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Crisis Management System in Poland - A New Perspective

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***Abstract*:**

Purpose: *The aim of conducted research was to elaborate a coherent structural model of crisis management system in public organizations, mainly in public administration bodies of different levels.*
Design/Approach/Methodology: *The research process consisted of theoretical and empirical part. The theoretical part included the analysis of current scientific studies on the shape and functioning of the crisis management system at different levels of public administration in Poland, as well as the applicable legal acts in this field. The empirical part of the study was based on direct observation carried out in institutions of crisis management on commune, district and voivodeship levels, conducted in 2020 and 2021.*
Findings: *As a result of the research, the needs for ensuring the smooth functioning of emergency management cells were identified and a structural model was developed to meet those needs.*
Practical Implications: *The results of the research can be used to construct the internal structure of crisis management bodies in public organizations. They can also be an important inspiration for building such structures in business organizations.*
Originality/Value: *The present study is an expert author's study based on the application of the concept of compliance used in the analysis of the performance of public institutions in the areas of security management, public management, human resource management and praxeology.*

Keywords: *Crisis, governance, crisis management, system, public administration.*

JEL codes: *H11, H12, H56, H76, H83, H84, R58, Z18.*

Paper Type: *Research article.*

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1. Introduction

The crisis management system currently in place in the Polish public administration was created in 2007 and its structure has not changed significantly since then. The shape of this system is based on general theory of systems and achievements of management sciences. Such a classical approach, while allowing for limited flexibility resulting from the location of a particular institution in the structure of the system and the specificity of the tasks it performs under crisis management, allows for ensuring appropriate effectiveness of the system. At the same time, this system shows certain shortcomings, as its framework is limited to only three basic elements, indicated in the Act of 26 April 2007 on crisis management, which is the legal basis for the creation and operation of the crisis management system in Poland.

In the presented article the assumptions of this system resulting from management science were indicated and its elaborate structure was presented, which includes all the elements that allow to ensure the appropriate quality of implementation of crisis management projects at all levels of public administration.

The presented contents are the result of in-depth analysis of crisis management system functioning in Poland, conducted in connection with selected contents of systems theory and theoretical foundations of management in public organizations.

2. Concept of System and Management System

The term "system" is one of the most popular terms in almost all languages of the world. In the widely used Internet search engine Google you can find almost 4.5 billion pages referring to this keyword. In Polish language there are over 86 million such pages. In the last dictionary of Polish language, published in 2009, which contains over 40 thousand lexemes, "system" is listed on 723 position (Kazojć, 2009).

According to the simplest definition, a system is a system (set) of elements related to each other by various dependencies and created in order to perform specific functions. Systems occur in almost all areas of human functioning. They refer to phenomena, objects and processes occurring in the natural environment or created by people (e.g. technical, production, social, economic systems). It should be noted that the elements of the system do not have to be either individual or material. They may also be subsystems (systems of a lower order) and e.g., principles, rules, procedures forming a specific, mutually connected whole[2]. The Argentinian philosopher Mario Bunge distinguishes five types of systems (Bunge, 2014):

[2] *E.g., a set of rules or procedures by which something is done; a set of rules used for measurement or classification; organized planning or behavior. Cf. (2021). Definition of system [online]. Oxford University Press. Available at: https://www.lexico.com/definition/wake.*

- natural (e.g., nervous system, river basin);
- social (e.g., family, school community);
- technical (e.g., machine, factory, hospital facility);
- conceptual (set of laws, rules of procedure);
- Semiotic (language, object plan).

The system will also be a set of ways of action consisting of sequential execution of complex activities aimed at achieving the assumed objective. A slightly more extensive definition of the system assumes that it is a distinct set of interrelated elements, considered as a whole and having at the same time such properties that its elements do not have. According to this definition, the system is not just a simple or synergistic multiplication of the properties of its elements, but the relationships between the elements lead to the emergence of the system, that is, the creation of new characteristics of the whole, different from the characteristics of its elements.

The creator of the general theory of systems, Ludwig von Bertalanffy, while formulating the definition of a system for the first time pointed to another of its distinguishing features - openness. A simple definition given by Bertalanffy, stating that a system is "a set of elements interrelated with each other and with the environment" (Bertalanffy, 2015) applies to the vast majority of systems observed today, including all those having the nature of different types of organisations. An interesting, developed definition of a system is given by Mario Bunge, quoted above. The CESM model, built by him, includes an ordered four:

$$\mu(s) = \langle C(s), E(s), S(s), M(s) \rangle \quad (1)$$

Where:

- **C(s)** - Composition - the collection of all elements of a system;
- **E(s)** - Environment - the environment of the system, the set of elements outside the system that form relationships with at least one element of the system;
- **S(s)** - Structure - the structure of a system, a set of relationships that bind elements of a system to other elements of the system (endostructure) or the environment (exostructure);
- **M(s)** - Mechanism - the mechanism of a system, the totality of processes within a system that cause the system to function as expected.

The model is universal and its detailing is done by making changes within individual parameters. The shape of the system is determined, to an equal extent, by all the four components mentioned above. It is worth noting that - paradoxically - the system is also created by the elements of the environment, which are de facto outside the system, as far as they enter into relations with the elements of the system.

This approach has been reflected in management theory. One of the most outstanding thinkers and theoreticians of management in the 20th century, Peter F. Drucker, stated that management must focus on the activities of the organisation and the effects of these activities. It seems necessary here to permanently monitor and evaluate everything that affects the effectiveness of activities - "both inside and outside the organization; whether the observed factors are under its control or independent of it". (Drucker, 2007). This means that management cannot focus solely on the processes taking place within the organisation, but must also be concerned with elements of the wider environment, if only they have any influence on the functioning of the organisation.

After all, management is not intended to ensure the proper functioning of the organisation only for itself, in isolation from the environment in which it operates and the external objectives it should be aiming at. What happens inside the organisation should only serve to make it possible to achieve the best possible effect of its activity, measured by the results obtained outside the organisation. As Drucker wrote, "the results of any institution (organisation) are visible only externally" and "management is, in a way, a tool to ensure that the institution (...) can achieve its intended results in the external environment in which it operates" (Drucker, 2007).

Each organization must therefore be oriented not only internally, which is not without significance, but also externally, taking into account the impact of the environment and referring to the results achieved. Following this reasoning, we can distinguish internal management, concerning relations taking place inside the organization, and external management, focused on the activities of the organization treated as a whole, aiming at controlled influence on the elements of the environment and, consequently, at planned transformation of this environment. In this approach there is a clear difference in the structure of internal and external management system, related to the location in this structure of the elements of the organization's environment. While in external management these elements must be treated as part of the system, in internal management they will not be included in the system.

The problem of including elements of the environment in the structure of the management system, which in its essence boils down to the definition of this structure and identification of objects which will be the subject of management, is extremely important from the point of view of crisis management.

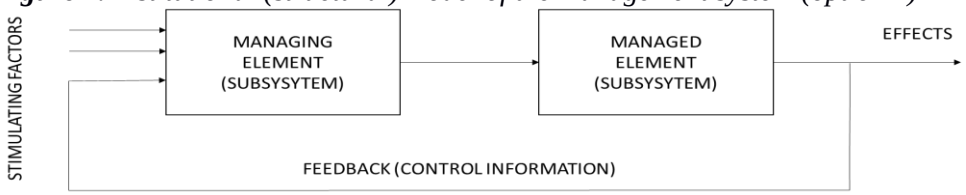
Adam Tomaszewski's view, according to which three fundamental components of the management system are distinguished in every organization, was taken as the starting point for further considerations (Tomaszewski, 2017):

- management organisation,
- management process.
- management measures.

Management organization includes, generally accepted in the organization principles and methods of operation, location of individual management bodies in the structure, their internal structures and powers, as well as relations occurring between the bodies. *The management process* is a set of interrelated undertakings of information and decision-making character, realised by authorised management bodies, consisting in continuous acquisition and development of information, making decisions on their basis and then passing these decisions to executors and supervising their realisation. *Management resources* are the material, technical and infrastructural resources used to implement the undertakings of the management process.

Bearing in mind the components mentioned above and recognizing, following Adam Tomaszewski, that "one can talk about management when there is a manager and an object of management" (Tomaszewski, 2017) it is possible to indicate an institutional (structural) model of the management system, which in its simplest form will have the structure shown in Figure 1.

Figure 1. *Institutional (structural) model of the management system (option 1)*



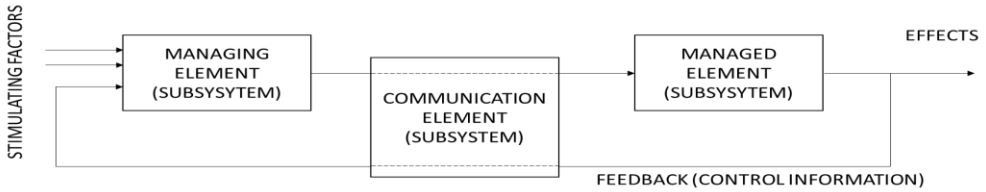
Source: *Own elaboration.*

The managing authority (subject of management) will be here the person (group of persons) having adequate authority to make decisions and transfer them for implementation to the managed authority (subject of management). The information about the obtained results of the actions of the managed body is passed back to the managing body, which on its basis determines the correctness of the functioning of the system, understood as the degree of achievement of the assumed objective (effect). Thus, feedback may constitute an internal stimulating factor, which, in addition to external stimulating factors, such as e.g. an order from a superior or the occurrence of a crisis situation, will be the source of the decision-making process.

Sometimes (e.g., in the case of a large dispersion of elements) communication elements have to appear between the managing body and the managed one, facilitating (or even enabling) the transfer of information. This applies not only to situations where the individual elements of the system are located at large distances from each other, but also to cases where there is a need, for example, to encode the transmitted data, to filter them or to decree them. Then the management system model must be more elaborate (Figure 2). The communication element presented in the figure above is the essential (and sometimes the only) component of the management measures listed by A. Tomaszewski. It is acceptable in this case only

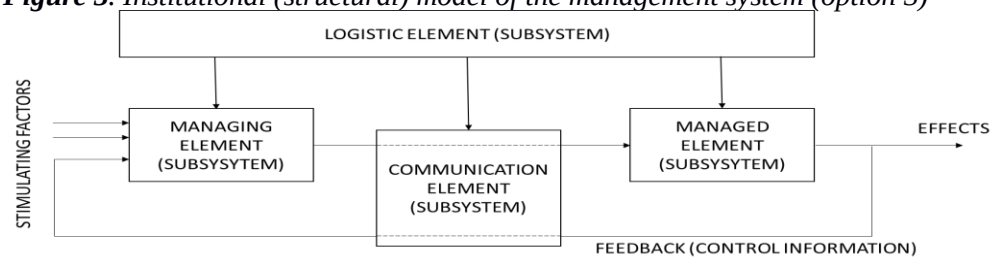
because the presented model is very simplified, limited only to two levels of management and a single managed element. In reality, management systems may be much more developed, which will cause the necessity of including in the system structure one more element constituting means of management, whose task would be to comprehensively secure the functioning of the system. This security element would be primarily responsible for performing logistics functions for the benefit of all system elements (Figure 3).

Figure 2. *Institutional (structural) model of the management system (option 2)*



Source: *Own elaboration.*

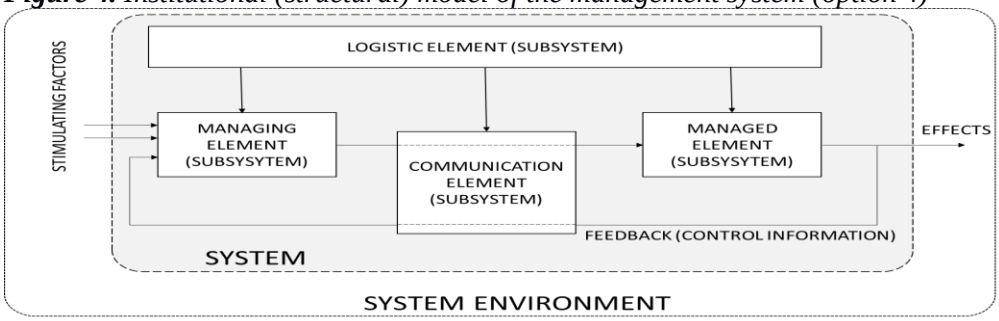
Figure 3*. Institutional (structural) model of the management system (option 3)*



Source: *Own elaboration.*

Of course, no management system functions autonomously, regardless of the environment in which it is located. Therefore, it is necessary to complement the presented model of the management system with the above-mentioned system environment, which is extremely important for considering the structure of the crisis management system (Figure 4).

Figure 4. *Institutional (structural) model of the management system (option 4)*



Source: *Own elaboration.*

This model, including subject, object and means of management, does not fully reflect the structure of real functioning management systems. In reality, each of presented elements can have very complex and diverse structure, adapted to accepted assumptions of system functioning. However, it can be a good point of reference for the analysis of the crisis management system solutions presented in the literature.

3. Crisis Management in Polish Public Administration

The growing systematic interest in the issues of crisis management in the 21st century has been reflected in numerous publications that present different aspects of this type of management (Bundy *et al.*, 2017; Christensen *et al.*, 2016). However, the authors of these publications do not always attempt to define the concept of crisis management (much less the crisis management system).

The situation is similar in Poland, where the authors usually stick to a legal definition provided in the Act on crisis management[3]. According to the provision of Article 2 of this Act, crisis management is "the activity of public administration bodies which is an element of national security management, which consists in preventing crisis situations, preparing to take control over them by means of planned activities, reacting in case of crisis situations, removing their effects and restoring resources and critical infrastructure". This definition enumerates the processes implemented under crisis management (prevention, preparation, response, recovery), which indicates the adopted processual model of crisis management. This model is similar to the phase model commonly presented in the literature, assuming that comprehensive crisis management includes three main phases related to preparation, response to the event and recovery actions (Boin, 2004; Mehr and Jahanian, 2016).

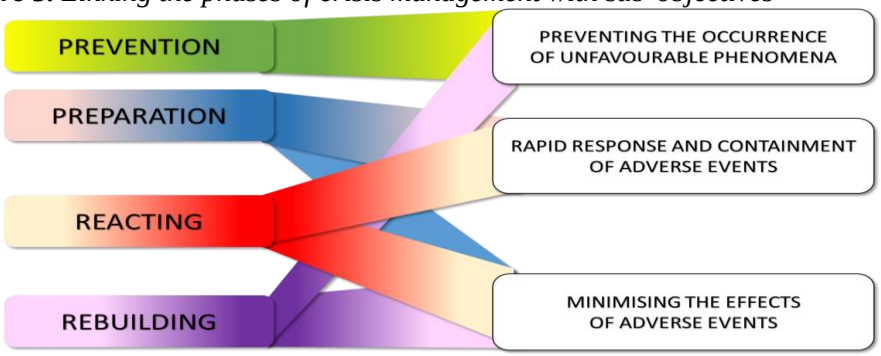
The crisis management model adopted in Poland includes four interrelated phases, prevention, preparation, response and recovery (Lidwa, 2015; Rysz, 2016; Sienkiewicz-Małyjurek, 2015; Bąk, 2010), within which differentiated undertakings are implemented aimed at achieving the assumed goal of activities, which includes, first of all, preventing the emergence of a crisis situation, but also, in the event of the impossibility of achieving this goal, efficient response and stopping the escalation of dangerous phenomena, and thus minimizing the effects of the event.

The activities carried out within the individual phases are directed towards achieving the respective sub-goal (Figure 5). The indications of cyclicality of crisis management activities appearing in the literature, however, cannot be equated with recognition of a rigid sequence of successive phases. Such reasoning is an obvious mistake, since in reality it is impossible to indicate unambiguous boundaries between individual phases, the more so that some of them are usually carried out in parallel. We may risk a statement that the only possible to indicate the border of two

[3]*Act of 26 April 2007 on crisis management (i.e. Journal of Laws 2017, item 209)*

phases is the occurrence of an event that could not be prevented. Up to this moment preparatory activities connected with the phases of prevention and preparation are implemented, and after it implementation activities (intervention and sanitation).

Figure 5. *Linking the phases of crisis management with sub-objectives*



Source: *Own elaboration.*

Activities within the scope of prevention and preparation are carried out simultaneously, often by the same entities. The objective orientation of these activities, aiming at avoiding the occurrence of unfavourable events (prevention) or creating conditions for their effective counteraction in case of such necessity (preparation), is different. The distribution of their intensity in time (expressed e.g. by the incurred costs) may also be different for the undertaken actions. Initially intensive preventive actions are taken, but as the threat grows the dynamics of preparatory actions increases.

The execution activities include intervention activities, related mainly to rescue, and rehabilitation activities, related to reconstruction undertakings. It is worth pointing out here that uncritical adoption of a common opinion that the reconstruction phase includes activities aimed at "restoring the state from before the crisis event" may raise doubts arising from the competence of crisis management bodies. It is difficult to expect that crisis management institutions (bodies, resources) will be used e.g., for reconstruction of damaged roads, bridges or buildings. Usually the activities under crisis management end with ensuring safety at the place of the incident (including, first of all, the participants of the incident), and the subsequent activities aimed at restoring the state from before the incident are carried out by other institutions of the state and include numerous undertakings, which most frequently also have a preventive character, thus blurring the line between the phase of reconstruction and the phase of prevention of the next cycle.

Such interconnection of activities carried out within the framework of particular phases of crisis management clearly indicates the lack of their distinct cyclicality in the scope of a single process. Such a cyclicality is however perceptible in relation to the whole process of crisis management, encompassing all phases and concerning a single event.

It should be noted, however, that in a particular institution very often crisis management activities relating to different events are carried out at the same time. Consequently, in relation to some events, e.g. response tasks may be carried out, and at the same time actions will be taken within the scope of other phases, concerning other events. Therefore, it cannot be unequivocally stated that at a certain time a given institution is carrying out tasks related to one specific phase of crisis management. The course of the crisis management process presented above refers, according to the previous deductions concerning the management system, to one of the components of the crisis management system and constitutes the basis for the creation of the so-called process model of crisis management.

However, in the literature one can also find other approaches to defining crisis management: based on the structure of the bodies[4] involved in such activities (subject approach) and resulting from the tasks performed (object approach) (Niemczuk, 2014).

The object-oriented approach is similar to the process-oriented approach described earlier, while the subject-oriented approach, which is the basis for creating the so-called structural model of crisis management, is completely different. Such a model, containing elements of organizational structure complemented by relations between these elements, is identified by Dariusz Majchrzak as a crisis management system (Majchrzak, 2014). Such a view is a significant and unacceptable simplification because, as indicated earlier, any management system also includes the management process and management measures.

4. Structure of the Crisis Management System

Taking Adam Tomaszewski's view as a basis, according to which the management system consists of three components: management organization, management process and management means, it can be concluded that the crisis management system consists of: crisis management organization, crisis management process and crisis management assets.

The *crisis management organization* includes:

- the bodies involved in carrying out tasks related to achieving the objectives of crisis management, their powers, interrelation and internal structures;
- generally accepted principles and methods of operation.

The *crisis management process* is an information and decision-making process that includes:

- continuously gather and analyze relevant information regarding potential and real threats and resources;

[4]*Authority - a department or organization that performs a specified function. (Definition of organ [online]. Oxford University Press. Available at: https://www.lexico.com/definition/organ.*

- decision making;
- communicating, in the form of tasks, decisions to contractors;
- monitoring the implementation of the set tasks and reacting to changes in the situation.

Crisis management assets are the material, technical, and infrastructural resources used to implement emergency management undertakings. The crisis management system may be thus described as an orderly whole composed of mutually connected bodies involved in the execution of planned and ad hoc undertakings aimed at efficient counteracting of crisis events.

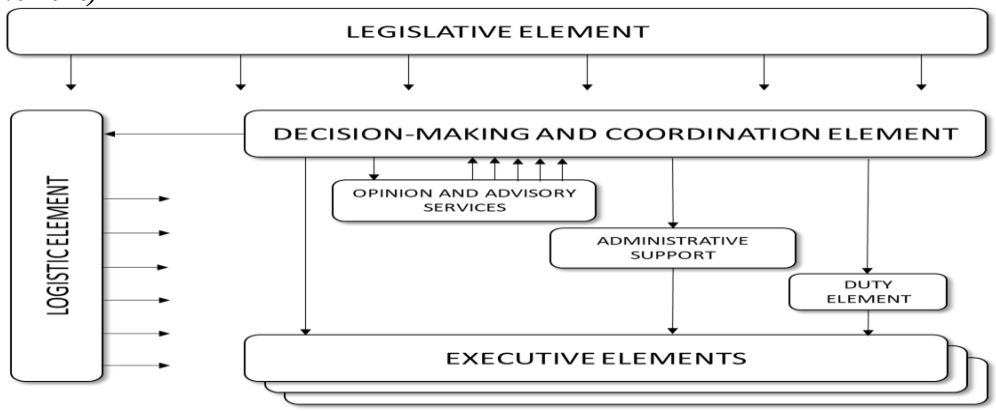
It should be noted at this point that it is a significant mistake to limit the above-mentioned bodies involved in the implementation of crisis management undertakings to decision-making bodies and to omit executive elements, because, as explained earlier on the basis of Adam Tomaszewski's statement, one cannot talk about management if there is no manager and no management object. Meanwhile, some authors consider as elements of the structure of the crisis management system only decision-making bodies and, supporting the activities of these bodies, crisis management centres and teams at different levels of public administration (Nepelski, 2016). Even more extreme views on this issue are presented by Marta Michalczuk-Wlizło, who considers the objects subject to crisis management as the surroundings of the crisis management system (Żmigrodzki, 2012).

The research conducted by the author indicates the need for a much broader view of the structure of the crisis management system, in which the following seven elements should be distinguished (Figure 6):

- legislative elements,
- decision-making and coordinating elements,
- opinion and advisory elements,
- administrative support elements,
- duty elements,
- logistic elements,
- executive elements.

Legislative elements are the bodies, operating at all levels of public administration, which make acts of general and local law, also in the field of crisis management. They are therefore responsible for the functioning of the crisis management system in two of its components: the organisation of crisis management in the part concerning generally accepted principles and methods of operation, and the process of crisis management in relation to formal requirements resulting e.g., from other provisions of law.

Figure 6. *Institutional (structural) model of the management system (author's variant)*



Source: *Own computation.*

Decision-making and coordinating elements are, usually one-person authorities on a given administrative level, responsible for i.a. directing the realization of tasks connected with removing effects of threats on administered area. These tasks are connected not only with making administrative decisions in this scope (decision-making role) but also with coordination of actions taken by rescue forces on lower administrative levels (coordinating role), if such a need arises. The decision-making and coordinating authorities have superior rights in relation to all the elements of the structure of the crisis management system on the administered area, except for the legislative elements.

Opinion and advisory elements are teams of specialists (experts) created on the basis of a relevant order of the relevant decision-making and coordination body, which defines their composition, tasks and mode of work. They are established on an ad hoc basis, often in an emergency mode, upon a clear order of the decision-making and coordinating element. Members of this team, in complex crisis situations, support the decision-maker in a substantive way and prepare proposals for him to take specific actions. It should be noted that these bodies do not have decision-making powers and their opinions are not binding for the decision-maker.

Administrative support elements are created in offices handling the functioning of the public administration. The tasks carried out by these elements concern the administrative service of the decision-coordinating body. In practice, these bodies may also have - granted by the decision-making and coordinating body - limited competences concerning the issuing of administrative decisions related to crisis management proceedings in routine, non-complex matters not directly related to rescue operations.

Duty elements are permanent vigilance and ad hoc response bodies functioning around the clock. These are centres, organised on all levels of public administration,

equipped with appropriate technical means enabling permanent observation of phenomena having influence on safety level in supervised area. The basic task of these authorities is to constantly monitor and analyse threats and possibly to undertake, within their limited competence, undertakings aiming at minimising these threats and the effects of their impact on people, property and environment. It means that these authorities have usually limited competences of direct leading of rescue actions, especially in the field of forces and means disposition and coordination of rescue actions. These authorities are also a very important element of the warning and alarm system, because from this place appropriate signals and messages about threats to the population are distributed.

The logistic elements are sometimes very developed institutions providing full protection of the functioning of all elements of the crisis management system in terms of logistics and information and decision-making. They are responsible for the use of one of the components of the crisis management system - the means of crisis management, which include e.g.: means of communication and information technology, means of transport, decision support devices and systems, threat level sensors, premises and buildings as well as other equipment and facilities used in the process of crisis management.

The inclusion of *executive elements* in the crisis management system is a consequence of the management system model adopted and presented above, which includes both the managing authority and the management object. The executive elements shall be all institutions undertaking direct and coordinated rescue actions within the framework of crisis management system. It should be noted that these elements have their own organisational structures, enabling them to undertake effective actions in the place of incident, also through proper cooperation and coordination of actions and appropriate division of competences.

The above mentioned elements of structure of crisis management system may function on all levels of public administration but it is also possible not to organise them on certain levels. It should depend on the scope of potential tasks and - above all - on decisions of appropriate administrative bodies.

Moreover, it is worth undertaking a discussion on adding *external stakeholders* to the above-mentioned seven elements forming the structure of the crisis management system model. This is because stakeholders often participate in activities related to preventing or counteracting crisis events (Pearson and Clair, 2008), and their importance in these activities can be significant.

5. Conclusion

The separation of elements of the crisis management system should not be perceived as a manifestation of an attempt to analyse them independently, but rather as a basis for a systemic analysis of crisis management. The author agrees with the thesis of

Andrzej K. Koźmiński who states that "by treating the organization as a system (...) one prevents the tendencies towards sub-optimization, i.e. treating individual parts as "for themselves" and improving them to the detriment of the functioning of the whole" (Koźmiński, 1979). It is particularly important in crisis management, where the achievement of the required effect of activities depends equally on the cooperation of many entities undertaking decision-making, operational and security activities.

The structural model of crisis management presented above is fully reflected in practical solutions, adopted and verified generally positively in recent years in Poland. The Polish crisis management structures, built since 2007, comprise all the above mentioned elements, functioning almost at all levels of public administration. At the same time, the model is universal in nature and can be successfully applied in various public and business organizations.

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