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CREATING VALUE FROM THE IMPLEMENTATION OF PROJECT PORTFOLIOS FOR THE DEVELOPMENT OF TERRITORIAL SECURITY SYSTEMS

THE ROLE OF THE POLICE IN ENSURING THE SECURITY OF PUBLIC ORDER PUBLIC SAFETY

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PREFACE

One of the measures used to evaluate scientific activity is the publications of researchers associated with specific fields and within them scientific disciplines. Therefore, it is not surprising that reflections are presented in the pages of scientific journals, the status of which is worked on for years. Many people are involved in the process, among them scientists, editors, proofreaders and technicians.

One of the journals that has been growing steadily is "Security Forum", a semi-annual journal published by the WSB University. The university is modern, open and innovative, focused on generating useful knowledge and is a valued partner for many entities, not just academia.

The above reflections are not just notes from the WSB University's strategy but can be read indirectly in the publications and statements of its employees and those working with it. This is confirmed by the first issue of this year's "Security Forum", which is being distributed to readers. In my opinion, one can find in it works related to security sciences and from their borderlands. This indicates the independent principles of editorial correctness carried out by the semiannual, which promotes openness of expression. This, in turn, results in the fact that the content available in the pages of the journal is accessible not only to researchers paralyzed by security issues. As a professional who has been involved in security and public order efforts in the past, I am pleased to see in many of them attempts to sensitize readers to the concern for the common good, which is security in personal and structural dimensions.

In conclusion, I encourage you to read the published articles because, among other things, through it you can consolidate your knowledge, learn to take different points of view and increase your analytical skills.

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FORMULATING STATE'S MISSION AND VISION FOR THE NATIONAL SECURITY STRATEGY – THEORETICAL ASPECTS

Abstract

The formulation of the state's security strategic objectives, including in this process its' mission and vision, is the most important element of the strategic planning process and enables the construction of adequate action plans. Forecasted processes and events are only one of the subsets forming the actual information base in the process of security strategy planning and formulation of strategic objectives in the field of security. Taking into account the dynamics of change, complexity and unpredictability of the state's security environment, it is important to supplement this base with projected conditions as well. Designing – as a research procedure complementary to forecasting – makes it possible to create the state's future (vision) and constitutes a conscious choice of its' alternative development. The presented logic, that include both forecasting and designing procedure, also underlines the importance of vision, i.e. a desired image of the state's future, based on which all its sectoral activities, including those in the field of security, are formulated. Described theoretical aspects will be followed with a practical research in this field that will be presented in the next article.

Keywords

security strategic planning, turbulent state environment, designing, mission, vision, strategy

Introduction

In a turbulent state security environment, strategic thinking[1] is fundamental while planning and constructing of any strategy. It is thinking in terms of tomorrow, which 'aims to describe, on the basis of data analysis and extrapolation existing knowledge, imagination and intuition, possible future situations (…), as well as the paths of development leading to these future situations, with close respect for the feedbacks with the structure and dynamics of its environment and the multi-causality that shapes these feedbacks'[2]. The literature indicates that in the strategic planning process it is important to determine: (A) where are we currently (as a state and nation)?, (B) where are we heading and what do we want to achieve (as a state and nation)?, (C) what tools and means should we use to achieve this?[3]. Nowadays a long-term and proactive strategy formulation[4] constitutes the essence of the strategic planning process in the field of security and is part of the concept of a creative organization which not only 'receives' and reacts to certain signals revealed in its environment, but also creatively shapes them[5]. Therefore, the fundamental premise of strategic security planning is that the state – as an organization characterized by a certain degree of complexity[6] – can and should shape its future in a rational and orderly manner[7], in order to reduce uncertainty resulting from the volatility of the state's security environment and increase its adaptive capacity[8].

The construction of any strategic plan[9] must always be preceded by an analysis of the reality in which the state operates: 1) an analysis of its security environment and 2) states' strengths and weaknesses. The results of strategic analysis – a reduced

1 R. Ackoff, *Creating the Corporate Future*, John Wiley and Sons, New York 1987, p. 17.

2 J. Penc, *Przedsiębiorstwo w burzliwym otoczeniu. Procesy adaptacji i współpracy. Część I*, Oficyna Wydawnicza Ośrodka Postępu Organizacyjnego Sp. z. o.o., Bydgoszcz 2002, p. 130.

3 J. M. Bryson, *Strategic planning for public and nonprofit organizations. a Guide to Strengthening and Sustaining Organizational Achievement,* John Wiley & Sons, Inc., New Jersey 2018, p. 10; A. Campbell, s. Yeung, *Brief Case: Mission, vision and strategic intent*, "Lang Range Planning", vol. 24, No 4, s. 145; I. Chaston, *Vision, Mission and Strategy*, [in:] I. Chaston, *Public Sector Reformation*, Palgrave Macmillan London, Londyn 2012, pp. 153-172.

4 J. A. F. Stoner, R. E. Freeman, D. R. Gilbert, *Kierowanie*, Polskie Wydawnictwo Ekonomiczne, Warszawa 2001, pp. 108-113.

5 *Ibidem*, p. 11, also: A. Stabryła, *Zarządzanie strategiczne w teorii i praktyce,* Wydawnictwo Naukowe PWN, Warszawa-Kraków 2000, pp. 117-118.

6 The quality and dynamics of changes, as well as its' number, degree of complexity and diversity of elements emerging in an unpredictable way in the state security environment justify the use of a systems approach in security research and allow to treat the state security environment as a complex system. See: A. Dziubińska, J, Rokita, *Systemy złożone w zarządzaniu,* Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach, Katowice 2016; Cz. Mesjasz, *Nauki o zarządzaniu a teoria systemów złożonych,* „Organizacja i Kierowanie", No 4/2003, p. Sienkiewicz, *Analiza systemowa. Podstawy i zastosowania*, Wydawnictwo Bellona, Warszawa 1994, Z. Gomółka, *Elementy ogólnej teorii systemów*, Wydawnictwo Naukowe Uniwersytetu Szczecińskiego, Szczecin 1994, A. Koźmiński, *Analiza systemowa organizacji*, Państwowe Wydawnictwo Ekonomiczne, Warszawa 1976.

7 W. Gasparski, *Projektowanie. Koncepcyjne przygotowanie działań*, Państwowe Wydawnictwo Naukowe, Warszawa 1978.

8 A. Dawidczyk, *Analiza strategiczna w dziedzinie bezpieczeństwa państwa,* Difin, Warszawa 2020, p. 20.

9 Depending on the scale and complexity of the security problems, developing a description of alternatives (possible options) and their assessment enables the selection of strategies to be detailed in the form of operational plans (covering a specific sector of the organization's operations, of a short-term nature), tactical plans (implemented at the medium level of organization management in the medium term) and strategic plans (long-term goals of the organization).

set of baseline information – are subsequently subjected to forecasting. However, in view of the irregular changes of a discontinuous nature that emerge, extrapolation or anticipation of future processes raises certain difficulties[10]. Thinking about the future by referring exclusively to extrapolations of observed and recurring trends and taking into account the increasing diversity of elements in the state's environment, results in the processes being increasingly unpredictable and allows only a certain probability of their occurrence in the future. Furthermore, classical forecasts describe a picture of the future that is merely 'an expression of the expectation of the development of certain processes'"[11], rather than a conscious shaping of the future 'according to pre-identified goals and a naturally determined outcome'[12]. Therefore, in the changing, complex and unpredictable state's security environment conditions, it is necessary not only to predict the future using scientific methods (forecast conditions), but also designing its' future by formulating a desired vision for the development of the state and its security. 'The future is difficult to predict, and even more difficult to create it sensibly'[13], but it is designing – as a complementary method to forecasting in the process of strategic planning, particularly while solving complex security problems, that makes it possible to create the future of the state and is a kind of 'steering template for practical action'[14].

Taking the above into account, for the need of the article following research problem was formulated: the application of which research procedure would optimize the process of creating state future under conditions of increasing complexity, volatility and unpredictability of the state security environment? The main objective of the article was to demonstrate the necessity of applying design (as a research procedure complementary to forecasting) in the process of constructing the state's development vision and strategic objectives under conditions of increasing turbulence of the state's security environment.

Research methodology – designing in the field of security

Design is an activity and is concerned with any activity, and all activity leads to a change in the existing state[15]. Therefore, designing is a preparatory activity that results in the formulation of of reality change[16]. It is a procedure that is aimed to set the effectiveness criteria. It should be emphasized that not only technical processes can be designed, but also collective action 'when one intends to achieve states of social

10 J. Naisbitt, *Megatrendy*, Wydawnictwo Zysk i S-ka, Warszawa 1997, p. 18, also: J. Prońko, B. Kaczmarczyk, *Bezpieczeństwo państwa – pojęcie, istota, strategia, system*, „Rocznik Bezpieczeństwa Morskiego", rok IX, część II/2015, p. 111.

11 A. Dawidczyk, J. Jurczak, p. Łuka, *Metody, techniki, narzędzia nauk o bezpieczeństwie*, Difin, Warszawa 2019, p. 121.

12 A. Filasiewicz, *Prognoza, program, plan*, Wiedza Powszechna, Warszawa 1977, p. 15.

13 J. Penc, *Strategie zarządzania. Perspektywiczne myślenie. Systemowe działanie*, Agencja Wydawnicza Placet, Warszawa 1997, p. 72.

14 W. Gasparski, *Projektowanie …*, *op. cit*., p. 5.

15 *Ibidem,* p. 72-73.

16 *Ibidem.*

organization and ensure their continuance'[17]. Therefore, designing is the conceptual preparation of change[18].

When designing in the field of security, the methodology developed by Wojciech Gasparski can be used, whereby the design problem must meet the conditions of appropriateness in the context of the identified need, it must be heuristic and workable (information processing) and its solution must be relevant to the problem, pertinent (consistent with the current state of knowledge and the adopted evaluation criteria) and feasible[19].

The use of design as a strategic planning tool in the field of security[20] makes it possible to create the future of the state by indicating the desired, most probable and feasible solution – 'it is the art of arriving at the most rational solution'[21].

All activities in the field of security should always be result-oriented and therefore determined by the existence of well-defined, concrete and measurable objectives. After all, the basic premise justifying the any organization functioning are objectives[22] and the most general one of any organization is to survive and develop'[23]. The formulation of state' objectives, and state security policy, is the most important part of the strategic planning process and security management[24]. Designing is a deliberative process that is oriented at the achievement of various objectives[25]/ Therefore, when designing in the field of security, the image of the state' future resulting from the strategic vision of the state's development, maximizing the achievement of national interests, should be taken as the point of reference for the projected solutions[26]. The identified threats and opportunities, as well as strengths and weaknesses are only a reference to designed vision and formulated objectives are modified on an ongoing basis, adequately to the processes (trends, challenges) revealed in the security environment. The designed solution (postulate defining the future desired states – designed conditions) should be subsequently adjusted to the capabilities of the state (forecast conditions).

There are many types of objectives[27]. For the purposes of the article, it is important to discuss their hierarchy. Its' level corresponds to the specific level of its

17 *Ibidem,* p. 5.

18 *Ibidem*, p. 93.

19 *Ibidem*, p. 101.

20 J. Jurczak, *Projektowanie jako narzędzie planowania strategicznego w dziedzinie bezpieczeństwa*, Difin, Warszawa 2024, pp. 126-151.

21 *Projektowanie i systemy. Zagadnienia metodologiczne. Tom I*, pod red. Gasparki W., Miller D., Wydawnictwo Ossolineum, Wrocław 1978, p. 8.

22 An objective is a defined, subjective, future, desired state of affairs, possible and expected to be achieved within a specified time or period of time. Objectives specify intentions, while being decomposed into tasks. See: L. J. Krzyżanowski, *O podstawach kierowania organizacjami inaczej,* Wydawnictwo Naukowe PWN, Warszawa 1999, p. 253.

23 A. Koźmiński, K. Obłój, *Zarys teorii równowagi organizacyjnej*, Państwowe Wydawnictwo Ekonomiczne, Warszawa 1989, p. 23.

24 A. Dawidczyk, p. Swoboda, *Projektowanie celów polityki bezpieczeństwa na użytek strategii bezpieczeństwa narodowego,* „Bezpieczeństwo Narodowe" 2023, No 1, vol. 42, p. 33.

25 A. Podgórecki, *Charakterystyka nauk praktycznych*, Wydawnictwo Naukowe PWN, Warszawa 1962, p. 19.

26 A. Dawidczyk, J, Jurczak, *Metodologia bezpieczeństwa w przykładach i zastosowaniach,* Difin, Warszawa 2022, p. 115.

27 See: H. Kreikebaum, *Strategiczne planowanie w przedsiębiorstwie*, Wydawnictwo Naukowe PWN, Warszawa 1997.

particularity – from the most general: ideal objectives (indicated in the state mission), through a set of intent objectives in all areas of the state's functioning (state development vision) and general objectives of the state policy, which are the expression of the general determination of the future desired states, possible and anticipated to be achieved in a specific time, and finally the specific objectives of the state security policy, which are the decomposition of the general objectives into subordinately complex ones (reduced and operationalized intent and general objectives)[28].

In the strategic security planning process, design can be successfully applied to the development of both strategic, tactical and operational objectives[29]. Strategic objectives result from the identified state needs – they are grounded in reality, but at the same time they refer to the future. However, the final shape of such objectives, cannot depend solely on aspirations[30], strivings[31], needs[32], values[33] and national interests[34]. Nowadays an essential condition while planning state security strategies is to take into account also forecasted and projected conditions of the state's security environment. The creation of any strategic objectives must also be complemented by a vision and mission of state as its' future. Such a two-dimensional view of strategic objectives makes it possible to create a bundle of objectives in line with the requirements of the strategy[35].

Polish planning practice in the area of security indicates that strategic documents do not explicitly and intentionally enshrine the wording of Poland's development mission and vision[36]. For example the 2020 National Security Strategy sets out

28 Z. Ścibiorek, B. Wiśniewski, R. B. Kuc, A. Dawidczyk, *Bezpieczeństwo wewnętrzne. Podręcznik akademicki,* Wydawnictwo Adam Marszałek, Toruń 2017, p. 392.

29 D. E. Rauch, M. Tackett, *Design Thinking, "Joint Force Quarterly 101"* 2021, 2nd Quarter, p. 12.

30 Aspirations are the organization's enduring goals within its socially desirable activities. See: s. Sudoł, *Przedsiębiorstwo. Podstawy Nauki o Przedsiębiorstwie*, Polskie Wydawnictwo Ekonomiczne, Toruń 1999, p. 75.

31 Strivings are primary aspirations that are the most basic behaviors of individuals, social groups, nations, states, organizations, international communities. Their decomposition enables the identification of needs and values. See: Cz. Maj, *Wartości polityczne w stosunkach międzynarodowych*, Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin 1992, pp. 20-22.

32 Needs are articulated by both citizens (individually and collectively – national needs) and international communities (systemic needs). They provide content for values through the social, cultural, economic and psychological development of the nation – a reduced set of needs constitutes the values characteristic of the nation and the state. See: Cz. Maj, *Wartości polityczne …, op. cit*., p. 18.

33 Value is 'a product of feelings, convictions or beliefs of some entity: a human individual, a social group, a local, national or other community, a cultural community or a global society about what in the natural and psychosocial-cultural reality is positively assessed and considered worthy of desire and aspiration'. Each time, the set of needs should be supplemented with values, written in constitutions and fixed in the system of social views. See: L. J. Krzyżanowski, *O podstawach kierowania organizacjami …, op. cit*., p. 205.

34 National interests are specific variables expressed in the language of politics, objectively understood, mediating between needs and values and the goals of state policy; it is a certain relationship between some objective state (current or future) and the assessment of this state from the point of view of the benefits it brings or may bring to an individual or group. For the process of determining the content of national interests and the final shape of goals in the field of security, the proper indication of needs and values is of fundamental importance. See: *Ibidem,* p. 251.

35 M. Lisiński, *Metody planowania strategicznego*, Polskie Wydawnictwo Ekonomiczne, Warszawa 2004, p. 40.

36 A. Dawidczyk, Pl*anowanie strategii rozwoju sił zbrojnych*, Akademia Obrony Narodowej, Warszawa 2006, pp. 134-145; A. Dawidczyk, *Bezpieczeństwo, obronność, wojskowość. Problemy planowania strategicznego*, Difin, Warszawa 2019, p. 9, 99; J. Gryz, *Wzajemny związek między polityką i strategią a bezpieczeństwem państwa*, „Rocznik Bezpieczeństwa Międzynarodowego", No 2/2007, pp. 23-27.

a 'comprehensive vision for shaping the national security of the Republic of Poland in all its dimensions'[37], while the text of the 2007 National Security Strategy indicates that 'the comprehensive vision of security underlying this strategy, corresponding to contemporary international realities and the nature of threats and challenges, as well as testifying to the will to maximize the results of actions for the security of the state and its citizens, indicates the need for Poland to make efforts in every sphere of social life. This gives rise to the need to develop the capacity to coordinate and integrate the efforts of the various state bodies, institutions and services'[38]. In both cases, these provisions do not specify any security conditions which are important and characteristic for the Polish state, which may be an evidence of passive state adaptation to the changes emerging in the security environment, rather than shaping the desired future of the state in a creative and active manner. The state' mission and vision are an expression of constructive thinking about the state future – a kind of 'direction indicator orienting planning activity'[39].

State's mission

The creation of strategic objectives, particularly in a turbulent state security environment, is complemented by mission and vision as desired images of state future. Strategic management theory and practice differentiates these concepts[40].

The mission sets out the philosophy of the state – its identity and social mission[41], while the vision is its desired future. The mission contains the role of the organization – the meaning of its existence, while the vision is the image of the desired future in the context of achieving the set goals[42]. The mission is the actual planning basis, it is a kind of information platform about the desired directions of the state's development in all spheres of its functioning, thus each time it provides the content of political activities constructed and undertaken by the state[43]. The literature indicates that any mission acquires strategic significance when it fulfils three conditions: 1) it sets the direction and concerns the future, 2) it expresses the dreams and challenges of the members of the organization, 3) the process of its implementation is credible[44].

The mission is a public part of the strategic plan[45] and its construction consists in defining how the organization is to be perceived by its environment – it is 'a certain

37 Wstęp, *Strategia Bezpieczeństwa Narodowego*, Warszawa 2020, p. 5.

38 Pkt. 84, podrozdział 4.1. „Strategiczne kierunku transformacji systemu bezpieczeństwa narodowego", rozdział 4. „System Bezpieczeństwa Narodowego RP", *Strategia Bezpieczeństwa Narodowego*, Warszawa 2007, p. 21.

39 A. Dawidczyk, *Bezpieczeństwo, obronność, wojskowość…*, *op. cit.,* p. 99.

40 In the historical sciences of organization and management, many concepts and interpretations of mission and vision have been developed. For the purposes of this article, the relationship was assumed that vision is a specification and development of the state's mission.

41 J. Supernat, *Zarządzanie strategiczne. Pojęcia i koncepcje*, Kolonia Limited, Wrocław 1998, p. 229.

42 G. Gierszewska, *Strategie przedsiębiorstw w dobie globalizacji*, Oficyna Wydawnicza Wyższej Szkoły Handlu i Prawa im. Ryszarda Łazarskiego, Warszawa 2003, p. 12.

43 A. Dawidczyk, *Bezpieczeństwo, obronność, wojskowość …*, *op. cit.*, p. 102.

44 K. Obłój, *Strategia organizacji*, Polskie Wydawnictwo Ekonomiczne, Warszawa 1999, p. 235.

45 J. Penc, *Strategie zarządzania*, *op. cit.,* p. 209.

ideal, an almost unattainable state of affairs, an unmatched model, but desired, sought after[46]. Its expression is possible by giving unambiguous answers to questions such as: 1) what place should Poland take in the region and in the world?, 2) what role as a state should we play in international communities?, 3) what values should we promote in society?, 4) what model of society should we shape?[47].

Therefore, the mission should be sufficiently detailed to leave no doubt as to the identity of the organization, and at the same time sufficiently general to allow it to be specified by means of the vision and the identified strategic objectives. In other words, the mission provides the rationale for the state' existence and expresses its specific role – it is the object of aspirations, strivings, needs and values perpetuated through the civilizational (historical, cultural, social, etc.) development of the state and nation described on a set of forecasted and projected conditions of the state's security environment[48].

Summing up, state' mission – as a kind of ideal towards which to aim – is an expression of the creative imagination of the designers, characterizes the most enduring catalogue of the values professed by society and, in a timeless way, clarifies the identity of the state and constitutes a declaration of its main ideals objectives[49].

State's vision

A refinement and development of the mission statement is a vision, or 'a future image of a fragment of reality formed by the creative imagination, the existence of which is considered theoretically possible'[50]. 'A vision is a journey on which the creative mind embarks, beginning with known matters and ending with the unknown, creating a future based on the assembly of current facts, hopes, dreams, dangers and possibilities'[51]. a mission statement is 'a concise scenario for dreaming about the future'[52], which objectively describes the desired actions of the state in all areas of its activity, i.e. what needs to be done and in which areas, in order to achieve the aspirations, strivings, needs and values representative of the community and the state. In practice, state's vision should consist of several intent objectives expressed in a long-term range of the forecast in each of state's activity sectors, i.e. political, economic, social, technological and others[53].

46 A. Dawidczyk, *Bezpieczeństwo, obronność, wojskowość …*, *op. cit*., p. 100.

47 *Id*., Pl*anowanie strategii rozwoju sił zbrojnych*, op. cit., p. 139.

48 *Id., Bezpieczeństwo, obronność, wojskowość …*, *op. cit*., p. 100.

49 R. Koch, *Słownik zarządzania i finansów*, Wydawnictwo Profesjonalnej Szkoły Biznesu, Kraków 1997, p. 147.

50 L. Krzyżanowski, *O podstawach kierowania organizacjami …*, *op. cit*., p. 252.

51 B. Karlöf, *Strategia biznesu. Koncepcje i modele: przewodnik*, Wydawnictwo Zarządzanie i Bankowość, Warszawa 1992, p. 81.

52 A. Dawidczyk, J. Gryz, s. Koziej, *Zarządzanie strategiczne bezpieczeństwem. Teoria – praktyka – dydaktyka*, Wyższa Szkoła Humanistyczno-Ekonomiczna w Łodzi, Łódź 2006, p. 99.

53 A. Dawidczyk, *Bezpieczeństwo, obronność, wojskowość …*, *op. cit*., p. 103, a także W. Kitler, J. Gryz, *Misje państwa w zakresie bezpieczeństwa narodowego*, [in:] *System bezpieczeństwa narodowego RP: wybrane problemy*, pod red. W. Kitler, K. Drabik, I. Szostek, Akademia Obrony Narodowej Warszawa 2014, pp. 35-55.

Two fundamental components of a vision are: 1) a 'roadmap' providing a conceptual underpinning for understanding the objectives set by the organization and 2) an emotional dimension – the vision is a motivational element that will condition the actions of the organization's participants and with which they can identify'[54]. Taking the above into account, when constructing state's vision it is important to include in this process – in addition to decision-makers, planners, analysts – also representatives of various social groups.

In summary, while the mission sets out the philosophy of the state's operation, the vision is an expression of its desired future in the context of achieving its stated objectives[55]. a vision is therefore a reference to state's future – a situation that is better than the one that exists at the moment[56]. Designing – as was indicated earlier – is a procedure leading to the formulation of patterns of change of reality, i.e. any modification of the existing state[57]. Therefore, when designing in the field of security, the image of state's future resulting from the state's vision that maximizing the achievement of its national interests in parallel with the necessity of permanently adapting the vision to the turbulent security environment and preserving the enduring values inherent in the functioning of the state, should be adopted as the point of reference for the designed solutions[58].

Conclusions

To sum up, it should be stated that in the contemporary, turbulent environment of state security, strategic planning in the field of security should boil down primarily to the creation of the future (projected conditions), and not only to the anticipation of the occurrence of certain processes and events in the future (forecast conditions). Imagining a specific, desired state's future and then attempting to 'arrange' the present (the existing state) in such a way that leads to the realization of this imagined future constitutes the essence of strategic security planning.

Formulating strategic objectives in the field of security and taking into account the mission and vision of the state, is the most important element of the strategic planning process. Formulating state's vision as a desired image of the future, against which all sectoral actions of the state will be formulated, including in the field of security has a particular importance. Designing future, desired conditions for state's functioning of the state, developing a set of forecasted opportunities, threats, strengths and weaknesses, as well as a catalogue of aspirations, strivings, needs and values characteristic of a given nation (described in the mission), and specified in the strategic state's vision, determines the content of national interests and the wording

54 A. Zarębska, *Wizja – pożądana tożsamość przedsiębiorstwa*, „Ekonomika i Organizacja Przedsiębiorstwa", No 9/2006, p. 53.

55 G. Gierszewska, *Strategie przedsiębiorstw …*, *op. cit*., p. 12.

56 J. Supernat, *Zarządzanie strategiczne …*, *op. cit*., p. 229.

57 W. Gasparski, *Projektowanie …*, *op. cit*., p. 73.

58 G. Gierszewska, *Strategie przedsiębiorstw …*, *op. cit*., p. 12.

of general and specific state's objectives, and consequently enables the construction of adequate strategies taking into account the dynamics of change, complexity and unpredictability of the state's security environment. Undertaken considerations will be supplemented by a description of the practical application of designing as a research procedure complementary to forecasting in the process of constructing state's vision, following strategic objectives in the conditions of increasing turbulence of the state's security environment, which will be discussed in detail in the next part of the article.

Creating multi-variant mental concepts describing future situations and desired directions of development undoubtedly requires multidimensional, multidirectional and constructive thinking, breaking away from the tradition of linear thinking, because after all 'some projection of dreams is necessary if planning is to be more than an ad hoc reaction to existing conditions'[59].

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59 R. A. Webber, *Zasady zarządzania organizacjami*, Polskie Wydawnictwo Ekonomiczne, Warszawa 1996, pp. 239-240.

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AFGHANISTAN AFTER ISAF WITHDRAWAL – a DECADE IN THE SHADOW OF CHANGE

Abstract

This article examines the origins, development and consequences of the International Security Assistance Force (ISAF) in Afghanistan. Established in 2001 under UN Resolution 1386 with an initial mandate to protect Kabul, the ISAF mission quickly became NATO's largest military operation, involving more than 130,000 troops from 42 countries at its peak. Despite the end of the operation in 2014, scholarly discussion of its effectiveness continues, pointing to both the strengthening of NATO interoperability and the tensions between political and operational objectives. There is also criticism of the failure to rebuild Afghan institutions and the low public assessment of the mission, partly due to negative media coverage. The complete withdrawal of NATO troops in 2021 led to the Taliban taking control of Afghanistan. Despite formal authority, their regime has not gained international recognition, resulting in no access to the SWIFT system, frozen foreign exchange reserves and sanctions. The consequence is a catastrophic state of the economy, mass unemployment and poverty – the January 2025 report indicates that more than 90% of the population lives below the poverty line. The author of the article concludes that the ISAF mission made sense and had a positive impact on security and human rights, but its too short duration prevented lasting change, suggesting the need for a long-term approach similar to the Balkan mission.

Keywords

National security, Afghanistan, ISAF, military missions, human rights

Introduction

The International Security Assistance Force (ISAF), with the original mandate of protecting Kabul and the surrounding area, was established on 20 December 2001, under UN Security Council Resolution 1386.

Acting under Chapter VII of the UN Charter, ISAF was established for a period of six months to assist the Afghan Interim Authority with security[1]. The constituent countries of the North Atlantic Alliance received a formal invitation to participate in ISAF. Participants were mandated to take all measures to properly fulfil the mandate of the operation[2]. The ISAF mission quickly evolved into NATO's largest and longest military operation, outside treaty territory, involving more than 130,000 troops from 42 countries at its peak[3].

Although more than 10 years have passed since the end of ISAF operations (2014), the scholarly discussion on the effectiveness and consequences of the intervention remains lively. On the one hand, the integrated operations of NATO troops in ISAF strengthened the interoperability of the alliance, while on the other, it affected the tensions between political objectives and operational constraints[4]. The capacity to rebuild the country's internal structures was also misjudged. There were significant systemic shortcomings during the reconstruction of Afghan institutions[5]. The last aspect of the performance of NATO troops in Afghanistan was the low public assessment of the ISAF mission[6]. This was undoubtedly influenced by inadequate media coverage. Governments, broadcasters and reporters mainly focused on negative events.

The complete withdrawal of NATO troops from Afghanistan (2021) has contributed to the fact that Afghanistan is now formally controlled by the Taliban, however their regime has not gained official recognition from many key countries. Lack of access to the SWIFT system, frozen foreign exchange reserves and imposed sanctions negatively affect the entire national economy. This has direct implications for massive unemployment and poverty[7]. This is confirmed by a January (2025) report from the Ministry of National Economy of Afghanistan, which indicates that more than 90 percent of the population lives below the poverty line, leaving more and more families without the basic necessities of life[8]. In addition, human rights are not respected in Afghanistan, women have been completely marginalized in society.

1 F. Clements, *Conflict in Afghanistan: a historical encyclopedia*, ABC-CLIO 2003, p. 255.

2 J. W. Durch, *Twenty-first-century peace operations*. US Institute of Peace Press 2006, p. 542.

3 A. Kevlihan, ISAF: NATO's Evolving Mission in Afghanistan, Journal of Strategic Studies, vol. 37, no. 5 (2014), p. 620.

4 J. Seth, *NATO's Lessons from Afghanistan*, https://www.belfercenter.org/publication/natos-lessons-afghanistan, [accessed 02.06.2025].

5 Stabilization: Lessons From The U.S. Experience in Afghanistan, https://www.sigar.mil/Portals/147/Files/Reports/Lessons-Learned/SIGAR-18-48-LL-Executive-Summary.pdf, [accessed 02.06.2025].

6 S. Mann, *Afghanistan war not worth it, say most Americans*, https://www.smh.com.au/politics/federal/afghan-war-not-worth-it-say-most-americans-20101217-190pq.html, [accessed 03.06.2025].

7 G. Clyde, J. J. Schott, K. A. Elliott, B. Oegg, Economic Sanctions Reconsidered, Peterson Institute for International Economics, 2009, pp. 78-80.

8 *Ministry of Economy of Afghanistan – Poverty Analysis Reports*, https://moec.gov.af/en/category/poverty-analysis-reports, [accessed 03.06.2025].

Given the current situation in Afghanistan, the author hypothesizes that the withdrawal of NATO troops from Afghanistan has contributed to a significant reduction in security.

The political and military context of the ISAF mission

The strategic impetus for the deployment of NATO troops to Afghanistan was the terrorist attacks on the United States of America carried out on 11 September 2001, by the terrorist organization al-Qaeda. The worldwide threat of terrorism generated by the terrorist attacks contributed to the pressure from the international community to take action towards the elimination of al-Qaeda.

The breakthrough moment for the creation of the ISAF operation was the Bonn Conference held on 5 December 2001, at the initiative of the United Nations (UN). It was there that the idea of sending an International Security Force to Afghanistan was born. The Afghan side made a formal request for an armed force to be sent to their country, which would be able to support the security of the population as well as the reconstruction of the country. The formal request for peacekeepers paved the way for UN Security Council Resolution 1386 (20.12.2001) and the establishment of the ISAF mission[9]. In addition, the conference produced the following decisions:

- establishment of the Afghan Transitional Authority;
- establishment of a transitional administration;
- Preparation of the constitution and holding of general elections (up to 2 years);
- commitment to human rights (including women's rights)[10].

Due to its ambitious objectives, we can divide the ISAF operation into 4 periods[11]:

1. 2001 – 2003 Legal mandate and first operational phase. The mission initially consisted of approximately 5,000 troops under the rotating command of European countries and was to protect only Kabul.
2. 2003 – 2006 Geographical expansion and transformation of the concept of operations. On 11 August 2003, NATO took command of the alliance's first operation outside the treaty zone. This action was seen as a test of the credibility of Article 5 of the North Atlantic Treaty (despite the fact that, in legal terms, ISAF remained a UN mission). Sketch 1 shows the stages of the expansion of the operation in Afghanistan.
3. 2009 – 2011: ISAF at its peak – the 'surge'. In response to increasing Taliban activity and a deteriorating security situation, US President Barack Obama announced the so-called 'surge' (sending an additional 30,000 troops to Afghanistan). The size of the ISAF force fluctuated between 130,000 and 150,000 troops from more than 50 countries.

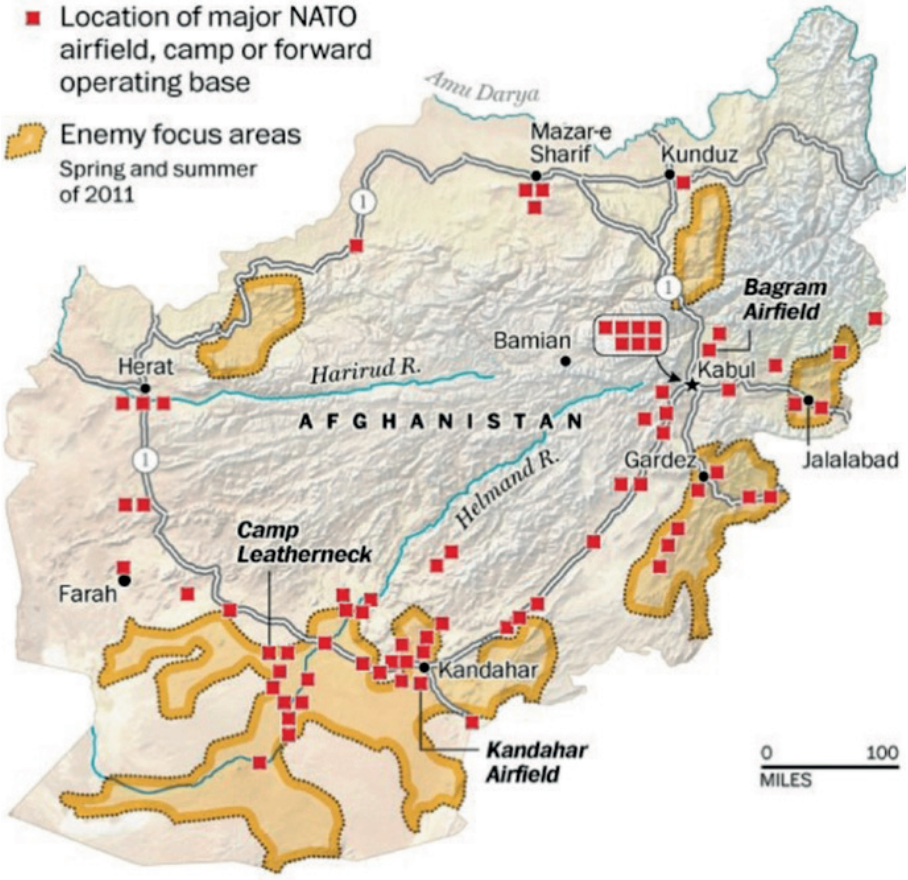
9 M. Fields, R. Ahmed, *a Review of the 2001 Bonn Conference and Application to the Road Ahead in Afghanistan*, Institute for National Strategic Studies Strategic Perspectives, No. 8, Washington, D.C.. November 2011, pp. 1-35.

10 *Security council endorses afghanistan agreement on interim arrangements signed yesterday in bonn, unanimously adopting resolution 1383 (2001)*, https://press.un.org/en/2001/sc7234.doc.htm, [accessed 03.06.2025].

11 M. Peck, *ISAF's Four Phases: Strategic Developments in Afghanistan*, International Peacekeeping, vol. 19, no. 3 (2012), s. 309-334.

4. Years 2011 – 2014 closure of mandate. Initiated the process of transferring security responsibilities to Afghan 'transition' forces. On 31 December 2014, the ISAF operation formally ended, while the Resolute Support mission began on 1 January 2015. The new mission was focused on training, advising and supporting Afghan security forces.

Sketch 1. Stages of expansion of the International Security Assistance Force (ISAF) in Afghanistan from 2003 to 2006.



Source: own compilation based on: C. M. Gourlay, Security Transition in Afghanistan: The Expansion of ISAF Regional Commands 2003-2006, Survival, vol. 49, no. 3 (2007), s. 87-110.

Approximately 1.3 million troops served in the ISAF mission between 2001 and 2014[12]. Table 1 shows the main military contingents involved in the operation and their numbers.

12 S. Parrish, *Coalition Dynamics and Troop Contributions in ISAF, 2001-2014*, Journal of Strategic Studies, vol. 39, no. 6 (2016), s. 789.

Table 1. The most important military contingents

Key military contingents		
Lp.	State	Number of soldiers
1.	United States	775,000.13
2.	United Kingdom	150,000.14
3.	Germany	150,000.15
4.	Italy	50,000.16
5.	Canada	40,000.17
6.	Poland	33,000.18

Source: own compilation based on: footnotes 12, 13, 14, 15 and 16.

Delegating such a large number of troops to the task carried a gigantic cost for the ISAF mission. It is estimated that over a trillion dollars was spent on the ISAF mission[19]. The huge investment in expanding and strengthening the country's internal structures, the cost of maintaining thousands of soldiers, armaments and other essentials initially testified to the of a commitment and desire to rebuild a country that had been experiencing wars for many years.

Participation of the Polish Armed Forces in the ISAF mission

The decision to form the Polish Military Contingent ISAF was made at the political level in 2005. The Polish government accepted the withdrawal of soldiers from participation in Operation Enduring Freedom (OEF)[20] and decided to become involved in the ISAF operation. The final step in the decision-making process was the signing, on 22 November 2006, by the President of the Republic of Poland, of an order amending the decision to extend the deployment of the Polish Military Contingent in the Islamic State of Afghanistan[21].

13 C. Whitlock, *At war with the* truth, https://www.washingtonpost.com/graphics/2019/investigations/afghanistan-papers/afghanistan-war-confidential-documents, [accessed 03.06.2025].

14 *Withdrawal from Afghani*stan, https://publications.parliament.uk/pa/cm5803/cmselect/cmdfence/725/report.html, [03.06.2025].

15 *Germany pays tribute to troops who served in Afghani*stan, https://apnews.com/article/afghanistan-frank-walter-steinmeier-angela-merkel-united-states-taliban-ea65dba7d2f808a317b6e9d4bcbd8e0c, [accessed 03.06.2025].

16 A. Gul, *Germany, Italy Complete Troop Exit From Afghani*stan, https://www.voanews.com/a/south-central-asia_germany-italy-complete-troop-exit-afghanistan/6207646.html, [accessed 03.06.2025].

17 O. Ayyad, *Following service together in Afghanistan, American, Canadian militaries train in* US, https://www.centcom.mil/MEDIA/NEWS-ARTICLES/News-Article-View/Article/885153/following-service-together-in-afghanistan-american-canadian-militaries-train-in, [accessed 03.06.2025].

18 *End of the Polish mission in Afghanistan*, https://www.gov.pl/web/national-defence/the-end-of-the-polish-mission-in-afghanistan, [accessed 03.06.2025].

19 J. Dobbins, *America's Role in Nation-Building: From Germany to Iraq*, RAND Corporation, 2008, pp. 346-347

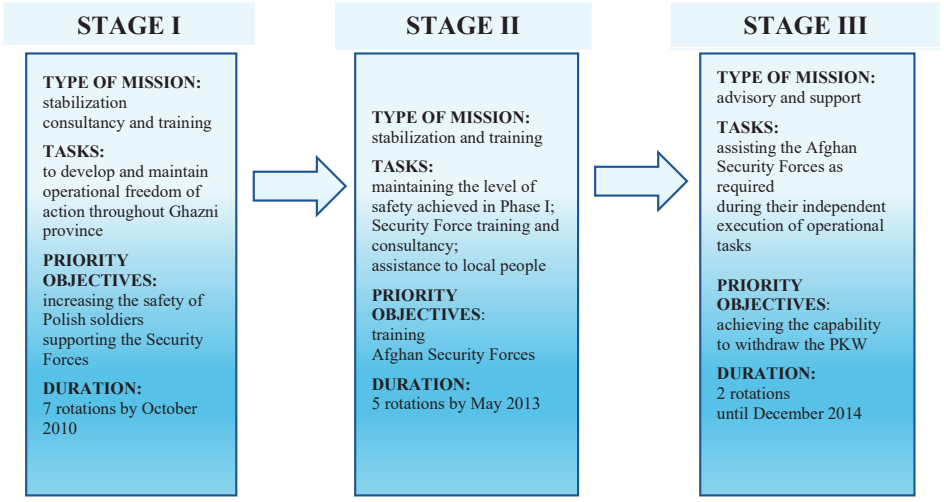
20 P. Gąsiorowski, *Polish military presence in Afghanistan: from OEF to ISAF*, National Security Yearbook, vol. 8 (2016), pp. 101-105.

21 *Decision of the President of the Republic of Poland of 22 November 2006 amending the decision to extend the period of use of the Polish Military Contingent in the Islamic State of Afghanistan*, Monitor Polski 2006, No. 85, item 862.

The Polish Military Contingent ISAF became a priority task for the armed forces, at the same time posing one of the greatest challenges since the end of the Second World War. Polish soldiers carried out mandated tasks from April 2007 to December 2014. During this time, XV shifts of ISAF PKW were formed and deployed to Afghanistan[22]. The Polish Armed Forces continued to evolve during the execution of tasks on Afghan territory by developing their structures and increasing their operational capabilities.

Taking into account the specificity of the ISAF mission at the level of the Ministry of National Defense, the "Strategy for Poland's involvement in Afghanistan" was developed[23]. The document defined Poland's participation in ISAF into three key stages of the mission[24]:

Diagram 1: Poland's engagement strategy in Afghanistan



Source: Own elaboration based on: G. Piątkiewicz, R. Socha, Evolution of Polish Military Missions on the example of the Polish Military Contingent of the International Security Assistance Force in Afghanistan. Part 2, Security Forum, Vol. 8 No. 1 (2024), p. 40.

Following NATO's decision to put Poland in charge of the entire Ghazni province, an official handover of responsibilities took place on 30 October 2008[25]. Located on

22 T. Kowalik, *Polski Kontyngent Wojskowy w Afganistanie: Misja ISAF 2003-2014*, Bellona Publishing House, Warsaw 2017, p. 88.

23 The Strategy for Poland's Engagement in Afghanistan was developed at the Ministry of Defence by an inter-ministerial team led by the MON plenipotentiary for Afghanistan, Col. Piotr Łukasiewicz. The political 'hosts' of the document were then Ministers Bogdan Klich (MON) and Radosław Sikorski (MFA), who presented it to the public after approval by the Council of Ministers on 5 December 2009. J. Walczak, *We are leaving Afghanistan*, https://www.magnum-x.pl/artykul/wychozimyzafganistanu, [accessed 04.06.2025].

24 M. Pytel, B. Pytel, *Security in Afghanistan*, Zeszyty Naukowe. Wyższa Szkoła Oficerska Wojsk Lądowych 2013, no. 3, p. 22.

25 Ministry of Defence official website for the military mission in Afghanistan, Official *handover of Ghazni province to Polish command*, http://isaf.wp.mil.pl/pl/1_484.html, [accessed 26.04.2025].

the outskirts of Ghazni, the Polish military base was named after Jack Winkler[26]. The area of PKW responsibility in Ghazni province and the location of Polish bases where Polish soldiers were stationed is shown in sketch no. 2.

Sketch 2. Area of responsibility and location of Polish bases in Afghanistan.

Source: own compilation based on: G. Piątkiewicz, Socio-professional inclusion of International Security Assistance Force (ISAF) soldiers in Afghanistan, Krakow 2021, p. 60.

During the 7 years of the ISAF mission, Poles participated in 494 operations and 21,754 patrols. Approximately 33,000 soldiers served as part of fifteen contingents[27]. The high level of threat, as well as the number of operations carried out, contributed to the death of 40 soldiers and 2 military personnel, in addition 869 soldiers were injured[28].

As a reliable and loyal NATO member, Poland was actively involved, as part of ISAF, in several key programmes. One of the most important was the reconstruction of Ghazni Province, which was struggling with aggressive Taliban activities, the collapse of the local government administration, and the lack of basic services. In July 2007, Poland was put in charge of the Provincial Reconstruction Team (PRT Ghazni). Its main objective was to create a secure environment for the development of local institutions, infrastructure reconstruction and socio-economic support. The reconstruction plan was divided into four pillars: security, local administration, infrastructure development and socio-economic support. The large

26 Jacek Winkler – Polish mountaineer, opposition activist, partisan during the Afghan-Soviet war, photographer and journalist. A. Wojciechowska, Jacek Winkler – from mountaineering to Afghan partisans, Polski Przegląd Alpinistyczny, no. 2/2017, pp. 10-19.

27 T. Kowalik, The *Polish contingent in ISAF: operations and patrols 2003-2010*, National Security Review, no. 2/2011, pp. 48-51.

28 P. Gąsiorowski, *Balance of losses of the Polish Contingent in Afghanistan 2003-2010*, National Security Yearbook, vol. 10 (2015), pp. 75-76.

size of the contingent, as well as the high level of training of the soldiers, contributed to the completion of 99 infrastructure projects, 50 training projects, and 45 procurement projects. These projects, among others, contributed to the construction of 40 km of new roads, construction of 25 km of water supply network, construction of 5 bridges, construction and renovation of 19 schools, kindergartens and orphanages, construction of 3 hydroelectric power plants, construction and renovation of 4 dams, construction of sewage treatment plants, construction of rubbish dumps, renovation of 4 hospitals, expansion of the power grid of Ghazni city, development of green areas and service and technical areas, training of 4,000. people in administration, judiciary, education and vocational activation, and equipping 130 public facilities[29].

Another task was the establishment of a Crisis Management Centre (CZK) in Ghazni city. The CZK is tasked with collecting data in case the city's residents are threatened by a terrorist attack, fire or other unforeseen situations. The CZK has also been equipped with CCTV, which has provided an overview of the most threatening areas to public order. In addition to this, a voice notification system integrated with the CZK was set up in Ghazni. Megaphones placed in the city center make it possible to quickly and effectively notify residents of threats such as flooding or storms[30].

Humanitarian aid is another extremely important area of service activity of the ISAF PKW. Between 2008 and 2014, more than 130 tones of various types of donations, obtained from social partners and NGOs, were transported and distributed to the people of the province. Meanwhile, approximately 137 tones of various material resources (including medical equipment, medicines, clothing, food, etc.) were provided as aid from the resources of the Ministry of National Defence[31].

Crucial to ensuring community security in Ghazni province was the training of Afghan police officers and soldiers. This task was carried out by soldiers of the OMLT, POMLT and TSS teams[32]. Training of Afghan Security Forces also took place in Poland. At the Joint Force Training Centre (JFTC) in Bydgoszcz, 1052 soldiers and officers were trained[33].

The proper level of training of the Afghan Security Forces was confirmed by, among other things, the independent implementation of security for the 2014 presidential elections and the celebration of the 'Ghazni World Capital of Islamic Culture' festival.

In 2013, the NATO Commander-in-Chief (Admiral James G. Stavridis) awarded the 3rd Brigade of the Afghan National Army, stationed in Afghanistan, the title of

29 P. Kowalski, *Civil-military projects* of *the Polish Contingent in Afghanistan*, Militaria XXI Wieku, no. 3/2012, pp. 58-62.

30 P. Nowak, *Integrated emergency alert systems in Afghanistan: the example of Ghazni*, Security and Military Technology, No. 1/2019, pp. 112-114.

31 G. Piątkiewicz, Socio-professional inclusion of International Security Assistance Force (ISAF) soldiers in Afghanistan, Krakow 2021, p. 65

32 Ł. Jureńczyk, *Polish mission in Afghanistan*, Wydawnictwo Uniwersytetu Kazimierza Wielkiego, Bydgoszcz 2016, p. 280.

33 G. Piątkiewicz, Inclusion…, op. cit. s. 65.

best trained unit in Afghanistan. Afghan police officers, in turn, were considered among the most effective and best trained in the country[34].

The implementation of the tasks and projects presented has had a measurable impact on temporarily improving the living and security conditions of the people of Ghazni Province[35].

After the end of the ISAF mission (2014), Polish soldiers carried out tasks in Afghanistan as part of the Resolute Support Mission (until 2021). It was a mission of an advisory nature, without involving Polish soldiers in combat operations[36]. The military contingent consisted of approximately 200 soldiers and was deployed in three bases: Bagram, Kabul, Gamberi.

It should be noted that in Afghanistan the Poles had at their disposal: wheeled armoured personnel carriers (KTO) Rosomak, wheeled armoured vehicles with increased resistance to mine and ambush attacks MRAP (Mine Resistant Ambush Protected), helicopters Mi-17, helicopters Mi-24, cannon howitzers "DANA", artillery reconnaissance radar "LIWIEC" and unmanned means of reconnaissance (BSR): Aerostar, Orbiter and Scan Eagle[37].

Social assessment of the mission

One of the highlights of the official ceremony marking the end of the ISAF operation was a speech by Afghan Interior Minister Mohammad Hanif Atmar, during which he referred to the heroism and sacrifice of ISAF soldiers. Coalition troops suffered very heavy losses on Afghan soil, with more than 2.5 thousand soldiers killed and more than 10 thousand wounded[38]. The following are the personnel losses of each coalition country: Australia (28), Belgium (1), Canada (157), Czech Republic (4), Denmark (41), Estonia (8), Finland (2), France (70), Georgia (9), Germany (53), Hungary (6), Italy (39), Jordan (2), Latvia (3), Lithuania (1), Netherlands (25), New Zealand (2), Norway (10), Poland (40), Portugal (2), Romania (19), Republic of Korea (1), Spain (33), Sweden (5), Turkey (2), United Kingdom (377), United States of America (1725)[39].

The ISAF operation, despite being a global security operation and an attempt to stabilise the situation in Afghanistan, was regarded by the societies of many countries as an action to the detriment of the implementing countries. The societies of Western countries feared possible retaliatory actions, by Afghan terrorists. Therefore,

34 E. Wessels, Building the Afghan National Security Forces: the ANA and ANP in 2013, Journal of Strategic Security, vol. 6, no. 2 (2013), s. 45-52.

35 *Implementing the Ghazni Province Reconstruction Programme*, https://isaf.wp.mil.pl/pl/1_2486.html [accessed 30.05.2025].

36 T. Kowalik, *The Polish contingent in the Resolute Support mission in Afghanistan 2015-2021*, National Security Yearbook, vol. 12 (2019), pp. 142-145

37 J. Kamiński, *Equipment of the Polish Contingent in Afghanistan – from Rosomak to drones*, Nowa Technika Wojskowa, no. 1/2018, pp. 55-61.

38 A. Zieliński, *Ending the ISAF mission: ceremony and Afghan perspective*, Political Studies, no. 21 (2015), s. 112-118.

39 *Afghanistan Fatalities*, http://icasualties.org/App/AfghanFatalities?page=6&rows=10, [accessed 05.06.2025].

the ISAF mission had very low public support. This was influenced by two factors, the deaths of soldiers and inadequate media coverage of ISAF mission activities[40].

International evaluation of the mission in Afghanistan

The opinion of the majority of the international community on the NATO intervention in Afghanistan was negative from the outset. In a 2007 global survey of 47 countries conducted by the Pew Research Institute (PRI), only in Israel and Kenya did a majority of respondents express positive feelings towards the presence of allied troops in Afghanistan. In contrast, respondents from 32 countries wanted forces withdrawn from Afghanistan as soon as possible[41].

In 2008, in another survey, PRI polled the opinion of 25 countries on the withdrawal of coalition troops from Afghanistan. 21 countries were in favour of withdrawing their troops from Afghanistan as soon as possible. 50% support for leaving troops until the situation stabilises was expressed by the United States of America, Australia and the United Kingdom[42].

In 2009, NATO asked member states to increase the number of troops in Afghanistan. The citizens of most countries were against it: Germany – 63%, France – 62%, Poland – 57%, Canada – 55%, UK – 51%, Spain – 50% and Turkey – 58%[43].

Another survey (a group of 22 countries) was carried out in 2010. The only country where a majority of the public was in favour of the continued presence of coalition troops in Afghanistan was Kenya 57%[44]. The biggest supporters of the withdrawal of forces from Afghanistan were Germany (63%) and France (62%). In Poland, 57% of respondents were in favour of troop withdrawal[45].

According to a survey conducted by the German Marshall Fund of the United States (June 2011), for the first time, the withdrawal of Nato troops from Afghanistan was supported by such a large number of respondents in the United States (66%) and the European Union (66%). The average result of support for keeping troops in Afghanistan was (29%). Only 3% of respondents wanted an increase in the size of the force[46].

In 2018, a survey was conducted in the US to take stock of the activities of coalition troops in Afghanistan. Only (18%) of surveyed Americans considered the operation a success. In contrast, (39%) of respondents considered participation in the war a mistake. Despite the end of the ISAF operation, a part of the public demanded

40 M. Brown, Public Perception and Media Framing of NATO's ISAF Mission in Western Societies, Journal of Military Media Studies, vol. 5, no. 2 (2014), s. 78-92.

41 *Global Unease With Major World Powers. 47-Nation Pew Global Attitudes Survey*, https://www.pewresearch.org/global/2007/06/27/global-unease-with-major-world-powers, [accessed 14.04.2025].

42 Ibid.

43 R. Heimlich, *NATO Opposition to More Troops in Afghanistan*, Pew Research Center Portal, https://www.pewresearch.org/fact-tank/2009/09/15/nato-opposition-to-more-troops-in-afghanistan, [accessed 14.05.2025].

44 Kenya is not a formal member of NATO. However, for the United States, it is a major non-NATO ally (MNNA). It has a close defence and security relationship with the US.

45 The Economist portal, *Losing Afghanistan?* https://www.economist.com/leaders/2009/08/20/losing-afghanistan [accessed 14.05.2025].

46 Z. Nyiri, *Transatlantic Trends: Public Opinion and NATO*, The German Marshall Fund of the United States, https://www.gmfus.org/search/troop%20withdrawal?page=7 [accessed 14.05.2025].

(24%) the complete withdrawal of troops from Afghanistan. Only (18%) of respondents indicated that the current number of troops should be maintained. In contrast, (44%) of respondents opposed the US commitment to building democracy, ensuring equal rights for citizens and developing education in Afghanistan. (57%) of respondents would immediately support a decision to withdraw troops[47].

The results of a survey (Pew Research Institute – June 2019) of US veterans are interesting. (58%) of those surveyed indicated that being involved in the conflict in Afghanistan was not worth it. The opposite view was held by 33% of the military respondents. US veterans rated the intervention in Iraq even worse 64%[48].

When analysing the attitude of international public opinion towards the intervention in Afghanistan, reference should also be made to the Afghan people. In 2005, a positive opinion for the military intervention was expressed by (83%) of the respondents, of which (68%) were of the opinion that the coalition's tasks were being performed correctly. In the following four years, the positive assessment of the operations decreased significantly and in 2009 it was (47%) and (32%).

Year by year, support for attacks on coalition forces gradually increased: 2006 (13%) 2009 (25%). In 2009, a reduction in the number of NATO troops was supported by (44%) of citizens.

It is also puzzling to compare the results of surveys on feelings of security. In 2005 (72%) Afghans indicated that they felt safe, while in 2009 their sense of security was rated positively (55%) by respondents. There were also provinces in Afghanistan where only a few percent of respondents felt safe, e.g. Helmand 14%[49].

Since the beginning of the intervention in Afghanistan, numerous marches and protests have been organised around the world calling on the US and the North Atlantic Alliance to withdraw troops. Among other things, the lack of legitimacy of the action according to international law, the deaths of many servicemen and civilians, the huge financial outlay, and accusations of the US satisfying its own interests were pointed out. In 2015, an open letter from Czech Lieutenant Colonel Mark Obrtel (a veteran of the Afghanistan mission) to the Czech Defence Minister, in which he returned the war decorations awarded to him and called NATO "a criminal organisation conducting fraudulent activities around the world", resonated loudly in international circles[50].

47 *Walter McDougall on the Tragedy of U.S. Foreign Policy*, https://www.charleskochinstitute.org/news/afghanistan-17-anniversary-poll/W, [accessed 15.05.2025].

48 *Majorities of U.S. veterans, public say the wars in Iraq and Afghanistan were not worth fighting*, https://www.pewresearch.org/fact-tank/2019/07/10/majorities-of-u-s-veterans-public-say-the-wars-in-iraq-and-afghanistan-were-not-worth-fighting, [accessed 15.05.2025].

49 *Afghanistan: Where Things Stand. Support for U.S. Efforts Plummets Amid Afghanistan's Ongoing Strife*, http://abcnews.go.com/images/PollingUnit/1083a1Afghanistan2009.pdf, [accessed 15.05.2025].

50 *An open letter by Mark Obrtel to Minister of Defence of Czech Republic*, https://www.chroniclesmagazine.org/a-quiet-european/, [accessed 15.05.2025].

Polish assessment of the mission in Afghanistan

At the beginning of 2001, the Public Opinion Research Centre (CBOS) published the results of a survey on the American-British intervention in Afghanistan. (63%) of those surveyed expressed support for the action taken, while (60%) feared that armed intervention could lead to World War III[51].

CBOS asked the public about their opinion on sending Polish troops to Afghanistan (2002). Opinion was very divided – (43%) supported the army's participation in the operation and exactly the same number were against it. The NATO operation itself was supported by more than two-thirds of the respondents (68%). However, fear of terrorist attacks was expressed by (49%)[52].

Year by year, public support for the participation of Polish soldiers in the in the mission decreased. When respondents were asked in 2006 whether they supported the decision to of increasing the size of the Polish Military Contingent, (73%) of respondents expressed their opposition.

There was also a noticeable division of public opinion in the area of the anticipated effects of the Polish Army's participation in foreign missions. (41%) indicated that such activities significantly contribute to strengthening Poland's position in the world, while (39%) of respondents did not share this opinion. As many as (79%) of respondents feared that military involvement in foreign missions might result in terrorist attacks. This attitude may have been influenced by the terrorist attacks carried out by Al-Qaeda in Madrid (2004) and London (2005)[53].

Opinion on the intervention in Afghanistan was also surveyed among soldiers of the Polish Army. professional soldiers about the threat to Poland's security. Concerns about the country's security in the context of the war in Afghanistan were held by (2%) of respondents in 2005, in 2007 (11%) and in 2010 (20%). This upward trend may have been influenced by the developing instability in the Middle East and the increase in terrorist activity in Europe[54].

In 2007, CBOS conducted a survey in which (75%) of respondents did not support Polish involvement in the operation in Afghanistan. Support for the mission was declared by every fifth respondent (20%), while (5%) of respondents had no opinion on the subject. The death of the first Polish soldier, Second Lieutenant Łukasz Kurowski from the 10th Armoured Cavalry Brigade, reinforced the negative attitude of the public towards Poland's involvement in the ISAF mission (77%)

51 *Polish reactions to the bombing of Afghanistan and opinions on terrorism*, https://www.cbos.pl/SPISKOM.POL/2001/K_150_01.PDF, [accessed 16.05.2025].

52 *Afghanistan: Polish soldiers' departure and opinions on NATO operations*, https://www.cbos.pl/SPISKOM.POL/2002/K_019_02.PDF, [accessed 16.05.2025].

53 *Public opinion on the participation of Polish soldiers in missions abroad*, https://cbos.pl/SPISKOM.POL/2006/K_161_06.PDF [accessed 16.05.2025].

54 A. Orzyłowska, *Społeczne aspekty udziału polskich żołnierzy w misji wojskowej w Afganistanie (Social aspects of the participation of Polish soldiers in the military mission in Afghanistan)*, p. 86, after: WBBS, *Generalny sondaż nastrojów żołnierzy zawodowych w latach 2007-2011.*

of respondents were against the mission's continuation, while (73%) of respondents were of the opinion that the ISAF mission would not contribute to peace in Afghanistan[55].

The very low level of support for the participation of Polish soldiers in the ISAF mission remained at a similar level over the following years. This may have been influenced, among other things, by successive casualties among Polish soldiers. On 10 August 2009, Captain Daniel Ambrozinski was killed in an ambush set by the Taliban. The officer's death further increased public doubts about the justness of the stay of Polish soldiers in in Afghanistan.

The most likely key reason for public opposition was scepticism about the possibility of peace in Afghanistan. In addition, media reports of further civilian and soldier casualties created a picture in which the material costs and loss of life were out of all proportion to the benefits gained.

Political situation and human rights after the departure of NATO troops from Afghanistan

After the end of the ISAF mandate (31.12.2014), Afghanistan continued to be led by the government of President Ashraf Ghani[56]. The Afghan president was supported by NATO's Resolute Support mission (2015-2021). Its mandate was to train and advise the Afghan Security Forces (ANSF). However, the lack of a proper political strategy, as well as growing tribal and ethnic tensions, was a major impediment to the consolidation of central power.

In Kathmandu, the capital of Nepal, peace negotiations with the Taliban began in 2019 and continued in the Qatari capital Doha (2020). The start of negotiations was influenced by the United States, which reached an agreement with the Taliban in February 2020 (Doha Agreement)[57].

The United States of America conducted negotiations with the Taliban bypassing the Afghan government. This way of conducting policy was criticised by world experts. It should be added that the whole idea of the ISAF operation was to cooperate with the government and build its social standing. The US actions significantly

55 *Public opinion on the participation of Polish soldiers in missions abroad and recent events in Iraq*, https://www.cbos.pl/SPISKOM.POL/2007/K_019_07.PDF, [accessed 16.05.2025].

56 Ashraf Ghani was twice elected president of Afghanistan (2014 and 2019). He was accused of forgery and corruption, which undermined the population's trust in state institutions. *Afghanistan's Ghani Wins slim majority in presidential vote, preliminary results show*, https://www.washingtonpost.com/world/afghanistans-ghani-wins-slim-majority-in-presidential-vote/2019/12/22/73355178-2441-11ea-b034-de7dc2b5199b_story.html, [accessed 05.06.2025].

57 The Doha negotiations between the US and the Taliban (launched in September 2019) were the culmination of an of an 18-month diplomatic process aimed at ending the ongoing US intervention in Afghanistan since 2001. After Donald Trump took office, for the first time, (2017), Zalmay Khalilzad, the US representative for Afghanistan, stepped up talks, arguing that withdrawing troops was the most effective way to avoid further US troop casualties and financial costs. *Taliban-US agreement: How the world reacted*, https://www.aljazeera.com/news/2020/2/29/taliban-us-agreement-how-the-world-reacted, [accessed 05.06.2025].

weakened the government's defence capabilities, which consequently led to the collapse of the Afghan forces after the withdrawal of international troops[58].

Although the Doha agreement provided for monitoring mechanisms, it did not set out any specific criteria for assessing the reduction of violence, nor did it indicate the sanctions that might be imposed for its violation. Civilians and government forces were left without any physical or legal support. Table 2 provides details of the agreement.

Table 2: Details of the Doha Agreement

No.	Category	Order	Details
1.	Withdrawal of US/NATO troops	Gradual reduction in numbers	Reduction of US forces in up to 135 days from 29.02.2020 to 8,500 troops. Before 01.05.2021 reduction to 2,500 US troops. After reaching 2,500 troops withdrawal of all NATO combat troops
2.	Anti-terrorism guarantees	Ensuring that Afghanistan does not serve as a base for attacks	The Taliban has committed that Afghan territory will not be used to plan, train or launch attacks against the US and allies. Establish mechanisms to monitor the fulfilment of these commitments (oversight committees, intelligence sharing).
3.	Intra-Afghanistan negotiations	Start of talks between the Afghan government and the Taliban	Not later than 10.03.2020 start of talks, Government – Taliban. First 7 days ceasefire jointly verified by Taliban and third parties.
4.	Exchange of prisoners	Release of prisoners in exchange for the release of government forces	The Afghan government was to release up to 5,000 Taliban prisoners by 10.03.2020. Condition Taliban to release 1,000 members of the security forces of the Islamic Republic of Afghanistan. Verified, unequivocal amnesty supervised by UN commission, government, Taliban and Pakistan, US and Qatar.
5.	Timeframe	Deadlines for key commitments	29.02.2020 signing of agreement in Doha. By 10.03.2020 reduction of violence by 80%, prisoner exchanges, start of intra-Afghan negotiations. 01.05.2021 withdrawal of all US and NATO forces, provided the anti-terrorist clause is respected.
6.	Verification mechanisms	Structures overseeing the fulfilment of conditions	Four bilateral commissions: US-Taliban, anti-terrorism clause oversight. US-Republic verification of violence reduction. Republic-Taliban dialogue on unrest and civilian casualties. United Government coordination of contentious issues. Coordination Operations Centre in Doha: collection of reports and recommendations.

Source: own compilation based on: A. Giustozzi, The Taliban at War: 2001-2020, Oxford University Press, 2020, pp. 172-178.

58 A. H. Cordesman, *Afghanistan: The Peace Negotiations Have Become an Extension of War by Other Means*, https://www.csis.org/analysis/afghanistan-peace-negotiations-have-become-extension-war-other-means, [accessed 06.06.2025].

The Doha Agreement brought a short-lived calm only in the first week of March 2020. (a decrease in attacks of around 80 percent). Attacks on Afghan forces and violence against civilians quickly returned to high levels (April 2020). Despite this, the withdrawal of NATO and US troops was carried out on schedule. Other commitments, notably counter-terrorism guarantees and intra-Afghan negotiations, were implemented piecemeal, some of which were broken in practice (the Taliban tolerated the presence of ISIS-K and al-Qaeda and fought government forces)[59].

The international community has reacted to this development. In the United States of America, Republicans and Democrats voiced their concerns. The former supported the agreement as an opportunity to reduce US involvement, but criticised it for excluding the Afghan government from peace negotiations. In contrast, the other political side warned that the agreement could quickly lead to the collapse of the Afghan government.

The Afghan government initially opposed the terms of the agreement, but supported it on 5 March 2020, recognising that it was the only chance to end the war[60].

The UN Security Council adopted Resolution 2513 on 10 March 2020, which called on all parties to fully implement the agreement and start intra-Afghan negotiations as soon as possible. In turn, the EU promised financial support of up to €500 million for peace programmes if the agreement proves sustainable[61].

Neighbouring states i.e. Pakistan and Iran supported the deal as they saw it as an opportunity to stabilise the region. Besides, Iran pressured the Taliban to respect the rights of the Shia minorities in Afghanistan[62].

Despite the US announcement that the agreement reached would be sustainable and improve security in Afghanistan, on 15 August 2021 the Taliban entered Kabul, overthrowing the Ghani government. This led to the swift seizure of control of the entire national territory and the creation of the 'Islamic Emirate of Afghanistan'[63].

For the first few months of Taliban rule, there was a relative decline in the level of clashes, the main anti-Taliban groups were disorganised and ISIS-K (Islamic State of Khorasan) had limited capacity to conduct operations. However, from 2022 onwards, ISIS-K attacks increased, particularly in Nangarhar, Kunduz and Kabul provinces, including suicide attacks in markets and state institutions. On

59 J. F. Sopko, *Why the Afghan government collapsed*, https://www.sigar.mil/Portals/147/Files/Reports/Audits-and-Inspections/Evaluation/SIGAR-23-05-IP.pdf, [accessed 06.06.2025].

60 *Taliban-US agreement: How the world reacted*, https://www.aljazeera.com/news/2020/2/29/taliban-us-agreement-how-the-world-reacted, [accessed 06.06.2025].

61 L. Maizland, *U.S.-Taliban Peace Deal: What to Know*, https://www.cfr.org/backgrounder/us-taliban-peace-deal-agreement-afghanistan-war, [accessed 06.06.2025].

62 *USA-Taliban Peace Deal*, https://www.drishtiias.com/daily-updates/daily-news-analysis/usa-taliban-peace-deal, [accessed 06.06.2025].

63 A. Rashid, *The Taliban's Return: Afghanistan in 2021*, Foreign Affairs 100, no. 5 (2021), pp. 58-68

average, there have been several large explosions every month, causing numerous civilian casualties and undermining the stability of the Taliban regime[64].

The Taliban tried to build their own security forces (they recreated the former ANA/ANP structure as the 'Islamic Emirate Security Forces'), but due to a lack of professional training and internal tribal tensions, most provinces were only nominally controlled. In the mountainous regions in the north and in the belt near the border with Pakistan, underground resistance cells (including the Republican Freedom Front – NRF) and ISIS-K front groups continued to operate, which meant that the Taliban had to constantly pull resources away to suppress local insurgencies and terrorist attacks[65].

After the Taliban seized power in August 2021, Afghanistan experienced profound changes in its political and social structure. The Taliban formed a government composed exclusively of members of their movement, which led to the marginalisation of other ethnic and political groups and a weakening of the legitimacy of the government in the eyes of citizens and the international community[66].

Economic and humanitarian crisis

Human rights, especially those of women and minorities, have been systematically violated since the Taliban took power. Women have been virtually excluded from public life, denied access to secondary education and many forms of employment. They have been banned from working in NGOs and restricted from moving around without the presence of a male guardian (mahram)[67].

Afghanistan is currently facing one of the most severe humanitarian crises in the world. According to UN data, by 2025, some 22.9 million Afghans are in need of humanitarian assistance, including 14.8 million suffering from hunger, while 14.3 million have limited access to health care[68].

Since 2021, the country's economy has shrunk by around 30-40%, unemployment has risen to 40%. The freezing of central bank assets and the withholding of foreign development and military aid, which had previously accounted for 75% of the budget, led to the collapse of public finances[69].

64 A. Giustozzi, *The Islamic State in Khorasan Province: a Case Study in the Strategic Implications of the Islamic State in Afghanistan*, CTC Sentinel 15, no. 6 (2022), s. 21-28.

65 A. Giustozzi, *Taliban's Security Forces and Insurgency Challenges: Post-2021 Dynamics in Afghanistan*, Small Wars & Insurgencies, vol. 32, no. 4 (2023), s. 615-622.

66 A. Rashid, "The Taliban's Return: Governance and Exclusion in Afghanistan." Foreign Affairs, vol. 101, no. 5 (Sept./Oct. 2022), pp. 78-87.

67 E. Ferris, *Taliban Gender Policies and the Erosion of Women's Rights in Afghanistan*, Journal of International Women's Studies, vol. 23, no. 4 (2022), s. 45-59.

68 United Nations Office for the Coordination of Humanitarian Affairs (2025), *Global Humanitarian Overview 2025. UNOCHA, New York*, pp. 22-23.

69 F. Nawabi, *Economic Collapse in Afghanistan: Aid Dependence and Fiscal Crisis*, Journal of South Asian Development, vol. 45, no. 1 (2022), s. 88-104.

Education

The Taliban have imposed a number of restrictions on women's education. Girls are not allowed to attend secondary schools and universities have been closed to women. Women's work in the public sector has been restricted to jobs 'unsuitable for men' and many women have lost their jobs due to new regulations[70].

UNICEF called for the ban on girls' education to be lifted, stressing that lack of access to education can lead to disastrous consequences for society as a whole, including a shortage of skilled health workers and an increase in maternal mortality and children[71].

Conclusions

Thirteen years of tasking by the International Security Assistance Force (20.12.2001–28.12.2014) have contributed to strengthening Afghanistan's internal security structures. However, decisions taken after that time no longer had a positive impact on the country's development. The impasse was exploited by the Taliban, who declared in Doha, their readiness to take responsibility for the whole of Afghanistan.

Several factors influenced the decision to withdraw NATO troops from Afghanistan. Among the most important we can include high personnel costs (loss of soldiers) and financial costs, as well as the negative attitude of public opinion and the governments of the countries sending soldiers to the mission area.

The effect of the actions taken by NATO and the United States of America is to exclude Afghanistan from many international forums and initiatives, including the United Nations Framework Convention on Climate Change (UNFCCC). Lack of access to climate funds prevents the country from adapting to the effects of climate change, such as droughts and floods, which destroy crops and exacerbate the food crisis.

Afghanistan's future is unknown. The key to breaking the impasse perhaps lies in restoring the ancient balance between central authority and the power of local tribal structures, between respect for Sharia law and acceptance of customary urf law[72], between sovereignty and rational compromises with neighbours.

Afghanistan, as the glue of Central and South Asia, has a chance of survival, however, provided it adapts to changing conditions – but only if it does not reject its own identity.

In conclusion, it is not possible to assess conclusively whether the attempt to introduce the rule of law and democracy in Afghanistan was a mistake. As a result of a comparison of the situation of the country during the period of ISAF operations

70 L. Safi, *Afghanistan's Education Crisis: the Taliban's Ban on Girls' Education*, World Policy Journal, vol. 39, no. 1 (2022): 80-95.

71 J. Smith, *The Consequences of Banning Girls' Education in Afghanistan: a UNICEF Perspective*, Journal of International Women's Studies, vol. 23, no. 3 (2022): 112-118.

72 Urf (Arabic: فرع) in Islamic law means 'custom' or 'locally accepted practice'. Its main features and meaning are: source of complementary law, condition of permissibility, examples of application. K. M. Hashim, *Principles of Islamic Jurisprudence*, Islamic Texts Society, Cambridge 2003, pp. 135-137.

and now under Taliban rule – it can be concluded that ISAF activities have had a positive impact on the security of citizens and the observance of human rights, mainly women's rights.

The information presented in this article supports the hypothesis that the ISAF mission was an initiative that made sense and had a positive impact on the security of the Afghan people, but its status should be based on long-term ideas. Thirteen years of the ISAF mission is far too short a time to bring lasting changes to the country and society.

The mission in Afghanistan should perhaps be based on similar assumptions, which have been consistently implemented since 1999 in the Balkans.

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CREATING VALUE FROM THE IMPLEMENTATION OF PROJECT PORTFOLIOS FOR THE DEVELOPMENT OF TERRITORIAL SECURITY SYSTEMS

Abstract

The article proposes a system-value approach to managing portfolios of projects for the development of territorial security systems. The author analyses modern approaches to project portfolio management, develops a methodology for determining the integral value of projects, and identifies key items for reconciling stakeholder interests. For the first time, the paper proposes an approach to defining and structuring the values of portfolios of projects for the development of territorial security systems, taking into account the multidimensional impact of projects on various

stakeholders. The article proposes measures to increase the level of stakeholders' interest in the creation of territorial security systems based on multi-criteria analysis and scenario planning. The practical significance of the work lies in the creation of a methodological framework for the development of models and methods that allow taking into account the value for public authorities, businesses, and NGOs when managing security project portfolios.

Keywords

project portfolio, territorial security systems, system-value approach, management, value, stakeholders, coordination of interests.

Introduction

Given the growing level of threats associated with man-made accidents, natural disasters, and social challenges, the relevance of our study is the need to improve approaches to managing security project portfolios [1-3]. This is especially true in the context of modern Ukraine, which is facing the consequences of hostilities that require urgent and comprehensive solutions to restore the territory and ensure the protection of the population. Justifying the structure of values created through the implementation of project portfolios not only contributes to a better understanding of their impact on society but also allows for transparency and efficiency in resource allocation [4]. Identifying the main subjects of stakeholder alignment helps to reduce conflicts that often arise due to different preferences and limited resources.

The purpose of the article is to substantiate the structure of values created in the process of implementing portfolios of projects for the development of territorial security systems, and also to identify the main subjects of reconciliation of stakeholders' interests to improve the efficiency of such portfolios.

To achieve this goal, the following tasks are to be performed: to analyze current approaches to managing security project portfolios; to develop a methodology for determining the values that are formed as a result of project implementation; to identify the key subjects of stakeholder interests at different stages of project implementation.

The paper proposes for the first time an approach to defining and structuring the values of portfolios of projects for the development of territorial security systems, which takes into account the multidimensional impact of projects on different stakeholders. The article also proposes measures to increase the level of stakeholders' interest in the creation of territorial security systems based on multi-criteria analysis and scenario planning.

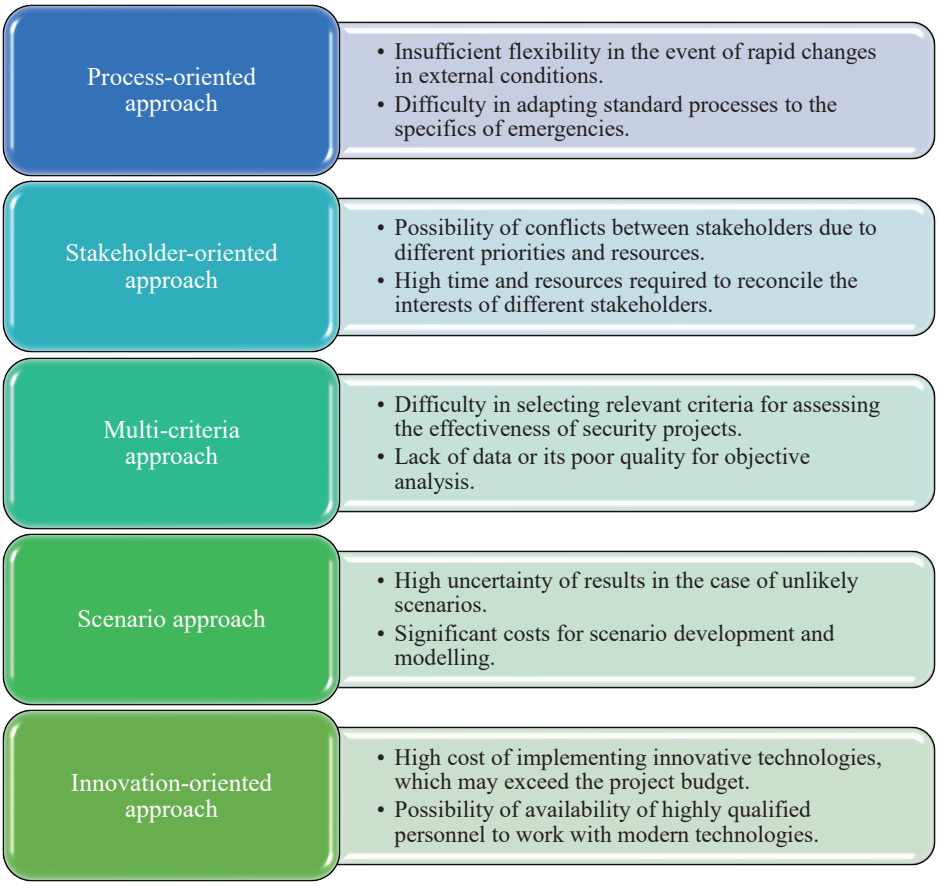
The practical significance of the work lies in the creation of a methodological framework for the development of models and methods that allow taking into account the value for public authorities, businesses, and NGOs when managing security project

portfolios. The results of the study contribute to ensuring transparency in decision-making, optimising the use of resources and increasing the level of public protection.

Thus, the study on the value creation from the implementation of project portfolios for the development of territorial security systems is a step towards improving the efficiency of risk management, aligning stakeholder interests and ensuring sustainable regional development.

The article analyses modern approaches to security project portfolio management. Managing security project portfolios is a complex process that involves coordinating resources, aligning stakeholder interests, and monitoring task performance [5-7]. Effective management of such portfolios requires the use of modern tools and techniques that ensure adaptation to a changing environment and an integrated approach to solving problems. This section analyses modern approaches to project portfolio management in the context of security (Fig. 1).

Figure 1. Modern approaches to project portfolio management and their shortcomings in terms of use in the development of territorial security systems



The presented Fig. 1 allows us to structure the main approaches to project portfolio management in the security sector and identify the key limitations necessary to increase their effectiveness in the context of the development of territorial security systems.

The process-oriented approach to project portfolio management focuses on streamlining processes and creating clear regulations for their implementation. In the context of security, this means the formation of successive stages of project implementation, from risk assessment to monitoring and mitigation. As noted by the authors [8-10], the successful application of this approach is possible only if procedures are standardized and modern management information systems are used. One of the key advantages of this approach is its ability to ensure transparency and control over project implementation. In particular, the standardization of management processes reduces the likelihood of errors in project implementation.

In today's environment, security project management is impossible without taking into account the interests of stakeholders. The stakeholder-oriented approach focuses on identifying key stakeholders and taking into account their needs at all stages of the project. Scholars [11-13] note that this approach helps to reduce conflicts between stakeholders and contributes to more efficient attraction of financial and organisational resources. The application of this approach in the security sector includes mechanisms for public participation in decision-making, the use of public feedback and the adaptation of projects to the real needs of the region.

The multi-criteria approach is based on the use of a system of criteria to assess the effectiveness of a project portfolio. In the security sector, this may include the level of risk reduction, economic benefits, improvement of social conditions, etc. According to studies [14-16], this approach allows for an objective assessment of the feasibility and priority of projects, especially in cases of limited resources.

The use of multi-criteria analysis helps to ensure a balance between short-term and long-term goals, as well as to reconcile the economic, social, and environmental aspects of projects.

The scenario approach is one of the most promising in the security sector, as it allows taking into account the dynamics of the environment and uncertainty. As noted in [17-19], this approach involves the development of alternative scenarios and modeling the response of the security system to these scenarios. For example, modeling the consequences of natural disasters or man-made accidents allows for the timely identification of weaknesses in the security system and the preparation of effective response measures. The scenario-based approach also provides management flexibility, allowing projects to be adapted to changes in the external environment without significantly reducing their effectiveness.

An innovation-oriented approach is also noteworthy, as it plays a key role in modern security project portfolio management. The introduction of new technologies, such as artificial intelligence, big data, and the Internet of Things, improves the quality of risk forecasting and coordination. As the authors of [20-22] emphasize,

innovations can significantly increase the effectiveness of emergency response through the use of automation processes and intelligent monitoring systems.

The analysis shows that modern approaches to managing security project portfolios are based on integration processes, technologies, and stakeholder interests. Each approach has its advantages and limitations, and their effectiveness differs depending on the specific conditions of project implementation. In practice, project management uses a combination of different approaches to ensure a comprehensive approach to solving security problems. However, when it comes to managing security project portfolios, a systemic and value-based approach should be used, which requires substantiation of the value structure from the implementation of these portfolios and the main subjects of reconciliation of their stakeholders' interests.

Materials and Methods

In our research on value creation from the implementation of portfolios of projects for the development of territorial security systems, we apply an interdisciplinary approach that combines methods of analysis, modeling, expert evaluation and scenario planning. The main attention is paid to identifying the factors that influence the creation of added value, as well as mechanisms for reconciling the interests of stakeholders.

The study uses a system-value approach, which allows the integrating various aspects of project portfolio management for the development of territorial security systems. This approach is based on the principles of system analysis, which provides a targeted perception of the object under study, and the value approach, which focuses on the creation and evaluation of values formed as a result of project implementation.

The system-value approach involves the study of territorial security systems as a multidimensional system that includes technical, social, economic, environmental, and infrastructural components. In the framework of the study, this allowed for a comprehensive analysis of the value of project portfolios, taking into account their impact on all key aspects of regional development. The main stages of applying this approach are identifying the values that ensure the results of project implementation, determining the relationships between them, and integrating these aspects into management mechanisms.

The study was based on the following sources of information. Data on implemented security project portfolios, including reports on initiatives in Ukraine and abroad. Expert opinions were obtained through a survey of security, project management, and regional development professionals. Scientific works and standards, such as PMBoK, PRINCE2, and ISO 21500, are used to analyze modern approaches to project management.

To achieve the research goal, the following methods of system analysis were used to identify the main components of territorial security systems and to identify the

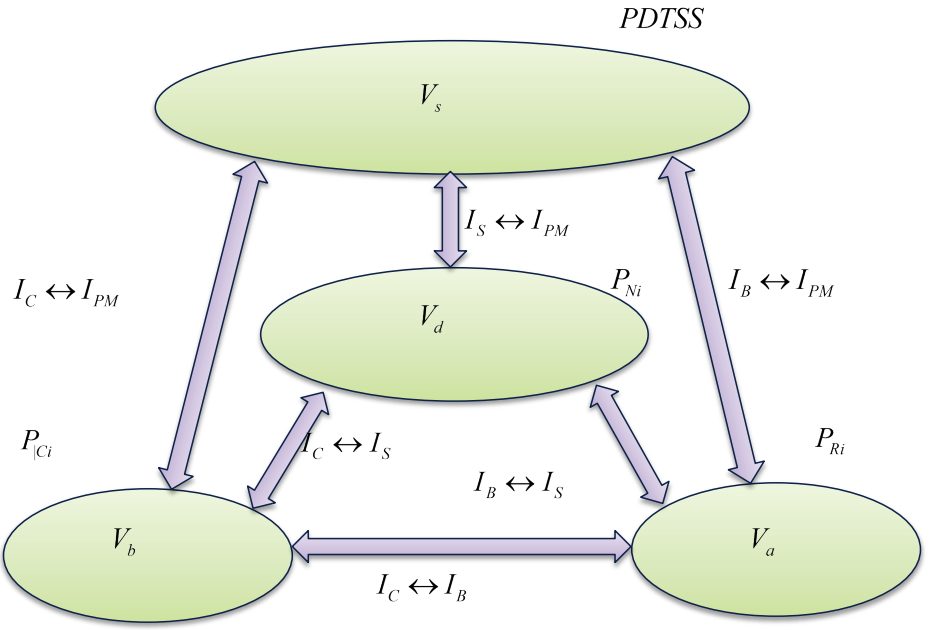
links between projects in the portfolio and their impact on the main components of value. Value analysis made it possible to develop a structure of values that are formed in the process of project implementation. The decomposition method was used to divide values into social, economic, environmental, and infrastructure components. Stakeholder mapping was carried out to identify the main groups of stakeholders (government, business, public, and international partners).

The application of the systemic-value approach allowed not only to take into account the multidimensionality of the projects, but also to provide a systematic understanding of their impact on the development of territorial security systems. This approach ensures the integration of various methods and tools, such as multi-criteria analysis, stakeholder mapping and scenario planning, creating a platform for the development of practical recommendations. Thus, the system-value approach in this paper is a methodological basis for comprehensive analysis, evaluation, and management of security project portfolios.

Results and discussion

The creation of each of the separate types of territorial disaster management units provides value for stakeholders and society. Value is the benefits from project products that relate to individual stakeholders and society for fulfilling the requirements specified in the mission of the project portfolios for the development of territorial security systems [23-24]. Therefore, in order to create value from the implementation of projects belonging to the portfolios of projects for the development of territorial security systems, it is necessary to satisfy stakeholders and society with their product, i.e. to receive benefits from it and to implement the project portfolio in accordance with the justified mission. Stakeholders of the projects belonging to the portfolios of territorial security system development projects are the state, the community, and business. At the same time, the values from the implementation of projects belonging to the portfolios of projects for the development of territorial security systems can be divided into basic (V_b), additional (V_a), added (V_d) and systemic ones (V_s) according to the peculiarities of their formation (Fig. 2).

Figure 2 – Structure of values from the implementation of project portfolios for the development of territorial security systems: $PDTSS$ – portfolio of projects for the development of territorial security systems; $P_{|Ci}$, P_{Ri}, P_{Ni} – community, regional and national level projects, respectively; V_b, V_a, V_d, V_s – respectively, basic, added, incremental and systemic value from project implementation; I_C, I_B, I_S, I_{PM} – the interests of the community, business, government and project managers, respectively



Basic values V_b are received by project stakeholders (P_{Ci}) at the community level, additional values V_a are received by project stakeholders (P_{Ri}) at the regional level, added values V_d are received by project stakeholders (P_{Ni}) at the state level, and systemic values V_s are formed by the office for managing the portfolios of projects for the development of territorial security systems.

The maximum systemic value V_s from the effective implementation of the portfolios of projects for the development of territorial security systems is obtained by all their stakeholders due to the systematic coordination of their interests (I_i) in individual projects, which ensures the growth of the basic (V_{bi}), additional (V_{ai}) and added (V_{di}) values of these portfolios:

$$V_s = \left(\{V_{bi}\} + \{V_{ai}\} + \{V_{di}\} + S_i \right) \rightarrow max. \quad (1)$$

Successful selection of projects for the development of territorial security systems portfolios, as well as coordination of the order of their implementation in a given administrative-territorial unit of the state, makes it possible to obtain synergy (S_i), i.e. an additional effect that significantly exceeds the sum of the effects of separately implemented projects. Systemic values (V_s) are received by all stakeholders in the portfolios of projects for the development of territorial security systems on the principle of emergence. That is, there are special benefits from the systematic implementation of projects in the portfolios of territorial security systems development that cannot be obtained without coordinated management decisions on a set of projects in a given administrative-territorial unit from a single centre, which is the project portfolio management office.

All i-th projects (P_{ji}) of j-th types belonging to the portfolios of territorial security system development projects are implemented on the basis of taking into account the interests of different stakeholders (I_i), which are agreed between them. The main stakeholders interested in the implementation of the TSS development projects P_{Ci} on the territory of communities are their residents or communities. Their main interest is to protect lives and material assets of the population on the territory of communities from the negative impact of disasters. These communities, through their local authorities, initiate projects (P_{Ci}) of TSS development on the territory of their communities by creating their own SFEs. The types and configuration of these formations are coordinated with the territorial departments of the SES representing the interests of the state (I_S) and comply with the current legislation on their establishment. These projects are part of the portfolios of projects for the development of territorial security systems. Accordingly, the interests of the community (I_C) should be aligned with the interests of project managers (I_{PM}), who ensure the formation of effective project portfolios and the creation of maximum value for all their stakeholders. At the same time, there are some business structures operating in communities that are interested in preserving material assets. At the same time, the interests of communities (I_C) and business structures (I_B) should be reconciled when implementing TSS development projects P_{Ci} in the territory of communities.

At the same time, there are business structures on the territory of certain communities that have a significant scale of activity or use various kinds of hazardous substances. At the same time, the SFSCPs of certain communities do not ensure full protection of their property, which, in the event of a disaster on their territory, requires the involvement of the regional level FRU. At the same time, the interests of business entities (I_B) and the state (I_S), which are represented by the territorial departments of the SES and the FRUs under their control, should be reconciled. At the same time, the implementation of the i-th TSS development projects in the region, which are also part of the portfolios of territorial security system development projects, requires coordination of the interests of business structures (I_B) and the state (I_S) with the interests of project managers (I_{PM}).

It should be noted that the interests of the state (I_S) are to ensure targeted organisational and regulatory impact on disaster prevention and response in certain territories of the state through the implementation of the SES development strategy of Ukraine. This strategy can be implemented through the implementation of project portfolios for the development of territorial security systems with maximum systemic value (V_S) for stakeholders. The main tasks facing the SES territorial offices and project managers are to ensure mission profiling and justification of an effective strategy and architecture of the territorial security system development project portfolios.

The effectiveness of the implementation of certain types of projects belonging to the portfolios of territorial security system development projects is determined by the quality of management decisions made at each level, taking into account the interests of stakeholders. It can be noted that each individual decision (U_{ji}) on the implementation of the *i*-th project (P_{ji}) of TSS development at the *j*-th level depends on the coordination of the interests of their stakeholders:

$$U_{ji}^{CB} = f\left(I_C \leftrightarrow I_B\right),\ U_{ji}^{CS} = f\left(I_C \leftrightarrow I_S\right),\ U_{ji}^{BS} = f\left(I_B \leftrightarrow I_S\right),$$

$$U_{ji}^{CPM} = f\left(I_C \leftrightarrow I_{PM}\right),\ U_{ji}^{BPM} = f\left(I_B \leftrightarrow I_{PM}\right),\ U_{ji}^{SPM} = f\left(I_S \leftrightarrow I_{PM}\right). \quad (2)$$

U_{ji}^{CB}, U_{ji}^{CS}, U_{ji}^{BS} – respectively, managerial decisions on the implementation of *i*-th TSS development projects at the *j*-th level due to the coordination of interests of the community and business structures, community and state, business structures and state; U_{ji}^{CPM}, U_{ji}^{BPM}, U_{ji}^{SPM} – management decisions on the implementation of the *i*-th TSS development project at the *j*-th level due to the coordination of interests of project managers with the interests of the community, business structures and the state; I_C, I_B, I_S, I_{PM} – the interests of the community, business, government and project managers, respectively.

At the same time, the systemic value of implementing portfolios of projects for the development of territorial security systems (V_s) depends on the respective sets of mutually agreed management decisions between their stakeholders:

$$V_s = f\left(\left\{U_{ji}^{CB}\right\},\left\{U_{ji}^{CS}\right\},\left\{U_{ji}^{BS}\right\},\left\{U_{ji}^{CPM}\right\},\left\{U_{ji}^{BPM}\right\},\left\{U_{ji}^{SPM}\right\}\right). \quad (3)$$

Based on a systematic analysis of the structure of values from the implementation of portfolios of projects for the development of territorial security systems and the interests of their stakeholders, we formulated the main subjects of their coordination in individual portfolios (Table 1).

Table 1 – Main subjects of coordination of interests of stakeholders in portfolios of projects for the development of territorial security systems

Stakeholders	Level of Implementation of i-th Development Projects for Territorial TSS			
	Community	Regional	State	Project Portfolio
Community	Configuration of projects and their products, resource volumes for implementation	Volumes of work execution in communities involving regional FRU	Volumes of work execution in communities involving state FRU	Priority of project implementation in communities
Business Structures	Volumes of community FRU involvement for business structures	Volumes of regional FRU involvement for business structures	Volumes of state FRU involvement for business structures	Funding volumes for i-th development projects for territorial FRU at j-th level
State	Regulatory and legal acts for community development	Regulatory and legal acts for regional development	Regulatory and legal acts for state development	Strategy for developing territorial FRU
	Volumes and sources of project funding in communities	Volumes and sources of project funding in regions	Volumes and sources of project funding for state projects	
Project Managers	Configuration of community-level projects and their products. Contents, timing, and resources. Basic project values.	Configuration of regional-level projects and their products. Contents, timing, and resources. Additional project values.	Configuration of state-level projects and their products. Contents, timing, and resources. Added project values.	Mission and architecture of the development project portfolios for territorial safety systems. Systemic portfolio values.

On the basis of the formulated subjects of reconciliation of interests of stakeholders of the portfolios of projects for the development of territorial security systems, management decisions are made both on the implementation of individual projects and systemic management decisions on the implementation of their portfolios. At the same time, the change in the quantitative value of the objects of coordination of stakeholders' interests at certain levels of implementation of TSS development projects changes the systemic value of the portfolios of territorial security system development projects and the quantitative value of synergy, which can take on positive and negative values. The variability of the direction of the synergy of the territorial security system development project portfolios is mainly caused by changes in the configurations of the project environment, the i-th territorial security system development projects, and their products.

Considering the life cycle of project portfolios for the development of territorial security systems, it can be noted that during this cycle, the processes of controlling systemic value should be carried out. This will allow timely changes in the structure of the portfolios of projects for the development of territorial security systems due to the inclusion of such projects at each level of implementation of these portfolios, which will ensure that the projected changing configuration of the project environment will provide maximum systemic value.

This is done on the basis of effective system management decisions made by project managers. The main specificity of these management decisions is that their justification should take into account the changing behavior of the project environment, which causes both value risks and risks of implementation of individual stages and projects of TSS development at certain levels of their portfolios.

Conclusions

The analysis of modern approaches to managing security project portfolios has shown that the most effective are integration approaches that combine process-oriented methodologies, consideration of stakeholder interests, use of multi-criminal analysis, and scenario planning. However, their adaptation to the specifics of territorial security systems requires taking into account the uncertainties created by the dynamic nature of the threat and increasing the flexibility of management mechanisms. It has been found that one of the approaches alone is not able to provide comprehensive coverage of security aspects, which emphasizes the need for an integrated approach.

The developed methodology for determining values allowed structuring the social, economic, environmental, and infrastructural types that are formed as a result of project implementation. The application of the system-value approach ensured the identification of an integral value that reflects the project's impact on the development of territorial security systems. The methodology takes into account not only several indicators but also qualitative aspects, which allow for a comprehensive assessment of projects and justify their priority within the portfolio.

The analysis of stakeholder interests showed that the key areas for coordination are resource allocation, determining the optimality of projects, monitoring results, and adapting to changes in the external environment. For each stage of project implementation, specific points of intersection of interests have been identified that need to be agreed upon to reduce conflicts and ensure transparency of management. The use of public participation mechanisms and regular feedback helps to increase the level of trust among all stakeholders.

Further research is needed to improve models and methods for assessing the values that are created in the process of implementing portfolios of territorial security system development projects, taking into account special conditions and constraints. It is also necessary to study the impact of different types of threats (man-made,

natural, social) on the structure of values and the effectiveness of the territorial security system development project portfolios. This is the basis for adapting the developed methodologies to the conditions of constant changes in the external project environment, in particular in the context of military operations, in order to ensure the sustainability of territorial security systems and achieve long-term socio-economic benefits for territorial communities.

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A SYSTEMIC APPROACH TO MANAGING PROJECT PORTFOLIOS FOR THE DEVELOPMENT OF TERRITORIAL SECURITY SYSTEMS

Abstract

The management of project portfolios for the development of territorial security systems (PPTSS) operates in a highly complex environment due to the dynamic nature of project settings, limited resources, and the absence of unified value assessment approaches for project outcomes. Traditional methods of feasibility assessment fail to account for the multidimensionality of hybrid projects implemented within the civil protection framework.

The systemic-value approach to managing PPTSS improves the rationale behind managerial decisions, reduces uncertainty risks at the planning stage, and ensures effective project execution. Future research should focus on enhancing modeling tools, identifying the characteristics of project environments, and establishing a dedicated scientific field in project management for security systems.

Keywords

project portfolio, territorial security systems, systems approach, simulation modeling, product value, hybrid projects, resource management.

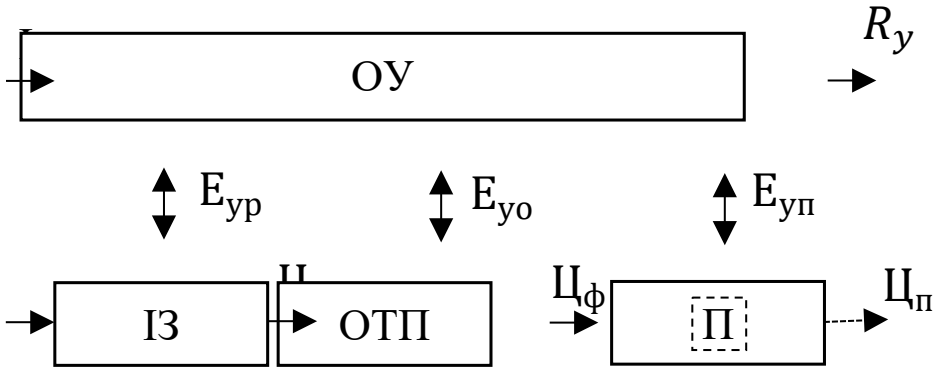
Introduction

Modern challenges in the field of national security of Ukraine, including war, hybrid threats, urbanization, environmental risks and social instability, require fundamentally new approaches to the organization and management of territorial security systems (TSS). The creation of adaptive, flexible and value-based management mechanisms is possible only with the use of modern concepts of project management, digital technologies and complex systems modeling.

The conceptual model for the development of the RTSS is the basis for further design of the project portfolio, which combines technical, organizational, regulatory and information components into a single managed system. Such a model allows to identify weaknesses in advance, define areas of strategic influence, and form a value-oriented development trajectory. Of particular importance is the inclusion in the model of mechanisms for assessing the effectiveness and value of projects, taking into account limited resources and environmental changes.

It is known that the portfolios of territorial security system development projects (TSSDPs) implemented in different regions of the state are production systems with a complex internal structure [1, 2]. Their life cycle is characterized by temporality, which always has a beginning and an end. The main components of these systems are the organizational and technical subsystem (ОТП), resource infrastructure (ІЗ), and management (ОУ) [3, 4]. In addition, the components of these systems include the product (П) itself, which is created (formed) as a result of the implementation of the PTSS (Fig. 1).

Figure. 1 – Block diagram of the "PPTSS" system



ОТП – organizational and technical subsystem; *ІЗ* – resource infrastructure; *ОУ* – management office; *П* – product; *І* – information; R_y, $R_П$ – resources for the management and implementation of the project portfolio; $Ц_з$ – the value of providing resources; $Ц_ф$ – value of product formation; $Ц_п$ – product value; $E_{уо}$, $E_{уп}$, $E_{ур}$ — respectively, the efficiency of resource management, project portfolio and product development

Methodology

The research aims to develop a systemic approach to managing PPTSS through virtual product system modeling, quantitative evaluation of value indicators, and assessment of project feasibility using simulation modeling.

The study applies methods of systems analysis, simulation modeling, statistical evaluation, expert judgment, and configuration modeling of organizational and technical systems. a conceptual framework for hybrid projects has been developed, including a multi-level model of dependencies between management efficiency and the final product's value.

A structural model of PPTSS is proposed, incorporating the organizational-technical subsystem, resource infrastructure, management office, and the final product. Functional dependencies are established. The feasibility of using statistical simulation modeling is substantiated for forecasting outcomes of hybrid projects in dynamic environments. Value indicators are classified as systemic, functional, and cost-related. The use of virtual system modeling at the design stage is justified to assess the potential value of territorial security system products.

The main part

Each of these components of the "PPTSS" system performs certain system functions [4, 5]: 1) ОТП – product formation; 2) ІЗ – resource supply; 3) ОУ – management; 4) П – application (use) of territorial security systems (TSS) for their intended purpose. These functions are performed with a certain value for stakeholders, who determine the value of product formation ⟦($Ц_ф$) and the value of resource supply ($Ц_з$), the efficiency of managing resources ($E_{уо}$), the project portfolio ($E_{уп}$) and its product ($E_{ур}$), and finally the value of using the product ($Ц_п$) of the PRTSB [6].

There are interconnections between these indicators. In particular, the value of using the product ($Ц_п$) of the project portfolio depends on the configuration of the product (К) of the СТРР. At the same time, $К_п$ depends on the value of the formation of the product ($Ц_ф$) o of the PRTSB and the efficiency ($E_{уп}$) of managing its formation [7, 8]:

$$Ц_п = f(К_п), f\left(Ц_ф, Ц_{ур}\right)$$

The value of forming a product ($Ц_ф$) of the project portfolio depends on the configuration of the organizational and technical subsystem ($К_{отп}$) of the RTSB. At the same time, $К_{отп}$ depends on the value of resourcing ($Ц_з$) in the RTSB and the efficiency ($E_{уо}$) of managing this portfolio:

$$Ц_ф = f\ \ (К_{отп}), К_{отп} = f\ \ \left(Ц_з, E_{уо}\right)$$

The value of resource provision ($Ц_з$) of a project portfolio depends on the configuration of the RTSB resource infrastructure (К). At the same time, $К_{із}$ depends on

the available resources ($R_п$) for the implementation of the CTPP and the efficiency ($E_{ур}$) of their management [9]:

$$Ц_з = f\ (К_{із}),\ К_{із} = f\ (R_{\ п},\ E_{ур})$$

The effectiveness of managing resources ($E_{уо}$), project portfolio ($E_{уп}$) and its product ($E_{ур}$) depends on the configuration of the management office ($K_{оу}$) of the PRTSB. At the same time, $K_{оу}$ depends on the available management resources ($R_у$) and information (I) for making management decisions [10]:

$$E_{уо}(E_{уп},\ E_{ур}) = f\ (К_{оу}),\ К_{оу} = f\ (R_{\ у},\ I)$$

These indicators are a generalized reflection of the set of actions that are purposefully carried out by the components of the PRTSB system [11]. They are evaluated at all stages of the life cycle of the PRTSB system, from the creation of the PRTSB system to its completion and use. During the life cycle of a PRTSB, these indicators change (are refined). Like the PRTSB itself, they gradually (sequentially) move from predicted (virtual) to real ones. In fact, the assessment of the real value indicators of the PRTSB may end at the moment of its completion, or it may continue until the product with the refined value indicators satisfying the stakeholders is obtained. So, the value indicators of the PRTSB are the milestones that reflect the stages of its implementation.

Let's consider the peculiarities of forming value indicators in the PRTSB system. At the stage of creating the PRTSS, first of all, the value indicators of the PRTSS product are predicted. The so-called feasibility study of the feasibility of creating a PRTSB product is nothing more than a forecast of the value ($Ц_п$) of the future PRTSS product. Without paying much attention to the details of this process, we note that the current methods of such forecasting (justification) of the value of the future PRTSS product are characterized not only by many shortcomings, but also by the objective uncertainty of many components of the virtual product. However, without such a justification, the implementation of the next stages of the life cycle of the PRTSS cannot begin.

The peculiarity of our proposed methodology of system-value management of the PRTSS is that it involves the use of a systematic approach to the creation and formation of project portfolios and modeling the use of their future product for its intended purpose to assess its value ($Ц_п$) [12, 13]. In other words, at the stage of creating a PRTSS, its future product should be modeled and the value of the virtual system – the PRTSS product – should be assessed. Although system modeling methods are sufficiently developed, they are still being developed today [14]. Their application is determined by the peculiarities of the future product of the PRTSS. In particular, in the sphere of civil protection of the state's population, the product of the PRTSS can be either an independent regional system or a component of the state system.

In this case, the configuration ($К_п$) of the PRTSS product is justified on the basis of design, which, as a type of intellectual activity, is based on knowledge about the physical and functional regularities inherent in individual objects of TSS, as well as elementary systems where these objects are used [15]. Without going into an in-depth analysis of this knowledge, which is the subject of research being developed by certain scientific fields in the field of civil protection, we note that knowledge about systems in different spheres of human activity is not currently combined into a corresponding independent scientific specialty, and therefore is being developed by the science of project and program management. In this case, virtual TSBs (production systems) with new elements (configuration objects) that are the product of the respective PRTSBs are mostly studied [16].

This ensures the prediction of value indicators for hybrid projects implemented by TSBs. To study such value indicators, in our opinion, it is advisable to use simulation modeling [17]. Given the likely nature of the behavior of many components of the project environment of these hybrid projects, statistical simulation modeling should be used, which is carried out in several stages:

1. a conceptual model of the project is being developed;
2. research and quantify the characteristics of the changing project environment;
3. the analysis reveals the cause-and-effect relationships between the components of hybrid projects;
4. a flowchart of the algorithm and a computer program for statistical simulation modeling of hybrid projects are being developed;
5. the model of hybrid projects is being validated;
6. preliminary modeling of hybrid projects is performed and the model is checked for adequacy;
7. experiments with the model of hybrid projects are planned;
8. final modeling of hybrid projects is performed;
9. statistically processed and analyzed data on the value indicators of hybrid projects with the product of the future PRTSS.

The obtained value indicators are compared with the corresponding indicators of real TSBs and a decision is made on the feasibility of including a particular project in the PRTSB.

At the same time, the creation of hybrid project models is accompanied by some difficulties in identifying the cause-and-effect relationships between their components, researching and quantifying the characteristics of the changing project environment, as well as the physical and functional indicators of configuration objects that characterize the virtual (future) PRTSB product. To get rid of these difficulties, it is necessary to justify idealizations, as well as to develop methods and techniques for studying and quantifying the characteristics of the changing design environment both directly and indirectly. With regard to the identification of physical and functional indicators of the configuration objects of the components of the virtual product of the PRTSB, they are substantiated by the methods of analogy, design, or expert evaluation [18].

The value indicators of the PRTSB product are divided into systemic, functional, and cost indicators. Systemic indicators of the PRTSB product are those that reflect the results of the intended use of the TSB in the given conditions of the project environment during the duration of their life cycle. Functional indicators of the PRTSB product are reflected by indicators of the intended use of the components of the virtual product. The indicators of the value of the components of the improved (developing) PRTSB product are mostly known. In addition, the characteristics of the changing project environment are known, which in turn reflect the conditions in which the PRTSB product will be used for its intended purpose. In particular, the components of these conditions include subject, climatic, territorial, production, and technological.

Subject conditions are divided into subject-quality and subject-scale components. The subject-quality conditions of the PRTSB product characterize the objects of disaster protection in terms of its quality – initial and final (desired). The subject and scale conditions of the PRTSB product characterize disaster protection objects in terms of the scope of work in hybrid projects. The subject conditions, together with the product of the PRTSB (a separate TSB), which is in a transitional state of its development, resources and technological conditions, are the basis for the implementation of the relevant hybrid projects implemented by the virtual system. At the same time, technological conditions reflect knowledge about the qualitative transformation of the existing technological system into the desired one. They define the nomenclature, sequence, and modes of work in hybrid projects that implement individual TSBs. The product of hybrid projects is formed on the basis of work performed in a virtual organizational and technical system.

Conclusion

So, a systematic approach to the management of the PRTSS involves the study of the properties and configuration of their dynamic product systems and project systems, which requires the development of specific methodological principles. The study of the properties of virtual product systems and project systems that are part of the PTSS is possible only on the basis of their simulation modeling. The development of models of virtual product systems and project systems of systems belonging to the PRTSB is one of the important stages of their research.

So, the conceptual modeling of a hybrid project within the portfolio of territorial security systems development is a strategically important task that ensures a high level of coherence between the needs of the state, the expectations of citizens, and the limitations of the resource environment. The proposed approach combines system analysis, value-based management methodology, and digital modeling capabilities, in particular, using BPMN, UML, and ER diagrams, which contributes to building a transparent decision-making architecture.

The developed model is the basis for the further development of an information technology for managing the CBRN portfolio, which will allow for real-time monitoring, analysis and adaptation of projects. In the future, such a model can be scaled up to meet the needs of other security sectors, including civil protection, critical infrastructure, and risk management. Implementing the conceptual model in practice will help build a more resilient, adaptive, and technologically advanced national security system.

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EDUCATION FOR SECURITY IN THE THIRD REPUBLIC OF POLAND – OPPORTUNITIES AND CHALLENGES

Abstract

The perception of security in the context of its threats by society or state authorities is conditioned by subjective and objective factors. Significant changes in Poland took place in 1989 due to the systemic transformation. Due to the changes in the political arena and throughout the country, reforms were initiated that covered various aspects of citizens' lives, including education. Currently, we are dealing with globalization, which guarantees many opportunities but also threats. Education for security should play an important role in raising awareness of young people about threats coming from various directions. The aim of the article is to present and at the same time indicate the opportunities and challenges as well as the characteristics of education for security in the Third Polish Republic. The literature on the subject and legal acts were used in this work.

Keywords

defence education, security, national security, Poland, education for safety, education

Introduction

Security threats and challenges have been the subject of dilemmas in the context of implementing appropriate education in various areas of life. The multi-faceted issue of security has a long history, dating back to the beginning of humanity. It identifies the need for security education to consider both countering threats and responding to the challenges of the contemporary world. The post-modern world is characterised by the emergence of completely new and unprecedented phenomena that need to be identified and understood, modern societies in turn need to respond to these phenomena appropriately.

The aim of the article is to present and at the same time discuss the opportunities and challenges of education for security in the Third Republic of Poland. In order to achieve the goal, the dogmatic-legal and historical-legal method was used, which turned out to be indispensable in the scope of the presented issue.

It is important to remember that school is the place where pupils acquire not only theoretical knowledge, but also many other and valuable skills that are useful in everyday life. Pupils should also be optimally prepared for life or health-threatening situations. It should also be noted that prolonged insecurity, regardless of the threat, can have negative repercussions both for the individual and for the society as a whole.

The concept of security is etymologically derived from the Latin terms *sine cura* and *securitas*, meaning a state free from care or danger. In Polish, the word originated from a combination of the words "bez" [without] and "piecza", where "piecza" means care and concern, so security means a situation in which such protection is not needed – a state free from danger.

It is assumed in the literature that security is dual in nature: on the one hand, it is the objective absence of threats that can be identified and diagnosed, and, on the other hand, a subjective feeling of certainty, depending on the individual's psychological construction, emotional state and socio-cultural conditions[1]. In this context, security occupies an important place in the hierarchy of human needs, as confirmed, among other things, by A. Maslow's classification of needs, where it is placed just after physiological needs.

Contemporary approaches to security are moving away from its static conception as a permanent state. Since the 1980s, it has been recognised that security is a social process, requiring the active action of public and private actors aimed at minimising the risk and strengthening the resilience of social and institutional systems.[2]

Security is also a multidimensional category. It can be considered internally – as the stability of the functioning of the state and its institutions, and externally[3] – as the absence of threats from the international environment. Nowadays, under conditions

1 M. Lisiecki, *Zarządzanie bezpieczeństwem publicznym*, Warszawa 2011, pp. 20-21.

2 *Słownik wyrazów obcych*, Warszawa 1980, p. 673.

3 Z. Nowakowski, H. Szafran, R. Szafran, *Bezpieczeństwo w XXI wieku. Strategie bezpieczeństwa narodowego Polski i wybranych państw*, Rzeszów 2009, p. 14.

of globalisation, these two dimensions are intertwined, as manifested, for example, by migration phenomena, international terrorism, cross-border crime or the effects of the COVID-19 pandemic.[4]

Parallel to these processes, we can see a shift in the centre of gravity of power from the central level to supranational and local structures, which is forcing new security systems management[5]. There is also a growing importance of non-state actors such as NGOs, transnational corporations or civic groups taking action for their own security.

In Poland, the definition-based and systemic approach to security has been reflected, among other things, in strategic documents such as *the National Security Strategy of the Republic of Poland (2007, 2020)*[6], where the security system[7] of the state is presented as a system of interacting subsystems: management, military executive (the Armed Forces of the Republic of Poland) and non-military executive[8]. This system should take into account political, military, social, economic, environmental and cultural security.[9]

In this context, education for security[10] becomes an important tool for strengthening social awareness and preparing citizens to respond to emergencies[11]. This is unequivocally confirmed in the Polish legal system – e.g. in Article 1, point 21 of the *Educational Law* Act, which imposes on the education system the obligation to disseminate knowledge on safety and to shape responsible attitudes in the face of threats.[12]

Safety education – basic principles

The contemporary concept of education for security is a development and reinterpretation of the earlier forms of civic and defence education, adapted to the challenges of the 21st century. According to Article 1, point 21 of the *Education Law* Act, one of the basic aims of the education system is to disseminate knowledge about security among children and young people and to shape responsible attitudes towards threats, including those related to emergencies and the use of information and communication technologies.

4 A. Czop, *System bezpieczeństwa publicznego Rzeczypospolitej Polskiej ze szczególnym uwzględnieniem prywatnego sektora ochrony*, Kraków 2016, p. 12.

5 P. Bogdalski, *Bezpieczeństwo kadrowe Policji na przykładzie przesłanek doboru do służby*, Szczytno 2015, p. 15.

6 Z. Nowakowski, H. Szafran, R. Szafran, *Bezpieczeństwo…*, p. 14.

7 J. Karp, *Bezpieczeństwo państwa*, [in:] *Konstytucja Rzeczypospolitej Polskiej. Komentarz encyklopedyczny*, W. Skrzydło, s. Grabowska, R. Grabowski (ed.), Warszawa 2009, pp. 108-109.

8 A. Pieczywok, *Bezpieczeństwo jako wartość edukacyjna i badawcza*, [in:] *"Rodzinna Europa". Europejska myśl polityczno-prawna na progu XXI wieku*, p. Fiktus, H. Malewski, M. Marszał (ed.), Wrocław 2015, p. 458.

9 J. Gierszewski, *Bezpieczeństwo wewnętrzne. Zarys systemu,* Warszawa 2013, p. 37.

10 See: A. Pieczywok, *Wybrane problemy z zakresu edukacji dla bezpieczeństwa. Konteksty, zagrożenia, wyzwania,* Warszawa 2011, pp. 21-24.

11 J. Gierszewski, *Bezpieczeństwo wewnętrzne…*, p. 36.

12 A. Czop, *System bezpieczeństwa publicznego…*, p. 13.

Although the term 'education for security' is relatively new, its content and functions are deeply rooted in national tradition and in the changing forms of state education[13]. Already at the time of the Knights' School, established in the 18th century at the instigation of King Stanisław August Poniatowski, emphasis was placed on the formation of a citizen-warrior – aware of his national heritage and prepared to defend the Republic. Similar aims guided military and defence training in the Second Republic, as well as patriotic education conducted under the conditions of the Polish Underground State.

In the post-war period, especially during the communist years, there were forms of education such as *military training*, *defence training* and *defence education*. Despite the ideological burden of those times, many curricular elements – such as preparation for responding to military threats, natural disasters or accidents – have remained relevant and are reflected in today's formula for security education.

Contemporary security education takes into account not only the defence aspect, but also non-military threats, including cyber security, environmental, health, social and cultural security. Its aim is not only to impart knowledge, but also to shape social competences, decision-making skills in crisis situations and to build civic attitudes based on responsibility, solidarity and readiness to cooperate.

It is worth emphasising that education for security has an integrating function – it combines formal education with the activities of public institutions, non-governmental organisations and services responsible for the security of the state and society. It thus constitutes an important element of the national security system, strengthening social resilience to internal and external threats.

Defence education in Polish history

In the 18th century in the Republic of Poland, defence education, referring to knightly traditions, was implemented in the first state military school (Szkoła Rycerska 17650 [the Knight's School 1765], and was based mainly on shaping physical fitness, acquiring the ability to use the principles of the art of war, strengthening patriotism in the spirit of the Enlightenment and shaping such personality traits as courage, bravery and discipline. The hero of two nations – Polish and American – Tadeusz Kościuszko was the most famous pupil of this school

On the other hand, during the partition period, in the face of the total loss of independence and the processes of Germanisation and Russification in the educational institutions controlled by the partitioners, the preservation of Polishness in the form of education in the mother tongue, culture, religion and history in Polish homes, associations and underground organisations, was a patriotic effort to regain independence. Generations of Poles brought up in this spirit, but not experiencing

13 A. Pieczywok, *Wybrane problemy z zakresu edukacji…*, p. 458; A. Skrabacz, *Edukacja dla bezpieczeństwa młodzieży wobec wyzwań i zagrożeń współczesności*, https://www.researchgate.net/publication/338352483_Edukacja_dla_bezpieczenstwa_mlodziezy_wobec_wyzwan_i_zagrozen_wspolczesnosci, pp. 69-71, [accessed: 16.09.2020].

freedom, joined the ranks of the insurgents of 1830-1831 (the November Uprising), 1848-1849 (the "Spring of Nations") or 1863-1865 (the January Uprising), which became the foundation of our nation's modern identity.

The regaining of independence in 1918 and the period of the Second Republic (1918-1939), was the time when the state authorities conducted various forms of military preparation and defence training. In turn, educational activity in this matter was directed by the State Office of Physical Education and Defensive Training. This took the form of defense training (PW), the primary aim of which was to prepare young people for military service in the national spirit, and the programme of classes included: physical education, civic education, military education, military training, often in such specialties as aviation, radio telegraphy, horse riding (the tradition of cavalry or lancers) or skiing. Military training was also extended to women volunteers (sanitary training). Distinguished reservists were willingly employed in sectors considered strategic for defence, such as the State Railways or the Polish Post Office. During the Nazi occupation, the young generation of Poles brought up in a free country engaged in armed struggle, and their greatest sacrifice was the Warsaw Uprising (PW).

After the Second World War, in the Polish People's Republic (PRL), which was dependent on the Soviet Union and was in a bipolar world on the eastern side of the 'Iron Curtain', according to the doctrinal assumptions of socialism, at all levels of national education and civic upbringing, young people were obliged to learn about defence in the context of the global nuclear conflict threatening the world between the two superpowers: the socialist USSR and the imperialist United States. Under the provisions of the Act on Universal Obligation to Defend the Republic of Poland[14], defence training (PO) was introduced into schools. The general public, on the other hand, was educated as part of the general self-defence of the population, both in workplaces and in local places of residence.

In the 1980s, when the People's Republic of Poland was immersed in the systemic and economic crisis of the declining socialist era, the concept of a positive understanding of state security in the context of such elements as its prosperity or the civilisational development of society emerged in the West. The result of this emerged in the form of distinguishing interrelated security sectors (multi-sectorality of state security). The Director of Research at the Centre for Peace and Conflict Studies at the University of Copenhagen, B. Buzan (1998), listed five dimensions of security: military, political, economic, social and environmental. The comprehensive theory of security by H. Bazan and other representatives of the so-called 'Copenhagen School' assumed that security should be viewed holistically as an indivisible category, because the overall security of an entity is formed by its external (international) and internal aspects. Therefore, state security and efforts to protect it have become a multidimensional process that goes beyond ensuring the survival of a nation. It encompasses the creation of such conditions to ensure the prosperity

14 *Act of 21 November 1967 on the Universal Duty to Defend the Republic of Poland* (Dz. U. of 1967, No. 44, item. 220).

of nations and their development freedoms/rights. According to a positive understanding of security, state activity in this area should not be limited to ensuring military security. Such activity must also take into account other levels of the state's functioning and such values as social peace, justice, the common good, prosperity and ecological balance. Hence, it is pointed out that state security is the sum of the different types of security and, in the case of the state, is not homogeneous, but a state of stable and balanced relations between political-military and socio-economic relations.[15]

The political and economic transformations of our country after the collapse of the bipolar world resulted in a shift away from understanding our security as a state in which the greatest threat was armed conflict and associating it with military defence against military threats, the realisation of which was associated with the art of war. This led to a change in the approach to the state security system in the work undertaken in the first decade of the 1990s by the Academy of National Defence (AON), which, given that the defence education of young people was always considered to be one of the priority goals of the state, led to a shift in focus from defence education to education for security. This brought with it changes in the interpretation of the traditional defence education of society and made it possible to replace it with the term security education. And one of the first definitions of the term stated that education for security formed a specific system of didactic and educational activities of the family, school, army, mass media, youth organisations and associations, workplaces and state and local government institutions. This system was to be aimed at the dissemination of a system of values, as well as the dissemination of the values themselves and the formation of skills that are important for ensuring national security.[16]

The aforementioned definition includes an extensive range of content, as education for security has been strongly linked to patriotic, civic, moral and defence education. And as a component of education in general, it is supposed to direct and integrate those educational efforts that are important for the formation of patriotic and defensive attitudes[17]. In this way, education for security has been linked to politics, the educational system, the state, the authorities and the whole system of governance, and the issues of its content have become important both for the society as a whole and for the individuals.[18]

In line with this theoretical basis for security education, four areas of security education activities have been identified, which have become known as thematic

15 M. Szuniewicz, *Ochrona bezpieczeństwa państwa jako przesłanka ograniczenia praw i wolności jednostki w świetle Europejskiej Konwencji Praw Człowieka,* Warszawa 2016, pp. 11-12.

16 B. Rudnicki, *Edukacja dla bezpieczeństwa i jej interpretacja*, [in:] *Edukacja dla bezpieczeństwa. Materiały z konferencji naukowej 23–24 maja 1994 r.,* Warszawa 1994, p. 11.

17 See: A. Zagórska, *Organizacje pozaparlamentarne jako instrument bezpieczeństwa państwa,* Kielce 2021.

18 E. Włodarczyk, *Edukacja dla bezpieczeństwa*, [in:] *Vademecum bezpieczeństwa*, O. Wasiuta, R. Klepka, R. Kopeć (ed.), Kraków 2018, p. 280; H. Elak, *Zagrożenie terrorystyczne jako nowe wyzwanie w edukacji dla bezpieczeństwa w szkołach ponadpodstawowych*, [in:] *Współczesna wielowymiarowość bezpieczeństwa narodowego. Wybrane problemy z zakresu bezpieczeństwa publicznego i powszechnego*, T. Kośmider (ed.), Kraków 2018, pp.144-145.

groups. The first is the cognitive one covering the system of concepts and knowledge related to how the world functions, the meaning of war and peace and the ways of achieving security. The second, a methodological one, concerns research activities based on modern research methods that are to be developed within the security sciences. The third one, in turn, is axiology, covering the issue of educating about various values, including security, on the assumption that the value is man himself and his health and life. In turn, the last group, i.e. the praxeological one, is the area of activities that define the ways of effective implementation of the assumptions of education for safety.[19]

In subjective terms, security education is concerned with three important aspects. The first is the individual safety of a person, because everyone has a characteristic system of values and social norms concerning also the canons that are related to individual safety, the second is the safety of groups of people, each of whom wants to feel safe in various interpersonal relations and social situations, and the third refers to the safety of state and international structures formalised from the point of view of the law, such as the commune, district, province, state or group of states, which, due to their territorial scope, constitute local, national and international safety respectively. Thus, education for security is that part of national education whose specific scope is formed by civic, economic, legal, defence, pro-social, health and environmental education.[20]

The constitutive elements of security education are mainly philosophical, psychological-pedagogical and sociological concepts, by means of which it is possible to recognise the nature of man and answer the question – who he is – in the context of security as a natural need of the individual in their life. At the same time, security education is fed with knowledge from those philosophical, axiological-ethical and pedagogical theories, which treat security as a particularly valuable value and which makes the educational activity directed by it possible to internalise the various components of security. However, in order for this to happen in a continuous process of education for security, a number of actions need to be taken with regard to those subjected to it in the form of: imparting knowledge on the occurrence of threats, shaping "safe" behaviour and attitudes, motivating them to take action to ensure safety, disseminating the necessary knowledge and skills in the field of counteracting threats, making them aware of the scale and type of needs in difficult situations, developing a sense of responsibility for taking specific actions, developing appropriate habits of behaviour in dangerous situations and nurturing values with regard to human life and health.[21]

19 R. Rosa, *Edukacja do bezpieczeństwa i pokoju w obliczu nowych wyzwań cywilizacyjnych i kulturowych*, [in:] *Edukacja dla bezpieczeństwa*…, p. 46.

20 A. Pieczywok, *Bezpieczeństwo jako wartość*…, p.472

21 Ibid, p. 461.

Safety education in Polish legislation

Universal education for security was reflected in the amended *Act on the Universal Duty to Defend the Republic of Poland*,[22] whose provision of Article 139(1)(1) stipulated that the duty of citizens in the field of civil defence, in addition to service in civil defence and training in universal self-defence of the population, consists in education for security.

The formal dimension of education for security was its introduction into the educational system of the state. This was undertaken on the basis of research conducted at the Academy of National Defence (AON) between 1996 and 2000, from which it was concluded that education for safety in the school environment would constitute a specific system of didactic and educational activities of the school, youth organisations, associations operating in the school and its surroundings. In turn, its primary objective is to equip the young generation with knowledge, skills and competences allowing them to act in cases of crisis threats to life and health, as well as other extraordinary threats.[23]

Education for security, in its broadest sense, is an important element of the didactic and educational process, and is particularly important in creating the right attitudes and values, acquiring knowledge and skills in the area of counteracting various threats, and is one of the basic ways of shaping safety in people's coping with difficult and conflict situations.[24]

According to a 2017 Ministry of Education regulation, the key objectives of safety education in primary school amount to: understanding the essence of state security, preparing students to act in situations of extraordinary threats in the form of disasters or mass accidents, shaping skills in the basics of first aid and shaping individual and social attitudes that promote health.

In the introduction to this core curriculum, attention is drawn to the important issues of values and attitudes in security education, because in the process of general education, it is the school that shapes in pupils such attitudes that foster their further individual and social development. These are: honesty, trustworthiness, responsibility, perseverance, self-esteem, respect for other people, cognitive curiosity, creativity, entrepreneurship, personal culture, readiness to participate in culture, taking initiatives and working in a team[25]. They become the basis for social development based on a civic attitude, an attitude of respect for the traditions and culture of one's own nation, as well as an attitude of respect for other cultures and traditions, as education

22 *Act of 21 November 1967 on the Universal Duty to Defend the Republic of Poland*, consolidated text (Journal of Laws of 2020, item 374).

23 T. Siuda, *Edukacja dla bezpieczeństwa w systemie oświaty*, [in:] *Takie będą Rzeczypospolite, jakie ich młodzieży chowanie. Spuścizna korpusu kadetów w procesie kształcenia obronnego młodzieży – stan i perspektywy. Materiały pokonferencyjne*, A. Skrabacz (ed.), Warszawa 2008, p. 52.

24 A. Pieczywok, *Kreatywny aspekt edukacji dla bezpieczeństwa na przykładzie studentów kierunku bezpieczeństwo wewnętrzne*, „Zeszyty Naukowe WSEI seria Administracja" 2017, no. 1, p. 41.

25 See: A. Zagórska, *Polityka siły – dylemat współczesne bezpieczeństwa*, „Rocznik Bezpieczeństwa Morskiego", vol. XVIII, 2024, pp. 619-647.

and and upbringing at secondary school orient pupils towards citizenship, patriotism and a sense of community. And the general task of the school is to strengthen the sense of national, ethnic and regional identity, attachment to national history and traditions.[26]

In accordance with the provisions of the Act on the Universal Duty to Defend the Republic of Poland and the Ministry of Education Framework Curriculum, compulsory classes in the subject of education for security are conducted, both at the level of primary schools and at post-primary schools, in both cases in the amount of 30 lesson hours in a school year – in a primary school in class VIII, and in a post-primary school in class I.[27]

Due to the rather wide range of curriculum content in the formal safety education system and the small size of the compulsory number of classes teaching this subject, both at primary and secondary level, this content should be correlated with the curricula of other compulsory subjects, such as Polish, history, social studies, geography, nature, biology, chemistry, physics, information technology, music, art, technology, physical education, upbringing in family life or ethics. Content covering a broad range of education for safety should also be present in the upbringing and prevention programmes of schools.

In the Educational Law Act, which is currently the foundation of the educational system in Poland, the system is to ensure the realisation at school of tasks in the broadly understood education for safety, which should be guided by the above-mentioned areas of state activity in this respect[28]. They are articulated both in the preamble to the educational law as education and upbringing of young people in the spirit of responsibility, love of the Homeland and respect for the Polish cultural heritage, as well as preparing them to fulfil their social duties in accordance with the principles of solidarity, democracy, tolerance, justice and freedom, and the provision of Article.

There are postulates concerning such issues as: shaping pro-social attitudes in pupils, which is to foster their active participation in social life; popularisation among children and young people of knowledge and skills necessary for active participation in national and world culture and art, as well as knowledge of the principles of rational nutrition and counteracting food waste; shaping social activity and skills of spending leisure time, as well as knowledge of the principles of social responsibility and leisure time skills; and, above all, to promote knowledge of safety among pupils and the development of appropriate attitudes towards risks, including those related to the use of information and communication technologies, and emergency situations.

These measures, which are so important in the systemic view of the security of Poles, are met by the submissions contained in the new 'National Security Strategy of

26 Ibid, p. 4.

27 *Regulation of the Minister of National Education of 3 April 2019 on framework teaching plans for public schools* (Journal of Laws 2019, item 639).

28 See: A. Zagórska, *Bezpieczeństwo współczesnego państwa na przykładzie Polski. Zarys problematyki,* Warszawa 2018.

the Republic of Poland 2020', which was approved on 12 May 2020 by the President of the Republic of Poland at the request of the Prime Minister.[29]

The creators of this new Strategy explicitly formulated the recommendation that the civil defence and civil protection system, of which education for security is such an important element, should be made universal in both urban agglomerations and rural areas, with particular emphasis on building the system's capacity for constant adaptation to the changing challenges and threats of the modern world. But the universality that is key to this effort can be achieved through promoted knowledge and capacity to shape national security. It should be based on the broad involvement of public authorities, including local government, the entities that make up the education and higher education and science systems, the economy, non-governmental organisations and, above all, it seems, citizens themselves, in order to adapt the state and the nation to the ever-changing needs of obtaining and maintaining security. This should also involve the promotion of patriotic attitudes, civic duties and pro-social behaviour.

Summary

Education for security in the Third Republic of Poland is one of the key pillars of building social resilience and developing civic awareness in the face of complex and multidimensional threats of the contemporary world. The article shows the evolution of this form of education – from patriotic and defence education in the 18th and 19th centuries, through military and defence training in the 20th century, to the contemporary approach integrating military and non-military aspects, including health, social, environmental and digital aspects.

The systemic transformations after 1989 and the increasing interdisciplinarity of the concept of security have resulted in the transformation of traditional defence education into a modern concept of security education. It is now multidimensional in nature and directed towards the development of individual and societal competences in recognising, preventing and responding to threats.

The inclusion of education for safety in the Polish legal system, including the Education *Law* and *the National Security Strategy of the Republic of Poland*, confirms its strategic importance for the formation of civic attitudes, social responsibility and risk awareness. However, the implementation of this idea requires a systemic approach, integrating the activities of schools, state institutions, non-governmental organisations and citizens themselves.

The opportunity for the development of security education is its rootedness in the core curriculum and its long-standing educational tradition, while the challenges are the need to increase its effectiveness, to adapt it to the dynamically changing geopolitical and technological realities and to ensure coherence between the formal educational system and the practice of social and institutional activities. This education should not only be the transmission of knowledge, but also the process of

29 *Strategia Bezpieczeństwa Narodowego Rzeczypospolitej Polskiej 2020,* Warszawa 2020.

forming the values, attitudes and habits necessary to function in a responsible and crisis-resilient society.

Conclusions: In the light of the analysis, it can be concluded that education for security in the Third Republic of Poland has undergone significant transformations, becoming an integral element of the educational system and an important tool for shaping social resilience and civic competence. Its contemporary approach combines the tradition of defence education with new civilisational challenges, including non-military threats such as climate change, cyber threats or pandemics.

Both the legal basis and strategic documents – in particular the *2020 National Security Strategy of the Republic of Poland* – confirm the importance of this area as a component of the state security system. However, the implementation of security education also faces serious difficulties. Limited hours, curriculum overload and often inadequate preparation of teaching staff mean that the potential of this education is not always fully exploited.

Despite these limitations, it should be emphasised that security education is of great importance in the process of forming civic attitudes, social responsibility and the ability to function in crisis situations. However, a condition for its effectiveness remains the integration of the activities of different actors – schools, public institutions, NGOs and local communities – in a coherent and diverse approach to security. It is also necessary to promote patriotic, pro-social and solidarity values as the foundation of educational activities.

In conclusion, security education in Poland today faces significant systemic and curricular challenges, but it also has real opportunities for development – provided that it is properly embedded in educational practice, supported by appropriate state policy and enriched with modern teaching methods and an interdisciplinary approach to security issues.

Conclusions

1. Security should be seen as a complex and dynamic social process that aims to continuously improve mechanisms to counter threats and build social and institutional resilience, with the active participation of state, local government and civil society actors.
2. Security education is interdisciplinary – combining knowledge from law, defence, sociology, psychology and pedagogy, making it a comprehensive tool for shaping civic attitudes.
3. Globalisation and new threats are forcing changes in the approach to security – terrorism, migrations, cyber threats and pandemics prove that internal security must be seen in an international context.
4. The educational paradigm shift – transforming defence education into security education – is a response to the need to frame security in a positive, holistic and pro-social way.

5. Security education is firmly rooted in the national tradition – continuing the legacy of the Knights' School, military training and civic education, but adapting them to the realities of the 21st century.
6. The current system of formal education for security – is based on a core curriculum and legal regulations (e.g. the Education Law, the National Security Strategy of the Republic of Poland 2020) and is implemented in primary and secondary schools.
7. Inadequate subject hours – 30 hours per year is not enough to comprehensively prepare students to respond to threats, so correlation with other subjects and the educational programme is necessary.
8. Formal education must be supported by informal education – youth organisations, families, the media and community institutions should also be involved in safety efforts.
9. The need to develop pupils' social and civic competences – education for security is intended to shape attitudes of responsibility, solidarity, patriotism and readiness to act in crisis situations.
10. Building a culture of safety must be a systemic activity – it requires a coherent state policy, cooperation between ministries, local governments and citizens, and the promotion of national values and pro-social attitudes.

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THE ROLE OF THE POLICE IN ENSURING THE SECURITY OF PUBLIC ORDER PUBLIC SAFETY

Abstract

Security is a fundamental concept in everyday life, society, and science, and constitutes a key responsibility of a democratic state. Numerous administrative authorities are responsible for ensuring it, including public safety and order, with the Police playing the most important role among them. The Polish Police operates on the basis of the Police Act of 1990, which defines it as a uniformed and armed formation serving the public, intended to protect human security and maintain public order. Its overriding task is to ensure the safety of citizens, and any interference with people's freedoms and rights is only permitted in situations defined by statute. Security is defined as an 'existential need' and 'a state that provides a sense of certainty'. Public order is a set of norms enabling normal coexistence in the state, and the role of the police in its protection is to detect phenomena that violate this state.

The purpose of this article is to present the role of the police in ensuring public order, analysing the concepts of public safety and public order, the status of the police as a public administration body operating on the basis of statutes, its statutory tasks and the division of legal forms of action.

Keywords

security, state administration, police, public order

Introduction

Security is one of the most frequently used concepts in everyday life, in the functioning of society, the state and also in science. In a democratic state under the rule of law, the main task that defines its existence as a structure is to ensure public safety and order for all citizens[1]. In terms of public security and order, the scope of powers has been entrusted to numerous administrative bodies in the state, while the most important role to ensure public security and order has been delegated to a specialised one, which is the police[2].

The Polish Police performs its tasks on the basis of the Police Act of 06 April 1990. The Act in question specifies that it is a "uniformed and armed formation serving the public, intended to protect the safety of people and to maintain public safety and order"[3]. The most important task of the Police is to ensure the safety of all citizens. The police are a formation that can affect human freedoms and rights, but only in situations specified in the Acts[4].

Security is defined as 'an existential need of individuals, social groups and states' and as 'a state that provides a sense of certainty and guarantees for its preservation'. In defining the meaning of the concept of security, it is necessary to carry out an interpretation of the legal norms set out in the Acts and other legislation. In a general sense, security is defined as "a complex system with a system of subsystems, which are designed to ensure the safe development of the individual, the collective and the nation using the means legally available"[5].

W. Kawka defines security and public order as "certain positive states prevailing in a social organisation, the preservation of which guarantees the avoidance of certain damage, both by the organisation as a whole and by its individual members". By public order, Kawka sees "the totality of forms enabling the normal development of life in a state organisation, a set of norms whose observance conditions the normal coexistence of human individuals". Does this also apply to Kawka? "The protection of public order is the maintenance of a state where the tasks of the police are reduced to the evaluation of a situation actually occurring with the situation envisaged by the legal norm, where the role of the police is to detect the occurrence of a certain phenomenon in the community, caused by the action of nature or by human behaviour"[6].

The article aims to present the role of the police in ensuring public order including the concept of security, public order. Police as a public administration body

1 M. Zdyb, J. Stelmasiak, K. Sikora: *System bezpieczeństwa i porządku publicznego, organy i inne podmioty organizacji*, ed. Wolters Kluwer SA, Warsaw 2015, p. 13.

2 M. Czuryk, M. Karpiuk, J. Kostrubec, K. Orzeszyny: *Police Law*, Difin Publishing House, Warsaw 2014, p. 11.

3 Article 1, section 1 of *the Act of 6 April 1990 on the Police*, Chapter 1, General Provisions (Journal of Laws 1990 No. 30, item 179)

4 M. Czuryk, M. Karpiuk, J. Kostrubec, K. Orzeszyny: *Police Law*, Difin Publishing House, Warsaw 2014, p. 11.

5 J. Gierszyński: *Bezpieczeństwo społeczne. a study in the theory of national security*, Difin Publishers, Warsaw 2013, pp. 49-50.

6 A. Misiak: *Administracja porządku i bezpieczeństwa publicznego. Zagadnienia prawno-ustrojowe*, Wydawnictwa Akademickie i Profesjonalne, Warszawa 2008, p. 13.

acting on the basis of statutes, the police sentences imposed by the Police Act, and an indication of the role and division of the legal forms of the Police.

Concept of security, public order

Security is defined as 'an existential need of individuals, social groups and states'. The concept of security is also interpreted as "a state that provides a sense of certainty and guarantees for its preservation". Ensuring security is one of the most important tasks of public administrations. In defining the meaning of the concept of security, it is necessary to carry out an interpretation of the legal norms set out in the Acts and other legal regulations. The justification of the above definition means that security is considered as "a complex system with a system of subsystems, which aim to ensure the safe development of the individual, collective and the nation using the means legally available"[7]. Security is understood both as "the aim of the state bodies to ensure adequate conditions for the development of the homeland and its protection from threats"[8].

According to p. Sienkiewicz, security is a certain "state of continuity of a system, a process ensuring its development and survival and a peculiar situation of no threat to the system"[9].

Public order is a certain pattern of social relations that has been defined by a number of generally applicable laws, ensuring the proper and undisturbed functioning of society in the state. Public order takes into account all society-wide relations that are normalized by law. An essential element of public order is the conduct of society in accordance with legal regulations, which ensure proper public order within the state. It plays a key role in reinforcing socially accepted bonds associated with public order and in shaping conditions based on the absence of contradictions and conflicts[10].

The purpose of public order is to ensure public peace and order and the proper functioning of citizens' life in the state. The definitions of "public security" and "public order" sometimes appear together in numerous studies or source materials, but they should not be compared. Interpretations of the terms "public security" and "public order" are similar, due to the fact that the provision of public security and public order is an effect to guarantee the security of society as a whole, when the provision of public order is linked to the decision of an individual[11].

Public security consists of the legal-administrative sector, referring to the routine tasks performed by public administration bodies in the state. Public security plays a key function of internal affairs in the state, concerning, among other things, the

7 J. Gierszyński: *Bezpieczeństwo społeczne, Studium z zakresu teorii bezpieczeństwa narodowego*, wyd. Difin, Warsaw 2013, pp. 49-50.

8 Ibidem, p. 51.

9 Ibidem, p. 51.

10 A. Misiak: *Administracja porządku i bezpieczeństwa publicznego. Zagadnienia prawno-ustrojowe*, Wydawnictwa Akademickie i Profesjonalne, Warsaw 2008, p. 18.

11 Ibidem, pp. 18-19.

police and other law enforcement services, which aim to provide security and protect the proper functioning of public order. In order to precisely define the concept, J. Widacki interpreted public security as "a state in which crimes are not committed and public order is a state in which offences are not committed"[12].

Views on the importance of security and public order by W. Czapiński, W. Kawki and s. Bolesta

W. Czapiński saw public order as "an external condition consisting in the observance by the population in their conduct of certain rules, forms and orders, the non-observance of which in the conditions of collective coexistence of people would expose them to dangers and nuisances despite the absence of evil intentions on the part of those who would disobey these rules, forms and orders"[13].

According to W. Kawka, security and public order are "certain positive states prevailing in a social organisation, the preservation of which guarantees the avoidance of certain damage both by the organisation as a whole and by its individual members". Kawka defines public order as "the totality of forms enabling the normal development of life in a state organisation and a set of norms whose observance conditions the normal coexistence of human individuals". "The protection of public order is the maintenance of a state where the tasks of the Police are reduced to the assessment of the situation actually occurring with the situation envisaged by the legal norm, where the role of the Police is to detect the community regarding a certain phenomenon, caused by the action of nature or human behaviour"[14].

On the other hand, s. Bolesta describes public order as "a system of legal-public devices and social relations, arising or developing in public places, and social relations, arising or developing in non-public places, and ensuring, in particular, the protection of life, health and property of citizens and social property"[15].

The Police as a public/governmental administrative authority operating on the basis of statutory provisions

The police, as a government administration body acting on behalf of the state, plays a special role for the benefit of the whole society[16]. The statutory empowerment of the formation is provided by the Act of 6 April 1990 on the Police, which assigns to it the tasks of protecting public security and order (Articles 1-2). On this basis, police officers may issue binding orders, use means of direct coercion, carry out administrative

12 J. Gierszyński: *Bezpieczeństwo społeczne, Studium z zakresu teorii bezpieczeństwa narodowego*, wyd. Difin, Warsaw 2013, p. 55.

13 A. Misiak: *Administracja porządku i bezpieczeństwa publicznego, Zagadnienia prawno-ustrojowe*, Wydawnictwa Akademickie i Profesjonalne, Warsaw 2008, p. 13.

14 Ibidem p. 13.

15 Ibidem, p.14.

16 S. Pieprzny: *Police, organisation and functioning*, LEX a Wolters Kluwer business, 3rd edition, Warsaw 2011, p. 28.

activities (legitimising, escorting), operational and exploratory activities as well as investigative activities.

The Police Act is not the only legal instrument in which tasks have been assigned to the police. a large number of powers have been assigned to the formation in the Acts shown in the table below.

Table No. 1 Laws governing the tasks of the police

L.p.	Laws governing the tasks of the police
1.	Act of 22 August 1997 on protection of persons and property. unified text: Journal of Laws of 2005. No. 145, item 1221 as amended).
2.	Act of 20 March 2009 on safety of mass events (consolidated text: Journal of Laws of 2009 No. 62, item 504 as amended).
3.	Act of 20 June 1997. – Traffic Law (consolidated text: Journal of Laws of 2005 No. 108, item 908 as amended).
4.	Act of 18 April 2002 on the state of natural disaster (Journal of Laws No. 62, item 558 as amended).
5.	Act of 21 June 2002 on the state of emergency (Dz. U. No. 113, item 985 as amended).

Source: own elaboration based on: M. Kondrusik, s. Stańczykiewicz, *Police. Zarys procedury prawnej*, Kraków 2019, pp. 45-50.

The police is a formation that is designed to protect people's safety. Nowadays, the tasks of the Police are in some way adapted to the needs of society. The interpretation of Article 1(1) of the Police Act specifies that the role of the Police in relation to society does not end with the protection of the safety of the population, but is primarily intended to ensure security and public order for the community as a whole. It should be noted that the state authorities are responsible for building the position of the formation in the state. The Police Act clearly indicates that it is a uniformed and armed formation, with a protective structure as well as a military scope of activities performed, and that its function is mainly to ensure security and public order for the entire society[17].

The police act "on behalf of the state" performing public tasks from Article 5 of the Constitution of the Republic of Poland and are subject to the standards of legality and proportionality (Articles 7 and 31(3) of the Constitution). In addition, it is subject to public supervision, controlled by public authorities (the Minister of Internal Affairs and Administration, the prosecutor's office, administrative courts, the NIK and the Sejm).

17 S. Pieprzny: *Police, organisation and functioning*, LEX a Wolters Kluwer business, 3rd edition, Warsaw 2011, pp. 28-29.

The tasks of the police in the light of the provisions of the Police Act

The police play a key role to ensure public safety and order. It performs its tasks on the basis of the Police Act of 6 April 1990[18]. Based on the cited Act, its most important tasks are outlined:

1. the protection of human life, health and property against unlawful attacks on these goods;
2. The protection of public safety and order, including ensuring peace and quiet in public places and on public transport, in traffic and on waters intended for public use;
3. initiating and organising activities aimed at preventing the commission of crimes and offences and criminogenic phenomena and cooperating in this respect with state and local government bodies and social organisations;
4. the detection and prosecution of offences;
5. supervision over specialised armed protection formations within the scope defined in separate regulations;
6. control of compliance with order and administrative regulations related to public activities or in force in public places;
7. cooperation with police forces of other countries and their international organisations, as well as with bodies and institutions of the European Union on the basis of international agreements and accords and separate regulations.

As a result of police activities performed on behalf of the state, i.e. in accordance with the legislation in force, the main role of police units is to strive to eliminate and prevent emerging threats to public life, which is directed at countering threats to public safety and order and strengthening the sense of security among all citizens[19].

The police have an important role in the structure of government administration bodies, according to the Police Act, the formation has been allowed to use legal forms of action in the course of performing its activities, in order to ensure public safety and order. The activities undertaken by the Police concerning the scope of security allow the use of measures that encroach on the area of public rights and freedoms. The actions of some citizens in a manner incompatible with the current legal order and the emerging threats to public safety and order, give consent to the use of appropriate preventive measures by the Police in order to avoid undesirable events. It should be noted that action may be taken only in situations specified by the Act[20].

18 T. Serafin, s. Parszowski: *Bezpieczeństwo społeczności lokalnych, programy prewencyjne w systemie bezpieczeństwa. Safety Management*, Difin Publishing House, Warsaw 2011, p. 134.

19 T. Serafin, s. Parszowski: *Bezpieczeństwo społeczności lokalnych, programy prewencyjne w systemie bezpieczeństwa. Safety Management*, Difin Publishing House, Warsaw 2011, p. 135.

20 A. Misiak: *Administracja porządku i bezpieczeństwa publicznego, Zagadnienia prawno-ustrojowe*, Wydawnictwa Akademickie i Profesjonalne, Warsaw 2008, p. 114.

Preventive measures that are used to ensure security and public order should be called special powers of the police[21] or special actions of the police[22]. The extraordinary properties of the formation state that the measures used by police units cannot be used by other administrative bodies to carry out specific tasks. Thus, it should be noted that the extraordinary powers of the Police are special legal forms of action, as a formation carrying out sentences aimed at ensuring security and public order for all citizens[23].

The elements of action used by the Police constitute the resources available to the police unit aimed at ensuring security and public order for all citizens of a country. By the public, the forms of action used by the Police, are perceived as the powers of uniformed bodies to influence their area of daily life[24]. Accordingly, according to Article 14(3) of the Police Act, it is stipulated that "police officers, in the course of their official activities, have a duty to respect human dignity and to respect and protect human rights"[25].

Interpreting the definitions of security and public order in the context to the activities of the Police, it is important to state that security is "a real state in which the whole society is not threatened by any danger". The scope encompassing security has been based on a number of legal acts and implies that anything that violates areas of sound law and order creates a danger, therefore referring to threats to life, health and property[26].

Organisation and actions of the Police to ensure the safety of citizens during public assemblies

The police, as a public administration body, have a fundamental role to ensure public safety and order for all citizens. The scopes of action set out in the Acts are relevant both to the actual state of affairs, where the state performs its tasks and acts accordingly with its intended objectives, and when it performs standard activities to ensure public safety and order[27].

According to Article 7(1) of the Police Act, the Chief of Police shall determine[28]:

1. detailed principles of organisation and scope of activities of police stations and other organisational units of the Police;

21 A. Misiak: *Administracja porządku i bezpieczeństwa publicznego, Zagadnienia prawno-ustrojowe*, Wydawnictwa Akademickie i Profesjonalne, Warsaw 2008, p. 114.

22 S. Plowuch: *Zagadnienia prawne organizacji i funkcjonowania Policji*, Szczytno 1995, p. 40 et seq.; K. Rajchel, Porządek i bezpieczeństwo w ruchu drogowym, Rzeszów 1979, p. 114 et seq.; J. Zaborowski, *Prawne środki zapewnienia bezpieczeństwa i porządku publicznego*, Warsaw 1977, p. 44 et seq;

23 A. Misiak: *Administracja porządku i bezpieczeństwa publicznego, Zagadnienia prawno-ustrojowe*, Wydawnictwa Akademickie i Profesjonalne, Warsaw 2008, p. 114.

24 S. Pieprzny: *Police, organisation and functioning*, LEX a Wolters Kluwer business, 3rd edition, Warsaw 2011, p. 116.

25 Article 14, paragraph 3, of *the Act of 6 April 1990 on the Police*, Chapter 3, Scope of powers of the Police, (Journal of Laws 1990 No. 30, item 179)

26 S. Pieprzny: *Police, organisation and functioning*, LEX a Wolters Kluwer business, 3rd edition, Warsaw 2011, p. 30.

27 M. Czuryk, M. Karpiuk, J. Kostrubec, K. Orzeszyny: *Police Law*, Difin Publishing House, Warsaw 2014, p. 96.

28 Art. 7 (1) of *the Act of 6 April 1990 on the Police*, Chapter 1, General Provisions, (Journal of Laws 1990 No. 30 item 179)

2. methods and forms of performance of tasks by individual police services, to the extent not covered by other regulations issued under the Act;
3. professional training programmes for police officers;
4. the scope and detailed conditions, procedure for carrying out and rules for assessing the physical fitness test of police officers;
5. detailed rules for the training of animals used in the execution of police tasks, as well as the standards for their boarding;
6. principles of professional ethics for police officers, after consultation with the police union;
7. the organisation, material and local scope of activities and principles of cooperation of the Central Bureau of Investigation of the Police (CBŚP) with other organisational units of the Police;
8. in consultation with the minister responsible for internal affairs, the organisation, material and local scope of activities, as well as the principles of cooperation of the Bureau of Police Internal Affairs (BSWP) with other organisational units of the Police.

The police, play a key role in order to ensure public safety and order in the Republic of Poland. The police unit is designed to carry out a number of activities aimed at ensuring public safety and order for all people, e.g. in situations where the proper legal order is disturbed. Any type of circumstance which disturbs the proper functioning of security creates some kind of obstacle to the life of every person, and brings the possibility of danger as a result of a breach of public order[29].

As stated in Article 18(1) of the Police Act on the subject of disruption of security, it follows that "in the event of a threat to public safety or disruption of public order, especially by bringing in", the police shall take action in the situation[30]:

1. a general danger to the life, health or liberty of citizens;
2. an imminent threat to property of significant size;
3. a direct threat to facilities or equipment important for the security or defense of the state, seats of central state bodies or the judiciary, facilities of the national economy or culture and representations of diplomatic and consular offices of foreign countries or international organizations, as well as facilities supervised by an armed security formation established on the basis of separate regulations;
4. the threat of a terrorist offence that could result in danger to the life or health of participants in cultural, sporting or religious events, including assemblies.

Police actions when securing a public assembly

The police, functioning within the framework of the tasks entrusted to them, i.e. on behalf of the state, are fully responsible for carrying out a number of activities aimed

29 M. Czuryk, M. Karpiuk, J. Kostrubec, K. Orzeszyny: *Police Law*, Difin Publishing House, Warsaw 2014, p. 97

30 Article 18, section 1 of *the Act of 6 April 1990 on the Police*, Chapter 3, Scope of powers of the Police (Journal of Laws 1990 No. 30, item 179)

at ensuring safety and public order for all assembled persons, during the event taking place. The main objective of the Police's activities in ensuring the safety of all assembled persons is to ensure that the event takes place in accordance with the law. The police unit performs preventive activities during the securing of the public gathering, in particular it protects the course of the route by means of numerous police patrols – on foot and mechanized, and monitors and counteracts any unforeseen circumstances at the venue. During a threat to the security of citizens, the police initiates specific preventive measures[31].

Organization of police command

Official Journals, of the Police Headquarters, of 21 March 2007. No. 5, item 49 of Ordinance No. 213 of the Commander-in-Chief of the Police of 28 February 2007 on methods and forms of preparing and carrying out police tasks in cases of threat to human life and health or their property or to public safety and order defines command organizations as "general principles of operation and the way in which the command is organized, relations between commands, their powers and responsibilities, as well as the division and functional structure at command posts"[32].

The command system for police action in cases of danger to the life and health of people or their property or to public safety and order according to the above Ordinance is set out in paragraph 1(1):[33]

1. organizational forms of policing used in the implementation of security;
2. competence of police officers in charge of police operations;
3. the modalities for setting up headquarters for police operations and their tasks;
4. principles for the development of police action commander plans.

Role and distribution of legal forms of police action

The subject of the legal forms of action of the Police plays a key role in the structure of public administration bodies, due to the activities they perform, which moreover influences the public's reaction to the actions of the Police aimed at ensuring public safety and order. The authority in a state under the rule of law, has delegated to the Police a number of competences in the field of security and public order, important for the proper functioning of the life of citizens in the state, as well as established the forms of action and preventive measures that the formation can use. Due to the activity and type of purpose of the Police, the units of the formation have structures

31 M. Czuryk, M. Karpiuk, J. Kostrubec, K. Orzeszyny: *Police Law*, Difin Publishing House, Warsaw 2014, pp. 100-101.

32 *ORDINANCE No. 213 OF THE MAIN POLICE COMMANDER, Warsaw, 21 March 2007 No. 5, item 49, ORDER No. 213 of the POLICE MAIN COMMANDANT of 28 February 2007 on methods and forms of preparing and carrying out police tasks in cases of threat to life and health of people or their property or to public safety and order*, p. 207. downloaded: 07.12.2018, 12.20 a.m.

33 Ibidem, pp. 193-194. retrieved: 07.12.2018, 12.25 pm

of action characterized by a specific form of action, aimed at ensuring security and public order for all citizens[34].

Due to the role of the police formation, which is to ensure public safety and order, legal forms of action have been defined and are presented in various laws and source materials. We distinguish three groups of legal forms of police action: general legal forms of action, special legal forms of action and forms used in emergency situations[35].

Whereas, s. Pieprzny divided the legal forms of police action, taking into account the scope of activities of the police formation. According to the division, the legal forms of police activity are divided, among others, into[36]:

1. forms concerning activities in the sphere of public administration;
2. forms related to the identification and prevention of crimes and offences;
3. forms related to legal prosecution in accordance with the procedures and principles set out in the Criminal Code and the Code of Criminal Procedure;
4. forms carried out by order of the court, prosecutor, public administration authorities;
5. forms that are an expression of the preventive and socio-organizational activities undertaken.

As a result of the division of the legal forms of police action presented above, it should be stated that the divisions into forms are not the final actions that the police formation undertakes. For an accurate description, the legal forms of police action have been divided into further groups[37]:

1. general, typical administrative and police-specific forms of authority;
2. operational and exploratory activities;
3. administrative and peacekeeping activities;
4. social and organisational activities.

Proprietary measures used by the police

A police unit, provided with special equipment, to perform tasks in the field of security and public order, can perform specific, for the police, forms of action. Due to the fact that many unpredictable incidents may occur at any time, which require the use of special legal measures that guarantee the elimination of the danger that has occurred, threatening public safety and order. The unique range of powers available to the police is manifold, including the possibility of using a measure of last resort, such as firearms. The possibility to apply the chosen legal measure, can be used depending on the type of occurrence of the given danger[38].

34 M. Róg, A. Sęk: *Materialno-administracyjne aspekty pracy Policji*, Aleksander Gieysztor Humanist Academy, Półtusk-Warszawa 2015, p. 11.

35 M. Czuryk, M. Karpiuk, J. Kostrubec, K. Orzeszyny: *Police Law*, Difin Publishing House, Warsaw 2014, p. 71.

36 Ibidem, pp. 71-72.

37 M. Czuryk, M. Karpiuk, J. Kostrubec, K. Orzeszyny: *Police Law*, Difin Publishing House, Warsaw 2014, p. 72.

38 S. Pieprzny: *Police, organization and functioning*, LEX a Wolters Kluwer business, 3rd edition, Warsaw 2011, p. 91.

Service activities of the police

The Police, within the limits of their tasks in the field of protection of public safety and order, referred to in Article 14 (1) of the Police Act, performs the following activities: operational and exploratory, investigative, administrative and orderly in order to[39]:

1. identify, prevent and detect crime and offences;
2. search for persons fleeing from law enforcement or the judiciary, hereinafter referred to as 'wanted persons';
3. search for persons who, as a result of an occurrence that makes it impossible to determine their whereabouts, need to be found in order to ensure the protection of their life, health or freedom, hereinafter referred to as 'missing persons'.

The above activities have to do with interference of the Police in the area of human rights and freedom[40]. According to the content of Article 14(3) of the Police Act, it follows that "Police officers, in the course of their official activities, have the duty to respect human dignity and to respect and protect human rights"[41]. The police unit, within the framework of the tasks entrusted with the protection of public safety and order, uses legal means of action, in accordance with the principles set out in the Act of 6 April 1990 on the Police, which gives the possibility to prevent and detect crimes and to recognize threats[42].

Article 19(1) of the Police Act, stipulates that "in the performance of operational and exploratory activities undertaken by the Police in order to prevent, detect, establish perpetrators, as well as to obtain and record evidence, prosecuted by public indictment, of intentional crimes: inter alia, against life and against crimes defined in Articles 148-150 of the Penal Code"[43].

According to Article 19a (1) of the Police Act, in cases of offences specified in Article 19 (1), "operational and exploratory activities aimed at verifying previously obtained reliable information on an offence and identifying the perpetrators and obtaining evidence of an offence may consist in carrying out, in an undisclosed manner, the acquisition, disposal or takeover of objects originating from an offence, subject to forfeiture, or the manufacture, possession, transportation or trafficking in which is prohibited, as well as in accepting or giving a financial benefit". In Article 19a, paragraph 2, "the operational and exploratory activities referred to in paragraph 1 may also consist in an offer to acquire, dispose of or seize objects originating from crime, subject to forfeiture, or the manufacture, possession,

39 Article 14, paragraph 1 of *the Act of 6 April 1990 on the Police*, Chapter 3, Scope of powers of the Police, (Journal of Laws 1990 No. 30 item 179)

40 S. Pieprzny: *Police, organization and functioning*, LEX a Wolters Kluwer business, 3rd edition, Warsaw 2011, p. 101.

41 Article 14, paragraph 3 of *the Act of 6 April 1990 on the Police*, Chapter 3, Scope of powers of the Police, (Journal of Laws 1990 No. 30 item 179)

42 S. Pieprzny: *Police, organization and functioning*, LEX a Wolters Kluwer business, 3rd edition, Warsaw 2011, p. 101.

43 Art. 19. par. 1, *Act of 6 April 1990 on the Police*, Chapter 3, Scope of powers of the Police, (Journal of Laws 1990 No. 30 item 179)

transportation or trafficking in which is prohibited, as well as accepting or giving a financial benefit"[44].

The administrative and order maintenance activities of the police include "the control of the observance of order and administrative regulations in connection with public activities or in force in public places"[45].

Public authorities, as part of their tasks of protecting public safety and order, also undertake social-organizational activities. This activity is one of the legal forms of action that the Police perform in a given area, where in the scope of its activity it does not apply legal forms of action and does not use means of direct coercion[46]. Socio-organizational activities undertaken by the Police consist in providing the public with information on threats to security and public order and in organizing meetings with the inhabitants in the field of preventive activities[47].

S. Pieprzny for an accurate breakdown of community-organizing activities carried out by the Police presents:[48]

1. organising meetings with the public;
2. talks and training sessions with schoolchildren;
3. organising patrols with student youth;
4. press and radio and television appearances on the subject of risks;
5. issuing leaflets and materials on how to prevent breaches of human security;
6. organizing competitions, contests and conferences.

Police powers

On the basis of Article 14(1) of the Police Act, police officers performing operational and exploratory, investigative, administrative and law enforcement activities, according to Article 15(1), police officers have the right to[49]:

1. legitimize people in order to establish their identity;
2. detain persons in the procedures and cases specified in the provisions of the Code of Criminal Procedure and other laws;
3. apprehend persons posing an obvious imminent threat to human life or health, as well as to property;
4. search persons and premises in the mode and cases specified in the provisions of the Code of Criminal Procedure and other Acts;
5. carry out personal checks, as well as inspecting the contents of luggage and checking cargo in ports and stations and on means of land, air and water transport;

44 Art. 19a, par. 1,2 of *the Act of 6 April 1990 on the Police*, Chapter 3, Scope of powers of the Police, (Journal of Laws 1990 No. 30 item 179)

45 S. Pieprzny: *Police, organization and functioning*, LEX a Wolters Kluwer business, 3rd edition, Warsaw 2011, p. 106.

46 M. Czuryk, M. Karpiuk, J. Kostrubec, K. Orzeszyny: *Police Law*, Difin Publishing House, Warsaw 2014, p. 79.

47 S. Pieprzny: *Police, organization and functioning*, LEX a Wolters Kluwer business, 3rd edition, Warsaw 2011, p. 107.

48 M. Czuryk, M. Karpiuk, J. Kostrubec, K. Orzeszyny: *Police Law*, Difin Publishing House, Warsaw 2014, p. 79.

49 Article 15, section 1 of *the Act of 6 April 1990 on the Police*, Chapter 3, Scope of powers of the Police (Journal of Laws 1990 No. 30, item 179)

6. request the necessary assistance from state institutions, to request such assistance from economic entities, social organizations, as well as to request emergency assistance from any citizen in an emergency;
7. seek the necessary assistance from other businesses and social organizations, as well as requesting emergency assistance from any person in an emergency, within the framework of the applicable legislation;
8. (repealed);
9. carry out preventive checks in order to protect against unlawful attacks on the life or health of persons or property or to protect against unauthorized acts resulting in danger to life or health or to public safety and order;
10. give instructions to persons to behave in a certain manner within the limits necessary to perform the activities specified in points 1-5 or 9 or to perform other official activities undertaken within the scope and for the purpose of carrying out the statutory tasks of the Police or within the limits necessary to protect against the obliteration of traces when securing the scene of an incident or to avoid an immediate threat to the safety of persons or property, when this is necessary for the efficient performance of the tasks of the Police or to avoid the obliteration of traces of an offence.

Conclusions

According to A. Skrabacz, security is "the primary, existential and supreme value and need of every human being, conditioning the survival and development of individuals and social groups. In order to strengthen the sense of security, people unite and establish the state as the most important organisational form that guarantees security"[50]. The decisive role of the state, defining its presence as an entity, is to ensure security and public order for all citizens[51].

The police as an armed and uniformed formation have the main role within the framework of security protection. As a specialised service, police units have a fundamental function in the state as a security authority performing tasks to ensure security and public order for the whole of society. The police are of crucial importance to the population as they ensure the proper functioning of public order in a given urban area. On the other hand, the other civilian public administration bodies, which are defined in the generally applicable Acts, are only auxiliary units to the main uniformed service, which is the Police[52].

The police is a "uniformed and armed formation serving the public and designed to protect the safety of the people and to maintain public safety and

50 M. Leszczyński, A. Gumieniak, L. Owczarek, R. Mochocki: *Security in the local dimension, Selected areas*, Difin SA Publishers, Warsaw 2013, p. 13.

51 M. Zdyb, J. Stelmasiak, K. Sikora: *System bezpieczeństwa i porządku publicznego, organy i inne podmioty organizacji*, ed. Wolters Kluwer SA, Warsaw 2015, p. 13.

52 S. Pieprzny: *Police, organisation and functioning*, 3rd edition, Warsaw 2011, p. 9.

order"[53]. With the increased effectiveness of the activities undertaken by the Police in ensuring public safety and order, the overall state of safety among the population increases. The effectiveness of the activities undertaken by the Police, is significantly influenced by proper preparation, planning and execution of specific tasks. The above-mentioned police activities cannot be carried out correctly, without proper training and without appropriate application of methods and forms of action in the event of a threat to public safety and order, and in particular to human life[54].

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53 Art. 1 (1) of *the Act of 6 April 1990 on the Police*, Chapter 1, General Provisions, (Journal of Laws 1990 No. 30 item 179)

54 M. Czuryk, M. Karpiuk, J. Kostrubec, K. Orzeszyny: *Police Law*, Difin Publishing House, Warsaw 2014, p. 95.

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IMPROVING THE PREPAREDNESS OF INDEPENDENT PUBLIC HEALTHCARE INSTITUTIONS FOR NATIONAL DEFENSE NEEDS IN THE AREA OF OPERATIONAL ORGANIZATION

Abstract

The preparation of independent public healthcare institutions for the efficient provision of medical assistance under conditions of external threats to national security and during wartime currently represents one of the most significant challenges faced by the healthcare system in Poland. The scale of the necessary efforts, such as the need for a sufficient number of trained medical personnel and the provision of essential infrastructure, services, procedures, equipment, and supplies, creates a foundation for developing substantive grounds for implementing legal, structural, and organizational changes. The main objective of these changes is to enhance the readiness and operational capacity of the structures responsible for delivering medical assistance in crisis situations. In the event of an external threat to national

security or during wartime, independent public healthcare institutions that provide outpatient medical services, such as clinics, outpatient departments, health centers, infirmaries, or ambulatory units with inpatient rooms, will primarily continue performing their statutory peacetime duties, namely the ongoing provision of healthcare services. The primary beneficiaries of these services will be the civilian population. To ensure continuity in the delivery of healthcare services, it is necessary to prepare and improve the structures involved in medical activities in the period preceding a potential threat. Therefore, based on the author's own scientific research, this article identifies directions for improving organizational solutions aimed at preparing independent public healthcare institutions for the performance of tasks under conditions of external threats to national security and during wartime.

Keywords

defense preparations, defense needs, healthcare entity, operational organization

Introduction

The primary objective of the defense preparations of the Republic of Poland is to create organizational conditions that ensure sovereignty, territorial integrity, independence, the survival of the nation, and the continuity of state structures during external threats to national security and in times of war. The main goal of preparing medical entities to operate under conditions of external threats to national security and during wartime is, in turn, to establish legal and organizational conditions for the provision of healthcare services, that is, undertaking actions aimed at preserving, saving, restoring, or improving health. This goal can be achieved through the proper organization, preparation, and continuous improvement of the structures responsible for carrying out medical activities in the period preceding a potential threat.

Given the current political and military situation in the immediate vicinity of the Republic of Poland, marked by an increased likelihood of global-scale confrontation and a high degree of unpredictability, it is justified to recognize the necessity of improving solutions related to the preparedness of medical entities, including independent public healthcare institutions, for the performance of tasks under conditions of external threats to national security and during wartime.

Methodology

In the literature, it is generally accepted that the objective of scientific research may be either cognitive or practical in nature. For the purposes of this article, a utilitarian goal has been adopted, defined as identifying directions for improving the

preparedness of independent public healthcare institutions for the performance of tasks under conditions of external threats to national security and during wartime. The scientific research focused on independent public healthcare institutions (hereinafter referred to as SPZOZ) for which the founding body is the Capital City of Warsaw, and which provide outpatient medical services within ambulatory care facilities.

The article presents research findings obtained primarily through the use of internal legal regulation analysis and the diagnostic survey method, including questionnaire and expert interview techniques. The recipients of the questionnaire technique survey were individuals managing independent public healthcare institutions. The interview technique, on the other hand, was applied to SPZOZ employees responsible for tasks related to national defense within these medical entities. The results obtained by means of these methods made it possible to identify directions for the improvement of these institutions in the area of organizational operations aimed at carrying out tasks under conditions of external threats to national security and during wartime.

Effectiveness of operation

Currently, the so-called organizations, including independent public healthcare institutions, are required to demonstrate a high level of operational efficiency, which means the ability to take advantage of emerging opportunities. Operational efficiency, therefore, refers to the capacity to adapt to change and to build relationships with external partners, rather than striving to maintain stability. The discipline that focuses on identifying ways to improve all forms of activity[1] is praxeology.

When analyzing efficiency, it is necessary to apply diverse and practical criteria and measures that allow for a comprehensive evaluation. However, "the choice of these criteria is always the responsibility of the decision-maker. What is important, though, is that the assessment of efficiency be based on a set of criteria which reflects the entirety of the institution's performance outcomes."[2]

In praxeology, two main types of efficiency are generally distinguished: universal efficiency and synthetic efficiency, with the fundamental forms of universal efficiency being effectiveness, benefit, and cost-efficiency. Effectiveness refers to the ability to choose appropriate goals; therefore, effective action consists of performing activities that lead to the achievement of intended objectives. In such action, it is not necessary to attain the main goal directly. Achieving intermediate goals that enable the realization of the main goal is sufficient.

1 T. Kotarbiński, *Traktat o dobrej robocie*, Wrocław 1982, p. 352.

2 M. Czerska, *Organizacja przedsiębiorstw*, part II: *Metodologia zmian organizacyjnych*, Gdańsk 1996, p. 19–20.

Effectiveness is closely related to operational efficiency[3], which is one of the key issues in the theory of organization and management. In the literature, efficiency is typically understood as cost-efficiency, productivity, profitability, effectiveness, performance, etc. a common feature of both efficiency and effectiveness is that they are outcome-oriented evaluations of actions. The difference lies in the fact that effectiveness is concerned with achieving the intended goal, whereas efficiency focuses more on obtaining positive results. If the outcome of a given action is the production of valuable results (even if those results were unintended), such action can still be considered efficient. Therefore, every effective action is also efficient, but not every efficient action has to be effective.[4]

Another principle of efficiency is benefit, which should be understood as the difference between the useful outcome and the cost of the action. At the same time, various types of relationships between effectiveness and benefit can be distinguished.[5] The concept of the benefit of an action is, in a sense, a complement to the concept of the effectiveness of an action, "and the evaluation of an action in terms of its benefit serves as a complement to the evaluation in terms of its effectiveness."[6]

The third and final form of efficient action is cost-efficiency, which is measured by the ratio of useful outcomes to costs. This can be interpreted in two ways: alternatively as productivity or thrift.

In addition to the forms of efficient action, "which are primarily used to assess planned and completed actions, and thus constitute the so-called praxeological system of evaluation, there are also practical directives for efficient action which serve as guidelines aimed at improving that action. These take the form of recommendations for maximizing efficiency or warnings to avoid inefficiency. There are many types of practical directives, which differ in their level of generality. They can be categorized in various ways depending on the classification criteria used. For example, based on their internal structure, directives can be divided into simple and complex. In turn, based on their linguistic form, we distinguish between positive directives (recommendations) and negative directives (warnings)"[7]. The most important directive for efficient action is the organization of the action.

Organizational Structure of SPZOZ

To increase the effectiveness of actions undertaken as part of defense preparations across all categories of healthcare entities, it is essential to adapt the organizational

3 Both in academic literature and in everyday language, various qualifiers of efficiency are used, including: decision efficiency, operational efficiency, business efficiency, economic efficiency, financial efficiency, company efficiency, management efficiency, investment efficiency, leadership efficiency, macroeconomic efficiency, managerial efficiency, selection method efficiency, motivation efficiency, operational performance, enterprise efficiency, investment project efficiency, recruitment efficiency, training efficiency, and the efficiency of processes and workstations.

4 See: R. Socha, *Działania Policji w stanach nadzwyczajnych*, Warsaw 2013.

5 See: W. Kieżun, *Sprawne Zarządzanie Organizacją*, Warsaw 1997, p. 18–22.

6 J. Kurnal, *Zarys teorii organizacji i zarządzania*, Warsaw 1969, p. 343.

7 Further: R. Socha, *Działania Policji…*

structure to the needs arising from the defense preparedness of independent public healthcare institutions. An analysis of the organizational statutes of independent public healthcare institutions in the capital city revealed that not all entities include a defense-related position within their organizational structure, for example, the Independent Group of Public Outpatient Healthcare Institutions Warsaw-Wesoła[8] and the Group of Public Outpatient Healthcare Institutions Warsaw-Rembertów[9].

According to an expert from the Independent Public Healthcare Institution (SPZOZ) Warsaw-Ursynów, responsible for security matters, including defense preparedness, "a key factor in the area of operational organization aimed at improving the effectiveness of the preparedness of healthcare entities, including independent public healthcare institutions, for operating under conditions of external threats to national security and during wartime, is the standardization of the job titles related to 'defense matters', and most importantly, the standardization of the responsibilities associated with these positions."[10] This is confirmed by the results of the questionnaire technique survey, which primarily indicate a lack of awareness among management staff regarding the proper title of the position responsible for defense-related tasks within the healthcare entity. Responses to the question concerning the official title of a dedicated position created for national defense purposes did not correspond to the job titles specified in the organizational statutes of SPZOZ institutions. Furthermore, respondents referred to positions that serve entirely different purposes, such as occupational health and safety (OHS) or fire protection officers. This may indicate that defense preparedness is being overlooked within the managed facility. Therefore, the following section will present research findings focused on the analysis of current organizational structures of outpatient clinics in the capital city, specifically in the context of their readiness to perform defense-related tasks.

In the Independent Group of Public Outpatient Healthcare Institutions Warsaw–Ochota, there is a "Single-Person Independent Position of the Plenipotentiary for Civil Defense Affairs."[11] The responsibilities of this position include, in particular:

- carrying out tasks related to defense matters;
- ensuring proper conditions for the storage, rotation, maintenance, and integrity of specialized reserves;
- preparing and updating organizational and operational plans for the first aid medical unit;
- supervising the storage of equipment for the first aid medical unit;
- preparing and ensuring operational readiness of the independent general rescue team;

8 https://szpzlowesola.waw.pl/pl/strony/schemat-organizacyjny (access: 22.09.2024).

9 Organizational Statute of the Independent Group of Public Outpatient Healthcare Institutions Warsaw-Rembertów, section 56 – introduced by the Director's Order No. 01_04_2024_ZP on April 18, 2024.

10 Results of the author's own research using the diagnostic survey method in the form of an interview technique.

11 Organizational Statute of the Independent Group of Public Outpatient Healthcare Institutions (SZPZLO) Warsaw-Ochota, section 75 – annex to Order No. 167.2024 of the Director of SZPZLO Warsaw-Ochota dated October 31, 2024.

– maintaining a register of medical personnel for mobilization and defense purposes;
– conducting training for civil defense personnel;
– carrying out tasks within the Management Control System as defined by separate regulations.

In the Independent Group of Public Outpatient Healthcare Institutions Warsaw Praga-Południe, matters of defense are the responsibility of the "Coordinator for Defense and Reserves"[12], whose tasks include, in particular:

– preparing the Independent Group of Public Outpatient Healthcare Institutions (SZPZLO) for national defense needs;
– developing directives and guidelines related to defense;
– participating in briefings and training sessions on defense issues organized by the Health Policy Office and the Security and Crisis Management Office of the City of Warsaw;
– cooperating with defense-related authorities of the Praga-Południe district and the Capital City of Warsaw;
– cooperating with internal departments and external entities regarding the performed tasks;
– preparing applications for exemption from compulsory active military service in the event of mobilization during wartime.

In the Independent Public Group of Outpatient Healthcare Institutions Warsaw Żoliborz–Bielany, the position of "Civil Defense Inspector"[13] has been established, whose responsibilities include, among others:

– planning tasks aimed at protecting the population from threats;
– carrying out tasks and complying with orders, instructions, and guidelines issued by the Voivodeship Chief of Civil Defense;
– developing internal instructions related to Civil Defense;
– performing other duties assigned by the supervisor.

The "Defense Affairs Inspector"[14] is responsible for defense-related matters at the Independent Public Healthcare Institution Warsaw Wola–Śródmieście, and their duties include:

– planning and implementation of defense-related tasks, in particular planning and conducting defense training in accordance with the guidelines of the Department of Defense Affairs of the Ministry of Health, the Security and Crisis Management Office, and the Health Policy Office of the City of Warsaw,

12 Organizational Statute of the Independent Group of Public Outpatient Healthcare Institutions Warsaw (SZPZLO) Praga Południe, section 27 – annex to Order No. 86 of the Director of SZPZLO Warsaw-Praga Południe dated November 27, 2024.

13 Organizational Statute of the Independent Public Group of Outpatient Healthcare Institutions Warsaw Żoliborz-Bielany, section 23 – annex to Order No. 72/2024 of the Director of the Independent Public Group of Outpatient Healthcare Institutions Warsaw Żoliborz-Bielany dated October 10, 2024, concerning the introduction of the Organizational Statute of the Independent Public Group of Outpatient Healthcare Institutions Warsaw Żoliborz-Bielany.

14 Organizational Statute of the Independent Public Healthcare Institution Warsaw Wola – Śródmieście, section 13 item 12 sub-item 3.

as well as raising awareness, initiating and cooperating in the promotion and participation of SPZOZ employees in the implementation of defense matters;
- cooperation with the Personnel Process Support Department in handling exemption procedures for military reservists and maintaining records of persons subject to compulsory military service, including those with mobilization assignments to military units or organizational and mobilization assignment cards for service in Civil Defense Formations, and those exempt from compulsory military service in the event of mobilization or war;
- handling exemption procedures for employees subject to compulsory military service;
- preparing applications to Military Recruitment Commanders regarding the exemption of selected employees from compulsory military service in the event of mobilization or war;
- maintaining a register of material and personal services for defense purposes – developing and updating the "Institution's Defense Preparedness Plan", the "Set of Defense Tasks" to be carried out during threats to national security and wartime, documentation for the Permanent Duty System during periods of threat to national security and wartime, training the Permanent Duty staff, and participating in trainings;
- preparing a balance of medical personnel for national defense purposes;
- drafting regulations, instructions, guidelines, and other documents related to defense matters;
- organizing training sessions for individuals authorized to access restricted materials.

In the Independent Group of Public Outpatient Healthcare Institutions Warsaw – Wawer, a position titled "Inspector for Security, Crisis Management, Civil Protection and Emergency Affairs"[15] was established, while in the Independent Public Healthcare Institution Warsaw-Ursynów, a position titled "Security Specialist"[16] was created. In both entities, the scope of tasks is identical and includes:
- developing and updating documentation related to operational planning during periods of state security threats and war;
- maintaining the staffing register for periods of state security threats and war, as well as managing matters related to ensuring staffing of positions;
- handling matters related to submitting requests to local government authorities for imposing material and personal contributions on the entity during periods of state security threats and war;
- managing preparations for the allocation by healthcare entities in the Mazowieckie Voivodeship of bed capacity for uniformed services subordinate

15 Organizational Statute of the Independent Group of Public Outpatient Healthcare Institutions (SZPZLO) Warsaw Wawer, section 56 – appendix to the Director's Order of SZPZLO Warsaw-Wawer No. 03/06/2024 dated June 17, 2024.

16 Organizational Statute of SPZOZ Warsaw-Ursynów, section 62 – appendix to Order No. 89/2024 of the Director of SPZOZ Warsaw-Ursynów dated October 1, 2024.

to or supervised by the minister responsible for internal affairs, during periods of state security threats and war;
- developing and updating documentation on defense matters in accordance with the documentation of the Capital City of Warsaw in this area;
- developing and updating documentation in case of changes in regulations concerning defense matters issued by the Minister of Internal Affairs and Administration;
- carrying out tasks related to civil planning;
- preparing crisis management plans;
- preparing crisis response procedures;
- organizing the system for threat monitoring, warning, and alerting within the Independent Group of Public Outpatient Healthcare Institutions (SZPZLO);
- preparing procedures, instructions, and guidelines for informing patients about threats and appropriate responses in case of emergencies within the entity;
- organizing and supervising contracts and agreements related to the implementation of tasks included in the crisis management plan;
- creating reports for management concerning threats, risk maps, and priorities for responding to specific threats;
- developing and implementing procedures for critical infrastructure threat scenarios and supervising the protection of critical infrastructure;
- carrying out orders from authorized personnel concerning crisis management;
- participating in internal training sessions organized for employees.

In the Independent Group of Public Outpatient Healthcare Institutions Warsaw-Mokotów, the position of "Defense Specialist"[17] has been established, aimed at ensuring the mobility of the Independent Group of Public Outpatient Healthcare Institutions (SZPZLO) for the state's defense needs, as well as the mitigation of the effects of natural disasters and environmental threats. The Specialist's duties include:
- developing, coordinating, regular updating, and supervising the implementation of preparation plans for state defense needs by subordinate organizational units;
- organizing training in defense, evacuation, and general self-defense;
- monitoring subordinate organizational units' compliance with evacuation plans in in case of fire, natural disaster, or other local threats;
- cooperating with the Health Policy Office, the Security and Crisis Management Office of the Capital City of Warsaw, and other institutions;
- protecting classified information related to defense.

Similar terminology has been adopted in the Independent Group of Public Outpatient Healthcare Institutions Warsaw Bemowo-Włochy, where an "Independent Position for Defense Matters"[18] has been designated within the organizational structure.

17 Organizational Statute of the Independent Group of Public Outpatient Healthcare Institutions (SZPZLO) Warsaw-Mokotów, section 23 – annex to Order No. 84/2024 of the Director of SZPZLO Warsaw-Mokotów dated October 1, 2024.

18 Organizational Statute of the Independent Group of Public Outpatient Healthcare Institutions Warsaw Bemowo-Włochy from March 2024, annex no. 1.

In the Independent Group of Public Outpatient Healthcare Institutions Warsaw Białołęka-Targówek, the "Coordinator for Civil Defense"[19] is responsible for defense matters, whose duties include:

- developing and maintaining up-to-date documentation related to defense matters as required by the Health Policy Office of the Capital City of Warsaw for times of peace and war;
- preparing analyses and reports on the execution of defense tasks;
- conducting defense training for the management staff and employees of SZPZLO;
- cooperating with the Health Policy Office of the Capital City of Warsaw in the implementation of defense and crisis management tasks;
- developing plans and conducting training with regard to medical evacuation of SZPZLO and procedures in case of emerging threats.

An analysis of the scope of tasks designated for positions created to carry out tasks related to the preparation and utilization of independent public healthcare institutions, whose founding authority is the Capital City of Warsaw, and which provide medical services in the form of outpatient care, for the needs of state defense reveals a number of discrepancies that may affect the effectiveness of defense preparations in this category of healthcare entities. The main shortcomings include, in particular:

- lack of uniformity in the titles of positions created to perform tasks related to state defense needs, which in turn leads to a variety of job responsibilities for these positions;
- lack of knowledge among both the management of the healthcare entity and the individuals assigned to carry out these tasks regarding current legal bases in the area of state defense (e.g., use of terms such as "exemption", "civil defense," despite the repeal of the legal basis, i.e., the 1967 Act on the *Universal Duty of Defense of the Republic of Poland*, or use of the term Military Recruitment Commander, now replaced by Head of the Military Recruitment Center);
- lack of familiarity with security science terminology among persons performing tasks in this area, e.g., the phrase "in case of mobilization (missing conjunction 'and') during war," which changes the meaning;
- assignment of tasks that should belong to the duties of other positions (e.g., organizing training sessions for persons authorized to access classified materials – Data Protection Inspector; supervising subordinate organizational units' compliance with evacuation plans in case of fire – fire protection inspector);
- assignment of security-related tasks unrelated to defense preparations (e.g., creating reports for management concerning threats, risk maps, priorities in

19 Organizational Statute of the Independent Team of Public Outpatient Healthcare Institutions (SZPZLO) Warsaw Białołęka-Targówek from September 2024, section 10 point 13 – annex to Order No. 84/2024 of the Director of SZPZLO Warsaw-Mokotów dated October 1, 2024.

responding to specific threats, which is justified if the job title is not limited solely to defense matters);
– assignment of security-related tasks that are not foreseen for independent public healthcare institutions (e.g., preparation of crisis management plans; development and implementation of procedures in the event of critical infrastructure threats and supervision of critical infrastructure protection).

Taking into account the above, as well as, according to an expert, "considering the provisions of the Act of December 5, 2024, on *Population Protection and Civil Defense*, which imposes additional tasks on healthcare entities in the area of preparedness for action both in conditions of non-military and military threats"[20], it is necessary to consider the creation of a position entitled "Coordinator (Plenipotentiary) for the Preparation of (name of the healthcare entity) for State Defense, Population Protection, and Civil Defense", which should be included in the organizational structures of all healthcare entities, including independent public healthcare institutions. Furthermore, it is essential to standardize the scope of duties assigned to this position. Based on the research results obtained, the key tasks of the coordinator should include:

– developing and updating the "Preparation Plan of the Independent Public Healthcare Institution for State Defense Needs";
– cooperation[21] with relevant entities in the development of plans and procedures concerning the implementation of defense tasks and the provision of services for defense purposes[22];
– exempting personnel from the obligation to perform active military service in the event of mobilization and during wartime;
– carrying out imposed material and personal contributions;
– planning and preparing the transformation of the independent public healthcare institution from a civil protection entity to a civil defense entity;
– organizing the system of information, warning, and alerting;
– planning and preparing protective buildings;
– preparing personnel and patients for appropriate behavior in emergency situations;
– organizing training for staff in the areas of civil protection, civil defense, and defense preparations,
– implementation of other actions necessary for the preparation and use of the independent public healthcare institution for the purposes of national defense, civil protection, and civil defense.

20 Results of the author's own research using the diagnostic survey method in the form of an interview technique.

21 See: C. Tomiczek, R. Ščurek, *Cooperation of health care units with uniformed formations in the area of public security,* "Security Forum" 2022, Volume 6 No. 2.

22 See: Ordinance No. 49/2016 of the Mayor of the Capital City of Warsaw of 18 January 2016 on the adoption of the internal organizational statute of the Health Policy Office of the Municipal Office of the Capital City of Warsaw, including amendments introduced by Ordinance No. 46/2019 of the Mayor of the Capital City of Warsaw of 16 January 2019, sections 10 and 11.

Preparation of Management Staff and Personnel

The readiness of independent public healthcare institutions to operate under conditions of external threats to national security and during wartime also depends on the preparation of both management staff and personnel, as well as their awareness of the necessity to provide services for defense purposes. Unfortunately, in the healthcare sector, "no real importance is attached to defense preparedness. As a result, tasks in this area of security are either not carried out at all, or they are undertaken sporadically and only as a response to 'immediate needs', i.e., as a reaction to initiatives imposed from above by authorities responsible for organizing, imposing, supervising, and monitoring defense tasks"[23], states an expert from SPZOZ Warsaw-Ursynów. Hence, "one can only expect ad hoc changes prompted by the situation at hand or by post-control recommendations."[24] The already presented survey results confirm these statements, indicating that defense preparedness is not implemented in as many as 49% of outpatient clinics in the capital. Using medical terminology, the remedy for changing this approach, according to the expert, is "raising awareness among both medical and non-medical staff about the role and significance of defense preparedness within the national security system of the Republic of Poland,"[25] as well as "introducing the climate of commonness of defense preparedness within healthcare entities, including independent public healthcare institutions."[26] In order to increase the effectiveness of the preparedness of independent public healthcare institutions (SPZOZ) for the national defense needs, in addition to adapting the staffing structure to the requirements arising from defense preparations and introducing the "climate of commonness," it is essential to avoid "assigning tasks in this area to random individuals"[27], notes an expert from SZPLO Warsaw-Wawer.

Another area for improvement involves the acquisition of competencies and skills by medical personnel in the field of counteracting the effects of armed conflict. The assessment of the healthcare system's capabilities indicates limitations in the availability of a sufficient number of trained medical personnel who could guarantee effective action in mitigating the consequences of mass casualties resulting from armed conflict. a fundamental shift in this area should involve raising awareness of "what battlefield injuries are and how to organize rescue operations for affected individuals. Knowledge of Tactical Combat Casualty Care (TCCC) should no longer be a skill possessed only by a handful of enthusiasts, but a widespread and deeply internalized responsibility of all medical

23 Results of the author's own research using the diagnostic survey method in the form of an interview technique.
24 Ibidem.
25 Ibidem.
26 Ibidem.
27 Ibidem.

personnel."[28] In this area, training for SPZOZ medical personnel should cover pre-hospital care for the wounded and injured, procedures and interventions aimed at stabilizing vital functions, as well as qualification and preparation for transport — medical evacuation. "In today's circumstances, and considering the fact that the knowledge and practical experience in this domain is currently the domain of the Military Health Service (WSZ), it should be considered obvious that at the early stage training should be conducted by experienced WSZ medical personnel using the facilities of military hospitals and training centers, and based on the curriculum currently used in the Armed Forces. At a later stage, certified training centers located at medical universities and in key postgraduate (specialization) training institutions may take part in the education process. For this reason, it is necessary to begin planning the modification of undergraduate and postgraduate training programs to supplement their content with a comprehensive package of theoretical and practical topics related to battlefield medicine."[29]

Training Organization

An essential element in improving the operational readiness of independent public healthcare institutions (SPZOZ) to function in conditions of external threats to national security and during wartime is the proper organization of both internal and external training. The training must be based on a properly conducted identification of training needs and delivered by individuals with knowledge and experience in the relevant field. According to an expert, "the training topics should primarily take into account planning scenarios and defense tasks specified in operational functioning plans, considering the specific characteristics resulting from the assessment of the military threat in the respective voivodeship."[30] Therefore, "the organization of a coherent training system for individuals responsible for defense preparedness in healthcare institutions" is highly desirable.[31] It would also be advisable to "include the management personnel of independent public healthcare institutions (SPZOZ) in the defense training cycle"[32], as research shows that defense preparedness training was conducted in 53% of clinics, with a quarter of those trainings attended solely by the management of these entities.[33] The situation is slightly better when it comes to experts, as only one of them reported that in the SPZOZ where they carry out defense-related tasks, such training is not organized. In turn, in two cases, defense-related

28 G. Gielerak, *System ochrony zdrowia na miarę potrzeb oraz współczesnych wyzwań i zagrożeń*, „Menedżer Zdrowia" 2022, No. 5-6, p. 20.

29 Ibidem; see: G. Gielerak, *System z(de)mobilizowany*, „Menedżer Zdrowia" 2023, No. 9-10.

30 Results of the author's own research using the diagnostic survey method in the form of an interview technique.

31 Ibidem.

32 Ibidem.

33 Results of the author's own research using the diagnostic survey method in the form of a questionnaire technique.

issues are part of onboarding training for new employees, and in two other cases, they are addressed within the framework of general safety training. Only in one case were training sessions organized exclusively for defense preparedness. It is concerning that only 7% of respondents identified the need for organizing training as a requirement for preparing SPZOZ to operate under conditions of external threats to national security and during wartime in the area of organizational functioning.[34]

Integration of Tasks Performed as Part of Defense Preparations with Non-Defense Tasks

A necessary premise affecting the implementation of defense-related tasks by independent public healthcare institutions during peacetime is "the integration of tasks carried out within the framework of defense preparations with tasks not falling within this scope"[35], i.e., with statutory duties focused on the provision of health services. These involve actions aimed at preserving, saving, restoring, or improving health. According to an expert, "the integration of activities is essential due to the still limited state funding for defense preparations. Financial difficulties impose constraints on how independent public healthcare institutions can organize their operations for defense purposes. However, the insufficient amount of financial resources cannot be an excuse for stagnation in the execution of defense-related tasks. Therefore, the financing of broadly understood security, including defense preparations, should be a state priority."[36] It should also be remembered that maintaining continuity of medical care for the civilian population in conditions of threat will additionally require actions such as:

- ensuring the safety of medical personnel;[37]
- ensuring the protection of facilities;
- securing sources of supply for medicines, medical equipment, and materials;
- ensuring access to water;
- securing sources of electrical power;
- providing means of communication and transportation;
- marking the facility in accordance with relevant conventions.[38]

Therefore, in peacetime, it is necessary (in addition to maintaining treatment capacity, infrastructure essential for providing health services along with personnel, appropriate equipment, and diagnostic facilities, carrying out investment initiatives, including construction projects and capital expenditures, as well as performing renovations and repairs of facilities and equipment to ensure that the infrastructure is

34 Ibidem.

35 Results of own research using the diagnostic survey method in the form of an interview technique.

36 Ibidem.

37 See: R. Socha, D. Haldar, *Infectious disease – a challenge for international security,* „Security Forum" 2022, Volume 6 No. 2.

38 See: G. Gielerak, Zdrowy pomysł, „Menedżer Zdrowia" 2022, No. 5–6/2022, p. 22.

prepared for national defense purposes[39]) to make use of human and equipment resources, as well as infrastructure, in a manner that maximizes the effectiveness and efficiency of actions taken under threat conditions.

Conclusion

In conclusion, only the effective and skillful combination of knowledge and experience can guarantee that independent public healthcare institutions are prepared to operate under conditions of external threats to national security and during wartime – preparation that "offers a chance for comprehensive and lasting protection, in the context of a new and unstable reality, of the state's most valuable asset: its citizens."[40] However, the results of scientific research indicate that as many as 77% of respondents, i.e., individuals managing healthcare entities categorized as outpatient clinics, do not perceive a need for improvement in the area of operational organization. Only a small number of managers recognize the necessity of enhancing procedures related to operations, the imposition of in-kind performance, the organization of training sessions and exercises, and maintaining continuity of operations in the event of communication loss.[41]

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39 See: Decision No. 122/MON of the Minister of National Defense of 27 September 2024 on the commissioned tasks in the field of national defense and security carried out by independent public healthcare institutions supervised by the Minister of National Defense and by research institutes of the military health service (Official Journal of the Ministry of National Defense, item 152), section 3.

40 G. Gielerak, *Zdrowy pomysł*…, p. 24.

41 Results of the author's own research using the diagnostic survey method in the form of a questionnaire technique.

W. Kieżun, *Sprawne Zarządzanie Organizacją*, Warsaw 1997.

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USE OF ARTIFICIAL INTELLIGENCE IN CIVILIAN PROTECTION

Abstract

In recent years, the number of threats in our environment has been steadily increasing. Observable climate change, increasingly frequent natural disasters, technical failures, and armed conflicts pose new challenges for humanity. a response to these challenges lies in the use of modern technologies that enable effective civilian protection. One of the key solutions is the growing application of artificial intelligence as a tool supporting threat forecasting and aiding decision-making processes in crisis situations. Artificial intelligence is an important component of contemporary video surveillance systems, drones, and other devices, enhancing their operational efficiency and enabling autonomous functioning. On the one hand, it offers opportunities for effective threat prevention and mitigation; on the other, it raises concerns related to legal frameworks and ethical standards.

Keywords

Public safety and order, civilian protection, civil defense, artificial intelligence, threat forecasting, CCTV.

Introduction

The use of new technologies in civilian protection is becoming increasingly widespread and crucial in the face of contemporary challenges such as rapid climate change, pandemics, and armed conflicts. Modern technological solutions—including artificial intelligence (AI), geographic information systems (GIS), drones, advanced communication technologies, and video surveillance systems—play a key role in crisis management and public health protection. Their implementation significantly improves and accelerates decision-making processes while also offering new possibilities for enhancing safety. These technologies considerably reduce the time between the emergence of a threat and the adoption of appropriate decisions and responses. Additionally, they help maintain a relatively high level of safety for personnel directly involved in civilian protection activities. The versatility of modern technological solutions is also noteworthy. The same tools can be applied across various scenarios and incidents during the execution of civilian protection tasks[1]. The application of modern technologies in civilian protection and civil defense is gaining particular importance in light of the long-anticipated legal regulation—the Act on Civilian Protection and Civil Defense of December 5, 2024[2].

Technologies that not long ago remained at the conceptual stage now constitute an integral part of crisis management systems. Among them, artificial intelligence (AI) occupies a prominent place, with applications in threat forecasting, decision-making support, operational planning, and the execution of rescue operations. Given the increasing complexity of modern threats, analyzing both the capabilities and potential risks associated with technologies—particularly AI—from the perspective of security studies is not only justified but essential for better understanding their developmental trajectories.

Methodological Assumptions and Research Methods

The primary aim of this publication is to present the potential applications of modern technologies in the field of civilian protection. Particular attention is given to artificial intelligence as a tool that supports threat forecasting and aids decision-making processes in crisis management. This aim led to the formulation of the following research problem: *What are the capabilities of artificial intelligence-based technologies in the domain of civilian protection? To what extent does artificial intelligence support threat prediction and decision-making in crisis management?* a qualitative analysis of the available literature played a key role in the research process. Special emphasis was placed on the review of foreign-language publications that present experiences and solutions related to the use of artificial intelligence in civilian protection. The

1 P. Gromek, *Nowe technologie w ochronie ludności w Polsce. Rozwiązania dotyczące projektu SILVANUS. Część 2 – Twarde technologie i rozwiązania służące angażowaniu społecznemu*, „Zeszyty Naukowe Pro Publico Bono" 2024, nr 1(1), p. 178-179.

2 Act of 5 December 2024 on Civil Protection and Civil Defence (Journal of Laws of 2024, item 1907).

analysis incorporated synthesis, content analysis, and comparative analysis of various concepts for applying artificial intelligence.

Artificial Intelligence – Concept and Categories

The term *artificial intelligence* does not yet have a legally binding definition in Polish law. Literature often assumes, perhaps implicitly, that the term is commonly understood, though proposed definitions vary significantly[3]. According to T. Zalewski, the most frequently cited definition of AI stems directly from the Turing Test[4]. In this view, artificial intelligence is the ability of a machine to imitate or replicate human intelligence[5]. Zalewski also proposes his own definition, suggesting that AI is a system capable of performing tasks that require learning and consideration of new circumstances in solving specific problems, which—depending on configuration—can operate autonomously and interact with its environment[6].

Diverse definitions of AI are also found in international documents issued by the European Union, the Council of Europe, and UNESCO. M. Świerczyński and Z. Więcowski emphasize the fundamental importance of adopting a unified legal definition at the international level[7]. They point out that AI, as a scientific discipline, encompasses various approaches and techniques, such as:

- machine learning;
- machine reasoning, which includes planning, action programming, knowledge representation and reasoning, search, and optimization;
- robotics, which involves control, perception, sensors, and actuators, as well as the integration of all other techniques into cyber-physical systems.

The authors note that no standard definition of AI exists even within the scientific community, and it is most commonly referred to in relation to human intelligence. They examine European legislative acts defining AI, highlighting that these often serve as aspirational lists of goals, limitations, and caveats, while also identifying new areas where AI may serve as a problem-solving tool.

A notable example is the definition proposed in the European Parliament's resolution of 20 October 2020, which contains recommendations to the European Commission on the ethical framework for artificial intelligence, robotics, and related technologies (2020/2012(INL)).

3 T. Zalewski, *Definicja sztucznej inteligencji*, [in:] *Prawo sztucznej inteligencji*, L. Lai, M. Świerczyński (ed.), Warszawa 2020.

4 The Turing Test is a practical examination designed to attribute intelligence to a machine. The test was proposed by the British computer scientist Alan Turing. His work led to the formulation of the concept of a "learning machine." According to Turing's assumption, a machine capable of conversing with humans without arousing suspicion that it is a machine would win the "imitation game" and could be considered "intelligent." See: J. C. Lennox *2084 Sztuczna inteligencja i przyszłość ludzkości,* Warszawa 2023.

5 See: Ibid, p. 2.

6 T. Zalewski, *Definicja sztucznej inteligencji*, [in:] *Prawo sztucznej inteligencji*, L. Lai, M. Świerczyński (ed.), Warszawa 2020, p.2.

7 M. Świerczyński, Z. Wieckowski, *Sztuczna Inteligencja w prawie międzynarodowym. Rekomendacje wybranych rozwiązań,* Warszawa 2021, p. 35.

In that resolution, AI is defined as: *a system based on software or embedded hardware that exhibits intelligent behavior through, among other things, the collection, processing, analysis, and interpretation of data about its environment, and that takes actions—at least to some degree autonomously—in order to achieve specific goals*[8].

At the level of the Council of Europe, AI has been defined as a set of scientific methods, theories, and techniques aimed at replicating human cognitive abilities through machines[9].

In reviewing definitions, M. Świerczyński and Z. Więcowski identify several common features of AI:

- perception of the environment, including real-world complexity;
- information processing through data collection and interpretation;
- decision-making, including reasoning and learning;
- action-taking, including adaptability and responsiveness to environmental changes, while maintaining a certain level of autonomy;
- goal-oriented behavior[10].

A crucial element of modern AI systems is machine learning. Like AI itself, machine learning has been subject to numerous definitions. It is best understood as one method for achieving artificial intelligence[11]. Machine learning is defined as a subfield of AI that focuses on adaptive computational methods such as artificial neural networks and genetic algorithms[12]. Learning systems are closely linked to two other AI areas: automated reasoning and heuristic search. Automated reasoning is the oldest branch of AI and is based on formal logic, aiming to develop effective algorithms for deduction. Heuristic search focuses on efficiently exploring large problem spaces, primarily for problem-solving and strategic games[13]. Machine learning enables computers to "learn" rather than merely execute pre-programmed instructions. This method applies statistical techniques to enhance machine performance by generating new mathematical algorithms from large datasets without explicit programming. As a result, machine learning generates forecasts and recommendations based on patterns identified in training data, rather than following static algorithms like traditional computers[14].

The most advanced approach to AI development is *Artificial General Intelligence* (AGI), also referred to as *strong AI*. AGI aims to enable machines to perform any

8 https://sip.lex.pl/akty-prawne/dzienniki-UE/rezolucja-parlamentu-europejskiego-z-dnia-20-pazdziernika-2020-r-zawierajace-69483184 (access: 22.03.2025).

9 The definition is the result of work the European Commission for the Efficiency of Justice (CEPEJ) see: *European Ethical Charter on the use of artificjial intelligence in judicial systems,.*

10 M. Świerczyński, Z. Więckowski *Sztuczna Inteligencja w prawie międzynarodowym. Rekomendacje wybranych rozwiązań,* Warszawa 2021, p. 40.

11 See: Ibid, p. 43.

12 *Encyclopedia of Artificial Intelligence* red. J.R.R. Dopico, J. Dorado de la Calle, A.P.Sierra, Hershey 2009, p.666.

13 P. Cichosz, *Systemy uczące się*. Wydawnictwa Naukowo-Techniczne, Warszawa 2007, p.50.

14 *Artificial Intelligence and Data Protection: Delivering Sustainable AI Accountability in Practice, First Report: October 2018 Artificial Intelligence and Data Protection in Tension,* https://www.informationpolicycentre.com/uploads/5/7/1/0/57104281/cipl_second_report__artificial_intelligence_and_data_protection_hard_issues_and_practical_solutions__27_february_2020_.pdf, p. 4-5 (access: 23.02.2025).

intellectual task that a human can. a more illustrative way to describe AGI is to envision it as a machine capable of simulating human-level or even superior intelligence—also referred to as *superintelligence*[15]. All existing AI systems fall under the category of *narrow AI*, designed for specific tasks. At present, no systems exist that can be classified as AGI. It remains unclear whether such systems will ever be developed[16]. Nonetheless, claims about the emergence of AI systems that could rival the human mind occasionally surface in public discourse[17].

AI and Threat Forecasting

One of the key applications of artificial intelligence in civilian protection is threat monitoring and early warning. AI algorithms are capable of analyzing vast datasets from diverse sources—such as satellites, meteorological sensors, and social media—to predict the occurrence of natural disasters like floods, hurricanes, or wildfires. Such technologies could also be effectively implemented in Poland, where extreme weather and climate-related events have been observed over the past several years. Particular attention should be paid to increasingly frequent strong winds and high temperatures—phenomena that were previously rare in the region[18]. According to reports by the United Nations Climate Change Task Force, these occurrences are a direct result of global warming and broader climate change processes[19].

A notable example of AI in threat forecasting is the use of systems that analyze meteorological and historical data to predict the likelihood of flooding in specific regions. These tools enable early warning for residents and facilitate the implementation of appropriate preventive measures. In 2018, a team of scientists from Lawrence Berkeley National Laboratory (Berkeley Lab) received the Gordon Bell Prize[20] for developing a deep learning model capable of extracting indicators of extreme weather events from climate data. According to the method's description, AI supported by high-performance computing can effectively predict and mitigate the impacts of climate change[21]. Neural network-based models have proven particularly

15 J. C. Lennox *2084 Sztuczna inteligencja i przyszłość ludzkości,* Warszawa 2023, p. 36-37.

16 P. Księżak, s. Wojtczak, *Prawa Asimova, czyli science fiction jako fundament nowego prawa cywilnego,* „Forum Prawnicze" 2020 nr 4, p. 59.

17 M. Rotkiewicz, *Trzy litery, które wstrząsną światem*, „Polityka", nr 7, p. 61.

18 W. Krasiński, Unmanned Aircraft Systems in Crisis Management in Poland after 2007, „Safety and Defence Scientific and Technical Journal" 2020, Vol 6, No 2, p. 46-47.

19 Raport IPCC: Summary for policymakers in Polish. Communication 05/2021 of the Interdisciplinary Advisory Team for the Climate Crisis at the President of the Polish Academy of Sciences. https://bip.pan.pl/artykul/215/823/6-raport-ipcc-podsumowanie-dla-decydentow-po-polsku(access: 11.01.2025).

20 The Gordon Bell Prize is awarded annually in recognition of outstanding achievements in the field of large-scale computing. The purpose of the prize is to track progress in parallel computing over time, with particular emphasis on innovations in the application of high-performance computing used in science, engineering, and large-scale data analysis. The founder of the prize is Gordon Bell, a pioneer in high-performance parallel computing., https://awards.acm.org/bell (access: 11.01.2025).

21 W. Karasiński, *Sztuczna Inteligencja w ochronie ludności w Polsce – możliwości i perspektywy wykorzystania,* „Doctrina. Studia społeczno-polityczne" 2024, Tom 21 nr 21, p. 29.

effective in this context. Literature cites a model that achieved 99.9% accuracy in forecasting earthquake-related casualties, highlighting the potential of neural networks to analyze massive datasets and generate precise predictions for high-risk areas. These technologies not only support the planning of emergency operations but also improve evacuation processes, significantly reducing both casualties and material losses[22].

A practical example of AI in hazard forecasting is found in the work of the National Institute of Water and Atmospheric Research (NIWA) in New Zealand, led by N. Fadaeff. Given the country's frequent flooding events, the project aimed to develop a machine learning-based tool to replace traditional flood modeling techniques. While conventional physical flood models required up to 24 hours to process, the AI-enhanced system can generate reliable flood maps within 1–2 minutes. This significant reduction in processing time has a direct impact on the speed and accuracy of responses by residents in flood-prone areas[23].

Another application of AI in flood forecasting is discussed in *Nature*, where researchers demonstrated that AI-based models can improve forecast accuracy, particularly in regions where traditional methods are less effective. These AI systems can issue warnings up to five days in advance[24]. They are capable of detecting both extreme events and threats in ungauged basins. One such model has been integrated into an operational early warning system that provides free, real-time flood forecasts for over 80 countries. The model was tested against the Global Flood Awareness System (GloFAS), a leading global flood prediction platform. The AI model performed equally well—or better—than GloFAS in both short- and long-term scenarios, especially when forecasting extreme weather events[25].

AI has also been applied in flood forecasting research on the Ba River in Vietnam. In this case, researchers combined hydrodynamic models with AI to assess flood risk. Techniques such as decision trees[26] and AdaBoost[27] were used to develop flood vulnerability maps. The study successfully demonstrated the integration of machine learning, hydraulic modeling, and the Analytical Hierarchy Process (AHP) method

22 R. Chaparro, H. Rincon, O. Betancourt, A. Melo Sierra, M. Gomez., J. Penuela, *Artificial intelligence for the prediction of health emergencies and disasters,* "Disaster and Emergency Medicine Journal" 2024, 9(4), p. 255.

23 *Forecasting floods in a fraction of the time with AI*
https://niwa.co.nz/news/forecasting-floods-fraction-time-ai (access: 18.03.2025).

24 G. Nearing, D. Cohen, V. Dube, et al. *Global prediction of extreme floods in ungauged watersheds*. Nature 627, 2024 s.559–563, https://doi.org/10.1038/s41586-024-07145-1 (access: 17.04.2025).

25 See:Ibid.

26 The decision tree technique is a method used in machine learning and artificial intelligence to make decisions or classify data based on their features (attributes). a decision tree is a structure resembling a flowchart, consisting of nodes, branches, and leaves. Source: D. Nelson, Czym jest drzewo decyzyjne? https://www.unite.ai/pl/what-is-a-decision-tree/ (access: 12.04.2025).

27 The AdaBoost (Adaptive Boosting) technique is a machine learning algorithm that builds a strong classifier by combining multiple weak classifiers. It operates iteratively, training successive weak models and increasing the weight of training examples that were misclassified by previous models in each iteration. This allows subsequent classifiers to focus more on difficult-to-classify cases. Source: J. Wołoszyn, *Wykorzystanie techniki AdaBoost w modelach opartych na regresji z wykorzystaniem sztucznej inteligencji*. Dydaktyka informatyki. 2019, (14), p. 162–169.

for risk assessment. The results continue to inform flood risk evaluation in the region and contribute to the development of effective mitigation strategies[28].

Beyond flood forecasting, AI is increasingly used in predicting the locations and intensities of hurricanes. Research conducted by the University of Miami's Rosenstiel School of Marine, Atmospheric, and Earth Science has shown that AI can effectively forecast a wide range of extreme events—from hurricanes and heatwaves to rainfall and droughts. AI models can predict events within minutes, whereas traditional methods require hours. In studies funded by the U.S. National Oceanic and Atmospheric Administration (NOAA), researchers analyzed radar data collected by so-called "hurricane hunter" aircraft. Machine learning techniques enabled the classification of this data to determine whether it represented meteorological phenomena or irrelevant oceanic or radar artifacts. While manual analysis of such data could take hours, AI systems complete the task within minutes[29]. a notable success of such implementation is a European AI-based model that accurately predicted the development of Hurricane *Francine* nearly ten days before it struck the southern coast of Louisiana—significantly earlier than traditional forecasting models[30].

Another area of active research is AI's use in earthquake forecasting. Preliminary results offer promise that this technology may help mitigate the impact of earthquakes on human lives and infrastructure. a team of scientists from the University of Texas at Austin developed an algorithm that predicted 70% of earthquakes a week before they occurred during a seven-month study in China. The model detected statistical patterns in real-time by analyzing seismic data based on historical events. It successfully predicted 14 earthquakes within approximately 200 miles of the epicenter, with nearly accurate estimates of their magnitudes. Researchers noted that this success was due to a relatively simple machine learning approach. The AI system was provided with statistical features based on the team's knowledge of earthquake physics and was trained on a five-year database of seismic records[31].

Importantly, AI integrates data from multiple sources—such as satellite imagery and real-time monitoring—enabling more precise forecasting of natural hazards and assessment of their potential consequences. Through the analysis of such data, new threats can be identified, and their evolution can be tracked, particularly in the context of changing weather conditions. Risk assessment systems supported by AI combine meteorological forecasts with localized environmental data, providing crucial support for preventive measures. The integration of monitoring technologies

28 Nguyen Huu Duy; Le Tuan Pham; Nguyen Xuan Linh; Tran Van Truong; Dinh Kha Dang; Truong Quang Hai; Quang-Thanh Bui *Flood risk assessment using machine learning, hydrodynamic modelling, and the analytic hierarchy process* Journal of Hydroinformatics 26 (8): 1852–1882. https://doi.org/10.2166/hydro.2024.033 (access: 17.05.2025).

29 R. C. Jones Jr. *a powerful, new tool in hurricane forecasting*, https://news.miami.edu/stories/2024/09/a-powerful-new-tool-in-hurricane-forecasting.html (access: 18.03.2025).

30 Ch. Scragg, *How artificial intelligence is storming the world of meteorology,* https://www.foxweather.com/weather-news/how-artificial-intelligence-storming-world-meteorology (access: 19.03.2025).

31 AI-Driven Earthquake Forecasting Shows Promise in Trials, https://news.utexas.edu/2023/10/05/ai-driven-earthquake-forecasting-shows-promise-in-trials/ (access: 18.03.2025).

with AI makes it possible to issue alerts to local communities before threats reach critical levels[32].

Decision Support in Crisis Situations

In the face of threats, the speed and effectiveness of decision-making are often critical to the successful de-escalation of a crisis. Traditional crisis management systems can struggle with processing and analyzing large volumes of information. Artificial intelligence is revolutionizing this process, with one of the most promising technologies being Retrieval-Augmented Generation (RAG), which combines generative language models with advanced information retrieval mechanisms[33]. This innovative approach merges search methodologies with generative models to enhance applications across various fields. RAG uses external data sources to improve the accuracy and relevance of generated responses. In the context of crisis management—especially during natural disasters—it can significantly enhance the decision-making process by providing timely and relevant information. Real-time data retrieval enables rapid access to critical information, supporting better situational awareness and more effective operational planning—both essential elements of successful crisis management[34]. The implementation of RAG in crisis management systems increases the precision of information disseminated to the public and aid organizations[35]. By synthesizing data from multiple sources—including weather forecasts, population maps, and infrastructure status—RAG systems can provide decision-makers with a comprehensive picture of the evolving situation[36]. The processes involved in RAG promote creative problem-solving akin to metacognition. This capability enables systems not only to generate responses but also to critically evaluate their outputs against retrieved data, thereby improving the overall factual accuracy of the information delivered[37].

Integrating artificial intelligence with crisis management systems enables the automation of decision-making processes, which is vital for fast and effective crisis response. a key component of this integration is the consolidation of data from sources

32 P. Zaskórski P., Żbik, *Monitorowanie zagrożeń z wykorzystaniem systemów informacji geograficznej*, „Studia Bezpieczeństwa Narodowego" 2016, 9(1), p. 397-413.

33 S. Malik, H. Kharel, D.S.Dahiya, H. Ali, H. Blaney, A.D. Singh, … & B.P. Mohan. *Assessing chatgpt4 with and without retrieval augmented generation in anticoagulation management for gastrointestinal procedures.* Annals of Gastroenterology. 2024. https://doi.org/10.20524/aog.2024.0907 (access:18.05.2025), G. Barbarossa, S.N.A.K. Putri, K. Rahayu, A. Siddiq, M. Maulana, N.A. Ferawati, *Hexa-helix approach for smart disaster governance framework in developing cities, case study: slawi urban area, tegal regency.* IOP Conference Series: Earth and Environmental Science, 1264(1), 012029, (access:18.05.2025).

34 Y. Xia, Y. Huang, Q. Qiu, X. Zhang, L. Miao, Y. Chen, *a question and answering service of typhoon disasters based on the t5 large language model,* "ISPRS International Journal of Geo-Information" 2024, 13(5).

35 P. Li, Y. Lai, *Augmenting large language models with reverse proxy style retrieval augmented generation for higher factual accuracy,* https://doi.org/10.31219/osf.io/ma6cq (access: 19.05.2025).

36 Z. Bouzidi, M. Amad, A. Boudries, *Enhancing warning, situational awareness, assessment and education in managing emergency: case study of Covid-19,* "SN Computer Science" 2022, 3(6).

37 Y. Hou, Z. Liu, J.S. Jin, J. Nie, Z. Dou, Z. *Metacognitive retrieval-augmented large language models. Proceedings of the ACM Web Conference 2024,* 1453-1463, https://doi.org/10.1145/3589334.3645481 (access:19.05.2025).

such as Geographic Information Systems (GIS), satellite imagery, and demographic information. This leads to a more complex and integrated picture of the situation, allowing for more precise decision-making. GIS—short for *Geographic Information System*—was introduced in the 1960s by Canadian geographer Roger Tomlinson. It originated as a Canadian innovation considered one of the first systems to introduce a new approach to acquiring, storing, and analyzing spatial data. In a narrow sense, GIS refers to a system used for collecting, storing, updating, managing, analyzing, and disseminating geographic data that is spatially referenced to the Earth's surface. In a broader sense, the term encompasses an entire system of information flow and usage, including technical tools (such as hardware and software), methodologies, databases, procedures, and the human and financial resources necessary for its operation. GIS is also a scientific discipline concerned with geographic information and GIS-related methods and techniques—commonly referred to as geomatics or geoinformatics[38].

Crisis management systems enhanced with AI algorithms can analyze spatial data, enabling detailed mapping of threats and forecasting their potential progression. This greatly increases the effectiveness of preventive and emergency response efforts[39]. The integration of AI with GIS can revolutionize crisis management by allowing for more precise analyses and efficient responses to disasters and natural hazards. As a result, GIS systems become even more reliable and capable in large-scale data analysis and decision-making during disaster scenarios. AI algorithms enhance GIS capabilities by automating data processing, pattern recognition, and predictive modeling. During a disaster, an AI-supported system can assist in response efforts and disaster recovery operations. AI algorithms can analyze data in real time, allowing emergency services to identify critical areas such as damaged infrastructure, population density, and resource distribution. This information supports the efficient allocation of resources and coordinated rescue efforts. Furthermore, AI can assist in damage assessment by comparing pre-disaster GIS data with post-event imagery—automatically analyzing the extent and severity of damage to buildings, roads, and other infrastructure, and helping authorities prioritize recovery actions[40].

AI is also proving valuable in supporting law enforcement decision-making and the execution of operational tasks. AI-based tools increase operational efficiency and enable effective analysis of large datasets. For instance, applications can assist in determining the necessary personnel and resources for specific tasks, such as optimizing the number and deployment of police officers, positioning resources, and identifying optimal service planning strategies[41].

38 E. Bielecka, *System Informacji geograficzne. Teoria i zastosowania,* Warszawa 2006, p. 1-2.

39 A.E. Gunes, J.P. Kovel, *Using GIS in Emergency Management Operations.* Journal of Urban Planning and Development, 126(3), 2000, p. 136–149. https://doi.org/10.1061/(ASCE)0733-9488(2000)126:3(136) (access:17.03.2025).

40 P. Emami, A. Marzban, *Synergia sztucznej inteligencji (AI) i systemów informacji geograficznej (GIS) w celu lepszego zarządzania klęskami żywiołowymi: szanse i wyzwania.* Medycyna katastrof i gotowość w zakresie zdrowia publicznego, 17. 2023. https://doi.org/10.1017/dmp.2023.174 (access:18.04.2025).

41 N. Malec *Sztuczna inteligencja a bezpieczeństwo państwa*, „Prawo i Bezpieczeństwo" 2024, Issue No: 11/2024, p. 29.

Another advanced solution that supports crisis management through enhanced situational awareness—leveraging elements of artificial intelligence—is the Internet of Things (IoT). This concept is based on the idea that various devices can be interconnected to collect and exchange sensor data. These may include electronic devices, vehicles, buildings, cameras, and other objects. While a wireless network and appropriate technologies are essential for connectivity, AI unlocks the full potential of the data generated. Currently, devices communicate using various, often incompatible protocols. AI has the potential to streamline and harmonize this complex network of communications, effectively serving as an integrating force[42].

Several key factors influence the effective application of artificial intelligence in crisis management systems:

- awareness and recognition of AI's potential to enhance decision-making, reduce response time, and deliver critical information during crises;
- availability of advanced AI technologies, such as machine learning and natural language processing;
- organizational readiness, including willingness to invest in AI infrastructure and analytical capabilities;
- a supportive legal environment and appropriate consideration of privacy and ethical issues associated with AI use[43].

An intriguing concept in crisis management is the use of AI-powered chatbots for communication and information management. These tools, based on AI and natural language processing, can improve communication with the public, deliver real-time updates, and collect data from populations affected by crises[44]. This discussion may be summarized with the findings of research conducted in China aimed at assessing the effectiveness of AI-supported crisis management systems. One of the core research questions was: *How do AI-based technologies impact public safety outcomes?* The study was based on a public safety and crisis management optimization model implemented in Chinese cities. The model consisted of five key components:

- a public safety management structure;
- AI-based data collection and analysis;
- crisis forecasting and early warning systems;
- AI-supported decision-making;
- public safety response mechanisms.

These components were integrated into a comprehensive AI-based public safety and crisis management system. In the decision-making component, AI was used to support the decision-making processes related to public safety and crisis response. AI-driven decision support systems can analyze multiple scenarios, predict possible outcomes, and recommend optimal courses of action based on predefined objectives

42 A.S.A.R Aladawi, A.N.A. Ahmad, *a study of factors influencing the adoption of artificial intelligence in crisis management,* "International Journal of Sustainable Construction Engineering and Technology" 2023, 14(5).

43 See: Ibid, p. 419.

44 See: A. Stranjik, D. Kozlevac, I. Turčić, *Artificial Intelligence in crisis management. Crisis Management Days*. 2024. https://ojs.vvg.hr/index.php/DKU/article/view/471 (access: 15.04.2025).

and constraints. The study concluded that public safety management structure, AI-powered data collection and analysis, AI-supported decision-making, and response mechanisms all had a positive and significant impact on improving public safety in a broad sense[45].

Artificial Intelligence in Video Surveillance and Drones

Video surveillance systems are increasingly incorporating elements of artificial intelligence, enhancing their effectiveness and significantly expanding their capabilities. As noted in scholarly literature, journalistic reports, and oversight body findings, the Polish legal system has not yet developed a formal legal definition of video surveillance[46]. One of the commonly cited definitions refers to video surveillance (English: *Closed Circuit Television – CCTV*, German: *Videoüberwachung*) as a system that enables remote monitoring of events captured by anywhere from a single to several hundred cameras simultaneously. The system consists of cameras transmitting images to a receiving center, where personnel can observe recorded events on monitors[47]. Another definition, adopted by the Polish Committee for Standardization (PKN) based on the International Electrotechnical Commission (IEC), introduces the term *Video Surveillance Systems (VSS)*[48]. In recent years, VSS has been used interchangeably with CCTV[49]. Both terms refer to a type of industrial television system—an electronic monitoring system that uses video cameras, connected in a "closed circuit," to capture, collect, record, and transmit visual information about events occurring in a specified area and timeframe[50].

Contemporary developments in video surveillance systems are advancing in two primary directions. On one hand, these systems are increasingly equipped with software based on algorithms capable of active, automated image analysis. On the other, public discourse more frequently references the ability of surveillance cameras to automatically recognize individuals' identities. While the former direction is largely uncontroversial, the implementation of identity recognition systems has sparked resistance from various stakeholders, particularly concerning legal grounds and ethical implications. Despite these concerns, facial recognition technology is developing rapidly in the security sector. Modern computers have proven capable of recognizing human faces more quickly and accurately than humans themselves[51].

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45 Li, G.; Wang, J.; Wang, X. *Construction and Path of Urban Public Safety Governance and Crisis Management Optimization Model Integrating Artificial Intelligence Technology.* Sustainability 2023, *15*,7487. https://doi.org/10.3390/su15097487 (access: 11.05.2025).

46 G. Matuszek, *Monitoring wizyjny – ujęcie prawne i technologiczne. Współczesność i perspektywy,* „Zeszyty Naukowe SGSP" 2020, nr 73/1/2020, p. 296.

47 G. Matuszek, *Monitoring miejski jako narzędzie bezpieczeństwa i porządku publicznego*, Dąbrowa Górnicza 2025, p. 56.

48 G. Matuszek, *Monitoring wizyjny – ujęcie prawne i technologiczne…*, p. 298.

49 Prepared on the basis of the Standard PN-EN 62676-1-1, https://czytelnia.pkn.pl/#/reading- room/PN-EN%2062676-1-1:2014-06E/~/PN-EN%2062676-1-1_2014-06E_ KOLOR.pdf/1 (access: 8.04. 2025).

50 G. Matuszek, *Monitoring miejski jako narzędzie……*p. 56.

51 See: Ibid, p. 247.

Another critical direction in CCTV evolution is automated video analytics. It is increasingly evident that a single operator—or even a small monitoring team—is no longer capable of effectively observing and responding to events captured by dozens or hundreds of cameras. For this reason, recent years have seen a growing emphasis on automation, including the integration of artificial intelligence in video surveillance systems. This development should be distinguished from "smart building" applications, which simply allow users to access and control the system from any location via smartphone. In professional surveillance systems, AI components are employed to shorten response times to detected threats and reduce the number of personnel required to operate the system. These tasks are facilitated by systems equipped with appropriate image analysis algorithms. Real-time image monitoring enables immediate intervention, thereby reducing the need for large security teams. The new functionality of these so-called "intelligent" monitoring systems is based on algorithms and software capable of configuring the system to respond to various predefined scenarios—such as detecting a person lying on the ground, unauthorized access to restricted zones, or illegal parking. These scenarios are not limited to optical image analysis; increasingly, advanced solutions are being developed to detect temperature changes, gas emissions, and water levels[52].

Considering the potential of AI, growing attention is being given to its use in drones, which are becoming increasingly common tools in civil protection. The literature lacks a single, standardized definition of "unmanned aerial system." In this context, there is a diversity of terminology, e.g., Unmanned Air Vehicle – UAV, Unmanned Aircraft System – UAS, Remotely Piloted Aircraft – RPA, Unmanned Vehicle System – UVS[53]. The term "drone," although widely adopted in colloquial language, is contested by some aviation professionals and legislative bodies due to its imprecise and non-technical connotations. It is thought to originate from the distinctive buzzing sound made by early unmanned aircraft, reminiscent of a female bee[54].

Unmanned aerial vehicles (UAVs) can effectively perform a variety of tasks in civil protection and crisis management. Examples of applications include:

- monitoring threats for wide-area reconnaissance and early warning systems;
- search and rescue operations;
- assessing the extent and impact of natural disasters and industrial accidents;
- transporting emergency supplies such as medical equipment, blood, medications, or vaccines.

AI can enable autonomous operation of UAVs. Military sources distinguish ten levels of UAV autonomy, which are being gradually implemented, with the final level involving fully autonomous swarms. These levels include:

- remote control;

52 See: Ibid, p. 248.

53A. Fellner, *Determinanty operacyjnego zastosowania RPAS* [in:] *Wykorzystanie bezzałogowych platform powietrznych w operacjach na rzecz bezpieczeństwa publicznego,* M. Feltynowski (ed.), Józefów 2019, p. 76.

54 W. Leśnikowski, *Drony w służbie ochrony infrastruktury krytycznej na wojnie z COVID-19*, Toruń 2021, p. 41.

- real-time control;
- adaptation to failures and flight conditions;
- onboard route re-planning;
- group coordination (achieved in 2015);
- group tactical re-planning;
- group tactical objectives;
- shared control;
- group strategic objectives;
- fully autonomous swarms (expected by 2025)[55].

An example of autonomous UAV operation was the "Spiderweb" operation, carried out by Ukraine's Security Service (SBU) on June 1, 2025. In this mission, AI was used to control combat drones that launched attacks on Russian airbases. These drones combined AI-driven autonomy with human operator oversight, allowing them to continue missions even if the control signal was lost. In such cases, the drones would switch to a pre-programmed route and autonomously approach their targets, activating their warheads automatically. AI also enabled autonomous target recognition using advanced computer vision and machine learning algorithms. These systems allowed drones to analyze live camera footage in real time, identifying and classifying targets based on visual features—without the need for constant operator control[56]. The course of the "Spiderweb" operation confirms that drones can autonomously perform civil protection tasks, even in the absence of operator communication.

Conclusion

Devices, applications, and systems utilizing artificial intelligence are becoming integral components of the modern environment. While they raise certain concerns, they also offer humanity novel and previously inaccessible capabilities. One of the most prominent and impactful domains for AI implementation is civil protection, which spans a wide spectrum of crisis situations—including natural disasters, technological failures, and military threats. AI-equipped tools allow for the prediction of potential disaster locations and impacts, and significantly support the decision-making process, especially in scenarios involving vast volumes of data. AI's role in video surveillance systems and UAVs is particularly noteworthy, as it enables autonomous operations. These capabilities contribute not only to threat avoidance but also to rapid and effective crisis response, which is essential for minimizing and mitigating damage. Moreover, AI-enhanced systems significantly reduce the risk to human personnel involved in emergency response operations. All the examples cited in this study clearly confirm the value and necessity of further developing AI-based

55 See: Ibid, p. 44.

56 *Rzeź rosyjskich lotnisk. Nagranie z operacji Pajęczyna*, https://polskieradio24.pl/artykul/3533329,rzez-rosyjskich-lotnisk-nagranie-z-operacji-pajeczyna (access: 10.06.2025).

systems for the purpose of effective civil protection. Any concerns related to their deployment should be addressed through the implementation of appropriate legal, procedural, and organizational frameworks.

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COUNTERTERRORISM PREVENTION AND THREAT DETECTION IN POLICE TRAINING – a CASE STUDY OF THE INDEPENDENT PREVENTIVE POLICE SUBUNIT IN OPOLE

Abstract

This article examines the importance of counterterrorism prevention and threat detection in police officer training, with a particular focus on the experiences of the Independent Preventive Police Subunit in Opole, Poland. The structure and legal foundations of the Polish Police training system are discussed, as well as the role of experts – both academics and practitioners – in improving training programs. Examples of specialized anti-terrorism training are presented, highlighting the necessity of early threat detection, comprehensive practical exercises, and the development of soft skills among officers. Based on the Opole case study, it is demonstrated that local training initiatives informed by international experience (including FBI standards) can set nationwide benchmarks for preparing police officers in counterterrorism. The article compares national and international approaches to police training (including in the USA, UK, Israel, Brazil, and Germany) and contrasts various training methods, with particular attention to tactical and psychological aspects. Recommendations for practice are provided – including the need for continuous program updates, integrating training

with scientific advancements, and the use of modern technologies (simulators, VR) – in order to enhance the readiness of the police to counter contemporary terrorist threats.

Keywords

counterterrorism prevention, threat detection, police training, crisis management, case study, Opole.

Introduction

Contemporary public security threats are undergoing dynamic transformation. Terrorism, organized crime, hybrid threats, and acts of mass violence create a complex context that requires not only effective response strategies but, above all, advanced preventive measures. In this context, the role of specialized training for police officers becomes particularly significant, as it incorporates both the latest scientific knowledge and practical experience. Properly designed counter-terrorism training enables early threat detection and proactive prevention before a crisis situation escalates.

Training police officers in counter-terrorism prevention must keep pace with the evolution of threats—modern officers face challenges that were virtually unheard of a decade ago. Terrorist attacks employing new techniques, the emergence of so-called „lone wolves," or CBRN (chemical, biological, radiological, nuclear) threats necessitate continuous adaptation of training programs. This also requires the integration of knowledge from various fields and inter-institutional cooperation to ensure that police officers are comprehensively prepared for potential scenarios.

The Role of Experts in Police Officer Training

The role of experts—both academics and practitioners—in the design and implementation of police training programs is invaluable. Their contribution lies in providing up-to-date knowledge on threat identification, risk analysis, prevention methods, and incident response. Experts bridge theory and practice, enabling officers to more effectively recognize and neutralize threats in real operational environments. Moreover, training developed in collaboration with experts reflects the latest trends and scientific research in the field of security.

The interdisciplinary knowledge of experts is essential for creating effective training programs, especially in response to atypical or emerging threats[1]. For instance, the analysis of specific threats such as food terrorism highlights the need to

1 Wiśniewska, M., *Terroryzm żywnościowy oraz obrona żywności w ujęciu formalnoprawnym*, „Ruch Prawniczy, Ekonomiczny i Socjologiczny", *84*(4), 2022, p. 101-119.

implement special procedures and control systems. Similarly, chemical threats associated with industrial activity (e.g., shale gas extraction) necessitate incorporating knowledge from chemistry, ecology, and law into security service training[2]. This type of specialized expert knowledge must be transferred into police training programs to ensure officers are prepared for a full spectrum of potential incidents.

Another important aspect is the experts ability to continuously improve training programs. By evaluating training effectiveness and analyzing participant feedback, they can identify areas that require enhancement. Research emphasizes that the involvement of practitioners with years of operational experience promotes the implementation of realistic procedures and training scenarios that better reflect actual threats. Additionally, international cooperation and knowledge exchange with other countries provide valuable insights for enhancing national training programs[3]. Case studies from counter-terrorism efforts in the United States, the United Kingdom, or Israel demonstrate that leveraging foreign experience can contribute to improving the preparedness of Polish law enforcement agencies. Thus, experts serve as a vital link between the latest knowledge—both domestic and international—and the practical skills imparted to officers during training.

Legal and Institutional Framework of Police Training in Poland

Police officer training in Poland is conducted within specific legal and institutional frameworks that define the standards and scope of training programs. The most important legal act is the *Act of April 6, 1990, on the Police*, which serves as the foundation of the force's operation. This act outlines, among other things, the tasks of the Police as well as the principles for recruitment, training, and professional development of officers. Based on this law, regulations and executive acts are issued that specify in detail the procedures and curricula for training at various stages of an officer's career. Modern training programs cover a wide range of topics: intervention techniques, operational tactics and safety, knowledge of law and procedures, professional ethics, crisis management principles, and the identification and prevention of diverse threats. As a result, officers receive both theoretical and practical foundations necessary for effective performance[4].

It is important to emphasize that police officers are required to continuously enhance their qualifications. In recent years, regulations have been introduced to strengthen the obligation for systematic periodic training, ensuring that officers'

2 Pakulska, D., *Chemical hazards arising from shale gas extraction*, „Medycyna Pracy", 66(3), 2015, p. 419-426.

3 Klos, L., *Theoretical basis of practice and social workers' professional training for the health care: retrospective review*. „Roczniki Teologiczne", *67*(1), 2020, p. 17-37.

4 See:Rozporządzenie Ministra Spraw Wewnętrznych i Administracji z dnia 21 grudnia 2022 r. *w sprawie szkoleń zawodowych i doskonalenia zawodowego w Policji* (Dz.U. 2022 poz. 2826).; Decyzja nr 377 Komendanta Głównego Policji z dnia 21 grudnia 2022 r. *w sprawie programu szkolenia zawodowego podoficerskiego* (Dz. Urz. KGP 2022, poz. 239).; Decyzja nr 378 Komendanta Głównego Policji z dnia 21 grudnia 2022 r. *w sprawie programu szkolenia zawodowego aspiranckiego* (Dz. Urz. KGP 2022, poz. 240); Decyzja nr 379 Komendanta Głównego Policji z dnia 21 grudnia 2022 r. *w sprawie programu szkolenia zawodowego oficerskiego* (Dz. Urz. KGP 2022, 241).

knowledge and skills remain up-to-date. Changing conditions and societal needs—whether stemming from technological advancements or emerging threats (e.g., terrorist attacks or public health crises like pandemics)—necessitate the adaptation of training programs. For example, experiences related to the COVID-19 pandemic revealed the need to modify operational procedures and highlighted the importance of flexibility and the ability to quickly acquire new competencies. This underscores the demand for more comprehensive and current training that also addresses areas previously given less attention[5].

The Polish police training system places strong emphasis on cooperation with other security-related institutions. Specialized training—such as in the detection of CBRN threats or response to terrorist attacks—is often conducted in collaboration with the Internal Security Agency (ABW), the State Fire Service, or medical emergency services. Such cooperation ensures that training programs align with current standards and best practices in public security[6]. It also enables police officers to learn how to coordinate effectively with other services during crisis incidents, which is crucial for successful crisis management.

Additionally, modern police training includes the development of social competencies. Officers are prepared to engage with various citizen groups, which is especially important in a culturally and socially diverse society. The curricula include topics such as interpersonal communication, conflict mediation, crowd psychology, and approaches to individuals in special circumstances (e.g., victims of violence, minorities, persons with mental health conditions). Literature emphasizes the importance of incorporating elements like combating stigmatization and building public trust into police training[7]. New areas—such as managing crisis situations in the information space and on social media—are also becoming essential knowledge areas for officers. All these measures aim to ensure that Police actions remain aligned with legal and societal norms while increasing the effectiveness of those actions in the face of emerging challenges[8].

The Importance of Specialized Counter-Terrorism Training

In the context of an increasing number of incidents involving terrorist violence, the Police are taking on increasingly complex preventive roles. It is not only about responding to threats but also about their early detection and effective prevention. This means that specialized counter-terrorism training must cover a wide range of topics—from current theoretical knowledge on the sources and mechanisms of

5 See:Kochańczyk R., *Szkolnictwo policyjne jako element systemu bezpieczeństwa wewnętrznego*, [in] s. Mazur, M. Ostrowska, M. Zawartka (ed.), *Rola i zadania instytucji bezpieczeństwa wewnętrznego*, AWF, Katowice, 2016.

6 Robakowski, P., *Crisis safety management in a teaching hospital – a proposal for action (case),* „Journal of Modern Science", *58*(4), 2024, p. 551-565.

7 Hansson, L., Markström, U., *The effectiveness of an anti-stigma intervention in a basic police officer training programme: a controlled study. „BMC Psychiatry", 14*(1), 55, 2014.

8 Kaczmarek-Śliwińska, M., *Specyfika zarządzania sytuacją kryzysową w przestrzeni mediów społecznościowych w perspektywie typologii SCCT W. T. Coombsa*. „Studia Medioznawcze", *20*(4), 2019, p. 72-86.

terrorism to intensive practical exercises simulating real threat scenarios. Training programs should be designed to prepare officers for the entire cycle of a terrorist event: from the prevention phase (including threat awareness and identification of warning signs), through response (neutralizing the threat, rescue operations), to restoring the community's sense of safety after an incident. Only a comprehensive approach that combines various teaching methods—lectures, practical workshops, scenario-based exercises, firearms training, and more—can ensure a sufficient level of preparedness for police officers.

As the largest internal security force in the country, the Police play a crucial role in the national counter-terrorism system, alongside specialized units such as the Police Counter-Terrorist Subunits (SPKP) and intelligence services[9]. Therefore, even standard police units must be trained in recognizing potential terrorist threats. This includes the ability to analyze unusual situations and behaviors that may indicate attack preparations (so-called pre-attack behavior analysis), as well as the capacity to react quickly to perceived dangers. Trainings should incorporate up-to-date intelligence and risk analysis so that officers are aware of the most probable threat scenarios[10]. This enhances decision-making in crisis situations and supports an evidence-based approach.

A key component of specialized training is the development of interpersonal skills, which are essential during crises. Police officers must be able to maintain composure and de-escalate conflicts even under high stress. Properly guided training in communication and crisis negotiation techniques can significantly reduce the risk of violence escalation during interventions[11]. Officers are trained in how to communicate with agitated, frightened, or aggressive individuals to defuse tense situations. In the context of counter-terrorism, the ability to work as a team and coordinate closely with other emergency services—such as fire brigades and medical rescue teams—is also vital[12]. Effective crisis management during a terrorist attack requires synchronized action by multiple entities. Joint inter-agency training and exercises help develop mutual understanding of roles and procedures, leading to more efficient coordination in real-life incidents.

Given the diversity of modern threats—from active shooter attacks and improvised explosive device (IED) incidents to potential use of chemical or biological weapons—the Police must be prepared to react rapidly. For this reason, training increasingly includes advanced simulations of crisis situations, allowing officers to practice their skills in conditions close to reality. Scenario-based exercises may involve simulated terrorist attacks in public areas, mass casualty evacuations, or

9 Hołub, A., *Kierunki aktywności polskiej Policji w obszarze zagrożeń terroryzmem*, „Fides, Ratio et Patria. Studia Toruńskie", *17*, 2022, p. 256-272.

10 Kordaczuk-Wąs, M., *Aktywność Policji w obszarze profilaktyki zagrożeń społecznych*, „Przegląd Policyjny", *2*(126), 2017, p. 108-122.

11 Sienkiewicz-Małyjurek, K., *Resilience and entrepreneurship in emergency management*, „Social Entrepreneurship Review", nr 2, 2020, p. 44-56.

12 Hołub A., op. cit.

operations in CBRN threat environments. This hands-on approach significantly improves readiness—studies show that officers who undergo regular, realistic training perform better in actual situations where response time is critical[13]. The integration of modern technologies into training—such as computer simulators or virtual reality—further enhances the learning process. These tools enable safe practice of dangerous scenarios and allow for repetitive training without risking lives or health. In this way, officers can gain valuable experience in controlled conditions, improving their readiness for real-world threats.

Another crucial aspect of counter-terrorism training is preparing police officers to make decisions under pressure and stress. Terrorist threat situations are often characterized by informational chaos, uncertainty about the number of perpetrators, or the scope of the danger. Training programs therefore emphasize the development of quick situational assessment skills and the ability to make sound decisions based on incomplete data. Building appropriate decision-making procedures and action habits (through repeated practice) helps minimize decision paralysis in critical moments[14]. Officers are also introduced to formal crisis management procedures—both preventive and reactive—which ensures coordinated action in accordance with the national crisis response framework.

In summary, specialized police training in threat detection, crisis management, and counter-terrorism is a fundamental element of ensuring public safety. These programs encompass both theoretical and intensive practical components (exercises, simulations), as well as the development of soft skills such as communication and teamwork. Regular updates of training content and close cooperation with other institutions and experts are essential to maintaining the Police's high operational effectiveness in the face of evolving threats.

Case Study: Counter-Terrorism Training in the Independent Police Prevention Unit in Opole

At the regional level, the Independent Police Prevention Units (*Samodzielne Pododdziały Prewencji Policji*, SPPP) play a key role as police reserves capable of responding to serious threats to public order. Since 2018, the SPPP in Opole has implemented advanced training in counter-terrorism prevention. The goal of this initiative was to enhance the preparedness of preventive police officers in recognizing and responding to potential terrorist threats within the Opolskie Voivodeship. The training program was developed based on an analysis of contemporary threats and best practices derived from both national police experiences and international standards.

13 Sobolewski, G., *Identyfikacja podmiotów i procedur zarządzania kryzysowego w sytuacjach zdarzeń z udziałem LNG*, „Zeszyty Naukowe SGSP", *78*, 2021, p. 7-34.

14 Kordaczuk-Wąs M., op. cit.

The implemented program covers topics such as the identification of mass killers (including active shooter scenarios), recognition and counteraction of IED (improvised explosive device) threats, basic procedures in the event of CBRN weapon use, analysis of typical pre-attack behaviors (so-called pre-attack indicators), and evacuation protocols in the event of an attack. The training is conducted by the author of this paper and draws on experience gained through cooperation with special forces units and standards established by the FBI and other international agencies. The author's involvement in the design and delivery of the training has enabled the direct transfer of practical knowledge into the SPPP's educational program.

The program at SPPP Opole is aimed primarily at officers beginning their service in the unit, but it also includes periodic refresher workshops for more experienced personnel. The training format is diverse, combining theoretical lectures with intensive practical workshops. Realistic scenarios and analysis of actual terrorist attacks (e.g., incidents in Europe and worldwide in recent years) are employed throughout the training. This approach allows participants to confront high-stress and uncertain simulated situations, with the goal of developing appropriate behavioral patterns. Field exercises are conducted in various locations—public buildings, critical infrastructure sites, and open areas—so that officers can practice tactics under different conditions. Each exercise concludes with a detailed debriefing session, during which best practices and mistakes are discussed in order to draw conclusions and continuously improve the training program.

The counter-terrorism training provided in SPPP Opole has received positive feedback from officers, who emphasize the practical nature of the sessions and their direct relevance to police duties. Although this unit is not a typical counter-terrorism formation, the acquired skills significantly enhance the overall readiness of preventive police officers to act in high-risk situations. In the context of limited personnel and equipment—typical for smaller garrisons—raising counter-terrorism competencies even among preventive officers can have a substantial impact on public safety. The Opole case study illustrates how a local-level initiative can become a model for other units—the training program developed at the Opole SPPP could be adapted in a similar form across other voivodeships, contributing to a more unified standard of police preparedness nationwide.

Literature Review and International Context

The academic literature emphasizes that the effectiveness of police training in countering terrorist threats depends not only on the quality of knowledge delivered but also on the extent to which practical experience is integrated with case analysis and the implementation of international standards. Studies on law enforcement education highlight the need to move away from traditional academic teaching methods in favor of more interactive training formats. For example, Blumberg et al. argue that new directions in police academy training are necessary, with a focus on practical

preparedness for duty, mental resilience, and professional ethics[15]. Similarly, research by Lorey and Fegert shows that modular, diversified, and user-developed (i.e., co-created with future officers) training programs can significantly improve competencies in mental health response and crisis management[16].

Contemporary training should rely on scenario-based approaches (role-playing realistic events), participatory methods (active involvement and feedback from participants), and interagency collaboration (joint exercises with other services)—a strategy supported, for example, by the police crisis training designs described by Lavoie et al[17].

An analysis of international experiences provides valuable insights. Examples such as the training of Brazilian officers in physical readiness and specialization, or comparisons between the training of police reserves in the U.S. and special constables in the U.K., demonstrate that training effectiveness depends on cultural context, operational task scope, and local threat specificities[18]. For instance, U.S. training strongly emphasizes active shooter responses and domestic threats, while in the U.K. there is a focus on community engagement as part of prevention. Countries like Israel and Germany have developed their own counter-terrorism training models, rooted in different national conditions—Israel prioritizes comprehensive preparedness for all services and citizens in case of attack, whereas Germany focuses on specialized units (e.g., GSG9) and federal-level coordination protocols. In all cases, it is clear that training programs must be tailored to the unique challenges and organizational structures of each country.

Importantly, national research also confirms the importance of training quality for counter-terrorism effectiveness. a survey-based study among officers in Polish counter-terrorist police units revealed that these professionals clearly associate the success of anti-terror operations with the level of training received—both tactically and mentally. In other words, those on the front lines of counter-terrorism recognize the need for realistic and comprehensive training as the key to operational success[19].

Another critical component of advanced police training is the development of soft skills. The literature emphasizes the need for training in conflict de-escalation,

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15 Blumberg, D., Schlösser, M., Papazoglou, K., Creighton, S., & Kaye, C., *New directions in police academy training: a call to action*, „International Journal of Environmental Research and Public Health", *16*(24), 2019.

16 Lorey, K., & Fegert, J., *Increasing mental health literacy in law enforcement to improve best practices in policing — introduction of an empirically derived, modular, differentiated, and end-user driven training design.* „Frontiers in Psychiatry", *12*, 706587, 2021.

17 Lavoie, J., Alvarez, N., & Kandil, Y., *Developing community co-designed scenario-based training for police mental health crisis response: a relational policing approach to de-escalation.* „Journal of Police and Criminal Psychology", *37*(3), 2022, p. 587-601.

18 Rezende, L., Dellagrana, R., Oliveira-Santos, L., Cruz, A., Mota, M., & Coelho-Ravagnani, C., *Physical performance of Brazilian military policemen: a longitudinal analysis by occupational specialties*, „International Journal of Environmental Research and Public Health", *19*(24), 2022; Britton, I., Wolf, R., & Callender, M., *a comparative case study of reserve deputies in a Florida sheriff's office and special constables in an English police force*, „International Journal of Police Science & Management", *20*(4), 2018, p. 259-271.

19 Wilk-Jakubowski, G., Harabin, R., Skoczek, T., & Wilk-Jakubowski, J., *Preparation of the Police in the field of counter-terrorism in opinions of the Independent Counter-terrorist Sub-division of the Regional Police Headquarters in Cracow*, Slovenská politologická revue (Slovak Journal of Political Sciences, *22*(2), 2022, p. 174-208.

recognizing symptoms of post-traumatic stress in citizens and colleagues, and appropriate interactions with individuals from marginalized groups. In an era of growing public awareness and expectations toward the Police, such topics are gaining importance—officers must not only respond with force when necessary but also demonstrate empathy, use negotiation techniques, and build public trust[20]. Training programs should therefore address issues such as preventing stigmatization, fostering ethical attitudes, and enhancing intercultural competencies. One example is the training program described by Hansson and Markström, in which modules aimed at reducing stigmatizing attitudes toward individuals with mental illness were incorporated into the basic police course—resulting in a noticeable improvement in how young officers engaged with this group[21]. Similarly, diversity training (e.g., relating to sexual minorities) has shown that well-conducted workshops can positively shift officer attitudes and improve relationships with affected communities[22].

Authors such as Klos and Winiarska further point out that practitioner-experts play a particularly important role in evaluating and improving training programs—their knowledge and experience enable the implementation of realistic procedures and the adaptation of training scenarios to current threats. Regular consultations with seasoned officers and analyses of real-world operations (both successful and those where flaws were identified) should become standard practice when planning future training editions. This kind of feedback loop between practice and instruction ensures that the content delivered in training is not merely theoretical, but directly contributes to the operational effectiveness of the Police.

Conclusions

An analysis of the police training system indicates that educational programs must be regularly updated to reflect the evolving nature of threats and technological advancements. The challenges that officers will face in the next 5 to 10 years may differ significantly from those of today, making it essential to continuously monitor emerging trends and flexibly adjust training content. Ongoing collaboration with experts from various fields—as well as with international institutions specializing in counter-terrorism—is also crucial. Such partnerships enable the implementation of evidence-based programs aligned with global best practices. Only through this approach can the operational readiness of law enforcement be effectively enhanced in the face of new challenges.

The example of the SPPP in Opole demonstrates how a grassroots local initiative can contribute to the development of procedures with nationwide relevance. The

20 Oliva, J., Morgan, R., & Compton, M., *a practical overview of de-escalation skills in law enforcement: helping individuals in crisis while reducing police liability and injury*, „Journal of Police Crisis Negotiations", 10(1-2), 2010, p. 15-29; Israel, T., Bettergarcia, J., Delucio, K., Avellar, T., Harkness, A., & Goodman, J., *Reactions of law enforcement to LGBTQ diversity training*, „Human Resource Development Quarterly", *28*(2), 2017, p. 197-226

21 Hansson, L., Markström, U., op. cit.

22 Israel, T., Bettergarcia, J., Delucio, K., Avellar, T., Harkness, A., & Goodman, J., op. cit.

preventive training model developed there—grounded in threat analysis using FBI protocols and interdisciplinary expert knowledge—offers a valuable proposal for modernizing police training. It is therefore recommended that the General Police Headquarters consider implementing similar solutions across the entire force, while also taking into account the local threat landscape specific to each regional unit.

The conducted analyses indicate that comprehensive training in counter-terrorism prevention and threat detection is a key element of the strategy for enhancing internal security. The case study of training at the Independent Police Prevention Unit (SPPP) in Opole demonstrates that the model developed there can be successfully adapted by other police units across Poland. In particular, the original concept of preventive training based on threat analysis according to FBI protocols stands out—it has proven to be innovative in the national context and effective in preparing preventive police officers for potential terrorist threats. The combination of interdisciplinary knowledge, scenario-based simulations, and systematic evaluation of training effectiveness appears to address the most significant challenges of contemporary public security. Moreover, the example of Opole shows that even within existing police organizational structures, it is possible to implement innovative training solutions—what is crucial is the support of leadership and the engagement of officers themselves in the creation and refinement of the program.

From a practical perspective, the findings and observations translate into several recommendations. First, future research should include an evaluation of the real-world impact of such training on officers' performance during crisis situations. In other words, it is necessary to monitor whether police officers trained in this manner perform better in actual interventions (e.g., shorter response times, fewer mistakes, improved coordination). It is also worth assessing the psychophysical readiness of officers following this training, including their stress resilience and ability to make decisions in situations of informational chaos.

Second, further integration of practice with science is recommended—ongoing cooperation between the Police and academic institutions to keep training content current and to use scientific methods to study emerging threat types.

Third, the potential of modern technology in training should be more intensively leveraged. Computer simulators, virtual reality (VR) training, and mobile field simulators can become standard components of tactical and psychological preparation. These techniques make it possible to create controlled virtual scenarios that closely resemble real situations, thereby increasing officers' practical experience without exposing them to real danger.

Fourth, it is essential to ensure adequate funding and infrastructure for training—good intentions and program designs must be matched by access to training grounds, shooting ranges, training equipment, and qualified instructors. Investment in training is an investment in security—prevention through capacity-building is incomparably more cost-effective and socially beneficial than dealing with the consequences of a successful terrorist attack.

In conclusion, as the national law enforcement body responsible for internal security, the Police must continuously develop their officers' counter-terrorism capabilities. Building a cohesive, modern training system—one that draws from best international practices, fits within Poland's legal and cultural realities, and is sensitive to evolving threat conditions—is essential for effective prevention and protection against terrorism. Implementing the presented conclusions and recommendations in police training practice will improve the preparedness of Polish officers and, consequently, enhance public safety.

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LOCAL GOVERNMENT PREPAREDNESS FOR OPERATING IN CRISIS CONDITIONS: a CASE STUDY OF THE MUNICIPALITY OF PSZCZYNA

Abstract

One of the directives of effective action is the organization of activity. In the literature, several phases of the organized action cycle are distinguished, including planning, which involves analyzing the conditions of operation and seeking means and methods appropriate to both the objectives and the circumstances. In the planning phase, both internal and external conditions of operation are analyzed, and the means and methods necessary to achieve the goal are determined. This phase also includes the development of an action plan. Therefore, the aim of this article is to present the organization of the security system in the Municipality of Pszczyna, oriented toward both military and non-military threats. The study analyzes local legal solutions and planning measures undertaken by the local government in the context of ensuring the safety of the local community.

The Municipality of Pszczyna covers an area of over 22 km², intersected by transit roads DK1, DW 933, and DW 938, the watershed of the Vistula and Oder rivers, and a dense railway network, resulting in a level of population migration comparable to that of a metropolis. Additionally, its location within the vicinity of two large artificial water reservoirs introduces further dangers in the event of a natural disaster.

Meanwhile, the proximity to the borders of Slovakia and the Czech Republic places the municipality in an area of potential threats, including terrorism or risks arising from cultural diversity.

Keywords

local self-government, threats, preparedness, Pszczyna

Introduction

In seeking to define the contemporary security threats to Poland, it is essential to recognize the need to treat national security as a process subject to dynamic and constant change. Although it is not entirely possible to predict what might happen tomorrow, accurately identifying the nature of modern threats is a fundamental step in building the national security of any country, including Poland. Therefore, for all elements of the state's security system to effectively perform their designated tasks in times of threat, they must be appropriately organized and prepared in advance, before a threat emerges—since during an actual crisis, organizing and preparing effective measures becomes significantly more complex.

It is both purposeful and necessary to consider national security[1] in connection with threats and the state of international security organization. In ensuring security, international cooperation plays a crucial role, especially within an allied framework. Poland's accession to the North Atlantic Treaty Organization (NATO)—the most powerful international organization guaranteeing security—provides a real foundation for Poland's national security and defense. At the same time, NATO membership has significantly altered Poland's geopolitical and geostrategic position. However, as B. Balcerowicz noted: "[…] every alliance is, above all, an instrument of a state's policy, and membership in it should be treated only as a means to an end, which is to enhance the security of the state."

When characterizing security threats, focus should be placed on those that directly concern the subject in question, as it is often the case that threat catalogues include those that do not directly apply to the researched entity. This not only leads to a misjudgment of the situation but—more importantly—fails to guarantee appropriate solutions. Additionally, the identification of threats should follow a holistic approach, now widely adopted globally, as the classical division between internal and external aspects of security has already become a thing of the past.

1 See: J. Łępicki, *State security system*, „Security Forum" 2024, Volume 8 No 1/2024; B. Wiśniewski, *National Security Governance System – a few remarks and reservations*, „Security Forum" 2022", Volume 6 No 1/2022; Wiśniewski B., Sander G. S., *Zagrożenie, kryzys i sytuacja kryzysowa–jako uwarunkowania życia współczesnego człowieka*, „BiTP", No 41, Issue 1, Centrum Naukowo-Badawcze Ochrony Przeciwpożarowej – Państwowy Instytut Badawczy, Józefów 2016.

Characteristics of the Gmina Pszczyna

Gmina Pszczyna is distinguished by its strategic location relative to the main industrial and tourist centers of the Silesian Voivodeship. It is situated in the southern part of the voivodeship, between the Upper Silesian Industrial Region and the Beskids, as well as between Kraków and Oświęcim to the east and the Rybnik Industrial Region to the west.

Gmina Pszczyna is part of the Pszczyna County and borders the following municipalities: to the west — Pawłowice and Suszec; to the north — Pawłowice, Suszec, Kobiór; to the east — Miedźna and Bojszowy; and to the south — Goczałkowice-Zdrój, Strumień, Czechowice-Dziedzice, and Bestwina.

The gmina covers an area of 22.49 km² and has a population of 50,531 inhabitants. Administratively, it consists of 12 settlements (osiedla) and 12 village administrative units (sołectwa).

Its advantageous location is also supported by well-developed transportation links. Both a railway line and National Road No. 1, connecting northern and southern Poland, run through Pszczyna. Two airports are located within close proximity: Katowice Airport in Pyrzowice (65 km) and Kraków Airport in Balice (80 km). Within the gmina's territory, there are also two artificial reservoirs: Goczałkowice Lake and the Łąka-Poręba reservoir.[2]

The Mayor of Pszczyna's Activities in the Area of Security

One of the directives for efficient operation is the organization of action. Literature identifies several phases in the cycle of organized activity. This cycle is a scheme for effective action, and maintaining the correct sequence while consistently following the principles of each phase ensures the achievement of the intended objective. Given that more complex activities require more precise organization, both in theory and in practice, various forms, methods, and approaches are constantly sought to accomplish the intended goals.

The phases of organized activity include:[3]

- defining the goal as a necessary condition for effective action;
- planning, including analysis of operational conditions and the search for means and methods appropriate to the goal and the conditions;
- acquiring the resources necessary to implement the plan;
- implementing the plan, i.e., using the resources in the order and manner outlined in the plan;
- control, i.e., verifying whether the actions taken are consistent with the assumptions.

2 www.pszczyna.pl, www.powiat.pszczyna.pl [dostęp: 12.04.2025 r.].

3 More: J. Zieleniewski, *Organizacja zespołów ludzkich. Wstęp do teorii organizacji i kierowania*, Warszawa1982, p. 307–330.

T. Kotarbiński refers to the first three phases as "preparation"—i.e., the preparatory stage of the action cycle. At this stage, setting the goal is the first step toward achieving it. The goal should be based on a diagnosis covering past and current situations, as well as future forecasts, and should meet the following conditions:

- Specific – it must not be vague or ambiguous;
- Understandable – clearly defined to avoid multiple interpretations;
- Achievable – feasible given the level of knowledge and current technical conditions;
- Limited – in proportion to available resources, as goals that exceed resource capabilities often lead to difficulties and high costs.

In the planning phase—i.e., the organization of the action process—an analysis is conducted of both internal and external conditions, and the necessary means and methods to achieve the goal are identified. This phase also includes the development of the action plan. The next phase—acquiring the necessary resources—comprises activities aimed at organizing the structure that will later carry out the plan. The implementation phase involves the proper use of gathered resources with the methods prescribed in the plan. It must be emphasized that the result of this phase should be the achievement of the final goal, not merely the execution of the plan, as the plan is only a tool. The control phase—necessary and final—appears in every concept of the action cycle and involves comparing actual outcomes with intended ones. This ensures that actions taken align with what was planned.

To efficiently fulfill tasks in the area of local security, the Mayor of Pszczyna issues directives. Planning also plays a key role. These directives support the effective execution of tasks in the following areas of safety:

- Mayor's directive on appointing, composing, organizing, locating, and outlining the procedures of the municipal crisis management team;[4]
- Mayor's directive on designating buildings for public use in the event of mass emergencies;[5]
- Mayor's directive on the location and operational range of potassium iodide tablet distribution points within the Municipality of Pszczyna;[6]
- Directive No. SG.120.1.116/2020 of 09.10.2020 on establishing the principles for developing the "Operational Plan for the Functioning of the Municipality of Pszczyna in Conditions of External Threats to State Security and During Wartime";[7]

4 Zarządzenie burmistrza nr SG.120.1.206/2022 z dnia 24.06.2022 r. *w sprawie powołania, wyznaczenia składu, organizacji, siedziby i tryby pracy gminnego zespołu zarządzania kryzysowego.*

5 Zarządzenie burmistrza nr SG.120.1.84/2017 z dnia 12.01.2017 r. *w sprawie wyznaczenia budynków dla potrzeb ludności w wypadku masowego zagrożenia.*

6 Zarządzenie burmistrza nr SG.050.2008/2022 z dnia 30.11.2022 r. *w sprawie umiejscowienia punktów tabletek jodu potasu i zasięgu ich działania na terenie Gminy Pszczyna.*

7 Zarządzenie burmistrza nr SG.120.1.116/2020 z dnia 09.10.2020 r. w sprawie ustalenia zasad opracowania *„Planu Funkcjonowania Gminy Pszczyna w warunkach zewnętrznego zagrożenia bezpieczeństwa państwa i w czasie wojny".*

- Directive No. SG.120.1.260/2023 of 02.03.2023 on establishing the HNS (Host Nation Support) Point in the Municipality of Pszczyna;[8]
- Directives related to the announcement of a state of epidemic due to the SARS-CoV-2 pandemic (12 directives).

At the municipal level in Pszczyna, the following plans have also been developed:

- Crisis Management Plan of the Municipality of Pszczyna;
- Operational Plan for the Functioning of the Municipality of Pszczyna under Conditions of External Threats to State Security and During Wartime;[9]
- Courier Action Plan of the Mayor of Pszczyna;[10]
- Plan for the Organization of Iodine Distribution within the Municipality of Pszczyna;[11]
- Special Conditions Water Supply Plan;[12]
- Plan for the Preparedness of Healthcare Entities in the Municipality of Pszczyna for National Defense Needs.[13]

In order to optimize the use of forces and resources during response to crisis situations, the elimination of their effects, and the restoration of critical infrastructure and resources, the "Crisis Management Plan of the Municipality of Pszczyna" has been developed. The essence of crisis management lies not only in responding at the moment of the occurrence of a crisis situation but, most importantly, in undertaking actions aimed at preventing such a situation and restoring conditions to their pre-crisis state. Therefore, a very important part of the plan consists of crisis response procedures, in the form of precisely outlined tasks to be carried out by individual emergency services responding to specific crisis scenarios. The plan is linked with external plans and operational procedures of services responsible for emergency operations, public safety, and the provision of key services essential for societal functioning (e.g., potable water, electricity, heating).

The "Operational Plan for the Functioning of the Municipality of Pszczyna during External Threats to State Security and Wartime" is the primary document that outlines specific tasks and activities, including personnel composition, necessary resources, and time required for their execution in the event of an external threat to national security or wartime. The operational tasks included in the Plan are assigned to specific departments, divisions, and organizational units within the Municipality of Pszczyna. This plan is a classified document and may only be accessed by department heads, managers, and directors authorized to handle classified information with the "restricted" clause. It is subject to approval by the Silesian Voivode.

8 Zarządzenie burmistrza nr SG.120.1.260/2023 z dnia 02.03.2023 r. *w sprawie powołania punktu HNS Gminy Pszczyna*.

9 Obecnie obowiązujący dokument to ZK.5560.009.2021 z lutego 2021 r.

10 *Plan Akcji Kurierskiej Burmistrza Pszczyny*, Pszczyna 2015.

11 *Plan organizacji akcji jodowej na terenie Gminy Pszczyna*, Pszczyna 2023 r

12 *Plan zaopatrzenia w wodę w warunkach specjalnych*, Pszczyna 2023 r

13 *Plan przygotowań podmiotów leczniczych Gminy Pszczyna na potrzeby obronne państwa*, Pszczyna 2019.

Another plan is the "Courier Action Plan of the Municipality of Pszczyna." This plan is prepared by the local public administration to facilitate the delivery of conscription notices to military reservists for immediate-call military training and for active military service in the event of mobilization and wartime. The courier operation within the Municipality of Pszczyna is activated upon receiving a signal from the Military Recruitment Center or the District Office. An authorized courier delivers documents to the municipal office, after which the person directing the Courier Action – typically the Secretary of the Municipality of Pszczyna, authorized by the Mayor – initiates the procedure of delivering conscription notices across the municipality. This is carried out by designated and trained couriers who hold clearance for classified information with the "restricted" clause, as parts of the plan are classified.

In October 2023, the Silesian Voivode issued a directive to prepare the Silesian Voivodeship for the effective implementation of a potassium iodide distribution campaign in case of radioactive contamination.[14], the Mayor of Pszczyna issued an ordinance outlining the method for distributing potassium iodide tablets within the municipality. Accordingly, the "Plan for the Organization of the Iodine Distribution Campaign in the Municipality of Pszczyna" was developed. Based on this framework, 23 locations were designated across the Municipality of Pszczyna for the collection of potassium iodide tablets. It is worth noting that in the event of nuclear contamination, timely ingestion of such a tablet is crucial as it blocks the absorption of radioactive iodine and prevents its accumulation in the human body.

The distribution of tablets does not begin immediately after an incident (e.g., a power plant failure), but only once a radioactive cloud reaches the relevant area. In the event of such an incident, residents will be promptly informed through local and national media, the municipal website, the Public Information Bulletin, and posted announcements.

To ensure the local community has access to water in quantities essential for survival, the functioning of public utility units, and agricultural-food sector businesses during technical failures, natural disasters, or wartime, a document called the "Water Supply Plan under Special Conditions" is developed.

This document outlines the operation of public water supply facilities under extraordinary circumstances. The preparation and supervision of water deliveries during crisis situations within the Municipality of Pszczyna are managed by the Municipal Engineering Company (Przedsiębiorstwo Inżynierii Komunalnej – PIK) in Pszczyna, which maintains 24-hour emergency teams capable of repairing failures or mitigating threats as they arise.

PIK is also responsible for maintaining the operational readiness of the fire hydrant network and a water-drawing point for firefighting purposes located at the 1,000 m³ water reservoir in the Piastów Housing Estate in Pszczyna. This additional

14 Zarządzenie nr 315/23 Wojewody Śląskiego z dnia 18 września 2023 r. *w sprawie aktualizacji planów operacyjnych funkcjonowania organów administracji*.

water source enhances the capabilities of the existing water supply infrastructure and ensures the continuity of water delivery in case of a network failure or power outage at water pumping stations.

The preparation of healthcare entities for the state's defense needs aims to create legal and organizational conditions for the provision of healthcare services,i.e., actions to preserve, save, restore, or improve health in the event of external threats to state security and during wartime. Within this scope, the Municipality of Pszczyna also operates a Plan for the Preparation of Medical Entities in the Municipality of Pszczyna for State Defense Needs, which defines the organizational structures and rules for both public and private healthcare institutions and teams responsible for medical services in crisis situations, states of emergency, or wartime conditions.

The primary tasks include providing medical services to the injured, wounded, and ill, as well as enabling the swift release of hospital beds. Designated buildings are equipped with facilities for temporary hospital beds—referred to as "Substitute Hospital Facilities" (ZMSz)—which serve as a supplement to the existing hospital bed base.

As of the entry into force of the Council of Ministers' Regulation of November 15, 2023, on the preparation and use of healthcare entities for the needs of national defense, the previous regulation from June 27, 2012, concerning the conditions and procedures for preparing and using healthcare entities for defense purposes and the competencies of the relevant authorities, was repealed.[15]That earlier regulation had been issued under the now-repealed Act of November 21, 1967, on the universal obligation to defend the Republic of Poland.

The new legal act introduces updated solutions in the area of defense preparations of healthcare entities, which is why this domain is now undergoing changes within the Municipality of Pszczyna.

When discussing the actions undertaken by the Mayor of Pszczyna in the area of security, it is also essential to mention the initiative taken under the framework of HNS – Host Nation Support.[16]

This refers to civilian and military assistance provided by a host nation during peacetime, crisis situations, and armed conflict to NATO forces that are moving through, stationed in, or operating within its territory.

In such circumstances, the Municipality of Pszczyna bears responsibility for transport, traffic control, maintenance and service, storage, and the provision of water, fuel, and food. The host country designates, based on operational needs, the storage or stationing locations as well as the area of responsibility for the foreign troops.

To that end, a Host Nation Support (HNS) Contact Point Instruction has been developed. This instruction was prepared based on the Guidelines of the Silesian Voivode dated February 11, 2008, concerning the preparation and coordination of

15 Rozporządzenie Rady Ministrów z dnia 15 listopada 2023 r. *w sprawie przygotowania i wykorzystania podmiotów leczniczych na potrzeby obronne państwa* (Dz. U. poz. 2482).

16 Instrukcja punktu kontaktowego HNS, Pszczyna 2008.

support for allied armed forces during peacetime, crisis situations, and wartime for units deployed, performing tasks, or transiting through the Silesian Voivodeship.[17]

The purpose of issuing this document is to ensure the preparation and subsequent activation of the HNS Contact Point of the Mayor of Pszczyna.

Conclusion

The implementation of security-related tasks by local government units requires the mayor, as the head of the municipal executive body, to lead activities associated with monitoring, planning, responding to, and mitigating threats within the administered area. In the field of local security, the Municipality of Pszczyna carries out its responsibilities in accordance with applicable legal norms and within the scope of its financial capabilities. At the same time, the evolving nature of modern threats necessitates the continuous improvement of the legal and organizational solutions in place.

In the area of defense, the local government of Pszczyna maintains military service registers, has a prepared system for delivering call-up cards for military exercises, issues decisions designating individuals for courier functions, and plans personal and material services for times of peace and war. It also issues administrative decisions imposing service obligations and summonses for their performance, as well as keeps records of movable and immovable property useful for defense purposes.

In the area of public safety, the activities carried out focus, among other things, on planning aimed at ensuring operational efficiency under threat conditions.

To summarize, thanks to well-developed and regularly updated plans and instructions for action in case of both military and non-military threats, as well as the annual training sessions organized for municipal office staff and organizational units, Pszczyna is a municipality well-prepared to respond effectively in the event of an emergency.

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17 Wytyczne Wojewody Śląskiego, z dnia 11 lutego 2008 roku *w sprawie przygotowania warunków organizacyjnych i technicznych planowania i realizacji zadań obronnych z zakresu przygotowania i koordynacji wsparcia sojuszniczych sił zbrojnych w czasie pokoju, sytuacji kryzysowych i wojny, wykonujących zadania lub przemieszczających się przez obszar województwa śląskiego.*

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HAIR AS EVIDENTIARY MATERIAL IN FORENSIC SCIENCE

Abstract

The article provides an overview of the use of hair as forensic evidence in criminal investigations, emphasizing its unique physical, chemical, and genetic properties that allow for the detection of drugs, toxins, and other substances over long periods. It outlines the scientific basis of hair analysis, describes advanced techniques like SEM, IMS, and FISH, and presents forensic case reports demonstrating its practical forensic applications. The article concludes by discussing future developments and the growing importance of hair analysis in integrating molecular biology, analytical chemistry, and forensic science.

Keywords

hair analysis, forensic evidence, scanning electron microscopy, ion mobility spectrometry, fluorescence in situ hybridization, toxicology, DNA profiling, drug detection, forensic case reports

Introduction

Modern forensic science, as an interdisciplinary field integrating achievements in the natural sciences, technology, and law, continually faces challenges related to the precise identification of perpetrators of criminal acts. The crime scene constitutes a complex evidentiary environment, rich in potentially significant information about the course of the offense. Every detail, even one that may initially seem insignificant, can prove crucial in reconstructing the sequence of events. In this context, biological traces play a fundamental role in the evidentiary process by enabling the identification of the perpetrator. Among these traces, hair holds a special place. Its distinctive structure, resistance to degradation, and ability to retain both genetic and chemical information make it a valuable source of answers to questions that, until recently, seemed beyond reach[1].

The application of modern techniques such as DNA analysis, isotope spectrometry, scanning electron microscopy (SEM), ion mobility spectrometry (IMS), and fluorescence in situ hybridization (FISH) has significantly expanded the interpretative capabilities in hair analysis. In particular, molecular techniques like polymerase chain reaction (PCR) have revolutionized the process of analyzing biological material, enabling its use in precise individual identification[2]. The uniqueness of hair lies not only in its durability but also in its ability to accumulate a wide range of information about the host organism (from genetic traits and health status to aspects of lifestyle). It is precisely this multidimensional informational potential that makes hair an increasingly valued trace in forensic investigations[3].

This article focuses on the multidimensional significance of hair as a biological trace, analyzing its use both in the context of identity identification and as a carrier of information about a person's life and related circumstances. The conclusions presented aim to highlight the growing importance of advanced hair analysis in modern investigative procedures, as well as the need for continued development of technologies that support this field.

The beginnings of hair analysis research

A significant place in the history of hair research as evidentiary material is held by the work of Mateo José Bonaventure Orfila, regarded as the father of modern toxicology. As early as 1835, he published the first studies on hair analysis in the context of its usefulness in legal proceedings. Orfila not only laid the groundwork for the development of chemical analysis of biological traces but was also among the first

1 R. Włodarczyk, *Rozwój i współczesne możliwości wykorzystania śladów biologicznych*, Lublin 2018, p. 50.

2 M. Mańczuk, *Wykorzystanie nowoczesnych technologii do badania włosów celem uzyskania informacji o popełnionym przestępstwie*, p. 103.

3 I. Sołtyszewski, *Badania kryminalistyczne. Wybrane aspekty*., Olsztyn 2007, p. 16–17.

scientists to recognize the evidentiary value of hair in detecting poisonings and identifying perpetrators of crimes[4].

The first practical case involving the use of hair as biological evidence occurred in 1847, when a hair was discovered on the surface of a firearm used in the murder of the Duchess de Praslin. This event is considered one of the earliest moments in the forensic application of hair[5].

In 1857, J.L. Lassaigne published a chapter titled *De l'examen physique des poils et des cheveux* in *Annales d'hygiène publique*, which represented one of the first attempts to systematize the study of human hair using physical and chemical methods. Another breakthrough came in 1869, when Emil R. Pfaff released the monograph *Das menschliche Haar in seiner physiologischen, pathologischen und forensischen Bedeutung*. This publication was the first attempt at a comprehensive description of hair in terms of its presence on different parts of the body. Pfaff argued that the analysis of the chemical properties of hair (such as the rate at which it dissolves in alkaline solutions) could provide information about the age of the individual from whom the sample originated[6].

An important milestone in the development of hair research was the publication, in 1884, of an atlas by the German anatomist J. Waldeyer, which included the first microscopic photographs of human and animal hair. The next step came with the 1889 publication by E. von Hofmann, *Handbook of Forensic Medicine*, in which a chapter dedicated to hair analysis provided practical guidance for investigators of the time. a significant contribution to the advancement of microscopic techniques was also made by G. Popp, who in 1904, while directing the Institute of Chemical Technology and Hygiene in Frankfurt, used an optical microscope to analyze hair in the case of the murder of Eva Disch. This case was widely publicized in the press as a groundbreaking example of the use of microscopy in a criminal investigation. In 1910, W. Balthazard of the Sorbonne Chair of Forensic Medicine published *Le poil de l'homme et des animaux*, a work that for decades served as a foundational textbook on the forensic analysis of human and animal hair[7].

In Polish forensic literature, the issue of hair analysis has appeared both in theoretical works and in the context of practical investigative cases. In the second half of the 19th century, L. Blumenstok-Halben, head of the Department of Forensic Medicine at the Jagiellonian University, published pioneering studies on methods of hair analysis. At the same time, H. Czerwiński emphasized their evidentiary significance, noting that the examination of a suspect's hair and facial features could be crucial in solving a crime. One of the earliest examples of hair being used as evidence in Polish forensic practice was the 1867 murder of Agnieszka Żychowiczowa, described by J. Widacki, in which the presence of hair in the victim's hands helped

4 R. Włodarczyk, *Historia, teraźniejszość i perspektywy kryminalistycznych badań włosów ludzkich*, Szczytno 2007, p. 10.
5 Ibid.
6 R. Włodarczyk, *Rozwój i współczesne…*, op. cit., p. 50-65.
7 R. Włodarczyk, *Historia, teraźniejszość…*, op. cit., p. 11.

establish key investigative facts. Interest in hair analysis as evidentiary material grew more broadly following the publication of J. Bednarski's book *Outline of the Most Important Principles of Forensic Science*, which at the time served as a fundamental compendium of knowledge in the field. In particular, Chapter X of the book focused on the potential use of hair in identifying perpetrators of crimes[8].

Structure of hair

Hair, which consists of keratinized fibers, is a unique product of epidermal cells characteristic of mammals, serving various protective functions. In humans, hair is mainly found on the scalp, in the underarm areas, and in the intimate regions. The hair covering the skin of the fetus, known as lanugo, consists of fine hairs whose development is closely linked to the activity of endocrine glands during fetal development. The hair organ comprises the hair follicle, sebaceous gland, and apocrine gland. The hair itself is made up of the shaft, root, bulb, and hair papilla, which work together in the process of hair growth and regeneration[9].

The hair root consists of several important structures: the hair shaft proper, the hair sheath, and the hair follicle. The upper part of the hair, known as the shaft or stem, ends with a free tip, while the lower part, embedded in the follicle, constitutes the root, whose key component is the matrix. The matrix contains living hair cells where intense metabolic processes and cell divisions take place. These cells, as a result of division, move upward, dying off, losing their nuclei, and undergoing keratinization. The shaft is composed of dead, keratinized cells in which no biological processes occur. It is worth noting that hair lacks blood supply and nerve endings. The interior of the hair is filled with a sulfur-containing protein called keratin, and at the center of the hair is the medulla (a residual structure made up of vacuoles containing glycogen and proteins rich in the amino acid citrulline). The vacuoles are separated by air-filled spaces. The hair cuticle, which forms the outer layer, consists of a single layer of flat cells, whose shape, polygonal nature, and arrangement are crucial in identification studies. These microscale structural features of hair can provide valuable information about the identity and individual characteristics of the person to whom the hair belongs[10].

The average number of hairs on the human scalp is about 120,000. Hair can be classified as straight, wavy, or curly, each with different cross-sectional shapes: straight hair has a round cross-section, wavy hair is oval, and curly hair is twisted along its long axis and has a kidney-shaped cross-section. Hair on the scalp typically forms one, and sometimes two, whorls, which can be either left- or right-handed; their position and direction are hereditary. The average lifespan of a hair is between

8 Ibid., p. 12-13.

9 I. Łuczak-Zielkiewicz, M. Szutowski, *Wartość diagnostyczna włosów*, 2013, p. 56-64.

10 B. Młodziejowski, I. Sołtyszewski, Ślady biologiczne [in:] *Ślady kryminalistyczne. Ujawnianie, zabezpieczanie*, ed. M. Goc, J. Moszczyński, Warszawa 2007, p. 125-184.

3 and 5 years[11]. The hair growth cycle consists of several phases that determine its growth and development. In men, the anagen phase (active growth) lasts from 16 months to several years, while in women it can last from 20 months up to 5 to 7 years. After the anagen phase comes the catagen phase, lasting 2 to 3 weeks, during which the lower part of the hair follicle and the papilla degenerate. The catagen phase transitions into the telogen phase, or resting phase, which lasts from 2 to 6 months. After the telogen phase, the hair falls out and the cycle begins anew[12]. Hair growth is a cyclical process; it is estimated that scalp hair grows about 1 cm every 28 days. This growth is not continuous but depends on the activity of the hair follicle. The total number of hairs on an adult human body is approximately 4 to 5 million; however, their number and activity decrease with age[13].

Hair consists of numerous substances, both inorganic and organic. Analysis of hair ash has revealed the presence of sulfur (S), nitrogen (N), calcium (Ca), phosphorus (P), sodium (Na), potassium (K), magnesium (Mg), iron (Fe), copper (Cu), manganese (Mn), cobalt (Co), nickel (Ni), and other trace elements. Among the organic compounds, keratin, melanin, lipids, and carbohydrates predominate. The presence of creatinine as well as sulfur- and nitrogen-containing compounds is also significant, as they form strong bonds that protect the skin from harmful external factors[14].

The presence of melanin in hair determines its classification into three main pigment groups: xanthism, melanism, and erythrysm. Light hair, referred to as xanthism, includes various shades of blonde, ranging from very light to medium-dark, characterized by high abundance and a fine structure. Dark hair, classified under melanism, encompasses shades of light brown, dark brown, brunette, and black, and can have medium to coarse thickness. Red hair, categorized as erythrysm, appears in a wide range of shades, from pale to intensely bright, fiery, and chestnut. Its color is determined by the presence of trichosiderin (an iron-containing pigment)[15]. For example, hair of individuals of the Caucasian race (white) exhibits a circular cross-sectional shape, whereas hair of individuals of the Mongoloid race (yellow) has an oval cross-section[16].

Detection and preservation

During the investigation of crimes, both sexual and other types, hairs from the perpetrator and the victim can be found in various locations related to the course of events — at the crime scene, along the path of approach and departure, on the bodies of those involved, their clothing, and objects used. It is practically impossible for a perpetrator to avoid leaving behind hairs, especially due to contact with rough

11 J. Sokołowska-Pituchowa, *Anatomia człowieka, Podręcznik dla studentów medycyny*, Warszawa 2003, p. 775.

12 R. Włodarczyk, *Rozwój i współczesne…*, op. cit., p. 91.

13 Ibid., p. 91-95.

14 Ibid.

15 Ibid., p. 159.

16 B. Młodziejowski, I. Sołtyszewski, op. cit., p. 125-184.

surfaces in the environment and the natural process of hair shedding (the average daily natural hair loss is between 50 and 100 hairs). Additionally, because of their small size and low weight, hairs are easily displaced by air movement[17].

In the search for hairs, there are no specific detection methods that allow for their easy localization. Therefore, it is important to conduct a thorough examination of the crime scene, preferably using strong angled light. Alternatively, wide adhesive tape can be used to detect hairs. The detection process involves meticulous inspection of items such as clothing parts, combs, sinks, as well as parts of the human body, including nails, hands, and interdigital spaces. After identifying hairs, they should be removed from the surface using disposable tweezers or forceps (preferably with rubber tips to prevent damage). In the case of wet hairs, they should be air-dried at room temperature before being sent for analysis, without cleaning. The evidence material must be secured in drying envelopes or paper bags, accompanied by a properly completed evidence documentation[18].

Preliminary examination

The initial morphological analysis of hair is a crucial stage in the identification process, allowing for the determination of physical characteristics and the assessment of the evidential value of the material for further investigation. This procedure includes both macroscopic and microscopic examinations. In the first step, it is established whether the examined material originates from a human or an animal. In the case of animal hair, it is possible to identify the species and, in some instances, assign the sample to a specific individual using DNA analysis. Human hair length generally exceeds that of animal hair, with a diameter ranging from 0.05 to 0.15 mm, whereas animal hair diameter may be smaller or larger. Animal hairs rarely show signs of dyeing or other cosmetic treatments. a significant difference is also found in the structure of the medulla: in animals, it is complex, regular, and often geometric in shape, with cells arranged in parallel rows. Human hairs have an interrupted medulla or lack one altogether, and the ratio of the medulla diameter to the total hair diameter (medullary index) is less than 1/3 for human hair and more than 1/3 for animal hair. Additionally, animal hair roots have a brush-like morphology, while human hair roots are bulbous or ribbon-like. The tips also differ: human hair, especially scalp hair, usually has frayed or cut ends, whereas animal hair tips are sharply pointed[19].

The next stage of the analysis is the identification of the body site from which the hair originates. This process involves assessing characteristics such as length, shape, color, degree of curliness, pigmentation, and the structure of the hair medulla.

17 R. Włodarczyk, *Historia, teraźniejszość…*, op. cit., p. 90.

18 L. Koźmiński, W. Miś, L. Szplit, *Podstawowe czynności techniczno-kryminalistyczne podczas oględzin miejsca zdarzenia,* Piła 2015, p. 56.

19 R. Pawłowski, *Medyczno-sądowe badanie śladów biologicznych*, Kraków 1997, p. 84.

Microscopic examinations also allow for the determination of the ethnic origin of the individual from whom the hair came by analyzing the cross-sectional shape, pigment distribution, and degree of waviness. Additionally, it is possible to distinguish hairs originating from children and elderly individuals. Children's hair is characterized by greater delicacy and fineness, whereas hair from older people exhibits reduced pigmentation and a distorted cross-section. Examination of the hair tips also provides important information regarding their origin (a shed hair, telogen, typically has a small sheath of surrounding tissue cells or is completely devoid of it, whereas a forcibly removed hair may contain attached tissue fragments)[20].

Macroscopic analysis of hair provides important information about its condition. Hair luster is an indicator of health (shiny hair suggests a proper balance of elements and trace minerals, while dull hair may indicate underlying health issues). Hair shape and elasticity are primarily determined by genetic and ethnic factors, as well as environmental influences and cosmetic treatments. Hair color can undergo various modifications due to chemical and physical factors. For instance, UV radiation often leads to hair lightening, while exposure to high temperatures or contact with substances such as copper or cobalt can alter the color to greenish or bluish tones. Additionally, pathological conditions and postmortem changes may also affect hair pigmentation[21].

The examination of hair collected from a deceased individual enables the identification of characteristic postmortem changes. a key element in this process is the assessment of the possibility of retrieving the root portion, approximately 1 cm in length, for further genetic analysis. To precisely select material for analysis, fluorescence microscopy is employed, during which the specimen is stained with DAPI. This substance binds to DNA, indicating areas of its highest concentration. For many years, morphological-comparative analysis served as the basis for forensic casework, complemented by serological testing and protein polymorphism analysis. Based on similarities and differences in hair characteristics, experts attempted to associate evidentiary samples with reference samples. The conclusions were drawn from the analysis of these features, taking into account factors such as diseases, parasites, or environmental damage[22].

Comparative examination

To obtain reference samples for the morphological analysis of hair (such as shape, thickness, length, color, etc.), approximately 10 hairs are either plucked or thoroughly combed from five different body regions, such as the scalp, beard, mustache, sideburns, armpits, torso, and pubic area. For genetic testing, only a few hairs or biological samples such as blood, saliva, or an oral swab are sufficient.

20 R. Włodarczyk, *Historia, teraźniejszość…*, op. cit., p. 32–33.

21 K. Świech, *Ultrastrukturalne badania włosów metodą SEM,* Prokuratura i Prawo, No 10, 2012, p. 133-148.

22 E. Sadowska, I. Sołtyszewski, *Dowód z badań włosów ludzkich,* Prokuratura i prawo, No 7-8, 2011, p. 217.

The initial macroscopic assessment of hair includes an analysis of several key parameters that may provide crucial information in the identification process. Hair length is measured in millimeters or centimeters and should be straightened, if possible, to ensure the most accurate measurement. Hair color is determined using the EKR scale or a standardized hairdressing nomenclature system, which enables precise color classification. The degree of luster is categorized as very glossy, semi-matte, or matte, offering insight into the hair's health and possible grooming routines. The shape of the hair is assessed using the Martin scale or classified as straight, slightly arched, arched, S-shaped, coiled, or wavy, depending on the degree of waviness. Hair type is closely related to the area of the body from which it originates (e.g., eyebrow, eyelash, nasal, and ear hairs have specific shapes that are not found in hair from other body regions). Elasticity and tensile strength are evaluated based on the hair's flexibility, which helps determine its resistance to mechanical stress. Additionally, various surface contaminants may be present, such as glass particles, plant debris, blood, dust, pollen, or traces of disease or parasites. These can provide information about the environment in which the individual was present[23].

Toxicological Analysis

The origins of hair toxicological analysis date back to the 1940s; however, this field experienced significant development only in the 1970s and 1980s. Initially, the primary focus was the detection of heavy metals and metallic elements. As technology advanced, hair toxicology began to include the identification of xenobiotics, organic poisons, and particularly addictive substances. Furthermore, hair screening tests now allow for the detection of alcohol metabolites, making them a valuable tool in diagnosing alcohol-related disorders and in identifying individuals who consume alcohol, whether regularly or occasionally[24].

In judicial proceedings and investigations conducted by law enforcement agencies, traditionally used biological materials, such as blood and urine, require experts to carry out detailed analyses to detect drugs and other substances regulated under the Act of 29 July 2005 on Counteracting Drug Addiction (Ustawa o przeciwdziałaniu narkomanii z dnia 29 lipca 2005 r.; Dz. U. z 2012 r. poz. 124, z późn. zm.). However, these tests are characterized by a limited "detection window," typically up to three days from the time of substance exposure. In contrast, human hair serves as a biological material with a significantly longer retrospective detection period, allowing for the identification of psychoactive substances several months, even up to a year or more after their use[25].

23 B. Hołyst, *Kryminalistyka,* Warszawa 2024, p. 448.

24 www.kwartalnik.csp.edu.pl/kp/archiwum-1/2015/nr-22015/2682,Wlosy-jako-material-analityczny-w-badaniach-kryminalistycznych-Zastosowanie-bada.html, [06.05.2025].

25 Ibid.

Hair analysis is one of the most non-invasive methods for drug detection. Keratin, the main protein in hair, has the ability to bind metal ions and organic substances, enabling detailed analysis of a user's drug consumption history. Psychoactive substances and toxins accumulate in specific segments of the hair, allowing retrospective detection of drug use up to 10 months prior. In the context of forensic science, this method is referred to as a "wide detection window." However, hair analysis has certain limitations; it is time-consuming, labor-intensive, and costly compared to other biological sample testing methods. Moreover, direct detection of drugs immediately after use is not possible, as psychoactive substances first need to disperse throughout tissues and organs. Additionally, this method is less effective for individuals who have used drugs only once[26].

Toxicological examination of hair provides significant opportunities for detecting hard-to-detect substances, such as the so-called "date rape drug" (e.g., gamma-hydroxybutyric acid, GHB) and doping agents. These compounds have a short detection window in traditional biological materials, often becoming undetectable within just a few hours. Hair, due to its ability to permanently bind chemical substances at the keratin level, allows for the identification of traces of these compounds even several months after their intake. This represents a major advancement in prosecuting sexual offenses involving psychoactive substances. Similarly, hair analysis has been applied in the long-term monitoring of pharmacological doping (including the use of anabolic-androgenic steroids and other performance-enhancing substances). Thanks to advanced analytical techniques such as gas chromatography or liquid chromatography coupled with mass spectrometry (GC-MS, LC-MS/MS), it is possible to precisely determine the type, concentration, and pattern of substance use. This makes hair a valuable piece of evidence in forensic toxicology and an effective tool in combating unfair practices in professional sports[27].

Modern Technologies

Thanks to the use of advanced analytical technologies, hair constitutes one of the most valuable pieces of evidence in forensic investigations. One of the most sophisticated tools used in hair analysis is the scanning electron microscope (SEM), which employs a precise electron beam to provide detailed imaging of the hair's microstructure. SEM enables not only the assessment of the hair loss mechanism (allowing differentiation between hair that was pulled out, shed naturally, or damaged chemically or thermally) but also the identification of chemical residues and traces of contact with mechanical or thermal tools. Complementing SEM in the detection of toxic compounds and explosive residues is ion mobility spectrometry (IMS). This technique allows for rapid detection of molecules characteristic of

26 I. Krzyżewska, A. Kozarska, *Zastosowanie chromatografii gazowej do detekcji narkotyków w technice kryminalistycznej*, LAB Laboratoria, Aparatura, Badania, No 21(2), 2016, p. 12-20.

27 E. Sadowska, I. Sołtyszewski, op. cit., p. 7-9.

toxic substances or explosives that may have deposited on the hair surface through direct contact or secondary transfer in the gas phase. Meanwhile, fluorescence in situ hybridization (FISH) enables the analysis of genetic material contained in the hair follicle. This technique uses molecular probes labeled with fluorochromes that bind to specific DNA sequences, including chromosome fragments determining sex. This allows for the identification of X and Y chromosomes, thereby determining the donor's sex. The combined application of these three technologies significantly broadens the range of data obtainable from hair analysis, providing morphological, chemical, and genetic information, making it an invaluable tool in modern toxicology and forensic science[28].

Forensic case reports

A properly secured and analyzed biological trace, such as a hair containing genetic material, can constitute extremely important evidence in criminal proceedings, often decisively influencing the outcome of a case. In international case law, there are instances where a single hair subjected to DNA analysis played a key evidential role. One of the most well-known cases is that of the so-called "Vienna Strangler," a 44-year-old writer and journalist accused of murdering prostitutes across Europe. In connection with one of the victims (a woman murdered in Prague), the breakthrough evidence was a single hair found on the passenger seat cover of a BMW car. This vehicle, previously owned by the suspect, had been sold by him and subsequently scrapped. The seat covers, stored for approximately 1.5 years in a garage, were secured by law enforcement authorities. Detailed examination and specialist analysis of the hair revealed a DNA profile matching the victim's genetic profile, directly linking the suspect to the crime scene. The results of the hemogenetic analysis served as key evidence in the trial, leading to the conviction of the journalist not only for the murder in Prague but also contributing to establishing his responsibility for other victims[29].

One of the most high-profile cases in which a hair played a crucial role as forensic evidence was the disappearance of Caylee Anthony, a three-year-old girl from Florida. The incident began on July 15, 2008, when the child's grandmother, Cindy Anthony, reported her missing. It was established that the girl had not been seen for 31 days, and her mother, Casey Anthony, repeatedly misled law enforcement by providing false information about her daughter's whereabouts. During the investigation, one of the key pieces of evidence was Casey Anthony's car. After the vehicle was recovered from a tow lot, Cindy informed the police about a strong odor resembling a decomposing body. In response, investigators conducted a detailed examination of the vehicle, focusing particularly on the trunk to determine whether Caylee's remains might have been stored there before being abandoned in a wooded area. The

28 M. Mańczuk, op. cit., p. 103- 109.

29 M. Lewandowska, *Wykorzystanie dowodu z DNA na przykładzie postępowań karnych,* Palestra 2011, p. 72.

breakthrough came with the identification of a single hair found in the trunk. It was subjected to mitochondrial DNA analysis, which allows for the determination of maternal lineage. The results indicated a high probability that the hair belonged to Caylee Anthony, as the mitochondrial profile matched those of the child's mother and grandmother. Moreover, an FBI specialist testified that the hair exhibited morphological features characteristic of hair from deceased individuals (changes in the root area indicative of postmortem processes). Although this evidence was insufficient to definitively assign guilt, it significantly strengthened the hypothesis that the girl's body had been present in her mother's car trunk. Consequently, it supported the assumption that Casey Anthony possessed knowledge of the child's death beyond what she had disclosed in her statements[30].

One of the high-profile cases in which hair played a key role occurred in August 1991, when Robert C., a contractor supervising the renovation of a chemical laboratory at Wilkes University, began experiencing severe symptoms such as persistent vomiting and rapid hair loss. Clinical diagnostics revealed significantly elevated levels of thallium (a toxic heavy metal previously used in rodent poisons, banned in 1984 due to its high toxicity). Initially, accidental exposure in the laboratory environment was suspected, but further investigation showed no similar symptoms among others in the same building. The turning point in the investigation was the analysis of Robert C.'s hair samples, which indicated chronic, systematic exposure to thallium even before his employment at the university. Postmortem hair samples taken during exhumation enabled the reconstruction of the exposure timeline over nine months, with a marked increase in thallium concentration shortly before his death. The collected data pointed to deliberate poisoning. Suspicion fell on Robert's wife, Joann C., who frequently visited him in the hospital and brought homemade meals. During the investigation, it was established that she systematically administered thallium to her husband with the intent to eliminate him, motivated by the desire to collect a $300,000 life insurance payout. To divert suspicion, she also poisoned herself and her daughters, attempting to support the theory of accidental exposure. Joann C. was charged with her husband's murder. She pled guilty in exchange for avoiding trial and a possible death sentence. After her husband's death, she received insurance benefits totaling $1.2 million. This case exemplifies how chemical hair analysis not only enabled the detection of a crime but also helped reconstruct the perpetrator's modus operandi[31].

In 2014, Elżbieta G. lost consciousness after consuming alcohol. She regained consciousness only several hours later, away from her place of residence. Additionally, numerous injuries were observed on her body, which could indicate physical abuse. Due to the circumstances, the woman went to the Department of Forensic Medicine to undergo a medical examination. She suspected her spouse, with whom she was in conflict during divorce proceedings, believing he had

30 B. Hołyst, op. cit., p. 451.

31 Ibid., p. 450.

administered her a psychoactive substance classified as a so-called "date rape drug." In March 2015, the woman reported to the Institute of Forensic Expertise Analityks in Poznań, where a hair sample was collected and a screening analysis was performed. The analysis results confirmed the presence of gamma-hydroxybutyric acid (GHB), indicating exposure to this substance during the period declared by the patient — September 2014[32].

In December 2014, the grandmother of four-year-old Weronika p. submitted a hair sample of the child for testing. The conducted physicochemical analysis revealed the presence of, among other substances, amphetamine and GHB (a substance typical of the so-called "date rape drug"). It was determined that the child had been exposed to these substances approximately six months earlier. In January 2015, to confirm the results, an expert personally collected a new hair sample from the occipital region of the child and conducted a repeated analysis, which confirmed the initial findings. The obtained results formed the basis for initiating proceedings by the prosecutor's office and the family court[33].

Conclusions

Hair as forensic evidence in criminalistics represents an exceptionally rich source of information with high evidentiary value, stemming from its complex structure and resistance to environmental factors. Thanks to its unique physical, chemical, and genetic properties, hair allows for multidimensional analysis, encompassing both the identification of individuals and the reconstruction of event circumstances. Modern forensic science treats hair as a bridge between molecular biology, analytical chemistry, forensic genetics, and advanced instrumental technology.

The application of advanced analytical techniques, such as scanning electron microscopy (SEM), ion mobility spectrometry (IMS), and fluorescence in situ hybridization (FISH), significantly broadens the analytical scope of hair analysis. SEM enables precise examination of the hair shaft's microstructure, allowing assessment of damage mechanisms (e.g., pulling, cutting, thermal or chemical damage), which can aid in reconstructing events. IMS provides highly sensitive detection of trace amounts of toxic, explosive, or narcotic materials, even from secondary transfer, making it useful in investigations related to violent acts or terrorism. The FISH method allows identification of specific DNA sequences in chromosomes, including determination of biological sex from a single hair containing the hair follicle. One of the most important aspects of hair analysis is the ability to utilize the genetic material it contains, both nuclear (from the follicle) and mitochondrial (also present in the hair shaft). Through the PCR technique (polymerase chain reaction), it is possible to precisely reconstruct a genetic profile even from a small amount of biological

32 https://kwartalnik.csp.edu.pl/kp/archiwum-1/2015/nr-22015/2682%2CWlosy-jako-material-analityczny-w-badaniach-kryminalistycznych-Zastosowanie-bada.html [08.05.2025].

33 Ibid.

material, which in many cases is decisive for individual identification. Isotopic and elemental analyses provide information related to lifestyle, diet, health status, and long-term exposure to heavy metals and toxic substances.

Additionally, hair is characterized by exceptional stability; its keratin structure provides resistance to microbiological and chemical degradation, making it particularly valuable as forensic evidence in cases where other biological samples have been destroyed. Even under extreme conditions (high temperature, humidity, exposure to light), hair can retain its structural and informational integrity.

In summary, hair is not only a passive biological trace but an active carrier of data with enormous informational potential. Its analysis, supported by modern scientific techniques, plays a key role in investigative and judicial processes. In the future, the development of research methods may further strengthen the role of hair as critical forensic material, expanding the boundaries of knowledge and increasing investigative effectiveness.

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