not just the first time we see them.



In answering the question on how the baseline should be established and maintained the working group focused on the available analytical resources. On the previous slide we suggested keeping the indicators you collect data against at a manageable level. However, you should still have a view on what indicators you would like to collect given more resources, time and data availability. You may never collect against the full set, but at least you know where the risk lies in what you are collecting against and how full (or otherwise) the picture is that you are reporting on. The group said "no laundry list". The laundry list has its uses, it might be a stepping stone to a shorter list of measures. But think critically about the laundry list of measures before you start collecting the data. You may find one measure that tells you the same thing three other measures are telling you. The point here is don't just think of everything you could measure and leave it at that. Think about what you could measure and then continue to think about variations on that set of measures that gives you almost same insight but with a reduced collection requirement. Also, consider whether your objectives tell you anything about the target you are aiming at with you plan. For example, is it necessary to train a nation's police force to be as competent and effective as a western nation's police forces or is it sufficient to just stamp out corruption and inculcate an awareness and adherence to human rights as the end-point?

There is wealth of data out there available from other government institutions, international organizations and non-profits. Be aware of those who do not apply rigorous data collection and management techniques or those who may deliberately manipulate statistics to their advantage. Not all governments publish reliable data, for a variety of reasons ranging from inadequate measurement systems and skills to deliberate deceit. Some of the data the COCOM needs will not be familiar. How do you interpret economic data if you don't have an economist or health data if you have not worked in that sector. The key thing here is the data will be messy and it will be important to bring in an expert in different disciplines from time to time to help the assessment staff identify what the data means. Most of us are comfortable with military and security related data. But in other areas bring in an expert to help. We would be disappointed if a social scientist commented on military capability without using our expertise to interpret data. We should be conscious of the same issue when interpreting messy data sets dealing with governance, culture and social justice.

Most data collection is likely to be passive but active data collection, such as polling may change the system. If you keeping asking about whether a population agrees with violent extremist ideologies you may inadvertently be encouraging them to view VEO as legitimate alternatives to national governance. A scientific principle is that you cannot measure any system without changing it in someway.

Even with CENTOM's short list of 56 indicators there needs to be a roll-up for presentation purposes or for engaging senior decision makers. Aggregating disparate but related data into indexes, ranging from 1 to 10 may be OK. The index is only meaningful for identifying whether something is getting better or worse. And "better and worse" comes with a caveat. If you are counting hospitals and doctors and both go up, the index for health care goes up. But if you've missed the availability of medicines in the index then health care might actually be getting worse but you'll have missed it. This again emphasizes the importance of knowing what you have consciously decided not to measure and the importance of focusing on MOE to describe the system rather than MOP. If you build an index define either end of the scale. If you are measuring police officers per capita pick a country in the region that is the ideal standard and put that at the top, a 10 and then choose the worst country and call that 1. Score everyone else in between. Aggregating the number of police officers with the number of crimes or other indicators of civil disorder into a relative index will start to build a measure that tells you about how internal security or the rule-of-law is changing over time.

Finally, the indicators need to be presented in an effective way. Spreadsheets with hundreds of numbers won't do, but neither will a single slide roll up with a stop-light chart. Techniques that may be useful include the use of maps with a cartographic overlay showing problem areas, or areas where values have changed significantly since the last assessment. Trend data is useful, not as a predictor but to provide context to what has happened over time and although stop-light charts were frowned upon by the working group it was also acknowledged that this was still a useful tool, as long as the decision maker was aware of values used to determine transition from red to amber to green and to not just show them a chart that will be translated as "worry about this, but don't worry about that". Give the context to the color, so the decision maker can make the decision on whether they need to worry or not.

Findings-- Suggestions

Q3. How should developing partner nations' security forces be evaluated and supported?

- Focus on sustainability (institutional change, 15 years)
  - Trust and confidence
  - Build the professional military education school house before going out on the rifle range
  - Target/create/instill/develop the cadre of professionals
- Assessment methods for building security institutions
  - Defense Resource Management Study Project (DRMS) difficult to implement for under-developed institutions
  - Comprehensive baseline surveys must be conducted. E.g. U.S. Country Team or SOF site survey. Consider host nation's security forces – not just military.
  - Can we do that with other U.S. government institutions? Authorities and treaties are issues. Other allies where required.
- Assessment measures must be tailored to each country's unique security requirements, authorities and situation
  - Existing U.S. assessment measures may be considered for establishing baseline or appropriate framework
  - A negotiation on suitable role/end-state for each partner nation's forces
  - Leverage capacity of other allies to help build regional capacity
  - You don't necessarily need a U.S. level of performance to be successful

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Workshop Summary

One of the key objectives of TSC is to help nations provide for their own security. In NATO the challenges faced by EUCOM revolved around modernizing forces, changing doctrine, instilling professional officer and NCO cadres and building up interoperability. Although not every former Eastern European country had military forces that made NATO integration easy they did at least have rudimentary military institutions that could be rebuilt and reshaped. The challenge in some parts of the world, especially Africa is very different. There may be very little there to build on. How do you begin to address issues such as ethos, training and professionalism when simple infrastructure systems, such as payroll, don't even exist? The focus here needs to be on building sustainable military institutions. To find the "tipping point" where a military (or other security force) can sustain itself and hopefully improve itself, even in the absence of U.S. training and support. The first observation is that time and effort is expended initially in building trust and relationships. So, don't expect to see quick improvements in capability. Measure instead willingness to share information, ask for help and to allow access. This might be the first 2 or 3 years of engaging a new partner. The next 7 might be just building up the basic institutions. Most Combatant Commanders would expect to see a measurable increase in capability over their tenure. But, the reality is the benefit might not be noticeable, in capability terms, for 10 years. Rushing to the firing range to train a battalion to shoot straight will not have a lasting effect unless the institutions are there for the security forces to take ownership of their own capability maintenance. The MOE need to express this long-term view. Measuring short-term increases in capability will lead engagement teams to focus on the unsustainable capability growth at the expense of creating self-sufficiency. With it will come the burden of having to repeat the same basic training for many more years beyond the notional 10 or so required to put that army or police force into a position to learn, build and sustain itself.

Assessment methods currently in use to assess an entire MOD include the Defense Resource Management Study Project (DRMS) which deploys for two or more years a team of experienced DoD professionals, typically about 4, to work with the country. But this can only be done for a few countries at a time and although it is not impossible to work with countries who have no MoD infrastructure it certainly makes things harder. "DRMS lite" need only be the assessment phase and that can be gathered in several ways. Ideally the country team but even small SOF detachments can make an evaluation of key infrastructure attributes in relatively short order. Baselining the starting position for partner nations is important before engaging the nation in a range of capability development activities. In some countries the first engagement activity might be hiring a consultant from the private sector to help establish with the basics, like building a payroll that prevents corruption or basic literacy programs for soldiers well before taking them out on the firing range.

Beyond institutions we need to baseline capability. The assessment should be tailored to each country's unique security requirements and other constraints. For example, if the military in that country are used to Russian equipment and doctrine then building upon that is going to be more valuable than re-educating them in NATO doctrine. Of course, there is a judgment here. Russian doctrine and equipment may be adequate for national defense but may not be suited to irregular warfare. In this case it would need to be replaced. If the old doctrine was likely to do more harm than good then we need to make that point. Where it is a good start, lets use that as our standard for measurement. Also, certainly in Africa there are ties that still go back to the Colonial era. The French particularly still have regional influence and undertake TSC in some African nations. Where possible leveraging allied contributions to developing regional security capacity should be part of the plan. Where progress is inadequate the engagement may be through a partner rather than directly with the country where capacity is being built-up. Authorities do not necessarily lend themselves well to this approach but there are other influence mechanisms at the Combatant Commander's disposal to encourage allies to develop capabilities that contribute to collective regional security.

Findings-- Suggestions

Q4. How would you begin to address analyzing cause and effect?

- Can't easily get to cause and effect. Is measuring effect enough for the COCOMs to make good decisions?
  - Without cause and effect how do we build models?
  - Need to be realistic about the level of perfection that can be achieved, "better than a coin toss" may be an appropriate standard
- Make more structured use of SMEs
  - Use techniques to add scientific rigor to SME contributions: pair-wise comparison, gaming, structured interviews, role-playing, value focused thinking,
  - SME selection remains important, encourage diversity of opinion - groupware
  - Try and think through to potential second & third order effects
- Other techniques that may be valuable
  - Historical analysis, electronic markets, risk-consequence management
  - Near real time data required for insights on causal relationships.
  - Modeling needs to be issue specific, at least initially. Need to be able to look under the hood (no black boxes, we need insights not just answers)
- Need to understand the lag between action and response in the system
  - System dynamics
  - What is the ideal refresh rate for indicators and reframing objectives? It may be different from one indicator or objective to the next.

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Workshop Summary

Analyzing cause and effect is the "Holy Grail" in TSC but remains notoriously hard to achieve. We cannot model, either in computer models or conceptually, how to achieve effects if we do not have a basic understanding of how we can cause those effects to occur. But, maybe measuring the effect is good enough. Techniques such as historical analysis will tell you which factors are significant in achieving an effect but why they are the dominant factors is not part of the analysis. Historical analysis will tell you the degradation from hitting the target on the firing range and hitting the target on the battlefield for a British rifleman is 100:1, but it won't tell you why (this is actually a good ratio, believe it or not). But if you conduct a similar analysis for a partner nation you will be able to identify their capability in battlefield conditions by measuring performance in a controlled environment, such as the firing range. You don't know why the degradation will be 100:1 or a 1000:1 but at least you know the effect of the engagement activity on their capability.

The most important observation was that "we are not going to be able to model our way out of this one anytime soon" and this leaves SMEs as the best chance at understanding cause and effect. If the use of the SME improves your decision making to at least be better than a coin-toss then at least that adds value. Perfection and optimization in making every dollar count is not an achievable goal. Getting more things right than wrong though is achievable. The COCOMs mainly used their SMEs in work-shop sessions. But there are other ways to engage SMEs where rather than just relying on their experience and anecdotal guidance you can identify the consistency in their advice. Structured techniques exist for capturing SME input. Structured interviews, gaming and pair-wise comparisons will get more out of the SME. But, a word of caution. You also need to establish the credentials of the SME. It has to be the right SME. For Interagency, allied and partner nation contributions we don't often look beyond their affiliation to the parent organization or country. Danielle Miller, from OSD/PA&E Joint Data Support will publish a paper on this topic in the near-future. Selecting the right SME is as important as how the SME is used.

Finally, some effects won't materialize for years whereas others may be instantaneous. So some indicators we will need to re-evaluate monthly whereas others we may not need to consider even yearly. It is important to understand the refresh rate for indicators. It should be part of the indicator description. Economies, culture and demographic indicators are generational. If you reassess them too often you may decide to begin or discontinue activities before the effect of that activity works its way into your measurements. System dynamics can help here. Don't micro-manage your activities and engagements. In some cases changing the activities and engagements even annually may in actual fact be micro-managing the system to the detriment of achieving the COCOM's long-term objectives.

The final question was “what is missing from this process?” . Well, in our theoretical Theatre Campaign Planning cycle we take measurements in two places. To establish the baseline and to measure the value (or otherwise) of our engagement activities. Normally, the assessment division will do both so chances are there is a link and some commonality in the measurements taken. But, for the record, consciously returning to the indicators and baseline as the starting point for assessing activities is a good place to start. No one activity will move a baseline indicator. But if, for example a link can be established between the measurement of activities and an indicator it may at least gives you a cue as to how you want to express your data. If your indicator requires you to count the number of clinics there is little value in expressing the output of an activity as the number of square feet of new hospitals constructed. Make them compatible (and don’t be afraid to change the indicator rather than the measures used for the activity if that makes more sense).

Another observation the working group offered was that once the objectives are identified the engagement team immediately begin constraining what activities they plan to undertake to fit available resources, authorities and partner nation permissions. A common process in DoD is to first of all express the unconstrained demand. So, if the objective is to establish a fully professional military with COIN capabilities within 5 years what would you need to do, given a free hand and unconstrained resources, to achieve that? The value of this is that it allows you to identify the risk (or shortfall against your target) once resource constraints are applied. The unconstrained demand is evidence for more resources and new authorities. In addition, it allows you to prioritize. If your resource constrained engagements are only 1% of what is required to achieve the objective then you may conclude doing nothing and allocating those resources to another task, where that effort will make a bigger difference against another objective, is more valuable. In saying this the group did not suggest stopping all engagements where was little chance of progress. All engagements allow access, trust, confidence building and relationship development. All of which would be essential if regional priorities changed to focus on that partner as the lynch-pin to regional security (consider Pakistan’s importance to U.S. interests the day before and then the day after 9/11). But if you can maintain trust and confidence by expending less resources and consciously decide that is the holding pattern for that country then that will allow you to allocate your resources more economically.

This is not an analytical observation as such but a policy one. NATO enlargement presented a significant carrot to partner nations to improve their security. NATO membership guaranteed security. Guaranteed security attracts external investment which accelerates progress towards EU membership and the benefits of joining. We are not suggesting that we form regional alliances with the obligations of NATO in other parts of the world but we are suggesting identifying the carrots (not necessarily DoD ones) that can be linked to progress in improving security. If they already exist do we currently communicate that as a benefit of engagement or do we leave the partner nation to draw their own conclusions? Should this be part of the objective prioritization process? Countries with the opportunity to gain benefits for improving security capacity are more likely to make rapid progress towards improvements.

Although program review is the formal process for resourcing COCOM requests for additional resources there are advantages, within PA&E, in understanding the specific issues and shortfalls before program review begins. PA&E irregular warfare division already has links to each of the COCOMs, but not necessarily to the engagement and assessment divisions. Visibility of these divisions’ challenges earlier in the year will allow more thinking time to understand the relative importance of a request and therefore more time to evaluate it. Similarly, there are parts of OSD/Policy that would benefit from regular liaison. One of AFRICOM’s challenges is that their authorities are outdated for the modern and dynamic security environment found in their AOR. Although amending or creating new authorities is never going to be a fast process understanding the requirement 6 months before frustration becomes a problem can only be beneficial to the process of seeking change.

There are 14 engagement tools. Is there a 15th out there that we currently don’t consider but could do so if the issue was raised? If we took the contraint off the engagement tools we currently use could we think of another way of developing partner nations. That won’t give us permission to do it, but that’s another example of a policy issue. Push it to OSD/Policy as an option and start the process of debating whether additional engagement tools can be legally added to the toolbox.

Finally, the assessment division is always going to be stretched thin. The current process identifies a reprioritization of indicators and objectives every year. Maybe a second look at priorities should be undertaken once the baseline is completed (pr partially completed). If you can’t measure progress towards one high priority maybe that should trigger a reassessment as to whether it is worth concentrating in the short-term on a smaller set of equally high priority objectives that can be measured. The feedback loop from resource priority and baseline assessment is unclear. Resource priorities are established in line with strategic priorities but there is also a pragmatic element to this. Demonstrating success against one objective is more likely to result in making the case for increasing or maintaining funding from the Services in subsequent years. Evidence of effect is important, particularly if budgets are frozen or reduced in response to the global economic crisis.

Key Takeaways

- Many of the effects are potentially unquantifiable (and will remain so). The challenge remains informing decision makers given this constraint.
- Interagency analytical resources can assist and are essential
  - National Institute of Justice
  - Office of Military Affairs at USAID
- Don't just accept objectives or rush to create them. Need to focus on shaping objectives as well as measuring progress. Reframe.
- IW analysis will affect traditional analytical paradigms
  - Messy data
  - Cause & Effect
  - No easy "one-size-fits-all" toolset
- Effective Security Cooperation exceeds the boundaries of DoD's authorities and capabilities
  - An obvious statement but it applies to the analytic community too

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Workshop Summary

This is a statement of the obvious but this is difficult and is going to remain so for a long time. We found no silver bullets. Despite this decision makers will still need to make decisions so improving the odds of making a good decision, even if it is only a small amount of progress, is worth pursuing. We kept saying "we need interagency analysts to help here". They do have them, there are two examples above where you will find individuals who have Ops Research or statistical skills in interpreting data and working on part of the COCOM's problems..

We kept saying "reframe, reframe". Keep objectives and indicators living. The cycle suggests revisiting these only once a year. I wouldn't recommend an endless cycle of re-writing objectives and indicators but I would suggest looking quarterly about whether we were having success in evaluating individual objectives and if not flag the objective-indicators for rework next time through the cycle.

The data is messy. We are uncomfortable with that so we keep trying to improve the data reliability so that it fits traditional Ops Research methods. Forget it. We can't get there from here. So, we are going to have forget about building large super models that explain everything. Lets tackle this one small tactical problem at a time. That's what we did in WWII, where Ops research began. The first analyses involved where to place radar stations and at the time there was no model about how radar contributes to air defense. The Ops researchers had to make their own determinations on important factors, such as how easy it was to defend the site, warming time it provided, redundancy between stations and atmospheric conditions. We did the same in the Battle of the Atlantic. We put analysts in the bombers with clip boards to identify whether changing one variable (e.g. the depth at which a depth charge detonates) improved kill rate. Years, decades later we knew enough about maritime warfare to build campaign models, but we didn't do that during WWII. We didn't know enough yet.

Finally, another statement of the obvious but these challenges extend beyond DoD's traditional boundaries. That also applies to the Ops Research Community. If we could repeat this conference in a year's time with Interagency analysts in the audience that would be another significant step forward for the ORSA community.

Thank you.