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## Operational Analysis at the Frontline – a Generic Approach to Measuring Progress?

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### **Abstract**

North Atlantic Treaty Organisation (NATO) forces have been deployed in the Balkans since 1995 and are currently supporting the International Community (IC) in keeping peace in Bosnia-Herzegovina (BiH) and Kosovo. It is important that NATO commanders can accurately assess progress made towards recovery within their areas of responsibility, so that force-restructuring issues may be addressed with confidence. The Stabilization Force (SFOR), deployed in BiH, has a well-established methodology developed since 1997. When the Kosovo Force (KFOR) was deployed in June 1999, it was recognised that a similar capability would be required to measure the effectiveness of the mission.

An initial measurement of progress was performed in April 2000 at KFOR and it is expected that the structure of the resulting document will form the basis for the first formal assessment. Experiences from SFOR were drawn upon, but it was acknowledged that, although some of the issues are similar, the situation in Kosovo differs to that of BiH. Operational Analysis support was key to measuring progress in both situations, but necessarily played different roles in each case. This paper discusses the extent to which a generic methodology may be developed for application at the frontline to assist the military with measuring progress towards recovery.

### **Introduction**

When military forces (e.g. NATO) intervene in a crisis and the subsequent reconstruction, it is essential that the commanders are able to assess the civil and military implications of the mission and to assess the level of recovery achieved. It is therefore necessary to monitor progress within the area of responsibility during a peacekeeping mission in order to aid decision-making, enabling the commanders to continually assess the tasks, mission and composition of troops deployed.

Operational analysts have been involved in measuring progress for NATO peacekeeping missions in the Balkans since IFOR deployed to Bosnia-Herzegovina (BiH) in December 1995. The methodology for this assessment has been dynamic, developing over time to take into account the changes within BiH and also the lessons learned from previous assessments. Details of how the methodology developed with time can be found at references 1 through 4.

NATO forces are currently deployed on peacekeeping missions in BiH and Kosovo and in each of these areas the commanders need to be able to quantify the progress towards recovery. When deploying to Kosovo, analysts had the experiences of BiH to draw upon, but there was no standard methodology, meaning that the first task was to develop an

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approach. In order that the start up phase in future missions could be more efficient, it is worth considering the extent to which a generic approach may be developed.

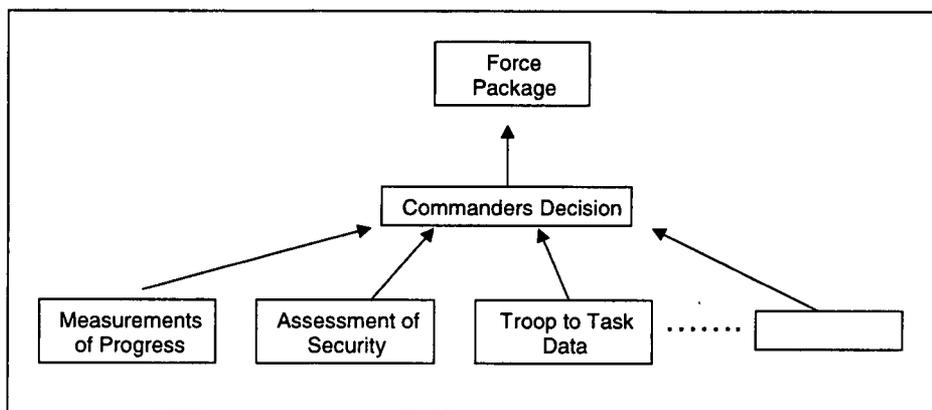
This paper discusses the importance of measuring progress in peacekeeping missions and summarises the assessment processes at SFOR and KFOR. It then introduces the benefits of a generic approach and the extent to which it may be possible to implement, concluding that a generic framework applied iteratively would be appropriate and that documentation is key to future measurement processes. This paper draws on experience from NATO operations, but the techniques discussed may be applicable to any military operation.

### ***Measuring Progress towards Recovery***

#### **Why Measure Progress?**

Every mission has a desired end-state, and the extent to which these civil and military goals are being achieved needs to be accurately assessed. The commander is only fully equipped to identify the tasks to be performed and the types and level of force required, if the progress over time can be measured. Assessing progress may also give an indication for when the aims of the mission will be fulfilled and subsequently of how the mission may need to change in the future.

Measuring progress aids the commanders of a peacekeeping mission with decision making. This is highlighted in Figure 1, which shows the inputs available to the commander for assessing the force package required for the mission. An assessment of the progress enables a quantifiable decision to be made concerning force restructuring or reduction taking into account any modifications to the mission tasks.



*Figure 1: Input into the Commanders Decision-Making Process*

The nature of recent conflicts (BiH, Kosovo, and East Timor) indicates that military operations are increasingly likely to be of a peacekeeping nature. In order to ensure the efficient application of measurement processes, it may therefore be beneficial to have a generic approach to assessing progress.



## Measuring Progress in Bosnia Herzegovina

The SFOR measurements of progress have developed over time from the initial IFOR assessment, which was very low-level looking at basic human needs such as food and housing, to the current methodology known as the Six-Month Review (SMR). The SMR is a high level assessment encompassing the security situation and civil implementation aspects of the General Framework Agreement for Peace (GFAP)<sup>2</sup>. The SMR methodology and preceding approaches are described in detail at references 3 and 4. In order to assess when the measurement process required development, the operational analysts referred to Maslow's Hierarchy of Needs Theory<sup>3</sup> to indicate the level that was most appropriate to measure.

A good example of the level of assessment changing over time is the issue of public security. The initial IFOR assessment (Normality Indicators) only touched on security by examining traffic levels, giving an indication of general feeling towards safety. A year later, when SFOR deployed, a study was set up called "Measures of Effectiveness" and one of the key issues was now recognised as security (the second level of Maslow's Hierarchy) and assessed the destruction and confiscation of weapons and the clearance of mines. These were issues directly affecting the people of BiH. The SFOR SMR focuses on assessing progress towards self-sustainment and has an entire criterion (high-level indicator) devoted to "Public Security and Law Enforcement", which covers the police, judiciary and prison service.

The assessment process has been modified over time to take into account the continuously changing situation within BiH and although the approach is now fairly stable, it still remains dynamic to ensure that the measurements portray the situation as accurately as possible. It is important that as modifications are made to the assessment (e.g. the addition of new parameters or the removal of existing ones) the integrity of the trend analysis is maintained. The importance of a dynamic approach is discussed in more detail at reference 6.

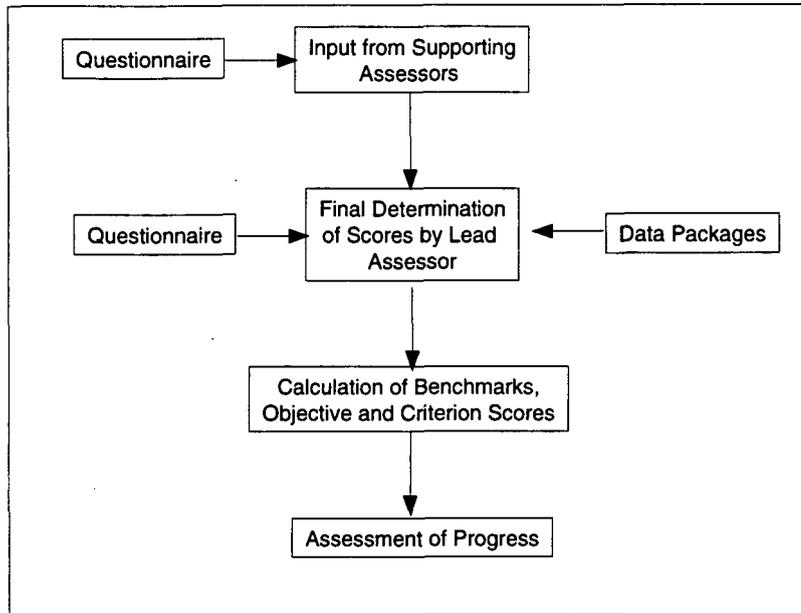
The SMR is a very structured process, guided by a questionnaire architecture, as shown at Figure 2. The North Atlantic Council (NAC) has identified ten criteria and these are broken down into objectives, benchmarks and finally questions, to enable a comprehensive assessment. Each question is scored and commented on by approximately 9 supporting assessors and this input, along with data packages and military judgement, are used by the subject matter experts to give the final assessment for each question. This assessment enables the analyst to calculate the benchmark, objective and criterion scores and this leads to the final assessment of progress.

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<sup>2</sup> The representatives of BiH, Croatia and the Former Republic of Yugoslavia signed the GFAP agreement on 14 December 1995. The GFAP contained eleven Annexes that laid out the specific aspects of the peace.

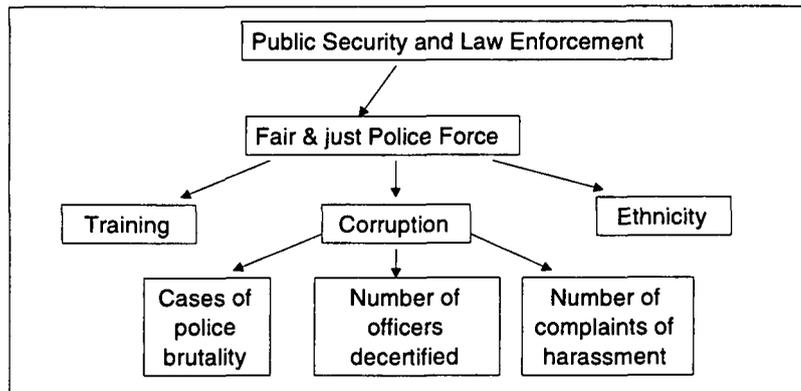
<sup>3</sup> Maslow's "Hierarchy of Needs" Theory categorises human needs in the following (reverse) order: self-actualisation; esteem; love, affection and belonging; safety; and physiological. He suggests that only when the lower needs are fulfilled will people strive to move up the hierarchy and this will only occur if society does not place obstacles in the way. It was recognised in BiH, that obstacles were placed in the way of normal progression, removing the opportunity for a smooth transition through the phases. See Reference 5 for further details.





*Figure 2: Methodology of SFOR Six-Month Review*

The relationship between criteria, objectives, benchmarks and questions is highlighted at Figure 3, with an example of how a strand of the “Public Security and Law Enforcement” tree may be structured. This example indicates how a high-level indicator can be broken down into manageable and quantifiable areas to assess.



*Figure 3: An Example Structure of the SFOR SMR Questionnaire Architecture*

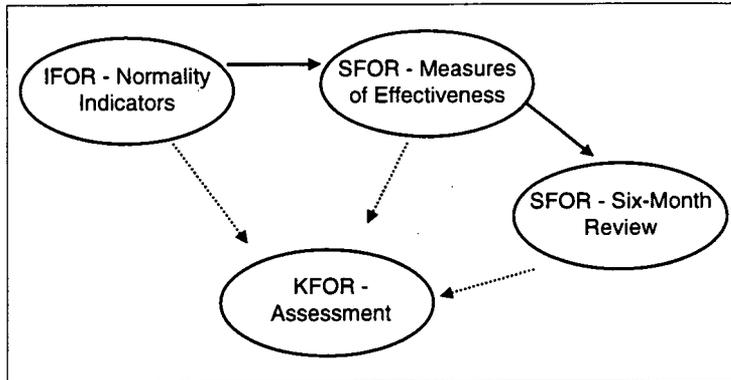
### Measuring Progress in Kosovo

The first assessment of progress within Kosovo was completed in April 2000, and although this was not a formal analysis, it was prepared as if it would be the first KFOR SMR and is likely to be used as the basis for the first official assessment.

KFOR personnel have the experiences of measuring progress in BiH to draw upon in order to assist with the process in Kosovo. The first KFOR assessment of progress towards recovery was completed within the first year of the peacekeeping mission, so was therefore performed at a fairly low level, whilst attempting to foresee how the



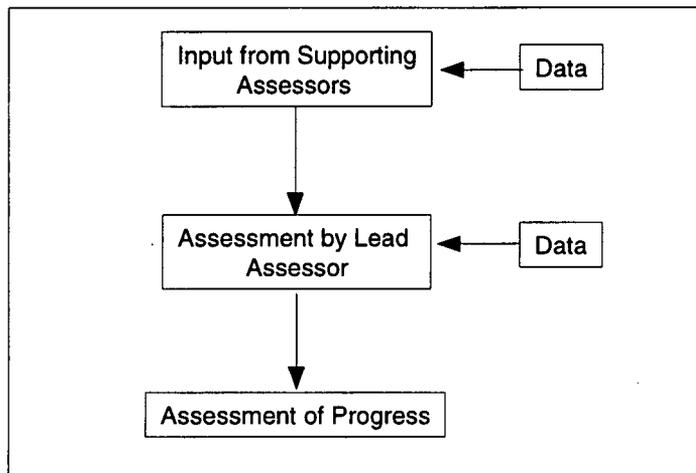
analysis may need to develop for the next reviews. Figure 4 shows the experiences that influenced the initial development of the KFOR assessment.



*Figure 4: The Inputs into the Development of the KFOR Assessment*

The approach taken at KFOR was an iterative process between the military personnel and analysts. Data was analysed and provided to the appropriate personnel for inclusion in the assessment and then further analysis provided, as required, to substantiate (or question) these reports. The results from the first KFOR commissioned Gallup opinion poll<sup>4</sup> were incorporated into this assessment, enabling the perceptions and opinions of the people of Kosovo to be included in the measurement of progress. This was particularly useful for areas such as public security, where for example the extent to which people feel safe and secure could be incorporated alongside crime statistics.

The methodology applied in Kosovo is described at Figure 5 and the similarities with the SFOR process can be identified.



*Figure 5: Methodology of KFOR Progress Assessment*

<sup>4</sup> The first KFOR commissioned opinion poll surveyed 1000 Kosovar Albanians (the Kosovar Serbs were not included for security reasons) on many issues concerning Kosovo – including, media habits, political opinions, the future of Kosovo, opinions of KFOR and the International Community, education and health care facilities. This poll also provided the analysts with a useful set of demographics for the people of Kosovo.



The SFOR and KFOR approaches are essentially very similar, with the main difference being the parameters that measure the trends in progress over time. At SFOR the data is used to enable military officers to give each indicator a score, whereas at KFOR the current method is to actually examine the trends in the raw data.

### **A Generic Approach to Measuring Progress**

The KFOR personnel have the advantage over their predecessors at IFOR and SFOR as they can draw on personal and limited written experiences of measuring progress when developing a way ahead for the assessment within Kosovo. Written material would have been particularly useful for those who had no previous involvement with measuring progress, but was not readily available at the beginning of the mission.

A great deal of time was spent by the military and civilian personnel trying to draw on past experiences to ensure that the KFOR assessment was as comprehensive and relevant as possible. If a generic approach had been in place this would have saved time that could have been better spent actually assessing the situation.

It was also necessary to spend a great deal of time briefing those involved about the importance of measuring progress. If a generic approach had been in place this would have been accepted more quickly. It may also have assisted with obtaining support at brigade level, which is essential, but extremely difficult to obtain. The introduction of a generic approach, if appropriate, would greatly assist with the measurement process during future peacekeeping missions.

### ***Defining a Generic Approach to Measuring Progress***

Progress is being assessed within BiH and Kosovo and, although two different methods are being applied, there are also similarities in the approaches as discussed in the section above. The main similarity is that both assessments identify high-level indicators of progress (e.g. security) and break these down into manageable areas of analysis dependent on the availability of data (e.g. murder rates). This indicates that it may be possible for a methodology to be developed that is, to a certain extent, generic.

There are two main aspects that need to be considered when measuring progress. Firstly, the methodology covers “how” progress is measured and then the progress indicators are “what” should be measured in order to assess the level of recovery achieved. Both of these are equally important to ensure that the assessment of progress is as comprehensive as possible.

### **Methodology**

The methodology may need to be dynamic, changing alongside the environment, to ensure relevance to the current situation. It is essential that any methodology developed is flexible enough to encompass any significant changes without losing the integrity of any trend analysis.

In order to measure progress it is necessary to collect data for analysis. The availability of data will dictate what can realistically be included in the assessment, although military judgement may be able to fill some of the gaps. In theory this should then be combined



with troop to task data, so that progress may be measured in view of the number of troops involved in tasks affecting the progress indicators (e.g. the number of patrols may be assessed alongside the level of crime).

The operational analyst has the task of interpreting this data and finding any correlation between troops and progress. At this stage it is also important to analyse the trends over time. The military officers are then able to put the assessment into a military context to lead to the final measurement of progress, which may be referred to by the commanders when deciding whether to restructure the troops and mission.

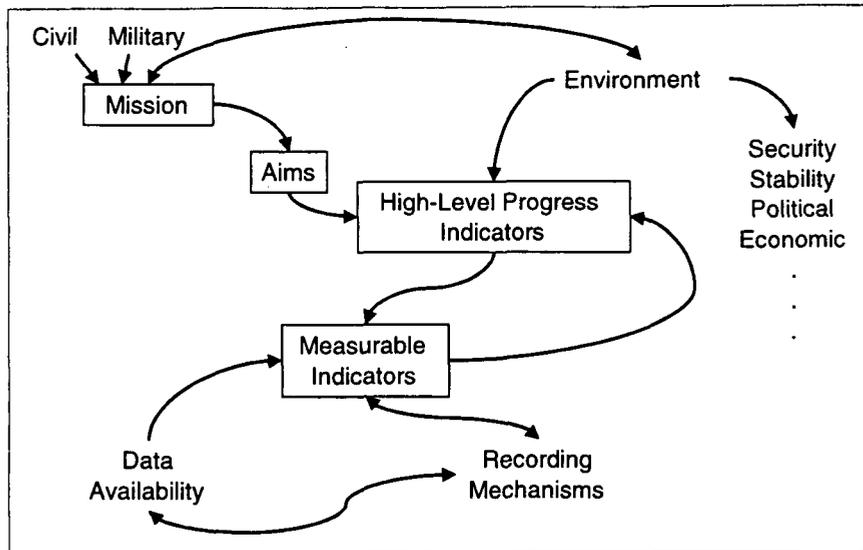
The data available across missions and throughout the lifecycle of an operation will influence the precise methodology that can be applied, determining the level of analysis that is appropriate and also the degree of subjective input that will be required. For some issues, there may never be a good set of raw data available, so it may be necessary to obtain a sample for a subject matter expert to assess. The availability of troop to task data, to combine with the raw progress data, will be key to defining the methodology. It is essential when developing an approach that it remains realistic and does not assume ideal data availability and working conditions.

Due to uncertain data availability, the methodology can never be a totally automated procedure, although a generic set of guidelines could be developed for military personnel and operational analysts to follow. A sensible framework would be the following, with iteration between stages 3 and 4, to ensure that the progress measurements are as comprehensive as possible:

1. Identify the aims of the mission;
2. Identify the high-level progress indicators;
3. Break indicators down into quantifiable measurements;
4. Assess the data availability and set up necessary recording mechanisms;
5. Assess the data over time.

This general framework should be an iterative process, which is reviewed over time taking into account the influencing factors. Figure 6 shows that changes in the environment may impact on the aims of the mission and that the mission should be impacting on the environment within the area of responsibility. The determination of progress indicators may be influenced, not only by the mission aims, but also by the data availability and the recording mechanisms in place. The identification of data requirements should lead to an increase in recording capabilities in order that future reviews can encompass a more comprehensive set of progress indicators. Figure 6 highlights the factors that require identification (mission definition, mission aims, high-level indicators) to lead to the determination of measurable indicators. These should then be assessed over time using analytical methods and military judgement.





*Figure 6: Generic Framework for Measuring Progress*

The general framework identified above could be developed over time as more experience in the area of measuring progress is gained. It is extremely beneficial for the desired end-states of each high-level progress indicator to be identified, so that the level of progress can be assessed in a relevant context. Pre-war data, where possible, should be used to determine the level of recovery achieved. Comparisons may also be made with similar countries, although care should be taken to ensure that the goals are realistic and that data is not compared with inappropriate standards.

Consideration should also be given to undertaking regional assessments, dividing the country into sections, so that those areas requiring most attention are identified. This may not be appropriate when troops are first deployed on a peacekeeping mission, but as stability returns could prove an essential part of the assessment process.

### Progress Indicators

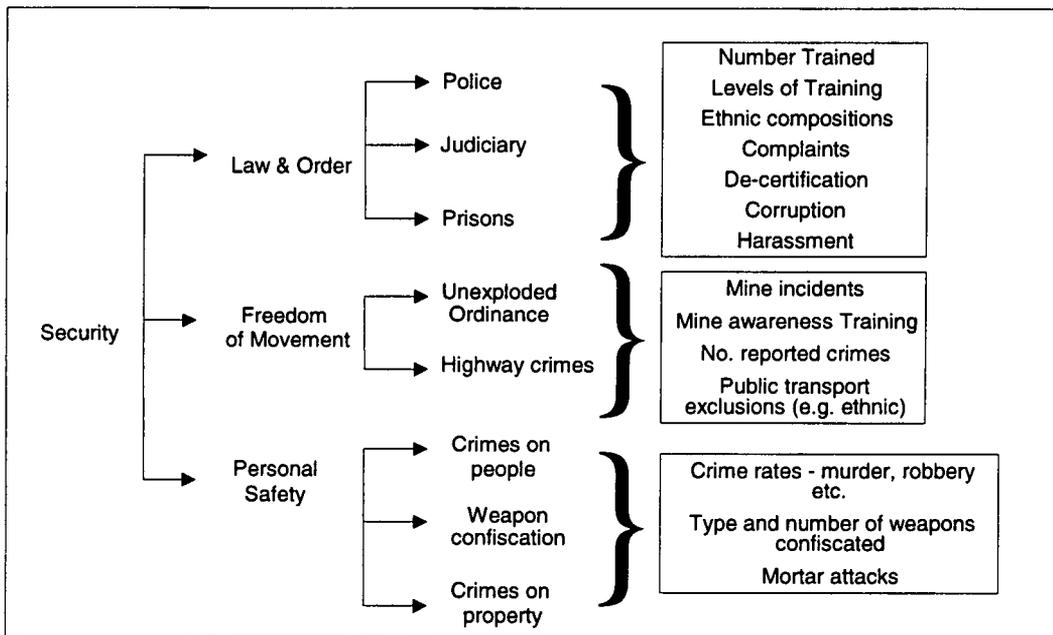
The progress indicators define what should be measured in order to assess the level of recovery achieved. Identification of the mission aims will enable the high-level progress indicators to be derived and broken down into quantifiable measurements. Data may not be immediately accessible for every indicator, but it is important that it still be included in the assessment, as at a later date the information may become available. At this stage the possibility of setting up appropriate recording mechanisms should be explored. It may also be necessary for military judgement to fill some of the gaps, although this should always be based on some quantifiable measurement.



In a peacekeeping mission there will always be some fundamental high-level indicators that need to be assessed. Some of these include:

- Stability
- Quality of life
- Democratisation
- Displaced Person and Refugee (DPRE) returns
- Security
- Freedom of Movement
- Reconstruction

This is not an exhaustive list, but a good starting point for areas that require analysis. Each of these high-level indicators will be described in detail by the identification of lower level issues, which will take into account the nature and stage of the mission. The indicators will each be broken down until they may be quantifiably measured. Figure 7 gives an indication of how these high-level indicators may be broken down into quantifiable measurements.



*Figure 7: Breaking Down the High-Level Progress Indicators*

Each of the lower level indicators would need to be explained in further detail, so that the purpose of measurement is clear. For example, weapon confiscation would need to be assessed in view of any policies in place concerning this issue. It would be important to consider issues, such as the demographics of those carrying weapons and also any political or military organisations they belong to. This could prove invaluable if assessing the extent to which warring factions have disarmed.



The measurement process should remain flexible and progressive to encapsulate the relevant issues and this relies, to a large extent, on the analyst being up to date with the current situation and being aware of when the analysis needs to be at a higher level. Even a methodology as structured as the SFOR SMR requires every indicator, at every level, to be assessed after every review. It may be beneficial to include additional high-level indicators, which will not be comparable with past reviews, but will be useful to future ones. Indicators may require rewording or may be removed if it is found to be irrelevant or unquantifiable. Care must be taken however not to remove an indicator just because it has reached its end state, as the removal of a score will lead to the appearance of the area degenerating in future reviews. It is essential that theories such as Maslow's Hierarchy of Needs<sup>5</sup> be considered when assessing what is important to measure and how the process may develop with time.

The analytical and military personnel need to be aware of the issues that are important to the recovery of the area being assessed. This is particularly important during the initial phases of the review process to ensure the indicators identified are comprehensive and describe the situation being monitored. It is necessary for all personnel to remain up to date with issues by reading the daily situation reports and, where possible, attending regular commander's briefings. This will lead to exposure of the available data and also the commander's views of important issues, thus ensuring that the appropriate indicators are incorporated into the assessment of progress.

### ***Discussion***

A generic process for measuring progress towards recovery could lead to efficiency savings, as personnel would spend less time deciding how to approach the problem and more time assessing the situation. This would be particularly beneficial for personnel unfamiliar with measuring progress and could lead to a more comprehensive analysis, as more time could be devoted to finding and assessing data.

Measuring progress is however a complex process that requires human interaction to ensure that the assessment is comprehensive and suitable for the situation. For example, it is essential to measure the economic progress of a country, but to try to assess the GDP (Gross Domestic Product) immediately after conflict would be futile. Human interaction is required to judge when new factors need to be introduced and when others no longer need to be assessed. The methodology for measuring progress could never therefore be completely automated, as this would lead to the assessment process losing its dynamic nature. A generic approach based on an iterative framework could however be developed and would be beneficial to the review process.

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<sup>5</sup> The needs and motivations of people have been studied intensively over the last decades, and although Maslow's theory is perhaps best known and also most applicable to the situation in BiH, others may be worth considering when undertaking future measurements of progress. These include McGregor's "Theory X and Theory Y", Frederick Herzberg's "Motivator-Hygiene Factors Theory" and David McClelland's "Three Needs Theory" (Reference 7).



A generic approach to measuring progress would enable a more general and wide lessons learned process, where lessons could be observed both within a mission and across the missions. This would make the review process more comprehensive and enable the lessons to be consolidated for the most benefit to the assessment process.

Developing an approach based around experiences does not necessarily mean that the method would be appropriate in the future. It would be essential for the approach to be assessed for its suitability to the current mission.

A standard assessment approach could lead to standard outputs, making the results clearer to read and easier to interpret, as they would be in a recognisable format. It is possible however that the measurements could lose individuality and the results forced to fit a format that is not really suitable for the analysis.

One of the key aspects to measuring progress is the collection of data. If there could be a generic set of parameters to assess progress, then it would be clear from the beginning of the mission what data would need to be collected and the format in which it should be recorded. This would be more efficient for the operational analyst, leaving more time to analyse the data, as less effort would be required for assessing how data should be recorded.

## **Conclusion**

A completely automated methodology would not be feasible, or desirable, due to the lack of human interaction encouraged by such an approach. This paper has identified an iterative approach based on a framework that would benefit the measurement process.

It is essential that any process for measuring progress remains dynamic, developing alongside the situation. It is therefore necessary for the operational analysts to be aware of the current situation and also to have knowledge of the background to measuring progress. This includes an understanding of motivation theories, such as Maslow's Hierarchy of Needs Theory, so that the analyst is aware of the level at which the assessment should be performed. Applying such a theory gives an insight into how any future measurements may develop and is also a useful aid to substantiating the level of analysis currently being applied.

The methodology must remain realistic, being developed by the analysts at the frontline with the co-operation of the military personnel, as these are the people exposed to the situation. It is essential that the available data be taken into account and steps taken to overcome some of the lack of data, by setting up recording mechanisms.

It is extremely important that experiences of measuring progress are documented and freely available to those undertaking similar studies in the future. This will enable some of the time issues to be overcome, allowing military personnel and analysts to gain a significant head start when commencing a progress measurement study.



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