

## METHODOLOGICAL ISSUES IN PLANNING FOR CRISES AND NATURAL DISASTERS

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**Abstract:** Advance planning of actions for crises and natural disasters constitutes a significant element in the preparation of governmental agencies and local authorities from the executive branch, the legal entities and individual businesses, which have obligations under the legislation of the country. A basic requirement of emergency planning is coordination, which requires a unified planning methodology and the establishment of an interdepartmental organization to facilitate the process. The quality of advance planning is of great importance for the efficient management of forces and capabilities in order to ensure timely reaction to crises and natural disasters.

**Keywords:** Plan, organization, evaluation, estimates, models, coordination, interaction.

The nature of modern threats to security define the preemptive actions and preparation for rational reaction in the event of crises and natural disasters as a priority for the governmental institutions, local authorities, NGOs, legal entities and private businesses. The quality of realization of this primary task determines to a significant extent the ability of the state to fulfill its functions as regards protection of the life and property of citizens, as well as of their rights. The capabilities of the country for crisis management and management of the aftermath of natural disasters cannot be set up and developed within the framework of a single institution and are always a function of the joint, coordinated actions of all agencies who share this responsibility. The adoption of specific legislation in the field of crisis management, disaster protection, nuclear safety, security of air travel, etc. constitutes the basis for the development of crisis and disaster management capabilities. This requires significant efforts as regards coordination between the institutions of the country. The implementation of a National Crisis Management System, capable of ensuring efficient control at the highest government level, presupposes the establishment of working mechanisms for interaction with the other subsystems, such as the Unified Rescue System, the Na-

tional Emergency Medical Activity Coordination System, the Air Traffic Control System, as well as the system for prevention of the illegal traffic of radioactive material. Our country's membership in collective security systems, such as the EU and NATO, raises additional requirements to the establishment of integrated mechanisms and procedures.

Efficiency of management of forces and capabilities in the event of crises, natural disasters and other emergencies is defined mostly by the timely reaction and interaction between the leadership and experts of various institutions. The basis, or the prerequisites for efficient reaction, is established during the stage of preliminary action preparation and planning. In the event of crises and disasters, the quality of reaction is crucial for the preparation of working documents, such as instructions, orders and operational plans for joint actions, within reasonable time limits.

The current practice in developing national and departmental crisis management plans demonstrates that there exist a number of issues which, during full scale exercises and training, lead to considerable difficulties as regards preparation of operational plans. Problems arise mostly from the different planning methods and techniques adopted by various agencies, which lead to prolonged, inefficient coordination procedures, and possibly to difficulties in developing operational plans for joint operations, in response to particular crises and emergencies. In this respect, there is an increasing necessity for developing a unified crisis and emergency planning methodology, which should be applied on all relevant state and government management levels.

The capabilities and preparedness for action in the event of crises and disasters depend on the quality of advance planning, the readiness of the forces and capabilities, control systems, as well as on the readiness to use the resources of various ministries, agencies, and of the state as a whole.

### **Advance Planning**

Advance planning is a major stage in the preparation made by a particular organization for acting in a complex environment; in its essence, it is a focused process of making management decisions and allocating resources necessary for their realization. The aim of preparing advance plans is the creation of favorable conditions for the successful achievement of established goals and the rational use of available resources. The efficiency of this process is determined by the training of leadership and personnel within the management and control structures, by their situational awareness as regards the availability of resources, as well as by the capabilities for monitoring and analysis of the risks and threats of crises and disasters, within the area of responsibility of the particular organization.

The planning process goes through several basic stages:

- Analysis of the environmental risks within the area of competence of the particular organization;
- Development and adoption of a strategy for using the resources and management of capabilities;
- Development of probability models for crises, disasters, and emergencies;
- Awareness of the tasks assigned by superior management levels;
- Development of a crisis and disaster management plan (action plan);
- Coordinating the plans of all relevant partner organizations – agencies of the executive branch, local authorities, legal entities, businesses, structures of neighboring countries, international organizations, etc;
- Regular update of the plan.

Fundamental to the analysis of the environment are the assessment of threats to the life, health and property of the population, civil disturbances; threats to the environmental balance; as well as to other material and cultural valuables. The groups of factors, which could be subject to assessment, are:

- The existence and characteristics of large groups of people set apart by ethnic, religious or other characteristics, who under particular circumstances are likely to cause civil disturbances or violate the established public order;
- The existence of critically important infrastructure facilities, which in the event of natural disasters and other catastrophes or illegal activities may release toxic or radioactive substances, cause large and complex fires, floods, etc.;
- Specific climatic phenomena and geographic characteristics, which can cause earthquakes, fires, floods, heavy snowfall, icing or landslides on a scale so large as to lead to crises or disasters;
- Public buildings and infrastructure that can potentially become target of criminal activities;
- Roads and transport infrastructure, sea and air ports, where there exists a risk of large-scale disasters or which could be the target of criminal activities;
- Other threats and factors specific to the particular region or activity, such as national borders, the density of the transport infrastructure, various facilities, etc. should also be considered and assessed;
- The evaluation of some of the risks is within the competencies of relevant national agencies and institutions or scientific organizations and should be

part of the national, regional, municipal or local crisis management, emergency and civil defense plans; thus, it is expedient that the results of the evaluation be submitted in a suitable manner to all relevant organizations;

- The analysis of threats should define the risk factors, which could under particular circumstances cause crises, disasters, and emergencies. As a result, the various parts of the plan can be defined and the authorities are able to move on to the next stage of the planning process.

The strategy for resource allocation and force management should be developed by the structures, which are responsible for strategic and operational command and control of forces and capabilities – ministries, national agencies, district and municipal authorities, etc.). With reference to these, the process of advance planning begins with the development of a strategy, which in essence aims to define, in general terms, the crisis and disaster management actions aimed at achieving the most efficient use of the forces and capabilities and ensuring the protection of life and physical health of people. As regards some of the risks to the security of citizens, the strategy can be adopted on a national level, as well.

The strategy should be developed in such a manner as to be able to answer the question: “What should the particular organization do in the event of crisis, or disaster, in order to ensure its own stability and realize the tasks assigned to it?” Its practical applicability is determined by features such as flexibility and adaptability. This requirement should be achieved during the development of crisis management plans by combining different variants and approaches for reacting, as well as by the flexible use of available forces and capabilities.

The formulation of a strategy for using the available resources and managing the assets and capabilities includes:

- Forecasting the possible crises and disasters, as well as their potential consequences, as regards the country, a region of the country or a particular organization;
- Delegating and assigning responsibilities;
- Ensuring an uninterrupted flow of information;
- Formulation of basic concepts for the use of forces and capabilities, under various conditions, shared between partner organizations.

*Development of probability models* describing the beginning and evolution of crises and disasters is a method used in order to build a simplified simulation of a more complex situation. In order to establish a unified understanding of the possible environmental variables occurring as a result of crises and disasters, it is necessary that the organizations, which are engaged in planning for such actions, be supplied with

reliable information as regards the potential risks of the environment. As a result, each organization will be able to interpret these risks in the form of models relative to its specific functions in society. The objective of developing models is to identify and define those expected specific characteristics of the environment, which would determine the basic parameters of the crisis management operation. The goal is that models be as close to the expected environment characteristics as possible, which will facilitate good planning and allow rational assignment of tasks and allocation of resources. It is expedient to take into account previous experience, existing good practices, as well as lessons learned from previously conducted training exercises. Developing probability models is a forecasting process, which represents a complex mix of practical actions and evaluation, and goes through several basic steps:

- Defining the risk factors, which have the potential to develop into emergencies, crises, and disasters;
- Formulating the object of prediction (an emergency, crisis or a disaster) in accordance with the functions and responsibilities;
- Gathering past and current information relevant to the simulated types of emergencies and to the level of preparedness of the structures of the organizations with regard to their readiness to perform their tasks in extreme conditions;
- Defining the essence of the simulated situation (onset, development, threats to security and health of people, adverse effects on the assets for management and reaction, etc.), determining the major threats and defining their hierarchy and interrelations;
- Defining the tasks of particular organizations and structures with regard to their competencies and capabilities;
- Identifying partner organizations, which will have to be supplied with information and coordinated.

Such forecasting and analysis makes it possible to develop a number of models, which then become the basis for the development of an action plan. In order to verify them, it is expedient that they be subjected to expert and scientific evaluation, by at least two independent teams of experts. A good idea is to use simulation software, which would contribute to the dynamic analysis of the developed models.

The *crisis management plan* is an organizational document, which is developed in order to determine the ways and the order of execution of tasks in managing crises, disasters and emergencies.

Plan development is based on a variety of legislative and administrative documents. The process of development is based on the strategy, models of different potential

emergency situations, as well as on the tasks assigned by superior government structures.

During this process, several types of plans can be defined with respect to their level of application:

- National;
- Regional;
- Ministerial and departmental;
- District, municipal; plans of the regional structures of the central government authorities;
- Plans of critically important infrastructure facilities of the country.

Such plans make necessary the setting up of an organization capable of executing a large number of tasks, which usually requires coordinated actions of more than one structure. In this respect, important elements of plans are the procedures for conducting certain activities – notifying, providing information, reacting and providing support. In addition, these procedures must be coordinated, i.e. they must correspond to the plans, as regards region and infrastructure, as well as management level. Because of this, planning at a national level should facilitate one of the main functions of plans, namely, their coordination. It is, therefore, expedient to adopt the method of parallel planning; the initial stage of this process includes receiving directions from the central government authorities. Directions should include:

- Assessment of risks for crises and disasters;
- Models of the development of crises and disasters;
- Main tasks and responsibilities;
- Orders of notifications;
- Orders and deadlines for preparation and coordination of plans;
- Other specific directions.

National, regional and municipal plans and often the plans of critical infrastructure facilities are put into action by different structures of the executive branch; therefore, it is a good idea that they be developed by working groups set up with an administrative act of the respective authority. It is advisable that plans are coordinated with all the structures, which have been assigned tasks, and sanctioned by the executive responsible for their execution.

The plan is developed as a paper document; it is expedient, however, that an electronic copy is preserved and backed up on a suitable and reliable medium. Given the possibility that two, or more, emergency situations might develop simultaneously, it is only reasonable if the plan is developed in two versions – as a complete document

and as separate parts. The complete document should elaborate on the details of the basic issues of crisis management and the use of assets and capabilities, while the separate parts focus on the concrete actions of the authorities.

The *structure and contents* of the advance plan should be relevant to the requirement for rationality and efficiency.

1. *Basic Premises*

*Reasons for developing the plan*

*Aim of the plan* – the main aim of the plan is to establish a procedure for adequate execution of tasks during crises and disasters. Sub-goals can be formulated, which should, however, be subordinated to the main goal.

2. General forecasts for the development of crises and disasters – the results of risk estimates and models of crises and disasters.
3. Main tasks – the main tasks executed by the structural unit, as well as the tasks of other partner organizations.
4. Management and control of the actions.

Notification and providing information

- Options for checking the reliability of information;
- Notification and dissemination of information;
- Options for notification under various circumstances (lack of communication, floods, snowfall, etc.);
- Exchange of information with partner organizations, activation of specific communication channels (mass media, etc.).

Management organization

- Organization of the actions of management structures – personnel, premises, support, formalized documents, etc.;
- Method of assessment and analysis of information, decision making as regards the conduct of operations;
- Routines and deadlines for operational planning, who reports to whom and how the operational plan is to be sanctioned;
- Different options for managing the forces and capabilities on location (establishment of a temporary operations headquarters, composition of the headquarters, leadership, orders, etc.);

- Procedures for monitoring the condition of forces and assets, as well as options for setting up of a reserve force, which can be sent to the crisis area or zone;
- Approaches used for disseminating information to the public and means of communication with the media.

#### Interaction and co-ordination

- With other structures of the organization, as well as with superior agencies;
  - With the provisional headquarters at the location of the disaster;
  - With other agencies of the executive branch; participation in their management and control structures.
5. Measures taken for ensuring protection of personnel.
    - Notifying the personnel in the event of danger to their life and possible health risks as a result of toxic emissions, nuclear contamination, contagious diseases, etc.;
    - Procedures and rules for using individual protective gear, measures to be taken in the event of injured or affected personnel, etc.
  6. Measures to be taken for protection of critically important infrastructure facilities, property of the organization, or facilities for which the organization is responsible – lists the measures to be taken for the protection of facilities from unauthorized activities, prevention, or protection from the effects of natural phenomena on communications infrastructure, storage facilities, buildings and depots, where dangerous substances, documents, weapons are stored, etc.
  7. Ensuring proper management and control of actions.
    - Medical care;
    - Psychological assistance;
    - Communications and IT support;
    - Logistic and financial support.
  8. Putting the plan into action – The plan is put into action by a sanction of the leader who has approved it, or by his deputy, authorized by a written order. Depending on the concrete situation, the plan can be put into action as a whole, or partially. The plan can be put into action in one of the two ways:
    - Independently, followed by immediate notification of the superior management level;

- Following the order of a superior management structure, or agency of the executive branch, authorized to do this.
9. Maintaining the readiness of the management and control structures and of the assets and capabilities.
  10. Relationship with other plans.
  11. Keeping the plan up-to-date.

The basic elements of crisis and disaster management, the models for the development of emergencies, as well as the relevant document forms should be put to maximum use during the process of training of the personnel for action in the event of crises and disasters (training exercises, etc.). This is also an opportunity to test in practice the various elements of the plan and to keep it up to date.

It is mandatory that the plan be reviewed immediately after putting it into action and after a detailed analysis of the actions of the management structures and forces in real-life situations.

### **Immediate Planning**

Immediate planning is a focused activity of the management structures aimed at adapting the advance action plans to the specific conditions of the environment, resulting from an emergency situation. It is a part of the immediate preparations for crisis and disaster management; as such, it constitutes an uninterrupted process, open for corrections, aimed at successful risk management. The basis for immediate planning is the decision to use the assets and capabilities for crisis management. The essence of this process lies in the timely and adequate adaptation of the previously planned strategy and procedures, which either elaborate the already existing options, in accordance to the particular threat, or develop new ones.

The result of immediate planning is the development of an operational plan to conduct a specialized or joint crisis management operation. The latter is usually developed under conditions where time and information are scarce and is based on the advance crisis management plan. The composition of the plan reflects the specific conditions of the environment, the concrete tasks of particular structures during the operation, as well as support operations. The operational plan is approved by the commander/manager of the operation.

Planning is an essential process in crisis and disaster management. Increased risks and various threats and emergencies on the territory of our country raise the issue of the efficiency of planning on a national, institutional, regional and local level. Coordination between advance and operational (action) plans for crisis and disaster man-

agement is a prerequisite for efficient use of national resources and is aimed at protecting the life and property of citizens. A significant step in this direction would be the adoption of a unified national planning methodology, which will streamline the procedures and structures of plans, as well as will guarantee their coordination and applicability.

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