# Methodology for long term defence planning

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## Sammendrag

Formålet med denne rapporten er å presentere ett av synspunktene på langtidsplanlegging. Rapporten kan gi et grunnlag for videre arbeid innen dette komplekse området i tillegg til å benyttes som et rammeverk for gjennomføring av langtidsplanlegging.

Den presenterte metoden behandler flere relevante hensyn som må taes for å forstå langtidsplanlegging: definisjonen og formålet med langtidsplanlegging, variabler som inngår og planleggingsprosessen i seg selv. Den relativt detaljerte beskrivelsen av prosessen er dette studiets viktigste bidraget.

Langsiktig forsvarsplanlegging er en kompleks, flertrinns iterativ prosess. Hovedtrinnene som defineres i denne rapporten er:

1. Politisk veiledningsanalyse
2. Bedømmelse av miljøet
3. Oppdragsanalyse
4. Planlegge situasjonsutvikling
5. Avgjøre kapabilitetskrav
6. Kapabilitetsbedømmelse
7. Utvikle alternativer
8. Løsningsutvalg

Langsiktig forsvarsplanlegging er ikke bare en teknisk prosedyre. Det er også en politisk prosess som må diskuteres i politiske termer.

## English summary

The purpose of this report is to present one of the viewpoints on methodology for long term defence planning (LTDP). The report can be a basis for further work on this complex issue and also used as a framework for conducting LTDP.

The presented methodology treats many various issues relevant for understanding of LTDP: the definition and the purpose of LTDP, different approaches, variables in LTDP and the planning process. The relatively detailed description of the LTDP process is the most significant part of this methodology.

Long term defence planning is a complex, multi-stage, iterative process. The main stages defined in this report are:

1. Political Guidance Analysis
2. Environmental Assessment
3. Mission Analysis
4. Planning Situations Development
5. Capability Requirements Determination
6. Capability Assessment
7. Options Development
8. Solution Selection

Long term defence planning is never just a technical procedure. That is also a highly political process that needs to be discussed in political terms.

# Contents

# 1 Introduction

This work on a methodology for long term defence planning is the result of the defence scientific cooperation between the Kingdom of Norway and the Republic of Serbia. This study can be a basis for further cooperation in the defence planning area.

This study was performed by Dejan Stojkovic and Bjorn Robert Dahl. Dejan Stojkovic is a guest researcher at the FFI from the Ministry of Defence of the Republic of Serbia and Bjorn Robert Dahl is a joint staff officer at the FFI. Sigurd Glærum, the (macro) project leader, coordinated the work on this analysis

The text below describes the background, goals as well as the tasks for conducting the study. The study is a part of the (macro) project which concerns development of the Norwegian Defence.

## 1.1 Background

Defence Planning is a very complex area that influences future defence effectiveness and efficiency. Defence planning seeks to ensure that a nation has the necessary forces, assets, facilities and capabilities to fulfil its tasks throughout the full spectrum of its missions.

Long term defence planning is a specific planning discipline that is related to the relatively distant future. It faces a lot of difficulties which are consequences of uncertainties and contingencies of the future. Uncertainties and contingencies are a great challenge for defence planners and political decision makers.

Long term defence planning is a interdisciplinary process that comprises many various activities. Activities are mutually dependent and precise coordination is paramount. The interdisciplinary planning approach requires a strong cooperation among defence planers, military commanders, various specialists, political authorities, etc.

A precisely defined methodology could be a very useful and helpful tool for conducting long term defence planning. However, this study introduces a planning model which does not cover all issues. It means that defence planners may use it as a basis for planning but they have to use their own creativity as well. That is the right approach for overcoming difficulties and meeting contingencies and uncertainties.

## 1.2 Goals

The general purpose of this study is to define a generic methodology for long term defence planning. Also, a very important goal is to determine the main defence planning approaches and variables.

### 1.3 Tasks

In order to accomplish the defined goals, it is necessary to carry out the following tasks:

- to define long term defence planning;
- to identify the purpose of LTDP;
- to describe defence planning approaches and identify which are suitable in the current security environment;
- to identify and describe main defence planning variables and their relations;
- to define and explain a model for the long term defence planning process;

## 2 Definition of long term defence planning

A military organisation is a complex social system which is designed to act in dynamic and unstable conditions. Preconditions of its development and existence are regularity of function and adaptation to environment changes. Management has a key role in fulfilling those preconditions.

There are many definitions of management because various authors define management in different ways. One of the overall definitions is: Management is the process of planning, organising, leading and controlling the work of organisation members and of using all available organisational resources to reach stated organisational goals.[1] The definition points out the major characteristics of management:

- Management is a process;
- Key functions of the management process are planning, organising, leading and control;
- A management process is directed to accomplishing predefined goals;
- Managers, as owner of the management process, make decision about allocation and use of organisational resources.

Defence management is in certain areas different from business management. The main characteristics of defence management are:

- Defence goals are mainly defined by the political establishment. Defence managers are only responsible for accomplishing goals;
- The purpose of defence is not profit, but fulfilment of some national and social needs;
- The government provides necessary resources for accomplishing goals, defence managers are supposed to use resources efficient;
- Development and function of defence depend on decisions of a government and other state institutions.

[1] Stoner, J., F., Freeman, E., R., Gilbert, D., R. (2000): *Menadžment*, Želnid, Beograd, p. 66

The definition of management pointed out that the first stage of the management process is planning. That is the process of setting objectives and goals, and formulating strategies to meet them. Planning involves the development of a complete set of plans and sub-plans which are necessary for coordinating and integrating organisational activities.

Goals and objectives are very often used interchangeably, but there are some differences between them. Goals are by nature ambiguous, open-ended, and difficult or impossible to measure.[2] They represent a desired future state an organisation or system attempts to accomplish. On the other hand, objectives are more specific. They are clearly defined, compatible, measurable and achievable end-states towards which organisations should be directed. They explain *how much* of *what* will be accomplished by *when*.

Strategy is originally a military term, but the word is now commonly used in many disparate fields. Generally, strategy can be defined as a specific way or method for accomplishing determined goals and objectives. That is a general approach which does not describe specific activities related to fulfilment of goals and objectives.

In the NATO SAS-025 publication, *Handbook on Long Term Defence Planning*, LTDP is defined as "a process that investigates possible future operating environments and develops a force structure development plan (SDP) to best adapt the defence organisation to those environments given a host of constraints – including financial ones".[3] This is a relatively detailed definition which points out that the main purpose of long term defence planning is the best adapted defence organisation which would be accomplished by developing the SDP. At the same time, the desired end state as well as the method for achieving it is too general.

Peter Faber emphasises that LTDP is more of a process than a desired end state. It is a process that first anticipates possible future operating environments, and then develops SDPs to best adapt defensive organizations like NATO to those environments, despite a host of constraints (constitutional, legal, financial, etc.).[4]

Considering previously mentioned explanations, LTDP can be defined *as the process of defining long-term defence objectives and a strategy for their fulfilment.* This definition can be criticised as being too general, but at the same time, the definition gives an appropriate level of flexibility.

Long term defence planning is never just a technical procedure. It is also a highly political process that needs to be discussed in political terms (i.e. good and continuous dialogue must exist between long-term planners and policy makers). At the same time, if care is not taken to ensure

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[2] Vego, M. (2006): *Effects-Based Operations: A Critique*, Joint Force Quarterly, issue 41, 2nd quarter, p. 52

[3] RTO/NATO (2003): *Handbook on Long Term Defence Planning*, RTO-TR-069, p. 3

[4] Faber, P., *NATO Long-Term Defense Planning: Implications for the Future*, available from: www.ndc.nato.int/download/publications/ltdp.pdf, accessed: January 15, 2007

objectivity in LTDP, it risks being discussed as just a political tool.[5]

There are three main planning time horizons: long-term, middle-term and short-term. In management theory, short-term planning usually considers a time horizon of 1-2 years, middle-term 2-5 years and long-term 5 years or more. Tagarev points out different defence planning time horizons: long-term planning – 10-30 years, mid-term planning – 4-8 years (6 years in NATO and a number of member countries)[6] and short-term planning (budget, procurement plans, plans for training and exercises, etc.).[7]

According to the NATO *Handbook on Long Term Defence Planning*, the appropriate long term time horizon is 10-30 years.[8] Also, long term plans in many NATO member and Partner countries consider longer time horizon than 10 years. For instance, USA's Quadrennial Defence Review covers the next 20 years and the Croatian Armed Forces long term development plan considers the period of 2006 until 2015.[9]

The previous discussion indicated that there is no universally accepted time period associated with long term planning. In this report long-term planning is assumed to have a time horizon of 10 years or more.

Long term planning is often referred to as strategic planning. It is equally applicable and employed in the business world as well as for Defence. That is the process of considering the potential nature of the operating environment in the distant future and developing a plan to adapt the organization, business or Defence, to maximize the likelihood of surviving and successfully attaining high-level goals.[10]

Long term planning, in Defence and business, has challenged analysts and managers for as long as it has been attempted. Most practitioners agree that it is as much an art as a science.[11]

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5 *Ibid.*

6 It is now 10 years.

7 Tagarev, T., *Integrated Defence Planning: From National Security Policy to Force Planning*, available from: http://se1.isn.ch/serviceengine/FileContent?serviceID=DCAF&fileid=89D6AEE6-2143-771A-D2B5-FEF9879A202B&lng=en, accessed: January 11, 2007

8 RTO/NATO, *op.cit.*, p. 3

9 United States Department of Defense, *Quadrennial Defense Review Report*, available from: http://www.defenselink.mil/qdr/, accessed: January 11, 2007; The Croatian Ministry of Defence (2006): *The Croatian Armed Forces Long term Development Plan 2006-2015*, Zagreb

10 Plausible Futures, *The use of Scenarios in Long Term Defence Planning*, available from: http://plausible.custompublish.com/the-use-of-scenarios-in-long-term-defence-planning.55074-6691.html, accessed: January 12, 2007

11 *Ibid.*

# 3 The purpose of long term defence planning

Too often short-term views on security have dominated the defence debate, based on snapshot views of the world, and the cost of Defence. The argument is "there is no threat, so why spend?". As already stated, strategic situations change rapidly whilst the building of defence capabilities and expertise takes time. All strategic defence planning must therefore take the long-term view.[12]

Recent research indicates that many long term plans are never implemented and that others prove to be useless in organizations faced with rapidly changing, difficult to predict, environments.[13] Why then do we need long term planning?

The general answer to the previous question is that the problem is not in planning or plans, but it could be in people who are responsible for their implementation. Plans are not magic wands. Any plan must be accompanied by commitment and action if it is to achieve results.

The general purpose of LTDP is to (re)consider the mission of the Defence and to establish realistic long term goals and objectives consistent with that mission, as well as to define strategies for their fulfilment. Also, LTDP will promote desirable development of the Defence and to avoid unwanted effects.

Defence organizations act in a very complex and unstable environment. Long term defence planning encourages thinking about contingencies and helps the Defence prepare for this. Long term defence planning increases the likelihood of success by providing insights into future risks. Long term defence planning also increases understanding of the Defence strengths and weaknesses in facing the changing environment.

Long term defence planning enables careful consideration of defence capabilities that leads to priority-based resource allocation and other decisions. Furthermore, LTDP optimizes defence systems, structures and processes. Also, LTDP establishes a link to long term financial or political challenges (e.g. replacement of aircraft).

A long term defence plan has to be flexible and practical and yet serve as a guide to developing and implementing the next level plans and programs. A long term defence plan also has to enable an evaluation of how those plans and programs are progressing, and allow adjustments when necessary.

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[12] Le Roux, L., *The Military Budgeting Process: An Overview (Defence Planning, Programming and Budgeting)*, p.13, available from: www.sipri.org/contents/milap/milex/le_roux.pdf/download, accessed: December 11, 2006

[13] The Voluntary Sector Knowledge Network, *Leadership: Strategic Planning and Strategic Management*, available from: http://vskn.ca/lead/strategy.htm, accessed: January 12, 2007

# 4 Approaches to long term defence planning

There is no universally accepted method for LTDP. Many of the long term planning methods employed for Defence have been adapted from the commercial sector. Some methods have been specifically developed for defence planning.[14]

Many different analytical approaches have been applied to LTDP over the years. Each of these general approaches originates from a specific perspective on the problem. The NATO Handbook on Long Term Defence Planning pointed out the following approaches:[15]

- **Top-Down Planning.** This is a "strategy to tasks" approach to LTDP. The process begins with the specification of national policy, interests and objectives. National security and defence strategies are developed in order to support the overall policy and objectives. The hierarchy continues through roles and tasks to concepts and force elements. The process examines capability requirements from a conceptual basis linked through the framework, to national goals.
- **Resource-constrained Planning.** The objective of this planning approach is to provide a viable defence capability that is sustainable within the provided budget. It attempts to maximize defence capability for the funds available.[16]
- **Technology optimism.** A key development goal is to obtain operational and strategic superiority through technology. Technology development is monitored closely. New technology is obtained and integrated into the defence force as soon as available.[17]
- **Risk Avoidance.** Proven concepts and structures are extrapolated and extended. This conservative approach continues current ways as long as they are deemed successful. Defence development adheres to current strategy, doctrine, tactics and structure and incorporates new technology, when proven available and appropriate. This method tries to maintain the status quo in defence capability in a relative sense.
- **Incremental Planning.** This approach seeks in an evolutionary manner to improve the existing inventory of defence capabilities. Existing capabilities form the foundation of new capabilities. The approach focuses on the assured enhancement of current capabilities and, as such, tends to concentrate on the near-term developments and options. Incremental planning is an instance of a risk avoidance approach.
- **Historical extension.** Similar to incremental planning, the basic premise is that what worked in the past will work again in the future. Analysis of future operational

[14] Plausible Futures, *op.cit.*

[15] RTO/NATO, *op.cit.*, p. 3-4

[16] This approach to LTDP is also called Budget-Based Planning.

[17] The approach is also called Technology-Driven Solutions

effectiveness of various options is based on a historical analysis. Past operations, campaigns and wars are evaluated to identify the factors that most significantly contributed to success and/or failure. The defence capabilities are then designed to take greatest advantage of the positive factors while avoiding the negative ones.

- **Capability-based planning.** This approach involves a functional analysis of expected future operations. Defence capabilities are identified based on the mission(s) the forces are given. This is performed in the absence of specific threats or conditions. The outcome of such planning is not concrete weapons systems and manning levels. Instead, this form of planning identifies the tasks to be done and generic capabilities needed to accomplish them.[18]
- **Scenario-based planning.** This approach utilises a representative set of hypothetical situations for the employment of defence forces. The situations are specified in terms of environmental and operational parameters. Defence capability requirements are determined from assessments of the ability to achieve formulated mission objectives.
- **Threat-based planning.** The threat-based approach involves identifying potential adversaries and evaluating their capabilities. Defence capability requirements are based on the criterion of defeating the enemy. Quantitative and qualitative solutions are explored. This was the common planning approach employed during the Cold War. It differs only from scenario-based planning in that humanitarian and other non-threat scenarios are excluded from the scenario set.

The defence planning approaches described above have been described as independent methods for clarity. Each method has own advantages and disadvantages. It is rare for defence planning to be conducted using one method exclusively. In practice, long term defence planning is more commonly conducted employing a combination of these planning approaches.

# 5 Variables in long term defence planning

The major variables in LTDP are ends, ways and means of Defence.[19] Political decision makers and defence planners should share the responsibilities for the determination of these variables.

The *ends* of Defence are the required defence outputs in support of national interests, values and goals in peacetime, crisis and war. Parliament and Government have primary responsibility for determining the ends of Defence. Examples of defence outputs (ends) are:

- Deter aggression;
- Homeland defence;
- Participation in international peace and humanitarian operations;
- Support to the Police and other civilian authorities.

[18] Faber, P., *op.cit.*, p.2

[19] Le Roux, L., *op. cit.*, p.13

The *ways* of Defence describe how the defence forces (means) will be used to accomplish strategic objectives (ends). They are concerned with the various methods of applying defence forces i.e. with strategic and operational concepts.[20] The responsibility for determining defence ways is a dual political/military. The primary role of military is expert advice to politicians who are responsible for approving the main concepts. Examples of strategic and operational defence concepts (ways) are:[21]

- Non-offensive defence or forward mobile defence concepts.
- A strategic defensive or offensive posture.
- Defence through regional defence co-operation and alliances or self-defence.

The *means* of Defence are instruments by which some "ends" can be achieved. The determination of the defence means is primarily the responsibility of the defence planners in alignment with the ends and ways as prescribed by policy.[22] In practice, however, politicians will often have strong views also in this area and will usually have their say in determining the means. The defence means are the real cost drivers of Defence. The creation, maintenance and development of these capabilities are the primary consumers of defence resources. Examples of the defence means are:

- Land forces,
- Naval forces,
- Air Force,
- Special Operation Forces.

Figure 5.1 presents ends, ways and means of defence schematically. The scale indicates that what political decision makers requires from Defence (ends), taking into consideration the approved defence posture (ways), must be balanced by defence capabilities (means) and that this requires a determined amount of resources.

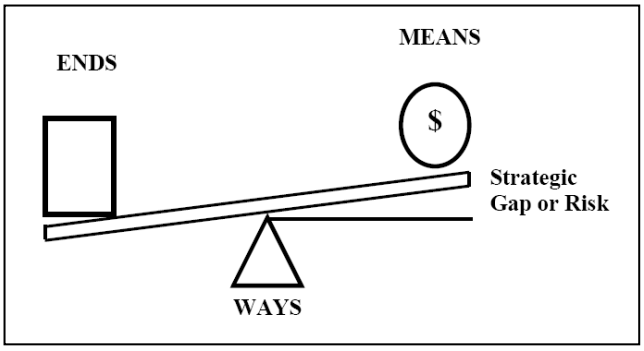


*Figure 5.1* Defence Variables: Ends, Ways and Means

[20] Lykke, A.F. (2001): *Toward An Understanding Of Military Strategy*, in "Guide To Strategy", U.S. Army War College, p.180

[21] Le Roux, L., *op. cit.*, p.13-14

[22] *Ibid.*

The scale can be balanced by either reducing ends or by increasing means and thus resources. If there is an imbalance or inconsistency between ends, ways and means this will result in a strategic gap between what needs to be done and what can be done. This strategic gap must be managed as a risk by the Government.[23]

# 6 Process of long term defence planning

Development of Defence is ideally an ongoing, evolutionary process, led by strategic guidance, pushed by technology advances, constrained by economics and politics, and to some extent, pulled by users' perceptions of the requirements. The aim is to maintain the necessary defence capability in an era of reducing public spending and increasing demands for efficiency, accountability and transparency in acquisition processes.[24]

The modern Defence needs appropriate long term planning in order to achieve the previously mentioned aim. Our suggested model of LTDP process (Figure 6.1) is the result of a comparative analysis of many different models (Appendix A, B and C). The investigated models are more or less directly related to LTDP, and they enabled overall research and understanding of this complex process. The intention is to include advantages and reject disadvantages from each of the models.

In contrast to some models, the suggested model presents an overall and detailed picture of the LTDP process. This model is more specific and could be used as guidance for conducting LTDP. At the same time, the model is generic enough and can be applied by various defence organisations.

The suggested model of a LTDP process represents an appropriate combination of different approaches to LTDP. In compliance with this model, LTDP is a threat, capability, scenario and resource based process. The starting point for determination of necessary defence capabilities would be the assessment of future risks and threats, but future capabilities would be tested through many different scenarios and developed in line with available resources.

In the suggested model, LTDP is an iterative process. A long term defence plan is a result of many iterations and trading off between capabilities necessary to deal with future risks and threats, political requirements and available resources.

The comparative and content analyses of different models of LTDP indicate that a LTDP process should include the following stages (Figure 6.1):

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[23] *Ibid.*

[24] Grisogono, M., Vaughan, J., Menadue, I.W., Seymour, R. S., Davies, M., *Synthetic Environments in Support of Capability Development: Design Case Study for the Armed Reconnaissance Helicopter at Exercise PHOENIX*, available from: www.siaa.asn.au/get/2395380040.pdf, accessed: December 1, 2006

1. Political Guidance Analysis
2. Environmental Assessment
3. Mission Analysis
4. Planning Situations Development
5. Capability Requirements Determination
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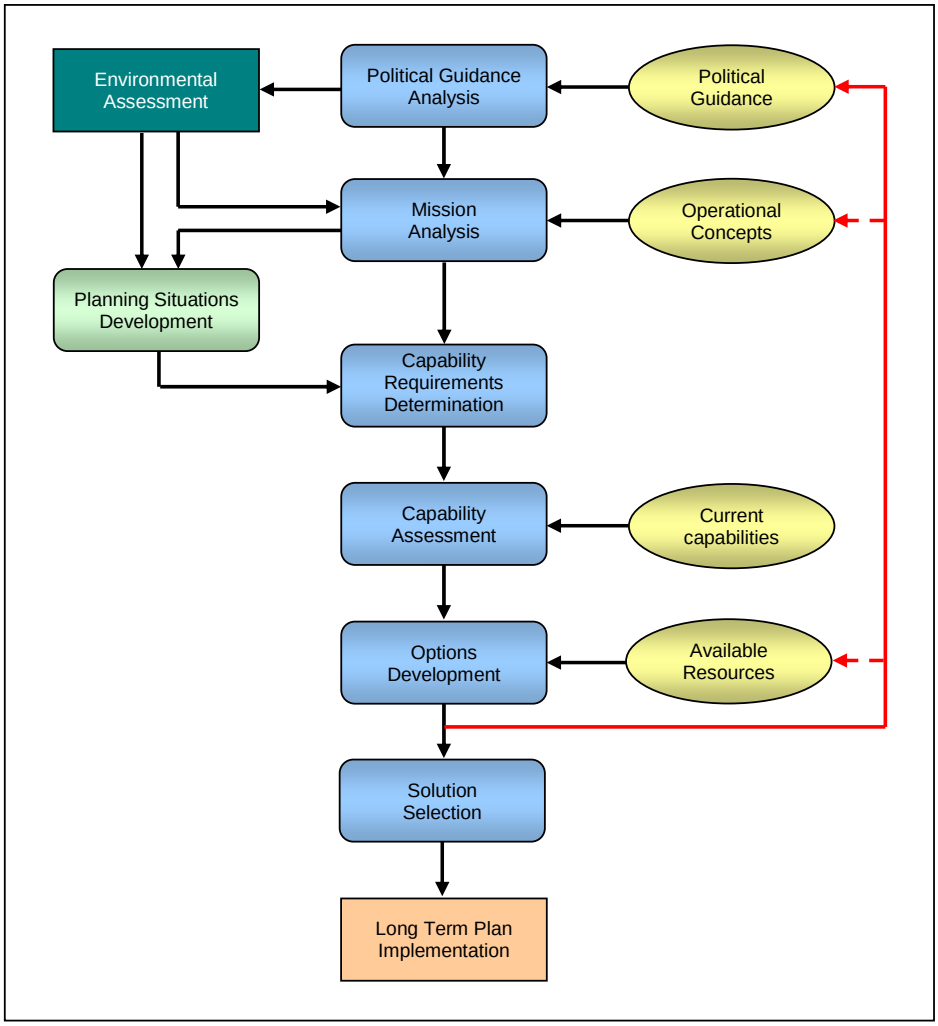


*Figure 6.1 Process of Long Term Defence Planning*

This model is recommended because it satisfies the following important criteria:

- It is top-down;
- It gives a clear audit trail;
- It facilitates quantitative analysis;
- It has clearly identifiable sub-processes with defined in- and outputs;
- It has been tested and demonstrated.[25]

[25] NATO's Defence Requirements Review uses a very similar model

## 6.1 Political Guidance Analysis

Political Guidance Analysis is the first stage in the LTDP process. The major inputs are: national interests and goals, national security and defence strategies, roles and importance of allies, friendly nations and international organizations for Defence etc. Political Guidance Analysis includes the following steps (Figure 6.2):

- Specify defence policy,
- Identify limitations,
- Identify defence missions,
- Identify level of ambitions (LoA) and priorities.

The first step includes detailed examination of the main national security, defence and foreign affair documents in order to realise political intention related to Defence as well as political implication for Defence. The purpose of the second step is to identify political and economical constraints for Defence. The output from the first and second step of Political Guidance Analysis makes the realisation of the third and fourth steps possible. The execution of these steps enables the precise identification of defence missions, the level of ambition as well as priorities.

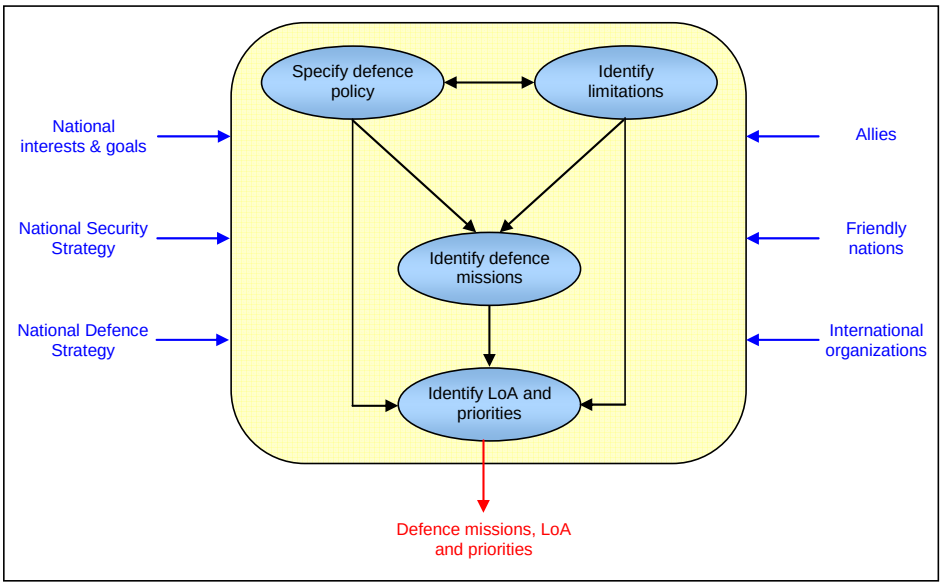


*Figure 6.2 Political Guidance Analysis*

Therefore, the major output from the first stage of the LTDP process are defence missions, the political level of ambition as well as political priorities related to Defence. Those outputs are preconditions for conducting the next planning process stages.

Defence planners may face the fact that defence policy may not exist in a way sufficiently clear for long term planning. In that case, it is necessary, as part of LTDP process, to develop an interpretation of the defence policy. Defence policy development begins with an assessment of possible future strategic environments and then links this strategic recognition to the national aim to protect and promote its citizens, territory, vital interests and values. In establishing this link, the

policy identifies the responsibilities and expectations to be placed on Defence.[26]

## 6.2 Environmental Assessment

The second stage in the LTDP process is the Environmental Assessment. The major inputs to this stage are national interests against which an environmental assessment will be undertaken to identify the events, issues and trends which may have an impact. The Environmental Assessment consists of four steps (Figure 6.3):

- Gather the necessary information
- Analyse the information
- Identify opportunities, risk and threats
- Develop a sufficient number of strategic situations.

In the first step defence planners collect all information necessary for further work on assessment of future environment. Pieces of information should be related to future security, political, economical and social issues as well as to technological development. Also, information about future natural conditions has great importance in establishing an appropriate final assessment. Sources of information can vary, from intelligence services to scientific research and analysis.

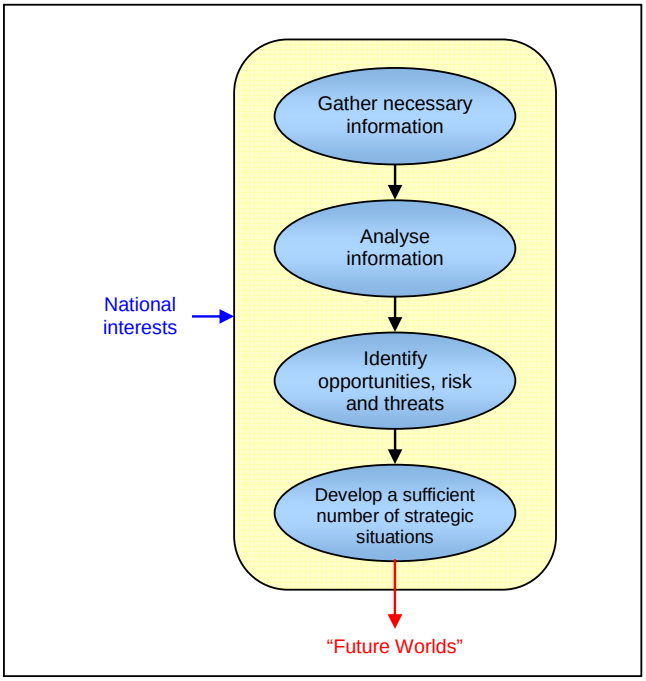


*Figure 6.3 Environmental Assessment*

The second step requires analytical knowledge and experience. For the purposes of successful analysis, defence planners can be supported by specialists and scientists schooled in the analytical techniques and knowledgeable in the areas of politics, economics, technology, and military and international affairs.

[26] RTO/NATO, *op. cit.*, p. 6

In the third step defence planners base their thinking on results of the analysis in order to consider the influence of future environments on national interests and goals. In this phase the aim is to identify future opportunities as well as risks and threats to national interests and goals.

The last step in the Environmental Assessment is the development of a suitable number of "Future Worlds". "Future Worlds" are strategic situations and have generalised characteristics that represent future developments in various areas. A more structured method, which can be useful for the development of "Future Worlds", is morphological analysis. This is a general method for structuring and analysing complex problem fields which 1) are inherently non-quantifiable; 2) contain non-resolvable uncertainties (both antagonistic and non-specified uncertainty); and 3) cannot be causally modelled or simulated in a meaningful way.[27] Tomas Eriksson and Tom Ritchey describe development of strategic situations by using morphological analysis.[28]

## 6.3 Mission Analysis

Mission analysis is the third stage of the LTDP process. This is mainly a military related activity whose purpose is to identify what should be done in order to achieve determined defence "ends" i.e. defined defence objectives. The main inputs to this stage of the planning process are defence missions and operational concepts.

Today's defence forces are usually assigned three main missions: homeland defence (it can include the defence of allies), peace operations and support to the police and other civilian institutions in confronting non-military risks and threats. In line with the main missions there are four main types of military operation: combat operations, peace support operations, operations other than war and national tasks. These types of military operation can be further divided. For instance, peace support operations involve: conflict prevention, peacekeeping, peace-building and peace enforcement operations.[29]

Identification of types of operations is the first step of Mission analysis (Figure 6.4). After that, defence planners, supported by military personnel, identify possible operation objectives (the second step) and tasks (the third step) which would be necessary to perform in order to accomplish supposed objectives. The last step in Mission Analysis is tasks decomposition i.e. development of a multi-level task structure.

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[27] Ritchey, T., *Modelling Complex Socio-Technical Systems Using Morphological Analysis*, available from: www.swemorph.com/pdf/it-webart.pdf, accessed: November 22, 2006

[28] Eriksson, T., Ritchey, T., *Scenario Development using Computerised Morphological Analysis*, available from: www.swemorph.com/pdf/cornwallis3.pdf, accessed: November 15, 2006

[29] Netherlands Ministry of Defence (1999): *Military Doctrine*, The Hague, p. 46, 173

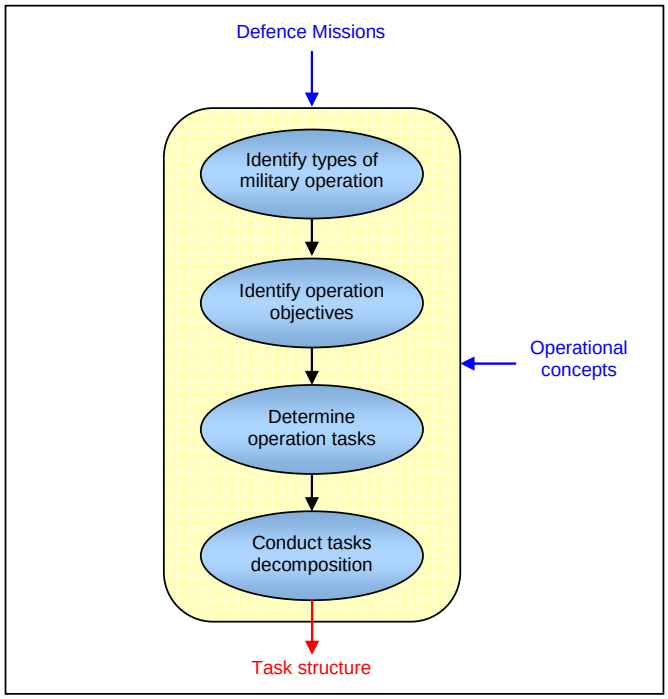


*Figure 6.4 Mission Analysis*

Very helpful tools in identifying of operation objectives and tasks are current operational concepts and existing task lists. In some cases (for instance, in order to meet new security threats), it may be necessary to develop new operational concepts and task lists.

## 6.4 Planning Situations Development

"Future Worlds" are outputs from the second stage of the long term planning process and a very important input to the fourth stage of the planning process. For the purposes of identifying future capability requirements, defence planners develop a suitable number of planning situations or specific scenarios for each of the previously defined "Future Worlds".[30] Planning situations are outputs from the fourth stage of the LTDP process and represent situations in which the forces might be used.

Besides "Future Worlds", identified types of future military operations are input for Planning Situations Development as well. The planning situations should correspond to the types of military operations defined in the stage 3.

*Planning Situations Development is based on morphological analysis and consists of four steps*

[30] Planning situations provide *context* for determination of capability requirements.

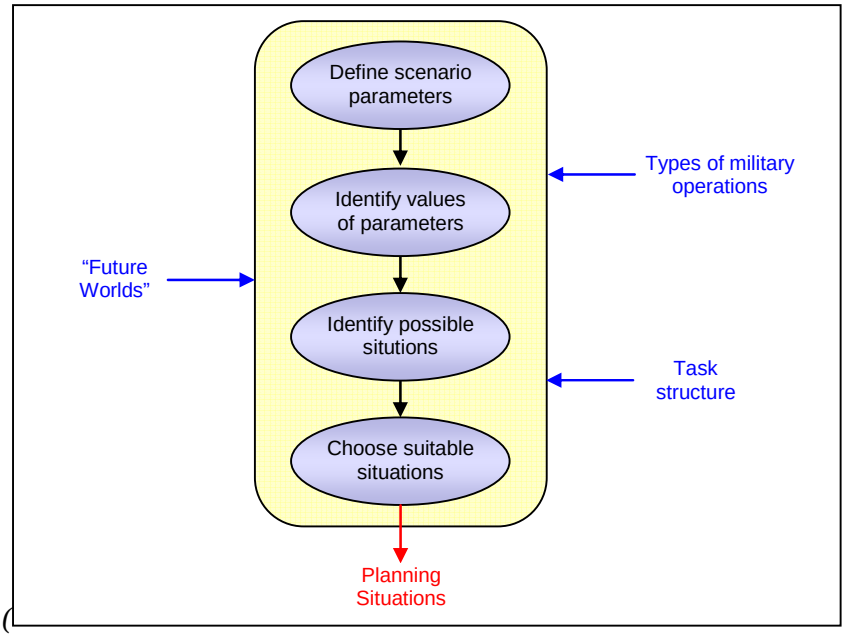


Figure 6.5). The stage begins by identifying and defining the parameters (or variables) which best defines the essential nature of possible situations. This is no trivial task and should be given ample time. The mission analysis gives the framework for defining of parameters.

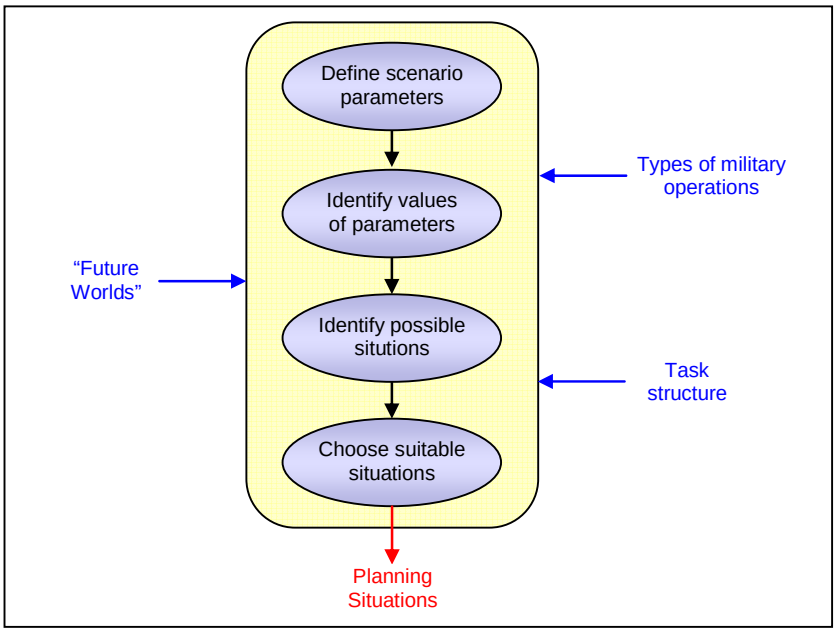


*Figure 6.5 Planning Situations Development*

After that, a spectrum of values (conditions) must be defined for each parameter. These values represent the possible, relevant conditions that each parameter can assume. The parameters and their values form a matrix called the morphological field that implicitly contains all possible future situations.

The next step is to reduce the total set of formally possible configurations in the morphological field to a smaller set of internally consistent configurations. The point is, to examine all of the configurations in the field, in order to identify which of them are really possible and which are

not.[31]

The last step in this stage is the selection of a representative set of possible situations. Defence planners choose suitable number of planning situations for each previously defined "Future Worlds" and identified types of operations. Planning situations would be a very important input for the determination of future capability requirements.

## 6.5 Capability Requirements Determination

There is not a common definition of the term capability. In "Joint Capabilities Integration and Development System", published by USA Department of Defence, a capability is defined as the ability to achieve a desired effect under specified standards and conditions through combinations of means and ways to perform a set of tasks.[32] The main capability inputs are: Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF).

The Canadian the *Collaborative Capability Definition, Engineering and Management Technology Demonstration Program (CapDEM TDP)* defines a capability as the ability and the capacity to perform a set of tasks supporting a Defence Capability Area.[33] In accordance with CapDEM TDP a capability is a function of personnel, materiel facilities (real property, installations, utilities etc.) and procedures each of which are delivered through a schedule of managed processes across all of the PRICIE components.[34]

According to the Australian Capability Development Group (CDG), a capability is the power to achieve a desired operational effect in a nominated environment, within a specified time, and to sustain that effect for a designated period. Capability is generated by fundamental inputs to capability comprising organisation, personnel, collective training, major systems, supplies, facilities, support, command and management.[35]

In line with the definitions mentioned above and, for the purposes of this study, the term

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[31] Classical morphological fields are full of contradictions (inconsistencies) which must be identified and weeded out. In fact, most morphological fields can be reduced by up to 90 or even 99 percent. This reduction leads to a manageable number of configurations – i.e. solutions – to examine and work with (Ritchey, T., *op.cit.*, p.11)

[32] CJCSI 3170.01E (2005): *Joint Capabilities Integration and Development System*, p. A-7, available from: www.dtic.mil/cjcs_directives/cdata/unlimit/3170_01.pdf, accessed: October 10, 2006

[33] CapDEM TDP, *Definitions*, available from: http://www.capdem.forces.gc.ca/html/definitions_e.html, accessed: November 13, 2006

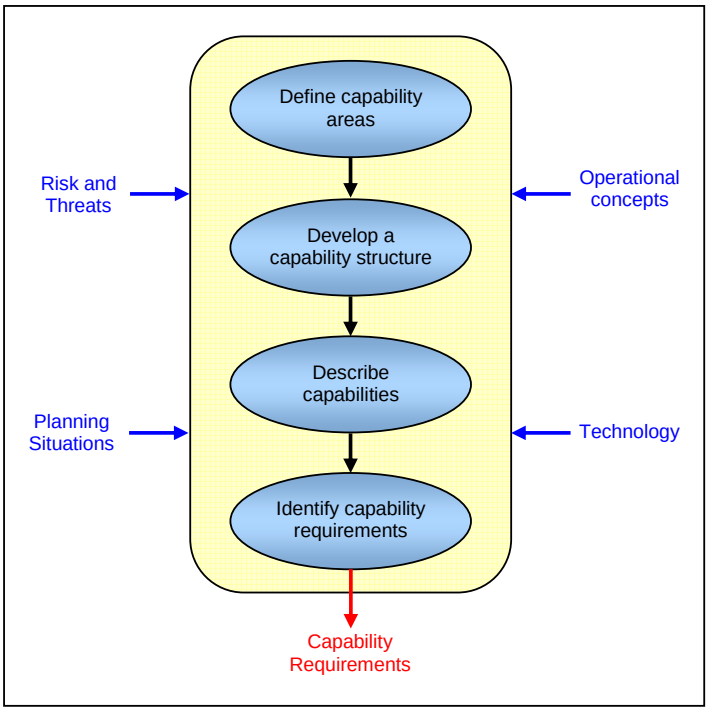
[34] PRICIE is the Canadian construct of Capability Inputs. PRICIE is the acronym for Personnel, R&D/Ops Research, Infrastructure & Organization, Concepts, Doctrine & Collective Training, IT Infrastructure, Equipment, Supplies and Services

[35] The Australian Department of Defence (2006): Defence Capability Development Manual 2006, Canberra, p.5, available from: www.defence.gov.au/capability/common/_pubs/dcdm%20preface%20and%20toc.pdf, accessed: December 21, 2006

capability can be defined as *an ability and capacity to perform tasks and achieve desired effects under specified standards and conditions in order to accomplish defined objectives.* Ability means the quality that permits or facilitates fulfilment of a task and achievement of effects and objectives. On the other side, the term capacity is related to a quantity of capabilities.

Capability Requirement Determination is probably the hardest part of the LTDP process and requires a combination of imagination and subject matter expertise. The purpose of this stage is to identify types and quantities of defence capabilities required to accomplish a given task in a given situation. Requirements need to be developed across the same set of time periods for which planning situations have been identified. Capability Requirements should be developed based on: identified tasks, developed planning situations, operational concepts, the possible impacts of future friendly and threat technology etc.

Capability Requirements Determination consists of four steps (Figure 6.6). In the first step, defence planers define capability areas. Capability areas decompose the complex issue into more manageable fragments. This is necessary due to the scope of the problem; it is easier to work with




the level of detail required for LTDP by dividing capability into smaller groups.

*Figure 6.6 Capability Requirements Determination*

There are many ways to define capability areas. Due to the complex nature of a capability, none of them are ideal, but some are better than others. Different parts of the Defence will have different approaches in identifying of capability areas. For example, budgeting specialists would identify one set of capability areas and military commanders would identify other. When implementing the capability areas design it may be necessary to consider the trade off between applying one approach across the entire organization and implementing different approaches

dependent on the needs of individual areas. For similar reasons, each nation may choose different ways to define its capability partitions, as each nation will have different requirements.[36]

Vencel, Cook and Matthews developed a set of five heuristics for capability areas design, as shown in Figure 6.7.[37]

| Heuristic | Explanation/Application |
|---|---|
| Similarity | Capability areas should contain elements that have similar characteristics. |
| Partitioning | Capability areas should be partitioned so as to minimize the interfaces between the components of different areas |
| Aggregation | Capability areas should be structured hierarchically in an appropriate manner. There should be in the order of 7 + 2 elements at each level. |
| Stable Intermediate Forms | Capability areas should be assembled from stable intermediate components. |
| Form, Fit & Function | The structure of capability areas should resemble a related functional structure in the organization. |

*Figure 6.7 Heuristics for capability areas design*

The next step in Capability Requirements Determination is the development of a capability structure. The third of previously mentioned heuristics refers to this part of the planning process. Usually there are three main capability levels: strategic, operational and tactical. The levels are strongly interconnected, but at the same time each of them is specific and must be considered separately. Defence planners should keep in mind that tasks are usually enabled by more than one capability. Also, it is very important that some capabilities enable the conduct of the task to achieve the intent (e.g. cross a danger area) or effect and some capabilities enable the task to be performed to standard (e.g. cross without detection, rapidly and safely).

A description of capabilities is the third step in the Capability Requirements Determination stage. That is very sensitive part of planning process because it is important to establish a common understanding of how a capability is conceived and expressed. Capability descriptions should be general enough so as not to prejudice decisions in favour of a particular means of implementation, but specific enough to evaluate alternative approaches to implement the capability.[38] Descriptions

[36] The USA Department of Defence identified 18 Joint Capability Areas. Eight of them are functional (Battle space Awareness, Command and Control, Force Application, Force Protection, Information Operations, Logistics, Force Management, Force Development) and ten are operational (Civil Support, Homeland Defence, Strategic Deterrence, Security Cooperation, Assistance & Stabilization, Special Operations, Access & Interdiction, Non-combatant Protection, Major Combat, Reconstruction & Transition) (Kiefer, T. (2004): *Capabilities Based Planning & Concepts*, Briefing slides, Washington, D.C.: Joint Staff J-7, available from: http://www.dtic.mil/jointvision/ideas_concepts/cbp_concepts.ppt, accessed: December 19, 2006). The Canadian Department of Defence identified 7 operational areas: Command, Information and Intelligence, Conduct of Operations, Mobility, Force Protection, Sustain, Force Generation, Corporate Strategy and Policy (Defence Planning and Management, *Canadian Joint Task List v1.4*, available from http://www.vcds.forces.gc.ca/dgsp/pubs/rep-pub/dda/cjtl/cjtl14/, accessed: December 20, 2006)

[37] The Technical Cooperation Program (2004): *Guide to Capability-Based Planning*, TR-JSA-TP3-2-2004 (Alexandria, VA: The Technical Cooperation Program), p.8, available from: http://www.mors.org/meetings/cbp/read/TP-3_CBP.pdf, accessed: January 22, 2007

[38] CJCSI 3170.01E, *op.cit.*, p.A-7

usually contain key capability characteristics (attributes) with appropriate parameters and metrics, e.g., time, distance, effect (including scale).

The parameters provide a way of expressing ability (proficiency, performance) for performing task(s) under a specified set of conditions. The main parameters are "measures" and "criterions". Measures provide the basis for describing varying levels of performance.[39] Criterions define acceptable levels of performance and they are often expressed as a minimum acceptable level of performance. The combination of the measures and the criterions comprises the standard of a capability.

The previous step of the Capability Requirements Determination stage answers the question "what capabilities do we need?". The next (and the last) step of this stage should give an answer to the question "how much of each capability do we need?". The identification of capability requirements is based on planning situations, current and future operational concepts as well as the mission analysis.

The identification of capability requirements implies an extension of the analysis from single scenario assessments of force structure to assessments that span multiple concurrent planning situations. The capability requirements should be expressed through time i.e. through a planning horizon.

The very complex question is how to express the capability requirements. They must be generic, but at the same time they should be specific enough. Defence planners often use "generic units" or "generic capabilities" as a means of capability requirements expression. "Generic units" should be defined for each capability category. These are "units" with specified and known capabilities which are used as a yardstick to calculate requirements for a certain capability. It can be a real world asset or a theoretical asset with specified capabilities.[40]

## 6.6 Capability assessment

Capability Assessment is a stage that follows Capability Requirements Determination. The purpose of the stage is to assess fulfilment of the previously identified capability requirements. Using the identified requirements and current capabilities as primary inputs, Capability assessment produce a list of capability gaps that require solutions and indicates the time frame in which those solutions are needed. It may also identify redundancies in capabilities that reflect inefficiencies. This stage of the LTDP process will also provide the relative priority of the gaps

[39] For instance, the capability "Communicate Operational Information" refers to the sending and receiving of information from one unit or organisation to another by any means. Measures of ability for this capability include the speed with which information is transmitted (queuing time for message transmission) and the accuracy of communications (percent of messages sent to the right addresses with the right content) (CJCSM 3500.04D (2005): *Universal Joint Task List (UJTL)*, Joint Staff, Washington, D.C., available from: www.dtic.mil/doctrine/jel/cjcsd/cjcsm/m350004c.pdf, accessed: September 23, 2006

[40] Glærum, S. (2006): *DRR Methodology Capability Analysis*, Briefing slides, Kjeller, Norway

identified.[41]

The Capability Assessment stage involves the following steps (Figure 6.8):

- Assess applicability of current capabilities;
- Review the list of capability requirements and identify those in which capabilities are short, sufficient, or redundant;
- Where capabilities are short, identify why that is the case and how the shortfall was discovered (e.g., modelling/simulation analyses, lessons learned, after action reviews, exercises etc.);
- Prioritize shortfalls;
- Identify capabilities in which modest investment would create efficiencies and, consequently, generate big savings by obviating the need for costly, now-redundant capabilities of which the Defence could divest;
- Identify Capability Areas – and capabilities, if possible - in which it is possible to accept risk.

[41] CJCSI 3170.01E, *op.cit.*, p.A-5

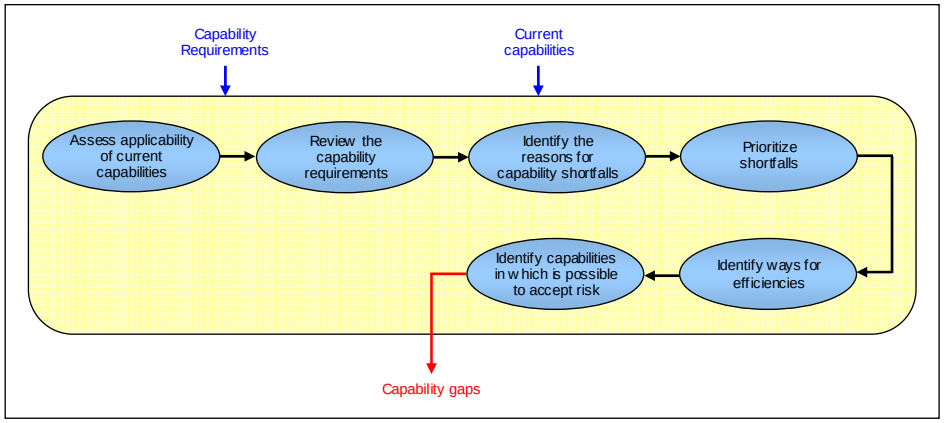
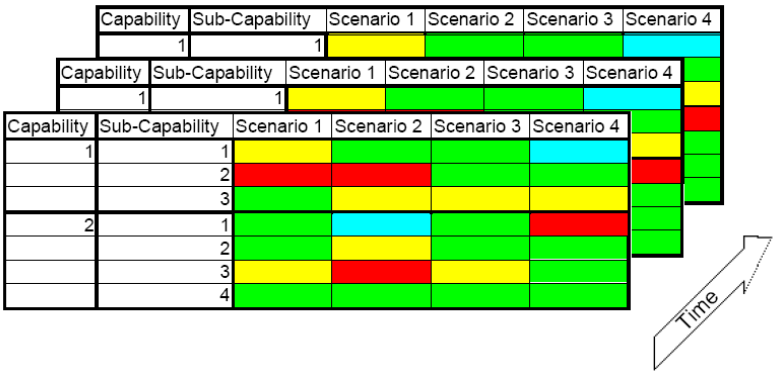



*Figure 6.8 Capability Assessment*

It is important to assess capability from the near-term to the distant future. It would allow keeping track of changes in defence capability over time and determining when changes occur. Capabilities should be assessed three or four times over approximately 15 years to strike the balance between excessive work and large gaps in the assessment.[42]

An example of a capability assessment matrix is shown in Figure 6.9.[43] The format presented below is one of possible formats available for the presentation of the capability assessment results.

*Figure 6.9 Example Capability Assessment Matrix[44]*




## 6.7 Options Development

The Options Development is the seventh stage of the LTDP process. That is a development of possible approaches to solving (or mitigating) the capability gaps identified in the previous stage of the process. Defence planners develop options taking both materiel and non-material solutions

[42] The Technical Cooperation Program, *op. cit.*, p. 11

[43] *Ibid.*

[44] The meaning of the colours can vary for instance: Red- major short capability, Yellow- minor short capability, Green- sufficient capability and Blue- redundant capability

into account.

The main inputs to this stage are capability gaps and available resources. The output from Options Development is a list of potential requirements and resources based options.

The Options Development stage includes five steps (Figure 6.10). In the first step, defence planners identify non-material approaches. It implies analyses whether or not changes in capability inputs (e.g. Doctrine, Organisation, Training, Leadership, Personnel etc) and/or operational concepts are able to fill capability gaps identified in the Capability Assessment stage. If this is not the case, the next step would be performed in order to identify material approaches. That is a very complex activity and the expertise of all government agencies, as well as industry and other resources should be engaged to identify possible materiel approaches that can provide the required capabilities. Study of options' feasibility follows identification of material and non-material approaches. It includes a detailed examination whether or not each individual approach is able to fill identified gap. Available financial and other resources as well as technological and other limitations very often disable feasibility of options. In that case defence planners find out additional approaches. For instance, additional approaches may request more resources, reduction of level of ambition or information about possible risks if gap would not be filled. In the last step defence planners specify possible options for each individual capability gap.

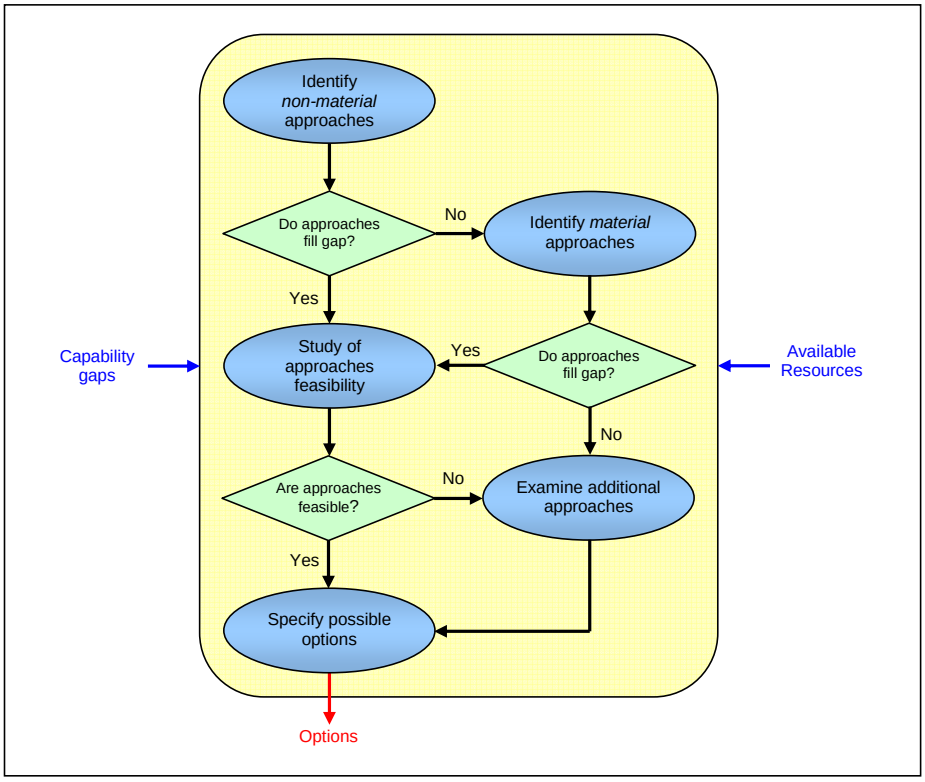



*Figure 6.10 Options Development*

The development of realistic options is a crucial step in linking capability gaps to the development of an affordable capability-oriented LTD plan. One of the most difficult areas in the Options Development stage is in obtaining realistic costs, especially for options in the longer time

horizon or when considering new capabilities. These costs should be whole-of-life to help in the comparison of options with different spend spreads. Life-cycle costs recognize that the most defence costs are in through-life support rather than in acquisition.[45]

The discussion above points out priorities in development of options for fulfilling identified capability gaps. Non-material approaches have first order priority. The second level of priority is related to material approaches. If non-material and material approaches are not able to fill capability gaps, then it is necessary to find additional options.

## 6.8 Solution Selection

The product of the Options Development stage is a list of options (approaches or combinations of approaches) for filling each individual capability gap. The purpose of the last stage of the LTDP process is to select a suitable solution.

Defence planners very often face situations where the political establishment does not provide the means for overcoming all identified capability gaps. In that case there are two general approaches: a) to develop attainable capabilities and fill some gaps; b) to reject development of some capabilities and accept risk. Acceptance of risk is not under jurisdiction of defence planners, but belongs to political institutions. However, defence planners are obliged to point out possible risks and consequences.

The last stage of the LTDP process comprises four steps (Figure 6.11). The first step implies reconsideration of the options for each capability gap. If the options do not fill capability gaps, defence planners will specify the possible risk. Options that are able to fill gaps would be tested in order to choose the optimal one. The test would be combination of cost-benefit and risk analyses. Finally, selected options for filling capability gaps and specified risks would be included into a Long-term defence plan.

The long term defence plan needs to be carefully developed to ensure that the information presented is useful in making decisions. The information should be presented in a simple and easily understandable way so that the decision-makers can understand complex trade offs.

The long term defence plan must be approved by relevant state institutions (Parliament, Government etc). In that way the political establishment become conscious of future defence capabilities and the risks accepted by leaving shortfalls in those capabilities.

[45] *Ibid.*, p. 12

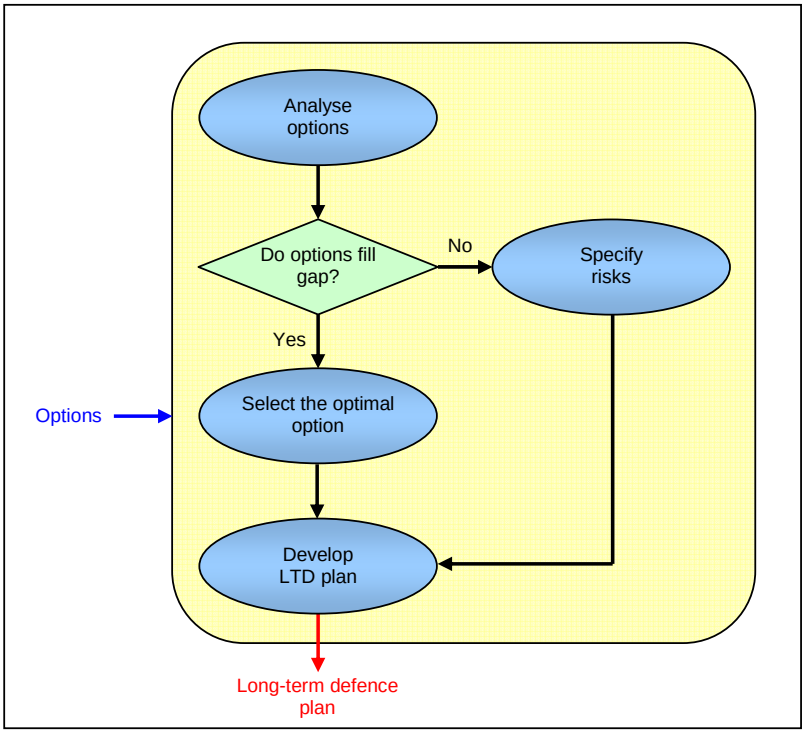



*Figure 6.11 Solution Selection*

The implementation of the LTD plan follows its official approval. This is a very complex process which must be well prepared and led. Relevant defence institutions prepare the necessary partial plans and programmes which would specify the LTD plan and support its implementation.

It has been mentioned that the LTD plan looks 10 or more years into the future. It is very difficult to keep the LTD plan current for so long because it is necessary to update the plan regularly. The update of the LTD plan includes reconsideration of all its parts, i.e. going through the entire planning process.

# 7 Conclusion

The modern Defence needs appropriate long term planning. Long term defence planning is a very complex and iterative process of defining long-term defence objectives and a strategy for their fulfilment. The general purpose of LTDP is to (re)consider the mission of the Defence and to establish realistic long term goals and objectives consistent with that mission. Finally, the purpose of LTDP is to define ways for fulfilment of the defence mission.

There is no universally accepted time period associated with long term planning. A reasonable compromise would be to require a time horizon of 10 or more years.

Also, there is no universally accepted method to perform LTDP. Many different analytical approaches have been applied to LTDP over the years. Each approach has own advantages and disadvantages. In practice, LTDP is more commonly conducted employing a combination of many planning approaches.

The major variables in LTDP are ends, ways and means of Defence. The *ends* of Defence are the required defence outputs in support of national interests, values and goals in peacetime, crisis and war. The *ways* of Defence describe how the defence forces (means) will be used to accomplish strategic objectives (ends) and the *means* are instruments by which some "end" can be achieved. Political decision makers and defence planners share the responsibilities for the determination of these variables.

The process of LTDP should include following stages:

1. Political Guidance Analysis
2. Environmental Assessment
3. Mission Analysis
4. Planning Situations Development
5. Capability Requirements Determination
6. Capability Assessment
7. Options Development
8. Solution Selection

Each stage implies specific processes which comprises many steps. The stages and their steps are mutually dependent. Successful performance of the previous stage or step is often a precondition for continuance of the process.

Long term defence planning is never just a technical procedure. It is also a highly political process that needs to be discussed in political terms (i.e., good and continual dialogue must exist between long-term planners and policy makers). At the same time, if care is not taken to ensure objectivity in LTDP, it risks being dismissed as a politically biased process.

# Appendix A: Stages of long term planning process

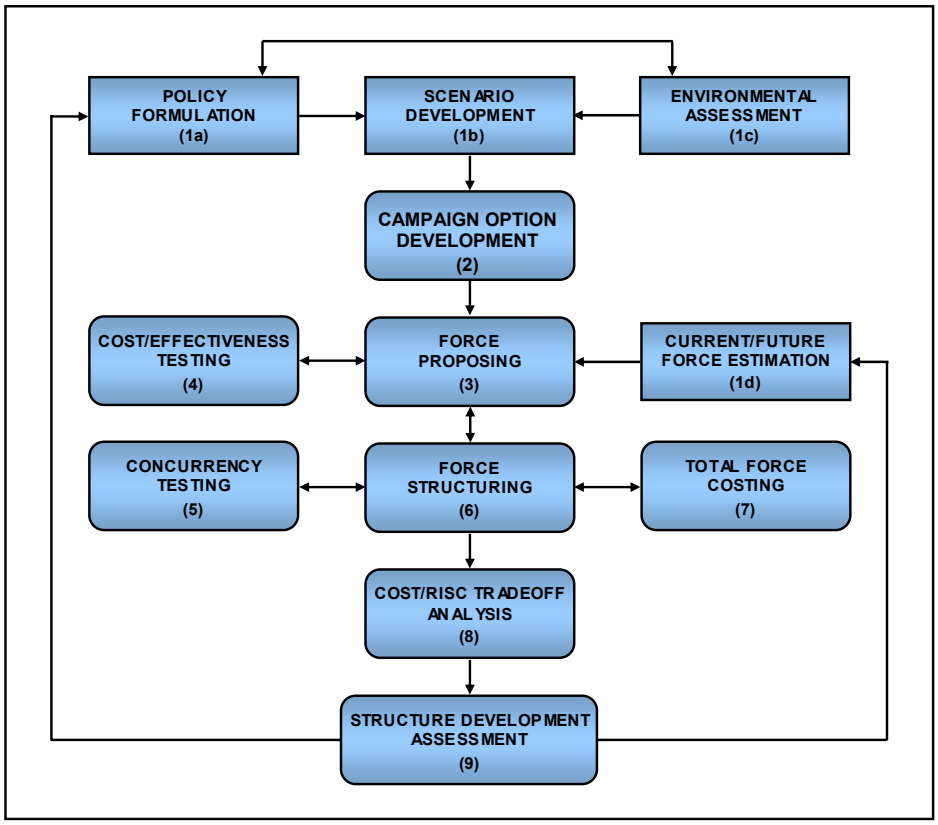
| Model | STAGES OF THE PROCESS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NATO *Best Practice* Model** | 1. Inputs | 2. Campaign options | 3. Force packages | 4. Cost / Effectiveness testing | 5. Concurrency testing | 6. Force structuring | 7. Total force costing | 8. Risk/cost tradeoffs | 9. Structure development assessment | 10. Feedback |
| **NATO DRR Process** | 1. Analysis of the political and military guidance and an assessment of the security environment | 2. Make DRR "Planning Assumptions" | 4. Define Mission Types and Planning Situations (or scenarios) | 5. Define "generic" capability requirement | 6. Gap Analysis and Fulfilment | 7. Define Force Proposals and Capability Packages | | | | |
| **Strategy and Force Planning Framework for the USA** | A. Strategic Choice | | | | B. Force choices | | | | | |
| | 1. Identify national interests and national objectives | 2. Assess the security environment | 3. Identify the role of allies, friendly nations, and international institutions | 4. Identify influence of resource constraints and technology | 5. Develop National Security Strategy and National Military Strategy (NMS) | 6. Assess ability of available forces, and identify Deficiencies and Risks | 7. Define and evaluate force alternatives | 8. Determine Programmed Force | | |
| **A National Security Policy Framework for Canada** | 1. The statement of national interests, values and goals | 2. The strategic analysis, an environmental assessment and stakeholder analysis | 3. Defence policy formulation | 4. The roles of the Canadian Forces | 5. The analysis of the capability requirements to meet the perceived risks and threats | 6. Canadian Forces strategy formulation | 7. Joint doctrine and concepts development | | | |
| **USA QDR Development Process** | 1. Identify Core Challenges and Planning Assumptions | 2. Identify strategic metrics and major types of force elements | 3. Develop plans to meet challenges | 4. Develop other plans related to defence | 5. Identify plans-resources gap | 6. Recommend military capabilities, force types and force mix | | | | |
| **Italian Defence Planning Model** | 1. Identifying national values and security interests | 2. Assessing the risks and threats to these values and interests | 3. Formulating defence policy and military strategy for responding to risks and threats | 4. Determining the most effective mix of forces, weapons and manpower to execute national defence policy and military strategy | | | | | | |
| | | | | 4.1. Determine force requirements | 4.2. Translating force requirements into force goals | 4.3. Selecting suitable strategies | 4.4. Allocating necessary resources | | | |
| **Bulgarian Defence Planning Framework** | 1. Objectives | 2. Strategies | 3. Missions | 4. Tasks | 5. Capabilities | 6. Force mix | 7. Resource Assessment | 8. Risk Analysis | | |
| **Generic Process Chart of Capability-Based Planning** | 1. Government Guidance | 2. Defence Priorities | 3. Scenarios | 4. Capability Goals | 5. Capability Assessment | 6. Identify Capability Mismatches | 7. Force Development Options | 8. Balance of Investment | 9. Affordable Capability Development Plan | |
| **Algorithm of military reform in Ukraine** | 1. Identify national interests | 2. Define strategic aims and priorities of the state | 3. Identify external and internal threats | 4. Identify the role of allies, strategic partners, and international organizations | 5. Develop military doctrine | 6. Develop the concept of military reform | 7. Assess ability for concept implementation | 8. Identify alternatives | 9. Develop programmes of reforms | |
| **Basic Strategic Planning Model** | 1. Defining the mission, goals, and key values of an organization | 2. Situation analysis (external and internal) | 3. Establish assumptions | 4. Set objectives and priorities | 5. Develop strategies and/or action plans | 6. Design a system to ensure follow-up | | | | |

# Appendix B: Linkages among stages of the different models

| STAGE | Model | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | NATO *Best Practice* Model | NATO DRR Process | Strategy and Force Planning Framework for the USA | A National Security Policy Framework for Canada | USA QDR Development Process | Italian Defence Planning Model | Bulgarian Defence Planning Framework | Generic Process Chart of Capability-Based Planning | Algorithm of military reform in Ukraine | Basic Strategic Planning Model |
| **1. Political Guidance Analysis** | 1.(a) Inputs | 1. Analysis of the political and military guidance and an assessment of the security environment<br>2. Make DRR "Planning Assumptions | 1. Identify national interests and national objectives<br>5. Develop National Security Strategy and NMS | 1. The statement of national interests, values and goals | 1. Identify Core Challenges and Planning Assumptions<br>2. Identify strategic metrics and major types of force elements | 1. Identifying national values and security interests | 1. Objectives<br>2. Strategies | 1. Government Guidance<br>2. Defence Priorities | 1. Identify national interests<br>2. Define strategic aims and priorities of the state | |
| **2. Environmental Assessment** | 1.(c) Inputs | | 2. Assess the security environment<br>3. Identify the role of allies, friendly nations, and intern. institutions<br>4. Identify influence of resource constraints and technology | 2. The strategic analysis, an environmental assessment and stakeholder analysis | | 2. Assessing the risks and threats to these values and interests | | | 3. Identify external and internal threats<br>4. Identify the role of allies, strategic partners, and international organizations | 2. Situation analysis (external and internal) |
| **3. Mission Analysis** | 2. Campaign options | 4. Define Mission Types and Planning Situations (or scenarios) | | 3. Defence policy formulation<br>4. The roles of the Canadian Forces | 3. Develop plans to meet challenges<br>4. Develop other plans related to defence | 3. Formulating defence policy and military strategy for responding to risks and threats | 3. Missions<br>4. Tasks | | | 1. Defining the mission, goals, and key values of an organization<br>3. Establish assumptions<br>4. Set objectives and priorities |
| **4. Planning Situations Development** | 1.(b) Inputs | | | | | | | 3. Scenarios | | |
| **5. Capability Requirements Determination** | 3. Force packages Cost /<br>4. Effectiveness testing<br>5. Concurrency testing<br>6. Force structuring<br>7. Total force costing<br>8. Risk/cost tradeoffs | 5. Define "generic" capability requirement | | 5. The analysis of the capability requirements to meet the perceived risks and threats | | 4.1. Determine force requirements<br>4.2. Translating force requirements into force goals | 5. Capabilities<br>6. Force mix | 4. Capability Goals<br>5. Capability Assessment | 5. Develop military doctrine<br>6. Develop the concept of military reform | |
| **6. Capability Assessment** | | 6. Gap Analysis and Fulfilment | 6. Assess ability of available forces, and identify defic. and risks | | 5. Identify plans-resources gap | | 7. Resource Assessment<br>8. Risk Analysis | 6. Identify Capability Mismatches | 7. Assess ability for concept implementation | |
| **7. Options Development** | | 7. Define Force Proposals and Capability Packages | 7. Define and evaluate force alternatives | 6. Canadian Forces strategy formulation<br>7. Joint doctrine and concepts development | 6. Recommend military capabilities, force types and force mix | | | 7. Force Development Options<br>8. Balance of Investment | 8. Identify alternatives | 5. Develop strategies and/or action plans |
| **8. Solution Selection** | 9. Structure development assessment<br>10. Feedback | | 8. Determine Programmed Force | | | 4.3. Selecting suitable strategies<br>4.4. Allocating necessary resources | | 9. Affordable Capability Development Plan | 9. Develop programmes of reforms | 6. Design a system to ensure follow-up |

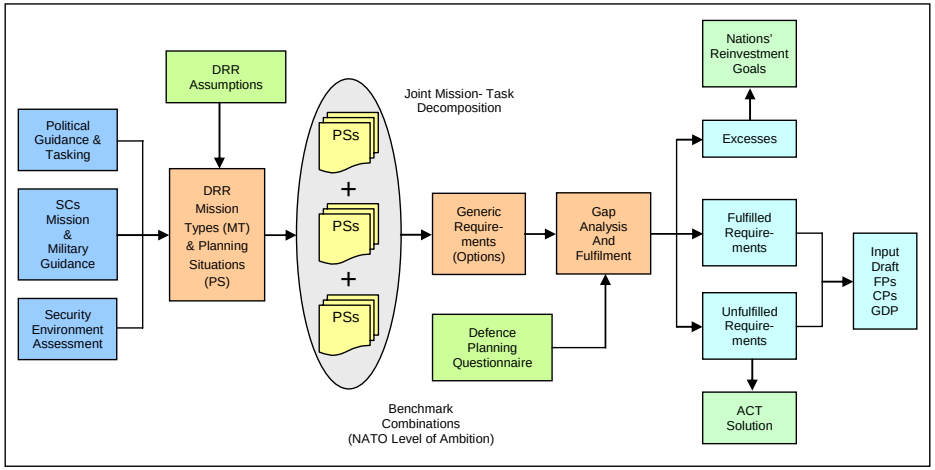
# Appendix C: The different models of LTDP

Long term planning process 'Best Practice' model[46]



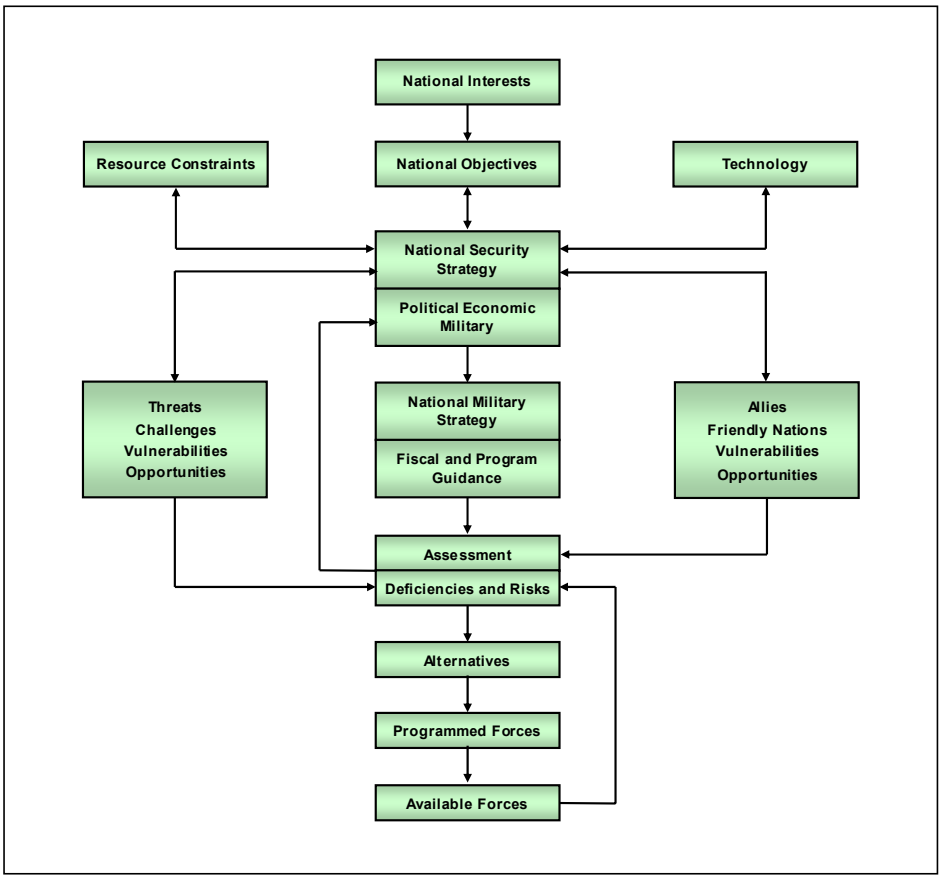

[46] RTO/NATO, *op.cit.*, p. 3-4

## Defence Requirements Review (DRR) process[47]



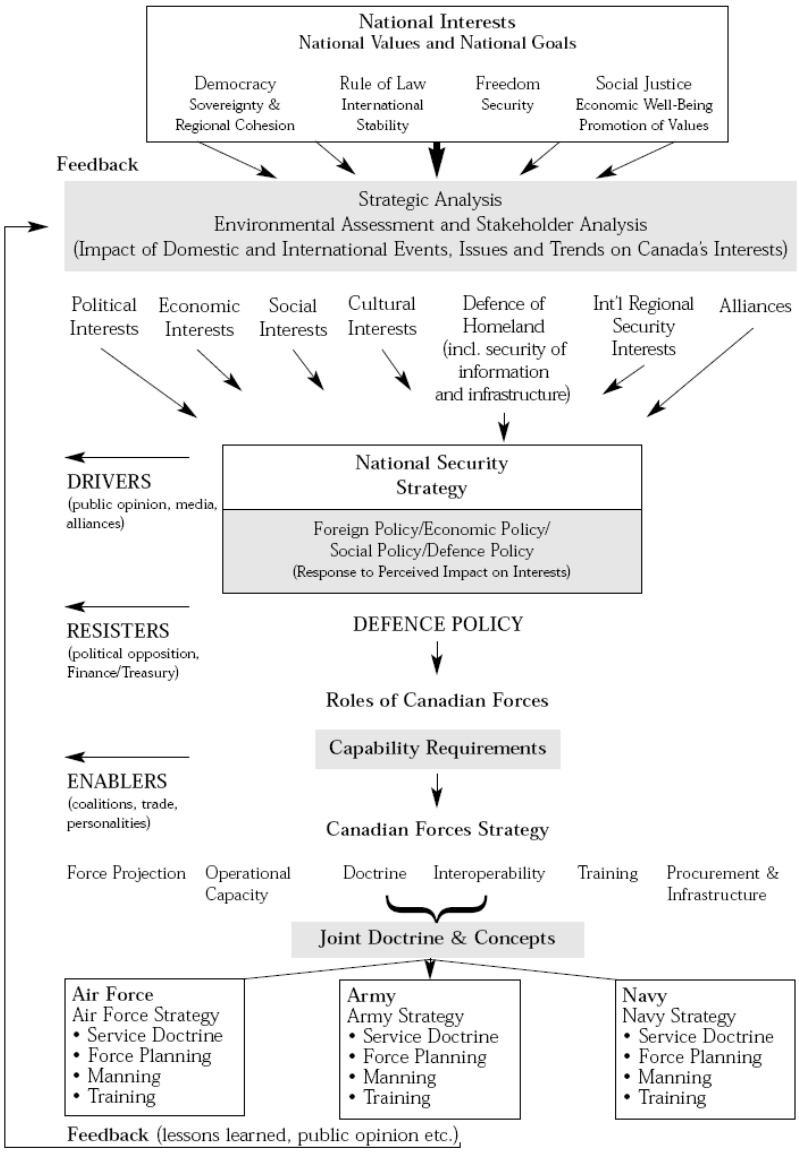

[47] Allied Command Transformation (2005): *Capability Requirements Definition: The Defense Requirements Review (DRR) and the Long Term Requirements Study (LTRS)*, Briefing slides

Strategy and Force Planning Framework for the United States[48]



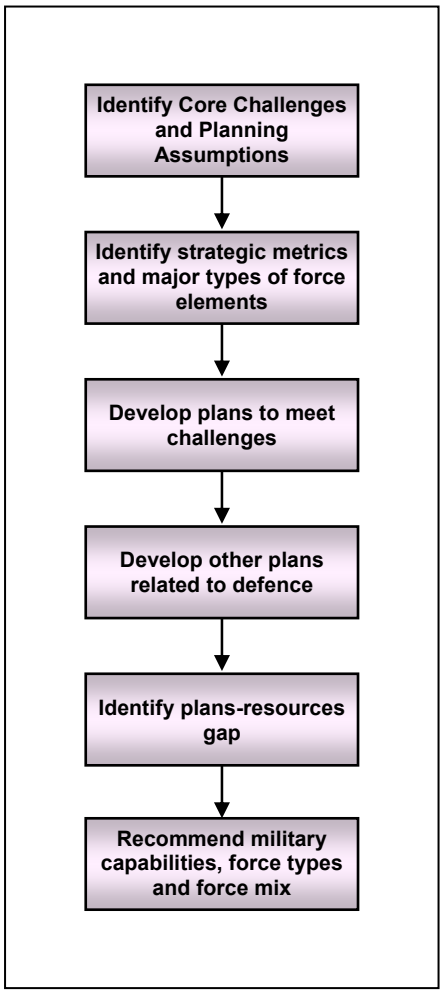

[48] Lloyd, R., M. (2000): *Strategy and Force Planning Framework*, Strategy and Force Planning, Third Edition. Newport, RI: Naval War College, p.3

## A National Security Policy Framework for Canada[49]

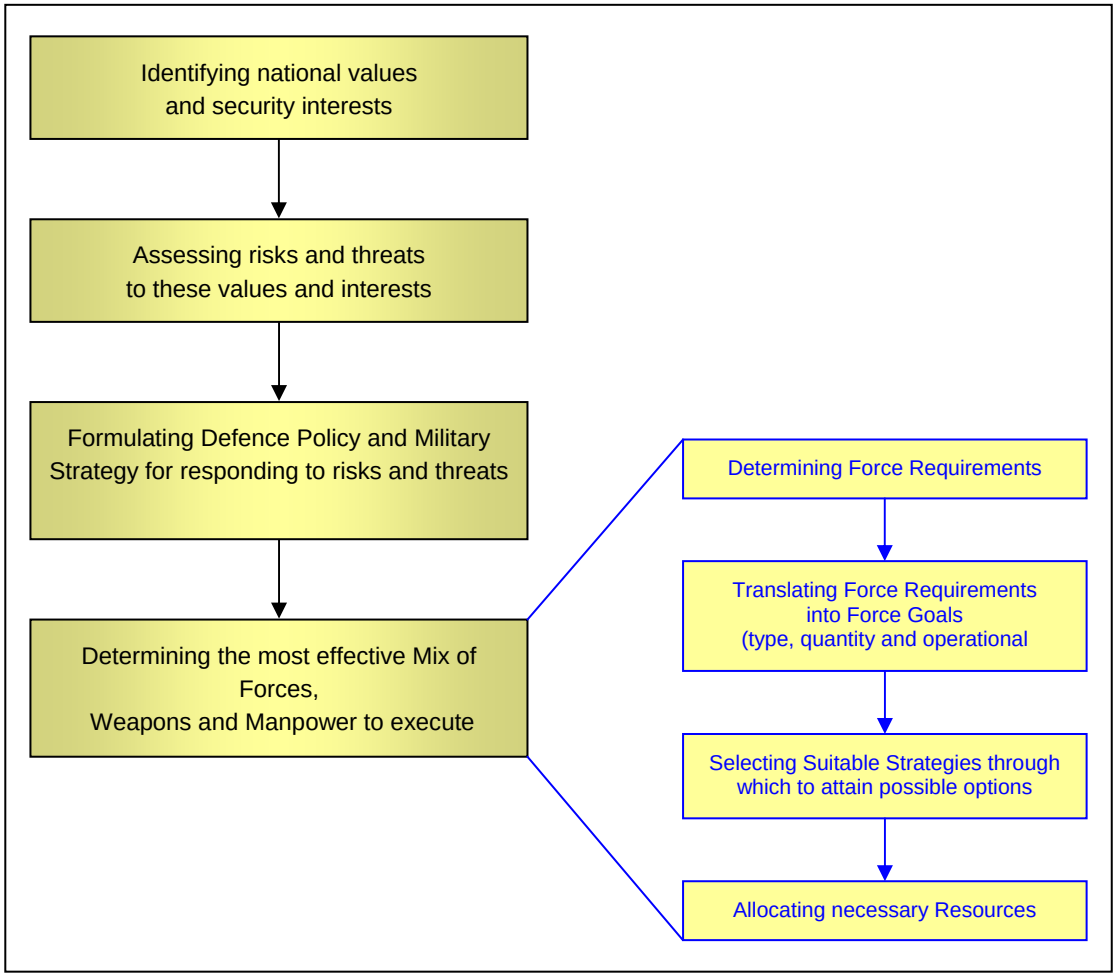



[49] Macnamara, D., Fitz-Gerald, A. (2002): A *National Security Framework for Canada, Enjeux publics*, Vol. 3, no 10, p.23, available from: www.irpp.org/pm/archive/pmvol3no10.pdf, accessed: January 4, 2007

The USA QDR Process[50]



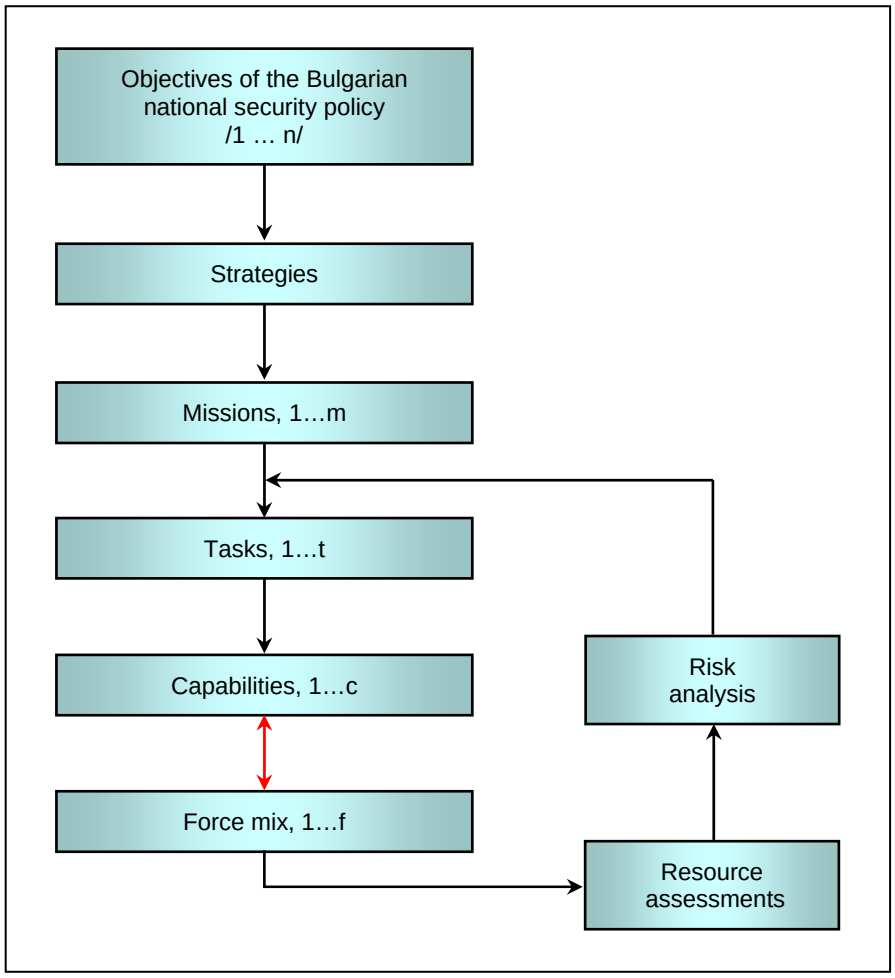

[50] Adapted according to: Krepinevich, A. (2005): *The Quadrennial Defense Review: Rethinking the US Military Posture*, Center for Strategic and Budgetary Assessments




Italian Defence Planning Model[51]

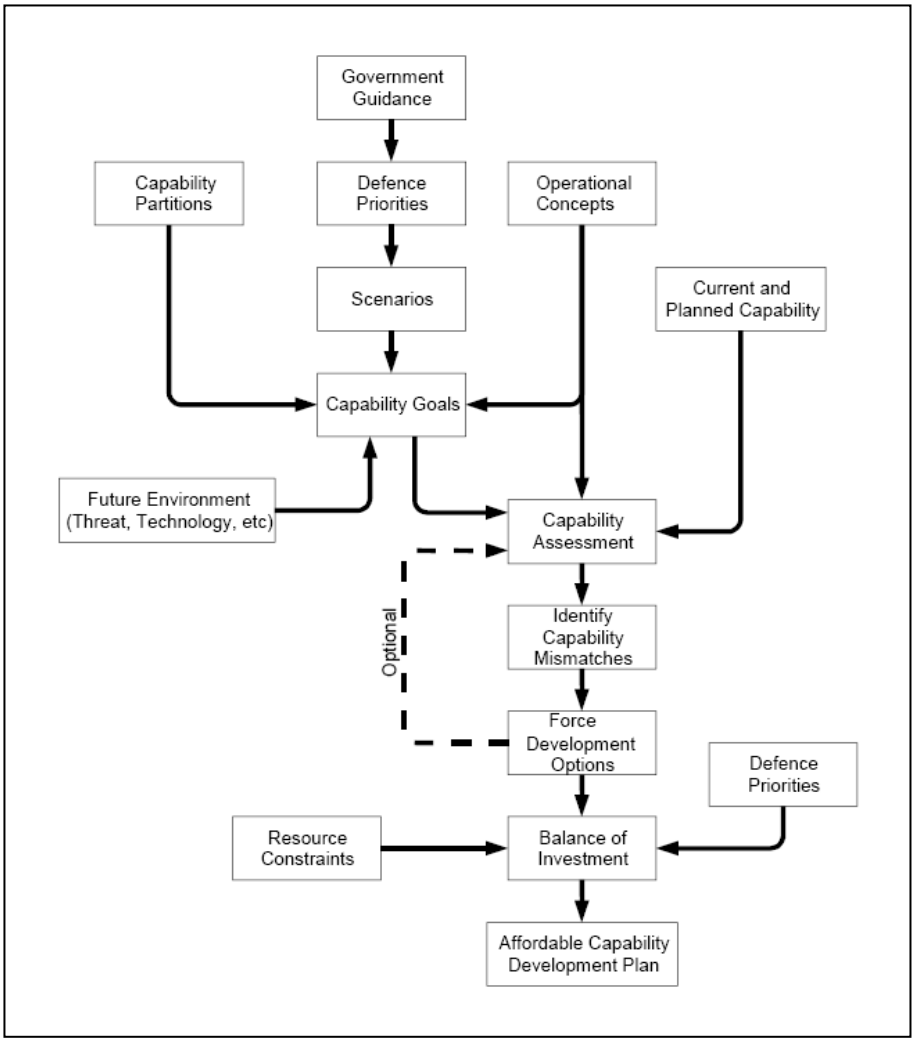
[51] Adapted according to: Risi, M. (2001): *Exchange of Information on Force Planning*, (lecture), RACVIAC, Bestovje, Croatia

Bulgarian Defence Planning Framework[52]



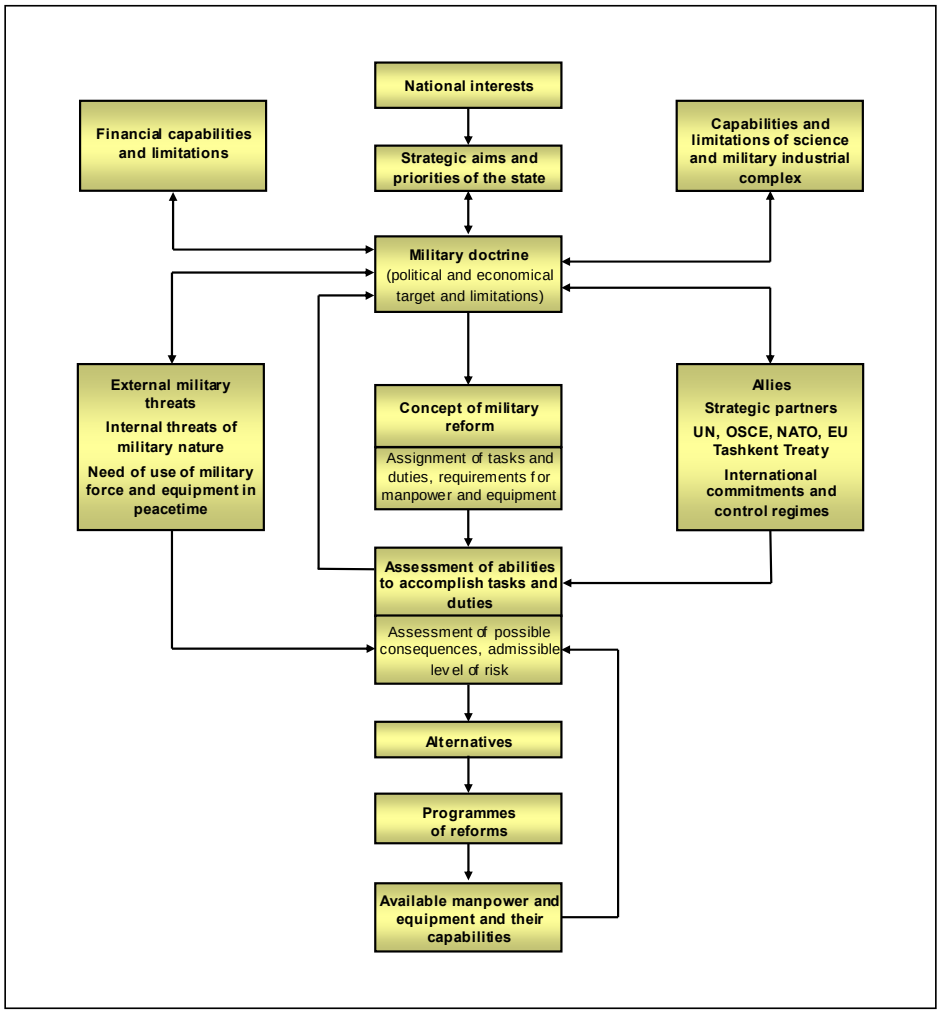

[52] Minchev, O., Ratchev, V., Lessenski, M. (2002): *Bulgaria for NATO - 2002,* Institute for Regional and International Studies, Sofia, p.257

Generic Process Chart of Capability-Based Planning[53]



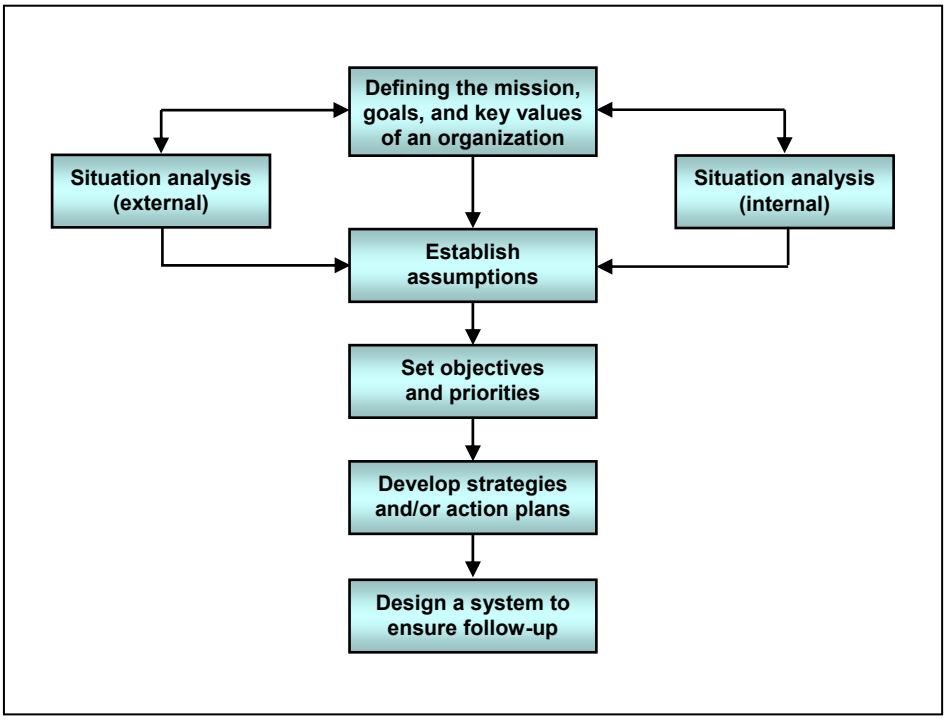

[53] The Technical Cooperation Program, *op.cit.*, p.4

Algorithm of military reform in Ukraine[54]




[54] Grytsenko, A. (2000): *Civil-military relations in Ukraine: On the way from form to substance*, NATO Fellowship Programme, Kyiv, p.26, available from: www.nato.int/acad/fellow/98-00/grytsenko.pdf, accessed: October 15, 2006

Basic Strategic Planning Model[55]




[55] Adapted according to: Condray, M., P. (1999): *Charting the Nation's Course Strategic Planning Processes in the 1952–53 "New Look" and the 1996–97 Quadrennial Defense Review*, Air University Press, Maxwell Air Force Base, Alabama, p.7

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