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DEFENCE RESOURCE MANAGEMENT CHALLENGES

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ABSTRACT

This paper explores the major factors that hinder the resource management process, which is critical to the development of defence institutions. An effective defence resource management (DRM) process enables coordination, synchronization and integration of defence activities; provides resilience in dealing with uncertainties; supports rational decision-making; and enhances future control capacity. This facilitates the translation of short-, mid-, and long-term defence plans into concrete budgets. The authors argue that several factors have a significant negative influence on success of DRM process, such as the absence of a comprehensive strategic policy framework, the lack of data-driven analysis, and the failure of budgeting tools within the planning, programming and budgeting system (PPBS).

An effective security and defence policy framework with clear priorities is one of the key prerequisites for DRM, ensuring that resources are directed toward building the capabilities required to achieve national security goals. Ambiguity around the major strategic areas creates essential challenges, as not having a robust future vision is the same as not knowing where to go. Furthermore, a strategic security policy framework sets the priorities not only for defence but also for social, economic, and foreign policies, ensuring that resource allocations align with broader national objectives.

Another critical factor hindering success of the defence resource management process is the lack of an organizational capacity to gather, analyze, and strategically exploit an enormous amount of information, which is crucial for rational decision-making, optimal resource allocation, and adaptation within a rapidly changing security environment. In today's digital age, the challenge for defence planners is not only a shortage of data, but rather the opposite: the ability to manage, evaluate, and analyze vast amounts of data.

Finally, the failure to adopt successfully PPBS was an additional factor challenging DRM processes in the defence institutions of post-Soviet legacy countries. This system was considered a fundamental strategic management tool that could improve resource planning processes within these organizations. However, its adoption and implementation faced significant problems that have limited its effectiveness in improving budgeting processes.

Keywords: Defence resource management, challenges, policy, data, PPBS.

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INTRODUCTION

The concept of Defence Resource Management refers to the systematic approach used by defence institutions to plan, allocate, and manage both financial and non-financial resources, supporting national security and defence policy. It encompasses the entire spectrum of resources, including personnel, equipment, infrastructure, logistics, and finances that ensure that military capabilities are maintained, developed and deployed effectively. DRM aims to achieve cost-effectiveness, operational readiness and strategic flexibility, ensuring that Defence Forces are able to address current and future security challenges.

DRM is essential for an organization to coordinate and integrate its activities, ensure that the future is taken into account. It facilitates the capacity to make the future “rational” and, insofar as possible, controllable. As an integral part of the politico-military activity, DRM translates long-term priorities into short-term activities and decisions, aligning plans to budgets through programs.[3] This approach clarifies the links between policy and budgets, future vision and current needs, facilitating transparency for decision-makers and relevant stakeholders. Receiving up-to-date information on the status of the defence programs, decision-makers are able to realistically assess transformation efforts and, if necessary, intervene in a timely way to avoid ultimate failures.

Since each country’s defence resource management needs are unique, many nations have adopted a Planning, Programming and Budgeting System patterned after the one initially developed in the early 1960s under former U.S. Secretary of Defense Robert S. McNamara to improve budgeting processes.[4] After decades, this systemic approach to defence resource allocation became particularly crucial for Eastern European countries, dealing with geopolitical vulnerability and security threats, as many of them transitioned from Soviet-aligned centralized financial systems to a more modern and effective defence resource structure.

This article aims to analyze the critical challenges affecting DRM. The central research question is: what are the key factors hindering effective defence resource management? In addressing this question, due to the article limitations, the study examines only three major issues impacting DRM effectiveness: the absence of a comprehensive strategic policy framework, the lack of data-driven analysis, and the failures of PPBS. The research has been conducted through the qualitative methodology, including the analysis of secondary source data from the academic studies: books, research papers, journal articles, as well as online sources. By analysing these factors, this work contributes to a deeper understanding of how to

[3] Tagarev T., Introduction to Program-based Defense Resource Management, 2006.
[4] DonVito, P. A., *The Essentials of a Planning-Programming-Budgeting System.* Santa Monica, CA: RAND Corporation, 1969. https://www.rand.org/pubs/papers/P4124.html.

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improve DRM processes to ensure the alignment of resources with national security objectives and adaptability to the evolving security environment.

MAIN PART

Absence of a Comprehensive Strategic Policy Framework

An effective security and defence policy framework with clear priorities is one of the key prerequisites for a successful defence resource management process, since this ensures that resources are directed toward building the capabilities needed to achieve national security goals. This framework provides the long-term vision necessary to guide decision-making, align resources with national defence objectives, and ensure readiness for emerging threats. Therefore, not having an explicit set of priorities closely linked to the operational plans of the armed forces is the same as traveling without a map. This leads to growing uncertainties, the misallocation of resources, and the risk that critical defence capabilities may ultimately remain underdeveloped. Unfortunately, many Soviet-legacy countries face significant challenges in establishing coherent and comprehensive strategic policy frameworks.

The institutional capacity of the Ministry of Defence to adopt and revise policies in response to shifting security environment and changing priorities is significantly weakened when it lacks a robust long-term vision and mechanisms and procedures for policy development, along with inadequate integration of national security goals into defence strategies and fragmented policies. Moreover, limited stakeholder engagement and poor coordination create significant gaps in the ability to understand and address critical defence needs, which in turn have both direct and indirect impacts on the effectiveness of resource planning and execution.[5] In general, the national and organizational conceptual documents form the foundation for defence resource management process, as they define the major areas for resource planning and execution. These documents identify the state's values and interests, threats, and security and defence challenges. This strategic policy framework sets the priorities, not only for defence, but also for social, economic, and foreign policies, ensuring that resource allocation aligns with broader national objectives.

Several cases from Soviet satellite countries reflect the challenges related to defence resource management resulting from an ineffective and ambiguous security and defence policy framework. The Czech Republic provides an example of how the failure to establish a conceptual strategic basis has hindered the implementation of an effective resource management process within its defence institution. Czech officials produced upwards of 24 policy documents from 1995 to 2012, yet this clearly demonstrated the weakness of the security and defence sector to create a cohesive strategic framework. These documents

[5] John A. Doe, *Defense Resource Management and Policy Planning* (New York: Security Press, 2019), 45.

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provided different and contradictory perspectives on future plans, exacerbating an already challenging resource allocation process across the defence system. For instance, the Defence White Book, produced in 2010, reflected the priority development areas of the Czech Armed Forces without considering the country's security reality as a new NATO member.[6]

Romania faced similar problems to the Czech Republic. In 2004, the Ministry of National Defence conducted a strategic defence review (SDR) process aimed at identifying existing shortfalls. Subsequently, they developed recommendations to eliminate revealed gaps. To support the implementation of these recommendations, the ministry leaders determined which organizational requirements could execute available defence resources most efficiently in the short and mid-term. However, in 2007, the General Staff, independently, developed a 'transformation strategy' of the armed forces without communicating with MoD officials, which partly ignored the government-endorsed policy in the 2004 SDR. Furthermore, in 2008, to address the reality caused by reduced defence resources, the Romanian MoD decided to review and update the current SDR. This initiative was opposed by the General Staff due to the fact that organization had already developed its own transformation strategy, which was not even directed and regulated by the laws on security and defence planning. The General Staff independently drafted and directly presented this strategy to the National Defence Council, ignoring the standard interagency communication procedure that required delivery of the General Staff's documents through the MoD.[7]

After the 2008 August War, in order to address new challenges that appeared due to the significantly changed security environment, Georgian political authorities launched a national security review (NSR) process. Driven by the need to revise and update the strategic and conceptual framework, Georgia reviewed and developed a number of national and organizational documents, such as the National Security Concept (NSC), the Threat Assessment Document (TAD), and the Strategic Defence Review (SDR). The NSR process was planned to be completed by the end of 2009. However, due to the uncertainties and complexity of the process, the NSC was only approved in 2011, the SDR in 2012, and the TAD in 2013. Respectively, during 2009-2011, the lack of and ambiguity surrounding national-level security and defence priorities relatively hindered the mid-term resource planning process within the MoD of Georgia, as short-term plans were mainly focused on the immediate needs of the country.[8]

The cases discussed above show the impact an ambiguous strategic policy framework has on the success of the defence resource management process. Vague defence priorities create a

[6] Young D. Thomas, *Is the US's PPBS Applicable to European Post-Communist Defence Institutions?*, the RUSI Journal, 2016.
[7] George Andrei, *Romania's Defence Policy: Challenges and Solutions* (Bucharest: Ministry of Defence Publishing, 2015).
[8] *Strategic Defence Review 2013-2016,* Ministry of Defence of Georgia

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cycle of inefficiency and uncertainty that affects a nation's defence capabilities. When defence priorities are unclear, resources may be allocated based on assumptions rather than strategic needs. This can lead to overspending in less critical areas while neglecting vital capabilities, ultimately weakening overall defence readiness. Without strong guidance, planners may overlook essential areas, leaving the defence apparatus vulnerable to threats. Different organizations within the defence institution may also pursue divergent priorities, leading to inefficiencies and conflicts in resource utilization. Coordination becomes challenging, resulting in duplicated efforts or gaps in capabilities that could be mitigated through better alignment. Furthermore, ambiguity makes the defence resource management process more subjective, which complicates accountability and future budgeting decisions, leads to prolonged discussions at various levels, and undermines timely responses to organizational needs.

Lack of Data-driven Analysis

Former British Prime Minister Boris Johnson stated that "the victors of the future will be those who are able to master data and new technology", emphasizing the increasing role of accurate, relevant and interoperable data in a rapidly evolving technological landscape.[9] In the realm of defence resource management, this concept gains particular importance, as the ability to gather, analyze, and strategically exploit an enormous amount of data is crucial for effective decision-making, optimal resource allocation, and adaptation within a changing security environment. DRM aims to provide sustainable defence capabilities despite constrained budgets by optimizing the use of available resources. On one hand, as outlined in the previous chapter, this might be hindered or even impossible due to flawed security and defence policy frameworks. On the other hand, defense resource management may be further complicated to the extent that these policies are driven by data.

In today's digital age, the challenge for defence planners is two seemingly contradictory problems: a shortage of data, but also the lack the capacity to manage, evaluate, and analyze vast amounts of information – a process known as data-driven analysis. This involves collecting, organizing, and examining large datasets to identify patterns, trends, and correlations, which support the extraction of valuable insights and enable evidence-based decision-making.[10] In the defence sector, data-driven analysis plays a crucial role in developing a comprehensive awareness and understanding of complex scenarios.[11]

[9] *Data Startegy for Defence,* Delivering the Defence Data Framework and exploiting the power of data, the UK Ministry of Defence, 2021 https://assets.publishing.service.gov.uk/media/614deb7a8fa8f561075cae0b/Data_Strategy_for_Defence.pdf
[10] The Role of Data Analytics in Defense Strategies, 2024
[11] Institute of Data: Data Science in the Military: An Overview, 2023 https://www.institutedata.com/blog/data-science-in-the-military/

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The first challenge is the absence of robust data, which causes defence planners and policy-makers to struggle to accurately assess needs, forecast future requirements, and measure the effectiveness of strategic initiatives. This undermines the ability to identify capability gaps and conduct the appropriate risk assessment.

The second problem is particularly obvious in some post-Soviet legacy countries, who despite the increasing sophistication of defence institutions, continue to rely on outdated software, fragmented data sources, and inappropriate analytical and data visualization tools. This is further exacerbated by the absence of formalized defence planning methodologies, which are essential for aligning defence priorities with national goals. This leads to inevitable inaccuracies, hindering the consistent development of defence capabilities.

A significant obstacle in addressing the above-mentioned challenges is the insufficient integration of data-driven analysis into the defence planning process. The incorporation of analysis methodologies such as scenario-based, threat-based, capability-based, and resource-based approaches – has considerable implications for resource management. Respectively, these methodologies provide a structured framework for preparing to meet a range of possible future security challenges, setting priorities based on the identification and analysis of specific threats, assessing necessary capabilities to achieve defence objectives, and effectively allocating available resources. Each analysis methodology offers distinct frameworks for evaluating and addressing defence needs. The inclusion of data-driven analysis ensures that information is real-time and grounded in accurate data, making decisions more reliable by mitigating the risks of missallocation.

Another challenge in overcoming institutional shortfalls is the flawed or non-existent integration of relevant analytical tools, such as alternatives hierarchy analysis (AHP), cost-benefit analysis (CBA), cost-effectiveness analysis (CEA), trade-off analysis, and other analytical tools with data visualization techniques. The lack of these tools hinders defence planners' ability to evaluate various options and make evidence-based decisions. By not fully integrating defence planning methodologies and analytical tools, military organizations struggle to allocate and manage resources efficiently, ultimately compromising the long-term development and readiness of defence systems. This becomes even more critical in terms of conducting the key processes of data analysis – data collection, analysis, and interpretation. To fully leverage data as a strategic resource, countries like the United States and the United Kingdom have developed comprehensive data strategies, transforming data into a key strategic asset.[12] Other countries' defence organizations, lacking data management mechanisms, struggle to reshape their decision-making culture into a data-driven approach, and establish

[12] Department of Defense, Data, Analytics, and Artificial Intelligence Adoption Strategy https://media.defense.gov/2023/Nov/02/2003333300/-1/-1/1/DOD_DATA_ANALYTICS_AI_ADOPTION_STRATEGY.PDF

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robust data systems.[13] Furthermore, the absence of a cohesive set of principles, goals and guidelines for collecting, storing, processing and utilizing data, hinders military institutions' abilities to harness analytics, artificial intelligence and machine learning for improved situational awareness and informed strategic planning. Moreover, it undermines their adaptability to evolving threats by limiting the effectiveness of real-time analytics, which is crucial for proactive decision-making.[14]

Generally, data-driven analysis in defence is supported by tools, such as data analytics software, artificial intelligence (AI), and various advanced data visualization techniques. While many Western nations have made significant progress, some post-Soviet satellite states still face diverse challenges in adopting data-driven analysis practice due to resource constraints, outdated technology, and the lack of an integrated defence policy. In recent years, several countries, such as Poland, Romania and the Baltic states, due to their strategic vulnerabilities, have outlined the critical need for effective, data-driven decision-making, thereby moving towards more data-centric defence plans. For instance, the Ministry of National Defence of Poland, in its conceptual documents, including "The Polish Defence in the Perspective of 2032", focuses on developing defence policy based on comprehensive data analysis. By using analytical techniques, specialised IT tools, and appropriate databases, the Ministry has created a permanent mechanism for learning and fulfilling the needs of the Polish Armed Forces.[15] Similarly, Ministry of National Defence of Romania, in its "Military Strategy of Romania", sets creation of the system for data processing and operational analysis as one of the priorities, particularly in the area of digital transformation and integration of advanced technologies.[16] The Baltic states, Estonia, Latvia and Lithuania, are also incorporating data-driven approaches into their defence strategies. Estonia, for instance, has introduced 'Data Driven Decision Management', which aims at establishing a more informed and efficient decision-making system, reducing the impact of incomplete and misinterpreted data.[17] Latvia and Lithuania have similarly emphasized enhancing their digital capabilities for information-sharing, analysis and strategic planning. These countries are focusing their efforts on

[13] Data Startegy for Defence, Ministry of Defence, Delivering the Defence Data Framework and Exploiting the Power of Data, 2021 https://assets.publishing.service.gov.uk/media/614deb7a8fa8f561075cae0b/Data_Strategy_for_Defence.pdf

[14] Data Startegy for Defence: Components, Importance, Roadmap&More, 2024 https://www.castordoc.com/data-strategy/data-strategy-for-defense-components-importance-roadmap-more

[15] Ministry of National Defence of Republic of Poland, 'The Polish Defence in the Perspective of 2032' https://www.gov.pl/web/national-defence/polish-defence-in-the-perspective-of-2032

[16] *Military Strategy of Romania,* Romania Ministry of National Defence, Bucharest, 2021 https://www.mapn.ro/legislatie/documente/STRATEGIA-MILITARA-A-ROMANIEI-ENG.pdf

[17] *Government evidence and data-driven decision-making framework and implementation in crisis management,* 2021, An official website of the European Union, https://reform-support.ec.europa.eu/what-we-do/public-administration-and-governance/government-evidence-and-data-driven-decision-making-framework-and-implementation-crisis-management_en?prefLang=fr

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improving data integration in defence, thereby strengthening their ability to respond to potential scenarios, allocate resources efficiently, and boost coordination with NATO. Nonetheless, these countries still continue to struggle with outdated software and insufficient analytical tools for defence planning.

Challenges incorporating various types of data – such as operational, financial, logistical, and personnel – into defence resource management process, is additional critical factor affecting rational allocation of the scarce resources. The existence of gaps in this area is highlighted by the U.S. Department of Defence (DoD). Its recent work outlines the importance of using realized performance data – from past operations, resource allocations, and budget execution – to evaluate the effectiveness of current strategies. This is especially important in identifying shortcomings; refining planning, programming, budgeting, and execution processes; and informing future decisions.[18]

In times of global security uncertainties, the role of data cannot be underestimated. Information is power, and without appropriate analytical methodologies and integrated approaches, defence planning and decision-making tends to be based on incomplete and outdated information. The lack of a formalized framework that combines defence planning methods, analytical tools, situation assessments, strategy development, and evidence-based decision-making often leads to failures in defence resource management. Thus, a comprehensive approach to data analytics not only informs decision-making, but also addresses the increasing complexity of DRM. This results in better alignment of resources with strategic objectives, ensuring that operational capacity of military institutions responds to emerging threats and technological advancements.

Failure of Planning, Programming and Budgeting System (PPBS)

The budget planning method well known as Planning, Programming and Budgeting System was created at the beginning of 1960s and instituted by Robert McNamara, the then U.S. Secretary of Defense. With the new budgeting system, McNamara aimed at consolidating the independent budgetary processes of the military services. Since the adoption of this new method within the Department of Defense, this system had been implemented by many other Western states. It was considered as a fundamental organizational management concept, which was thought to improve the resource planning processes in the short-, mid- and long-term periods. Furthermore, PPBS was seen as an effective tool that could improve coordination and decision-making processes both at horizontal and vertical levels within the military institutions and concurrently could balance civil-military involvement in budgeting

[18] Three Reforms to Improve Defense Resource Management, IBM Center for the Business of Government, https://www.businessofgovernment.org/report/three-reforms-improve-defense-resource-management#:~:text=The%20report%20offers%20three%20key,to%20inform%20resource%20decision%2Dmaking.

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processes.[19] Despite these expectations, this approach was almost immediately terminated in certain countries. For example, in Canada, “programming” was recognized as an inappropriate tool for its organizational needs, since it was perceived as creating gaps between policy priorities and budgetary plans. Similar to Canada, many former post-Soviet satellite European countries have faced challenges in adopting PPBS within their defence institutions, significantly impacting the resource management processes of these organizations.[20]

The institutionalization of PPBS has encountered a number of challenges that have severely influenced its effective implementation. Among these, one of the most significant obstacles is the lack of political will. In any organization, especially within defence institutions, the commitment of political leaders is crucial for the successful adoption of new systems and methodologies. Without strong advocacy and support from political leaders, PPBS initiatives have struggled to secure the resources, engagement, and legislative backing needed to thrive. This lack of political will have been manifested in various ways. First, without endorsement from top officials, initiatives planned within PPBS framework have not received the necessary funding and resources. Budget allocations often reflected the priorities set by political leaders without synchronization and integration with other activities. Consequently, essential programs that could enhance defence capabilities were sidelined or completely neglected. Moreover, the absence of political backing led to a perception among institutional staff that PPBS was not a priority, which bred apathy and resistance among employees, who were overwhelmed already by their existing duties. Resource planners saw no value in investing their time and effort into learning and implementing the new system, and ultimately ended up following the old methods of budget management.[21] Furthermore, political transitions in these countries have exacerbated this challenge even more. In environments where leadership frequently changes the strategic vision of the defence institutions also alters. This eventually disrupts continuity and hinders long-term planning efforts, leaving organizations in a state of uncertainty, as has been the case in Soviet-legacy countries, such as Poland, Romania and Bulgaria.[22]

Another significant factor affecting the institutionalization of PPBS is the way it was delivered through advisory assistance programs. For example, the extensive efforts of the U.S. Department of Defense to ‘export’ its budgeting methods to developing military institutions in certain European countries often resulted in confusion and operational failures within those

[19] Robert S. McNamara, *the Planning, Programming, and Budgeting System: A Tool for Defense Management* (Washington, D.C.: U.S. Government Printing Office, 1965), 17.
[20] William D. Byers, *the Politics of Defence Budgeting: An International Comparison* (Cambridge: Cambridge University Press, 2001), 88-91.
[21] Ronald E. Bassett, *Political Will and Defense Reform: The Impact of Political Leadership on Defense Institutions* (Washington, D.C.: Brookings Institution Press, 2006), 45.
[22] Young D. Thomas, *Is the US's PPBS Applicable to European Post-Communist Defence Institutions?*, the RUSI Journal, 2016.

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organizations. While the DoD aimed to share its expertise and best practices, these methods were frequently inadequately explained by donor experts.[23] This lack of clarity meant that recipient states struggled to grasp its essence and rationale, often leading to development of ineffective resource mechanisms and procedures. Moreover, the advisory programs often lacked a tailored approach that considered the unique contexts and needs of the recipient countries. Instead of fostering an environment of collaborative learning and adaptation, the programs sometimes imposed a one-size-fits-all model. This rigidity failed to account for the varying levels of development, existing institutional frameworks, and cultural factors present in these military organizations. Consequently, the intended benefits of PPBS – such as improved resource allocation and enhanced strategic planning – were not realized, and many initiatives ended up being superficial or unproductive. In addition to these challenges, the financial decision-making processes in post-Soviet legacy countries were typically highly centralized, that created significant impediments for the effective implementation of modern resource management system within their defence organizations. The prevalent rigid hierarchical structures clashed with the more decentralized planning and budgeting approaches promoted by PPBS, which emphasize flexibility, stakeholder engagement, and adaptive management. As a result, the attempt to integrate new resource management approach into the existing centralized systems often faced resistance, as decision-makers were accustomed to top-down directives rather than participatory budgetary processes.[24]

Beyond these structural incompatibilities, fundamental differences in culture and mentality further complicated budget management process. In above-mentioned post-Soviet legacy states, there was a prevailing skepticism towards new methodologies, particularly if they were perceived as foreign or imposed, leading to a reluctance to fully embrace the principles of PPBS. Furthermore, outdated guidelines and regulations additionally hindered institutionalization of modern resource management systems within their defence institutions.[25]

Finally, long-term resource planning is a critical component of contemporary defence management, especially for military institutions facing unpredictable future security challenges with limited funds. Defence planners have recognized that a one-year planning horizon is insufficient; there is a pressing need to understand future perspective of the financial implications to establish more resource-informed defence goals. According to a U.S. government report, “leading practices in capital decision-making include developing a long-term capital plan to guide the implementation of organizational goals and objectives and help

[23] Brian T. McFadden, *The Failure of Exporting Defense Budgeting Systems to Developing Countries* (London: Routledge, 2010), 34-35.
[24] Michael A. Johnson, *Resource Management in Post-Soviet Militaries* (Chicago: University of Chicago Press, 2012), 78.
[25] Young D. Thomas, *Is the US's PPBS Applicable to European Post-Communist Defence Institutions?*, the RUSI Journal, 2016.

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decision-makers establish priorities over the long-term".[26] Despite the recognized importance of multi-year planning – especially among "new" NATO members and partner countries – successful implementation of such plans has been elusive. The introduction of PPBS was thought to improve these processes in their defence organizations; however, it resulted in the continuation of existing Soviet-era financial management procedures rather than a true adoption of a Western-style long-term planning approach. In many cases, the new concept became an institutional pathology that impeded the development of a coherent resource management system.

While long-term planning is essential for modern resource management, the actual implementation of these plans has been affected by a combination of legacy practices, institutional inertia, and a prevailing focus on short-term objectives. For PPBS to succeed and improve budgeting processes, there must be a concerted effort to shift organizational mindsets and practices toward a more integrated approach to future-oriented resource planning.

CONCLUSION

A robust security and defence policy framework with well-defined priorities is essential for effective defence resource management, ensuring that resources are allocated to build the capabilities necessary for achieving national security objectives. This framework provides a long-term vision that guides decision-making, aligns resources with defence goals, and maintains readiness for emerging threats. Therefore, national and organizational strategic documents are foundational to the defence resource management process, as they specify key areas for resource allocation. The strategic policy framework not only prioritizes defence, but also impacts funding for social, economic, and other critical sectors.

The cases of post-Soviet legacy European countries illustrate that ambiguity regarding a state's interests and security challenges create a cycle of inefficiency and uncertainty, adversely impacting a nation's defence capabilities. When defence priorities are unclear, resource allocation may be driven by assumptions rather than actual organizational needs, leading to underspending in critical areas and ultimately diminishing overall defence readiness. Furthermore, the absence of an effective defence policy framework can lead various defence organizations to pursue conflicting priorities, creating inefficiencies and resource allocation disputes. Concurrently, it can hinder coordination, resulting in duplicated efforts or gaps in capabilities. This ambiguity also renders the defence resource management process more subjective, complicating accountability and future budgeting decisions.

In the current digital era, defence planners face not just a scarcity of data, but also the greater – and seemingly contradictory – challenge of effectively managing, evaluating, and

[26] U.S. Government Accountability Office, *Leading Practices in Capital Decision-Making*.

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analyzing vast amounts of information – a process referred to as data-driven analysis. This involves gathering, organizing, and scrutinizing extensive datasets to uncover patterns, trends, and correlations, facilitating the extraction of valuable insights that support evidence-based decision-making. Within the defence sector, data-driven analysis is vital for developing a thorough understanding of complex scenarios, ultimately fostering institutional growth and ensuring successful outcomes. Although defence institutions have become more sophisticated, many post-Soviet satellite countries still depend on obsolete software, fragmented data sources, and inadequate analytical and visualization tools. This challenge is compounded by the lack of formal defence planning methodologies, which are crucial for aligning defence priorities with national objectives, minimizing inaccuracies, and fostering the continuous development of defence capabilities. Information is a critical asset, and without effective analytical methods and integrated approaches, resource planning often relies on incomplete or outdated data, leading to poor decision-making. A cohesive framework that combines defence planning methodologies with analytical tools is essential for accurately assessing situations, evaluating potential actions, and formulating relevant strategies. This ensures that decision-making is grounded on evidence, which is vital for successful defence resource management, as it aligns affordable resources with strategic goals, ensuring that military capabilities are responsive to emerging threats and technological developments.

The institutionalization of the U.S. Planning, Programming, and Budgeting System in the defence organizations of post-Soviet legacy European states have faced significant challenges that have obstructed effective resource management. Implementation of this system often resulted in a continuation of Soviet-era financial management practices rather than a true adoption of a Western-style, long-term planning framework. Coupled with the highly centralized nature of financial decision-making, these challenges have raised significant doubts about the effectiveness of PPBS as its adaptation created an institutional pathology that disrupted the formation of a cohesive resource planning framework. Additionally, challenges arising from a lack of qualified personnel and the absence of a long-term planning culture – considered essential for the PPBS – often resulted in defence goals that were more aspirational than realistic. This gap ultimately led to inadequate cost estimation and, consequently, ineffective implementation in post-Soviet satellite countries.

In conclusion, a strong security and defence policy framework with clear priorities is vital for effective resource management in defence. The experiences of the discussed countries highlight the importance of clarity in defence goals to avoid inefficiencies and enhance readiness. By embracing data-driven analysis and modern planning methodologies as well as tailoring the Western budgeting approaches to their realities, these nations can overcome outdated practices and ensure that resources are allocated effectively to meet national security

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objectives. Addressing these challenges will ultimately strengthen defence capabilities and responsiveness to emerging threats.

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