TRANSFORMATION OF THE ROMANIAN ARMY

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fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE
Strategy

by

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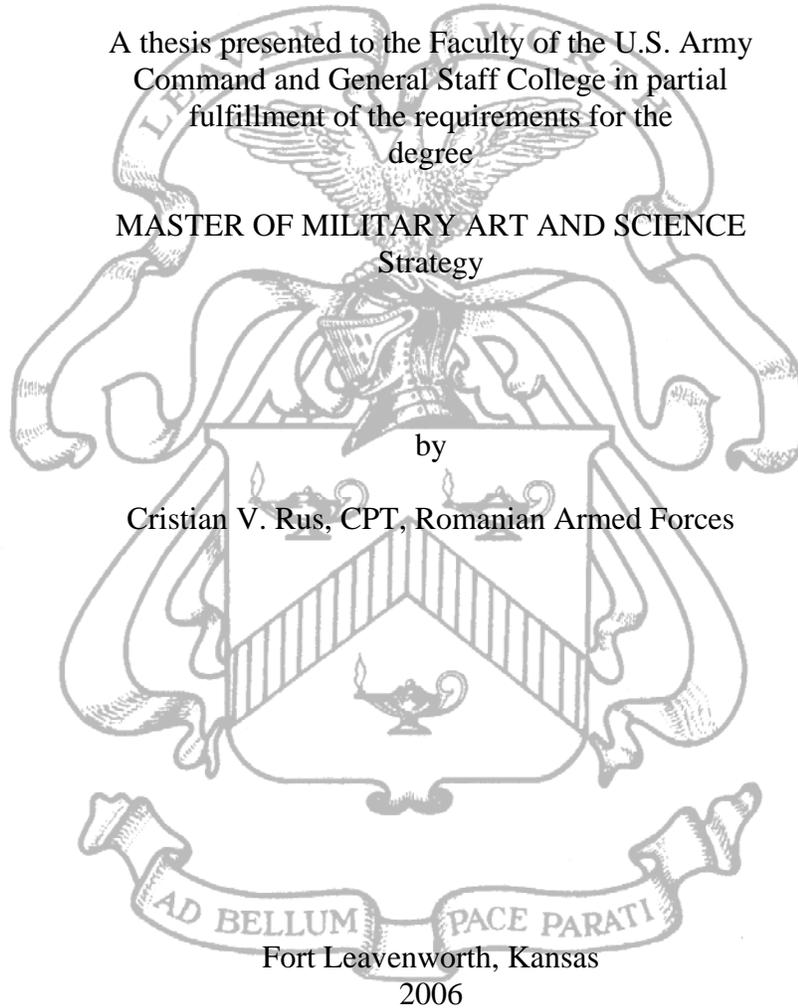
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As a NATO member, Romania must transform its military forces in order to meet the interoperability requirements and operational capabilities set by NATO in deployability, sustainability, survivability and C4ISTAR systems. These areas require capabilities-based forces able to perform full-spectrum operations ranging from peacekeeping, stability and reconstruction missions to major combat operations. By employing the Army Force Management and the Universal Joint Task List the study examines the development of the Romanian Army's current and programmed capabilities and identifies capability gaps, capability needs, and DOTMLPF solutions that might contribute to reducing the force planning shortfalls. The study is a useful assessment tool of the Romanian defense capabilities which can be applied to analyze the defense transformation of other Central and Eastern European countries that went through a similar defense transformation process.

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ABSTRACT

TRANSFORMATION OF THE ROMANIAN ARMY by CPT Cristian V. Rus, 101 pages.

As a NATO member, Romania must transform its military forces in order to meet the interoperability requirements and operational capabilities set by NATO in deployability, sustainability, survivability and C4ISTAR systems. These areas require capabilities-based forces able to perform full-spectrum operations ranging from peacekeeping, stability and reconstruction missions to major combat operations. By employing the Army Force Management and the Universal Joint Task List the study examines the development of the Romanian Army's current and programmed capabilities and identifies capability gaps, capability needs, and DOTMLPF solutions that might contribute to reducing the force planning shortfalls. The study is a useful assessment tool of the Romanian defense capabilities which can be applied to analyze the defense transformation of other Central and Eastern European countries that went through a similar defense transformation process.

TABLE OF CONTENTS

ACRONYMS

AFMM	Army Force Management Model
APOE	Airport of Embarkation
CEE	Central and East Europe
CBRN	Chemical, Biological, Radiological, and Nuclear
CIMIC	Civil-Military Cooperation
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance
COE	Centers of Excellence
CRO	Crisis Response Operations
CS	Combat Support
CSS	Combat Service Support
C2	Command and Control
DCI	Defense Capabilities Initiative
DOD	Department of Defense
DOS	Days of Supply
DSSC4ISR	Deployability, Sustainability, Survivability Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance
DOTMLPF	Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities
ECAP	European Capabilities Action Plan
EOD	Explosive Ordnance Disposal
EU	European Union
FMF	Foreign Military Financing
FSSU	Field Service Support Units

GDP	Gross Domestic Product
GWOT	Global War on Terror
HQ	Headquarter
HNS	Host Nation Support
HUMINT/SIGINT/IMINT	Human, Signal and Imagery Intelligence
IMET	International Military Education and Training
ISAF	International Security Assistance Force in Afghanistan
JCDEC	Joint Concept Development and Experimentation Campaign
JMETL	Joint Mission Essential Task List
MAP	Membership Action Plan
MEDEVAC	Medical Evacuation
METL	Mission Essential Task List
MOD	Ministry of Defense
MPFSEE	Multinational Peace Force in Southeastern Europe
MTP	Mission Training Plan
MTR	Military-Technical Revolution
NCO	Noncommissioned Officer
NDS	National Defense Strategy
NRF	NATO Response Force
NSE	National Support Element
NSS	National Security Strategy
NTEEP	NATO's Education, Training, Exercise, and Evaluation Policy
OFP	Objective Force Program

OSCE	Organization for Security and Cooperation in Europe
PARP	Partnership for Peace Planning and Review Process
PCC	Prague Capabilities Commitment
PfP	Partnership for Peace
PGs	Partnership Goals
PPBES	Planning, Programming, Budgeting and Evaluation System
POD	Ports of Debarkation
POE	Ports of Embarkation
POTH	Processes, Organizations, Technologies and Human Capital
PSO	Peace Support Operations
PSYOP	Psychological Operations
RO-RO	Roll On-Roll Off
ROL I	Echelon I Level of Medical Care
RMA	Revolution in Military Affairs
ROTA	Releases Other than Attack
RSOI	Reception, Staging, Onward Moving, Integration
SAR	Search and Rescue
SPOE	Seaport of Embarkation
SRO	Stability and Reconstruction Operations
STANAG	Standardization Agreements
TIM	Toxic Industrial Material
UJTL	Universal Joint Task List
UAV	Unmanned Aerial Vehicles
WMD	Weapons of Mass Destruction
WPSND	White Paper on Security and National Defense

ILLUSTRATIONS

TABLES

CHAPTER 1

INTRODUCTION

The end of the Cold War brought Eastern Europe into an unstable security

environment marked by political, social, and economic crisis. Following fifty years of

communism, Romania found itself without a viable security alliance to guarantee its

sovereignty. Army transformation is part of the democratic and structural reforms that

will fully integrate Romania within NATO and European security alliances.

The purpose of this study is to analyze the Romanian Army's[1] transformation.

Generally, the term "transformation" has been used to define the structural and doctrinal

changes the military must make in order to meet the challenges presented by the end of

the Cold War and the Global War on Terror. This study will consider John J. Garstka's

capabilities-based definition of transformation as a sustained, purposeful change,

undertaken with the strategic objective of creating, developing, and enhancing

capabilities.[2] Chapter 3 provides a detailed approach to defining and analyzing

transformation.

Overview of the Romanian Armed Forces Transformation

The overall transformation of the Romanian armed forces comprised gradual steps

that focused on force restructuring, personnel reductions, interoperability, and

modernization. During the 1990s, the resources allotted to support the reform of the

Romanian armed forces were not sufficient to cover all costs of the transformation

process. The reason lies in the financial difficulties generated by Romania's economic

transition, which has been one of the toughest in Central and Eastern Europe. Only by the

1

end of the 1990s and the beginning of 2000, did Romania's economic recovery allow an increase of investments in the transformation of its defense forces.

The transformation process consisted of both quantitative and qualitative changes in the Romanian military. From 1989 to 2001, the Armed Forces wartime force structure was reduced from 850,000 to 230,000. In 1997, the first strategy for the Armed Forces projected the military strength to be 112, 000 military personnel and 28, 000 civilians and maintained the Reserve Forces. Considering the budgetary limitations, it was impossible to continue the reform by both restructuring and major acquisition programs and, as a result, equipment modernization was significantly delayed until 2004.

In 2000, a second plan called "Program Force 2003" eliminated the reserve forces, created rapid reaction components, active and territorial forces, and organized the integrated surveillance and early warning system. The plan set modernization priorities, derived from NATO's interoperability requirements but did not clearly define mission-structure-capabilities relationship for the new created forces.

The ongoing transformation program, "Objective Force" *(2003-2007)*, seeks to ensure that the Romanian Armed Forces will be able to meet their national and international commitments. With a peacetime authorized strength of 90,000 (75,000 military and 15,000 civilians), the Objective Force program aims to balance Romania's military requirements and international commitments with domestic financial reality for an efficient distribution of resources in four major areas: modernization, training, operations and maintenance.[3] By 2007, components of the Romanian Army (as decided upon within NATO Force Proposals mechanism) should be capable of conducting full spectrum operations in accordance with the requirements set by NATO.

<u>Overview of NATO Transformation</u>

NATO redefined its capabilities first through the Defense Capabilities Initiative (DCI), launched in April 1999 in an effort to improve allies' interoperability and their military capabilities. DCI attempted to employ NATO's collective defense planning process to correct the fifty-nine specific military capabilities considered deficient within NATO members. Being broadly defined, and not having political consensus and financial support from all members, DCI failed to bring significant improvements to military capabilities, thus limiting the ability of the Alliance to carry out the roles and missions that it set out for itself in the 1999 Strategic Concept.[4] Continuing the efforts, at the 2002 Prague Summit, alliance leaders adopted the Prague Capabilities Commitment (PCC) through which member countries made firm and specific political commitments to improve their capabilities in key areas such as strategic air and sea lift, air-to-ground surveillance, chemical, biological, radiological, and nuclear defense, command, control and communications, and deployable combat support and combat service units.[5] PCC strategy in overcoming capability and interoperability deficiencies is based on reprioritization, multinational cooperation and role sharing. The Romanian Army transformation includes implementation of the Force Goal provisions since, as a NATO member, Romania's contribution to NATO has been transferred from the Partnership Goals, assumed through the Partnership for Peace Planning and Review Process (PARP) process, to the Force Goals.

<u>Thesis Statement</u>

Since the 1999 NATO enlargement, numerous debates over the new members' contribution to NATO capabilities have characterized both the political and the military

scene. As a new NATO member, Romania wants to bring its own contribution to European security and prove its capabilities as a security provider in Southeastern European and NATO led operations. It is important to determine whether the Army transformation program will design force structures with the required capabilities in accordance with existing military strategy, doctrine, resources, and NATO requirements. Based on NATO Force Proposals negotiations, Romania as a NATO member must transform its military forces in order to meet the interoperability requirements and operational capabilities set by NATO. If the force structure requirements can be met,[6] there are justifiable concerns that capability requirements will not be attained under the existing budgetary and time constraints. The main argument in support of this statement derives from NATO's emphasis on deployability, sustainability, survivability and effective command, control, communications, computers, intelligence, surveillance, and reconnaissance (DSSC4ISR) systems which require capabilities-based forces able to perform full-spectrum operations ranging from peacekeeping, counterterrorism, and nation-building missions to major combat operations.

Assessing the above, leads to the thesis' primary question: Will the current transformation program of the Romanian Army generate forces with adequate capabilities to meet NATO's requirements [by 2012]? To answer the primary question, the study must address several secondary and tertiary questions:

1. What are the conceptual future capabilities that must be developed by the Romanian Army?

a. What are the strategic and operational requirements derived from the National

Security Strategy (NSS), National Defense Strategy (NDS) and the White Paper on

Security and National Defense (WPSND)?

b. What is the projected regional security environment for 2006-2012?

2. What capabilities must be developed to meet NATO requirements?

a. What are the NATO required operational capabilities?

b. What are the current programmed capabilities?

c. What are the required capabilities not met by the programmed force?

3. What measures should be implemented to solve identified shortfalls and how

can they be integrated into transformation program?

For the purpose of this study, the following underlying assumptions will be

considered as true. The first assumption is that the budget profile for 2006-2012 will

increase gradually from the value established in 2004.[7] A second assumption is that there

is no direct risk of military aggression against Romania or its allies for the short to mid-

term. The third assumption is that negative evolution of the existing conflicts will lead to

no more than low-intensity conflicts in South Europe and medium-intensity conflicts in

the Caucasus.

The study will analyze the capabilities that the Romanian Army must develop by

2012 in order to meet NATO requirements, by employing the Army Force Management

Model (AFMM) as an analytical and critical evaluation instrument. The AFMM is a

process that defines military capabilities, designs force structures to provide those

capabilities, and translates organizational concepts based on doctrine, technologies,

materiel, manpower requirements, and limited resources into a trained and ready Army.[8]

Because AFMM is an extensive evaluation process that presumes the use of classified information, this analysis will focus on the first step of the AFMM which is Capabilities Development Process. Also, the study will limit the amount of details on NATO transformation to the major security and cooperation programs' roles and implications for the Romanian Army transformation and capabilities requirements. The impossibility of using classified sources will limit the amount of details provided on force planning but it is unlikely that they would alter the final conclusions of the thesis.

This study brings two important contributions. First, it could stand as an assessment tool of the Romanian defense capabilities. Up to now, the Romanian Army has not developed a capabilities-based evaluation instrument similar to AFMM. Therefore, the analytical model developed in this study can be adapted and implemented as a modern and efficient instrument to design, build and assess capabilities. Second, the process can be applied to analyze the defense transformation of other countries that went through similar processes and difficulties as the Romanian Army did.

The thesis is organized in six chapters. Chapter 2 is the review of literature. In the beginning, chapter 2 reviews the literature on defense transformation in general, including but not limited to Krepinevich's articles on defense transformation published by the National Academy of Sciences, Congressional Research Service reports on defense transformation and NATO publications on transformation. The next section of chapter 2 focuses on Central and East European (CEE) countries' processes of modernizing and reviewing their force structure. Primary sources will include the Centre for Southeast European Studies and NATO database. Finally, chapter 2 approaches the literature on Romanian defense transformation. Primary sources will include Romanian

security strategy and military doctrine, the Romanian Center for Strategic Studies, The Academy for Advanced Military Studies, and books and articles about the Romanian Army transformation process.

Chapter 3, "Research Methodology," consists of several steps. In the beginning, chapter 3 defines the transformation process, and builds the research methodology based on the Mission Focus Approach to force planning. Further on, it describes the course of action adopted for the employment of the AFMM's Capabilities Development process and provides details of each analytical process used to answer the secondary and tertiary questions.

Chapter 4, "Background of the Romanian Army's Transformation Process," examines the Army's transformation process from 1990 to the present time. This includes the role played by the Partnership for Peace (PfP), PARP, Membership Action Plan (MAP) and other cooperation mechanisms and individual partnerships in developing credible defense capabilities. This information is important because it portrays the planning mechanisms used by the Army to transform and develop the current capabilities. This chapter also provides an analysis on the evolution of the defense budget, as financial resources proved to have a significant impact on defense transformation.

Chapter 5, "Analysis," determines what capabilities the Romanian Army must develop by 2012 in order to meet NATO requirements. The AFMM provides the framework for analysis, but the study employs the Capabilities Development process as an objective analytical instrument. The Capabilities Development process is applicable to Romanian Army's force planning process and consists of three distinct functional analyses. The Functional Area Analysis identifies the conceptual future capabilities

requirements derived from the strategy and threat. The Functional Needs Analysis links the conceptual future needs with current programmed capabilities and compares them with NATO's capabilities requirements. The required capabilities not met by the programmed force are identified as mission needs or shortfalls. Finally, the Functional Solution Analysis recommends solutions that can resolve each need, and focuses on key technologies or major endowment programs.

Chapter 6, "Conclusions and Recommendations," provides an interpretation of the analysis described in chapter 5 and the implications for the Romanian medium term (2006-2012) defense capabilities and force planning. Chapter 6 concludes with recommendations for further studies and poses unanswered questions that may impact future developments of the study.

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[1]The term Romanian Army refers to the land component of the armed forces and it excludes the Air and Navy components.

[2]John J. Garstka, *"The transformation challenge",* in NATO Review No. 1 (spring 2005), (Brussels, Belgium: NATO, 2005), [article on-line NATO web site]; available from http://www.nato.int/docu/review/2005/issue1/english/special.html; Internet; accessed on 30 September 2005.

[3]General Mihail Popescu, "Romanian Army Reform: Present and Future from NATO Membership Perspective," in *Romania Membru al Aliantei Nord-Atlantice*, Center for Defense and Security Strategic Studies, (Bucharest, Romania: The Academy for Advanced Military Studies Publishing House, 2002), 16-20; [book on-line]; available from http://cssas.unap.ro/ro/carti.htm; Internet; accessed on 28 August 2005.

[4]Defense and Security Sub-committee on Future Security and Defense Capabilities Interim Report, NATO's Role in Defense Reform, [report on-line NATO Parliamentary Assembly Archives web site]; available from http://www.nato-pa.int/archivedpub/comrep/2001/au-199-e.asp; Internet; accessed on 24 October 2005.

[5]NATO, NATO transformed, new members, capabilities and partnerships, (Brussels, Belgium: NATO, 2005), [article on-line NATO web site]; available from http://www.nato.int/docu/update/2002/11-november/index-e.htm; Internet; accessed on 19 October 2005.

[6]Following the negotiations on Force Proposals one Mechanized Brigade and one Mountain Infantry Brigade will be available for collective defense by 2007.

[7]The defense budget for 2004 was 1.390,3 million USD.

[8]Colonel James H. Thomas, Army Force Development in *How the Army Runs* (Carlisle Barracks, PA*:* US Army War College, 2004), 41.

CHAPTER 2

LITERATURE REVIEW

The term "transformation" has been used to describe the process of change that

defense institutions are going through, in their attempt to redefine capabilities, doctrine,

organization and much more in response to the new political and security environment. It

is beyond the scope of this paper to examine all aspects of and views on transformation or

to provide a new definition of it. The literature review will follow a sequential process of

reviewing the US defense transformation and its impact on the US allies, specifically on

NATO. Then the review will focus on particulars of CEE countries' transformation,

including Romania's, by underlining the main views on the transformation process.

The US Defense Transformation

In the 2003 Transformation Planning Guidance, Secretary of Defense Rumsfeld

defined transformation as the process of thinking creatively to improve interagency and

coalition cooperation. Moreover, he stated that the transformation processes will continue

indefinitely, with no foreseeable end state thus anticipating and creating the future by

developing new capabilities to meet today's and tomorrow's threats.[1]

The Department of Defense (DOD) identifies four imperatives making

transformation necessary now: strategy, threat, technology, and risk mitigation. The DOD

strategy for achieving transformation is an effort to transform the culture by encouraging

innovation and risk taking, and an increased emphasis on concept development and

experimentation. There are Four Pillars of Force Transformation around which the

Department has built its force transformation implementation strategy: (1) strengthening

joint operations through the development of joint operations concepts and architectures;

(2) exploiting existing US intelligence advantages through enhanced exploitation and

broader dissemination of global surveillance and reconnaissance information; (3)

innovative concept development and experimentation through war gaming, simulations

and field exercises; and (4) developing new transformational capabilities, building on the

successful pursuit of the first three pillars. In the process of transforming, the army will

become more expeditionary, agile, and lethal than the present force and more capable of

employing operational maneuver and precision effects capabilities to achieve victory.[2]

A similar approach on transformation is provided by other members of DOD such

as Admiral Harold W. Gehman, Jr., and Major General James M. Dubik.[3] They consider

that jointness is the core of transformation via the Joint Concept Development and

Experimentation Campaign, which employs a two-path strategy by improving the near-

term war fighting capabilities and developing new approaches to capabilities that focus

on the next decade. This transformation through experimentation concept uses "joint

prototyping"[4] to improve current capabilities and the Joint Concept Development to

improve future capabilities based on four challenges: urban warfare, terrorism, failing

states, and weapons of mass destruction (WMD). The authors argue that:

"Transformation is a continuous process that integrates innovative thinking,

experimentation and discovery to convert concepts into prototypes and strengthen

warfare capabilities."[5]

Christopher J. Lamb's paper adopts a top-down view of transformation by

analyzing three elements of transformation: the Joint Operating Concepts, the

capabilities-based approach to defense planning and resource allocation and the global

force planning.[6] The challenges to the transformation process the author identifies are the needs for balance resources allocation between transformation, modernization and current operations and conceptual clarity in identifying the key areas to invest in developing both, offensive and defensive capabilities.

A different view on transformation comes from Leonard L. Lira's thesis which states that understanding transformation is difficult as long as it has no clear end state. As a result, the successful accomplishment of military transformation is in jeopardy because there is no way to properly evaluate why or how it is supposed to change and what the end state of that change should look like.[7] He argues that effective transformation should be a "second-order change process"[8] that implies an adjustment in one of the following dimensions of an organization: technology, administration; products or services provided by an organization; human resources; politics; or culture.[9] Lira identifies three reasons for transforming the military by implementing the second-order changes. First, the need to conduct peace operations which are determined by changes in the international security environment and the nature of conflicts. Second, the asymmetrical nonstate actor threats that require full spectrum operations and forces able to counter capabilities-based threats. Third, the political liberal democratic ideology in foreign affairs and the increased demand by National Security Strategy for more peace and post-combat stability operations which create a gap between political needs and military capabilities: it is this gap, that is the fundamental reason the military must change into an organization that has to accomplish more with less, and it is this gap that is driving the discussion of how to change, either quantitatively or qualitatively.[10]

Ronald O'Rourke provides a different definition of transformation as large-scale, discontinuous, and possibly disruptive changes in military weapons, concepts of operations, and organization that are prompted by significant changes in technology or the emergence of new and different international security challenges. His report to Congress includes different views on transformation as a process designed to make the U.S. forces more mobile, agile, and lethal through greater reliance on unmanned vehicles, advanced technologies for precision-strike operations, and special operations forces; or as the concept of network-centric warfare and the C4ISR technologies. Furthermore, he makes the distinction between the concept of defense transformation and the term Revolution in Military Affairs (RMA). He views the RMA (as periodic major changes--discontinuities--in the character of warfare), as the trigger for transformation (as the process of changing military weapons, concepts of operation, and organization in reaction to, or anticipation of an RMA).[11] While defense transformation requires a clear strategy there are opinions that even though RMA alters the capacity of states to create and project military power, it is not a substitute for strategy but merely an operational and tactical means often limited by the nature of the war.[12]

Andrew F. Krepinevich considers that a Military-Technical Revolution (MTR)[13] occurs when the application of new technologies into military systems combines with innovative operational concepts and organizational adaptation to alter fundamentally the character and conduct of military operations. Therefore, such revolutions are characterized by: technological change, military systems evolution, operational innovation, and organizational adaptation. In his view, these elements combine to produce a dramatic improvement in military effectiveness and combat potential but what

13

is revolutionary is not the speed with which the change takes place, but rather the magnitude of the change itself. The information revolution, major improvements of platforms, advanced simulations, joint operations and network integration are some of the issues approached in his paper which are considered to be central to MTR. He also considers that, because technological progression is much greater now and the intervals between revolutions are shorter, we may be moving toward an era of continuous, overlapping military-technical revolution. The author argues that revolution is fully realized only when innovative operational concepts are perfected to exploit systems based on new technologies and when organizations are created to execute the new operations effectively and dominate previous modes of warfare.[14]

NATO Transformation

There is no doubt the US defense transformation has a decisive impact on NATO and European defense organizations and there are concerns that NATO partners will not be able to keep up with the US development of doctrine, equipment and capabilities. The analysis of the US defense pillars of transformation (strategy, capabilities, global posture, domestic basing) reveals that the existing gap between the US and its allies defense investments and capabilities might increase, making combined operations impossible or very limited.[15]

It may be assumed that the US is looking toward NATO and European Union (EU) as providers of complementary means or niche capabilities in stability and support operations while the US would focus on combat operations. In any case, the US is attempting to close the gap mentioned above, by supporting NATO in taking the lead in Afghanistan (International Security Assistance Force), Iraq (train-and-equip mission for

the Iraqi security forces) and Bosnia. But, one can observe that increased allied participation in stability and support operations has both negative and positive impact. It may increase interoperability and cultural awareness in the short term, but in the long run it would divert financial resources on current operations and limit the investments on transformation. This observation is confirmed by NATO officials' appraisals that allies are increasingly allocating defense spending to operations and maintenance prerequisites of expanded global operations. The trend is beginning to diminish funding that might otherwise be earmarked for the longer-term PCC modernization programs.[16]

One of the possible solutions agreed to by the analysts that might reduce the capabilities gap is the "combined transformation" through increased security cooperation in sharing of intelligence information and technology, combined military training and global posture realignment[17].

On the other hand, Steve Sturm's analysis of the NATO initiatives on improving its force-generation and defense-planning processes considers that: Crisis-response operations have become a key element of NATO's contribution to international peace and security, and the success of these operations measures the Alliance's continued relevance.[18]

He identifies the need for change due to the different demands of operational theatres, especially in terms of the needed capabilities, which evolved over time and must all be met simultaneously, and the fact that NATO has problems in matching capabilities to commitments. Furthermore, he argues that the persistent discrepancy between political decisions about operations and reliable fulfillment of statements of requirements derives from three problems: political will, resources, and capabilities. As a direct consequence,

NATO needs to change its force generation mechanism to provide a more comprehensive and longer-term view of its operational needs and of the Allies' overall efforts to meet them. Another demand is on forces' usability as NATO defense ministers agreed that 40 percent of each nation's overall land force strength should be structured, prepared and equipped for deployed operations under NATO or other auspices, and that 8 percent of the overall land force strength would either be engaged in or earmarked for sustained operations at any one time.[19]

A commonly accepted idea within the NATO community is that the Alliance's transformation strategy is in part a response to external developments and joint threat perception which require the shift from a static, defensive posture towards more agile, deployable and expeditionary forces to confront unpredictable threats at their source.[20] In this respect, NATO's military transformation consists largely of the transfer of the technological, doctrinal and structural innovations from the US revolution in military affairs to the rest of the Alliance.[21] Moreover, the shift in the focus of US force transformation on irregular warfare brings US force transformation much closer to a vision with which Europeans are comfortable and to which they can realistically contribute.[22]

Other analysts have different opinions. They affirm that even though the US has sought to transform NATO's military forces into high-technology conventional forces with as many interoperable elements as possible, NATO transformation is a slow process in spite of agreed force modernization priorities and power-projection capabilities. They back up the above statement arguing that much of the NATO's force transformation

efforts may be based on the wrong strategic assumptions and priorities, and determine

several factors to be considered in the transformation process:

> --European forces are not going to be transformed to have the level of
> conventional technology or power-projection capability of the United States.

> --European integration and stability is Europe's primary focus, which causes
> disagreements between Europe and the United States on a common set of
> NATO out -of-area missions.

> --Because the United States focuses on security missions outside of Europe, the
> transatlantic cooperation is based on coalitions of the willing, rather than
> reliance on formal arrangements with NATO. As a result, many--if not most--
> European states have no clear motive to become involved and pay the cost.

> --The mission priorities for force transformation are changing. Budgets cannot be
> shaped to meet the priorities of force transformation; force transformation must
> be shaped to fit budgets. In the absence of some peer conventional threat, the
> primary criteria for force transformation is now affordability.[23]

Alternatively, other analysts believe that the Alliance might survive but only as a

service provider making available capabilities for coalition operations led by the United

States and possibly in the future by the EU in which European forces can play a critical

role in providing niche capabilities rather than high-technology systems.[24]

Robert G. Bell's examination of the implementation of NATO's transformation

initiatives[25] identifies the political will as being the center of gravity of NATO's

transformation strategy. Bell reviews the steps ahead in implementing the provisions of

the ongoing transformation agendas and concludes that the risk of failure persist as long

as from the Secretary General on down, the organization bemoans the disconnect

between Allies' willingness to embrace new missions and new capabilities, on the one

hand, and to pledge the manpower, equipment, and resources needed to deliver on those

missions and capabilities, on the other.[26]

A more critical approach to the Alliance transformational efforts identifies five priorities that assure the Alliance relevance as a stabilizing force for security in the North Atlantic area and beyond. These are: focus on expeditionary capabilities by downsizing the overwhelming majority of European nondeployable forces, to redirect resources to transformational initiatives; define the end state to avoid the risk of losing support of the home governments who will by necessity have to justify increased expenditures to their voting publics; understand the cost, though allowing national home governments to plan for them in budgetary terms and to manage the political consequences; accept risk posed by the significant drawdown on in-place forces; and reform the system, by avoiding the tendency to allow the decision-making organizations that will be most affected by any new reform to be the party that controls the process and debate about that reform.[27]

Transformation of Central and Eastern European Countries

There are opinions that the military reforms in the countries of CEE have followed a similar pattern even though these countries differ in terms of size, economic capability, and the nature of their relationships with the EU and NATO. Many of the studies available have examined the difficulties of the military reform and reached the conclusion that during the 1990s, none of the armed forces of countries in the CEE managed to reconstruct an effective and sustainable military system.[28]

Other analysts take a more analytic approach when analyzing transformation of the CEE countries, by examining first the contribution that these countries bring or should bring into alliance and second the capabilities derived from the modernization programs. Some of the parameters used to quantify the CEE countries' contribution to the Alliance's overall effort are national defense spending and financial contribution to the

Alliance's GDP, troops made available for collective and national defense and the actual participation to NATO peace operations.

The Congressional Budget Office paper examines the transformation process that Poland, Hungary, and the Czech Republic are going through. Specifically, it looks at their progress in restructuring their militaries, training their personnel, adopting NATO doctrine, modernizing outdated equipment, and generally developing the capability to fight alongside and communicate with existing NATO forces. It also gauges their current contributions to NATO operations in the Balkans and other activities of the Alliance. The analysis identifies the following constraints on their defense spending: their desire to join the EU for which the three countries will have to reform their political and economic systems to conform to the EU's accession criteria; all three nations spend the largest share of their defense budgets on personnel costs; the costs of supporting the ongoing NATO operations have exhausted the current defense budget; there is little public support for increasing defense spending to carry out the obligations of NATO membership. Furthermore, it reviews the contribution the Central European allies have as number of troops, involvement in the PfP program, and other security cooperation efforts. The paper concludes by asserting that because NATO's future peacekeeping and humanitarian relief operations are likely to be conducted by "coalitions of the willing" beyond the Alliance's territory, all countries need to transform their forces into lighter forces capable of rapid deployment.[29]

Jeffrey Simon determines the effects of participation in NATO-led operation on defense reforms of CEE countries. He examines the national experiences of CEE countries and identifies the challenges and lessons learned in conducting peace keeping

and peace enforcement operations in the Balkans and stability and reconstruction operation in Afghanistan and Iraq.

Among lessons learned he identifies: the difficulty of shifting from territorial defense to expeditionary operations: the necessity to make adequate resources available for such operations and to restructure their forces; the necessity of pre-establishing standing units for future peace support operations; the need to change training and rotation policies to emphasize more peacekeeping and less territorial defense and to modernize communications equipment; the need to develop and establish deployable headquarters, and improve force reliability and strategic lift; limited resources concentrate efforts on building niche capabilities to include medics, combat divers, explosive ordinance disposal (EOD) personnel, and military police, human intelligence and special operations forces; and the need to integrate operational experiences in simulation exercises and training.[30]

The author studies the evolution of the force structure of the CEE countries and the implications for NATO Force Planning by providing comparative trends in the defense establishments from operation Joint Endeavour to Iraqi Freedom, specifically the decreased reliance upon conscription, while simultaneously professionalizing and restructuring their forces to develop a deployable, sustainable expeditionary capability. Based on figures provided, he argues that by 2007, CEE countries would have about 302,000 professional troops that theoretically could be available for expeditionary operations.[31]

Romanian Defense Transformation

Larry L. Watts provides a comprehensive examination of the Romanian

performance in military, political, and economic reform from 1997 to 2001. His study

includes the development of the military restructuring efforts, and examines the status of

democratic and civilian control over the military by comparing the progress achieved in

two distinct periods 1997-2000 and 2000-2001. The study examines the evolution of the

following parameters: constitution and legislative framework, strategic planning, defense

planning, budgeting, force structure, acquisitions and property management, personnel

management, presidential and parliamentary oversight, and the status of civilian

expertise. The author argues that in certain respects, the considerable progress in defense

reform achieved in 2001 brought Romania closer to NATO members like: Poland, the

Czech Republic and Hungary, in regard to democratic and civilian control over the

military, and defense planning and budgeting.[32] He also examines Romania's role in

addressing the regional insecurity and the evolution of public support in transitioning

from territorial defense and assistance to domestic authorities, peace-support, peace-

enforcement, and crisis management abroad.[33]

A common approach in analyzing the Romanian Army reforms is by evaluating

the impact of NATO's integration instruments on the reform processes, specifically the

PfP program and its PARP and MAP components. Most of the analysts use the timeframe

design to analyze the transformation by adopting defined phases of transformation,

mainly determined by NATO's assessment policies and plans.[34] These phases

extensively adopted and used by the most of the analysts are: 1990-1993; 1994-1996,

when Romania joined the PfP and went through the first cycle of the PARP; 1997-2000

when Romania transitioned within the second PARP cycle; and 2000-2004 when Romania went through five MAP cycles in its transition from a candidate country to a NATO member. An important advantage of this approach is that it relates NATO and Romanian Army transformation efforts by connecting NATO's guidance and evaluation policies with tempo and quality of the military reform.

There are numerous studies that portray the evolution of the Romanian Planning and Defense Policy and include developments such as the adoption of top-down defense planning system and the adapted Planning, Programming, Budgeting and Evaluation System (PPBES), the development and adoption of the NSS, WPSND, the NMS and the Defense Planning Guidance. The studies also attempt to correlate the defense policy objectives with force planning and describe the provisions aimed at enhancing the capacity to meet new missions requirements: jointness, interoperability and rapid deployment.[35]

The NSS, WPSND, and the NMS are primary sources for this study. They provide first hand information on Romania's security strategy and describe the linkage between political will, economic resources, military capabilities and diplomacy efforts in safeguarding Romania's national interests.

The Academy for Advanced Military Studies and the Center for Strategic Security Studies are important secondary sources. Their web sites provide studies and research papers on transformation and defense capabilities, regional security, terrorism, military strategy, and NATO. An additional secondary source is the magazine *Romanian Military Thinking*. It is available online and includes articles on military theory and science,

interoperability, national security, PfP, and perspectives on Romania's Euro-Atlantic integration.

A series of independent assessments of Romania's defense transformation are also available. The assessments written up to 2001 provide a critical perspective while those written afterwards are favorable and appreciative to the progresses achieved by the military. One explanation could be the sound reforms initiated after 2001 and the active contribution to GWOT.

For example, in 1997, Jeffrey Simon and Hans Binnendijk examined Romania's progress in implementing the provisions set by the NATO *Enlargement Study.*[36] They questioned Romania's readiness for NATO membership from the premises of the slow progress in meeting PfP interoperability objectives and the image of a "dark horse" among potential NATO candidates.[37] The assessment concluded that Romania had to increase the efforts to maintain its eligibility in becoming a NATO member.

By 2003, US officials appraised the reforms as significant, as Romania had the highest defense spending, 2.38 percent of the Gross Domestic Product (GDP) from all candidate countries,[38] developed expeditionary capabilities and was an active political and material supporter of the coalition campaigns in Afghanistan and Iraq. Furthermore, in May 2003, Deputy Secretary of Defense Paul Wolfowitz appreciated the outstanding progress in Romania's defense reforms as one of the key factors in Romania being invited to membership in NATO.[39]

The literature review attempted to accomplish two goals. First, it captured some of the studies and opinions on defense transformation that are relevant for this paper. Second, it attempted to determine the correspondence between the defense transformation

programs ongoing in the US, NATO, CEE, and Romania, and eventually, portray

commonalities or divergences. However, due to time constraints and the amount of

information available on this subject, the review does not claim to be complete and is

subject to further developments.

[1]Office of Force Transformation, Elements of Defense Transformation, (Washington, DC: Office of the Secretary of State, 2004), 2 [document on-line Office of the Secretary of Defense web site]; available from http://www.oft.osd.mil/library/library. cfm?libcol=6; Internet; accessed on 04 November 2005.

[2]Ibid., 6-8.

[3]Admiral Harold W. Gehman, Jr., USN (Retired) and Major General James M. Dubik, USA, Military Transformation and Joint Experimentation Two Views from Above, Defense Horizons, no. 46 (Washington, DC: Center for Technology and National Security Policy, December 2004), 4-7 [journal on-line National Defense University, Center for Technology and National Security Policy web site]; available from http://www.ndu.edu/ctnsp/defense_horizons/DH46.pdf; Internet; accessed on 2 November 2005.

[4]Prototyping, as described by the authors is the process of converting ideas or concepts originated from the Joint Concept Development into physical forms as prototypes used in field exercises (experimentation) to develop new capabilities.

[5]Admiral Harold W. Gehman, Jr., and Major General James M. Dubik, Military Transformation and Joint Experimentation Two Views from Above, 8.

[6]Christopher J. Lamb, Transforming Defense, (Washington, DC: National Defense University Press, September 2005), 2 [study on-line National Defense University, Institute for National Strategic Studies web site]; available from http://www. ndu.edu/inss/Occassional_Papers/Lamb_OP_092005_Transformation.pdf; Internet; accessed on 3 November 2005.

[7]Leonard L. Lira, To Change an Army: Understanding Defense Transformation, (West Point, NY: U.S. Military Academy, 2004), 2 [research paper on-line United States Military Academy, Office of the Dean web site]; available from http://www.dean.usma.e du/sosh/Research/Lira-To%20change%20an%20Army.pdf; Internet; accessed on 3 November 2005.

[8]For details about the concept, see Amir Levy and Uri Merry, *Organizational Transformation: Approaches, Strategies, Theories* (New York: Praeger Publishers, 1986).

[9]Leonard L. Lira, To Change an Army: Understanding Defense Transformation, 8

[10]Ibid., 18.

[11]Ronald O'Rourke, Defense Transformation: Background and Oversight Issues for Congress, The Library of Congress, order code RL 32238, (Washington, DC: The Library of Congress, 2005), 8 [report for Congress on-line Federation of American Scientists web site]; available from http://www.fas.org/sgp/crs/natsec/index.html; Internet; accessed on 11 November 2005.

[12] MacGregor Knox and Murray Williamson, *The Dynamics of Military Revolutions* (Cambridge, UK: Cambridge University Press, 2003), 7, 192.

[13]The term "Military-Technical Revolution" was later changed to "Revolution in Military Affairs". Both terms are borrowed from Soviet military writings on the subject.

[14] Andrew F. Krepinevich, Jr., The Military-Technical Revolution a Preliminary Assessment, (Washington, DC: Center for Strategic and Budgetary Assessments, 2002), 3 [report on-line]; available from http://www.csbaonline.org; Internet; accessed on 11 November 2005.

[15]Leo Michel, Transatlantic Ricochet: How U.S. Reassessments Will (or will not) Transform Europe, (Washington, DC: National Defense University Press, 2005), [article on-line Institute for National Strategic Studies web site]; available from http://www.ndu.edu/inss/Repository/Outside_Publications/Michel/Michel_EuroFuture_Autumn2005.pdf; Internet; accessed on 4 November 2005.

[16]Robert G. Bell, NATO's transformation scorecard*,* NATO Review, No.1, (Brussesls, Belgium: NATO, 2005), [journal on-line NATO web site]; available from http://www.nato.int/docu/review/2005/issue1/english/main.htm; Internet; accessed on 01 November 2005.

[17]Under Secretary of Defense for Policy, Douglas J. Feith, Transformation and Security Cooperation, (Washington, DC: Department of Defense, Conference National Press Club, 8 September 2004), [speech on-line U.S. Department of Defense web site]; available from http://www.defenselink.mil/speeches/2004/sp20040908-0722.html; Internet; accessed on 5 November 2005.

[18]Steve Sturm, Matching capabilities to commitments*,* NATO Review, No.1, (Brussesls, Belgium: NATO, 2005), [journal on-line NATO web site]; available from http://www.nato.int/docu/review/2005/issue1/english/main.htm; Internet; accessed on 05 November 2005.

[19]Ibid.

[20]Mark Joyce, Taking the transformation agenda forward, NATO Review, No.1, (Brussesls, Belgium: NATO, 2005), [journal on-line NATO web site]; available from http://www.nato.int/docu/review/2005/issue1/english/main.htm; Internet; accessed on 01 November 2005.

[21]Henning Riecke. The transformation challenge, NATO Review, No.1, (Brussesls, Belgium: NATO, 2005), [journal on-line NATO web site]; available from http://www.nato.int/docu/review/2005/issue1/english/main.htm; Internet; accessed on 01 November 2005.

[22]Mark Joyce, Taking the transformation agenda forward.

[23]Anthony H. Cordesman, Rethinking NATO's force transformation, NATO Review No.1, (Brussesls, Belgium: NATO, 2005), [journal on-line NATO web site]; available from http://www.nato.int/docu/review/2005/issue1/english/main.htm; Internet; accessed on 05 November 2005.

[24]Henning Riecke, The transformation challenge.

[25]According to the author these initiatives are: the Prague Agenda, initiated in response to the "lessons of Kosovo and 9/11" and focused on changes in capabilities, missions and structures; the Norfolk Agenda, initiated in 2004 in response to the "lessons of Afghanistan" and focused on changes in defense planning, force generation and common funding; and the Munich Agenda, initiated in 2005 in response to the "lessons of the Iraq crisis" and focused on changes in NATO's role (or lack thereof) as a venue for genuine transatlantic strategic consultation and decision-making.

[26]Robert G. Bell, NATO's transformation scorecard.

[27]For example see Brendan L. Wilson, Military Strategy for Transformation: NATO's Rubicon, Strategic Insights, vol. 1, issue 10 December 2002, (Monterey, CA: Center for Contemporary Conflicts, 2002), [electronic journal on-line U.S. Naval Postgraduate School, Center for Contemporary Conflicts web site]; available from http://www.ccc.nps.navy.mil/si/dec03/europe.asp; Internet; accessed on 11 October 2005.

[28]Chris Donnelly, Military matters, Reform realities, NATO Review, No.3, (Brussesls, Belgium: NATO, 2005), [journal on-line NATO web site]; available from http://www.nato.int/docu/review/previous/previous_en.html; Internet; accessed on 11 November 2005.

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[30]Jeffrey Simon, *NATO* Expeditionary Operations: Impacts Upon New Members and Partners, (Washington, DC: National Defense University Press, 2005), 8, 14, 20, 30 [study on-line National Defense University web site]; available from http://www.ndu. edu/inss/Occassional_Papers/SIMON_OP_032005.pdf; Internet; accessed on 23 November 2005.

[31]Ibid., 32.

[32]Larry L. Watts, "Democratic Civil Control of the Military in Romania: An Assessment as of October 2001" in Dr. Graeme P. Herd *Civil Military Relations in Post Cold War Europe,* (Camberley, U.K.: The Conflict Studies Research Center, 2001), 38; [research paper on-line] available from http://www.da.mod.uk/CSRC/documents/CEE/G102/G102.chap3; Internet; accessed on 17 November 2005.

[33]Larry Watts, "Romanian Public Attitudes to Defense and Security Sector Reform" in Marie Vlachová, *The Public Image of Defense and the Military in Central and Eastern Europe*, (Geneva, Switzerland: The Geneva Centre for the Democratic Control of Armed Forces, 2003), [book on-line The Geneva Centre for the Democratic Control of Armed Forces web site]; available from http://www.dcaf.ch/milsoc/ev_prague_02_vlachova_watts.pdf; Internet; accessed on 14 November 2005.

[34]For example see Iulian Berdila, Romania's NATO Membership, (Fort Leavenworth, KS: U. S. Army Command and General Staff College, 2005) [thesis on-line]; available from http://cgsc.cdmhost.com/cgi-bin/showfile.exe?CISOROOT=/p40 13coll3&CISOPTR=315; Internet; accessed on 20 November 2005.

[35]For example see George Cristian and Mihaela Matei, Defense Policy Developments: Old and New Missions for the Armed Forces, Occasional Papers No.1 (I)/2002, (Bucharest, Romania: Military Publishing House, 2002), [occasional paper on-line Institute for Political Studies of Defense and Military History web site]; available from http://www.ispaim.ro/pdf/op1.pdf; Internet; accessed on 4 December 2005.

[36]The NATO Enlargement Study stipulated minimal conditions to be met by candidate countries in the realm of political and economic reforms, democratization, regional security, treatment of ethnic minorities, democratic control of the military, and interoperability and defense planning.

[37]Jeffrey Simon and Hans Binnendijk, Romania and NATO Membership Reassessment at the July 1997 Summit, in Strategic Forum No. 101/1997 (Washington, DC: National Defense University Press, February 1997), [journal on-line Institute for National Strategic Studies web site]; available from http://www.ndu.edu/inss/Press/NDUPress_STRFOR.htm; Internet; accessed on 14 January 2006.

[38]The seven countries were: Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia and Slovenia.

[39]Deputy Secretary Paul Wolfowitz, Press Conference with Romanian Defense Minister Pascu, (Washington, DC: U.S. Department of Defense, May 19, 2003), [news on-line U.S Department of Defense web site]; available from http://www.dod.mil/trans cripts/2003/tr20030519-depsecdef0204.html; Internet; accessed on 24 January 2006.

CHAPTER 3

RESEARCH METHODOLOGY

Chapter 3, "Research Methodology," describes the methodology used to analyze the Romanian Army transformation process by examining and quantifying the capabilities developed within. To analyze the Romanian Army's transformation first the study defines what transformation is. Generally, the term "transformation" conveys the structural and doctrinal changes the military must make in order to meet the challenges presented by the end of the Cold War and the emerging Global War on Terror (GWOT). In spite of the common frame of reference used to define transformation, there are different opinions about what transformation should include and what consists of that leads to different definitions and interpretations.

Even though, it has no doctrinal definition for transformation, the Romanian Army uses the concept of modernization. Modernization is the qualitative transformation of the Romanian Armed Forces according to the missions and responsibilities constitutionally bestowed upon them as well as to the shifts occurred in the international environment. Modernization of the military establishment implies transformation of the infrastructure, military equipment, forces structure, command and control systems, training and, education and culture.[1]

For the purpose of this study, the paper considers John J. Garstka's capabilities-based definition of transformation as a sustained, purposeful change, undertaken with the strategic objective of creating, developing and enhancing capabilities. Garstka states that a capabilities-based transformation involves the continuous character of the process, the co-evolution of processes, organizations, technologies and human capital (POTH), the

28

expansion of the existing capabilities and the focus on the human component of change.[2] According to Garstka's interpretation, there are direct relations between POTH capabilities and doctrine, organization, training, materiel, leadership, personnel, and facilities (DOTMLPF) elements, and therefore capabilities can be evaluated by defining and analyzing the following relations: People - Personnel, Leadership, Education, and Training; Process - Doctrine; Technology - Material and Facilities. The above correlation serves the purpose of this paper in analyzing the capabilities developed through the Army's transformation by using an abbreviated DOTMLPF analysis.

Research Methodology considers the approaches to force planning as described by Henry C. Bartlett, specifically the Mission Focus Approach. The Mission Focus Approach is functionally driven. The force planner starts with broad categories of wartime mission activities such as strategic surveillance, strategic deterrence, force projection and sustainment which can be broken down into subsets of more specific activities. This approach is an excellent way to assess the balance of capability across warfighting functions, either unilaterally or in relation to a specific threat. It also provides a systematic way of developing priorities for the allocation of limited resources. The primary drawback of the Mission Focus Approach is the possibility of disconnecting force choices from objectives and strategies. To develop the detailed analysis of the Army's ability to execute its wartime missions, the battlefield is viewed in terms of specific mission areas. These mission areas serve as the framework for measuring the current capabilities to fight a successful battle against a projected threat. Using the Army's programmed force, the projected threat and the doctrine, each mission area proponent examines required battlefield tasks, assesses the capability to accomplish the

tasks, and develops a list of deficiencies in the areas of DOTMLPF systems. From this

analysis, the mission area proponent develops a series of corrective actions to eliminate

deficiencies.[3]

It is necessary to consider that mission focus approach is not an exclusive force

planning method. During the force planning process, other methods are used in

combination to take into consideration current capabilities and threats (bottom up

approach), possible scenarios (scenario approach), opponent's capability (threat

approach), future uncertainties (hedging approach), technology concepts and systems

(technology approach), and budget (fiscal approach).[4]

Based on the Mission Focus Approach, the study will analyze the capabilities that

the Romanian Army must develop by 2012 in order to meet NATO requirements by

employing the AFMM as an analytical and critical evaluation instrument.

Because the social and political environment is shifting dramatically and

constantly, the Army must continuously change in order to provide the most combat

effective force, within available resources, for joint and expeditionary roles. The US

Army has adapted the AFMM to develop balanced and synchronized solutions in

providing adjustments to the existing force, while balancing force structure requirements

(manpower and equipment) within available and planned resources. The actions to create

a capable force (relevant and ready) are those that structure, man, equip, train, sustain,

station, deploy and fund organizations. The AFMM depicts how the Army will manage

force structure changes and consists of the next processes: Determine Strategic and

Operational Requirements, Develop Capabilities, Materiel Acquisition Management

Process, Design Organizations, Develop Organization Models, Determine Organizational

30

Authorizations, Document Organizational Authorizations, Acquire, Train, and Distribute

Personnel, Acquire and Distribute Equipment, and Provide Combat Ready Units.[5]

For the purpose of this paper, the research methodology includes only the

Capabilities Development process of the AFMM. The process identifies capabilities

needed to accomplish the strategic and operational requirements. The analysis process

defines capability gaps, capability needs, and approaches to provide those capabilities

within a specified functional or operational area. Based on national defense policy and

centered on NATO's required capabilities, the analyses initiate the development of

current and programmed capabilities by investigating solutions within DOTMLPF.

The Capabilities Development process as a linear analytical instrument is

applicable to Romanian Army's force planning process and consists of three distinct

functional analyses (see figure 1).
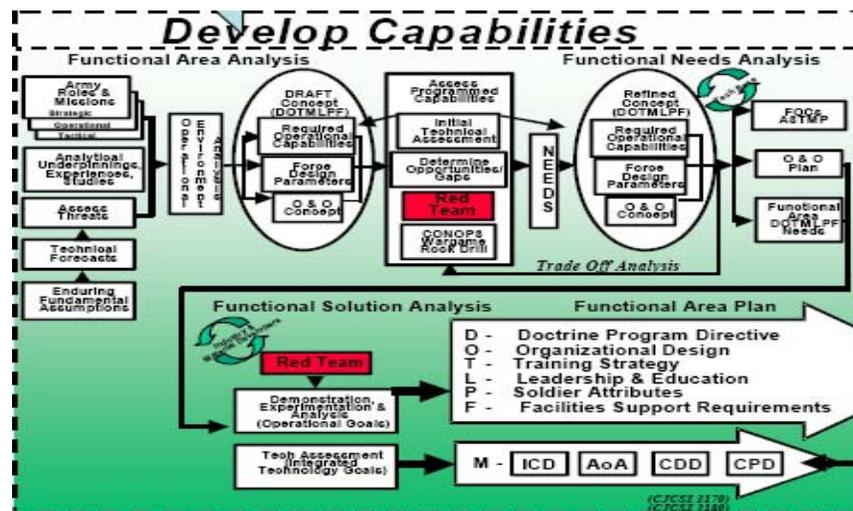
Figure 1.   Capabilities Development Process
Source: The Army Force Management School, Army Force Management Model, 5 [field
manual on-line the Army Force Management School web site]; available from
http://www.afms1.belvoir.army.mil/main.html; Internet; accessed on 25 November 2005.

The Functional Area Analysis identifies the conceptual future capabilities requirements derived from the strategy and threat. First, it analyzes the strategic and operational requirements for the Army, derived from NSS, WPSND, and NMS. Second, it analyzes the Regional Security Environment, for 2006-2012 timeframe. This would comprise threat assessment and analysis of the contributions that the Romanian Army brings to the regional security. Based on the evolution of the security environment and on the requirements derived from the national strategies, it determines the conceptual future capabilities the Army needs to meet at the strategic and operational level.

The Functional Needs Analysis links the programmed capabilities with NATO's capabilities requirements and compares them with the Army's current capabilities. The required capabilities not met by the programmed force become mission needs or shortfalls. First, the Functional Needs Analysis identifies NATO's required operational capabilities derived from the Washington, Prague, and Istanbul Summits. This will include the operational requirements set for both NATO Response Force (NRF) and forces assigned for collective defense. The WPSND provides the programmed capabilities established based on Force Proposals negotiations, which should match NATO's requirements. Second, based on the Romanian Army's current operational capabilities (peace support operations, and NATO and coalition operations), the study will determine the existing capabilities across the following warfighting functions: deployability, sustainability, survivability and C4ISR. The degree of congruence between the Army's present capabilities and the Army's programmed capabilities, determines the eventual shortfalls in force planning across warfighting functions or in relation to resource allocation and major acquisition programs.

To develop detailed analysis of the Army's capabilities across warfighting

functions, the study considers the battlefield tasks developed within the US Joint Mission

Essential Task List (JMETL). These battlefield tasks serve as the framework for

measuring the current and programmed capabilities. Each warfighting function examines

required battlefield tasks, assesses the capability to accomplish the tasks, and develops a

list of deficiencies in the areas of DOTMLPF systems.

For the investigation of the Army's current and programmed capabilities, the

analysis uses only doctrine-organization-training-materiel components of DOTMLPF.

Because of the overlap and the similarities between DOTMLPF components, the study

includes Leadership within Training, Personnel within Organization and Facilities within

Material. This decision was made upon the evaluation of NATO Research and

Technology Organization Study Group Report *Urban Operations in the Year 2020*[6] that

used DOTMLPF domain to investigate capability requirements for future urban

operations. The conclusion is that a complete use of DOTMLPF elements would exceed

the time and size requirements for this study.

Finally, the Functional Solution Analysis recommends DOTM solutions that can

resolve identified shortfalls, and focuses key technologies or major endowment programs.

In addition, it captures the current level of operational capabilities and serves as the basis

for future operational assessments of the programmed force.

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[1]General Eugen Badalan, "Developing through Modernization and Optimizing the
Defense Resources Management" in *Romanian Military Thinking no. 2/2005* (Bucharest,
Romania: Romanian Armed Forces General Staff, 2005), 15-16 [journal on-line
Romanian Ministry of Defense web site]; available from http://gmr.mapn.ro/EnglezaUlti
mul_nr/badalan-p.15-25.pdf; Internet; accessed on 4 February 2006.

[2]John j. Garstka, The transformation challenge.

[3]Henry C. Bartlett, "Approaches to Force Planning", in *Fundamentals of Force Planning*, *Vol. 1: Concepts*, (Newport, RI: Naval War College Press, 1990), 334 [book online Defense Technical Information Center web site]; available from http://www.dtic.mil/doctrine/jel/research_pubs/p003.pdf; Internet; accessed on 26 November 2005.

[4]Ibid., 334-345

[5]The Army Force Management School, Army Force Management Model, 1-2, (Ft. Belvoir, VA: The Army Force Management School, 2005), [field manual on-line]; available from http://www.afms1.belvoir.army.mil/main.html; Internet; accessed on 25 November 2005.

[6]NATO Research Technology Organization, Urban Operations in the Year 2020, (Brussels, Belgium: NATO, 2002), [report on-line]; available from http://www.rta.nato.int/abstracts.asp?pg=8&restrictpanel=&searchstring=&restrictrdp=; Internet; Accessed on 05 December 2005.

CHAPTER 4

BACKGROUND OF THE ARMY'S TRANSFORMATION PROCESS

In order to understand the particularities of the Romanian Army's transformation this chapter examines the evolution of the Army's transformation process from 1990 to present time. This chapter also examines the evolution of the defense budget and its impact on the transformation process and capabilities development.

Romania's downsizing of military forces started before Romania became a NATO member. Downsizing was a result of the post Cold War security architecture and social-economic environment. The armed forces went through both doctrinal and structural changes in order to shift from territorial defense to peace operations, crisis management, and stability and reconstruction operations.

In analyzing the transformation process, the study examines the reforms initiated and implemented within the Army to build expeditionary and NATO interoperable forces. Specifically, it examines the role played by the PfP, PARP, and MAP in developing credible defense capabilities while enhancing the cooperation between Romania and NATO. It also includes the contributions of other cooperation mechanisms and individual partnerships that Romania benefited from.

Romanian Land Forces' reform was initiated in 1990 as a continuous process, and included two major stages of transformation. The first stage 1990 to 1994, focused on rapid structural reorganization and redeployment of the army. The lack of security agreements with the neighboring countries resulted in the adoption of a defensive doctrine. Doctrinally, the Army was prepared to conduct a circular defense and had very limited expeditionary capabilities. Having the war-time strength of about 320,000 troops,

the Land Forces redeployed its troops along the national borders to deter any possible

aggression. This initiative absorbed most of the military's resources and had no

significant contribution to the overall transformation process. The restructuring process

was controversial, as it did not have a clear vision and focus. The Land Forces

Headquarters was established in 1993 and consisted of four army headquarters, each

having 2-3 divisions, with each division organized in 3-4 combat regiments and 4-5

combat support regiments. In 1994, one army headquarters was disestablished and most

of the regiments transformed into brigades. At that time, the only Army's capabilities

participating in international operations consisted of two field hospitals under UN aegis

(UNOSOM II - Somalia), and the US-led coalition in Iraq (Desert Storm - Iraq).

Other objectives were to eliminate political elements inserted by the communist

party at all levels of command and to reduce armament and conventional forces

according to the provisions of Conventional Armed Forces in Europe Treaty.[1]

<u>The Partnership for Peace</u>

The coherent modernization of the Army began with the inauguration of the PfP

program in 1994, developed in 1997 with initiation of a strategic partnership with the

USA. Introduced in 1994, the PfP was the primary mechanism to enhance security

cooperation and interoperability between NATO and partner countries' armed forces.

Romania joined the PfP in 1994 and initiated PfP activities based on the Individual

Partnership Program. The PfP Framework Document and the PARP set the framework

for the Army's participation in PfP activities. The PfP Framework Document set as

objectives the improvement of the national defense planning and budgeting processes, the

ensuring of democratic control of defense forces, the development of forces capable of

operating with NATO forces and the development of cooperative military relations with NATO.[2]

In 1995, the Romanian Supreme Defense Council ratified the Individual Partnership Program and set the cooperation fields for the first two years. This included endorsing the Romanian contribution to peacekeeping operations humanitarian assistance, search and rescue (SAR) operations and NATO/PfP exercises. The Army contributed with one infantry battalion for peacekeeping operations, one Paratroopers Company and one Mountain Company for search and rescue operations, a field hospital for humanitarian assistance and a division-level force[3] for training and PfP exercises. Beginning with 1996, all these forces participated in joint training with NATO forces based on agreed bilateral plans.

Although the army started its structural transformation early in the 1990s, doctrinal evolution in the security and defense realm followed a slower trend and as a result the NSS was only adopted in 2000. As the basic document that substantiates national defense planning, the NSS identifies the national security interests, identifies the risk factors within the domestic and international environment, and develops courses of action and resources for ensuring Romania's national security.

The events of 11 September 2001, changed the security environment and identified new missions for security cooperation to counter terrorism, organized crime, illegal trafficking and proliferation of weapons of mass destruction. As a result, the second NSS, approved by the Parliament in December 2001, addressed both external threats and domestic vulnerabilities emphasizing Romania's participation in cooperative security initiatives and collective defense missions. The WPSND implements the

provisions of the Romanian NSS. The WPSND establishes detailed policies and

strategies including the objectives and tasks of the security and defense institutions and

agencies, as well as the allotting annual resources based on established budgetary

forecasts. The Ministry of National Defense issued the Romanian Military Strategy based

on Romania's NSS and the WPSND. The Military Strategy regulates the force structure,

missions, organization, procurement, training and readiness, logistic, support, and

infrastructure necessary for the military system in order to support the national security

objectives, as well as the concept of training and engagement in military operations.

<div align="center">The Planning and Review Process</div>

In 1995, the PARP introduced the concept of interoperability between PfP and

NATO forces and required an intensified cooperation in areas such as defense policies,

democratic control of the armed forces, and PfP cooperation.

Romania joined the first PARP cycle (1995-1997) and assumed 19

interoperability objectives to implement standardization efforts and to build new

capabilities. Implementation of these objectives presumed the adoption of NATO maps

and staff procedures, developing capabilities for marking and registration of the mine

fields and unexploded ordnances, language skills for staff officers, liaison teams, logistic

planning and all-purpose fuel.

In the second PARP cycle (1997-1999), Romania committed to implementing 44

interoperability objectives and increasing the number of units for peace support

operations and NATO/PfP exercises. These 44 objectives included the 19 from the first

PARP cycle and were aimed at achieving compatibility between forces nominated to PfP

and NATO forces in the realm of command and control, logistics, planning, and

equipment. Due to the lack of financial resources, only 3 interoperability objectives had been achieved by 1998. Because of budgetary limitations, it was impossible to continue the reform by both restructuring and major acquisition programs. As a result, equipment modernization efforts were significantly delayed.

With the introduction of the PPBES in 1999, the second PARP cycle extended one year and, in 1999, Romania assumed ten more Partnership Objectives to directly support the Army's capability to conduct peace support operations (PSO). This initiative was backed up by reducing the number of nominated units to NATO/PfP exercises and PSO/SAR operations and by shifting the financial resources from units nominated for NATO/PfP exercises only to units nominated for PSO/SAR. By 2000, the Army implemented 12 more objectives regarding command and control procedures, logistic support, air support and air transportation, and identification and reporting procedures for mine fields.

The third PARP cycle (2001-2003), introduced the Partnership Goals (PGs), and continued the interoperability efforts for the forces nominated for operations within the PfP. This PARP cycle also initiated measures to build capabilities for peace support operations (PSO) and collective defense. In 2001 the Army assumed the implementation of 48 PGs (27 general and 21 specific) within 2001-2006 timeframe. By 2003, the Army implemented 34 PGs and finalized reforms such as adopting NATO type of headquarter (HQ) modular structure, selecting 145 officers for NATO HQ, establishing of the civil-military (CIMIC) and medical evacuation (MEDEVAC) units, acquisition of 37 satellite communication systems for all deployable units. It also maintained the operational readiness for one National Support Element (NSE) and National Military Liaison Teams ,

established two NATO interoperable air bases for PfP operations and contracted civilian airframes to enhance deployability of the PfP forces.[4]

<div align="center">The Membership Action Plan</div>

Participating in PfP operations and exercises shaped the transformation of the Army, and supported Romania's enrollment in the Membership Action Plan initiative. Launched at Washington NATO Summit (1999), the MAP focused the integration efforts within NATO, by providing enhanced cooperation mechanisms. The Annual National Program on reform submitted to NATO covered not only defense issues but also economic, resource, security and legal issues. NATO feedback included political and military advice based on annual assessments of agreed planning targets included in the annual reform program.

During the first MAP cycle (1999-2000), the Defense Planning Guidance approved in 2000, introduced NATO's PPBES. Therefrom, the Parliament approved the defense budget and the distribution of resources, based upon modernization requirements and major transformation programs.

Within the second MAP cycle (2000 - 2001), the Defense Planning Council focused the planning efforts on 13 priorities in the following areas: career management, joint planning, joint communication, participation in PfP operations and exercises, English learning programs, building the non-commissioned officer (NCO) core, force restructuring, interoperability, and the development of coherent acquisition and fielding programs. This cycle adopted a quantitative approach and introduced major changes within the force structure. Within the Army, 8 Brigades and 30 Battalions, 55 subunits, and 602 territorial structures were disestablished; 16 brigades and regiments and 26

battalions were transformed in smaller organizations. At the same time, one brigade was maintained operational for conducting PSO operations.[5]

The third MAP cycle (2001-2002), considered the new security environment determined by terrorism and the proliferation of WMD and focused on creating smaller and more flexible structures that could be supported financially and could meet national defense and NATO requirements. This vision adopted a qualitative approach focused on building actual capabilities. Restructuring focused on eliminating 3 division headquarters, 5 brigades, 6 mobilization centers, and 5 battalions while maintaining the readiness level for the first operational brigade and initializing the operational program for the second brigade.[6] In parallel, the Army continued to implement the reform of the officer and NCO core, maintained the interoperability level of the forces earmarked for NATO, improved the officer/NCO ratio up to 1/1.23 and fielded NATO compatible communication equipment for all units earmarked for NATO-led PfP operations.

The Army's participation in multinational peacekeeping operations led by the UN and NATO consisted of 5 detachments (310 troops) in the Balkans, 1 Military Police platoon and one battalion (405 troops) within Operation Enduring Freedom in Afghanistan. The Army's force package earmarked for NATO-led PfP and PSO operations consisted of 3 infantry companies, 1 paratrooper company, 1 Military Police Company, and 1 Mine Clearing detachment. The forces earmarked for collective defense consisted of 1 Infantry Battalion, 1 paratrooper Company, and 1 Mountain Company. Within these forces, the Army could deploy and sustain up to 900 troops.[7]

MAP IV (2002-2003) had as objectives reorganizing the force structure according with the provisions of the Objective Force 2007, while maintaining operational two

mechanized brigades and initialize the process for 3 more brigades (Mountain, Logistic, Airborne) and independent battalions such as Special Forces and Chemical, Biological, Radiological, and Nuclear (CBRN). By the end of 2003, the Army had downsized to 6 combat brigades, 3 combat support (CS) brigades and 1 combat service support (CSS) brigade within Active Forces, and 2 Corps HQ, 9 combat brigades, 5 CS brigades and 2 Logistic Bases within Territorial Forces.

To address NATO's operational requirements, the Army developed the Host Nation Support Catalogue, it adopted the CBRN defense doctrine by initiating the establishment of one CBRN battalion and it implemented NATO rotation system regarding force generation, training, and deployment. It also improved force sustainability in the theatre through the creation and deployment of the NSE, and it maintained the participation in multinational operations in the Balkans and in Afghanistan. Doctrinal development played an important role in redefining new capabilities. Developed in coordination and satisfying NATO standards and security concepts, the Army adopted and implemented the provisions of the following documents: the Strategy for employment of the Armed Forces in PSO, the doctrine for Military Training, Joint Operations doctrine, Special Operations doctrine; the Field Manual for Joint Operations, Psychological Operations (PSYOP) Field Manual, Army Regulation for Physical Training, and provisions for the constitution, fielding and training of Special Force units.

The Army increased the number of units earmarked for collective defense operations up to 1 Mechanized Brigade, 1 Mountain Company, and 1 Paratrooper Company. The forces earmarked for peace-support and crisis-response increased from the

previous MAP cycle by one company. Due to limited resources, Army's contribution to NATO Response Force limited the contribution to niche capabilities such as mountain infantry, military police, PSYOP, CBBRN, Special Forces and engineer.

Joining the Coalition Forces in Operation Iraqi Freedom, the Army contributed with one Infantry Battalion (405 troops), one Engineer Detachment (149 troops) and 1 Military Police Company (100 troops). By the end of the fourth MAP cycle, Romania could deploy and sustain about 1,500 troops in two theatres of operation, Afghanistan and Iraq. In addition to these efforts the Army continued its participation in the Balkans.

The fifth MAP cycle (2003-2004), marked Romania's admission to NATO. The transformation focused on interoperability, maintaining the participation in NATO and coalition operations in Afghanistan, Iraq and the Balkans, increasing the force readiness by implementing the NATO Force Goals, and participation in the NATO defense planning process. The forces available for collective defense operations were increased with 1 Paratrooper Company.

From 1994 to 2003, the Army participated in more than 3,400 NATO/PfP activities and exercises. The PfP program enhanced Army's reform efforts and had a significant contribution to Romania's admission into NATO. The transformation process represented a difficult endeavor due to the lack of resources, and dual efforts required in both downsizing and modernization. Nevertheless, the PfP and MAP had accomplished great achievements. The force structure was reduced by more than 60 percent, command and control improved, PPBES favored a better management of the existing resources, and fielding initiatives improved interoperability. Possibly, the most important achievements were the development of modern forces capable of conducting a large spectrum of peace

operations to include humanitarian assistance, stabilization and reconstruction, and the development of niche capabilities to offset NATO's NRF needs.

International Military Cooperation

Multilateral and bilateral military cooperation contributed in developing defense capabilities and was a valuable instrument in shaping Romania's security cooperation relations with NATO and non-NATO members. Romania developed defense cooperation programs in different domains with eleven countries. These objectives focused on defense resource management, personnel training and education, interoperability and logistics and infrastructure.

The most extensive cooperation was developed with the US. Launched in 1997, the Strategic Partnership has promoted bilateral cooperation in areas of military cooperation, regional security and counterterrorism and proliferation of WMD. The MIL-TO-MIL program familiarized the Romanian decision makers with the organization, training, planning, acquisition and fielding in the US defense. Initiated in April 1993, the program totaled more than 350 activities.

The "Warsaw Initiative" is a US governmental program, which provides financial assistance for PfP states to improve their defense capabilities. It consists of Foreign Military Financing (FMF) grants and International Military Education and Training (IMET) funds. Under this program, Romania has received more than $100 million since 1996. The FMF focused on communication, air transport, air management, informatics, procurement, and personnel training and spent about $93 million from 1996 to 2003. The IMET focused on personnel training, military restructuring and modernization, logistic support and intelligence, and benefited from $10 million in financial assistance, from

1996 to 2003. The IMET offered a package of 50 training courses to 258 participants within the 1999-2002 time framework.[8]

The extended cooperation with the Institute for Defense Analysis experts assisted the Romanian Armed Forces in the restructuring process, human resource management and simulation training by establishing the Defense Resources Management Centre, the Simulation Training Center and the NCOs Training Center.[9]

Within the partnership with the United Kingdom, Romania received assistance for developing the joint planning process, and establishing the PfP regional Training Center.

Romania also received assistance from Germany in the military reform processes, training and modernization of air defense equipment (the refurbished GHEPARD air defense system). The strategic partnership with Italy and cooperation projects with Turkey and Greece, Netherlands, Norway and Hungary developed capabilities within the same areas of cooperation.

It is important to acknowledge the contribution to defense transformation brought by the international military cooperation. Developments in areas such as defense planning, education, training and equipment modernization significantly improved the level of interoperability with NATO countries, and contributed to the development of credible capabilities.

<u>Evolution of Defense Budget</u>

The defense budget allocates funds to four critical areas: personnel, operations and maintenance, infrastructure, and acquisitions. Due to social protection measures for discharged personnel, the defense budget allocated about 55 percent to 70 percent towards personnel expenditures, from 1997 to 2002. This reduced the funds available for

operations and maintenance, infrastructure and acquisitions. In 2003, the defense budget

stabilized and allocated around 60 percent for personnel expenditures, 25 percent for

acquisition, 2 percent for infrastructure development and 13 percent for operations and

maintenance. Around $200 million was allocated to fund the on-going operations in

Afghanistan, Iraq and the Balkans. By 2005, force reduction and base closures were

almost completed and personnel expenditures decreased and stabilized to around 50

percent of the defense budget making more funds available for acquisition and

operations. This level would be similar to countries like Denmark and Spain (see

appendix 1, table 10). Figure 2 shows the evolution of the defense budget.
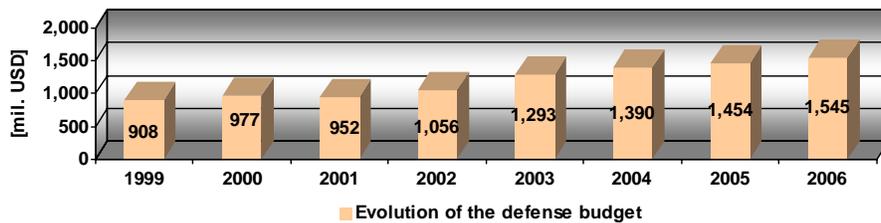
Figure 2.   The Evolution of the Defense Budget from 1999 to 2006
Source: The White Paper on Security and National Defense, 42.

It is noticeable that while the percentage of GDP allocated to defense

expenditures remained approximately constant, the defense budget increased at a rate of 5

to 10 percent a year due to a growing GDP. Even though the GDP percentage allocated to

defense expenditures is comparable to other NATO members (see appendix 1, table 11)

due to economic difficulties, the defense budget is smaller compared to other countries

having similar or less armed forces. In comparison to all other NATO members, Romania

has the lowest defense expenditures per capita. Under these circumstances, the Romanian Government expressed a willingness to increase its commitment to its defense budget by increasing expenditures to 2.38 percent of GDP, for the period 2004-2007 (see figure 3). This would allow about 10 percent annual increase of the defense budget, based on the foreseen economic growth. The defense budget would also include the financial contributions to NATO military budget and NATO Security Investment Program which is 1.32 percent of the defense budget, and about $0.7 million each year for the participation to the Individual Partnership Program.[10]
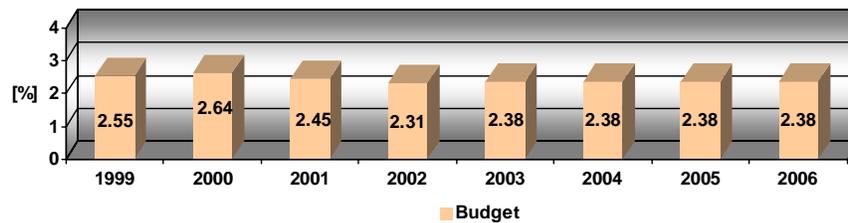
Figure 3.   The Evolution of the Defense Budget as Percentage of GDP, 1999 to 2006
Source: The White Paper on Security and National Defense, p. 43.

In conclusion, the defense budget meets NATO's requirements regarding percentage of GDP and it allocates significant percentage to acquisition. At the same time, the defense budget is much lower to that of other countries that have fewer armed forces. Therefore, the acquisition and fielding of new equipment takes longer which impacts the interoperability, the level of training, and other critical capabilities required to conduct coalition operations within NATO. Under these circumstances of limited

47

resources, acquisition and fielding programs must be carefully managed and oriented

toward the development of critical capabilities within NATO.

[1]The Treaty on Conventional Armed Forces in Europe (CFE TREATY) was signed on 19 November 1990 by a number of 30 States. Article IV of the Treaty established equal limitations on major armaments for NATO and the Warsaw Pact.

[2]NATO, Partnership for Peace: Framework Document (Brussels, Belgium: Ministerial Meeting of the NATO Cooperation Council, 10-11 January 1994), [on-line Ministerial Communiqués]; available from http://www.nato.int/docu/comm/49-95/c94 0110b.htm; Internet; accessed on 12 November 2005.

[3]The offer comprised 3 brigades (Mechanized, Mountain, Tank), two battalions (Signal and Cavalry) and two companies (Paratroopers and one Military Police)

[4]LtCdr Mihai Lupu, "Pregatirea Armatei Pentru Integrarea in Structurile Euroatlantice", in Romanian Military Thinking no. 6/2002, (Bucharest, Romania: Romanian Armed Forces General Staff, 2002), 97, [journal on-line Romanian Ministry of Defense web site]; available from http://gmr.mapn.ro/Arhiva_pdf/2002/Revista-6.pdf; Internet; accessed on 12 January 2006.

[5]General Eugen Badalan, "Fortele Terestre în Contextul Aderãrii României la NATO", in Romanian Military Thinking no. 6/2002, (Bucharest, Romania: Romanian Armed Forces General Staff, 2002), 46, [journal on-line Romanian Ministry of Defense web site]; available from http://gmr.mapn.ro/Arhiva_pdf/2002/Revista-6.pdf; Internet; accessed on 12 January 2006.

[6]Ibid., 46.

[7]Lt Cdr Mihai Lupu, "Pregatirea Armatei Pentru Integrarea in Structurile Euroatlantice", 94.

[8]The Romanian Government, *White Paper on Security and National Defense*, (Bucharest, Romania: The Romanian Government, 2004), 19-20, available from http://www.mapn.ro/indexro.php; Internet; accessed on 10 December 2005.

[9]Ibid., 20.

[10]Ibid., 44.

CHAPTER 5

ANALYSIS

The Functional Area Analysis

The Functional Area Analysis identifies the conceptual future capabilities

requirements for the programmed force. First, it analyzes the strategic and operational

requirements for the Army derived from national strategic documents. Second, it

analyzes the regional security environment for 2006-2012 timeframe. This would

comprise the threat assessment and analysis of the contributions that the Romanian Army

brings to the regional security. Based on the evolution of the security environment and on

the requirements derived from the national strategies, it determines the conceptual future

capabilities the Army needs to meet at strategic and operational levels.

Strategic and Operational Requirements

The NSS synthesizes objectives, defines, and correlates policy actions for all the

agencies responsible for implementing, safeguarding, and asserting Romania's

fundamental interests. Romania's national security interests, as identified by the NSS,

represent those states and processes, based on the values assumed and pursued by the

Romanian society, by which it ensures the prosperity, protection and safety of its

members and the stability and continuity of the state.[1] In the military realm, these

interests focus on integrating the country as a NATO and EU member, the only security

institutions capable of guaranteeing its integrity, independence, and sovereignty.

There are three main missions set by the NSS for the armed forces: defend

Romania and its allies, promote regional and global stability, and provide support to state

and local authorities in case of civil emergencies. Although the NSS makes no distinction between the strategic and the operational requirements to accomplish the above-mentioned missions, it frames general requirements for the armed forces as policies to develop credible, modern, and effective capabilities. The NSS sets the main policies in the realm of national defense and emphasizes the necessity of continuing the armed forces' reform to develop necessary national defense and expeditionary capabilities. Even though it does not specify what exact capabilities are required, the NSS focuses on building up Romania's status as a security provider in the region, continuing the participation in the security cooperation programs and securing the interoperability with NATO and EU forces. It states in general terms, the necessity of establishing and building up capabilities required for collective defense and for the conducting of peacekeeping, stability and reconstruction operations, fighting terrorism and humanitarian assistance.

The NDS acknowledges that the Army has limited capabilities of defeating a possible military aggression against Romania. Therefore, the NDS links Romania's national security with European security by promoting the development of defense capabilities and by connecting them with those of the European security organizations such as NATO, Organization for Security and Cooperation in Europe (OSCE) and EU.

The NDS develops two strategic concepts relevant for this study. The first concept, Credible Defensive Capability, presumes maintaining a permanent capability, able to respond to risks generated by the security environment using an array of forces in simultaneous or sequential actions. The second strategic concept is the Enhanced and More Operational Partnership, which promotes the development of a system of

partnerships with NATO member states, and within the sub-regional cooperation as the best way to prepare the Army for the integration into collective security environment. These concepts support the creation of a smaller, flexible, and professional force capable to conduct an array of missions in peacetime, in crises and at war.

The strategic missions set by the WPSND presumes the establishment of deployable forces with different levels of readiness having adequate capabilities, self-sustainable and capable of conducting joint and combined operations under national or NATO command. The same single set of forces will contribute with troops in EU, OSCE and UN-led crisis response operations and humanitarian assistance operations. Moreover, same troops will participate in security arrangements and cooperation at the regional level to enhance European security and stability. The mission requirements are:

- Counter an armed aggression against Romania or its Allies within NATO's collective defense.
- Promote regional and global stability, including through the use of defense diplomacy.
- Participate in crisis response operations.
- Participate in humanitarian assistance operations outside Romania.
- Participate in military operations within ad-hoc coalitions.
- Participate in defense cooperation initiatives and in the implementation of confidence and security building measures.
- Provide military assistance and outreach to other countries.
- Contribute to national and international efforts for armaments control and counter proliferation of WMD.
- Provide appropriate support to state and local authorities in case of civil emergencies.
- Participate with forces and logistic support to contain and eliminate disaster consequences.
- Provide support in case of CBRN accidents.
- Conduct support search and rescue operations.[2]

It is important to notice that in complex contingencies, employing the same package of force for different missions, in different circumstances, and under different

aegis, involves assuming certain risks regarding planning, sustaining, and deploying simultaneously these forces in different theaters. For example, training these forces is an issue which must be carefully addressed. While some forces require strict specialization such as CBRN, search and rescue, intelligence, other forces will have to conduct full spectrum operations. In conclusion, the operational and strategic requirements for the Romanian Army require the development of both focused and broad capabilities that must underpin the projected forces in accomplishing the above missions.

Regional Security Environment

Threat Assessment and Risk Factors to National Security

There is a general consent that in medium term there are no neighbouring countries who could initiate an attack against Romania, thereby the strategic documents make no reference to a specific country as a threat. Even though the risks of a major military conflict in Europe has significantly diminished, the existing sources of conflict and the new asymmetric threats impact the regional stability and, if not addressed, can degenerate into low to medium intensity conflicts, instability or political crisis. Considering the regional conventional and non-conventional risks, the regional instability, and the fact that Romania is within the sphere of influence of two global key players (US and Russia), Romania must build a credible force and take active roles within NATO, EU, and regional security initiatives to promote regional stability.

The NDS identifies four types of risks: regional, asymmetric, transnational risks and unpredictable hazards. Regional risks derive from the existing conflicts between states or from their tendency to emerge as regional powers and extend the sphere of influence. The existing military conflicts and tensions from South Ossetia, Transnistria,

Nagorno-Karabakh, Bosnia-Herzegovina, and the ongoing GWOT campaigns in

Afghanistan and Iraq, could extend and influence the entire region economically,

politically, and militarily. The disparity between Russia and the former soviet states in

matters of territory, resources, ethnicity on one side, and the tendencies of the Russian

Federation to influence countries like the Republic of Moldova and Ukraine on the other

side, is another destabilizing issue that affects regional security. The unsolved ethnical

and religious conflicts in Kosovo, Cyprus, Albania, Bosnia and Herzegovina, Caucasus,

Macedonia, Serb Republic or the territorial disputes between Greece and Turkey,

Macedonia and Albania could bring tensions into foreign relations in the Balkans and

may ignite new conflicts. The strategic importance of the Black Sea to all bordering

countries, in respect to resources and trade, raises territorial disputes between Ukraine

and Romania regarding delimitation of the continental plateau or diplomatic tensions on

the issue of Chilia-Bâstroe channel.

The second type of risks are asymmetric risks determined by non-state actors and

rogue states employing irregular forms of warfare or methods to disrupt national stability

or undermine the political will. They can be terrorist organizations who promote

proliferation and dissemination of nuclear technology and WMD or illegal trafficking of

drugs, arms, and ammunition.

Transnational risks originate from groups that promote separatism or extremism

based on ethnicity and religion, which extend outside of the national boundaries. One

example is the rise of Islamic radical fundamentalism in countries like Kosovo and

Bosnia and Herzegovina or Bulgaria. Their activities include terrorist attacks, organized

crime, smuggling of drugs, arms, and hazardous materials, and clandestine migration from Asia and Africa to Europe.

Unpredictable hazards are the risks determined by unforeseen developments that pose risks to national security, in the realm of international relations, natural calamities, and access to regional resources such as oil and gases. Such developments might affect Romania's credibility, as a democratic country and undermine the reform process.

The current developments in the CEE and the surrounding regions pose significant risks to European security. The complexity of the unsolved issues extends beyond the conventional military approach and requires involvement of diplomatic, economic, and military resources to identify possible solutions. In this context, the global character of terrorism and WMD threat, generate multiple challenges and increase the spectrum of unconventional risks.

Romania's Contribution to NATO and to Regional Security

Romania lies at the crossroads of four strategic paths within the following areas:

- Central Europe - a pole of regional prosperity.
- Central Eastern Europe - an emerging pole of regional stability.
- Community of Independent States - currently undergoing an identity crisis having territorial, ethnic, religious, economic and social disputes.
- The Black Sea area, of strategic importance for NATO Southern Flank, as well as a transit route for energy resources from Central Asia.[3]

In the present international environment, NATO plays an essential role in promoting the security not only in the Balkans and Middle East but also in Asia. The past and ongoing NATO operations in the Balkans, Afghanistan, and Iraq, and the existing conflicts from Middle East, Asia, and the Caucasus confirm the assertion that these regions experience territorial disputes, terrorism, social turmoil, organized crime,

54

economic crisis, and ethnic conflicts. Therefore, the alliance's southeastern flank is important but vulnerable to a multitude of traditional and asymmetric threats.

Being in the first defensive line on the NATO southeastern flank, Romania plays a proactive role by providing its infrastructure such as air bases and seaports for NATO and coalition expeditionary force projection in the above-mentioned regions and by participating with troops in NATO-led operations and regional security agreements. The WPSND provides the planning guidance in developing the Romanian contributions to missions outside of the national territory.

In the context of participation to EU Security and Defense Policy, Romania contributes to enhancing NATO-EU cooperation in the field of capabilities, by committing resources to the PCC projects and the European Capabilities Action Plan (ECAP)[4] and through an active participation to the NATO-EU Working Group on Capabilities. Romania announced that for the next period its contribution would be harmonized with the force package made available for the entire range of NATO operations. Participation in the development of a European security and defense dimension is congruent with the goals of ensuring coherence and cooperation between NATO and the EU, avoiding duplication and securing a harmonious development in the military capabilities field. By establishing an interconnected approach between NATO's PCC and the ECAP, the overall framework of NATO-EU relations will develop in a complementary manner with regard to forces and capabilities.[5]

Having deployed about 1,700 troops in Afghanistan, Iraq and the Balkans, the Army is also engaged in multinational cooperation initiatives and participates with forces and military capabilities in crisis response and peacekeeping operations under the UN and

OSCE mandate. These include the Multinational Peace Force in Southeastern Europe (MPFSEE)[6], the Romanian-Hungarian Joint Peacekeeping Battalion, and the Multinational Engineer Battalion (TISA)[7].

Conceptual Future Capabilities

The Army's conceptual capabilities derived from the national strategic documents and threat, overlap in areas such as peace support operations, crisis response, and humanitarian assistance. But, the White Paper on Defense considers a wide spectrum of operations, and a heterogeneous threat, which demand the respective forces to be capable to conduct full spectrum operations, not only peace support type of missions or classic offensive and defensive operations. The conceptual capabilities set by the WPSND for the future force are:

- Ability to conduct operations outside the national territory and outside of NATO's Area of Responsibility.
- The military structure must ensure robust forces and capabilities, interoperable, deployable, mobile, with self-sustainable capabilities for 30 days and able to participate in operations outside Romania's territory, in the absence of Host Nation Support (HNS).
- The forces must be able to be deployed and sustained in the theatre of operation for a period longer than two years with a six month rotation.
- The forces must be able to respond to current risks to include terrorism and the existence of unconventional phenomena such as regional instability, arms proliferation or the effects of civil emergency.
- The process of professionalizing the forces will gradually remove the conscript military service by 2007.
- The number of forces and structures designed to participate in collective defense missions will progressively increase.
- The forces' operational readiness shall observe the NATO criteria regarding the equipment and training for participation to combat operations.[8]

These requirements have important implications in the force planning and acquisition areas. The programmed force must have adequate protection capabilities to

reduce their vulnerabilities and ensure their survivability against CBRN threats. Ensuring survivability includes also protecting the forces against enemy direct and indirect fire or against unconventional threats such as improvised explosive devices. As the Army forces may conduct operations beyond NATO's borders, they must be deployable and sustainable.

Deployability will require adequate transportation infrastructures such as roads and railways, but also airlift or sealift assets. Deploying and sustaining operations in countries that cannot provide adequate host-nation support, has a significant impact on the intensity and duration of the operations by limiting the amount of deployed forces and their capabilities. Therefore, planning for logistic supply lines would require more transportation capabilities. Another requirement is effective command and control, and interoperable information systems. Not meeting this requirement would reduce the unity of command and interoperability with coalition forces.

It is important to observe that conceptual future capabilities focus on meeting the requirements generated by NATO and concentrate on collective defense missions outside of the national territory. Under these circumstances, understanding NATO's requirements would help determine the degree of congruence on capabilities planning at the conceptual level.

<u>The Functional Needs Analysis</u>

The Functional Needs Analysis determines the mission needs or the shortfalls in force planning by analyzing the current and programmed capabilities within four critical areas considered as being NATO' capability requirements: deployability, sustainability, survivability, and C4ISR.

Each area has specific capability requirements developed based on the Universal Joint Task List (UJTL). The UJTL provides an ordered listing of tasks describing the Armed Force's ability to perform activities or processes that joint force commanders require to execute their assigned missions. Since the UJTL is founded on Joint Doctrine and Joint Tactics, Techniques and Procedures, it provides a common language to describe the warfighting requirements.[9] The analysis evaluates the current and programmed capabilities in each of the specific requirements and determines the shortfalls in force planning across warfighting functions or in relation to resource allocation and major acquisition programs. Then it selects the most relevant capabilities requirements required for the success of the transformation program and correlates them with DOTM components that might contribute to reducing the shortfalls identified in the analysis of each area.

NATO's Required Capabilities

In order to maintain its relevance, NATO had to develop new capabilities adapted to the present security environment. The paper identifies the required operational capabilities derived from the Washington, Prague, and Istanbul Summits for the NRF and forces assigned for collective defense.

The Washington Summit

Launched at Washington NATO Summit, the Defense Capabilities Initiative aimed to develop relevant defense capabilities. It also emphasized the necessity to adjust the shortfalls identified in the Balkan conflict and to consider the particularities of the security challenges and risks posed by new unconventional threats.

Directly supporting the 1999 Strategic Concept, the DCI addressed the following areas:

- Deployability and mobility, sustainability and logistics, effective engagement, survivability of forces and infrastructure, command and control (C2) information systems.
- Improving interoperability among Alliance forces, and between Alliance and Partner forces in the realm of training, doctrine, personnel, and equipment.
- Closing the Euro-Atlantic technology gap capability in areas of key strategic importance such as C4ISR, strategic lift, precision guided munitions and the suppression of enemy air defense.[10]

The DCI acknowledged the diminishing risks of a large-scale conventional aggression against the Alliance and the rising of a wide variety of military and non-military risks that are multi-directional and often difficult to predict: ethnic and religious rivalries, territorial disputes, proliferation of CBRN threats, terrorism, organized crime, and the disruption of the flow of vital resources.[11]

In response to the above-mentioned challenges, DCI identified the following capabilities requirements that NATO forces should acquire:

- NATO forces need adequate levels of readiness and strength, as well as appropriate support structures, planning tools and command and control capabilities.
- The Alliance should be prepared to support, on the basis of separable but not separate capabilities, operations under the political control and strategic direction either of the EU or as otherwise agreed.
- NATO forces must be able to carry out essential tasks which include controlling, protecting, and defending territory; ensuring the unimpeded use of sea, air, and land lines of communication; conducting independent and combined air operations; surveillance, intelligence, reconnaissance and electronic warfare; strategic lift; and providing effective and flexible command and control facilities, including deployable combined and joint headquarters.
- The Alliance must be capable of deterring and defending against the use of CBRN weapons.
- The Alliance requires sufficient logistics capabilities, including transport capacities, medical support, and stocks to deploy and sustain all types of forces effectively.

- The Alliance's military forces must be capable of mounting and sustaining short notice operations conducted beyond the Allies' territory with little or no host-nation support.[12]

NATO force planning transposed into force goals all fifty-eight specific capabilities identified as deficiencies, but ultimately the decision to allocate necessary resources to support their implementation rested on national governments' commitment and political will.

The 2001 Statement on the DCI issued at the meeting of the North Atlantic Council in the Defense Ministers Session admitted that from its inception, DCI achieved limited progress, and further efforts are required to achieve necessary improvements in areas with critical and long-standing deficiencies.[13]

The Prague Summit

The 2002 Prague Summit meant the redefinition of NATO's commitment to adapt its capabilities assumed through DCI two years before. The emergence of terrorism threats and the spread of weapons of mass destruction posed new challenges that had to be addressed through a new reforming agenda. The NATO members adopted specific measures which included new priorities and concrete initiatives to correct the deficiencies that could not be fixed through the DCI, and ensure that NATO would have required capabilities to conduct full spectrum operations. These initiatives were the PCC, the creation of NRF, and the streamlining of the military command structure. Further, the paper examines the importance of the PCC and NRF in defining NATO capabilities requirements.

The PCC refined the DCI by adopting firm political commitments, an agenda, and agreement upon specific shortcomings to overcome. Through the PCC, each member

state contributes with specific capabilities, enabling the Alliance to carry out the full range of missions, including counterterrorism and CBRN defense.

The PCC connects the political commitments of all Allies on improving defense capabilities with the Force Goals and NATO Force Planning, and focuses on a number of capabilities critical to address the requirements of full spectrum operations. The PCC emphasizes the need to continue DCI's projects in the area of sustainability, deployability, readiness, survivability, command and control and introduces new needs for improvement and development of military capabilities such as CBRN defense, C4ISR, effective engagement; strategic air and sea-lift, air-to-air refueling; and force protection.[14] Furthermore, it gives the opportunity to each member to bring military contributions by developing niche capabilities in areas identified as deficient. However, like the DCI, PCC might confront the problem of matching capabilities to commitments. Ultimately, the implementation of the PCC depends on the ability of the member countries to coordinate their political will with necessary resources and to provide adequate capabilities.

Through the implementation of the Force Goals, the Romanian Army plans to build the necessary capabilities required by the force package assigned for collective defense and crisis response, for the full range of Alliance missions. These capabilities require adequate interoperability and readiness levels and their development is the central element in redesigning the force structure and committing resources. Romania's contribution to PCC comprises a package of capabilities such as Special Forces, mountain infantry, military police, electronic warfare, CBRN, unmanned air vehicles, engineer, CIMIC, and airlift.

The NRF evolution from concept to reality was noteworthy. At the Prague

Summit, NATO leaders agreed on the need to build interoperable and deployable forces

capable of responding to the new challenges posed by terrorism and the proliferation of

weapons of mass destruction. Based on the concept that each of the NATO countries will

contribute to NATO's pool of force, NATO members have agreed to focus spending on

capabilities shortfalls.

Approved as a concept in June 2003, the NRF inaugurated the first force package

of 9,500 troops in October 2003, and in October 2004, it numbered approximately 17,000

troops capable of conducting the full spectrum of operations. Having planned to increase

to about 25,000 troops, the NRF will reach full operational capability in October 2006.

The NRF will require a five-day notice before deployment and it will have 30 days of

self-sustainment capabilities for all classes of supplies. In 2006, the operational NRF will

consist of a brigade-size land component with forced entry capability, a naval task force

composed of one carrier battle group, an amphibious task group, a surface action group,

and an air component that will be capable of 200 combat sorties a day[15].

Driven by the underlying principle: "first force in, first force out", the NATO

Response Force, should be capable of carrying out different missions, anywhere in the

world:

- Deploy as a stand-alone force for Article 5 (collective defense) or non-Article 5 crisis response operations such as evacuation operations, support disaster consequence management (including chemical biological, radiological and nuclear events), humanitarian crisis situations and counter terrorism operations.
- Deploy as an initial entry force facilitating the arrival of larger follow-up forces.
- Deploy as a demonstrative force to show NATO's determination and solidarity to deter crises (quick response operations to support diplomacy as required).[16]

Flexibility would be important in maintaining the relevance of the NRF. Similar to the U.S. concept of Marine Expeditionary Unit, the NRF can be tailored to meet a broad spectrum of requirements from the pool of forces committed by the contributing countries. Because the basis of force planning is the six months rotation system that alternates force generation, training and certification, and stand-by or deployment, ideally, the amount of forces committed to NRF should be larger than the planned number, for each required capability.

The Istanbul Summit

The Istanbul Summit reiterated collective defense as the main mission of the alliance and emphasized the need for further transformation of military capabilities to meet the security challenges posed by terrorism and proliferation of weapons of mass destruction. In this respect, the Summit identified key priorities in increasing the security climate such as the contribution to International Security Assistance Force in Afghanistan (ISAF) and by adopting measures (Civil Emergency Action Plan and the Partnership Action Plan on Terrorism), to prevent and respond to CBRN threats.

In the realm of capabilities, the Summit adopted a set of measures to link the political commitment to employ NATO's forces with the commitment of providing the necessary capabilities. These measures aimed to improve the interoperability, usability, and adaptability of the forces. Perhaps the most important decision made at the Istanbul Summit was to improve the force generation process for the ongoing operations, collective defense, and NRF, as the defense ministers agreed to new readiness targets for NATO members: that 40 percent of their land forces should be deployable and 8 percent deployed at any one time.[17]

Current and Programmed Capabilities

Currently, Romania brings a significant contribution to the global and regional security and stability. The current contribution to NATO operations consist of two mechanized infantry battalions supplemented with combat support units. The Army managed to deploy and sustain these troops in three different theaters of operation with national capabilities. Conducting mostly stability and reconstruction operations (SRO) and peacekeeping operations, these forces proved to be interoperable as of training, doctrine, personnel, and equipment and C4ISR compatible with NATO and coalition partners. A financial effort of 20 percent of defense budget (approximate US $200 million) supports this military effort.

The planned force structure aims to balance two categories of forces capable of performing both expeditionary and collective defense missions. According to the Objective Force program, the Army will have active and territorial forces[18]. Active forces will generate the high-readiness forces capable of deploying rapidly and conducting crisis response operations, counterterrorism operations, humanitarian assistance, and non-combatant evacuation. Active forces will amount to 29,000 troops, with 100 percent personnel and equipment, and self sustainable for 30 days. Their readiness goes from 7 days notice before deployment, for missions within the national territory, to 30 days for missions abroad. Timely and efficient employment of these forces would require readiness and availability doubled by modern equipment and standardized training. Therefore, about 80 percent of the Army's budget supports the active forces.

Territorial forces will have a lower readiness to support or reinforce the high-readiness forces or to conduct large-scale operations in major contingencies. They will

number 19,500 troops, with 100 percent major equipment, and 5 percent to 70 percent personnel having a readiness of 30 to 360 days.[19]

According to WPSND, by 2007, the Army will make available for NATO-led collective defense one Mechanized Brigade (high-operational readiness) and one Mountain Troops Brigade (low-operational readiness). By 2009, the offer will increase to one Deployable Division framework with CS and CSS elements and by 2012, a deployable division consisting of 3 brigades and the necessary combat support and combat service support units. The Army Transformation Strategy sets the programmed capabilities to one division and one brigade, by 2015. As for the NRF, the Army will develop up to battalion level Special Forces, CBRN, and human, signal and imagery intelligence (HUMINT/SIGINT/IMINT) niche capabilities.

Deployability

In accordance to *Allied Joint Movement and Transportation Doctrine* (AJP-4.4), Romania is responsible for providing the necessary airlift, sealift, and land transport capabilities to deploy and sustain its forces participating to NATO military operations. To implement this provision, Romania adjusted its national legislation and signed agreements to contract the necessary airlift capabilities. It also implemented the Allied Deployment and Movement System by establishing, in 2002, the National Movement Coordination Center and developing the Host Nation Support Capability Planning Catalogue.

Analyzing the security environment and NATO's extended area of interest, it may be observed that future possible deployments may occur in NATO countries for

collective defense missions or in Central Asia, Middle East, Caucasus, and Africa for PSO or crisis-response operations (CRO).

Many factors influence deployability. The most significant include the location of deploying units in relation to airfields or ports, the existing transport infrastructure (roads, railways, seaports and airports), the existing mobility assets (airframes and cargo ships), type of deployed unit, and air threat in the country of destination. The study will refer to specific tasks that define deployability requirements, described in table 1.

TASK	Capability Requirement
Table 1. Deploy Capabilities	
D1 Conduct Deployment and Redeployment	To move forces and cargo in accordance with both national and theater requirements and in conformance with the supported concept of operations. To provide the transportation assets (e.g., road, rail, sealift, and airlift) required in an operational configuration for the movement of forces and cargo. Mobility assets involve military and commercial means that includes assets from multinational partners.
D2 Conduct Terminal Operations	To conduct reception, processing, and staging of passengers; receipt, transit storage, and marshaling of cargo; loading and unloading of ships or aircraft; maintain in-transit visibility; and manifesting and forwarding of cargo and passengers to destination.
D3 Provide Movement to POE	To move forces, individuals, and equipment/supplies from origin installation, or mobilization station if used, to marshaling area and then to ports of embarkation (POE). Includes Ministry of Defense (MOD) organic transport and contracted capabilities.
D4 Move Forces from POE to POD	To move forces by air and sea strategic mobility assets to ports of debarkation (POD) in theaters. Includes strategic mobility and support assets, in place to move forces and cargo.
D5 Determine the Impact of Threat Activity on Mobility	To examine potential and actual threats at departure and arrival locations and en route (along lines of communication). To determine the impact of threat on civilian contracted lift assets and determine necessary changes to operations.

Source: Developed based on Joint Mission Essential Task List Development Handbook, Annex A to Appendix C to Enclosure B, Strategic National Tasks, Measures, and Criteria, (Andover, U.S.: Dynamics Research Corporation, 2002), p. 8-23; [DTIC database]; available from http://www.dtic.mil/doctrine/training/JMETLbook.pdf; Internet; accessed on 14 January 2006.

Current Capabilities

The Army has engaged in international SROs about 1,700 troops from which 880 are troops in Iraq, 550 troops in Afghanistan, and 250 troops in the Balkans. Additionally, one infantry battalion (400 troops), assigned as part of Supreme Allied Commander Europe strategic reserve, is ready to deploy to Afghanistan.

The study, considers the deployments to Afghanistan and Iraq where the Army deployed battalion level force. Each deployment required both military and civilian air, sea, and land transportation capabilities. First, the movement from the peacetime garrison to seaport of embarkation (SPOE) and airport of embarkation (APOE) requires railway and road transportation. Due to the well-developed national infrastructure, units up to brigade level can reach any national SPOE or APOE by using MOD contracted capabilities, in no more than 24 to 36 hours. Second, movement of personnel and equipment from SPOE and APOE to each theater requires airlift and sealift capabilities.

The Romanian Air Force has a limited available airlift fleet. Four C-130 are currently in the Air Force inventory of which two are operational. Therefore, the deployment time for troops, equipment, and material using these assets is considerable. Even though Romania has other NATO noninteroperable military transport airframes (AN-24), the study does not take them into consideration.

To increase the airlift capabilities, the MOD ratified protocols with two Romanian airline companies, TAROM-SA and ROMAVIA-RA. Their availability and response time is still limited. ROMAVIA has few airplanes capable of deploying troops and equipment, and TAROM has a load rate of 90 percent of its current fleet.[20] Their

maximum capacity is up to 1000 troops or 160 tons of cargo for a maximum distance of 5,000 km without refueling.

Deployment and redeployment of personnel to Afghanistan are conducted with C-130 and it requires 10 sorties for one infantry battalion (405 troops).[21] In Iraq, the same operation is conducted with chartered flights and it requires about the same number of sorties, but it may depend on the type of plane. The time required for deployment varies from 20 days up to one month based on aircraft availability, weather, and other factors.

The national airfield infrastructure provides adequate runways and refueling and unloading equipment on all international airports and military airfields but only one airport has the specific equipment to service the C-130 aircraft.

Sealift capabilities that are available for deployment include two ferryboats, one roll-on and roll-off (RO-RO) ship and various cargo ships. In both cases, the equipment and 30 days of supply (DOS) were transported by sea, using contracted sealift capabilities (one ferryboat). The national port infrastructure includes three ports at the Black Sea from which the port of Constanta has RO-RO and ferryboat terminals and can accommodate vessels up to 200,000 tdw. The ferryboats can accommodate up to 100 troops and 300 combat vehicles. The response time from notification is 30 days for deployments within the Black Sea, and 45 days for deployments beyond the Black Sea.[22]

Analyzing the current capabilities, the Army can deploy an infantry battalion-level unit under the following circumstances:

1. By using combined transportation methods (land, sea, air).

2. By using a combination of military and contracted railway, sealift and airlift capabilities.

3. By sea-lifting the equipment and 30 DOS with one ferry-boat.

4. By airlifting the personnel, individual weapons and one DOS with C-130 for Afghanistan or civilian contracted aircraft for Iraq.

Programmed Capabilities

The study considers that within the division made available for NATO operations by 2012, the Army will deploy only one brigade, the division headquarter and CS and CSS units, which can sum from 5,000 to 7,000 personnel. This represents an increase roughly four times the current deployability requirements. It is important to mention that the current modernization and acquisition programs do not include development of airlift or sealift capabilities by 2009.[23]

To identify the needs to meet deployability requirements for the programmed force, the study will use the results identified by a research conducted by the Army General Staff.[24] The research analyzed the possibility of deploying one Paratrooper Brigade numbering 5,000 troops, on a distance up to 5,000 km assuming that the country of destination had the required air and sea infrastructure to accommodate the transportation assets. The results are that, with the existing capabilities the Army can deploy one Paratrooper Brigade by contracting two ferryboats and two Ro-Ro ships and having the existing two C-130 flying 35 sorties without maintenance.[25] To deploy a mechanized brigade or a mountain infantry brigade, the requirements would increase by 50 percent. Considering also the division headquarters and the CS and CSS units that come along, the requirements would increase by 100 percent. The deployment time would be about 4-5 months, which by far exceeds NATO requirements for both NRF and collective defense forces.

The conclusion is clear. The existing MOD air assets and contracted air and sea capabilities do not meet the requirements to deploy the programmed force. Since there are no foreseen initiatives to increase the air and sea fleet, the only solution would be to ask for support from NATO or non-NATO countries or foreign airline/sea civilian companies.

The situation might be different for deploying forces assigned to NRF, which require short-notice deployment, usually no more than a month. Since these forces are up to battalion level, the existing capabilities might accommodate them only if their deployment does not take place in the same time when other contingents are rotating.

<u>Sustainability</u>

Sustainment is a national responsibility and includes all activities and resources required to sustain the deployed troops by providing all classes of supplies.

Sustainability is highly related to deployability and, in generally, depends on the same factors. The most significant include the existing transport infrastructure (roads, railways, seaports, and airports), the existing mobility assets (airframes and cargo ships), type of deployed unit, and resources provided in theater by coalition partners or the host nation. The study will refer to specific tasks (see table 2) that define sustainability requirements.

Table 2. Sustain Capabilities	
Number	Capability Requirement
S1 Procure, Train, Supply, Transport, and Maintain Personnel	To procure, train, and assign personnel to authorized positions in the force structure. This task includes accountability of assigned forces and movement of trained personnel replacements to their unit assignments.
S2 Provide Supply and Maintenance	To provide procurement and distribution of supplies and equipment. It also includes the maintenance performed on materiel requiring major overhaul or complete replacement of parts, assemblies, subassemblies, and end items.
S3 Ensure Interoperability	To ensure that systems, units, or forces can provide services to, and accept services from, other systems, units, or forces and use the exchanged services. It includes interoperability of the communications, fuel, doctrine, ammunition, geodetic reference, rations, unit design, training, and materiel.
S4 Provide Legal Support	To advise commanders and staff on all civil, acquisition, fiscal, military, international, and operational law issues.
S5 Acquire HNS	To negotiate and contract for support and services from a host nation for the Romanian forces in a theater.
S6 Provide for Personnel Support	To provide for the support of personnel in a theater, to include personnel management and morale support, religious support, and health services support, medical evacuation and patient transport; and humanitarian assistance and civic action to other nations.
S7 Conduct Materiel Acquisition	To procure, produce, buy, lease, rent, or otherwise obtain equipment and supplies for the armed forces. To provide them to military units and other allied forces, governmental, and nongovernmental organizations.
S8 Acquire, Manage, and Distribute Funds	To perform the resource management function of estimating costs for specific operations, tracking, and reporting actual costs to support requests for appropriation of funds for specific operations.

Source: Developed based on Joint Mission Essential Task List Development Handbook, Annex A to Appendix C to Enclosure B, Strategic National Tasks, Measures, and Criteria, (Andover, U.S.: Dynamics Research Corporation, 2002), p. 69-84; [DTIC database]; available from http://www.dtic.mil/doctrine/training/JMETLbook.pd;. Internet; accessed on 14 January 2006.

Current Capabilities

When deploying to a theater of operation, the troops carry 1 to 3 DOS and up to 30 DOS onboard of the vessel transporting the equipment. If troops arrive first into theater, they depend on the existing coalition resources usually provided during Reception, Staging, Onward Moving, and Integration (RSOI) activities. If arrival is coordinated, the troops can self-sustain for up to 30 days but then depend on in-theater sources to replenish the stocks and to procure most of supplies.

Currently, the Army is sustaining by air the troops deployed to Afghanistan and Iraq. One may question how this is possible with the existing limited lift capabilities. The answer lies in the fact that coalition partners or the host nation satisfies most of the supplies requirements within the theater.

For example, couple of C-130 sorties a month for Afghanistan and Iraq, satisfy the sustainment requirements for class V (ammunition), class IX (repair parts), and class VIII (medical material). This is possible mainly because the troops are conducting SRO and not major combat operations, therefore the requirements for the above-mentioned classes of supply are low.

The procurement and supply of the personnel is not an issue since the combat losses are sporadic and in small number. Personnel replacement does not require an extra sortie besides the one planned for sustainment.

Each deployed contingent has maintenance capabilities up to level 2 and when the situation requires it, special maintenance teams deploy into theater to conduct level III maintenance. Personnel have full issue of clothing and protective CBRNE equipment and the unit has a reserve to cover unexpected contingencies.

For each theater, there is an NSE responsible for negotiating and contracting for support and services or conducting materiel acquisition from the host nation or coordinating with coalition nations for support in accordance with pre-established agreements. A finance officer performs the resource management function and tracks and reports actual costs to support requests for appropriation of funds and to confirm the spending on services provided by contractors and suppliers. Each contingent has a chaplain, a psychologist, and echelon I level of medical care (ROL I)[26] to provide for personnel support and humanitarian assistance to host nations. Medical care above ROL I and medical evacuation are coordinated with other coalition forces that have these capabilities.

The Army relies heavily on sustainment provided by coalition partners on those classes of supply that require large amount of resources for in-theater transportation. These include class I (food and water), class III (POL-petrol, oil, lubricants), and class IV (construction materials and all fortification and barrier materials).

Currently, sustainment of a force equivalent of two battalions is possible under the following circumstances:

1. The troops conduct only SRO or peacekeeping missions.

2. Class I, class III, and class IV are available in the theater.

3. At least one C-130 is available for sustainment operations.

4. The host nation's infrastructure has adequate airports and seaports to accommodate the existing lift capabilities.

Programmed Capabilities

Sustaining the programmed force under the existing circumstances is challenging and almost impossible. Considering that sustainment of 400 troops requires two C-130 flights a month, sustaining 5,000 to 7,000 personnel would require a minimum of 15-20 sorties a month which means that the two available C-130 would have to conduct continuous sustainment flights, which is not realistic. The civilian airline companies do not have adequate cargo planes to satisfy these needs and the available sea fleet might not have access to the theater of operation. The conclusion is that with the existing capabilities, the Army can sustain the programmed force under the following circumstances:

1. The troops conduct only SRO or peacekeeping missions.

2. Class I, class III, and class IV are available from the theater.

3. All airlift and sealift assets are available for sustainment operations.

4. The host nation's infrastructure has adequate airports and seaports to accommodate the existing lift capabilities.

5. Lines of communication from the air/sea port of debarkation (APOD/SPOD) to area of operation are open and transportation assets are available.

While the above considerations work for the current deployed forces, they cannot constitute a solid argument base for planning future operations. In addition, they certainly do not meet NATO requirements. The existing MOD air assets and contracted air and sea capabilities do not meet the requirements to sustain the programmed force.

Survivability

Survivability includes defense of forces against CBRN threat, releases other than attack (ROTA) and terrorist threats. It diminishes the effects of possible non-conventional attacks, to protect the force and its freedom of maneuver.

The Army has implemented NATO's doctrine regarding CBRN defense since the first MAP cycle. The Army's CBRN Defense Doctrine sets the requirements, the operational standards, and procedures the troops have to meet to achieve NATO standards related to survivability. The doctrine encompasses NATO directives, the specific Standardization Agreements (STANAG) referring to CBRN defense and the Joint Allied CBRN Defense Doctrine. Table 3 presents the required survivability tasks and capabilities for the current and programmed force.

Table 3.   Survive Capabilities

Number	Capability Requirement
Sv1 Operate in a CBRN Environment	Units and individuals must have specialized training and equipment to operate in a CBRN environment.
Sv2 Coordinate CBRN Defense Operations	To protect all assets from attack by CBRN weapons. Protected assets include centers of gravity, critical facilities, strategic reserves, population centers, industrial capabilities, and infrastructure.
Sv3 Coordinate CBRN Protection for Forces and Means	To detected and identify use of CBRN to provide unambiguous attack warning, to provide accurate attack assessment, to access and display data bases in a CBRN weapon situation, and to assure C4ISR nodes survive a CBRN attack.
Sv4 Coordinate Consequence Management	To contain, mitigate, and repair damage resulting from the intentional use or accidental release of a CBRN weapon or a toxic industrial material (TIM). It includes adequate NBC personnel/equipment protection and decontamination capabilities.

Source: Developed based on *Joint Mission Essential Task List Development Handbook,* Annex A to Appendix C to Enclosure B, Strategic National Tasks, Measures, and Criteria, (Andover, U.S.: Dynamics Research Corporation, 2002), p. 146-152; [DTIC database]; available from http://www.dtic.mil/doctrine/training/JMETLbook.pdf; Internet; accessed on 14 January 2006.

Current Capabilities

   To evaluate the Army's capabilities to survive to a nonconventional attack, the study must investigate the following areas: organization of the CBRN defense, and CBRN defense readiness. Organization of the CBRN defense includes the C2 structure and the CBRN intelligence collection and dissemination. The Army has implemented a CBRN C2 structure in accordance to NATO's requirements.[27] At company level, the C2 structure comprises of one NCO coordinating the overall training and operation and a number of surveillance, early warning, and decontamination specialized teams. From battalion level and up to division level, staff officers and NCOs are responsible for coordinating the overall planning, training and implementation of CBRN defense plans.

   The CBRN intelligence collection and dissemination refers to procedures for early warning and reporting the CBRN attacks or risks. Every command post at company level and above has the personnel and the equipment capable of conducting CBRN reconnaissance and surveillance missions and disseminating standardized reports on non-conventional attacks or risks in accordance with NATO procedures.[28]

   The CBRN defense readiness includes training, protection, and equipment capabilities. The Army implemented STANAG 2150, which regulates personnel's training and establishes the competency standards for personnel, specialists, and units. Training focuses on CBRN attack early warning procedures, collective and individual protection measures, contamination detection, and decontamination, the usage of detection and monitoring equipment and intelligence collection and dissemination.

   If, at individual level protection, equipment and accessories are provided for all Army troops, not all units have collective protection capabilities. Presently, most of the

units have reduced capabilities to operate within a contaminated area for a longer period of time, since the personnel can not recuperate or rest.

Currently, all units nominated for NATO and coalition operations have the equipment to detect, identify, monitor, and report the CBRN risks.[29] This includes individual protection equipment, CBRN detectors and dosimeters, and hardware and software for automated dissemination of CBRN warnings. They also possess decontamination capabilities from individual to collective level. One example is the Army's participation to operation Iraqi Freedom with one CBRN company which conducted decontamination operations in support of the coalition forces.

Based on the above evaluation, the current force meets the interoperability requirements in respect to doctrine and training and it can operate for a limited time in a CBRN contaminated environment.

Programmed Capabilities

NATO requires CBRN capabilities able to deploy rapidly in response to a crises situation and capabilities with lower readiness to support long term operations such as PSO and SRO. Army's projected capabilities, in response to this requirement, is one deployable CBRN decontamination company (high readiness force) and, by 2009, one CBRN Battalion consisting of two decontamination companies (low readiness force). Besides these specialized units, by 2012, the collective defense force (one division) should have CBRN capabilities at NATO standards. Since doctrine and training do not constitute a concern by already meeting NATO standards, the only concern is the equipment. Several fielding programs have been initiated and funded, and aim to improve the CBRN protection, detection and decontamination equipment at the individual and

collective level. By the end of 2007, the programmed force should have the equipment able to detect and monitor the full spectrum of radiations and capabilities to detect and identify biological and chemical contamination. It should also have collective protection capabilities to include recuperation facilities for up to 25 percent of deployed troops, command posts, infirmeries, and tactical operation centers. The high readiness force capabilities will also include protection against TIM.

In conclusion, the existing capabilities do not fully satisfy NATO requirements regarding collective protection for the programmed force. Nevertheless, the Army has initiated adequate programs to fill these gaps and field the equipment for each programmed structure.

C4ISR

NATO joint and combined operations require timely tactical and operational level information on both friendly and enemy forces. The C4ISR system connects sensors, and collects, analyzes and disseminates necessary information for planning and conducting the full range of military operations. The Directorate of Communication and Informatics has implemented a strategy to integrate NATO's and Army's communication networks at strategic and tactical levels. Table 4 presents the desired C4ISR tasks and capabilities for the current and programmed force.

Table 4. C4ISR Capabilities	
Number	Capability Requirement
C1 Operate Land Force C4ISR Compatible with NATO Structure	Headquarters of land units should have a NATO compatible standardized structure.
C2 Collect Information on Situation	To obtain information and data from all sources on the situation. This task includes collecting battlefield damage assessment, munitions effects, medical assessments, and hazards information such as CBRN contamination.
C3 Support Commander's ISR Requirements	To provide surveillance and reconnaissance support to commanders. To determine national asset capability having validated requirements. This task includes providing, on a time-share or dedicated basis, assets to meet the needs of commanders.
C4 Determine Enemy's Capabilities and Courses of Action	To identify, what an enemy (or potential enemy) can do, as well as when, where, and with what strength. This task addresses both military and nonmilitary capabilities.
C5 Provide Intelligence for Targeting	To provide targeting intelligence to targeting planners. This includes supporting the strategic targeting process as well as target battle damage assessment.
C6 Disseminate and Integrate Intelligence	To provide intelligence, in a timely way, in an appropriate form, and by any suitable means, to those who need it and to ensure that the intelligence is understood and considered by the consumers. To disseminate data to users in support of operational commander. To prepare, publish, and disseminate intelligence report.

Source: Developed based on Joint Mission Essential Task List Development Handbook, Annex A to Appendix C to Enclosure B, Strategic National Tasks, Measures, and Criteria, (Andover, U.S.: Dynamics Research Corporation, 2002); p. 23-39; [DTIC database]; available from http://www.dtic. mil/doctrine/training/JMETLbook.pdf; Internet; accessed on 14 January 2006.

Current Capabilities

The Army adopted NATO type command and control structure beginning with

1997. The process presumed a reorganization of all headquarters from battalion level

above, on functional modules, in accordance to NATO modular organization (S1 to S6 at

battalion and brigade level, respectively G1 to G8 at division and corps level and J1 to J9 at Army headquarter).

The Army is developing communications and computers capabilities. Currently, there are two major acquisition and fielding programs, the Permanent Communication Network (PCN/STAR) and the Radio Communication Network (RADIO/STAR) from strategic to tactical level, and the program EXPERTUL at tactical level.

The PCN/STAR and RADIO/STAR, includes 450 fixed and 300 mobile communication centers fully interoperable with NATO C4ISR systems.[30] Initiated in 1997, the program integrated all command and control structures and provided the communication platform from strategic to tactical level. The equipment provides secure voice and data links to all forces within national boundaries or deployments.

The development of the C4ISR capabilities is an undergoing effort to achieve interoperability with NATO forces and integrate all forces regardless of their location, mission, or type. At brigade level, the program EXPERTUL integrates C4ISR communication and data platforms and enhances the interoperability and cooperation with allied forces, through the following capabilities:

1. Secure, real time, voice and data transmission/reception.

2. Tactical and operational analysis, process, and display of terrain and troops data (Recognized Land Picture and Local Recognized Environmental Picture).

3. Warfighting and threat evaluation.

4. Data base and utility software.

5. Blue Force Tracking and Blue Force Combat Readiness.

All Army's forces currently operating under NATO and Coalition aegis have proved their capabilities to establish interoperable C4ISR structures. These include voice and data links with partner nations, computer networks, and radio and satellite terminals.[31]

Even though the Army's forces earmarked for NATO and coalition operations do not have organic ISR capabilities, they study considers the existing MOD ISR capabilities since they operate along with Army' contingents in Iraq and Afghanistan. The ISR capabilities in Iraq consist of one military intelligence detachment comprising one command and analysis group, three HUMINT groups, two counterintelligence groups and one unmanned aerial vehicles (UAV) detachment (SHADOW 600). In Afghanistan-ISAF, it consists of one military intelligence detachment comprised of one command and analysis group, three HUMINT groups, one mobile team and one UAV detachment (SHADOW 600).[32] They collect analyze and disseminate intelligence to support the commanders in determining the enemy's capabilities and courses of action and provide intelligence for targeting.

Summarizing the current capabilities, the conclusion is that battalion level units up to one mechanized brigade nominated to NATO and coalition operations posses interoperable C4ISR capabilities, and benefit ISR support from other MOD assets.

Programmed Capabilities

The program EXPERTUL has been implemented to one mechanized brigade. Besides the communication and data infrastructure, by the end of 2007, this brigade should have integrated ISR capabilities, such as tactical reconnaissance and surveillance

(vehicles, UAV, sensors, radars), fire-finder radars, access to NATO's surveillance system and to HUMINT and SIGINT resources.

Besides the mechanized brigade, by 2012, program EXPERTUL will be implemented to two other brigades and within division headquarter. The only foreseen impediment for EXPERTUL and for achieving interoperable C4ISR at tactical level would be the financial resources. According to the NDS, beginning with 2007, the financial efforts will shift toward acquisition and modernization. Therefore, there is a high probability that by 2012, the division will have a fully implemented and interoperable C4ISR network.

Application of DOTM

Up to now, the analysis identified the Army's current and programmed capabilities within areas of deployability, sustainability, survivability, and C4ISR. To correlate each capability requirement with DOTM components, the study must first identify the most relevant capabilities required for the success of the transformation program. Table 5 correlates these capabilities with the DOTM components that might contribute to reducing the shortfalls identified in the analysis of each area.

Since the DOTM elements are interrelated and they influence each other, the table below contains only the most significant ones. For example, changes of doctrine would affect the organization and the training, while the introduction of new materiel would produce the same effects. However, to identify potential solutions for a particular requirement, each component of DOTM is analyzed distinctively and the impact on other components is disregarded. Therefore, each potential solution aims to improve a specific capability.

Task Number	Capability Requirement	DOTM Element
Table 5. Top 11 Key Capabilities and DOTM components		
D1	Provide the transportation assets required for the movement of forces and cargo.	M
D2	Conduct reception, processing, and staging of passengers and cargo.	D, O, M
S3	Ensure that systems, units, or forces can provide services to, and accept services from, other systems, units, or forces and use the exchanged services.	D, T, M
S4	Negotiate and contract for support and services from a host nation.	O
S5	Provide support of personnel in a theater.	M
Sv3	Detect and identify use of CBRNE to provide unambiguous attack warning, provide accurate attack assessment, and assure C4 nodes surviving a CBRNE weapon attack.	M
Sv4	Contain, mitigate, and repair damage resulting from the intentional use or accidental release of a CBRNE weapon or a TIM.	O, M
C1	Ensure interoperable C4 standardized structure for all land forces	M
C2	Obtain information and data on the enemy and friendly situation.	M
C3	Provide surveillance and reconnaissance support to commanders.	M
C6	Process intelligence, and disseminate data to users in support of operational commander.	M

Functional Solution Analysis

The Functional Solution Analysis recommends DOTM solutions that can resolve identified shortfalls, and focuses key technologies or major endowment programs. In addition, it captures the current level of operational capabilities and serves as the basis for future operational assessments of the programmed force.

Doctrine

In the realm of interoperability doctrine impacts deployability and sustainability of forces in NATO-led operations (see table 6). The Government decision 1374/2004

delegates full competencies to MOD to ratify and implement NATO standardization agreements and doctrine. At the tactical and operational level, NATO doctrine has been implemented and it regulates all aspects of training, operations, and logistics. At strategic level, there is a great need for a doctrine to integrate the Army's forces into NATO's operational framework. The implementation of a Joint Doctrine for NATO/Coalition Operations proves to be critical since it should set the provisions for command and control, deployability and sustainability of the Army's forces within NATO-led operations. Therefore, until the implementation of this doctrine, Army's capabilities to project, sustain, and integrate brigade level and above contingents into NATO/Coalition Operations are limited.

Table 6. Doctrine Driven Solutions for Key Capabilities	
Task Number	Potential Solutions-Doctrine
S3	Joint Doctrine for NATO/Coalition Operations.
D2	Conduct reception, processing, and staging of passengers and cargo.

Organization

The Army has to establish new organizations or to improve the existing ones, to achieve key capabilities in three areas. First, to coordinate the RSOI during theater opening and during force rotation, the Army needs to establish CSS units with RSOI capabilities and liaison teams. Currently, the Army depends on coalition assets to conduct RSOI for its deployed forces. Considering the size of the programmed force, RSOI

capabilities and liaison teams would decrease time and cost requirements for theater deployment and sustainment.

The development of the existing NSE would have the same effects on cost-time variables. Acquiring services and facilities from the host nation would reduce the logistical footprint and the RSOI load. Lift assets would become available for troops transport, thereby decreasing the deployment time and speeding up the force closure. The NSE should have the capability of contracting specific services and facilities such as medical, fuel and power, communication, food and water, transportation assets and infrastructure and construction materials.

As NATO's demands for CBRN capabilities are increasing, the Army has to develop capabilities to manage the intentional use or accidental release of a CBRNE weapon or TIM. Each CBRN unit should have reaction teams and medical consequence management teams able to contain the consequences of CBRN incidents. Developed within existing decontamination units, these capabilities would provide a faster response to an incident and would increase the survivability of the personnel affected by the incident. Based on the situation, NATO countries as well as civil authorities could also benefit from this support.

These organizational changes and improvements would increase the Army forces' ability to deploy and sustain larger forces and would increase the survivability, in case of CBRN event. Table 7 contains the potential organization solutions to three key capabilities.

Task Number	Potential Solutions-Organization
	Table 7. Organizational Driven Solutions for Key Capabilities
D2	CSS units with RSOI capabilities. Liaison teams.
S4	National Support Element modules.
Sv4	Reaction teams. Medical consequence management teams.

Training

NATO initiated a coherent program to improve interoperability and defense capabilities. *NATO's Education, Training, Exercise, and Evaluation Policy* (NTEEP) represents the new transformational approach aiming to elaborate and implement common training standards based on Mission Essential Task List (METL). A second element is NATO's Supreme Allied Commander Transformation initiative of establishing the multinational Centers of Excellence (COE). The COE are nationally funded centers who provide opportunities for NATO and PfP forces to improve interoperability and capabilities, test and develop doctrine, and validate concepts through experimentation[33]. As shown in table 8, training drives one of the eleven capabilities.

Task Number	Potential Solutions-Training
	Table 8. Training-Driven Solutions for Key Capabilities
S3	Adopt force rotation based training. Develop METL based training programs. Interoperable and standardized training at individual and collective level. Joint/Interagency training for designated personnel. Establish National Center of Excellence. Implementation of NATO Education, Training, Exercise, and Evaluation Policy.

The Army's training doctrine defines national training policies along with NATO's concepts mentioned above. It encompasses the national experience and lessons learned, with NATO's training concepts and operational doctrines and it introduces the concepts of METL and force rotation.

METL focuses the collective training on future missions, increasing the combat effectiveness and reducing the resource spending. An important input to METL is the Mission Training Plan (MTP). This plan links the essential tasks and the mission requirements specific to a unit with the training plan, and helps the commander in selecting for training only those tasks essential to accomplish the mission. The Army established committees and working groups to develop the MTP based on the *Guide for Developing MTP*. The Army developed MTP for maneuver forces and is in the process of developing the MTP for CS and CSS units as the programmed force must be able to conduct joint operations. For example, a logistic unit with support functions should have a METL that covers the differences between peacetime and NATO-led operations, since an austere theater will not offer same the transportation or sustainment facilities as the garrison-type permanent facilities.

The two other documents, *The Concept of Standardized Training* and *The Army Standardization Strategy* contribute to implementing the training doctrine. They create the conceptual framework that links the training with interoperability and set the responsibilities for standardizing the training. Since NATO is in the process of elaborating on the training standards and the implementation of the NTEEP is undergoing, the documents integrate the US design for standardization and training into national MTP and training standards.[34]

A gap lies beween the conceptual level and the operational and tactical level as there is no methodology for elaborating the MTP, and the training standards have not been developed for all type of units and all possible missions. Another consideration is that to ensure interoperable and standardized training at individual and collective level, the process of elaborating battle books, field manuals, deployment or mobilization plans and standing operating procedures for the programmed force should accelerate. The establishment of a National COE would help develop the necessary doctrine, concepts, and capabilities to achieve interoperability and standardization. The center could also provide pre-deployment joint and interagency training for key personnel such as commanders and staff officers and could coordinate the implementation of the NTEEP.

<div align="center">Materiel</div>

Material proves to be the driver that impacts all key capabilities (see table 9). Accordingly, it has the most significant impact on the transformation program. Most of the identified solutions refer to acquisition of equipment and technology or to developments of the existing capabilities. Both options demand intensive financial resources which could be a problem considering other competing acquisition and fielding programs and the limited resources available.

The solutions identified for improving deployment capabilities are probably the most demanding in term of resources. At the same time, they would accommodate lift requirements for the programmed force and NATO's requirements set for deployability. As the existing capabilities can hardly satisfy the current operational needs, they will not satisfy the future ones. Consequently, the Army must include air and sealift platforms in

the acquisition program, and develop the required lift capabilities for the deployment of

brigade-size units with necessary equipment, cargo, and logistic supplies in 15 to 30 days.

Task Number	Potential Solutions-Materiel
Table 9.	Materiel-Driven Solutions for Key Capabilities
D1	Acquisition of the necessary capabilities. Leasing contracts with foreign military and civilian companies. Develop national capabilities (long term).
D2	Staging facilities. Field Service Support Units. Materiel Handling Equipment.
S3	Interoperable communications equipment. Interoperable fuel and ammunition. Interoperable Geodetic Reference. Rations acceptable to multinational partner and to recipients of humanitarian assistance.
S5	Field Service Support Units. Field Feeding Capabilities. Combat Health Support. Latrines, Shower, Laundry Support. Water purification/distribution/production. Trash Disposal.
Sv3	Sensors, UAV. C4ISR nodes provided with collective protection. Units provided with individual and collective protection equipment. HUMINT/SIGINT units. CBRN detection and monitoring capabilities and EOD units.
Sv4	CBRN personnel/equipment protection and decontamination capabilities. Medical equipment and medical supplies. Individual and collective protection equipment. EOD units.
C1	Battalion/Brigade/Division interoperable C4.
C2	UAV, surveillance equipment. HUMINT.
C3	UAV, surveillance equipment. HUMINT.
C6	Battalion/Brigade/Division interoperable C4.

As the air and sea fleet would increase, the Army should develop capabilities to conduct terminal operations within national territory and the theatre of operation. This would increase the number of sorties and amount of cargo per same unit of time by expediting the reception, processing, and staging of passengers and cargo.

As future theaters of operation might provide limited or no HNS, interoperability between coalition partners would play a critical role. Materiel interoperability would allow the integration of Army and NATO's logistic structures. Using the same ammunition, fuel, and food would reduce logistic footprint and sustainment requirements for the deployed force, as other nations might accommodate some of these needs. This would also relieve the pressure on lift requirements and consequently on the limited financial resources. Therefore, the Army should promote interoperability in three main areas:

- Standardizing NATO 5, 56 mm and 9 mm calibers and antitank ammunition.
- Introducing the single fuel-based engines for all combat vehicles.
- Introducing rations accepted by NATO countries and recipients of humanitarian assistance.

Providing support of personnel in a theater is a critical task. Having provided most of this support in Iraq and Afghanistan by the coalition partners, the Army must develop the existing logistic capabilities into Field Service Support Units (FSSU) capable of providing support in theaters where external support is not available or is limited.

Regardless of the size of the supported unit (brigade or division), the FSSU should have field feeding capabilities with food transportation, refrigeration and storage capabilities. Currently, deployed battalions have water purification capabilities that

satisfy the requirements for drinking water only. As the programmed force is much larger, the Army should develop water purification/distribution facilities to address the needs for sanitation, food preparation, construction and decontamination, shower and laundry support. Considering that combat operations would inflict casualties, the Army should also develop mortuary affairs and combat health support. Brigade and division level units must have adequate medical evacuation and combat health support capabilities corresponding to ROL2 and ROL3 levels of care.

NATO Strategic Concept and the PCC emphasize the need for capabilities to deter and defend against the use of CBRN weapons to reduce operational vulnerabilities of NATO military forces while maintaining their flexibility and effectiveness despite the presence, threat or use of CBRN weapons.[35] As a result of this, the Army must have credible defense capabilities against CBRN threats and their means of delivery. As the Army implemented NATO doctrines, planning, and training policies, the only shortfalls are in the area of acquisition and fielding of CBRN detection and monitoring equipment. Collective protection is another issue that needs consideration as it increases survivability of C4ISR nodes and troops in a CBRN contaminated environment. Significant progress has been made for CBRN units, but the fielding program must be extended throughout the division. Furthermore, as early warning plays a critical role in assuring survivability, the Army should integrate CBRN units with sensors, UAV, HUMINT/SIGINT units, and EOD units via digital communication and data links.

In the event that a CBRN attack occurs, containing and mitigating its effects would require decontamination capabilities, medical equipment, and supplies. Presently, one CBRN battalion supporting the division and one CBRN company organic to each

brigade are undergoing intensive training and fielding programs. The components of these units have already proved their efficiency in Iraq. Since training and doctrine are fully interoperable, it would only be a matter of resources to make these units operational by 2012.

The analysis determined that battalion level units and one mechanized brigade have interoperable C4ISR structure and equipment that allow them to collect, process, and disseminate information. Currently, they receive support from national UAV and HUMINT units operating in the theater. The Army should develop tactical UAV units organic to each brigade and to division's battlefield surveillance battalion. This would allow focusing joint combat power and fire effects to support simultaneously current and future operations, or decisive and shaping operations throughout the area of operation. As these capabilities must extend to one division, the only impediment is the cost associated with the acquisition and fielding process.

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[1]President of Romania, *The Romanian National Security Strategy*, (Bucharest, Romania: The Romanian Presidency, 2004), 4 [document on-line]; accessed from http://english.mapn.ro/stratsec/interese.php; Internet; accessed on 12 November 2005.

[2]The Romanian Government, *White Paper on Security and National Defense*, 31.

[3]The Romanian Government, *White Paper on Security and National Defense*, 3.

[4]The European Capability Action Plan (ECAP) was launched at the European Summit in December 2001 to address the shortfalls in national capability commitments to EU rapid reaction forces.

[5]The Romanian Government, *White Paper on Security and National Defense*, 18.

[6]MPFSEE initiative was established in 1997 and is a brigade level Multinational Peace Force that includes NATO member states (Greece, Italy, Turkey, Romania, and Bulgaria), partner countries (Albania, Former Yugoslav Republic of Macedonia), and countries with observer status (Slovenia, USA and Croatia). MPFSEE participates in UN or OSCE mandated NATO or EU-led conflict prevention and peace support operations,

coalition operation and exercises. Romanian Army's contribution consists of one infantry battalion, one engineer company, one reconnaissance platoon, and one transport platoon.

[7]These are regional cooperation initiatives developed with Hungary, Ukraine, and Slovakia having as purpose training the forces for peace support operations, humanitarian and disaster relief operations. The Romanian national module includes one infantry detachment and one Engineer Company.

[8]The Romanian Government, *White Paper on Security and National Defense*, 42.

[9]. Joint Chiefs of Staff, *Joint Mission Essential Task List Development Handbook* (Andover, MA.: Dynamics Research Corporation, 2002), 3 [joint publication on-line]; accessed from http://www.dtic.mil/doctrine/training/JMETLbook.pdf; Internet; accessed on 14 January 2006.

[10]Claire Taylor, *NATO:* The Prague Summit and Beyond, House of Commons Research Paper 03/05, 21 [research paper on-line House Of Commons Library web site]; accessed from http://www.parliament.uk/parliamentary_publications_and_archives /research_papers/research_papers_2003.cfm; Internet; accessed on 18 January 2006.

[11]NATO, The reader's guide to the NATO Summit in Washington 23-25 April 1999 (Brussels, Belgium: Office of Information and Press, 1999), 50-51 [document on-line NATO web site]; accessed from www.nato.int/docu/rdr-gde/rdrgde-e.pdf; Internet; accessed on 12 January 2006.

[12]Ibid., 56-59.

[13]North Atlantic Council, Defense Ministers in Session, "Statement on NATO Defense Capabilities Initiative," M-NAC-D-1(2001), 89 (Brussels, Belgium: NATO Press Office, 7 June 2001); [document on-line NATO web site]; accessed from www. nato.int/docu/pr/2001/p01-089e.htm; accessed on 12 January 2006.

[14]NATO, The Prague Summit and NATO's Transformation, (Brussels, Belgium: NATO Public Diplomacy Division, 2003), 26 [publication on-line NATO e-library web site]; accessed from www.nato.int/docu; Internet; accessed on 21 January 2006.

[15]NATO, The NATO Response Force, (Brussels, Belgium: NATO, 2006); [article on-line NATO web site]; accessed from http://www.nato.int/issues/nrf/; Internet; accessed on 23 January 2006.

[16]Ibid.

[17]NATO, Istanbul Summit Communiqué, (Brussels, Belgium: NATO Press Office, 2006); [article on-line NATO web site]; accessed from http://www.nato.int/docu/ pr/2004/p04-096e.htm; Internet; accessed on 12 January 2006.

[18] The Army Transformation Strategy changes the name of the Active Forces into Forces Available for NATO Operations, and the Territorial Forces into Generation and Regeneration Forces.

[19]General Eugen Badalan, Fortele Terestre în Contextul Aderãrii României la NATO, 51.

[20]Commander Dorin Ionescu, "Principii si Politici Privind Mobilitatea in Cadrul NATO. Planificarea si Transportul Fortelor Intr-un Teatru de Operatii" in *Romania Membru al Aliantei Nord-Atlantice*, (Bucharest, Romania: The Academy for Advanced Military Studies Publishing House, 2002), 237; [book on-line Center for Defense and Security Strategic Studies web site]; available from http://cssas.unap.ro/ro/carti.htm; Internet; accessed on 22 November 2005.

[21]Ibid., 264.

[22]Colonel (ret) Vasile Popa and LTC Gheorghe Badea, "The Romania's Role in Regional and Continental Security and Stability"*, in *ROMANIA - NATO 1990-2002*, (Bucharest, Romania: The Academy for Advanced Military Studies Publishing House, 2002), 136 [book on-line Center for Defense and Security Strategic Studies web site] available from http://cssas.unap.ro/ro/carti.htm; Internet; accessed on 25October 2005.

[23]See the current modernization and acquisition priorities set by the *White Paper on Security and National Defense*.

[24]The study is written by Commander Dorin Ionescu, "Principii si Politici Privind Mobilitatea in Cadrul NATO. Planificarea si Transportul Fortelor Intr-un Teatru de Operatii" in *Romania Membru al Aliantei Nord-Atlantice*, 199-267 (Bucharest, Romania: The Academy for Advanced Military Studies Publishing House, 2002); [book on-line Center for Defense and Security Strategic Studies web site]; available from http://cssas. unap.ro/ro/carti.htm; Internet; accessed on 22 November 2005.

[25]The study includes the characteristics of the sealift assets.

[26]ROL 1 includes first aid and emergency medical care at battalion level. For details on Levels of Medical Care see FM 4-02, *Health Service Support in a Theater of Operations,* (Washington DC: U.S., Department of the Army, 2003); [field manual on-line Department of the Army web site]; available from http://www.globalsecurity.org/ military/library/policy/army/fm/4-0/index.html; Internet; accessed on 24 November 2005.

[27]For more information, see NATO *STANAG 2150*.

[28]These capabilities refer to NATO *STANAG 2103/ATP-45* and *STANAG 2497/AEP-45*, both implemented by 2004.

[29]NATO *STANAG 2352* describes the minimum required equipment to operate within a contaminated area.

30Cdr. Ion-Eftimie SANDU, "Armed Forces Procurement Modernization Programs" in *ROMANIA - NATO 1990-2002*, (Bucharest, Romania: The Academy for Advanced Military Studies Publishing House, 2002), 60; [book on-line Center for Defense and Security Strategic Studies web site]; available from http://cssas.unap.ro/ro/ carti.htm; Internet; accessed on 12 November 2005.

31The equipment is produced by the Romanian defense industry through transfer of technology from the UK (PANTHER) and USA (FALCON, HARRIS).The main features of the communication equipment are: clear and crypto voice and data transmission, GPS, jamming protection, NATO frequencies.

32General Ion-Aurel Stanciu, "Locul si Rolul Structurilor Specializate ale Armatei Romaniei in Prevenirea si Combaterea Terorismului International", in *Provocari la Adresa Securitatii si Strategiei la Inceputul Secolului XXI*, (Bucharest, Romania: The Academy for Advanced Military Studies Publishing House, 2005), 464-466; [book on-line The Academy for Advanced Military Studies web site]; available from http://cssas. unap.ro/ro/carti.htm; Internet; accessed on 22 November 2005.

33Tyce Velde, *NATO* Takes Steps Toward Creating First Multinational Centre of Excellence, (Norfolk, VA: NATO Allied Command Transformation Public Information Office, 2004); [article on-line NATO web site]; accessed from http://www.act.nato.int/ multimedia/articles/2004/121304japcccoe.htm; Internet; accessed on 24 February 2006.

34The training doctrine assumes that NATO adopts the U.S. model for standardization and training.

35NATO, NATO Strategic Concept, (Brussels, Belgium: NATO Press Office, 1999); [document on-line NATO web site]; accessed from http://www.nato.int/docu/pr/ 1999/p99-065e.htm; Internet; accessed on 23 February 2006.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

Brief Summary and Interpretation of Findings Described in Chapter 5

This chapter provides an interpretation of analyzes presented in Chapter 5 and its implications for Romania in midterm (2006-2012) defense capabilities. It also includes recommendations for the Army and for future developments of the study.

The purpose of this research was to determine if the current transformation program of the Romanian Army will generate forces with adequate capabilities to meet NATO's requirements. The study employed the Mission Focus Approach force planning method to investigate the Romanian Army warfighting functions across DOTM spectrum. The analysis of the Army's ability to execute its missions within NATO was based on the Army's current and programmed force, the projected threat and the doctrine.

The study answered the primary question by employing the Capabilities Development process of the AFMM to identify capability gaps, capability needs, and solutions to provide those required capabilities within a specified functional or operational area. Based on national defense policy and centered on NATO's required capabilities, the analyses investigated the development of current and programmed capabilities within DOTM. Each of the three distinct functional analyses of the Capabilities Development process answered the secondary questions.

The Functional Area Analysis answered the first secondary question by identifying the conceptual future capabilities that the Romanian Army should develop. The Strategic and Operational Requirements derived from the national strategic documents reflected a coherent perspective on the Army's role in securing the

interoperability with NATO forces, contributing to regional security, and providing support in case of civil emergencies. These strategic missions determined the establishment of deployable forces with different levels of readiness having adequate capabilities, self-sustainable and capable of conducting joint and combined operations under national or NATO command.

The Functional Needs Analysis answered the second secondary question determining the capabilities that the Army must develop to meet NATO requirements. Specifically, it identified and compared NATO's required capabilities, and the Army's programmed capabilities. The purpose of this comparison was to determine the required capabilities not met by the programmed force.

To determine the viability of the transformation program, the study analyzed the degree of congruence between the Army's present capabilities and programmed capabilities and determined the shortfalls in force planning across warfighting functions or in relation to resource allocation and major acquisition programs. JMETL provided the battlefield tasks across warfighting functions, and served as the framework for measuring the current and programmed capabilities. The study investigated each warfighting function by examining the related battlefield tasks, assessed the capability to accomplish the tasks, and developed a list of deficiencies in the areas of DOTM. Then the study selected the most relevant capabilities required for the success of the transformation program and correlated them with DOTM components that might contribute to reducing the identified shortfalls.

Having analyzed the current capabilities and the ongoing acquisition and fielding programs, the main conclusions regarding the programmed force are:

- From a planning perspective, the programmed force meets NATO's requirements and the conceptual requirements identified previously, in terms of missions, size, readiness, availability, sustainability, and training. The available airlift and sealift capabilities do not meet the requirements to deploy the programmed force.

- The existing MOD air assets and contracted air and sea capabilities do not meet the requirements to sustain the programmed force in conducting medium to high intensity full spectrum operations, in theaters with no available supplies.

- The existing CBRN capabilities do not fully satisfy NATO requirements regarding individual and collective protection.

- The existing C4ISR capabilities do not satisfy NATO requirements regarding the interoperability for the command and control structures.

- The Army has initiated programs to fill these gaps and field the equipment in the following areas: CBRN, C4ISR.

- The primary limitation in developing the above-mentioned capabilities would be the financial resources.

The Functional Solution Analysis answered the third secondary question by recommending DOTM solutions that can resolve identified shortfalls and focused key technologies or major fielding programs. The study determined that the doctrine and training components provide input to only one key capability, which is interoperability. As this capability is critical for the effectiveness of NATO operations, ensuring doctrinal and training interoperability within the Army should have a high priority. Implementation of these solutions would require a low amount of financial resources and they would

manage the training resources efficiently by eliminating redundancy and focusing the resources on attaining specific capabilities.

Organization solutions would improve deployability, sustainability, and survivability. Also, demanding low cost for implementation, organizational improvements would decrease time and cost requirements for theater deployment and sustainment, would reduce the logistical footprint and the RSOI and they would increase the survivability of troops in case of a CBRN event.

The study identified that materiel impacts all key capabilities having the most significant impact on the transformation program. Because the identified materiel solutions refer to acquisition of equipment and technology or to developments of the existing capabilities, both options demand extensive financial resources. At the same time, they would develop critical capabilities of all four warfighting functions. Implementation of these solutions would improve the overall capabilities of the Army to conduct coalition operations and it would meet NATO's requirements.

In conclusion, the success of the transformation process in building credible defense capabilities depends mainly on the amount of financial resources allocated for acquisitions and development of interoperable and modern equipment that satisfies the requirements derived from the missions the Army has to carry out in the next future.

Recommendations for the Romanian Army

Instead of recommending the implementation of each identified solution, the study will formulate general recommendations that would address most of the shortfalls. This would give the force planners more flexibility in developing and sourcing each

project and would create the conditions for further developments. These recommendations are:

1. The Army should revise the current modernization and acquisition programs and include the development capabilities focused on DSSC4ISR. Procurement projects should include power projection and lift capabilities to improve deployability, interoperable C4ISR equipment, CBRN protection equipment, mobile and accurate firepower systems, high-performance interoperable ammunition, and computerized logistic systems.

2. The Army should initiate a study to determine the feasibility of adopting and implementing the AFMM as a force planning tool. Implementation of the AFMM would synchronize the agencies and multiple levels of command involved in the transformation process and allow the development and integration of the DOTMLPF solutions.

3. The Army should develop its version of UJTL. As the Army's new missions require standardized and mission-focused training, the UJTL would provide the commanders, force planners and combat support agencies with a standardized tool for developing the METL.

4. The Army should increase the funds allocated for acquisitions. This would speed up the technological development and would increase the interoperability between Army and NATO forces.

<u>Recommendations for Further Studies</u>

The study is open to further developments. There are three areas that can be considered for a more detailed approach. First, the usage of complete AFMM would allow a better management of the force structure changes. The process would eventually

improve the Acquisition Management Process, and would provide a capability-based approach in determining new methods to design and train organizations for future operations. Second, the employment of all DOTMLPF components would determine a more detailed set of solutions as each component would provide specific solutions that can decisively impact the transformation process. Third, applying the analysis process to all defense forces (including the Air Force and the Navy) would allow the identification of joint shortfalls and the development of solutions impacting the joint spectrum of capabilities. This would also create a complete picture of the Romanian Armed Forces' transformation process. Finally, this study could be applied to evaluate other countries' defense transformation as it provides a capability-based approach to develop defense capabilities.

DEFENSE EXPENDITURES OF NATO COUNTRIES

Table 10 : Defense expenditures of NATO countries							
Country	Defense expenditures (millions of US dollars)		Defense expenditures as % of gross domestic product		Defense expenditures per capita in US $ (2000 prices and exchange rates)		Armed forces strength (thousand)	
	2004	2005	2004	2005	2004	2005	2004	2005
Belgium	4376.8	4769.0	1.2	1.3	293.0	293.0	40.7	38.0
Bulgaria	579.1	640.0	2.4	2.5	46.4	51.0	42.2	42.0
Czech Republic	1984.2	2314.0	1.9	1.8	117.0	116.0	25.4	26.0
Denmark	3579.5	3694.0	1.5	1.4	445.0	431.0	19.6	20.0
Estonia	171.3	210.0	1.6	1.7	85.0	100.0	2.6	3.0
France	51876.8	54841.0	2.6	2.5	608.0	594.0	356.8	357.0
Germany	37920.2	39271.0	1.4	1.4	326.0	323.0	252.1	254.0
Greece	5887.4	7081.0	2.9	3.1	348.0	386.0	133.0	135.0
Hungary	1529.2	1508.0	1.5	1.3	82.0	73.0	30.0	24.0
Italy	30642.4	32397.0	1.8	1.8	357.0	322.0	314.6	317.0
Latvia	175.2	199.0	1.3	1.4	57.0	66.0	6.6	6.0
Lithuania	312.7	303.0	1.4	1.3	65.0	63.0	11.8	12.0
Luxembourg	244.3	273.0	0.8	0.8	350.0	374.0	1.6	1.6
Netherlands	9640.2	10268.0	1.7	1.7	383.0	384.0	51.1	50.0
Norway	4534.5	4980.0	1.8	17.0	734.0	671.0	25.7	23.0
Poland	4549.9	5684.0	1.9	1.9	93.0	97.0	150.0	150.0
Portugal	2841.2	3063.0	1.7	1.7	175.0	176.0	45.2	47.0
Romania	1528.3	1957.0	2.2	2.0	45.0	46.0	90.8	79.0
Slovak Republic	728.1	873.0	1.8	1.8	80.0	86.0	16.4	19.0
Slovenia	518.2	602.0	1.6	1.7	167.0	189.0	6.2	7.0
Spain	12631.8	13600.0	1.3	1.2	186.0	183.0	123.7	124.0
Turkey	10207.1	11650.0	3.5	3.2	100.0	105.0	502.3	499.0
United Kingdom	48918.0	52772.0	2.3	2.3	616.0	621.0	199.6	

Source: NATO, NATO-Russia Compendium of Financial Economic Data Relating to Defence, (Brussels, Belgium: NATO Defence Policy and Planning Division, 2005), p. 6, 7, 9; [NATO database]; available http://www.nato.int/docu/pr/2005/p05-161.pdf.; Internet; accessed on 12 March 2006.

Country	% devoted to personnel expenditures		% devoted to equipment expenditures		% devoted to infrastructure expenditures		% devoted to other expenditures	
	2004	2005	2004	2005	2004	2005	2004	2005
Belgium	74.6	75.1	5.2	5.4	3.0	2.5	17.2	16.0
Bulgaria	59.9	54.7	8.9	13.4	0.4	0.1	30.8	31.8
Czech Republic	48.2	49.7	17.7	11.6	3.9	9.8	30.2	28.9
Denmark	51.4	52.2	19.1	18.0	2.1	2.4	27.5	27.4
Estonia	34.5	31.0	13.3	13.3	13.7	15.3	38.5	40.4
France	57.4	58.1	20.9	21.4	5.1	4.7	16.6	15.9
Germany	59.3	59.3	14.8	15.1	3.8	4.0	22.1	21.6
Greece	77.4	76.2	7.6	8.0	1.2	1.3	13.8	14.4
Hungary	49.4	53.3	11.9	8.9	7.0	2.9	31.7	35.0
Italy	75.3	78.7	11.7	10.7	0.6	0.8	12.4	9.8
Latvia	43.8	48.8	7.4	7.6	14.8	11.5	34.0	32.2
Lithuania	51.1	57.4	12.3	14.9	3.8	3.7	32.8	24.0
Luxembourg	77.7	72.2	8.2	14.6	2.3	1.5	11.8	11.7
Netherlands	49.8	49.6	16.4	17.5	3.0	3.4	30.9	29.5
Norway	41.3	41.7	22.9	22.5	5.4	5.3	30.5	30.5
Poland	60.6	58.5	14.6	15.7	3.8	4.1	21.1	21.7
Portugal	74.2	73.5	7.6	11.4	0.9	1.4	17.2	13.6
Romania	50.6	54.6	25.6	21.3	1.1	1.9	22.8	22.2
Slovak Republic	49.7	49.1	11.6	11.2	7.3	5.2	31.4	34.5
Slovenia	61.6	57.8	18.5	17.1	2.6	2.6	17.2	22.6
Spain	53.9	54.3	22.8	20.7	2.3	3.7	21.0	21.3
Turkey	49.7	47.8	32.9	36.9	3.1	2.2	14.4	13.0
United Kingdom	39.8	39.1	22.8	24.5	1.8	2.6	35.6	33.9

Table 11 : Distribution of defense expenditures by category

Source: NATO, NATO-Russia Compendium of Financial Economic Data Relating to Defence, (Brussels, Belgium: NATO Defence Policy and Planning Division, 2005), p. 8; [NATO database]; available http://www.nato.int/docu/pr/2005/p05-161.pdf.; Internet; accessed on 12 March 2006.

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