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## Security Education for Disaster Risk Management Capacity Building

Education and communication have always been tried and tested tools of governments and societies to advance public understanding of disaster risks and support public discussion about potential responses. They seem even more crucial nowadays.

### Security environment

The variety of risks threatening the security environment are growing in power, impact and extent and can affect the whole system, the part of it and individual. The World Economic Forum experts define them as global risks: “occurrences that cause significant negative impact for several countries and industries over a time frame of up to 10 years”<sup>1</sup>. They fall into five categories: environmental, economic, geopolitical, social and technological risks.

- Economic risks include fiscal and liquidity crises, disfunctions of a major financial mechanism and institutions.
- Environmental risks include both natural disasters (e.g.: earthquakes, geomagnetic storms) and man-made risks (e.g.: collapsing ecosystems, freshwater shortages, nuclear accidents and failure to mitigate or adapt to climate change).
- Geopolitical risks result from human activity in the areas of politics, diplomacy, conflict, crime and global governance (e.g.: terrorism, disputes over resources and war, governance undermined by corruption, organized crime and illicit trade).
- Societal risks result from social instability, e.g.: severe income disparities, food crises and dysfunctional cities – and public health, such as pandemics, antibiotic-resistant bacteria and the rising burden of chronic disease.

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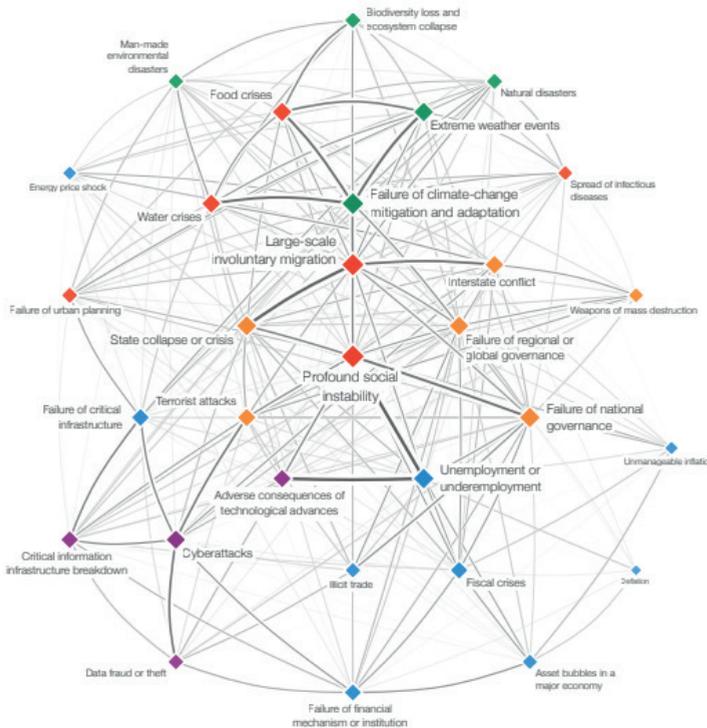
<sup>1</sup> *The Global Risks Report 2018 13th Edition*, World Economic Forum Geneva, 2018, p. 10, <https://iapss.org/2014/04/22/the-five-main-categories-of-risks-at-the-global-level/>, [accessed: 28.04.2019].

- Technological risks relate to the growing centrality of information and communication technologies to individuals, businesses and governments. They are: cyber-attacks, infrastructure disruptions and data loss<sup>2</sup>.

These risks are interconnected<sup>3</sup> causing variety of prima facie unrelated human insecurities<sup>4</sup>.

The map below (Fig. 1) presents the strong dependency between failure of climate-change mitigation and adaptation, extreme weather events, food and water crises and biodiversity loss and ecosystem collapse, man-made environmental and natural disaster. At the foreground, there is also involuntary migration linked to the above-mentioned web of risks and interstate conflict, state collapse or crisis and profound social instability with unemployment or underemployment which can be strengthened by adverse consequences of technological advances. The links are not directed clearly in any way, which means that the risks are mutually interconnected and they interact.

Fig. 1. The Global Risks Interconnections Map 2018



Source: *The Global Risks Report 2018 13th Edition*, World Economic Forum Geneva, 2018, Figure II.

<sup>2</sup> Ibidem, p. 12.

<sup>3</sup> Ibidem.

<sup>4</sup> Ibidem.

From human security perspective, the risks such as lack of rule of law, lack of access to opportunities, basic health care, famine, environmental degradation, physical violence, social tension are the root causes of human insecurities: political, economic, food, health, ecological, personal and community, respectively. The more detailed list is presented in Figure 2.

Human well-being is directly and crucially dependent of the condition of environment<sup>5</sup>. Yet, the expert analysis confirms that there is generally a stable increase in environmental risks both natural and man-made disasters.

Fig. 2. Types of human insecurities and possible root causes

Type of insecurity	Root causes
Economic insecurity	Persistent poverty, unemployment, lack of access to credit and other economic opportunities
Food insecurity	Hunger, famine, sudden rise in food prices
Health insecurity	Epidemics, malnutrition, poor sanitation, lack of access to basic health care
Environmental insecurity	Environmental degradation, resource depletion, natural disasters
Personal insecurity	Physical violence in all its forms, human trafficking, child labour
Community insecurity	Inter-ethnic, religious and other identity-based tensions, crime, terrorism

Source: *Human Security Handbook. An integrated approach for the realization of the Sustainable Development Goals and the priority areas of the international community and the United Nations system*, Human Security Unit, United Nations, January 2016.

Natural risks are classified by their root causes and fall into two groups: geophysical (earthquakes, volcanic activity and dry mass land movements) and climate or weather-related disasters. The later include: hydrological disasters: flood, floods and landslides, meteorological disasters (storms and extreme temperatures), climatological disasters (droughts and wildfires)<sup>6</sup>.

Man-made disasters include the element of human intent or negligence. Many of them mirror natural disasters and lead to human suffering and environmental damage, yet they are human-induced<sup>7</sup>. They are: major fires (explosions in oil, gas industry, warehouses, other buildings), other fires (explosions, department stores), miscellaneous (social unrest, terrorism), aviation disasters (space crashes, damage

<sup>5</sup> *Safeguarding people from environmental risks to health*, European Environmental Agency, 2016, Chapter 5.

<sup>6</sup> *Poverty & Death: Disaster Mortality 1996–2015*, CRED, UNISDR.

<sup>7</sup> Disaster Survival Resources, <http://www.disaster-survival-resources.com/man-made-disasters.html>, [accessed: 28.04.2019].

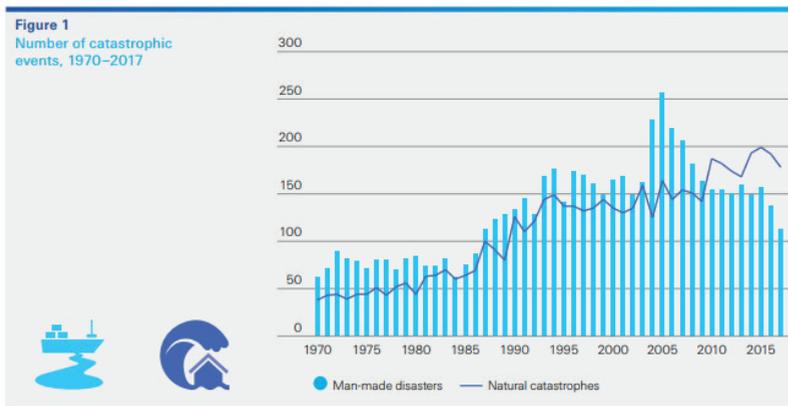
on ground), maritime disasters (drilling platforms freighters, tankers, passenger ships), rail disasters (incl. cableways), mining accidents.

The Sigma statistics show that there were 301 catastrophes worldwide in 2017, down from 329 in 2016. There were 183 natural catastrophes (compared with 192 in 2016), and 118 man-made disasters (down from 137) (Fig. 3). More than 8000 people died or went missing in natural catastrophes (the ones that brought the highest death toll: Bangladesh Storm, Tangshan Earthquake, Cyclone Gorky, Indian Ocean Earthquake and Tsunami, Cyclone Nargis, Haiti Earthquake) and around 3000 died in man-made disasters. More than 11 000 people lost their lives or went missing in natural and man-made disasters in 2017, more than 2016 but still one of the lowest in a single year (Fig. 4)<sup>8</sup>.

Natural disasters come in many different forms: other weather events, earthquakes, flooding and wildfires. The projections for the next 50 years are not reassuring; the natural disasters risk will continue to evolve as changing variables like a warming climate, growing populations and urbanization drive (and likely expand) the loss-potential of natural world hazards<sup>9</sup>.

The fact that global risks are not only interconnected but also have systemic impacts, requires procedures, institutions, including Disaster Risk Management, to be “globally coordinated yet locally flexible”<sup>10</sup>.

Fig. 3. Natural catastrophes and man-made disasters over the period from 1970 to 2015



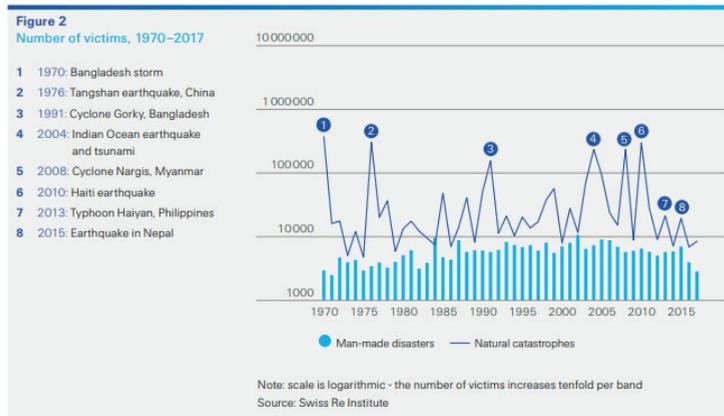
Source: *Natural catastrophes and man-made disasters in 2017: a year of record-breaking losses*, Swiss Re Institute 2019, No. 1.

<sup>8</sup> *Natural catastrophes and man-made disasters in 2017: a year of record-breaking losses*, Swiss Re Institute 2019, No. 1.

<sup>9</sup> *Ibidem*.

<sup>10</sup> *The Global Risks Report 2018 13th Edition...*, op. cit., p. 9.

Fig. 4. Number of victims in natural and man-made disasters 1970 to 20015



Source: *Natural catastrophes and man-made disasters in 2017: a year of record-breaking losses*, Swiss Re Institute 2019, No. 1.

## DRM capacity building

People are rather well educated and organized to face simple disasters, yet, they are much less competent when facing complex risks in the interconnected systems that build the structures of our world, such as organizations, economies, societies and the environment<sup>11</sup>. The top priority for all societies and their governments should be developing awareness of all aspects of natural disasters and find solutions that better mitigate the risk and fallout of the devastating events<sup>12</sup>. Consequently, disaster risk management needs to be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment<sup>13</sup>. *Capacity building* is “the process by which individuals, organizations, institutions and societies develop abilities to perform functions, solve problems and set and achieve objectives. It needs to be addressed at three inter-related levels: individual, institutional and societal”<sup>14</sup>. Thus, *Disaster Risk Management (DRM) capacity building* can be defined as “efforts to strengthen the competencies and skills of a target organization, group or community so that the target could drive DRR efforts, or in a broader sense development, in a sustainable way in the future”<sup>15</sup>.

<sup>11</sup> Ibidem, p. 10.

<sup>12</sup> *Natural catastrophes and man-made disasters in 2017...*, op. cit.

<sup>13</sup> *Poverty & Death: Disaster Mortality 1996–2015...*, op. cit.

<sup>14</sup> *Definition of basic concepts and terminologies in governance and public administration*, United Nation Economic and Social Council, E/C.16/2006/4.

<sup>15</sup> *Strategic research into national and local capacity building for disaster risk management*, International Federation of Red Cross and Red Crescent Societies, 2013.

In 2013 the International Federation of Red Cross and Red Crescent Societies (IFRC), in a cooperation with Oxford Policy Management (OPM) and the University of East Anglia (UEA), conducted the research on quality and needs of DRM capacity building.

The main findings confirm that:

- The system for building global DRM capacity is not strategic – it is made up of lots of small, uncoordinated projects and programmes scattered across countries,
- The DRM capacity-building programmes are usually postponed in the areas affected by conflicts, which results in people left out of DRM initiatives despite their increased vulnerability to disasters,
- Capacity-building activities are not yet aimed at building an “enabling environment” for DRM, i.e. a context that provides the prioritization and motivation to turn development of DRM structures and skills into effective actions,
- Most of the programmes focus mostly on preparedness marginalizing prevention and mitigation,
- Programs are not targeting vulnerable groups, and concentrate on present risks rather than building capacities to respond to long-term changes in risk,
- Programs do not consider or very little the gender issues: different disaster vulnerabilities, perceptions of risks, access to resources, roles, skills and decision-making power,
- Capacity building programs are not giving attention to securing the sustainability of capacities developed,
- Monitoring and evaluation (M&E) systems are typically very weak (lack of tools and an external evaluation mechanism).

On the basis of the limitations discovered, the DRM capacity building policy and programs were formulated<sup>16</sup>. They include crucial suggestions for the security education strategy and programs as they provide “know how” and enable better understanding of the context.

Education should be present at all levels of capacity building programmes: institutional, societal and individual<sup>17</sup> and all stages of disaster risk management (prevention, mitigation, response and recovery) to support implementation of the main objectives of the capacity building policy, which are:

- Creating an enabling environment for DRM through activities that build motivation for prioritizing DRM in society,
- Improving the impact of training with the use of a training of trainers’ approach, on-the-job training or secondments. Training should be interactive, contextualized and based on an attitude of mutual learning. Developing skills and abilities to identify and adapt to long-term changes in risk. Strengthening of highly vulnerable groups within communities. Broadening the capacity-building support to all aspects of DRM: prevention, mitigation and recovery,

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<sup>16</sup> Ibidem, pp. 11–16.

<sup>17</sup> Ibidem.

- Ensuring sustainable development and vulnerability reduction by cooperation of donors, governments and policy-makers to promote and invest in capacity-building interventions,
- The inclusion of gender-sensitive and comprehensive approaches to capacity building for DRM moves beyond quotas for female participation,
- Linking to the context by tailoring activities and approaches to the particular environment, rather than applying a standardized approach,
- Building DRM capacity in fragile and conflict affected states (FCAS) by conducting continuous assessment of the context and adapting programmes to changing needs in insecure environments,
- Linking up the levels, developing scalar chain by mixing scales at training sessions, and building capacities for inter-scalar interaction.

### Security education for DRM capacity building in Poland

Security education policy in Poland tones in with the DRM capacity building policy and programs as it promotes:

- incorporation of education and vocational training of privates and non-commissioned officers into the national educational system based on the Polish Qualifications Framework<sup>18</sup>,
- Coordination of education for security institutions in areas important for state and citizens' security within the framework of the general education and higher education system including vocational training of soldiers, officers, civilians,
- Creating the coherent curricula on a trans sectoral and supraministerial level, which would allow to obtain better quality of teaching<sup>19</sup>,
- Cooperation of state and local uniformed groups: the state fire service, police and city guards within the Crisis Management System by developing more effective joint basic training programs of state fire service, police and city guards in order to overcome critical situations<sup>20</sup>,
- Cooperation of public administration and private stakeholders at all administrative levels; Civil Protection tasks performed by civil protection units created by the starosts, mayors, commune heads and city presidents. Civil defense formations may also be established by the employers. The law defines the duty of citizens to complete training in universal civil protection of society and civil defense training for pupils and students<sup>21</sup>.

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<sup>18</sup> Art 120 of *National Security Strategy of The Republic of Poland (NSS RP)*, BBN 2014.

<sup>19</sup> *Ibidem*, Art 141.

<sup>20</sup> The voluntary fire services still lack regular training which contributes to lack of professionalism, mismanagement and nepotism confirmed by publicised cases of acting to the detriment of social interest – J. Dworzecki, *Crisis Management System in Poland*, "The Science for Population Protection" 2012, No. 2, <http://www.population-protection.eu/>, [accessed: 6.05.2019].

<sup>21</sup> *The Act of 21 November 1967 on universal obligation to defend the Republic of Poland* (uniform text, Journal of Laws of 2004, No. 241, Item 2416, as amended).

Education and communication are among the most powerful tools to bring risks to public attention, understanding, and action<sup>22</sup>. They can be more effective when strengthened by sufficient communication channels.

Security education can be provided by formal schooling were variety of tools are used: traditional printed materials, media and other learning materials such as text, graphics, simulations, maps, websites, movies, television programs, field trips, experiments, and citizen science projects<sup>23</sup>. Governmental authorities enrich the education and communication with the use of social campaigns and tools such as ICT to pass the message.

Social campaigns of 2017 *Pedestrian vs Driver* by the National Council for Security on Roads and Ministry of Infrastructure or *Secure Navigation* by Play, a Polish cellular telecommunications provider, and Police can be the examples. The *Pedestrian vs Driver* campaign aimed at encouraging safe behavior on the roads and consequently reducing number of accidents caused by road users. The time of the campaign was not contingent (Oct., Nov. Dec.). During the autumn and winter time the number of accidents with pedestrians increases significantly due to weather conditions and night falling earlier. The campaign exploited all communication channels: national and regional TV channels, spots in the cinemas, public transport, train stations and billboards along the main traffic routes to reach the target groups of 18–24 and 40–45 year-old drivers statistically considered as the most careless. The exposure of the target groups to the stimuli just at right frequency, place and time to be heard or seen and remembered, provided by various methods were to increase the strength and effectiveness of the message.

Content of the campaign was to make pedestrians and drivers understand one another, what irritates them, why and how it is to be on another side. The situations experienced in AR/VR were reported in the spots. Well prepared visual aspects with single but appealing words and emotional reactions of the actors were communicative to anyone irrespectively of the language spoken.

General Statistics influence also by the campaigns: in 2017 the drivers caused fewer accidents with a pedestrian as a victim by 79 than in 2016. The pedestrians caused fewer accidents in 2017 than 2016 by 71 (-2,9%).

*Secure Navigation* Campaign – one of the main causes of the road accidents is the lack of concentration and too short following distance between vehicles due to using phones while driving especially navigation. Police and Play experts designed the set of rules how to use navigation safely in a form of infographic template to download.

Pop-up advertisement is another useful educational tool to communicate instruction how to behave during the storm, fire or how to avoid lightning strike, which appeared together with the weather news.

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<sup>22</sup> *Informing an Effective Response to Climate Change*, The National Academies Press, Washington, D.C., Chapter 8, p. 251, [www.nap.edu](http://www.nap.edu), [accessed: 7.05.2019].

<sup>23</sup> *Ibidem*, p. 256.

SMS sent by Early Warning Systems with cooperation with cellular telecommunications providers not only communicate the approaching risk but provide the short instruction who to respond to it. This was the case during the hurricanes in October 2018.

## Conclusion

„Communication about the risks posed by climate change requires messages that motivate constructive engagement and support wise policy choices, rather than endangering indifference, fear or despair”<sup>24</sup>.

This quote explicitly supports the educational policy objectives to empower decision-makers, societies and individuals with accurate knowledge and thus building DRM capacity to drive sustainable recovery and future development.

Security education as well as informal education with social campaigns operate on all levels of capacity building:

- At the individual level, education targets at a continuous process of learning and adapting to change building on life-long learning, training and courses addressed to students as well to citizens of all social groups and preparing them to contribute to decision-process, planning and mitigation stages of DRM,
- At the institutional level education policies and communication channels are adapted and developed to conditions and needs of the society avoiding foreign blueprints,
- At the societal level education and communication becomes more interactive. Security services and public administration attempt at being responsive and accountable. ICT technologies provide tools for effective the two-way communication.

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<sup>24</sup> Ibidem, p. 258.

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## Security Education for Disaster Risk Management Capacity Building

### Abstract

The variety of risks threatening the security environment are growing in power, impact, extent and can affect the whole system, the part of it and individual. They are not only interconnected but also have systemic impacts, which requires Disaster Risk Management policies and procedures to be globally coordinated yet locally flexible.

The analysis of expert literature, statistics and findings from the research as well as policies and legal regulations allowed to refer the main guidelines for Disaster Risks Management to the role, quality and practice of education in DRM capacity building.

The attempt to answer the question how security education builds DRM capacity is supported with the case study of the social campaigns and use of ICT.

**Słowa kluczowe:** środowisko bezpieczeństwa, edukacja dla bezpieczeństwa, kampanie społeczne, ICT, budowanie potencjału systemu zarządzania kryzysowego

**Key words:** security environment, security education, social campaigns, ICT, DRM capacity building

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