

## PHENOMENA DISTURBING THE EUROPE SECURITY AND TASKS FOR FUTURE RESEARCH

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Research article

**Abstract:** Based on the concept that the Europe and its parts are represented by model “System of systems” denoted as the human system the in-depth study of disasters and disasters’ management reveals the tasks for future research. The formulation of tasks for research is based on philosophy that each responsible government should protect the inhabitants daily and at critical situations. The outputs showed that European citizens are very threatened by organisational accidents the causes of which are the human behaviour defects and mainly human management defects on all levels of government.

**Keywords:** Safety, Security, Disaster, Disaster management, Future research tasks.

### Introduction

Security situation in the Europe, world and in each territory continuously changes with time, and therefore, it is necessary to form new safety culture taking into account the actual knowledge and experiences with interdependences among the public assets leading to extreme social crises (in history e.g. great famines). With regard to the historical development there are: a lot of preventive and mitigation measures that have been applied into practice by legal rules, technical standards and norms and public instructions; response systems; and renovation ways. However, it is true that their effectiveness decreases with time because new risks emerge and territory and human vulnerabilities increase in all domains.

The research comes out of the systematic concept of reality and its aim is systematically to create the Europe as a safe community that has a highly sustainable potential and it stands as a significant world power, i.e. it ensures security of itself and of its vicinity (i.e. in the globalization era of the world) by using the human system management based on strategic, systemic and proactive system of systems management (Procházková, 2011, 2012a, 2013). The concept used is complex so that it enables the solution of most present problems.

The paper summarizes the results of disasters’ research and disasters’ management research in the Europe. On their basis, it identifies the shortages, forms the tasks for the serious shortages remove and also proposes the directions, which the following research should head to, so that the Europe would systematically create the safe community and build the background for sustainable development.

Present goal of humans is to live at safe space, and therefore the UN formulated the aim of a “safe human system” in 1994 (UN, 1994) and the EU “safe community” in 2004 (EU, 2004). In agreement with the EU and UN proclamations and the professional knowledge there is necessary for conservation and sustainable development of the human society to create the safe territory. With regard to present knowledge we should consider that we want to build safe open dynamically variable system that is a complex system the model of which is the system of systems (SoS), i.e. several overlapping systems (Procházková, 2012b).

The security and development of both, the humans and the human system are disturbed by disasters, i.e. internal or external phenomena that lead or from a certain size can lead to damages, harms and losses on humans and human system assets. It means that human system safety (i.e. set of measures and activities ensuring the security and development of both mentioned objects) must consider both, the processes, actions and phenomena that are under way in human society, environment, planet system, galaxy and other higher systems, and the human management acts. Therefore, for safety reasons we must negotiate with risks of different origin and kind. The research performed under the FOCUS project (EU, 2011) deals with principles of negotiation with risk at stages of its mitigating and managing in selected sections of human system management and it gives tools to the public administration for public affairs governance because it is responsible for territory governance and conditions. Especially, it concentrates to the EU governance.

On the basis of a current knowledge, from a systematic and strategic viewpoint, it is not

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possible to solve significant problems of a complex system, which is every area, i.e. also the Europe by reducing complex problems to a set of simple problems and by neglecting the non-linearity's and various interdependencies that create the specific couplings, which are the causes of risks across systems, among partial systems, between the system and its vicinity etc.

The current knowledge shows that it is necessary to deal with the problems on the basis of the systematic concept of reality, which is in case of our research the human system. Systematic concept is based on the systemic (holistic) thinking, the typical feature of which is the focusing on the whole views at systems and on research of relations among their individual parts. The characteristics of a systematic thinking are: to see both, the whole and the details at the same time; to focus on the dynamics of processes; to pay attention to relations, associations and interactions; to take into account the roles of a feedback; to consider the relativity of possible situations; and to think in a long-term way. A system according to its core means more than only a sum of parts, and therefore, the stress is put on: study of the interactions and associations; non-linear thinking; interactions; inductions; feedbacks; and experiments or realistic simulations. E.g. feedbacks cause non-linearity's in the system behaviour that is not predictable, and therefore, it is not possible to use the common prognostic methods for the identification of the possible states of a system.

For the characteristic and management of simply organized units, the results of analytic solutions are used. For the characteristic and management of composite systems (in practice the term construction is used) that are understood as a representation of elements that are organized and connected in a certain way and because of a proper structure they fulfil certain functions, there are used results of statistical solutions based on analytic functions, the parameters of which are variable in a certain interval, which is a reflection of various possible states/variants of the system behaviour. For the characteristic and management of complex systems, the results of simulations must be used since the given aggregates have many components (often systems too) those interact together and are organized in several levels, which causes that we observe: suddenly emerged behaviour features that is not possible to obtain from the knowledge of components' behaviour, it is the so-called emergence; hierarchy; self-organization; and various management structures, which all together seems as a chaos. Therefore, while observing it is necessary to take a multidisciplinary and interdisciplinary approach. For their management it

is then necessary to use the multi-criteria approaches, the model of the system of systems and also to consider the cross-sectional risks (Procházková, 2012b). For the solution of their problems the tools based on the theory of chaos (Ott, 2012), theory of fuzzy sets (Zadeh, 1975), complexity theory (Gleick, 1996, Lucas, 2006, Mayers, 2009), theory of possibilities (Dempster 1967, Shafer, 1976) exist. Since the Europe belongs among the developed parts of the world and the EU has ambitions to be the world power, it is necessary for it to build its politics on the current knowledge.

## Materials and methods

The systematic research of disasters the summary of which based on more than 5 000 professional works, historical catalogues, databases, archives is in works (Procházková, 2011, 2013) revealed that we must consider the following disaster types as being the results of processes:

- in and out of the Earth: natural disasters (earthquake, floods, drought, strong wind, volcanic activity, land slide, rock slide etc.); land erosion; desertification; fundament liquefaction; sea floor spreading etc.,
- in the environment including human body, animals and plants; and in the human society separated to:
  - unintentional: illnesses; epidemic; epiphyte; epizootic; involuntary human errors etc.,
  - intentional: mutual improper behaviour of an individual or groups of individuals: wrongful appropriation of property; killing a human; bullying; religious and other intolerance; criminal acts such as: vandalism and illegal business, robbery and attacking, illegal entry, unauthorized use of property or services, theft and fraud, intimidation and blackmail, sabotage and destruction, terror against individuals, terrorist attacks; local and other armed conflicts; intentional disuse of technologies, such as: improper application of CBRNE substances; data mining from social networks and other cyber networks used for psychological pressure on a human individual; incorrect governance of public affairs: corruption; abuse of authority; and the disintegration of human society into intolerant communities,
- connected with human activities: incidents; near miss; accidents; infrastructure failures; technology failures; loss of utilities etc.,
- that are reactions of the Planet or environment to human activities: man-made earthquakes; disruption of the ozone level/layer; greenhouse effect; fast

climate variations; contaminations of air, water, soil and rock; desertification caused by human bad river regulation; drop of the diversity of flora and fauna (animal and vegetal) variety; fast human population explosion; migration of great human groups; fast drawing off the renewable sources; erosion of soil and rock; land uniformity etc.,

- connected with inside dependences in human system and its surrounding separated to:
  - natural: stress and movements of territorial plates; water circulation in environment; substance circulation in environment; human food chain; planet processes; interactions of solar and galactic processes,
  - human established: human society management; flows of raw materials and products; flows of energies; flows of information; flows of finances etc.

In social domain for reasons of internal relations the monitored adverse effects are put together to the following groups: subsequent crime and other offences. The group includes: vandalism and illegal risk behaviour, robbery raids and attacks, property crime, killing and rioting; tax fraud and fraud. The group includes: tax fraud, fraud; damage to the customs laws, including: customs fraud, smuggling of prohibited goods; illegal access to any information systems. The group includes: data theft or data changes, espionage, partly fraud - forgery of documents, partially terrorist attack, data mining from social networks leading to the psychological pressure on people; corruption and serious economic crime, including money laundering, extortion and humiliation. The group includes: corruption, abuse of authority, society disintegration into the intolerant groups. The group includes: religious and other intolerances.

Due to lack of data there are not considered: child labour, sabotages, infringement of law by government agencies, maritime piracy, severe negligence with criminal responsibility, misuse of postal services, an anonymous notice of alarming information, environmental crime including pollution, and violations of security regulations.

For investigation of disasters, types of disasters' management there were used original data and results of special projects, e.g. Switzerland - the PLANAT project, US - FEMA projects, Canada, the Netherlands, EMA (Australia), OCHA, the Czech Republic, IAEA, OECD, UN etc. - real references are in (Procházková, 2011, 2013) and in materials quoted in. For obtaining the original results there were also used: historical catalogues, databases, archives and original papers on phenomena that

caused harms and losses on public assets in time period from historical time up to now, i.e. they belong to disasters; for some of them (floods, earthquakes, chemical accidents, epizootic, epidemic, electro-energy net failure) the results obtained are very detailed; and the different methods, from very simple method to scientific ones.

The outputs described in the next paragraphs were created by the pure scientific methods, i.e. analysis and synthesis of obtained published results on disasters; specific investigation of disasters by analytical and heuristic methods. Heuristic methods were in the first tested on real data if they are suitable for security tasks solution; specific investigation of level of disaster management by help of special questionnaire; and specific investigation for identification of critical items in territory management from the viewpoint human survival performed by special logical tool specially tailored for the FOCUS targets (Procházková, 2012c).

Detail descriptions of data and methods with references are in publications quoted in appropriate places.

## Results

The detailed study on disasters and disaster management in the EU (Procházková, 2013) was concentrated to ten domains the outputs of which are concisely summarized in work (Procházková, 2013). This work also obtains results of theoretical study dealing with the form of EU security concept: it must be based on the systemic (holistic) thinking, the typical feature of which is the focusing on the whole views at systems and on research of relations among their individual parts; proactive approach; all hazard approach (FEMA, 1996); respecting the co-existence of overlapping systems (Procházková, 2012b). For its realisation there is necessary sophisticatedly managing the disasters that damaged the security of community and its assets, i.e. to apply measures and activities of prevention, preparedness, response and renovation. For practical purposes there are necessary good technical solutions based on recent findings and experiences and correctly aimed governance of public affairs supported by legislative with sufficient legal force, finances, qualified human personnel and material base.

Synthesis of results obtained by detailed studies of disasters and disasters' management described in (Procházková, 2013) is summarized in Tab. 1.

Tab. 1 Deficits at disasters' management from the viewpoint of safe community concept

SECURITY ITEMS	RESEARCH RESULTS
Security challenges that can be considered to have big impact in the 2035 time frame and currently are not sufficiently addressed in the planning of research	<p>The list of followed disasters is necessary to supplement by:</p> <ul style="list-style-type: none"> <li>- <b>natural:</b> geomagnetic storms; desertification; land erosion; soil salinization; fall of a cosmic body; sand storms; ocean spreading; and sudden change of weather (cold wave or heat wave),</li> <li>- <b>technological:</b> organising accidents in technological facilities; biotechnologies because their use is not regulated despite the fact that their wastes are often more aggressive than chemical technologies; disuse of technologies (nuclear, nano and IT); disuse of genetic engineering; and disuse (abuse) CBRNE agents,</li> <li>- <b>imperfect human activities:</b> education infrastructure breakdown, research infrastructure breakdown, breakdowns (organising accidents) in public governance, defects of supply chains,</li> <li>- <b>environmental (including human body):</b> stress and movements of territorial plates; rapid natural subsidence of surface; water circulation in environment; substance circulation in environment; human food chain; planet processes; interactions of solar and galactic processes, incurable diseases in systems of humans, animals and plants,</li> <li>- <b>environment reactions to human activities:</b> artificial surface subsidence due to undermining; and interaction due to militarization of outer space,</li> <li>- <b>social:</b> illegal production and distribution of narcotics and psychotropic substances, illegal migration, proliferation of the weapons of mass destruction.</li> </ul>
Most severe security challenges that should be addressed by research planning in the 2035 time frame	<p>The disaster order with regard to the impact severity is:</p> <ul style="list-style-type: none"> <li>- <b>natural:</b> fall of a big cosmic body on Europe; earthquake; floods; forest fires; and drought,</li> <li>- <b>technological:</b> beyond design accident with presence of radioactive substances; beyond design accident with presence of substances mutagenic, carcinogenic and harmful to reproduction,</li> <li>- <b>imperfect human activities:</b> corruption, disuse of power, insufficient respect to public interest, education infrastructure breakdown, research infrastructure breakdown, breakdowns (organising accidents) in public governance, defects of supply chains, blackouts, low robust technical and finance infrastructure - long-term outage of electrical infrastructure; long-term stoppage of drinking water supply; long-term finance market disorder; and long-term shortage of basic food,</li> <li>- <b>environmental (including human body):</b> disruption of water circulation in environment; disruption of substance circulation in environment; huge pandemics and epidemics and incurable diseases in systems of humans, animals or plants and across them,</li> <li>- <b>environment reactions to human activities:</b> contamination of air, water, soil and rock missive's; uncontrolled human population explosion; migration of large groups of people; the militarization of space; and climate variations,</li> <li>- <b>social:</b> abuse of power; corruption; decay of human society into intolerant groups; abuse of technology; and abuse of authority, illegal access to information systems, cybercrime, terrorist attacks, corruption in government and public administration, including the political scene, serious economic crime, including money laundering, tax evasion, trafficking with human beings and illegal migration, illegal production and distribution of psychotropic substances, extremism, all forms, discrimination and intolerance.</li> </ul>
Challenges for future security research for prevention, preparedness, response and renovation	<ul style="list-style-type: none"> <li>- To implement the system of management based on integral safety and to improve the prevention, preparedness, response and renovation.</li> <li>- To build the systematic approach for the response to disasters. Note: the individual Member States have the systems of response on various levels.</li> <li>- Especially to improve the response to critical situations because extreme disasters cause of big economic and social impacts (lesson learned from Fukushima accident). They affect infrastructure (buildings, transport, energy and water supports), which represents a specific threat for the densely inhabited areas.</li> <li>- To target crisis management for case of extreme situations is necessary.</li> <li>- To process norms and standards for infrastructures that will: ensure their sufficient capacities; enhance their robustness and resiliency.</li> <li>- To upgrade sector and cross-sector management - cross-sectional risks (systemic) management and putting the cross-sectional risks (systemic) under control.</li> <li>- To compile robust measures to prevent disuse of technologies.</li> <li>- To introduce early warning systems in case of disasters for which there are known symptoms that enabling the warning.</li> <li>- To prepare tools for systematic regulation of recovery process; i.e. a recovery plan and plan for prevention of losses at renovation.</li> <li>- To improve humanitarian assistance in case of extreme disasters.</li> <li>- To implement systematic use of disaster insurance policies.</li> <li>- To improve attention to land degradation - lack of European legislation and objectives of soil protection.</li> <li>- To improve the EU preparedness for climate change because it is lagging behind in the sphere of adaptation (in contrast to the absurd emphasis on the causes of the greenhouse effect); to increase attention to adaptation in cross-border dimension (e.g. the possibility of international coordination and construction of dams and reservoirs)</li> <li>- attention to economic and social criteria.</li> </ul>



	<ul style="list-style-type: none"> <li>- To upgrade management of social disasters - Prevention is not systematically carried out for any of the social disasters; prevention is often declared by signed treaties, conventions, treaties or bilateral/multilateral agreements but in reality no effective tools. It is necessary to improve: close interdisciplinary cooperation of all parties involved at national level and consistency with other central institutions within the EU states; and sharing good practice, continuing education and training of experts responsible at the pan-European level. Preparedness for coping with the given disasters is the most well established the best on a theoretical level but the level of practice is greatly affected by the economic stability of a particular Member State; and level detection (intelligence services, technical means, and the level of experts ...) is variable and not interconnected. Because highly unacceptable impact on the current situation in EU countries they have long-term consequences of an economic crisis, it is necessary to find effective tool for inhabitants survive and for stabilization of economic situation that evocates a lot of followed disasters.</li> <li>- To upgrade process management - type "just in time" is not suitable for goods, measures and activities that are important for human survival.</li> </ul>
Related main vulnerabilities to be addressed for future security research	<ul style="list-style-type: none"> <li>- The most infrastructure and the objects is only protected to the size of design disaster, i.e. at extreme disaster's sizes they fail, which represents a specific threat for the densely inhabited areas. The situation can be made worse by rising of the sea level.</li> <li>- The insufficient level of civil protection at critical situations from the public administration of states.</li> <li>- The low support human daily needs from the public administration of states.</li> <li>- The incapability of inhabitants to take care of himself/herself and his/her family, to secure his/her property, to have basic food and water for at least 24 hours; incorrect behaviour of humans in critical situations.</li> <li>- Strategic and long-term approach is not systematically included into the territorial planning on both the continents and coastal areas including transport, regional development, industry, tourism and energetic politics.</li> <li>- Low attention to land degradation - lack of European legislation and objectives of soil protection.</li> <li>- No sufficient the EU preparedness for climate change, because it is lagging behind in the sphere of adaptation (in contrast to the absurd emphasis on the causes of the greenhouse effect).</li> <li>- Lack of knowledge stress and movements of territorial plates; rapid natural subsidence of surface; water circulation in environment; substance circulation in environment; human food chain; planet processes; interactions of solar and galactic processes.</li> <li>- Low attention to adaptation in cross-border dimension (e.g. the possibility of international coordination and construction of dams and reservoirs) - attention to economic and social criteria.</li> <li>- The knowledge on the vulnerability of protected assets is only fragmental.</li> <li>- No targeted crisis management for critical situations that can be caused by: beyond design nuclear accident; long-term outage of electric energy supply; long-term stoppage of drinking water supply; long-term shortage of food supply; long-term failure of the financial infrastructure; and long-term failure of the financial infrastructure.</li> <li>- The deficiency of early warning systems in case of disasters for which there are known symptoms that enabling the warning.</li> <li>- Lack of technical resources, inadequate knowledge and training of managerial staff, poor response management and lack of finances.</li> <li>- Lack of supply chain organisation at emergency and critical conditions.</li> <li>- In many cases not enough care is given to prevent human errors in processing plants and public affairs governance.</li> </ul>
Related main knowledge gaps to be addressed for future security research	<ul style="list-style-type: none"> <li>- Systematic collection of data on disasters of all types and their impacts.</li> <li>- No in-depth research based on data - key step - Missing data catalogues for these disasters; qualified monitoring, systematic detection system; systematic research etc. Special attention must be paid to social disasters because data for research are pure - collection and processing of data are on low level from methodical viewpoint - it is necessary to create: consistent data sets; effective mutual consultation and co-ordination of procedures and their flexible adaptation to the rapidly evolving global (trans national) conditions that bring new threat scenarios, and therefore, they require new more reliable methods determining new reliable scenarios.</li> <li>- Missing knowledge on solution of lack of drinking water, raw materials, resources, energy, food in case of uncontrolled human population explosion and migration of large groups of people.</li> <li>- Missing tools for robust crisis management in case of extreme disasters.</li> <li>- No verification of every result, before its implementing in practice by a public management opponent and by real experts who demonstrate professionalism, objectivity and support of public interests - the way how to avoid the influence of lobbyists.</li> <li>- No specification of methods for defining the scenarios for the identification, analysis, assessment, management of risks and dealing with risks are defined; no standards guaranteeing that the results of methods are comparable.</li> <li>- No data and methods for investigation of interdependences, rules of co-existence of overlapping systems and of management and trade-off with cross-sectional risks.</li> </ul>
Proposed type of future security research	<ul style="list-style-type: none"> <li>- Monitoring of all kinds of disasters and their impacts.</li> <li>- How to implement in practice the strategic management of integral safety that is systematic and proactive and it is not influenced by lobbyists and other insisting groups.</li> <li>- How to implement the strategic territory safety management in dynamic variable world in which will be taken into account aspects connected with: <ul style="list-style-type: none"> <li>• human lives and health as protection of physical body, food, drinking, comfort, homeland,</li> <li>• human security as protection against psychological harm and loss of security,</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• property as protection in case of: buildings and fittings - loss, damage; domestic animals - death loss, loss,</li> <li>• public welfare as protection against: deterioration in the atmosphere among the humans; and the loss of security,</li> <li>• environment as protection of: air; surface water; ground water; soil; rocks; landscape; forest; flora; and fauna,</li> <li>• infrastructures and technologies as protection in case of: the failure of energy supply (electricity, heat, gas); failure of water supply drinking, failure of water supply utility; sewage system failure; failure of the transport network; failure of cyber infrastructure (communication and information networks); the failure of the banking and financial sector; failure of emergency services (police, fire-fighters, paramedics); failure of essential services in the area (food supply, waste disposal, social services, funeral services), industry, agriculture; and failure of state and local governments, i.e. of area management and management of human society. To compile principles of continuity plans and contingency plans.</li> </ul> <ul style="list-style-type: none"> <li>- How to arrange stability of finance and bank sectors in the dynamically variable words.</li> <li>- How to implement professional knowledge for the benefit of the public interest.</li> <li>- How to prevent big impacts of the brain drain and the exodus of professionals; i.e. how to create experience databases.</li> <li>- How to upgrade cooperation in the security research; the implementation of existing directives and legislation; and strengthening the individual response tools of the EU to appurtenant disasters.</li> <li>- How to establish effective tools and legislation in prevention, preparedness, response and renovation - e.g. of Incorrect governance of public affairs also sanctions; qualified research based on real qualified data; and education.</li> <li>- Collection of qualified data (monitoring, qualified catalogues), selection of processing data methods and creation of standards and norms that will be codified in legislative.</li> <li>- Qualified research of disasters targeted to human security and improvement of population education.</li> <li>- With regard to the lessons from Fukushima to improve the methods associated with the determination of terms of references for design, construction and operation of technological buildings, equipment's and infrastructures; deterministic and stochastic approaches must be supplemented by expert judgement that considered influence of epistemic uncertainties.</li> <li>- To improve: system of management of territory and objects; and integral risk management because procedures applied so far do not consider cross-cutting risks, which are the cause of cascading failures of complex systems.</li> <li>- To operate systematic disaster's monitoring; to create legislation for prevention, preparedness, response and renovation with special attention to response to critical situations (crisis management, warning systems etc.).</li> <li>- To study disaster characteristics in-depth; to improve the population education with aim to reduce its vulnerability to these disasters.</li> <li>- To propose and implement sanctions for contamination of air, water, soil and rock mass.</li> <li>- To propose contingency plan for erosion of soil and rock massifs.</li> <li>- To find the safeguard procedures for landscape uniformity.</li> <li>- To apply Effective protective measures and activities of supply chains.</li> </ul>
Expected most needed topics of future security research	<ul style="list-style-type: none"> <li>- To implement into practice the strategic management of integral safety that is systematic and proactive and it is not influenced by lobbyists and other insisting groups.</li> <li>- To implement professional knowledge for the benefit of the public interest.</li> <li>- To specify the cases in which system "JUST IN TIME" is impossible to use from the viewpoint of human survival.</li> <li>- To find the way for: reduction of big impacts of the brain drain and the exodus of professionals - creation of experience databases; elimination of reasons for migration, such as poverty, climate change and hunger; establishment of comprehensive migration policy - e.g. measures and activities for case of sharp climate change, deforestation, desertification, biodiversity loss etc.</li> <li>- Proposal of human countermeasures against disasters and their impacts, if possible.</li> </ul>

From Tab. 1 analysis it follows that many critical situations in human system is connected with the disasters' management of disasters for which the humans are responsible - behaviour of humans; human factor; and disturbances in human society behaviour. Generally it is possible to say that the cause of critical situations are organisational accidents that are connected with a human factor; especially with phenomena as corruption; abuse of power; suppress of the public interest; low respect to knowledge and engineering experiences; and low professional level

of management. Their consequences are: government default; technologies failures; infrastructure failures; research failure; social system failure; decay of human society into intolerant groups; increasing number of impoverished people - seniors, dossiers, jobless - problem young people who are out of work and without education; disturbances of daily civil protection human needs; disturbance of daily civil protection, human security and public welfare; disuse of technology, space militarization; real data are in Tab. 2.

Tab. 2 Phenomena that cause the disturbance of social relations, public welfare and human security

Domain	Defects leading to critical situations
Top governance	The domain management: is predetermined to political and military aspects; is short of human dimension and gives low support to the EU inhabitants; does not governed on the basis of qualified data processed by qualified methods; is often determined by fixed ideas without real assessment of their realisation; is based on image that all is stationary and it does not respect dynamic development of world that means to prepare possible extreme scenarios and measures for human's survival; and is not realised on the principle "Safety management system for system of systems".
Technical domain	In domain: no standards and norms for underground and high-rise buildings with regard to human security and public welfare; missing essential services provided to the citizens; scenarios for decision-making are prepared only by simulation without verification with use of real data - sometimes scenarios used were derived for different conditions, i.e. conditions of technology transfer were not fulfilled; no norms and standards for interoperability; no standards and norms for co-operation of diverse systems; no co-ordinated emergency plans on all levels (EU-wide to regional) - all must be on professional level respecting knowledge and experiences, continuity and contingency plans.
Organisational domain	In domain: missing the effort directed to reduction of weakness (low number of resources, contamination of environment, work price, unemployment) and to use of strength (qualified technician population); no effective tool against to corruption, power disuse, lobbying etc.; missing the support of co-operation on mutual partner principle; missing base for mutual understanding and mutual co-existence; no effective international teams of first responders; no base for close co-operation of first responders; no norms and standards for interoperability.
Knowledge domain	In knowledge base used for decision-making: missing systematic respect to present world nature - dynamic open system of systems; low effort directed to collection of qualified data on disasters and on lesson learned from responses to extreme disasters; underestimation of disasters at disasters' management; neglecting the creeping disasters as ground water stores, contamination of human food chain etc.; no qualified disasters' scenarios for decision making.

Proposal of problems' solving consists in the finding the way how to implement: systematic use of knowledge and experiences at decision-making; strategic safety management and strategic safety engineering based on the system of system approach and on principles integral safety based on integral risk management and trade-off with aim to avert the organisational accidents; human dimension into governance (daily public protection and public protection at normal, abnormal and critical situations); rules for removing the corruption, lobbying and abuse of power; solidarity principle; responsible co-operation among partners; the good governance based on qualified data and on strategic, systemic and proactive management; systematic inspection by professionals, deputies and by public; legislative supporting the public interests into the state and sector management; solution of possible conflicts by peaceful way; special family politics, ensuring the availableness of further education etc. It is also necessary to find the way how to establish and implement into daily practice the basic EU functions, because the economic base, politic and military bases are not sufficient for the security of the EU inhabitants and for public welfare. For all these problems solving it is necessary to ensure: systematic building the knowledge base; systematic building material and technical base; qualified engineering procedures; the management based on qualified data; realising the EU governance that supports the EU inhabitants. The most effective seems systematic prevention of organisational

accidents that lead to the government defaults on all levels. It is necessary to stop talking and to work with goal "security and sustainable development of humans".

## Conclusion

Formulation of tasks for research is based on philosophy that each responsible government must protect inhabitants daily and at critical situations, i.e. the EU must also preserve the basic functions of a state; the real tasks are given for each public protected asset separately (Procházková, 2013). The basic requirement is so that the research: was targeted, i.e. the already-known was not researched without a good reason; sought and solved open problems, namely correctly with regard to current knowledge and experiences on ensuring the safe community and its sustainable development; demanded objective results under given conditions, i.e. to systematically present the results in front of a relevant expert community and to make them be a subject to a public opponent control. With this, plagiarism can be avoided, the real protection of intellectual property will be ensured and the development of creative abilities of individuals that has a creative potential and that are willing to give it in favour of the EU and its inhabitants' development will be supported; and would not distort the results - the style "the fundamental is what an authority says" holds development back. Therefore, it is necessary not to dissimulate conflicts among outcomes of

projects since their existence is normal. Under the effort of finding the right solution, it is necessary to make it a subject of a thorough investigation with aim to find the causes of problems and to define an optimal solution of them in a given conditions and within the given possibilities. The main task of the future EU security research is to create systems for knowledge-based decisions and effective utilisation of land and nature. Therefore, the EU must remove prejudice in favour of lobbying groups the interest of which is different from public interest.

The main deficiencies in the EU disaster management are the following items: all hazard approach is not systemically applied; some disasters are underestimated (mainly in social domain); systemic, strategic and proactive management is not always implemented into practice; co-existence of systems with different nature is not followed; gaps in risk management, risk engineering and in trade-off with risks; present research does not determine

priority orientations, its targets are influenced by politicians or lobbies; application procedures and orientation of strategies are not regularly verified; reasonable strategy for disaster management is missing; the disaster management does not often respect disaster life cycle; accent to problem solving is missing, still only a lot of discussions on problems; lack of resources; lack of instrument for ensuring the EU finance stability; and lack of management supporting the public protection and sustainable development.

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