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STRATEGIC AND LOGISTICAL ROLE OF THE POLISH ARMED FORCES IN RESPONDING TO THE COVID-19 PANDEMIC: MODELS, ANALYSIS AND RECOMMENDATIONS

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Abstract.
This article examines the strategic and logistical role of the Polish Armed Forces in responding to the COVID-19 pandemic. The study addresses a research gap at the intersection of crisis logistics, civil-military cooperation, and military support to non-military emergencies. The aim of the study is to analyse the scope and sequence of military support activities during a pandemic and to propose reference process models and strategic recommendations for future biological crises. The study adopts an exploratory and practice-informed approach and does not test a formal hypothesis. The research is based on a review of the relevant literature, legal and institutional documents, international guidance (WHO, NATO, EU), reference process modelling using ARIS, and SWOT/TOWS strategic analysis supported by expert

consultation. The developed models reconstruct the main decision and logistics chain, from threat identification and request for support to mobilisation, operational deployment, and demobilisation. The findings indicate that the strategic orientation of military support should be phase-dependent: a maxi-mini approach is more appropriate during rapid escalation, when critical constraints must be stabilised, whereas a maxi-maxi approach becomes more suitable during stabilisation and preparedness phases, when organisational strengths can be used to institutionalise cooperation and strengthen resilience. The study concludes that improving pandemic preparedness requires formalised civil-military coordination, the development of specialised military capacities, and the integration of predictive decision-support tools into crisis response systems.

Keywords:
crisis logistics; COVID-19; military support; pandemic response; public safety

Introduction

The COVID-19 pandemic generated unprecedented pressure on public health systems, state institutions, and emergency response structures worldwide, including in Poland (Hsu et al. 2020; Lorent et al. 2021). In many countries, the scale and complexity of the crisis required the engagement of armed forces in support of civilian authorities, particularly in areas such as logistics, coordination, transport, temporary infrastructure, and organisational surge capacity. This experience highlighted the growing importance of crisis logistics and civil–military cooperation in the management of biological threats (Choi 2021; Grala and Jałowiec 2024; Jałowiec et al. 2023).

From the perspective of crisis management, pandemic response differs from conventional emergency operations because it combines prolonged uncertainty, multi-level coordination, resource shortages, and the need to maintain continuity of essential services under dynamically changing conditions. In such settings, the armed forces may provide structured command systems, logistical capabilities, disciplined personnel, and operational flexibility that can complement civilian response mechanisms. At the same time, the scale, sequencing, and institutional logic of such support require clearer analytical framing.

The aim of this article is to analyse the strategic and logistical role of the Polish Armed Forces in responding to the COVID-19 pandemic and, on this basis, to develop reference process models and strategic recommendations for future biological crises. The study focuses on the scope of military support activities, the sequence of decision and logistics processes, and the internal and external factors affecting operational effectiveness.

The research problem addressed in this article concerns the lack of a structured, process-oriented explanation of how the Polish Armed Forces supported civilian authorities during the COVID-19 pandemic and how this support can be translated into reference models and strategic recommendations for future biological crises. Although the literature discusses civil-military cooperation and military assistance

during health emergencies, less attention has been paid to the sequential decision-logistics architecture of such support in the Polish institutional setting.

Accordingly, the study is guided by the following research questions:

RQ1. What were the main strategic and logistical roles of the Polish Armed Forces in supporting civilian authorities during the COVID-19 pandemic?

RQ2. How can the decision and logistics sequence of military support be represented in reference process models?

RQ3. What strengths, weaknesses, opportunities and threats shaped the effectiveness of military support in pandemic response?

RQ4. What strategic recommendations can be formulated for improving civil-military preparedness for future biological crises?

Due to its exploratory and practice-informed character, the study does not test a formal hypothesis. Instead, it reconstructs the institutional and operational logic of military support and uses this reconstruction to generate analytically grounded recommendations.

The study adopts an exploratory and practice-informed approach focused on reconstructing the logic of military support, modelling its main decision-and-logistics sequence, and formulating analytically grounded recommendations for future crisis-response planning.

Literature Review

The international literature on COVID-19 consistently shows that armed forces were most often deployed not as substitutes for civilian governance, but as surge-support actors that expanded state capacity in logistics, transport, staffing, coordination, and emergency infrastructure. In this sense, military engagement during the pandemic is best understood as part of a broader civil–military support interface activated under conditions of institutional overload and operational uncertainty (Gibson-Fall 2021; Gad et al. 2021; Tsagarliotis and Rachaniotis 2026).

Comparative evidence from Europe indicates that the scope and form of military support varied across countries, but several recurring categories of activity can be identified, including transportation and distribution, emergency infrastructure, medical reinforcement, administrative support, and operational coordination. Importantly, this variation was shaped less by the epidemiological trajectory itself than by legal mandates, governance arrangements, and the maturity of civil–military coordination mechanisms. This makes pandemic response a useful field for analysing not only military capacity, but also the institutional design of support relationships between armed forces and civilian authorities (Gad et al. 2021; Reis 2021).

From the perspective of crisis logistics, the pandemic reinforced the importance of interoperability, information flows, surge scalability, and continuity of essential

services under prolonged disruption. Studies from military and emergency logistics show that response effectiveness depended not only on available resources, but also on the clarity of task sequencing, interface design, and the ability to integrate military capabilities into civilian-led response systems. This is particularly visible in operationally intensive domains such as medical logistics, patient transport, decontamination, temporary treatment infrastructure, and vaccine distribution (Brzeziński 2024; Pomer et al. 2024; Reis 2021).

Recent scholarship increasingly situates pandemic response within the broader framework of health system resilience. This perspective is relevant here because it shifts attention from isolated intervention tasks to the system-level question of how external capabilities can reinforce continuity, adaptation, and recovery in health emergencies. WHO/Europe's "Preparedness 2.0" strategy further supports treating preparedness, response, resilience, and recovery as an integrated continuum (World Health Organization 2021; Witter et al. 2023; Topp 2023).

This resilience-oriented perspective also helps to interpret military support more critically. While armed forces can provide rapid mobilisation and logistical depth, their involvement in health emergencies must remain compatible with civilian primacy, institutional accountability, and public legitimacy (McInnes 2024; Gautier et al. 2023; Gibson-Fall 2021; Dietrich et al. 2023).

Overall, the literature suggests that armed forces contribute to pandemic response mainly through logistics, coordination, and surge support rather than by replacing civilian command structures. Their effectiveness depends on governance design, legal frameworks, and the maturity of civil-military interfaces. A remaining gap concerns process-oriented reference models that connect the support chain from request to demobilisation with strategic reasoning and distinguish transferable analytical elements from those dependent on national legal and administrative settings. The Polish case is useful in this respect because it allows the reconstruction of a centralised decision-and-logistics chain while raising broader questions about interoperability, resilience, and the governance of military support in health crises (Gad et al. 2021; WHO/Europe 2024).

Materials and Methods

This study adopts an exploratory, qualitative, and practice-informed design focused on reconstructing the logic of military support to civilian pandemic response and formulating evidence-informed strategic recommendations. It integrates literature and document analysis, reference process modelling, SWOT/TOWS-based strategic synthesis, and expert-informed consultative verification.

First, a targeted review of the relevant literature was conducted in order to situate the analysis within the fields of crisis logistics, civil-military cooperation,

pandemic response, and resilience-oriented emergency governance. This review was complemented by an analysis of selected institutional and legal documents, including the Act on Crisis Management (2007), the Act on the Voivode and Government Administration in the Voivodeship (2009), the Act on the Prevention and Control of Infections and Infectious Diseases in Humans (2008), the Homeland Defence Act (2022), the National Crisis Management Plan prepared by the Government Security Centre, selected publicly available Polish legal and institutional documents, and WHO/Europe guidance on health emergency preparedness and resilience. References to Ministry of National Defence planning logic are based on publicly available information and expert-informed consultation; where specific internal planning materials cannot be publicly identified for confidentiality reasons, they are not listed as auditable documentary sources. These sources were used to identify the formal institutional setting, legal competences, and documented operational logic of military support during biological emergencies. In particular, the legal acts were used to identify the competent administrative actors, the role of the Voivode in crisis governance, the epidemiological responsibilities of sanitary authorities, and the legal basis for involving the Polish Armed Forces in crisis-management tasks, while the National Crisis Management Plan was used to contextualise institutional coordination and planning logic.

Second, the study developed reference decision-logistics models concerning the involvement of the Polish Armed Forces in crisis and pandemic response. The models were constructed using the ARIS method and ARIS Express, which support structured representation of organisational processes, decision chains, actor responsibilities, and operational sequences. In the present study, ARIS was used not merely for illustration, but as an analytical tool for identifying key decision points, task interfaces, operational dependencies, and potential bottlenecks within the civil-military support chain.

The proposed models should be understood as hybrid reference models. They are descriptive insofar as they reconstruct the dominant institutional logic reflected in documents and expert-informed operational knowledge, but they are also normative in that they organise this logic into a clearer reference sequence that may support future planning, training, and comparative analysis. Accordingly, the models are not intended as exact reproductions of every operational reality observed during the pandemic, but as analytically reduced representations of the main decision and logistics architecture of military support.

Third, SWOT/TOWS analysis was used as a structured strategic synthesis tool. Its purpose was not to provide theory-testing evidence, but to organise internal and external factors affecting the effectiveness of military support and to connect those factors with strategic recommendations. In methodological terms, SWOT/TOWS was applied as a heuristic framework supporting interpretation and option generation rather than as a self-sufficient explanatory method.

Fourth, the plausibility and internal consistency of the developed models and the SWOT/TOWS inputs were subjected to expert-informed consultative verification. This stage was based on semi-structured interviews conducted in September 2021 with five purposively selected representatives of the Polish Armed Forces who had direct knowledge of pandemic support procedures and crisis-response practice. Five interview sessions were conducted, each lasting approximately 30 minutes, on the basis of a predefined interview guide covering the decision chain, task sequencing, constraints and bottlenecks observed during the COVID-19 response, and the internal and external factors relevant to SWOT/TOWS assessment.

The interview material was documented in structured notes consolidated after each session and reviewed comparatively to identify recurring themes relevant to process sequencing, bottlenecks, and civil-military coordination. To reduce subjectivity, interview-derived observations were cross-checked against official documents, legal acts, and international guidance. Only factors corroborated in documents or repeatedly confirmed during consultation were retained in the final analytical framework.

This consultative stage should not be interpreted as full empirical validation in the statistical or multi-stakeholder sense. Rather, it served to assess the practical plausibility, internal coherence, and procedural realism of the proposed analytical constructs. Because the consultation relied on a small group of military experts and did not include equivalent interview material from civilian institutions, the study remains exposed to potential institutional perspective bias and limited cross-sector triangulation. For this reason, the findings should be interpreted as practice-informed and analytically grounded, but not as fully generalisable across all actors involved in pandemic governance.

The documentary analysis included the Act on Crisis Management, the Act on the Voivode and Government Administration in the Voivodeship, the Act on the Prevention and Control of Infections and Infectious Diseases in Humans, the Homeland Defence Act, the National Crisis Management Plan prepared by the Government Security Centre, WHO/Europe's Preparedness 2.0 strategy, and selected publicly available NATO and EU documents concerning civil preparedness, resilience and crisis response.

The study has several limitations. First, it does not rely on a quantitative operational dataset and therefore does not measure response effectiveness through performance indicators such as mobilisation times, throughput, or inter-agency coordination metrics. Second, due to confidentiality constraints, the experts' exact ranks and organisational functions are not disclosed, which limits replicability. Third, although the study draws on interviews with five representatives of the Polish Armed Forces, it does not incorporate equivalent interview material from civilian institutions such as the Ministry of Health, provincial crisis-management centres, hospitals, or other emergency services. Consequently, the article should be read as a

focused analytical study of the military support perspective, embedded in a broader civil-military context, rather than as a complete multi-actor reconstruction of the Polish pandemic response system.

Reference process models of the Polish Armed Forces in crisis and pandemic response

The reference models presented below were developed on the basis of document analysis, literature review, and expert-informed consultation concerning the operational involvement of the Polish Armed Forces in crisis and pandemic response. Their purpose is not to reproduce every empirical variation observed during the COVID-19 pandemic, but to reconstruct and organise the dominant decision and logistics logic of military support to civilian authorities in a structured and analytically useful form.

Figure 1 presents a general reference model for the involvement of the Polish Armed Forces in a crisis situation. The model begins with the occurrence of a crisis event, which is first assessed by the competent public authority at the relevant administrative level. In the analytical scenario adopted in this study, this role is performed by the Provincial Crisis Management Centre. Following the initial assessment, the Voivode (Provincial Governor) determines whether the involvement of the Armed Forces is necessary. If military support is not required, the situation remains under civilian management. If such support is considered necessary, a formal request is submitted to the Minister of National Defence. This reconstruction reflects the crisis-management logic established in Polish law, under which the Voivode plays a central role in regional crisis governance and the Armed Forces may be used in support of crisis-management tasks within a civilian-led framework (Act on Crisis Management 2007; Act on the Voivode and Government Administration in the Voivodeship 2009; Homeland Defence Act 2022).

On the basis of the Ministry of National Defence Crisis Management Plan, the Minister designates the relevant forces and resources, and the selected units are alerted and prepared for deployment. After mobilisation, the forces are deployed to the operational area. Once the assigned mission is completed, the units return to their home bases, where technical inspections, repairs, and replenishment activities are conducted in order to restore full operational capability (Pszczółkowski and Goliasz 2023).

Analytically, this model highlights several critical points in the crisis-support chain. First, the request phase creates a dependence on administrative recognition of the crisis and on the decision of the Voivode, which may influence response speed. Second, the transition from ministerial approval to force designation constitutes a key coordination interface between civilian demand and military command.

Third, mobilisation and deployment represent operational bottlenecks because delays, transport incidents, or insufficient resource matching may reduce support effectiveness. The model should therefore be read not only as a formal sequence of actions, but also as a representation of decision dependency and logistical friction.

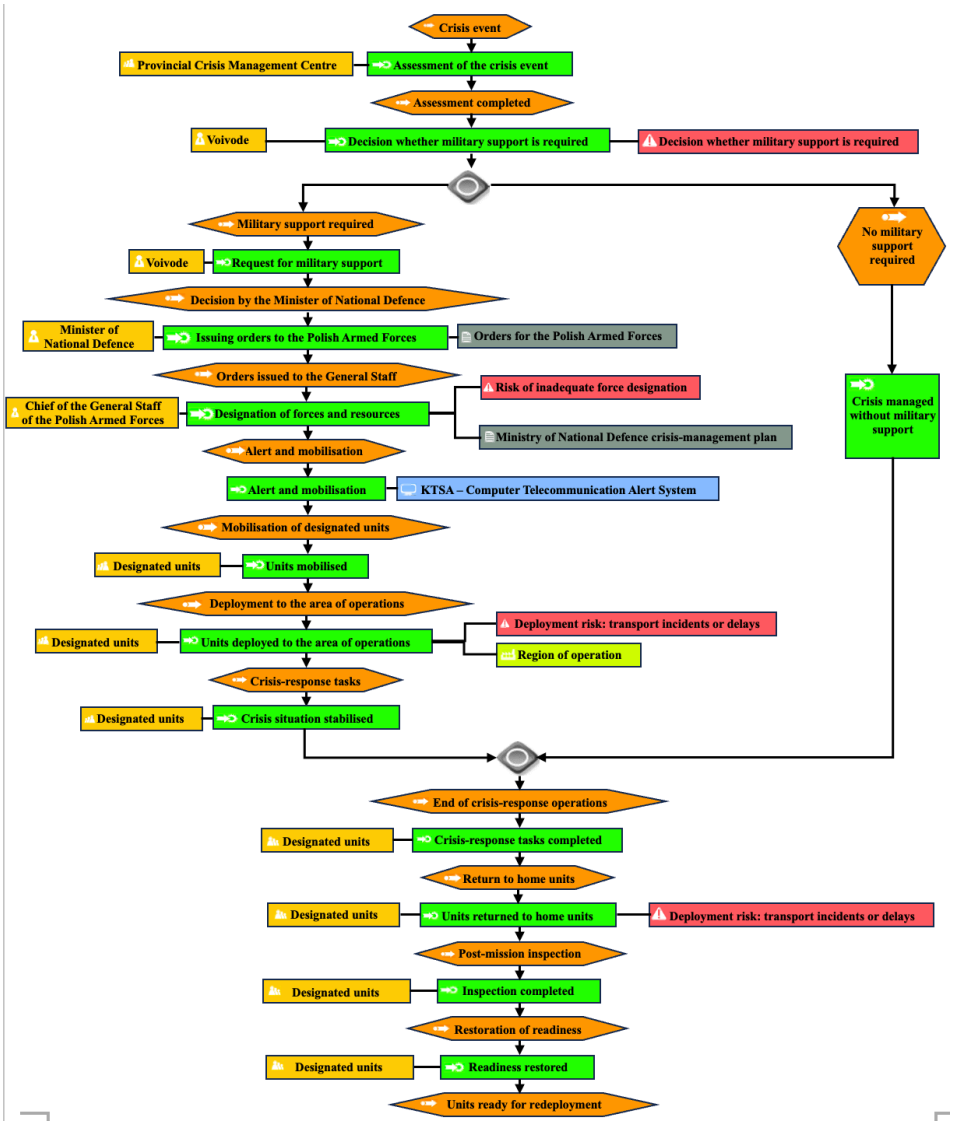


Figure 1. Reference process model of Polish Armed Forces support during a general crisis situation
Source: own study

Figure 2 presents a more specific reference model for the operation of the Polish Armed Forces during the SARS-CoV-2 pandemic. In this case, the process is initiated by the occurrence of an infectious outbreak within a province. The outbreak is assessed by the competent Provincial Sanitary and Epidemiological Station, after which the Voivode decides whether to request military support. This reflects the institutional logic of the Polish epidemic-control system, in which sanitary authorities are responsible for epidemiological recognition and public authorities act on the basis of the legal framework governing infectious disease control and crisis management (Act on the Prevention and Control of Infections and Infectious Diseases in Humans 2008; Act on Crisis Management 2007). If such support is not required, the outbreak is managed by civilian authorities alone. If the decision is affirmative, the Voivode formally notifies the Minister of National Defence of the need for assistance.

Acting in accordance with the Ministry of National Defence Crisis Management Plan, the Minister decides on the deployment of the Armed Forces and forwards the relevant directives to the Chief of the General Staff of the Polish Armed Forces. The institutional basis for this sequence lies in the broader Polish crisis-management and defence framework, in which the Armed Forces may perform crisis-response tasks in support of civilian authorities, while remaining embedded in the national command structure (Act on Crisis Management 2007; Homeland Defence Act 2022; Government Security Centre 2020). The Chief of the General Staff then designates appropriate Military Task Groups (WZZSZ), which are required to achieve readiness within the specified timeframe and deploy to the operational area.

During the pandemic, military support included medical logistics, CBRN and disinfection operations, patient transport, temporary infrastructure support, assistance to civil administration, and selected monitoring tasks.

After the epidemic outbreak has been contained, all participating units and subunits return to their home garrisons. This redeployment phase is also associated with operational risks, including traffic accidents, equipment damage, and other unforeseen incidents. Upon return, personnel and equipment should undergo inspection in order to identify material losses, technical deficiencies, and replenishment needs before full readiness is restored.

From an analytical perspective, the pandemic-specific model reveals a more complex and more fragile support architecture than the general crisis model. The first critical interface is the epidemiological assessment stage, where the accuracy and speed of public-health recognition affect the entire downstream response chain. The second is the civil-military request interface centred on the Voivode, which determines whether military support is activated and how quickly the request enters the national command structure. The third is the vertical command chain linking the Minister of National Defence, the Chief of the General Staff, and designated task groups. While this structure may strengthen command clarity, it may

also create procedural bottlenecks under rapidly escalating conditions. Finally, the model shows that pandemic support is not a single activity, but a bundle of partially interdependent task streams requiring coordination with civilian institutions, which makes interoperability a decisive condition of effectiveness.

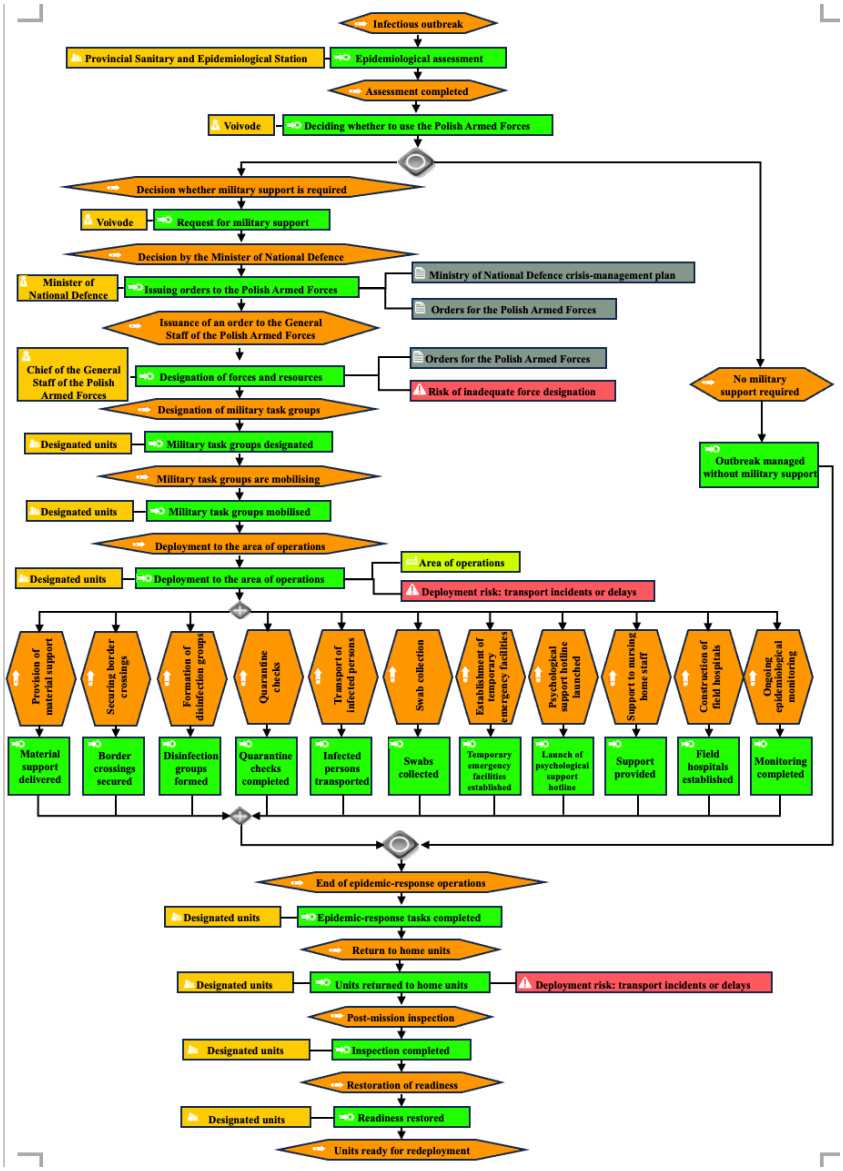


Figure 2. Reference process model of Polish Armed Forces support during the SARS-CoV-2 pandemic
Source: own study

Taken together, Figures 1 and 2 should be read as analytical reference architectures rather than merely procedural diagrams. They identify where military-support effectiveness depends on administrative recognition, request formalisation, command transmission, force availability, deployment speed, and coordination with civilian institutions. For readability, they are presented here as analytically reduced reference architectures.

Discussion

The discussion interprets the process models and document-based analysis through a structured strategic lens. SWOT/TOWS is used here as a synthesis tool linking process-level observations with strategic implications for preparedness, response, and recovery.

The legal and institutional factors included in Table 1 were interpreted primarily on the basis of the Act on Crisis Management, the Act on the Voivode and Government Administration in the Voivodeship, the Act on the Prevention and Control of Infections and Infectious Diseases in Humans, the Homeland Defence Act, and the National Crisis Management Plan. Factors related to military logistics, mobilisation capacity, command hierarchy and operational readiness were additionally informed by the literature on military logistics and by expert consultation. Factors concerning interoperability, public legitimacy, civil-military relations and health-system resilience were interpreted in the light of the cited literature on civil-military cooperation and health emergency governance.

The main weaknesses identified in the analysis are linked to limited military-civilian health integration, dependence on formal request-and-approval procedures, and the risk of overload under concurrent crises. Accordingly, effectiveness depends not only on force availability, but also on institutional integration, information exchange, and cross-sector coordination. At the same time, the practical value of these strengths depends on the quality of civil-military interfaces, the availability of specialised capacities, and the ability to avoid operational overextension.

Table 1. SWOT analysis of the Polish Armed Forces in support of civilian response during the COVID-19 pandemic

Strengths	Weaknesses
• High level of training, organisation and discipline • Strong organisational capacity in operational implementation • Access to significant institutional resources • Readiness to operate 24/7 • Ability to mobilise within formal crisis-response procedures • Experience in operational and emergency logistics • Access to selected reserve and logistical resources • Unified command and command hierarchy	• Potential ethical dilemmas (e.g., quarantine control, restriction of civil liberties) • Risk of shortages or uneven availability of specialised equipment) • Limited availability of selected specialised capacities (including engineering and CBRN-related support) • Limited interoperability with civilian health-system structures • Limited number of specialised medical units within the Polish Armed Forces • Risk of logistical overload in case of several crises simultaneously (e.g., flood + pandemic)
Opportunities	**Threats**
• Political and institutional support for military assistance to civilian response • Potential contribution to limiting the operational consequences of pandemic escalation • Growth in public awareness of preventive and protective measures • Cooperation with the civilian and scientific sectors (predictive models, AI) • Possibility of adapting international crisis-response solutions to the Polish institutional setting • Expansion of medical military competence (telemedicine, mobile laboratories) • Ability to test and implement new models of crisis management • Integration of data (GIS, dashboards, field reports) for threat prediction	• Public resistance to military presence (anti-authoritarianism, fake news) • Regulatory instability and ambiguity may disrupt operations • Rapid epidemiological change and pathogen uncertainty • Possible disinformation and cyberattacks on critical infrastructure • Risk of infection among soldiers and reduction of operational capabilities • Risk of psychological strain during prolonged civilian-support operations

Source: own elaboration based on the Act on Crisis Management, the Act on the Voivode and Government Administration in the Voivodeship, the Act on the Prevention and Control of Infections and Infectious Diseases in Humans, the Homeland Defence Act, the National Crisis Management Plan, expert-informed consultation, and the literature cited in the manuscript

The COVID-19 experience suggests that the Polish Armed Forces are a significant support actor in biological emergencies, particularly when civilian institutions face capacity overload.

To enhance preparedness, regular inter-institutional exercises involving defence, health, internal security, and regional crisis-management authorities are essential. Such exercises would strengthen coordination, clarify request-and-tasking procedures, and improve interoperability. Prolonged military involvement in civilian

emergency operations may strengthen surge capacity, but it may also blur institutional boundaries and raise concerns related to civilian primacy.

An important component of the Polish military response was the Territorial Defence Forces, whose territorial embeddedness made them particularly relevant for community-level support (Mazurkiewicz 2022). Their role shows that military involvement in health emergencies is not organisationally homogeneous and that support effectiveness may depend on both command capacity and territorial proximity.

This also affects the interpretation of SWOT, because some strengths and opportunities are linked more strongly to territorially embedded formations than to the Polish Armed Forces as a whole.

The SWOT/TOWS results suggest that strategy choice should not be treated as static, because the dominant operational problem changes across pandemic phases. During rapid escalation, the central challenge is to preserve continuity under constraints such as personnel shortages, equipment pressure, interoperability gaps, and uncertainty. Under such conditions, a maxi-mini orientation is strategically justified, as it allows organisational strengths—such as command discipline, mobilisation capacity, and logistics capability—to be used primarily to stabilise weaknesses and contain the most disruptive threats.

By contrast, during stabilisation and post-surge phases, the operational environment becomes more predictable and institutional learning becomes possible. In this context, a maxi-maxi orientation becomes more appropriate, because the strategic objective shifts from emergency stabilisation to the institutionalisation of cooperation, development of specialised capabilities, and strengthening of long-term resilience. The recommended sequence is therefore not a universal strategy, but a phase-sensitive strategic progression from constraint stabilisation to capability consolidation (Piubello Orsini et al. 2024).

Table 2. Pandemic phases and recommended strategic orientation derived from the SWOT/TOWS analysis

Phase: Escalation/ surge	Dominant risks: capacity overload, interoperability gaps	Recommended orientation: maxi-mini (stabilise constraints).
Phase: Stabilisation/ recovery	Dominant opportunities: institutional integration, digital tools	Recommended orientation: maxi-maxi (institutionalise and modernise).
Phase: Preparedness/ inter-wave period	Dominant task: capability development	Recommended orientation: maxi-maxi (build resilience and specialised units).

Source: Own study

Comparative Perspective

In comparative terms, Poland's use of the Polish Armed Forces during the COVID-19 pandemic was broadly consistent with patterns observed in other NATO and EU member states, where military support was directed toward civilian authorities in areas such as medical logistics, temporary infrastructure, epidemiological support, and selected public-administration functions. At the same time, the Polish model reveals important institutional specificities. Its vertically ordered decision chain may strengthen clarity of competence and predictability of tasking, but it may also create procedural bottlenecks by increasing dependence on administrative recognition, formal request procedures, and upper-level approval. The proposed models should therefore be understood as analytically transferable but institutionally adjustable, because their wider value lies in clarifying decision dependencies, coordination interfaces, and bottlenecks in military support to civilian pandemic response, while their practical implementation depends on national legal and administrative settings (Dietrich et al. 2023).

Conclusions

This study examined the strategic and logistical role of the Polish Armed Forces in responding to the COVID-19 pandemic and developed reference models and strategic recommendations for future biological emergencies through an exploratory and practice-informed approach.

The analysis indicates that the Polish Armed Forces played a significant supporting role during the COVID-19 pandemic, especially where civilian institutions faced capacity pressure. Their contribution extended beyond conventional security functions and strengthened state response capacity when integrated into civilian-led crisis management arrangements.

A central contribution of the study is the development of two reference decision-logistics models illustrating the principal support logic of the Polish Armed Forces in general crisis response and pandemic-specific conditions. These models are not exhaustive empirical reconstructions, but analytically reduced reference architectures clarifying decision points, command dependencies, task sequences, and coordination bottlenecks. Their practical plausibility and internal consistency were reviewed through expert-informed consultation with five representatives of the Polish Armed Forces, supported by document analysis.

The strategic interpretation based on SWOT/TOWS suggests that the effectiveness of military support should be understood as phase-dependent. During rapid escalation, when the dominant challenge is continuity under constraint, a maxi-mini orientation is more appropriate because it uses organisational strengths to stabilise

weaknesses and contain the most disruptive threats. During stabilisation, preparedness, and recovery phases, a maxi-maxi orientation becomes more appropriate, as the strategic task shifts toward institutionalising cooperation, strengthening specialised capabilities, and embedding resilience-oriented preparedness mechanisms. In this sense, the study supports a sequenced rather than universal strategic approach to military support in pandemic response.

At the same time, the study also shows that military capacity alone is insufficient to ensure response effectiveness. A decisive factor is the quality of the civil-military interface, including the speed of request formalisation, clarity of institutional roles, interoperability with the civilian health system, and the ability to coordinate multiple task streams under prolonged stress. The Polish case therefore suggests that the value of military support depends not only on mobilisation capability, but also on the degree to which military action is embedded in coherent civilian governance and preparedness structures.

The study is limited by its exploratory qualitative design, the absence of a quantitative operational dataset, and the lack of equivalent interview material from civilian institutions. The findings should therefore be interpreted as analytically grounded and practice-informed rather than statistically generalisable. Future research should include multi-actor perspectives and comparative performance indicators for more robust evaluation of mobilisation speed, coordination quality, and operational effectiveness.

Overall, the findings suggest that the operational potential of the Polish Armed Forces may be considered an important supporting component of national preparedness for biological emergencies, provided that such involvement remains embedded within a civilian-led crisis-management framework and is supported by formalised coordination mechanisms, specialised capability development, and improved decision-support systems.

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Conceptualisation: D.P.M. and M.D.-G.; methodology: D.P.M. and M.D.-G.; investigation: D.P.M.; process modelling: D.P.M.; SWOT/TOWS analysis: D.P.M.; literature review: M.D.-G. and J.G.; documentary analysis: J.G. and B.B.; preparation and verification of references: J.G. and B.B.; technical support in preparing figures and tables: B.B.; writing – original draft: D.P.M.; writing – review and editing: D.P.M., M.D.-G., J.G. and B.B.; supervision: D.P.M. All authors have read and approved the final version of the manuscript.

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Conflict of Interest Statement

The authors declare no conflict of interest.

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The authors used OpenAI ChatGPT to support language editing, text organisation, stylistic refinement, and consistency checking of selected parts of the manuscript. The tool was not used as a source of empirical data, legal interpretation or independent scientific evidence. All AI-assisted outputs were critically reviewed, verified and approved by the authors, who take full responsibility for the final content of the manuscript.

Ethics Approval / Consent
Not applicable. The study did not involve medical, clinical or experimental research on human subjects. The expert-informed consultative verification was conducted for analytical and methodological purposes only, and no personal, sensitive or identifiable data are disclosed in the manuscript. Participant consent was obtained where required.

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