Ukrainian Journal of Ecology

Ukrainian Journal of Ecology, 2021, 11(3), 390-400, doi: 10.15421/2021_188

ORIGINAL ARTICLE

Application of methodology of environmental emergency management in terms of accidents and disasters: A case of Ukraine

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Received: 01.06.2021. Accepted: 04.07.2021.

The article investigates reasons and arguments in the structure of scientific discussion of possibility of the use of methodology of environmental emergency management at working of administrative decisions in relation to reacting on an environmental emergency and assistance to the injured population. Ground of the use of methodology of environmental emergency management for the acceptance of administrative decisions in environmental emergencies by the study of her methodology taking into account the rapid change of limitations and maximum terms is the aim of research of authors. The study of possibility of the use of methodology of environmental emergency management becomes complicated by divergence in determination of concept "emergency management" and determination of phases of emergency that is confirmed by the studies of scientific information and current legislation generators. Reduction of time for development, acceptance and realization of administrative decisions, increase of vagueness and risk, necessity of bringing in of additional resources from backlogs-by the base aim of reacting on the origin of environmental emergency that confirms actuality of this scientific research. The existence of different regimes of the functions of the system of public management in environmental emergencies to inform about those who are not in charge of management in the spheres of singing. The staff of the state authorities in the sphere of environmental emergency management will be able to take advantage of the speed of unburdened solutions. The acceptance of the self-weighted and adequate administrative decisions will help to economize resources and time for the removal of consequences and reduction of losses in the conditions of environmental emergency. It offers to conduct the study of possibility of application of methodology of environmental emergency management in such logical sequence: analysis of dynamics of environmental emergencies in Ukraine, study of their consequences, research of features of working and acceptance of administrative decisions in the conditions of environmental emergencies. The methods of analysis of the systems and object-oriented are select the methodical tool of research; research period limit 2015-2018 years. Functioning of State Emergency Service (SES) of Ukraine is select a research object from environmental emergencies, because it is a central executive that carries out a public policy in the sphere of the civil protection. Protecting of population and territories from environmental emergencies, prevention of their origin, reacting on environmental emergencies, saving, extinguishing of fires, fire and technological safety, activity of search and rescue teams, and hydrometeorological activity the competences of SES of Ukraine attributed to the limits from environmental emergencies. In the article, the presented results of empiric analysis of standardization of terminology and management processes are in the conditions of environmental emergencies that proved that in Ukrainian realities management processes in are based on the use of out-of-date approaches to the acceptance of administrative decisions case-insensitive factors of the resource providing. Research empiric confirms and in theory asserts that an urgent requirement in Ukraine is an input of going near a management processes with the use of methodology of environmental emergency management, and also updating of normative base in accordance with state standards. The results of the study may be useful for the preparation of masters in the sphere of Public Administration, specialization "Emergency Management" and improvement of management activities in the accidents and disasters.

Keywords: Environmental emergency, environmental emergency management, management, methodology, standard, administrative decisions.

Introduction

On quality of life in any parts of any country the risks of origin of emergencies of natural and technogenic character influence substantially. Having regard to that in Ukraine, these risks are sufficiently high; there is an urgent necessity of development of organizational and administrative approaches to this thorny problem. It follows to notice on that the use only of the traditional administrative going near the decision of this complex problem is uneffective, so is confirmed exactly by experience of their application and results of introduction of these decisions. A global problem in these terms is insufficient co-ordination and cooperation between the public and srtate organs of management and ungovernmental public organizations.

Public administration in this sphere has certain features, that is determined by reduction of time for development, acceptance and realization of administrative decisions, to the increases of vagueness and risk, necessity of bringing in of additional resources from backlogs, presence of the different modes of functioning of the system of state administration in the conditions of environmental emergencies.

Mobilization of considerable material, financial and skilled resources for liquidation of consequences begins in exactly in that moment when a report is get about the origin of environmental emergency. The optimal, operative and adequate use of resources is a main task at planning of actions on the stage of liquidation of consequences. On the above-mentioned reasons, there are not doubts in importance of question of effective process control of liquidation of consequences of environmental emergency, which requires the application of the methodology of emergency management.

Problems of effective and adequate resistance suffered in the environmental emergencies are one of the urgent tasks of the civil protection system. Which are cause by two causative factors: firstly, the increase in the frequency and complexity of the environmental emergency consequences, and secondly, the new types of environmental emergency, in particular, the socio-political character, which requires a special nature of the organization of the process of response of the environmental emergency.

Search and rescue of people at environmental disasters and emergencies with a large number of victims (oil spills and especially dangerous chemicals, incidental cases of terrorist acts) make up 80% of all cases, therefore the elimination of their consequences takes place in accordance with pre-developed principles and algorithms.

The environmental emergency management is in the permanent leadership of the governing body and the authorized head of the liquidation of the environmental emergency by the forces and means involved and in the organization of the tasks assigned for liquidation of the environmental emergency or its consequences.

The main tasks of environmental emergency management are maintaining a high level of moral and psychological state of staff and constant readiness for the intended actions. In addition, advance planning of force actions; continuous collection and analyze of data on the situation in the district of the environmental emergency; timely decision-making and bringing it to subordinates; organization and provision of continuous interaction; the organized collection and evacuation of population are from an environmental emergency zone. Also preparation of forces and means for search and rescue works connected with liquidation of the environmental emergency; organization of resource support of forces and means; control after careful implementation of the put tasks by inferiors and provide them with the necessary assistance.

According to the statistics of the SES of Ukraine (www.dsns.gov.ua) during 2018 in Ukraine were registered 128 emergencies, which according to the National Classifier of Emergency DK 019: 2010 distributed as follows: technogenic-48; natural-77; social-3. As a result, 168 people died (including 40 children) and 839 people (including 401 children) were injured.

According to the scale of the emergency that arose in 2018 as into levels: the state-2; regional-6; local-64; object-56.

During 2017, 166 emergencies were registered in Ukraine, which according to the National Classification of Emergencies DK 019: 2010 were distributed to technogenic-50; natural-107; social-9. Was died 172 people (including 29 children) and 892 people (including 417 children) were injured.

The scale of the emergencies that arose in 2017 distributed as follows at levels: state-2; regional-8; local-69; object-87.

Compared to 2016, the total number of emergencies in 2017 increased by 11.4%, while the number of emergencies of technogenic character decreased by 10.7%, while the number of environmental and social consequences increased by 20.2% and 125%, respectively. In addition, in 2017 there is a decrease in the number of victims-by 6% and 50.6% respectively.

During 2016, there were registered 149 emergencies in Ukraine, which were divided into: technogenic-56; natural-89; social-4. After of these emergencies, 183 people died (37 of them were children) and 1856 people (861 of them were children) were injured. According to the scale, the emergencies allocated to levels: state-1; regional-9; local-64; object-75.

In 2015, in Ukraine, there were registered 148 emergencies, which were divided into technogenic-63; natural-77; social-8. As a result, 242 people died (including 40 children) and 962 were injure (including 422 children). According to the scale of the emergencies that arose in 2015, they distributed as follows at levels: state-2; regional-9; local-62; object-75.

Compared to the same period in 2014, the quantity of emergencies in 2015 increased by 3.5% (an increase occurred due to the growth of more than 30% of the number of natural disasters). An increase of 41.5% of the number of victims in the emergencies in 2015 was due to an increase in their share in the emergency, related to infectious diseases and poisoning of people.

Now in the sphere of the civil protection, one of constituents of national safety of Ukraine, there is a necessity to decide the urgent question of development of methodological approaches for the ground of acceptance of administrative decisions in the complex action of emergency factors that indefinite.

Vitally important in such terms as catastrophes, natural disasters, scale fires, when the question is first of all about life of people, there are processes of acceptance of administrative decisions in relation to the optimal use of present material and financial resources.

Literature Review

Experts-practices experts (McEntire, 2006; Lennquist, 2012; Khorram-Manesh et al., 2015), acknowledge circumstance that providing of readiness to the actions at reacting on the origin of environmental emergencies touch all without the exception of public, ungovernmental public organizations and establishments authorities. Also assists understanding of this statement in relation to the necessity of preparation to reacting all without an exception there is the clear understanding of nature of crisis situations and environmental emergencies from the point of view of functions and tasks of public administration.

Having regard to the looks of experts to exactly such phenomenon as emergency, there are a few determinations of term "management in the conditions of emergencies" taking into account distribution on the phases of reacting, technology of reacting and attracted of resources from outside.

Asghar S. (2008) applies a term "disaster management". Marking that the traditional process of disaster management consists of two phases (1) of decline of risk before disasters and catastrophes and (2) phase of renewal after catastrophes. The first phase consists of such events, as a prophylaxis, prevention and readiness, and the second envisages events in relation to reacting, renewal and rehabilitation. This statement represents the technological process of reacting on the origin of natural disasters or emergencies of technogenic character.

Baas S. (2008) uses a term "disaster risk management (DRM) ", it is distinguishing the problem of reduction to the risk to, under time and after emergencies, taking into account risks at planning of actions at reacting on an emergency taking into account their striking factors. A disaster risk management contains reduction to the risk with combination of events from prevention, minimization and readiness to the actions under act of striking factors of emergency. A term " disaster risk management" is used in the real article for denotation of legal, institutional and political scopes and administrative mechanisms and procedures related both to the previous and from further management of process of reacting constituents.

In disaster management (Khorram-Manesh et al., 2015), the most important is not how to assist others when post-disaster, but how to develop disaster recovery plans (for minimizing the risk of disasters and for handling them when they occur) and implementing such plans. It means that disaster management must include the preparation of disaster before it happens, disaster response (such as emergency evacuation, quarantine, mass emergency medical treatment, etc.), as well as supporting and rebuilding the society after the disasters and catastrophes. Disaster preparation distributed on two directions of activities, namely: mitigation and preparedness.

Lagadec P. (2007) uses the term "crisis management". The term "crisis management" is closer to public security, which is part of the civil protection-preventing the emergency, minimizing the consequences of the environmental emergency and reacting directly to the disasters, tecnogenic accidents, emergencies of social and military character. In the opinion of the researcher, "In a crisis, you do not have time to think", the urgent need is to train new generation managers for "crisis management" on the master programs that are based on a multidisciplinary approach.

Results

An actual step is application of methodology of environmental emergency management in the conditions of environmental emergencies in relevance with that the modern system of public administration, that has administrative and legal plenary powers, cannot be a full degree execute the tasks fixed on her in relation to protecting of population and territories from environmental emergencies through complication of consequences.

It is the environmental emergency that it is necessary to attract considerable material, financial and skilled resources for work to eliminate the consequences. And the most a sharp question is the optimal, rapid and adequate use of resources. On the above-mentioned reasons importance does not cause a doubt of the issue of effective management during reacting on an emergency, using modern approaches to improving the efficiency of management activities.

Confession leaders that accept political decisions, circumstance that in the zone of their responsibility can take place environmental emergencies, conflicts and crises. For proceeding in a trust in such terms from the side of leaders successive actions are so much need in relation to liquidation of consequences, providing of efficiency of state mechanisms for reduction of harm to life and people health, and to the environment. A retrospective analysis leads to lightness of transformation of environmental emergencies in political crises and conflicts in the case when power loses control above the course of events.

Before leaders and their inferiors there are new and unknown tasks in environmental crises and emergencies, conservative procedures, priorities and distribution of duties, change. Actions in such terms envisage a close collaboration with different establishments and structures that is not included in the usual communication circle. There are hard sentinel limitations that does not abandon time on making of cooperation and input of the general operating under reacting. For this reason a key value is on possibility to the actions under these circumstances, certain a circle duties and by the degree of responsibility.

The turned out experience of cooperation provides possibility and readiness to reacting on calls allows perceiving the far greater amount of calls and potential threats at the terms of environmental emergencies. From the degree of readiness to the actions reputation of establishment and his guidance depends in such terms and their efficiency and effectiveness. Having regard to it a crisis gives to the manager's new possibilities-effective actions in environmental crises and emergencies can assistance development of career and authority of leader.

The use of methodology of environmental emergency management for the acceptance of administrative decisions in environmental emergency terms by the study of technology, mechanisms and principles of acceptance of administrative decisions was grounded exactly by the rapid change of limitations and maximum terms.

A potential danger is presented by the emergencies of technogenic character, amount of that not only in Ukraine, but also in the world grows with a permanent tendency on the average 5-7% on a year with heavy consequences. It is explained by that now in Ukraine an industrial infrastructure from one side is developed enough, from other-it is present morally and technological equipment is physically threadbare in industry and on a transport. Climatic changes are in Ukraine, namely the origins of droughts and tornados also promote the level of potential danger for a population. It creates the potential threat of scale catastrophes with considerable human victims that can entail the state that is characterized as environmental emergency.

In recent year fundamental changes took place in the field of protecting of population and territories from the emergencies of different character not only in Ukraine and in the whole world that entailed gain in specific weight question of organizational management and cooperation of services of the urgent reacting. Coming from it the effective using of possibilities of the attracted forces and successful implementation of tasks became the main task of management in good time for any terms.

Having regard to this same the organization of management became one of major constituents of reacting on an environmental emergency with understanding that her influence increases proportionally to the scale of emergency, complication of situation, increase of amount of the attracted forces and requirement in material resources. The increase of scale of environmental emergency increases requirements to organization of management, and the end-point of liquidation of consequences of environmental emergency predetermines dependence from efficiency of management.

Exactly for Ukraine risks of natural and technogenic emergencies are high enough, that predetermines an urgent requirement in the detailed working of the organizationally-administrative going near the decision of this thorny problem. Having regard to it the traditional going near a management liquidation of complex consequences of environmental emergencies often result in unsatisfactory results, that is confirmed by practical experience of reacting.

Difficult or insufficient co-ordination of actions of official government, department and ungovernmental bodies during reacting on an environmental emergency considerably complicates the grant of assistance of injured and proceeding in the normal terms of vital functions on the injured territory. It confirms partial accordance of traditional principles of management to the calls of present time also.

Public administration in this industry has certain features, to that it is possible to take the necessity of reduction of time for development, acceptance and realization of administrative decisions, increase of vagueness and risk, necessity of bringing in of additional resources from backlogs and presence of the different modes of functioning of the system of public administration in environmental emergency terms. This taking into account at working of administrative decisions will decrease probability of inadequate administrative decisions, will economize resources and time for the removal of consequences of environmental emergency, and will decrease losses.

With this in mind, and assume the practices of other countries (Bowman R. (2013); Collins M., (2016)), it is important to centralize crisis communication in one body/headquarters, which will have the opportunity to manage and provide information on the crisis in case of its emergence.

The complexity of the decision to the problem of modeling and management is because the nature of the development of a specific environmental emergency is individual. Its development occurs in conditions of uncertainty, when the unknown scale of the environmental emergency, the necessary forces and means for its elimination, the required volume of material and technical resources and the level of complexity of the work performed. Lack of operational information on the forecast and the nature of the development of the environmental emergency may lead to the development of emergency.

In these conditions, problems of situation analysis that establish the uncertainty factor when making a decision, the optimal allocation of resources involved in the liquidation of the environmental emergency and the estimation of the rates of use of these resources become actual.

In accordance with widespread now, presentation the acceptance of administrative decisions is considered identical to the process of management. From the technological point of management view, it follows to examine not only as an acceptance of administrative decision, and also to include next realization of decision and control of results of his implementation. It does not follow to consider that, an administrative decision self is the variant of decision.

Idea in relation to identifying of acceptance of administrative decision with all process of management more inherent to the specialists on business-management that substantially differs from a management in the conditions of environmental emergencies. A management in the conditions of environmental emergencies requires working of all present alternative variants with the aim of choice of the best variant, but also to the search of less expense variants, hallmarking of estimation, choice of method of estimation of alternatives and others like that.

Being base on technological approach we can offer determination of term "acceptance of administrative decisions", namely-it a process, that is based on understanding of that a problem is, contains a search and analysis of alternative variants of decision and completed by electing of the best at present terms alternative and ends with the action sent to the decision of problem situation.

It is well-proven practice of liquidation of consequences of environmental emergencies, that destructive influence factors (political, economic, institutional, social-humanitarian, psychological, technological, informative, organizational, spatio-temporal) can carry out on this process. Taking into account of influence of these factors will allow working out the "best" and "worst" scenarios of events, which will allow to the leaders of government bodies to accept weighing of decision in the conditions of environmental emergency and to send all efforts to the assistance of the injured.

Incomprehension of importance of political and institutional factors can translate a situation from the state of difficult to the state of crisis. The insufficient financing over of events from prevention of origin of environmental emergency can bring. The absence of changes in the environment and neglect of climate change can significantly reduce the level of natural and technogenic security of the country. Ignoring the problems of adequate satisfaction of necessities at logistical support of events of civil protection on the stage of increase of possibility to the actions and during liquidation of consequences of environmental emergencies diminishes efficiency of actions of searching-rescue subdivisions and increases time of expectation for assistance in a victim. Psychological factors can entail distribution of panicky moods among the injured population that considerably will complicate proceeding in the normal terms of vital functions on the injured territory. Combination of informative and social-humanitarian factors helps to optimize the acceptance of administrative decisions and approach an assistance to the victim.

The process of prevention, localization and liquidation of the environmental emergency (especially long lasting, average, operational forecasts of the threat of the environmental emergency) is characterize by incomplete and inaccurate information, a minor reserve available for decision on environmental emergency assistance to the affected population in the zone of the emergency.

In opinion of Quarantelli, E.L. (2005) reacting on emergencies is sent to minimization or softening of their consequences, grant injured all spectrum of necessary aid, proceeding in the injured territory. A management process in the conditions of environmental emergencies has the certain recurrence related exactly to technology of reacting on the origin of environmental emergencies. Within the limits of one cycle, it takes place there is an analysis of information about potentially possible events, the row of events is conducted on the increase of possibility to the actions in the conditions of environmental emergencies. Also maybe realization of events from prevention of origin of negative consequences on the next iterations of management cycle. Forming of plans of reacting on environmental emergency and plans from prevention of origin of emergency exactly and fold the complete cycle of management in the conditions of emergencies.

Becomes clear that a management in the conditions of environmental emergencies has a certain recurrence and it is divided into phases-to readiness to the origin of emergency, minimization and softening of her consequences, phase of reacting on the origin of emergency and protracted phase-phases of renewal (recovery).

The phase of readiness (preparedness) to the origin of environmental emergency envisages realization of row of the organizational and preparatory events sent to the increase of possibility to the actions in the conditions of environmental emergency. The phase of minimization or softening of consequences (mitigation) is send to preparation of territorial society (administrative territory) to proceeding in the normal terms of vital functions and to reduction of negative influence of environmental emergency on administrative processes. The phase of reacting (response) predetermines bringing in of all forces and facilities, and ungovernmental public organizations, to the actions in reply to influence of striking factors of environmental emergency and grant of help injured. All phases are logically successive and watched at any natural catastrophe or technogenic accident.

Quarantelli, E.L. (2000) defined the primary objectives of crisis management: reduction or avoidance of losses as a result of natural calamities and technogenic catastrophes; urgent grant injured all spectrum of necessary aid; providing of rapid and effective renewal of the injured territory. From the point of view of public administration the difference of terms "crisis" and "emergency" are clearly watched on condition of that very often these terms used as synonyms. Crisis should be considered a situation that is somewhat challenging public perceptions of the proper state of things, traditions, values, security, security or integrity of the state, observes (Guriev, 2008).

Thus, from the point of view of environmental emergency management, the crisis is a cessation of the normal process, and an unforeseen event that jeopardizes enterprise stability, and a sudden serious event that has the potential to damage or even ruin the reputation of the campaign. Khorram-Manesh A. et al. (2015) summarized the running of administrative decisions in the emergencies can be divided into several iterative stages: I-statement of the problem; II-preparation of managerial decisions; III-the adoption of management decisions and IV–the realization of the administrative decisions.

The first stage-the statement of the task, contains the processing of information coming directly from the environmental emergency zone of the current operational situation. The determination of current situation and verification and control of present resources are being carried out to overcome the consequences of an environmental emergency. At the second stage-the preparation of managerial decisions-the special weight gaining determines the criteria for choosing sound management decisions. To do this, you can use several scale options, such as qualitative, quantitative, and ball scales. The amount of indexes that is used for working of administrative decision depends on the type of vagueness (stochastic, natural and others like that).

At the stage of making a managerial decision necessarily considered possible alternative solutions for finding "better" and "worst" options. At the same stage, experts (McEntire, 2006; Lennquist, 2012; Khorram-Manesh, 2015) are invited to fully consider the offer decision. During the fourth stage–the realization of administrative decisions-the system of organization and monitoring of the actions of the civil protection system to manage bodies in fulfilling the tasks must be substantiated, and it is necessary to have an appropriately regulated procedure for evaluating the decision is in relation to the parameters of efficiency, timeliness and adequacy. A similar estimation must be conducted by experts that have considerable own practical experience of reacting on the origin of environmental emergencies.

The development of any environmental emergency or disaster can be divided into 3 phases.

The phase of minimization of risks contains the events sent to reduction of negative influence of striking factors of environmental emergency. A main task is an exposure of critical points in the structure of management and infrastructure of territory and input of events from reduction of potential negative influence on them with the use of present material and technical resources. To the list of events it is possible to take research from an exposure and authentication of potential risks (determination of grades is after importance and actuality), retrospective analysis of actions in similar terms, creation of prognosis scenarios of development of events with the obligatory working off a "worst" scenario. Obligatory is determination of experts for participating in planning of operating under reacting on the origin of environmental emergency. Also creation and introduction of the constantly operating systems of monitoring of situation.

Readiness phase (preparedness)-the actions aimed at ensuring preparedness include planning of operative and of communication events, basic parameters of corresponding actions, organizational behavior models, the necessary resource base, and conducting trainings and trainings on actions according to the developed plans. It should not be too voluminous and complicated plans, for studying which in the real state of environmental emergency will not be the right. By a scope document, that contains all information necessary to the leaders for the effective exposure of environmental crisis and emergency there is a plan of operative events in relation to liquidation of consequences of environmental emergency. Envisaged this plan: management (list of persons, responsible at an action in such of situation, determination of plenary powers, character of co-operating with other establishments (by organizations) and them by operative staff) structure; administrative procedures necessary for realization of plan in case of environmental crisis or emergency; organizationally-technical providing (apartment and equipment certain for an operative staff); administrative procedures are in environmental crisis situations and emergencies.

Perfection of process of working of administrative decisions by the organs of management of SES of Ukraine, that is the constituent of the single state system of civil protection, takes place for the increase of efficiency of the events sent to the grant of assistance of the injured as a result of environmental emergencies. It is well-proven on the basis of analysis of liquidation of consequences of emergencies of natural and technogenic character, that happened lately, that the process of ground, acceptance and realization of

administrative decisions has objective and subjective components, clear formalization and requires intuition, skills and knowledge of man, that accepts administrative decisions that are totality and formal and informal procedures.

Modern scientifically-methodical accompaniment (Guriev S. et al.(2008)) and world experience of reacting (Khorram-Manesh A. et al.(2015), Lennquist S. (2012)) testify to the presence of general conceptual elements : evaluation of risks of environmental emergencies, previous planning of events of reacting taking into account the specific of environmental emergency and validity by the process of acceptance of administrative decisions. For this reason, basic strategic approach for the achievement of sufficient strength security is an input risk of the oriented approach at working of administrative decisions (Table 1).

The following is a correlation of environmental emergency management operational procedures.

Environmental disaster management, phase	Environmental emergency management, stage	Operation
Pre-disaster	Prevention	Preventive measures
		Evacuation plans
		Environmental planning
		Design standards
	Mitigation	Structural and non-structural changes to limit impact of disasters
	Preparedness	Planning, organizating, training, equipping, exersing, evacuating, connective action
	Response	Coordination and management of resources
		Responding to a disaster/emergency
Post-disaster	Recovery	Restore critical functions, manage stabilization
		Return to normalcy
	Reconstruction	Recovery and rehabilitation of effected victims and communities

Table 1. Environmental disaster management and environmental emergency management operations compearing.

Environmental emergency management focuses on managing the environmental emergency once it takes place including preparedness, and disaster management includes a wide range of activities-prevention, mitigation, preparedness, response and recovery from the environmental emergencies/disasters. Environmental emergency management is maybe in the conditions of situations for overcoming of that there are enough present local resources. A disaster management possible to use in the conditions of bringing in of scale external assistance. Disaster management investigates the order of cooperation at liquidation of consequences of environmental emergencies, grant of assistance in the conditions of natural disasters and scale humanitarian catastrophes, related to readiness, reacting, renewal and softening of consequences.

The strategy of national safety of Ukraine, ratified by Decree of President from 26.05.2015 No.287/2015, determines to one of main directions of national safety of Ukraine of creation effective sector of safety and civil protection. Also due to the professionalization, perfection of professional level of personnel, effective motivation of them to the proper implementation of the put tasks, optimization of structure and composition of operative subdivisions of service of civil protection. By the decision of Council of national security and defensive of Ukraine from 18.02.2015 "About additional events in relation to strengthening of national safety of Ukraine", President of Ukraine No. accepted by Decree 139/2015 from 12.03.2015 "About the decision of national security and defensive of Ukraine Council from 18.02.2015 "About additional events in relation to strengthening of national safety of Ukraine" on SES of Ukraine lays the task of the immediate strengthening of preparation, retraining and in-plant training of persons of ordinary and chief composition of service of civil protection, leader and specialist executive, organ self-government, enterprise, establishment and organization body, studies guidance and specialist, activity that related to organization and realization event of the civil protection.

The Law of Ukraine "On National Security" defined The Public Security and Civil Protection Strategy of Ukraine, a long-term planning document, which is developed on the basis of the National Security Strategy of Ukraine based on the results of the public security

and civil protection review and defines the directions of the state policy for guaranteeing the protection of vital for the state, society and persons of interests, human rights and freedoms, goals and expected results of their achievement having regard to actual and potential threats.

The Public Security and Civil Protection Strategy of Ukraine identify the impendences of national security in the sphere of the public security and civil protection. The ways of achievement of aims and realization of priorities of public policy are certain in these spheres, in particular government programs, branch strategies and programs, sent to realization of Strategy of public safety and civil protection of Ukraine, their aims accountable for development of documents, monitoring their realization and estimation. It also is basis for development of branch strategies and conceptions, national having a special purpose programs in the spheres of public safety, defense of state boundary of Ukraine, civil protection and migratory politics, and also for development of operative plans and plans for the use of forces and resources in crisis situations.

One of priorities of European choice of Ukraine there is tacking to Mechanism of civil protection of EU. About creation of Advice of mechanisms of civil protection was make decision Advice of EU of 23.10.2001 in Luxemburg. Taking into account the experience purchased in 17.12.2013, Euro Parliament and Advice made decision No. 1313/2013/EU "Mechanism of civil protection of European Union" in Brussels. A mechanism of civil protection of UE is the key instrument of the system of civil protection of EU. In that 28 countries-members (are included Austria, Estonia, Italy, Portugal, Belgium, France, Latvia, Romania, Bulgaria, Finland, Lithuania, Slovakia, Croatia, Netherlands, Germany, Luxemburg, Slovenia, Cyprus, Greece, Malta, Spain, Hungary, Sweden, Denmark, Ireland, Poland, Czech republic, Great Britain, and also Macedonia, Iceland, Liechtenstein and Norway, that cooperate in the field of civil protection in case of large natural disasters and technogenic accidents.

The transboundary character increasingly takes the scale of environmental emergencies and state are set before the need for coordination their efforts in all directions. It is for this purpose that the EU has formed a certain institutional system, which is assigned the functions of prevention, response and environmental emergency management.

Implementation of one of the priorities of European integration-Ukraine's accession to the EU's Civil Protection Mechanism. It will be facilitated by the signing and implementation of a new version of the Administrative Agreement between the SES of Ukraine and the European Commission's Directorate General for Environment on Cooperation between the Coordination Center for Emergency Situations of the Community Civil Protection Mechanism and the Search and Rescue service of the SES of Ukraine, further participation in Phase 2 events of preparedness and response to natural and technjgenic emergencies for the Eastern Partnership (PPRD East).

Within this program, the harmonization of the regulatory framework, in particular the introduction of ISO standards, regulating actions and in emergencies in the section "Social Security" is will implemented. ISO 22320: a 2018 "Security and resilience–Emergency management-Guidance on management emergencies" determines methodology of creation of control system by emergencies, sent to minimization of risks for the people in the terms of natural disasters and technogenic accidents. This circumstances so need the input of co-ordination and cooperation during reacting for providing of recovery of normal terms of vital functions on the injured territory.

Public health, telecommunications, water and food supplies, as well as access to electricity and fuel are all included in these security functions. A retrospective analysis of events indicates that much earlier was given to responding at national and territorial levels, and at the level of individual organizations and institutions. Currently, the emphasis is on the international approach and the involvement of many national and long-distance humanitarian organizations in responding to natural disasters and technogenic accidents. This approach is justified by the need to promote cooperation and interaction between government, non-governmental organizations, civil society organizations and the private sector at the interstate level.

This document provides guidelines for organizations and institutions to improve disaster response and technogenic accidents disasters. It is can recommended that cyclical response procedures be shared between different organizations, agencies, and take into account, taking into account the division of jurisdiction between regional and national levels of government.

It is recommended that when assisting victims of environmental emergencies at an inter-organizational or cross-border level, it is imperative to take into account the needs of the affected population and to take into account cultural and religious backgrounds. It is appropriate to involve many parties to work on the format and scope of assistance to those affected by geographical, political and organizational boundaries. This document will be used by any organization responsible for environmental emergency response at local, regional or national level, or even internationally.

The document will be relevant for specialists responsible for environmental emergency preparedness, management decisions and decision-making. Participate in the elimination of their consequences, conduct scientific research in the sphere of the civil protection.

Provided a shared management approach is used, organizations will benefit from communication and engagement before, during, and after (during the recovery period) an environmental emergency. At present, Ukraine's national standards are being adapted. This is due to the fact that the overwhelming majority of Ukrainian national standards, such as Ukrainian national standard 7095:

2009 "Emergency Safety. Key Provisions" and Ukrainian national standards 3891: 2013 "Emergency Safety. Terms and definitions of key concepts" are developed on the basis of Soviet standards that do not meet the requirements of modernity regarding the formation of a security environment.

We can speak about the availability in Ukraine of the ISO 22320:2011 by the State standard of Ukraine 22320: 2017 (ISO 22320: 2011, IDT), "Social Security", adapted to the requirements of ISO 22320:2011 "Emergency management. Response Requirements". However, it should be noted that there is already an upgraded ISO 22320: 2018.

The methodology of environmental emergency management can be certain with two basic things about management in the conditions of the emergency, namely-the vulnerability and sustainability of the functioning of the object, industry, administrative territory. Vulnerability is a lack of ability to execute important functions in the pre and post periods of the environmental emergency (for example, search and rescue of victim, evacuation, crisis communications, etc.). Accordingly, sustainability is the ability to function under the influence of the impressive factors of the environmental emergency, to promote public awareness of the environmental emergency and to increase its potential through analysis of hazards and vulnerabilities, logistical support, planning and training of environmental emergency response services and volunteers.

Interesting are further consideration of accordance of phases of disaster management and stages of emergency management and corresponding normative standardized fixing (Table 2).

Disaster management, phase	**Emergency management, stage**	**International standard**	**National standard of Ukraine**
Pre-disaster	Mitigation	ISO 22320:2018 Security and resilience-Emergency management-Guidelines for incident management	State standard of Ukraine ISO 22320:2017 (ISO 22320:2011, IDT) Social safety. Emergency Management. Response requirements
		ISO 22320:2018 Security and resilience-Emergency management-Guidelines for incident management	State standard of Ukraine ISO 22320:2017 (ISO 22320:2011, IDT) Social safety. Emergency Management. Response requirements
	Prevention	ISO 22324:2015 Societal security-Emergency management-Guidelines for colour-coded alerts	State standard of Ukraine ISO 22324:2017 (ISO 22324:2015, IDT) Social safety. Emergency Management. Guidelines for color coding of hazard warnings
		ISO 22325:2016 Security and resilience-Emergency management-Guidelines for capability assessment	State standard of Ukraine ISO 22325:2017 (ISO 22325:2016, IDT) Safety and resilience to emergencies. Emergency Management. Methodological guidelines for assessing readiness
		ISO/TR 22351:2015 Societal security-Emergency management-Message structure for exchange of information	State standard of Ukraine ISO/TR 22351:2017 (ISO/TR 22351:2015, IDT) Social safety. Emergency Management. Notification structure for information sharing
Pre-disaster	Preparedness	ISO 22322:2015 Societal security-Emergency management-Guidelines for public warning	State standard of Ukraine ISO 22322:2017 (ISO 22322:2015, IDT) Social safey. Emergency Management. Guidelines for public information
		ISO 22398:2013 Societal security-Guidelines for	State standard of Ukraine ISO 22398:2017 (ISO 22398:2013, IDT) Social safety. Guidelines for conducting exercises

Disaster management, phase	Emergency management, stage	International standard	National standard of Ukraine
		exercises	
		ISO 22324:2015 Societal security-Emergency management-Guidelines for colour-coded alerts	State standard of Ukraine ISO 22324:2017 (ISO 22324:2015, IDT) Social safety. Emergency Management. Guidelines for color coding of hazard warnings
Post-disaster	Response	ISO/TR 22351:2015 Societal security-Emergency management-Message structure for exchange of information	State standard of Ukraine ISO/TR 22351:2017 (ISO/TR 22351:2015, IDT) Social safety. Emergency Management. Notification structure for information sharing

Table 2. Standartization of environmental emergency management stages.

It is possible to assert coming from foregoing, that an environmental emergency management simultaneously is scientific discipline and profession those, who engages in liquidation of consequences of environmental emergencies, based on application of tool of management and planning.

The fundamental principles of environmental emergency management are based on four stages–mitigation, preparedness, response and recovery. Regard as the above mentioned, there is a certain demand for the training of managers in the direction of "Emergency Management" according to the relevant master's programs. A study from environmental emergency management really owes its existence to a multidisciplinary approach. Geography allowed researchers to understand the peculiarities of dangers, while sociology contributed to the understanding of social causes and behavior of people in the environmental emergency, etc.

The final request for improving the theory of environmental emergency management is to integrate research on each discipline that contributes to the environmental emergencies. It is vitally important for undergraduates to appreciate the diversity of issues and functions that need to be addressed in this area. These include, but are not limited to: hazard and vulnerability analysis, land use planning, engineering, planning, training, public education, grants procurement, budgeting, prevention, evacuation, shelter, fire management, emergency medical aid and medical triage, search and rescue operations, mass mortality management, crisis communications, disaster declaration, humanitarian aid management, garbage management, critical incident management, and more. In addition, the theory of environmental emergency management should resemble the sociology of the disasters and conclusions about human behavior (which helped to establish discipline in the first place).

Conclusion

The optimal use of material, technical and financial resources for implementation of administrative decisions in the conditions of natural disasters and technogenic accidents is an important constituent at the grant of assistance of the injured. Public administration in the sphere of the civil protection has the features that depend on by reduction of time for development, by an acceptance and realization of administrative decisions. The increases of vagueness and risk, by the necessity of bringing in of additional resources from backlogs and presence of the different modes of functioning of the system of civil protection. Reduction of probability acceptance of non-adequate of administrative decisions, rational distribution of all types of resources and reduction of charges, actually is the aim of application of methodology of environmental emergency management in the conditions of emergencies. It should be noted that the estimation of quality of offer administrative decisions must be based on research and information accompaniment that envisages collection and processing of on-line data from an environmental emergency zone and previous development of variants of administrative decisions with the use of mathematical models. Certainly, the achievement of the best results in the process of working of administrative decisions in relation to the removal of consequences of environmental emergency is possible only at combination of methods that is determined by the level of problem and character of tasks that needs to be decided. In opinion of authors, it is expedient to use the standardized terminology in the sphere of the civil protection based on national and international standards that answers the tendencies of harmonization of the legal field of Ukraine with European and world. An urgent necessity is the use of only terminology in the sphere of the civil protection at all services of the urgent reacting on environmental emergencies for adjusting of communication and deepening of cooperation during participation of Ukrainian searching-rescue subdivisions and mobile medical teams of service of disaster medicine in composition with international humanitarian missions.

Will mark that determination the concept "environmental emergency management", envisaged in ISO 22320: 2018, most exactly represents character of the direct reacting on an environmental emergency with combination of all functional subsystems that give assistance to the injured. Therefore we have a right to talk about complication of the processing near determination of concept "emergency" and necessity of understanding of technology of working of administrative decisions from the moment of crisis report in an environmental emergency taking into account and resource providing and human factor.

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Citation:

Terentieva, A., Poteriaiko, S., Tverdokhlib, O., Kravchenko, Yu., Stankevych, S. (2021). Application of methodology of environmental emergency management in terms of accidents and disasters: a case of Ukraine. Ukrainian Journal of Ecology, 11 (3), 390-400.