

CAPABILITY-BASED PLANNING AND PROGRAM BUDGETING APPROACHES: ENHANCING SUSTAINABILITY AND UTILITY OF DEFENSE FORCES

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Capability-Based Planning (CBP) and Program Budgeting (PB) are powerful tools that contribute to the sustainability and utility of defense forces. CBP prioritizes and allocates resources based on desired capabilities to achieve strategic objectives, ensuring adaptability and responsiveness to potential threats. PB allocates resources based on specific programs, focusing on results and aligning funding with outputs and outcomes. This article explores how the simultaneous application of CBP and PB can enhance the efficiency and effectiveness of defense resource management. CBP enables the development of a comprehensive force structure plan, while PB facilitates informed resource allocation and optimization over a medium-term period. The alignment between required capabilities, produced outputs, and desired outcomes outlined by national defense objectives is crucial. By adopting these approaches, defense organizations can strategically allocate resources, prioritize high-priority programs, and produce desired military capabilities. This results in improved transparency, accountability, and performance measurement, ultimately enhancing the sustainability and utility of defense forces. The adoption of CBP and PB fosters a more effective and efficient defense resource management process, enabling defense forces to effectively respond to evolving security challenges.

Key words: *Capability-Based Planning (CBP), Program Budgeting (PB), sustainability, utility, Defense Forces.*

1. INTRODUCTION

Capability-Based Planning (CBP) is an approach used in defense planning to prioritize and allocate resources based on the desired capabilities required to

achieve strategic objectives. It aims to ensure that military forces are equipped with the right mix of capabilities to effectively respond to a wide range of potential threats and challenges. By adopting a CBP approach, military organizations aim to be more flexible, adaptable, and responsive to changing

circumstances. CBP is oriented on developing future force and focused on elaboration of a force development plan. It informs senior defense decision-makers “on how to organize, train, equip, resource, and provide capability to force elements in support of policy objectives – within allocated resource limits – to carry out armed forces activities and operations” (Taliaffero et al., 2019).

Program Budgeting (PB) is an approach to budgeting used in the defense sector that focuses on allocating resources based on specific programs rather than traditional line-item budgets. It aims to align funding with outputs (capabilities) and outcomes (strategic objectives), enabling better transparency, accountability, and performance measurement. Properly implemented, PB implies planning, programming and budgeting processes, and provides clear linkage between defense policy, strategy, capability planning, and budget planning and execution. By adopting PB, defense organizations can make more informed decisions regarding resource allocation, prioritize high-priority programs (projects), and optimize the utilization of available resources over a four- to six-year period (Taliaffero et al., 2017). It enables a more strategic and results-oriented approach to budgeting, ensuring that resources are aligned with defense priorities and produce the desired military capabilities.

This article provides an overview of two key concepts in defense planning and resource management: Capability-Based Planning (CBP) and Program Budgeting (PB). The adoption of these approaches is crucial for effective resource allocation, strategic planning, and the achievement of desired defense outputs and outcomes. These approaches facilitate the alignment of capabilities with national defense objectives, resulting in more sustainable, efficient, and effective defense forces capable of addressing evolving security challenges. When applied simultaneously, both approaches serve as effective tools to ensure the sustainability and utility of the Defense Forces.

2. CONCEPTS OVERVIEW

2.1 Capability-Based Planning

In times of peace, the defense system operates as a complex system that must effectively utilize public resources to transform them into mission-ready armed forces. This transformation, along with the ongoing development and upkeep of the armed forces, is guided by defense policy and strategy. Defense policy outlines the desired objectives that the Defense Ministry aims to achieve, while defense strategy can be understood as the approach taken to accomplish these objectives.

Defense planning, which is guided by defense policy and strategy and relies on analytical, planning, and

programming efforts, determines the type of armed forces that are appropriate, feasible, and affordable for the nation (Mazarr et al., 2019). The purpose of defense planning is to convert national security and defense policy, as well as derivative defense strategies and guidance documents, into a practical and economically viable set of capability requirements, spending priorities, plans for capability development, programs, and budgets. Ultimately, this process results in the establishment of a comprehensive, accessible, and capable force structure that ensures the fulfillment of assigned defense tasks and the achievement of national defense and security objectives.

The primary challenge faced by defense planners is to determine the most optimal military capabilities to be developed and maintained, as well as the necessary states of readiness associated with them (Omitoogun & Hutchful, 2006). Two primary approaches to defense planning exist: threat-based planning (TBP) and capability-based planning (CBP) (Borzillo et al., 2021).

During the late 1990s, some defense experts started expressing concerns that the US Defense Department's force development plans were based on limited scenarios that failed to encompass the potential spectrum of future military engagements. This traditional method was referred to as "threat-based planning." At that time, the commonly utilized scenarios revolved around

addressing a North Korean invasion of South Korea and an Iraqi assault on Saudi Arabia and Kuwait. However, during the period spanning from the mid-1990s to the early years of the twenty-first century, military forces were confronted with a multitude of varied challenges, often requiring simultaneous responses. Consequently, developers of military forces began advocating for the adoption of a broader range of realistic scenarios for planning purposes. One of the most comprehensive frameworks in this category was proposed by RAND analyst Paul Davis and his colleagues. Eventually, Davis termed his approach "capabilities-based planning" (Hicks, 2017).

As Troxell (2001), a professor at the U.S. Army War College noted, whether employing TBP or CBP, the force planner must achieve three main objectives. Firstly, they need to ascertain the required level of force structure to effectively respond to the anticipated challenges posed by the security environment while maintaining an acceptable level of risk. Secondly, they need to determine how to organize the force structure into units with appropriate allocated resources. Lastly, they must provide a justification to defense leadership, the national legislature, and the public, demonstrating that the solutions for the first two tasks are reasonably accurate and worthwhile

investments. To accomplish these three objectives, force planners can opt for either threat-based planning or capabilities-based planning (Troxell, 2001).

Threat-based planning is beneficial when threats are easily identifiable and can be described using one or a few plausible scenarios. In such cases, force planners assess the necessary force required to succeed in those scenarios while managing an acceptable level of risk (Troxell, 2001).

On the other hand, capabilities-based planning is most advantageous when threats and challenges are multifaceted, uncertain, and cannot be adequately captured by a limited number of scenarios (Troxell, 2001). According to Davis (2014, p. xiv), “[c]apabilities-based planning is planning under uncertainty to provide capabilities for a wide range of modern-day challenges and circumstances while working within an economic framework that necessitates choice.” As for taking into account threats, Paul K. Davis noted, that “[w]hen done well, then, capabilities-based planning confronts uncertainty and the need to make choices within constrained budgets. Properly understood, it has always considered both generic possibilities and specific threats” (Davis, 2014, p. xiv).

To summarize, threat-based planning (TBP) has always focused on developing suitable capabilities to address the specific contingencies associated with identified threats. However, the underlying assumption in threat-based planning is that a force designed to effectively handle a few well-defined and understood threats would also be adequate to address less significant challenges from any other potential threats that may arise. On the other hand, capabilities-based planning (CBP) takes into account all threats and their associated contingencies that an armed force is expected to face. It aims to design the most efficient and affordable force structure possible. CBP operates on the implicit assumption that no single threat or a narrowly defined set of threats alone can adequately guide the design of a force required to respond to numerous and diverse challenges. The process of CBP should primarily concentrate on formulating a plan for the development of the desired force or capability. This involves identifying and prioritizing the necessary means or capability requirements, which are derived from analyzing strategic policy guidance, scenarios, and concepts. The goal is to develop the future force structure in alignment with the guidance provided by the Ministry of Defense and within the known fiscal limitations. It is crucial for the

capability planning process to be completed well in advance so that it can inform the subsequent programming and budgeting processes effectively.

2.2 Program Budgeting

Program budgeting is an advanced performance budgeting system implemented across the government, which effectively incorporates performance information during the formulation of the state budget (Robinson, 2013).

In the past, governments commonly employed a budgeting approach known as incremental "line-item" budgeting, which organized budgets based on specific organizational entities. Under this system, budgets were determined solely by input components such as wages, salaries, materials, supplies, and infrastructure. Funding decisions for these items were typically influenced by factors like inflation, expected economic growth rates, or policy changes impacting the organization's role and responsibilities. Since the mid-20th century, governments, particularly in the United States, have undertaken efforts to implement program budgeting. This shift primarily stemmed from the need for increased transparency regarding the allocation of funds. The aim was to provide a clearer understanding of how resources are allocated to achieve

specific results (both outputs and outcomes). This transition to program budgeting sought to ensure that resource allocation decisions were based on more comprehensive information regarding the resources necessary to accomplish specific objectives (Asian Development Bank, 2017).

A program can be defined as "a group of different types of output and/or transfer payments that have a common intended outcome together, possibly, with other common characteristics such as a single target group" (Robinson, 2013, p. 14).

Defining programs appropriately, along with other components within the program hierarchy, is essential for the effective functioning of a program budgeting system.

With regard to the defense ministry, the program structure serves as a strategic tool for managing finances and resources at the highest level. Properly structured and organized, defense budget programs play a crucial role in linking defense policy and strategy to budgetary allocations by carefully planning the distribution of available resources over a medium-term period, typically spanning four to six years. The collective allocation of resources aims to generate *outputs - military capabilities*, which are the necessary to achieve desired *outcomes - national defense policy objectives*.

The key aspect of an effective program budgeting system lies in properly defining programs and other

elements within the program hierarchy. The structure of defense programs can vary, and there is no one-size-fits-all approach. It can be organized based on military service or major defense organizations, types of forces, functional areas, major mission areas, or a combination of different approaches. The design choice for the defense ministry's program structure should align with the institution's goals and consider the existing culture, limitations, and capabilities (Taliaferro et al., 2017).

In the context of defense programs, it is essential to describe the force in quantifiable terms, considering both cost (inputs) and capabilities (outputs). This enables defense leaders to effectively manage both the financial aspects and the performance of these programs. It also provides them with the ability to compare the costs and benefits of various spending options and select the most effective ones. Moreover, the defense budget programs should adhere to the fundamental principle of being *results-based* to the greatest extent possible. They should be defined as *groups of outputs* (products or services) *delivered to external entities* that share *common outcomes* (resembling "product lines") (Robinson, 2013). In fact, every defense capability, whether related to combat, combat support, or general administrative functions, can be regarded as a program (subprogram/program element). As

Taliaferro et al. noted, a defense "...program is the combination of assets, activities, and services along with the financial inputs they require to produce a capability" (Taliaferro et al., 2017, p. 13-14).

According to Okromtchedlishvili (2022a, p. 94), "[t]he main output of a defense program is Military Capability as a comprehensive force structure consisting of its constituent force elements/capabilities (combat, combat support, combat service support, training, management, command and control) with an integrated set of aspects categorized as doctrine, organization, training, materiel, leadership development, personnel, and facilities, and with an appropriate readiness level assessed at a concrete time."

The output of a defense program refers to the overall military capability, which can be seen as the sum of capabilities provided by the various components of the Defense Forces.

The primary output of the defense program, the Military Capability, is provided to external parties, specifically the society that the defense forces serve, through both direct and indirect means. Directly, the defense forces support civil agencies in managing various emergencies or engage in military operations to defend against enemy aggression. Indirectly, the defense forces contribute to deterrence and

plays a role in reinforcing regional and international security.

The primary outcome expected from the Defense Program should be established based on the specific defense objectives or tasks outlined in the defense policy documents. These objectives typically include ensuring deterrence and defense, providing assistance to civil agencies in managing emergencies, contributing to the enhancement of regional and international security, etc.

It is important to highlight that an inadequate program design, coupled with a lack of clear alignment between allocated resources and the desired outputs or capabilities of force elements integrated with capability components, as well as the expected outcomes in the short- and mid-term perspective, can result in a disconnect between defense strategy, capability development, and budgeting. This mismatch may lead to defense forces that are either unaffordable or incapable of fulfilling their intended purpose.

Consequently, such a situation can undermine the overall efficiency and effectiveness of the defense resource management process. It can also result in a scenario where the planned or expended resources generate products or outputs that do not fully support the desired outcomes, namely the defense

objectives or tasks established by the government. This can further manifest as the "watermelon effect," wherein the activities or outputs may meet certain predetermined targets, but the ultimate outcomes are either not achieved or only partially achieved.

If the defense program structure is not a *result (output/outcome)-based*, with military capability being a primary output and outcomes aligned with national defense objectives, the utilization of program budgeting in the defense sector loses its purpose as a tool to enhance the efficiency and effectiveness of defense resource management and becomes a mere simplification of budget allocation and utilization, without obtaining the essential advantages associated with program budgeting.

3. THE ROLE OF CAPABILITY-BASED PLANNING AND PROGRAM BUDGETING IN ENSURING THE SUSTAINABILITY AND UTILITY OF THE DEFENSE FORCES

3.1 Production Model of Performance in the Defense Sector

The foundation of the production model of performance in the defense sector (Okromtchedlishvili, 2022b) starts with defining the national

interests, security situation, threats, anticipated scenarios, and the establishment of national security and defense objectives and tasks. These aspects are documented in the National Security and Defense Policy papers. The issues related to national security and defense (1 in Figure 1) prompt defense planners and decision-makers to identify the necessary military capability requirements to achieve the defense objectives and tasks. They also need

to prioritize these requirements based on the available resources (2).

According to the model, these priorities are then transformed into the objectives (3) of the specific defense program in question. By comparing the objectives with the identified needs (prioritized military capability requirements), an assessment can be made regarding the alignment and relevance of the pursued policy (7).

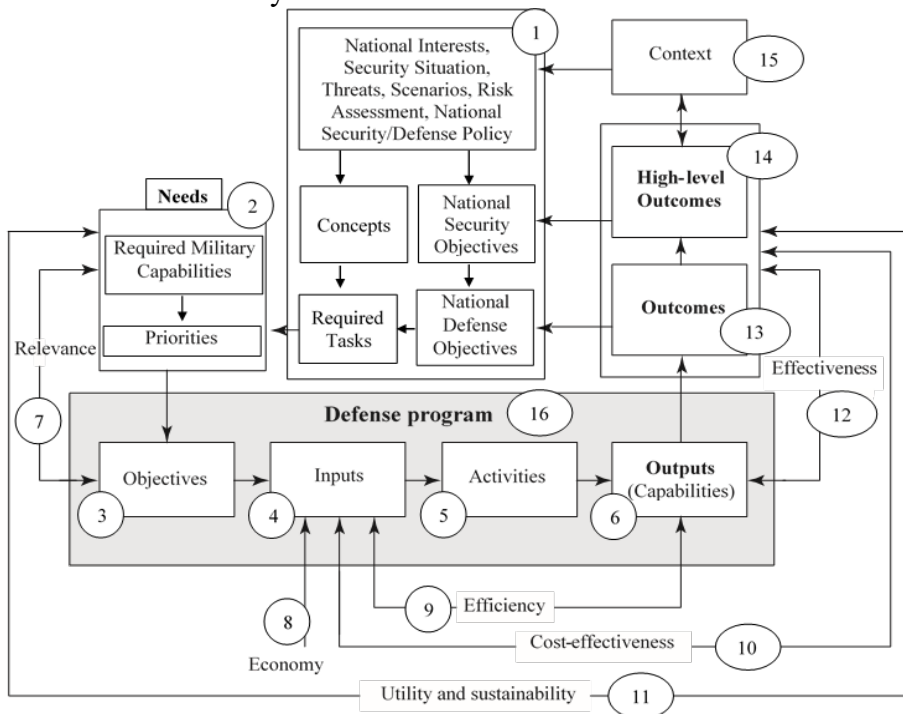


Fig. 1 Production Model of Performance in the Defense Sector
Source: Okromtchedlishvili (2022b)

3.1.1 Defense Outputs and Efficiency

Resources such as financial, material, and human inputs (4) are allocated to defense organizations

and programs to facilitate their activities (5), which ultimately generate outputs or capabilities (6). The economy (8) refers to the relationship between monetary inputs

and other inputs, such as the cost of vehicles, weapon systems, or uniforms. Efficiency (9) is the measure of how effectively inputs are utilized in relation to outputs. According to Omitoogun & Hutchful (2006), efficiency denotes achieving the optimal output for a given input, thereby obtaining the best value for money. Economists distinguish between efficiency and productivity, where productivity is defined as the ratio of input to output. It is worth noting that financial profit maximization is not the objective of public sector organizations, including the Ministry of Defense. However, the MOD still needs to evaluate its output mix. Defense decision-makers and planners should also consider and evaluate whether they are providing the appropriate combination of outputs or capabilities (force elements).

3.1.2 Defense Outcomes and Effectiveness

The outcomes of public services, including defense, often have a collective nature or consist of externalities that are not accounted for by individual consumers. Unlike market transactions, citizens do not directly pay for the services they receive, such as air defense provided by the Air Defense Forces. As a result, citizens cannot evaluate these services by assigning monetary values to them. Instead, in democratic societies, citizens can indirectly assess public services through political

participation, as explained in the principal-agent theory (Hartley, 2012).

Defense, with its primary desired outcome of deterrence and defense, serves as a classic example of a non-competitive and non-exclusive public good. For instance, when residing as neighbors in the same city, the consumption of air defense services by some individuals does not impact the consumption of others. Once provided, no one can be excluded from benefiting from these services (Hartley, 2012).

Researchers in public administration have examined the concept of outcomes. Outcomes can be intermediate (13 in Figure 1), or final/high-level, usually in the long term (14). These outcomes are often influenced by contextual factors (15), which the organization or program has limited or no control over. These contextual factors may include socio-economic or environmental trends, as well as policies implemented by other governments. For example, agencies in European Union member states are bound by European regulations. In the case of the Ministry of Defense, contextual factors may include trends in regional or global security, relationships with strategic partners and adversaries, changes in the domestic or international political landscape, breakthrough technological innovations affecting the methods of armed struggle, and more. The effectiveness (12) is the ratio of outputs to outcomes, while cost-effectiveness (10) represents the ratio

of inputs to outcomes. The outcomes of a program or organization must address the needs of society, such as providing deterrence against potential adversaries, ensuring defense in the face of aggression, supporting civil agencies in handling emergencies, and safeguarding sovereignty and territorial integrity. *Evaluating the alignment between needs and outcomes allows for the assessment of the sustainability and utility (11) of the program or organization.*

The alignment of needs, required capabilities (2), produced capabilities or outputs (6), and outcomes or national defense objectives (13) *significantly enhances the sustainability and utility (11) of a defense program or organization.*

3.2 Summary

In fact, all the processes described in the proposed Production Model of Performance in the Defense Sector are integral parts of capability-based planning (CBP) and program budgeting (PB) processes. The primary goal of the CBP process is to formulate a comprehensive plan for creating the desired force structure or military capability. This involves identifying and prioritizing the necessary capability requirements, which are determined through the analysis of strategic policy guidance, scenarios, and concepts. Subsequently, these prioritized capability requirements are translated into the objectives of the specific defense program. As a result, the PB

process generates the desired capabilities or outputs, thereby contributing to the accomplishment of the National Defense objectives or outcomes.

Therefore, when implemented and executed effectively, CBP and PB play a critical role in establishing the necessary alignment between required capabilities, produced capabilities or outputs, and the desired outcomes outlined by the National Defense objectives. This, in turn, facilitates the enhancement of sustainability and utility of Defense Forces.

4. CONCLUSION

Capability-based planning (CBP) and program budgeting (PB) are powerful tools that can significantly contribute to the sustainability and utility of defense forces. The adoption of CBP enables defense organizations to prioritize and allocate resources based on the desired capabilities necessary to achieve strategic objectives. By focusing on the development of a comprehensive plan for the desired force structure or military capability, CBP ensures that defense forces are well-equipped, adaptable, and responsive to a wide range of potential threats and challenges.

Program budgeting, on the other hand, shifts the focus from traditional line-item budgets to allocating resources based on specific programs and focuses on results rather than inputs. This approach enhances

transparency, accountability, and performance measurement by aligning funding with outputs and outcomes. Through program budgeting, defense organizations can make more informed decisions regarding resource allocation, prioritize high-priority programs, and optimize the utilization of available resources over a medium-term period.

When implemented together, CBP and PB establish a crucial alignment between required capabilities, produced capabilities or outputs, and the desired outcomes outlined by national defense objectives. This alignment enhances the effectiveness and efficiency of the defense resource management process, ensuring that resources are allocated strategically and produce the desired military capabilities. It also enables defense decision-makers to evaluate and optimize the output mix of defense programs, considering both cost and capabilities.

It is important to recognize that defense outcomes, such as deterrence and defense, are collective and non-exclusive public goods. Citizens cannot directly assign monetary values to these outcomes, but their assessment can be conducted indirectly through political participation. By addressing societal needs and providing outcomes that align with national defense objectives, defense

organizations can enhance their sustainability and utility.

In conclusion, the adoption of capability-based planning and program budgeting in the defense sector is crucial for achieving effective resource allocation, strategic planning, and desired defense outputs and outcomes. These approaches facilitate the alignment of capabilities (outputs), and national defense objectives (outcomes), leading to a more sustainable, efficient and effective defense forces that can effectively address evolving security challenges.

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