

Management of Complex Operations for Prevention and Management of Emergency Situations

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Abstract: Taking into account the perspective in the field of management of the prevention and management of emergency situations of an institutional system, partly established, with temporary functioning, which is only active at the moment of occurrence of the Emergency Situations, unable to provide an adequate response to the new challenges to the national security, a national emergency management system was set up in Romania, composed of a number of authorities and bodies: the National Emergency Committee, the Ministerial Committees and other central public institutions for emergency situations, the Committee of the City Bucharest Emergency Situations, County Emergency Committees and Local Emergency Committees. In most Western and Central European countries, the field is managed by the Ministry of Internal Affairs (administration and internal, justice and home), and the Council for Justice, Home Affairs and Civil Protection functions at EU level. The range of emergencies is widened by various natural disasters, storms, torrential rains and hail, blizzard, massive snow or avalanches, earthquakes, earthquakes, and earthquakes, which in turn cause human casualties and material damage. These are the reasons why public authorities, world states, the international community develop security policies and strategies, create and develop specialized institutions, strive to prevent or mitigate risks, protect the population and assets in emergencies. Regularly, congresses and world conferences on civil protection are held to harmonize legislation, standardize response procedures, and facilitate international assistance in civil emergencies.

Keywords: national emergency management system; national security; public authorities; international community

1. Introduction

An emergency was defined not only by the exceptional dimension or importance of an event but also by the capacity of existing structures and mechanisms to cope with the event. Exceptional urgency calls for exceptional measures requiring exceptional planning. The implications of the extraordinary and exceptional nature of the event can be reduced by effective emergency planning. The complex emergency attracts the involvement in a special event of more existential and environmental resources, calls for prompt interventions of several factorial systems and requires multiple, diverse and prompt actions.

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2. Complex Operations: Definition, Features and Classification

The term “complex operations” used in emergency management is an organized set of different actions, processes and components that: are met in a relatively large space within a certain period of time; they are combined in a relational manner that often subject some of the components to some unpredictable risks; it requires a unified coordination of cooperation in order to obtain the desired result.

The complex operation is vast, it is difficult and contains risks. It requires a wider, deeper, interdisciplinary and prudential approach to achieving the established objective. At the same time, it involves planning, concentrating and executing movements and maneuvers of forces and operational means under unitary coordination. It is done through cooperation.

In the complex operations, the principle of synergy applies, an internationally recognized principle.

Complex operations addressing emergency situations according to their main purposes are of two categories: Emergency Prevention and Emergency Management. Operations with both ends can be organized.

The following types of complex operations are used in the emergency services practice:

- a. complex actions to monitor and assess some types of risks;
- b. Collective or complex inspections or inspections;
- c. exercises and applications for preparation of intervention or response;
- d. Operative interventions or response operations.

3. Planning Complex Operations

Response capacity can often stand waiting until decision is made to act. Political, financial, logistical, security and bureaucratic constraints are among those that may delay the entry into action of pending resources. An effective mechanism for solving these problems is important.

Specific measures can and should be specified both on the ground and at the intervention command during the emergency planning phase that includes activating internal management mechanisms, identifying resources (preliminary identification of personnel needs, materials and equipment) and meeting security and telecommunication needs.

Planning is a dynamic process focused on training and flexibility; integrated into ongoing operational planning activities; a process that provides input to managers, program staff and emergency officers; an integral part of all preparatory work for

emergency agencies; a process that solves only the scenarios for which humanitarian operations can take effect; a process that is based on field actions.

When planning complex operations, the strategies adopted for some types of risk, the risk profile types in territorial profile and the evolution of the operational situation are considered.

Complex actions for monitoring and evaluation of some types of risk are planned, as appropriate, at the level of the Territorial Inspectorate for Emergency Situations or at the level of the General Inspectorate for Emergency Situations. Types of generating fires, catastrophic floods, radioactive contamination, and others may be covered.

For some types of risk, complex monitoring and evaluation actions can also be planned by other ministries or specialized agencies, such as epidemics, epizootics, earthquakes, pollution, landslides or collapses, unfavorable meteorological conditions, etc., to which specialists from emergency inspectorates should attend.

Exercises and applications for the preparation of operative intervention or response are planned on the hierarchical and competence levels of the components of the National Emergency Situation Management System.

In the emergency services, the exercises and applications are planned by:

- specialized intervention sub-section for those organized within the limits of intervention rayon;
- the intervention group for those organized within the intervention area with at least two specialized sub-units;
- the County Inspectorate for Emergency Situations in the area of responsibility attended by at least two specialized sub-units or two intervention groups within the structure;
- General Inspectorate for Emergency Situations for those attending: specialized sub-units from at least two territorial emergency inspectorates; specialized sub-units from at least two national emergency services. These exercises and applications planned by the IGSU in relation to the operational field in which they take place may have the following feature:
 - internal (county, inter-county or national);
 - international (regional in the sense of including parts of territory in at least two neighboring states).

In the planning of complex operations and their objectives, the principles relating to foreseeing and prevention shall apply; the priority of protecting and saving people's lives; respecting the human rights; cooperation; transparency and the gradualism of activities; the correlation of objectives and resources; legality.

The magnitude and complexity of emergency management operations should, in principle, correspond to the severity levels of the events that trigger the “alert state”. The complexity and volume of operations increases with the establishment of an “emergency state”.

The main territorial risks are:

- the industrial risk - is assessed by various methods, one being the gravity index, depending on the type of flux or the dominant agent (thermal, chemical, electromagnetic, biological), business classification and population density present in the vicinity enterprise;

- transport risk - covering all types of transport: air, rail, road and special (subway, tunnels, cableways, conveyor belts or sewerage networks). Parameters are considered, such as: length of transport networks, traffic intensity, black spots, accidents accumulation areas, destination (for persons, hazardous materials, etc.), capacity of the means of transport etc.;

- building risk - assessed in relation to their destination, importance and size: works of art, historical or cultural heritage; administrative buildings, sensitive technical constructions (railway stations, airfields, etc.), collective or public (schools, hospitals, discotheques, hotels etc.), high or very high buildings. Particular risks are residential districts (old or new dwellings) as well as agro-technical constructions;

- natural risk - can be caused by forest fires or agricultural crops, floods, meteorological phenomena (storms, tornadoes, droughts, strong wind, etc.), landslides, avalanches, earthquakes, etc.;

- social risk - whose presence is of interest to firefighters, especially at major public gatherings (sports or political rallies, shows, especially with fireworks, grandiose public marches, fairs, etc.) or popular, massive arrivals of refugees and others.

The operational situation is mainly characterized by the evolution and gravity of the territorial risks, the dynamics of the emergency situations, the causes and the impact of the events produced.

4. Organizing and Conducting Complex Preventive Operations

Prevision and prevention are principles of emergency management.

The obligation to organize and carry out complex preventive operations (inspections, controls and monitoring) is the responsibility of:

- Inspectorates for County Emergencies and Bucharest Municipality;
- the General Inspectorate for Emergency Situations;
- Ministries and other specialized central public bodies in their fields of competence.

Collective or complex preventive or collective inspections or controls are forms of exercising state control. They cover the field of fire protection and civil protection, as well as measures and actions for the prevention and management of emergency situations.

The actions for monitoring and evaluating the types of risks are covered by the monitoring and evaluation functions of the Operational Centers and Operational Centers for Emergency Situations.

Specialized forces, usually empowered to carry out inspections, controls and follow-up actions, are part of the preventive inspections and operational centers of the emergency inspectorate, as well as the departments of their ministries, agencies and their departments. Where appropriate, staff from intervention sub-units and civilian emergency services may participate. Sometimes other specialists are also co-opted.

In organizing and conducting complex operations, we aim at applying basic principles specific to fire and disaster protection such as: compliance with the regulations in force, priority, optimal dimensioning, correlation with existing resources, collaboration with stakeholders.

Pre-disaster-complex prevention operations have as objectives:

- coordinating the unitary application of the legal provisions and other regulations regarding the identification, evaluation, control and combating of the emergency generating risks that can become disasters;
- Preventive training of the population and information on potential risks, protective measures and preventive limitation of disasters as well as on how to act in such emergency situations;
- checking the existence and functioning of systems for monitoring certain types of risks;
- Evaluation and improvement of the technical, organizational and specific equipment necessary to ensure the operative intervention in emergency situations.

5. Organizing and Conducting Complex Operations to Prepare the Intervention or Response

The complex operations of emergency preparedness or response preparation have as main objective the creation during the pre-disaster period of the conditions for the operative, qualified and efficient intervention of the specialized forces and means together with the ones with which they cooperate.

The organization and conduct of complex interventions or disaster response operations mainly aims at verifying the preparation of the territory (s) for intervention, the preparation and training of the intervention forces, the allocation

and availability of technical means and other necessary and appropriate resources, the fulfillment of support functions, cooperation and management of emergency situations.

Synthetically, it can be said that through these complex operations, the set up ensemble prepares itself for activity in emergency situations and is trained in the perfect realization of the established operations, so it is operational.

An important activity carried out by the professional emergency services is the elaboration of the intervention concept and its materialization in the operative documents. In developing the concept of intervention, it is necessary to establish the operative characteristics of the operational field, such as: territorial risks and their severity levels; levels of performance criteria for fire safety of buildings, installations and other fittings; levels of danger from the point of view of civil protection, objectives and localities; the size of the population that may be endangered, affected or evicted; operational, alarm, evacuation or intervention time; the action capacity of emergency situation services.

Exercises and training applications are usually executed in practice. In some situations it is recommended that exercises or command applications be carried out in advance of the practical deployment of exercises and practical applications, without the effective involvement of the forces and means of intervention and cooperation or of the population. In such cases, only emergency managers and some specialists are involved.

Exercise and training applications aim at ensuring interoperability and capability through: common terminology; modular organization; integrated communications; enhanced intervention plans or action plans and harmonized procedures; compatible technical means of intervention and protection; joint training of forces; access to existing resources; the request for technical assistance and support at internal and, where appropriate, international level; the continuity of management.

6. Emergency Planning and Operations Planning during Emergency Situations

There is no big difference between emergency and operational planning. Both are planning activities where the goals are set and the strategy to achieve these well-known goals. The major difference between the two is that planning for emergencies is planning in unknown or uncertain situations.

In planning for emergencies, it is therefore necessary to make presumptions and to draw up scenarios on which to base planning. In the planning of operations, a perfectly tangible situation and the required response are observed. These are the associations between the emergency planning process and the planning of operations.

There is also a continuous pattern in which emergency planning is a stage before the planning of operations. In this pattern, early warning signs determine the emergency planning, and if the event take place for which planning was established, the planning process simply changes “clothes” and becomes the process of planning operations. Assumptions made in the emergency planning process are confirmed or adjusted and then the planning of operations continues, taking into account the real situation.

Planning operations take place in the middle of a mix of actions (sometimes complex).

The management of emergency situations is ensured through the components of the National Emergency Situation Management System.

In conducting these operations, the commander of the intervention is empowered to give operative orders, such as alerts, displacement, recognition, evacuation, intervention, maneuver and retreat. Orders must be clear, accurate and short, and transmitted by the communication means and / or by hierarchical officers or agents at their disposal.

During the conduct of the intervention operations, the operative management establishes specific measures for ensuring the actions and the protection of the intervention personnel and verifies their achievement, as well as the observance of the security technique rules.

Involvement in intervention operations is done gradually and on an emergency basis, in relation to the magnitude and evolution of emergency situations and the moment of arrival of the forces and the focused means in the operational field. The first intervention is usually carried out by voluntary or private public services for emergencies.

The logistics of complex intervention or response operations is one of the indispensable requirements for their success. In such situations, the size of human and material resources that provide logistical support is comparable to forces and means of intervention.

A very important issue during complex intervention or response operations is the provision of resource reserves, especially in the case of long-term operations.

Operations planning during emergency situations should also be supported by the population who must be fully aware of the dangers they face, be instructed on how to protect themselves as much as possible and to support completely the efforts to protect it.

Public awareness can be achieved through a range of short-term and / or high profile campaigns, using information, literature and general education. Education has the tendency to familiarize and demystify, to eliminate the sensationalism of these preparations. Everyone needs to understand the dangers as a living fact. Information

on hazards should be integrated as part of the standard curriculum for school preparation and elements used by daily sources of information.

7. Conclusions

Classification of challenges, defiance, threats and dangers and their vulnerabilities that generate emergency situations is not given once and for all. It has to be constantly adapted to the new conditions created by the evolution of the geophysical, climatic, economic, infrastructure, informational and social environment so as to constantly ensure a very good management of the emergency situations. Such management is only possible if there is a good assessment of risk and especially of extreme risk. Its limits, the thresholds for switching from one risk category to another, from one level of risk to another, determine a special approach to the issue of extreme risk and the creation of adequate structures and functions, or the proper optimization of the existing ones.

8. Bibliography

- Niculae, C. (2005). *Manual de Protecție Civilă/Manual of Civil Protection*. Bucharest: Editura M.A.I.
- Regester, M. & Larkin, J. (2003). *Managementul crizelor și al situațiilor de risc/Crisis and risk management*. Bucharest: Comunicare Ro.
- Mocioi, A. & Neacșa, F. (2007). Managementul operațiunilor complexe de prevenire și gestionare a situațiilor de urgență. Problematika general/ Management of complex operations for prevention and management of emergency situations. General issues. *Buletinul pompierilor/ Fire Brigade Bulletin no. 1*, Bucharest: Editura Ministerului Internelor și Reformei Administrative.
- Crăciun, I. (2006). *Curs Managementul situațiilor de urgență/ Course on Emergency Situations Management*, vol. II, Bucharest: Ed. BREN.
- Crăciun, I. (2002). *Situații și servicii de urgență/ Emergency situations and services*. Bucharest: Ed. Ministerului de Interne.
- Ceocea, C. (2010). *Riscul in activitatea de management/Risk in management activity*. Bucharest: Ed. Economica.
- Facultatea De Pompieri (2012). *Managementul situațiilor de urgență/ Emergency Situations Management*, Volumul 1, Bucharest: Ed. Matrixrom.