

Reducing socio-economic vulnerability to disasters

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Abstract. The extreme manifestation of certain natural phenomena, to which one may add technological hazards, meteorological situations, global warming and lately non-symmetrical, non-classical events of unknown origin, have immediate or in time influences, in a direct or indirect manner, upon the life of each individual and mankind in its entirety. Climate changes represent one of the biggest challenges in the modern society, a challenge that should be approached at a global level. The European Union joins the global effort to counteract the climatic changes, to limit its consequences and to decrease the probability of major and irreversible effects on a planetary level. The general purpose is to meet the needs of the current generation without compromising the abilities of next generations to sustain their own needs, in other words, the capacity of planet Earth to support life, in all its diversity. Along these lines, Romania, through the redesign and harmonization of its institutional frame disposes of a modern legal frame which targets the national and international framework capable in a permanent manner to prevent and supervise emergency situations, ensuring and conducting human resources, financial resources which are essential for the reduction of socio-economic vulnerability to disasters and for the restoration of a state of normality.

Key Words: greenhouse gas, sustainable development, the Kyoto protocol, strategies to prevent emergencies, the Emergencies Department.

Introduction. The climate is basically influenced by Sun and Earth’s atmosphere. Some of the gas in the atmosphere allows the solar radiation to reach the Earth, but it prevents the heat reflected by the surface to dissipate into space the phenomenon being known as the greenhouse effect (GHE).

The greenhouse gas emissions are emitted as an effect of natural occurring processes as well as human activities that occurred mostly in the modern age. The Industrial Revolution, defined by steam-powered machines and mechanisms, accelerated the development of human society, but, at the same time, it destroyed more riches than it had created, heating up the climate and altering it. The heavy industrialized countries are responsible for the massive levels of greenhouse gas emissions in the atmosphere.

The aftermath of climate changes (Schuldt & Schwarz 2011) is reflected by an increase in the average temperature with significant values worldwide, a decrease in water resources for the general population, the volume of icecaps, the risk of increasing the level of the ocean, the dramatic change of the hydrologic cycle, the expansion of the desolate areas, the alteration of seasons, the increase in the frequency and intensity of extreme weather events, the reduction of biodiversity, all of these representing one of the biggest challenge of the modern society, a challenge that should be approached at a global level. A mere two degrees Celsius increase in the global temperature will generate a climatic chaos and nobody, not even a person, a nation, a community will be able to escape the dire consequences: massive losses of human lives and incalculable damages in terms of assets (Laurent 2014).

Therefore, academics and leaders from the G8 states (USA, Canada, France, Great Britain, Italy, Japan), along with specialists from five countries with emergent economies (Brazil, China, India, Mexico and South Africa) warn that climate changes are a serious threat to the water and food supplies, especially in the developing countries and insist on a firm action in order to reduce the carbon dioxide emissions with 50% by the year 2050. Also, it has been emphasized that measures should be taken, as concerns the water supply, the general hygiene, the safety level of the food, an increased awareness in medical information and the proper formation of the medical personnel.

The main goal here is to establish a global agreement regarding the reduction of carbon dioxide emissions.

The first important step to a real global understanding about the reduction and stabilization of carbon dioxide emissions was taken by the Kyoto Protocol, which established the architecture for the future international agreement about the climatic changes.

Unfortunately, Europe – The Old Continent – is affected in the South and in the arctic areas by dramatic increases in the level of average temperature and pronounced decreases in the quantity of precipitations, while the other parts of Europe are confronted with increases in the volume of precipitations.

Therefore, The European Union joins the global effort to combat the climate changes and to assure the fulfillment of the current generation's needs without compromising the abilities of next generations to satisfy their own needs, to maintain the capacity of planet Earth to support life, in all its diversity.

At present, the process of decreasing the carbon dioxide emissions is monitored by an inter-governmental group of experts, called IPCC (Intergovernmental Panel on Climate Change) which is supported by the United Nations.

In 2014, IPCC released two reports, one signed by Workgroup II, on 31st of March in Yokohama, Japan, and the other one by Workgroup III, on 13th of April in Berlin, Germany (IPCC 2014).

The main conclusions are the following:

- the global emissions in greenhouse gas are at unprecedented levels, despite the increase in various policies that address this matter. Between 2000 and 2010, the increasing rate of emissions was significantly faster than in the previous three decades;
- climate changes became painfully real and their effects are obvious on the continents and over oceans;
- the world, in many cases, is not properly prepared for the aftermath of the climate changes;
- there are opportunities to address this kind of risks which will be difficult to manage.

Furthermore, the Kyoto Protocol was designed to help various countries to adapt and understand the negative effects of the climate change. This kind of help facilitates the development and implementation of technologies for improving and developing the intervention techniques to increase the resilience to climate changes (Mercer et al 2008).

The impact of preventing emergency situations through the reduction of social and economic vulnerabilities to disasters in Romania. The result of the climate changes, alongside with the multiplication and increase of non – military threats at global level, the acceleration of the process of globalization, the diversification of production activities, utility and commerce of dangerous substances are generating emergency situations. The analysis of recent events which have generated emergency situations proved that they cannot be avoided, but they can be managed to a minimum damage. The risk management - in emergency situations involves a set of systematic measures and actions, which reduces the circumstances that lead to danger in the community, generated by processes of physical, social, economical or environmental nature, by maximizing the community's ability to react (Nils 2012). Also, risk management in emergency situations involves all kind of activities, encompassing structural or non-structural prevention or limitation (mitigation and awareness).

One of the main features of risk management in case of emergency situations is the fact that they are predictable, which allows the Emergency Department to warn, in real time, the authorities and the people located in the risk-prone area. The Emergency Department deals, primarily, with the risk management in case of emergency situations, through resources of human, material, financial, or other type of nature, in order to establish a state of normality. To reach that state of normality, the Emergency Department ensures and coordinates all the processes handled by the emergency units in a country, which are conducted by the General Inspectorate for Emergency Situations in Romania.

The responsibilities of the General Inspectorate for Emergency Situations encompass the updating of the legislations according to international policies, taking part in prevention and response (in case of fire, floods and other natural disasters). In order to provide proper prevention measures, the emergency units follow an overview of integrated activities, both technical and operative in nature, planned and executed in

order to eliminate / reduce the effects of disasters, to protect life, environment and assets.

All activities which prevent emergency cases rely on the following principles:

- the supremacy of citizens protection: according to the Constitution, each and every citizen of the country enjoys protection from the State, either on national or foreign ground. This is a special feature of the Constitution, enforced in this case by the Ministry of Interior through the General Inspectorate for Emergency Situations (Anderson 1995);

- sustainable development: the prevention of emergency situations is summed up by the principle of sustainable development, as a coordinated set of processes that allows continuous progress which relies on planning and managing available resources (Gordon 2012);

- the complementary character of prevention and reaction: both prevention and reaction are complementary processes in their nature; preventive activity is a process of permanent nature and it runs its course previously to the emergency situation. It is also constituted in a permanent activity of great national and international importance and responsibility.

- the priority of preventing emergency situations. It is well known that prevention is at least 8 times cheaper than reaction, thusly, prevention must be considered as a preprimary course of action;

- the mandatory character of preventive actions. Prevention and preventive activities are the responsibility of all the citizens, local communities, and economic entities and are managed by the National Management System for Emergency Situations through the Ministry of Interior and the General Inspectorate for Emergency Situations. The National Committee for Emergency Situations is set up within the Ministry of Administration and Interior, it operates under direct leadership of the Ministry of Administration and Interior and under the coordination of the Prime - Minister;

- identifying, evaluating and prioritizing risk assessment. Identifying, evaluating and prioritizing risks lie at the foundation of planning and organizing preventive actions. In this process of identification, evaluation and risk ranking, based on a thorough knowledge, one has to keep in mind the maximum level of their manifestation, concurrency and performance chain, their aspects that determine a plan which takes into account each risk separately and even combined situations in order to ensure a rapid response for a better training, protection and reduction of side effects;

- specialization: regulation, risk identification, planning and organization conducted in order to prevent crisis are the competence of ministries and agencies with support functions regarding the prevention and management of emergency situations;

- graduality: according to this important requirement in preventing and managing emergency situations, decisions shall be made at several levels at the local, regional and national level. Strengthen prevention and response at the local level is a priority. A permanent character is developed and an anticipatory environment defines order and public safety.

The national interest in this matter assesses the current state of presence and manifestation of risk factors on the Romanian territory forming the most important directions and principles of action, also providing the resources needed to manage emergency situations. One of the priorities is represented by the implementation in practice of provisions conducted by the Kyoto protocol, related to the adaptation to adverse effects of climate change and to the development and improvement technique of intervention in emergency situations that can contribute to increased resistance to effects of climate change.

Adaptation to adverse effects of climate change is performed by the central and local public administration through the development of their own evolution programmes, policies for prevention, education, training and formation of behaviors, authorities, training institutions, and competent bodies. All these programmes are built in order to prevent the occurrence of similar situations, as well as to supervise compliance and applications of regulations in the field of disaster management.

In this respect, the administrative-territorial units, public institutions and economic operators have been classified in terms of civil protection, depending on the types of risks in emergency situations, thusly, specific risk-prone areas that exist within the natural potential of destructive natural phenomena being inventoried: for example earthquakes, floods, landslides which may affect population, human activities and may also result in material damages and human casualties. The geographical delimitation of natural risk zones is based on specific studies and researches developed by specialized institutions, through natural risk maps, approved by the bodies of central and local public administration. In natural risk areas specific measures on prevention and risk mitigation are imposed, being included in urban and landscaping plans, being also the basis of drawing response and protection plans to mitigate disasters.

The data is centralized in the first phase in the local catalogue of each county, even in the national catalogue including the classification of territorial administrative units, public institutions and economic operators in terms of civil protection, depending on the specific risk types.

Based on this classification, each municipality draws up a plan analysis and a risk coverage plan that includes potential risks identified at the level of administrative territorial units, measures, actions and resources needed for their respective risk management.

The analysis of risk ensures that knowledge is involved in the management and prevention of emergency situations, in tasks and duties, during and after the occurrence of an emergency and it is also used to create a unitary and coherent framework of action and to ensure optimal response, appropriate to each type of risk identified.

The plan will also ensure prevention of risks by avoiding their manifestation, reducing the frequency of production or consequences, on the basis of conclusions resulting from the identification and assessment of risk, to the graphic of territorial risks, location and dimensions of operational units and other forces, thusly providing support functions related to the prevention and management of emergency situations.

The plan is created to draw up operational plans, as well as allocations and optimization of necessary means and forces of preventing and managing emergency situations (Hallegatte 2014).

Conclusions. The role and the importance of preventing and responding to emergency situations are characterized by a series of results of great significance in managing the risks in emergency stances, such as:

- ensuring that Romania accommodates to the negative effects of climatic changes and keeps up-to-date with modern interventions and prevention techniques;
- developing a greater endurance threshold for moments of crisis and disasters, through establishing an effective system of public order and safety;
- developing the capacity of resilience in crisis situations and disasters through the establishment of an efficient system of order and public safety, in the service of the citizens for the creation of a safe environment where people feel protected and enjoy everyday life without fear;
- identification, assessment of risks and threats with direct impact on life, safety and welfare of citizens and the frequency analysis of emergency situations;
- preventive education and information of population and communities;
- consolidation of the integrated management of action;
- reduction of effects in emergency situations, increased capacity in disaster recovery and securing a response to new challenges including the general climate change.

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