Role of Education in Shaping Preparedness for Disasters in Albania

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Abstract

Education system is much affected by the challenges imposed by disasters. Disasters affect both demand and supply side of education. During a disaster event, the less developed communities are the ones who bear the highest costs of a damaged environment, and this affects also education provision. These impacts affect the quality of education and jeopardize the security of students and teachers involved in the process of teaching and learning. This article will focus on the importance of disaster risk communication and perception, in the context of implementing a complete disaster management cycle. In particular, attention will be paid to the impacts and role of education, as an important tool for risk communication, emphasized in both research and practice. The methodology the paper includes both desk research and primary data collection. The needs of implementing disaster risk studies in higher education institutions is thoroughly assessed. The past experience with inter-disciplinary studies in the Balkan Region and in Albania is summarized. In-depth interviews are in addition conducted to support our study. Accordingly, conclusion on the needs to develop and integrate disaster studies in current curricula in Higher Education in Albania are elaborated.

Keywords: Education system, inter-disciplinary studies, integrate disaster studies, Balkan Region, Education in Albania

1. Introduction

As the world constantly faces different types of disasters and crises, it is becoming increasingly important to design and implement a complete disaster management cycle that addresses the stages before a disaster event occurs, not just the post-disaster phases. The way risk is communicated to the population and perceived influences the success of disaster risk management policies.

This article will focus on the importance of disaster risk communication and perception, in the context of implementing a complete disaster management cycle. Particular attention will be paid to the role of education, as an important tool for risk communication, emphasized in both research and practice. The needs of implementing disaster risk studies in higher education institutions is thoroughly assessed. Based on the results of the in-depth interviews conducted to support our study, conclusion on the needs to develop and integrate disaster studies in current curricula in Higher Education in Albania are drown.

The article is organized as follows. The literature review offers a summary on studies on disaster communication and on the role of education in disaster field. Further, the stage of development of disaster risk education is presented, with a special focus on the progress of the Balkan area in this issue. The methodology and results are presented in the third part of the paper and followed by recommendations on the future path of development of higher education studies in the field of disaster risk.

2. Literature review

2.1 Risk Perception and Risk Communication

Risk mitigation is a includes policies and activities that are aimed at reducing risk, lowering the exposure, and preventing the impacts of different categories of risks. These policies are only successful if the risk is understood by the exposed population. The way the risk is interpreted, and consequently the way people react to a threat is considered one of the strongest drivers of a successful disaster risk management strategy (Young, 1998). However, different people perceive the risk in different ways, and, accordingly, respond differently (Slovic et al., 1979). To be perceived, the risk needs to be communicated. The way risk is communicated to the communities is another pillar of a successful disaster risk reduction polity. This section discusses risk perception and risk communication literature.

Risk perceptions is affected by a large number of personal factors, which are thoroughly addressed in literature, like age, gender, educational level, profession, and personal disaster experience (Agrawal, 2018; McGee, 2007; Perlstein, 2024). Scholars agree that men are more risk tolerant than women (Miceli, 2008). In regards of age there are contradictory findings in the literature. While Miceli (2008) argues that elders are more risk tolerant than younger generations, Armas (2007) shows that people become more risk adverse while they age. In addition, Armas (2007) shows that higher levels of education are associated with lower risk tolerance. Income effect is less agreed upon. Baan & Klijn (2004) has than an increase in family income reduces the tolerance of individuals to natural risk.

Perception also varies depending on the type of risk (e.g., how frequent and severe is the potential harm), the personality of the individual, the political-economic context of the country and the social circle (Renn, 2008). When risk is taken voluntarily, e.g. when driving fast or smoking, it is perceived as less harmful. Meanwhile, natural disasters such as earthquakes or epidemics are perceived as more threatening as they are imposed by external forces and as a result are uncontrollable not only by individuals but also by governments or health systems. Also, knowledge about a certain risk influences public perceptions. Unknown risks, involuntary, and with consequent consequences, are considered more life-threatening than common causes (Slovic, 1992).

The framing and presentation of risk-related information by authorities such as government, schools, media and experts, significantly shapes public risk perception and, subsequently, disaster management dynamics (Fischhoff et al., 1997; Lundgren & McMakin, 1998). Furthermore, authors (Siegrist & Cvetkovich, 2000; Viklund, 2003; Welch et al., 2005) have confirmed that increasing trust in governing authorities lead to a better implementation of a disaster risk management strategy.

In order to study the risk communication effects to risk perception, a social amplification of risk framework (SARF) was developed in 1988 (Kasperson et al., 1988). Identifying the physical event, recognizing it, and identifying the people or groups in charge of defining and interpreting the risk components are some of the crucial processes that are outlined in this framework (Renn et al., 1992). These thorough evaluations serve as the foundation for identification of the so called "amplification stations", which are channels though which messages about threats are spread. In such framework, individuals act as amplification stations, decoding a variety of risk-related signals according to their subjective assessment and interpretation of the danger (Kasperson et al., 1988). Media, as an important source of information, is another important amplification station. Information communicated from a trusted amplification station lowers the perceived level of risk (Renn & Levine, 1991). Trust is affected by seveal factors. If people relate a certain activity to negative feelings or emotions, they believe that it creates an increased risk, but if their approach towards a risk is positive, they perceive risks to be minimum. Further, if the information provided is presented in a manner that is comforting and assuring, accompanied by elements of anxiety reduction, the risk is seen as being low. If the delivery of information is carried out in a negative way, with stigma or elements of personal belief destruction, then this increases the level of perceived risk, whereby individuals will perceive the situation to be worse than it actually is (Slovic et al., 2005).

Many researchers are more focused now on reducing risk and creating a safety culture. Educational institutions contribute to this process by identifying and transferring the key educational messages that future generations must embrace to develop a strong safety culture. Many researchers are now focusing more and more on the ability of children and youth to affect disaster policies, and resilience building. Especially their role in implementing risk communication, education, advocacy, and risk reduction activities is being recognized (Anderson, 2005; Peek, 2008; Pfefferbaum et al., 2018). In this regard, while acknowledging the top-down approach of disaster risk communication, which requires scientist and experts to maintain the role of informants to the general public, Mitchell et al. (2008) studied the role of children and youth as resources or receivers of disaster management information. Their case study research on the role of children during a time of crisis in El Salvador and New Orleans, though not conclusive, contended that informed

children and youth could serve as highly trusted and politically neutral resources influencing the understanding on risks and challenging traditional beliefs (Mitchell et al., 2008). The United Nations International Strategy for Disaster Reduction, emphasizing the high impact that disaster have on children, has also advocated their active participation in disaster risk reduction activities (UNISDR, 2011). Under these observations, approaching children and youth through education programs designated to enrich their understanding on sustainable development issues related to disaster risk management becomes crucial (Peek, 2008).

3. Education role in DRM

Disaster risk has its effect on the education system, since the sector is severely affected both on the demand and supply side when a disaster event occurs. Disasters affect school enrolment, security of pupils and teachers, education infrastructure, as well as education quality, making educational institutions highly vulnerable in case of disaster (Kopnina, 2012; Anderson, 2012; Hamilton, 2011; Peek, 2008). Vulnerability is particularly high in less developed countries, which suffer disaster consequences more than developed countries (Gurenko & Lester, 2004).

Schools and educational systems can be destroyed or severely damaged by disasters, threatening communities' physical and mental security. Population migration brought on by climate change also disrupts the availability of education. The economic effects of disasters, which lower school enrolment because children are kept out of school to assist their family in coping with the aftermath of the disaster, further increase education vulnerability.

Despite being threatened by disaster risk, the education sector involves many adaptive capacities. More educated citizens are believed to be better prepared to face a disaster event (Russell et al., 1995; Liu et al., 1996; Lindell & Perry, 2000). Numerous studies highlight the critical role education play in generating and disseminating disaster-related knowledge while contributing to policy development at all levels (Holloway, 2014). While this applies to all societies vulnerable to disasters, it is particularly significant in developing nations, where higher education institutions (HEIs) play a key role in engaging the public and advancing national development goals (Koehn, 2013). In addition, disaster-related education can further enhance personal preparedness, contributing to the mitigation of disaster risks (Muttarak & Pothisiri, 2013).

Today education system is challenged by the need to address complex development problems globally. Higher education has long played a crucial role in supporting policies and programs for disaster risk reduction though the management of specialized data bases, dedicated natural hazards research centres and training of tomorrow's leaders, who can give conceptual, methodological and empirical contributions to the field of DRR (Holloway, 2014). Higher education programs, including disaster risk management in the curricula, are essential for promoting a culture of prevention and is directly applicable to a wide range of disciplines and sectors, including agriculture, business studies, education, environmental management, engineering, public health, urban planning, public administration and governance . All the efforts and action taken by the education sector to cope and mitigate disaster events are part of the Education for Sustainable Development framework (Kopnina, 2012; Anderson, 2012; Hamilton, 2011). This type if education is both interdisciplinary and transdisciplinary.

HEIs throughout the world have progressed creating disaster risk reduction course modules in interdisciplinary settings, such as in science (like geology), humanities (like geography), urban planning, engineering, economics, and so on (Shaw, 2020). Promotion of education in the field of disaster risk reduction has been emphasized in several international frameworks:

- The third priority of the Hyogo Framework for Action explicitly underlined the value of knowledge, innovation and education to build a culture of safety and resilience (UNISDR, 2005);
- The first priority of the Sendai Framework Action Plan "Understanding disaster risk" emphasizes the need to integrate education, science, and technology as an available mechanism to facilitate priority actions (UNDRR, 2015)
- Education is central to reorient efforts towards a new path for achieving sustainability, within the aims of the SDG goals (UN, 2015a)
- Promoting action in education for climate change and disaster risk reduction is also required in the framework of Paris Agreement (Articles 11 and 12), which affirms the importance of education, training, public awareness, public participation, public access to information and cooperation at all levels on the matters addressed in it (UNFCC, 2016).

Education is seen in all these frameworks as an important channel for risk communication. The opportunities coming from enhancing risk communication through the education need to be carefully balanced with the challenges that

are imposed in the sector. In particular, the educators, who are used to a more traditional setting, are faced with new responsibilities. They need to learn new content, and teach through new methodologies, in order to enhance critical thinking and a problem-solving approach to students. In addition, new forms of collaboration within the education system, involving interfaculty and interdisciplinary collaboration, need to be explored. This impies the modernisation of the sector, which not always is an easy path (Makrakis & Kostoulas-Makrakis, 2016; Holloway, 2014, Azeiteiro, 2015). The lack of flexibility of classes and courses, language and psychosocial factors, economic factors, and rigid university programs and regulations are further barriers to mainstreaming sustainability into current curricula (Gilbert, 2005; Holloway, 2014).

4. Sustainability Education in the World, Europe and in the Western Balkans

Educational institutions can make indirect contribution to public health and safety through developing their curricula. However, this mission has only to a limited extent been carried over to higher education. A review of programs of studies conducted with an EU project shows that over 107 risk education programs (including programs dealing with business risk and to financial risk management) are offered in EU and UK (K-force, 2017). In many cases these programs are of interdisciplinary nature, where the technical elements of the field are integrated with economics, risk assessment, finance and insurance issues. Holloway (2014) has reviewed the academic offerings in the field of DRM in many developed and developing countries and found around 100 masters-level programmes offered in 48 countries that involve resilience, disaster reduction, or disaster risk. Two University partnerships established in Africa and Asia, respectively Periperi U and the AUEDM, have promoted strategic human and institutional capital in the disaster risk domain by explicitly integrating disaster risk-related concepts and practice into higher education curricula (Shaw, et. al, 2011 and Holloway, 2014). Singh (2007) evaluates India education and technical training from elementary to higher education curricula as essential components of disaster mitigation. Pal et al., (2019) make observation on the considerable progress in incorporating sustainability in higher education within the Asian region. They further recommend prioritizing in HEIs curriculum, among other topics, disaster economics, risk insurance, and business risk management. They also recognize the need for short term and professional courses of interdisciplinary nature in the HEIs educational framework, in order to promote the chances for effective community outreach and greater awareness (Pal et al., 2019). Shaw (2020) mentions the efforts of the Association of Pacific Rim Universities in relation to creating a safety culture. A comprehensive multi-hazard program, incorporating open campus activities, has contributed to promoting campus safety initiatives. It has also addressed governance support by improving campus facilities and infrastructure while ensuring educational continuity and providing post-disaster support for students, including assistance with post-traumatic stress disorder (Shaw, 2020).

Education is widely recognized as an important tool in addressing these challenges, yet its full potential in supporting adaptation and mitigation efforts remains largely unexploited in the Balkan region. The countries of the Western Balkans share a common political history, shaped by their communist past, which still influences their higher education systems in different ways. The integration of Sustainable Development Education in these countries is still in its early stages. Except for Greece, few nations have effectively incorporated subjects such as disaster risk management, climate change adaptation, energy markets, and sustainability governance into their curricula. Barriers such as cultural rigidity, a traditionally structured education system, and a constrained labour market hinder the successful implementation of these topics in higher education.

Attempts to implement sustainability education practices and improve the efficiency and sustainability of services at HEIs in the region have been limited. However, since the post-communist era (1990 to the present), higher education curricula have undergone significant revisions to align with the principles of the Bologna Process. Furthermore, new courses in the curricula of HEIs in WBC have been added to improve the educational system and societal needs. By providing assistance through projects and funding opportunities, the European Union is a key stakeholder in improving higher education in the region. by offering support through. However, many countries have embraced Western educational models, integrating multidisciplinary and interdisciplinary approaches into their academic context. While undergraduate programs in the Western Balkans tend to follow more traditional structures, postgraduate programs are actively diversifying their content. The development of master's programs that bridge multiple faculties highlights this shift, reflecting the need to prepare students for increasingly complex global challenges. Most of these programs are currently hosted by polytechnic universities, yet stronger interfaculty collaboration remains essential for fostering a more integrated and comprehensive educational approach.

In 2016, the EU-funded initiative "Knowledge for a Resilient Society (K-Force)" aimed to establish a sustainable educational framework in Disaster Risk Management and Fire Safety Engineering across the Western Balkans. By 2018, six new academic programs in this field were introduced at partner universities in Serbia, Bosnia and Herzegovina, and

Albania. The project was developed through collaboration with academic institutions from the European Union. Table 1 provides an overview of the programs implemented in the region.

Table 1: Programs of study in the field of disaster risk management in Western Balkans

Country	Program	Aim	HEI
Serbia	Master programme "Disaster Risk Management and Fire safety"	The purpose of the study programme is the education of students of the profession of Master in Disaster Risk Management and Fire Safety in accordance with the needs of society.	Faculty of Technical Sciences, University of Novi Sad
	Master programme "Emergency Management"	The primary aim of the study programme is to enable students to apply scientific and professional achievements in solving the problems of safety of humans and natural and material wealth, and in developing emergency management systems.	Faculty of Occupational Safety, University of Niš
North Macedonia	Master in Earthquake Engineering	The Earthquake Engineering major enables education of candidates in the domain of modern earthquake engineering. The candidates are trained in application of new, most recent methods of design and construction of seismically safe structures.	University Ss. Cyril & Methodius, Skopje Institute of Earthquake Engineering and Engineering Seismology
Bosnia and Herzegovina	Master in Disaster Risk Management and Fire Safety	The program's goals are to further train professionals in Disaster Risk Management and Fire Safety in Civil Engineering.	University of Tuzla
Albania	Master of Science in Risk Management	This Master Program aims at combining three approaches to risk management: enterprise risk management; Financial risk management; and disaster risk management.	Faculty of Economy, University of Tirana
	Professional Master Disaster Risk Management and Fire Safety in Civil Engineering	The program's goals are to further train professionals in Disaster Risk Management and Fire Safety in Civil Engineering who are able to work effectively in teams across a large range of scales and with a well-developed knowledge.	Epoka University

Source: K-force Project Webpage and The Authors

5. Methodology

5.1 Background

The Albanian population has experienced many human or natural disasters, such as floods, droughts, and even earthquakes. These disaster have caused severe damage, affecting the well-being of the population, the economy, and general development. The lack of disaster insurance has further worsened these conditions (WB, 2014). According to the report of the Ministry of Local Government and Decentralization and UNDP (2003), Albania has a high exposure to natural disasters. The causes of natural disasters are different: Natural causes (geological, hydrological, atmospheric, biophysical); 2) Anthropogenic causes (floods caused by dams break, intentional fires, 3) Ecological causes. Moreover, as the risk of climate change increases, it is expected that the frequency of extreme weather events will increase significantly (UNDP, 2009). Available data sets indicate that the current risk level is on the increase and relatively higher in Albania when compared with other neighbouring countries. The main hazards affecting Albania include earthquakes, floods, forest fires, and snowstorms.

The most devastating disaster of the last decades was registered in 2019. On 26th November 2019 at 03:54, a devastating earthquake, with a magnitude of 6.3 on the Richter scale at a depth of 38 km, hit the country (Albanian Institute of Geophysics, 2019). As a result of the disaster, a total of 202,291 people were affected in the country, 47,263 directly, and 155,029 indirectly. The earthquake caused 51 fatalities and injured at least 913 people. Moreover, up to 17,000 people were displaced due to the loss of their homes. In total, the first responders rescued 48 people from collapsed houses. Albania's' National authorities have described the earthquake as the most powerful in Albania in the

past 30 years. The disaster caused big destruction across 11 municipalities, including Tirana and Durrës, with the biggest populations and highest levels of urbanization and infrastructure. Among the damage reported, 321 educational institutions in the affected municipalities were impacted, accounting for 24% of all educational facilities. The municipalities of Tirana and Durrës have the highest share of damage, with 55% and 21%, respectively. In addition, losses are estimated at 8.76 million EUR (1.08 billion ALL) (Inter-ministerial Committee for Civil Emergencies, February 2020).

In Albania, disaster risk reduction and management must be treated as a priority, especially in light of the destroying 2019 earthquake. This event exposed the lack of a safety culture within society and highlighted the urgent need for qualified professionals and experts skilled of managing the prevention, response, and recovery phases of catastrophic events, as well as addressing interdisciplinary challenges in disaster risk management.

Until 2018, there were no university programmes (neither master's nor bachelor's degree) focused on disaster risk management in Albania. Programs related to the field of Environmental Engineering and Earthquake Engineering can be mentioned to emphasize their content and their partial relevance to the field of disaster risk management.

Meanwhile in 2018, two programs of studies in the field of disaster risk management were implemented in Albania under the European Community funded Erasmus + program. The program of study Master of Science in Risk Management offered at the University of Tirana continues for the third consecutive year, and includes topics related indirectly and directly to sustainability, such as: disaster risk management, climate change adaptation, financial resilience toward hazards, disaster risk modelling, disaster risk evaluation, etc. This program of study is the only program in the country that includes a course on Climate Change Adaptation. However, despite its importance, this program of study involves only 30 students each year.

6. Data and Method

Our research focuses on the assessment of the need for disaster risk education in Albania. It is supported by thorough desk research on the issue, including the review of several programs of studies in the field of risk management, disaster risk management, climate science, etc. We further analyzed the history of the country in relation to disasters and the impact of these events on the economic and social framework of the country. This process helped us identify the problems of the way response after a disaster is organized and the reasons for the lack of capacities in this regard.

Additionally, as part of market research activities, a number of in-depth interviews were carried out between March and April 2017 with officials from government agencies in charge of civil protection, specialists in the sector, and individuals that have an expertise in disaster risk management (DRM). This process gave important insights into the gaps in DRM education and training that currently exist, as well as the difficulties Albania faces in its institutional and legislative framework for civil emergencies.

The interviews results were indispensable in supporting our conclusions of the need for further developing education in the field of disaster risk in Albania and particularly emphasized the needs of the market for professionals educated in the field.

7. Findings: Education requirements in the field of disaster risk management in Albania

The responses of the interviews were categorized into two groups; the first group consisted of researchers and academics in DRM. They strongly believe in the establishment of a master's program in the field. This is in direct contrast to, representatives of government institutions, who instead emphasize the improvement of the legislative and institutional system over education-based initiatives. They pointed out the need to create a solid institutional and legislative foundation before offering such academic programs, so that the graduates could have enough employment opportunities in the future.

More specifically, the main ideas consulted are summarized below:

Interview with General Directorate of Civil Emergencies in Albania – The disussions were focused mainly on the legal and institutional framework of disaster risk management.Participants in this interview were the most skeptical, because they focused on the necessity of combining laws and institutions in the sector as a prerequisite for creating a labour market for future professionals in the industry.

- Interview with Ministry of Agriculture and Water Administration, General Inspectorate of Water, and Municipality of Tirana - The outcome of these interviews was very good, and the idea of a new master programs in the field of disaster risk managment was embraced by the participants. The discussions were oriented towards the lack of expertise in the current labor market in relation to disaster risk field and the need

to consolidate education in this regard.

- Interview with UNDP Climate change Program in Albania, Institute of Water research in Albania, IBECA project in Albania. In these cases, these organisations presented very positive attitute towards the development of new programs of studies in the field of disaster risk. They underlined that Albania has been dependent on foreign specialists in this area for far too long and that it is crucial to develop local specialists who must gain in-depth knowledge via their education as well as through work training.
- Interview with Albanian Financial Supervisory Authority representatives Since the Authority oversees the Albanian insurance industry, its thoughts and recommendations were crucial in determining the demands of the market and the DRR economy.
- They regarded as very important the initiation of study programs in the field of risk management in general. The development a master program in Risk Management at the University of Tirana was very much elaborated during this interview.

Importantly, all interviewees emphasized that although there is a clear need for a more diversified workforce (in terms of education), it is questionable if the job market can accept graduates of "modern" and "innovative" programs of study.

The recent earthquake experience by Albania in 2019 testified the necessity for a larger number of experts in the field of Disaster Risk Management. More attention should be address to awareness raising of future generation to acquire knowledge in the field of Disaster Risk Management as a mean that will provide the base for building a resilient society. Reality has proven that economic development is affected by disasters. Under such circumstances, is significant to build capacities with interdisciplinary and interfaculty knowledge, able to create sustainable financial plans for disaster preparedness and preventive measures, according to national and regional economy recourses.

8. Conclusions and Recommendations

In Albania, disaster risk management should be treated as primary issues, especially in light of the severe earthquake of 2019. This earthquake proved the lack of security culture in society in general and in particular the need for professionals, experts, competent to operate in the stages of prevention, response and recovery of disaster events and the resolution of interdisciplinary problems in the field of Disaster Risk Management. More attention should be paid to raising the awareness of the next generation to gain knowledge in the field of Disaster Risk Management as a tool that will provide the basis for building a resilient society.

In addition to developments and capacity building in the field of higher education, researchers in the field have assessed that the risks of disasters that may occur in the future must necessarily be included in the national economic plans and rescue plans of the country.

Reality has shown that disasters have an impact on economic development. According to national and regional economic sources, in such situations, it is critical to develop faculties' interdisciplinary expertise and collaboration in order to create viable financial strategies for preparation and catastrophe prevention. Policies that support the growth of formal education can help lessen the effects of disasters and increase resilience.

To address these challenges, and to guide the way toward sustainability in higher education system, international cooperation and assistance is essential. International collaboration and support are necessary to solve these issues and drive the higher education system towards sustainability. The EU's sustainability-related experience may help the Balkan region's higher education system meet its sustainability targets. Joint projects that bring together EU and Balkan higher education institutions and promote networking and cooperation both within and outside the area meet the needs of coordinated, integrated, and shared action for sustainability as well as each nation's integration ambitions.

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