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# Displacement and climate change: improving planning policy and increasing community resilience

Displacement  
and climate  
change

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## Abstract

**Purpose** – The purpose of this paper is to present the major gaps in the field of planning policy and its implementation regarding climate change and disaster risk reduction (DRR), with special reference to the displacement of people, together with the knowledge needed to increase community resilience. The researched relations are illustrated by the example of Serbia. The Republic of Serbia has been faced with increasingly visible impacts of climate change in recent years – floods, heat waves, droughts and others. During the floods that hit Serbia in 2014, over 30,000 people experienced displacement. These events have triggered numerous efforts, both to repair the incurred damage and to analyze opportunities for prevention.

**Design/methodology/approach** – This research has used document analysis to investigate contemporary approaches defined by policies, programs and research reports regarding climate change and DRR, with special reference to the displacement of people. An analytical framework has been used to evaluate to what extent the planning policy framework in Serbia addresses these issues in the context of achieving resilient development. Secondary analysis of research data has been used to recognize the gaps and identify needs for increasing community resilience.

**Findings** – Based on the growing trends in projections of climate change as a result of induced natural disasters for the region in the future and international trends in coping with these issues, this paper argues that it is necessary to improve the implementation of the planning policy framework and the capacities of professionals and citizens, to reduce future displacement and increase community resilience to climate change. The key weaknesses found within DRR and the emergency management system in Serbia were the lack of an appropriate information base of the cadastre of risk zones and the lack of information and coordination of actors on the local to the national level. During the “pre-disaster” period, findings stress a weak partnership and capacity development practice at the local level, as well as between local responsible bodies and regional/national entities in charge of emergency management and DRR. The paper singles out the main preconditions for achieving effective resilient planning, so that such a plan can move “people away from marginal areas” and provide living conditions that are resilient.

**Originality/value** – This paper provides a comprehensive insight analysis of the relations between climate change and DRR, with special reference to the planning policy. Using the lessons learned from the

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recent climate-induced disaster with its implications on displacement, the paper identifies needs for strengthening capacities to establish more resilient communities in Serbia. The gaps and needs identified, as well as the recommendations provided, may be of value for neighboring countries as well, who face similar challenges in climate change adaptation and who need to increase disaster risk resilience.

**Keywords** Displacement, Climate change, Floods, Community resilience, Planning policy

**Paper type** Case study

## 1. Introduction

The issue of climate change today is an integral part of the contemporary global policy of sustainable development. Within the 17 Sustainable Development Goals (SDGs), Goal 13 directly promotes climate change issues, i.e. to “take urgent action to combat climate change and its impacts”, while two others (Goals 9 and 11) indirectly address the issue by supporting resilient development (United Nations, 2015). To achieve these set goals, in December 2015, as a result of the 21st Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC), the Paris Agreement was adopted, after which all signatories undertook the obligation to limit the increase in global temperatures up to 1.5 degrees (194 countries signed, including the Republic of Serbia, and 141 ratified the agreement) ([http://unfccc.int/paris\\_agreement/items/9485.php](http://unfccc.int/paris_agreement/items/9485.php)).

The aim of establishing resilient human settlements is the protection of the population and the prevention of displacement and migration as a result of the impacts of climate change. The Intergovernmental Panel on Climate Change (IPCC) in its report from 1990 indicates that one of the main impacts of climate change may be on human migration (WMO, United Nations Environment Programme (UNEP), IPCC, 1990). The focus of this latest report is on the adaptive or vulnerability capacities of populations to climate change rather than on migration. The report indicates that climate change may result in the “displacement of people” and that “populations that lack the resources for planned migration experience higher exposure to extreme weather events, particularly in developing countries with low income” (IPCC, 2014a, p. 16). However, as pointed out, “there are no empirical data on the impact of climate change on the population” (Brown, 2008, p. 36), which stresses the fact that migration is the result of inadequate planning and, when migration continues following a natural disaster, it is “a reflection of the state’s deficient response, rather than the natural hazard impact” (Raleigh and Jordan, 2010, p. 112). Thus far, the Internal Displacement Monitoring Center (IDMC) reports that permanent environmental migration has already occurred – in 2014, more than 19 million people from 100 countries were displaced (IDMC, 2016). Furthermore, predictions also indicate that the number of people affected by floods will be between 10 and 25 million by the year 2050 and between 40 and 140 million by 2100, depending on the future scenarios consulted (Nicholls and Lowe, 2004).

Even in fields of growing theoretical, policy and practical interest, such as disaster resilience and environmental displacement and migration, issues related to the impacts of climate change on humans are often analyzed from a one-sided perspective – as a consequence of predominantly environmental factors or as an effect of destructive human behavior toward the environment (emission of gases, deforestation, etc.). In addition to the largely recognized difficulty of viewing these phenomena within a holistic framework, there is also the rightly emphasized need to pay particular attention to the diversity of contexts in societies and communities around the globe. Overall, whether it comes to displacement and migration as a result of climate change or environmental impact, contemporary strategies are considering the distress migration patterns or migration as a result of natural disasters.

These migration models carry two basic assumptions: the first is that the migration is internal rather than international and that such migration is temporary (Raleigh *et al.*, 2008). Further, there is no legislative response “either literally or figuratively” (Brown, 2008, p. 36) except that Sweden is including within its immigration policy, environmental migrants as “persons in need of protection” (Brown, 2008). What should be emphasized is that displacement is mostly forced, while migration is mainly voluntary (Yonetani, 2017), and thus, within the Sendai Framework for Disaster Risk Reduction (SFDRR), displacement is also indicated as “major human consequences and drives of disaster risk” (Yonetani, 2017). Therefore, building capacities for disaster risk reduction (DRR) aims at reducing the need for and potential consequences of displacement. While DRR establishes a set of well-planned, long-term strategic measures and activities, displacement comes as an *ad hoc*, reactive measure, taken when an emergency has already occurred.

A modern approach to DRR requires human responsibility and building awareness of human influence and its contributions both to vulnerability and to resilience to disasters. “A natural hazard” (such as an approaching storm) only becomes a “natural disaster” if a community is particularly *vulnerable* to its impact. A community’s vulnerability, then, is a function of its *exposure* to climatic conditions (such as a coastal location) and the community’s *adaptive capacity* (the capacity of a particular community to weather the worst of the storm and recover after it) (Brown, 2008, p. 18). A paradigm shift is required in the approach to the individual and the community role in coping with disasters – from the concept of “passive receivers of help” and “victims”, toward active, knowledgeable, adaptive citizens.

The growing discussion of the concept of the Anthropocene, which places humans as a “global geological force in their own right” (Steffen *et al.*, 2011), sheds light on human power, rather than on human vulnerability. Accordingly, it is acknowledged that human activity brings about huge geological (and consequently climate) change, using – or abusing – knowledge and technology. Despite different paradigms behind the pictures of vulnerable and powerful humankind, both call for reflection on our role and responsibility toward the physical and social environment of the present and the future, requiring “wise technology and knowledge” ([www.ecomodernism.org](http://www.ecomodernism.org)).

Living in a “risk society” (Beck, 2001), we face a reality in which the distribution of risks, as well as capacities to cope, is not equal in the modern world (Orlovic-Lovren and Pejatovic, 2015). In terms of environmental/climate displacement and migrations, it is necessary to look at the wider context of sociodemographic processes, such as migrations from rural to urban areas, accelerating in particular in low- and middle-income countries, as well as the “brain-drain” – both characteristic mostly of developing countries. (Brown, 2008). One of the recent global trends is the increasing number of migrants being forced to leave their homes under the risks of armed conflicts. Unlike those forced by natural disasters, these migrants tend to move externally, to faraway destinations – usually to more developed countries. These “altered patterns of forced migrations” (Miladinovic, 2016) bring new requirements in terms of adaptation to the new environment and culture, as well as relationships with the new community and the development of social networks that can support the integration process.

Adaptation to climate risks is highly influenced by the ability of the system – collective or individual – to learn. Learning to understand the nature, causes and consequences of risks, as well as the – individual or collective – needs and opportunities to prevent or reduce its influence, are among the key segments of building resilience, a part of “the ability of individuals, communities, organizations or countries exposed to disasters and crises and underlying vulnerabilities to anticipate, reduce the impact of, cope with, and recover from the effects of shocks and stresses without compromising their long term prospects”

(IFRC, 2015). The new paradigm that promotes the Sendai Framework for Disaster Risk Reduction 2015-2030 (UNISDR, 2015) presents DRR and resilience as the key elements for achieving sustainable human development with focuses toward creating “safer living environments and for improving building codes [...]” with continuous strengthening of local communities (IFRC, 2016, p. 22). The message from all relevant global strategies – related to climate change, disaster risk reduction or sustainable development – is strong and clear in advocating for improving capacities for adapting to and coping with climate change, risks and disasters.

Taking into account the global policies and current trends within climate change and DRR with respect to the displacement of people, the purpose of this paper is to present the status of the Republic of Serbia and its capacities regarding resilient development, with special reference to the planning policy and capacities of professionals and citizens.

## 2. Methodology

Starting from the aim of this paper – to present the major gaps in the field of planning policy and its implementation regarding climate change and DRR in Serbia, with special reference to the displacement of people – a document analysis has been performed. Global policy documents have been analyzed to identify contemporary approaches defined by strategies, programs and research reports in the context of achieving resilient sustainable development. The analytical framework is then used to evaluate to what extent the planning policy framework in Serbia addresses issues of climate change resilience and promotes measures toward strengthening community resilience to climate change.

In addition, a secondary analysis of research data has been used to recognize the gaps and identify needs for increasing community resilience. The researched relations are illustrated through the example of Serbia.

## 3. Serbia: case study

### 3.1 The context

The changes in climate conditions within the past decades in Serbia are evident. There was an increase in episodes of stronger rainfalls, and even though the changes in overall quantities were small, there was a warming trend in terms of the increase of extreme high temperatures and extended periods of warm weather and droughts (which especially endangered North Vojvodina) and increased periods of very low temperatures (Official Gazette of the Republic of Serbia, 2011; United Nations Development Programme (UNDP), 2016). In the context of expected climate changes of climatic conditions, taking into account different scenarios, the report stresses the possibility of an increase in temperature, with more pronounced warming during summer and autumn that would exceed 4°C by the end of the century. In relation to precipitation, a positive trend is expected until the year 2040, but which by the end of the century will reduce to negative values, with the largest deficit in summer (Republika Srbija (RE), 2017). All scenarios of climate change indicate that Serbia and the Western Balkans face a high probability of rising temperatures in the future, with frequent and prolonged drought and wildfires expected. These changes will be accompanied by prolonged and intense rainfall and melting snow, which will result in the emergence of a large pour point, landslides and flood sediment (IPCC, 2014b; UNDP, 2016).

Vulnerable areas in Serbia cover 57.33 per cent or 50656.87 km<sup>2</sup>, of which over 20 per cent are areas vulnerable to drought, followed by seismic hazards (18.55 per cent VIII-IX MCS), potential floodable areas (17.20 per cent), landslide hazard areas (15.08 per cent), forest fires (3.57 per cent), erosion (3.76 per cent) and seismic hazards of IX-X MCS (1.26 per cent) (Dragicevic *et al.*, 2011). Compared to other countries within the region, the population of

Serbia is most at risk of flooding – the potential flood areas in the Republic of Serbia cover about 1.6 million hectares, with about 500 larger settlements and 515 industrial facilities, 680 km of railways and 4,000 km of roads within 30% of the country is agricultural land (UNDP, 2016; Official Gazette of the Republic of Serbia, 2010). At the end of the twentieth century, the frequency and intensity of floods in Serbia increased. From 1980 to 1990, 2,000 natural disasters were recorded, while in the last decade of the twentieth century, the figure rose to 2,800 (Official Gazette of the Republic of Serbia, 2011). In 2014 and 2015, 2.8 million people were affected by floods that hit the region, with damages reaching \$4.63bn (UNDP, 2016). In May 2014 alone, floods hit 38 towns and municipalities in central and western Serbia – around 20 per cent of the population of Serbia and over 30,000 people were displaced. The total damage from the floods was mainly concentrated on manufacturing activities (€1,070m/70 per cent of total damage), then on social services (€242m/16 per cent) and infrastructure (€192m/12 per cent) (UN, EC, WBG, 2014). This disaster caused a recession in the economy of Serbia, which in 2014 recorded a decline of 1.8 per cent rather than the expected growth of 0.5 per cent (Bijelić and Lazarević, 2015). In the same year, four months later, floods hit the Bor region in eastern Serbia, causing damage in the municipalities of Negotin, Kladovo, Majdanpek, Tekija, Grabovica, Brza Palanka and Boljetin, so that total damage from flooding in 2014 was estimated at 4.8 per cent of the GDP of Serbia (UN, EC, WBG, 2014).

Because climate change and displacement are both global and context-specific phenomena, defined by “[...] various interacting factors such as social, environmental, political, climate, cultural, developmental and physical aspects” (Upadhyay *et al.*, 2015), it is necessary to put our analysis in the context of the characteristics and recent developments in the Serbian society.

The political, social and economic turbulences that have taken place in Serbia since the 1990s, including the influences of armed conflicts on the territory of former Yugoslavia and the bombing of the Serbian territory in 1999, certainly contribute significant impacts to the vulnerability of its citizens. Keeping in mind the consequences of international economic sanctions by the international community and hyperinflation, as well as the duration of the transition (from the socialist political and economic regime), this period is rightly marked as “a prolonged period of crisis” in Serbia (Orlovic-Lovren and Pejatovic, 2015).

In addition to this general trend, discrepancies are also visible within the country – from the data on poverty and demographic characteristics of rural and urban areas, and in particular between the capital (Belgrade) and the rest of the country. The overall increase in poverty in the Republic of Serbia was generated as a result of increased poverty in rural areas. The poor are the least represented in northern parts of the country, including Belgrade. A huge disproportion may be found in terms of the demographic volume and characteristics between Belgrade and other cities and regions in Serbia, affecting capacities for sustainable development and the resilience of its inhabitants (Official Gazette of the Republic of Serbia, 2012) (Table I).

Type of settlement	2006	2007	2008	2009	2010
Serbia	8.8	8.3	6.1	6.9	9.2
Urban areas	5.3	6.0	5.0	4.9	5.7
Other areas	13.3	11.2	7.5	9.6	13.6

Source: Statistical office of Serbia: [www.stat.gov.rs](http://www.stat.gov.rs)

**Table I.**  
Percentage of  
poverty based on  
type of settlements –  
absolute poverty line

As is now largely evident in different regions of the world, along with poverty and overpopulation, there is an increase in exposure to disaster risks, which then further affects the vulnerability of people. Living in areas close to river banks and in poorly constructed houses, the poor are most often affected by floods and earthquakes. Not only improvements in infrastructure but also in environmental and planning legislation and procedures are strongly needed, especially in those cases where the situation is further complicated by the lack of the capacity of these people to participate and to actively contribute to sustainable solutions. In this context, the goal of contemporary planning is not only to “produce a perfect document but to develop a process” (ADPC, 2010, p. 3) because “what really counts is how the plan is prepared” (ADPC, 2010).

One of the demographic trends typical of Serbia since the last decade of the twentieth century is the waves of refugees and internally displaced people, caused mainly by the conflicts in the former Yugoslavia. Data show that at the end of the past decade, there were 86,336 refugees and 205,835 displaced people in Serbia (Krstic *et al.*, 2010). In addition to their unfavorable social status, they often belong to groups of poor and socially excluded people who live in inadequate settlements or parts of settlements. The situation is even worse in the case of the Roma and persons with disabilities because they are particularly affected by poverty, as a result of the accumulation of various risks. Of all the social and economic risks, the dominant one for these groups is unemployment.

In terms of aging and depopulation, rural and mountainous areas are particularly vulnerable in Serbia. Entire regions within Serbia have been affected by general economic trends, as well as by additional demographic trends, first of all by the migration of the younger and more educated toward urban centers. These regions outline the unfortunate “exclusion curves”, such as the area of East Serbia (Krstic *et al.*, 2010). The vulnerability of the population in less developed areas and those belonging to poverty circles and marginalized groups contributes to their overall vulnerability to disaster risks in the country – on individual, family and community levels.

When examining general migration trends, it is important to mention those related to the recent waves of migrants from conflict zones or those searching for better economic conditions. According to data from the beginning of 2017, there were around 7,700 asylum-seekers and migrants in Serbia, mainly from Afghanistan, Iraq and Syria, who were sheltered (around 85 per cent of them) in 17 facilities provided by the government (UNHCR Serbia update, 2017). Most of them are children (47 per cent) and for some of them (age 7-15) in some of the reception centers, there are organized education programs (UNHCR Serbia update, 2017). Though the majority of these migrants consider Serbia only as a transit route and do not intend to stay here for a long time, this problem may be seen as indirectly related – but still relevant – for the mapping of the characteristics of vulnerability to disaster risks and the need to increase the resilience of the population in Serbia.

### 3.2 Policy framework

Taking into consideration that the main orientation of the Republic of Serbia is harmonization within the European Union (EU) policy, Serbia in the past decade has been undergoing changes to improve the legal and planning framework in all segments. Since March 2012, after receiving the status of candidate for EU membership, six chapters of the *acquis* have been opened. Chapter 27, which covers the field of environmental protection, is being considered under the project “Further implementation of the National Strategy for approximation in the field of environmental protection” that should be completed by October 2018. Regarding the context of climate change, special activities are directed

primarily in the domain of the legal framework and the harmonization of development policies. It should be noted that Serbia has signed all relevant frameworks regarding the climate change issue (Kyoto Protocol, UNFCCC, Hyogo Framework for Action, Sendai Framework for Disaster Risk Reduction 2015-2030). An overview of national frameworks of relevance to climate change, indicating the main scope regarding the selected strategies with special reference to DRR, is provided in [Table II](#).

Regarding DRR, the following programs were adopted: *National Program to Manage the Risk of Natural Disasters* (2014) and the *Action Plan for the Implementation of the National Program for Risk Management of Natural Disasters* (2016). The adoption of the following law is in progress: *Law on Reducing the Risks of Natural and Other Disasters and Emergency Management*. These documents provide solid foundations for integrating DRR principles in the policies and practices of development at all levels – from local to national. Local governments are seen as the main contributors to DRR and are expected to actively participate in the development of plans for DRR based on previously completed risk assessments.

These strategic frameworks suggest that the Republic of Serbia's access to the issue of climate change is comprehensive, both in the fields of mitigation and adaptation. Signing the global frameworks that address the climate change issue and establishing a strategic DRR framework are the first steps in the implementation of commitments. In accordance with the strategic documents described above, the legal basis provides support regarding the issue of climate change. The bases for the inclusion of climate change issues in spatial and urban planning are given in the *Law on the Spatial Plan of the Republic of Serbia 2010-2014-2021* (Official Gazette of the RS, no. 88/10), the *Law on Strategic Environmental Assessment* (Official Gazette of the RS, no. 88/2010) and the *Law on Environmental Impact Assessment* (Official Gazette of the RS, no. 135/2004.36/2009), providing the scope for the inclusion of the issue within planning and assessment. Indirectly, the climate change issue is represented in terms of promoting measures for adaptation and mitigation, such as: development of areas within the program NATURA 2000, the development of ecological networks after the Law on Nature Protection (Official gazette. RS no. 36/2009, 88/2010), through the rational use of non-renewable natural resources and renewable energy sources and by promoting energy efficiency under the Law on Planning and Construction (Official gazette of RS No. 79/09, 81/09-correction, 64/10-US, 24/11, 121/12, 42/13-US, 50/13-US, 98/13-US, 132/14 and 145/14). In addition, the Law on Forests (Official Gazette of the RS, no. 30/10 i 93/12) acknowledges the favorable impact of forests on the climate and protection measures in the case of disruption of the biological balance and also the serious damage within forest ecosystems caused by natural disasters, while within the Law on Environmental Protection (Official Gazette of the RS, no. 135/2004), the climate issues have not been considered directly. Together with a strategic framework, these legal bases provide the main preconditions for the inclusion of climate change issues within planning. However, it is stressed that the “[. . .] climate change problem area has not been systematically treated in the SEA, i.e. plans” and therefore “the current legal framework [. . .] is not fully supportive of this theme” (Crncevic *et al.*, 2011, p. 19). A main limitation is that the current legal and planning bases are “missing an adequate response to the potential risks of climate change, especially in the fields of impact research and implementation of the planning instrument” (Crncevic *et al.*, 2016, p. 168). However, as a main potential, it is noted that “plans give full support to the measures such as increasing protected areas, developing ecological networks, ecosystem protection, monitoring of invasive species, and planning measures for their



*National Strategy for Sustainable Development and Action Plan for the period 2009-2017* (Official Gazette of the RS, 57/2008)

Supports sectoral actions for reducing GHG emissions and development of a plan of adaptation within the economic sector; contains recommendations for the development and implementation of the program of risk assessment that would include risk maps, development of a database of landslides and evaluation of risk mitigation measures; within a separate chapter "Natural disasters – floods, landslides, fires, earthquakes" promotes flood protection and institutionalization of civil protection

*National Program for Environmental Protection for the period 2010-2019.* (Official Gazette of the RS, 12/2010)

Establishes a framework for action on climate change/ defines the actions needed to mitigate the effects of climate change

*National Strategy for Inclusion of the Republic of Serbia in the Clean Development Mechanism (CDM)* (Official Gazette of the RS, 8/2010)  
*Strategy for Forest Development of RS* (Official Gazette of the RS, 59/2006)

Identifies priority modes and options for inclusion in the Clean Development Mechanism for the sectors of agriculture, forestry and waste management  
Defines priorities, including stopping the further reduction of forested areas, and emphasizes the role that the forestry sector has in the sustainable development of the Republic of Serbia, as well as the importance of forests for flood prevention

*Strategy of Biodiversity for the period 2011-2018* (RS, 2011)

Defines strategic areas, objectives and activities for biodiversity protection, as well as an Action plan. Supports the increase of capacity of relevant institutions to monitor and forecast the impact of climate change on biodiversity, capacity building in all sectors and in public and the development of a national strategy and mechanisms for better understanding of planning, regarding the impacts of climate change

*National Strategy for Disaster Risk Reduction and Protection and Rescue in Emergency Situations* (Official Gazette of the RS, 86/2011)

The national strategy ensures fulfillment of the recommendations of the European Union for the development of a national system of protection: the establishment of institutional, organizational and personal conditions for the implementation of protection in emergency situations

*National Strategy for Sustainable Use of Natural Resources and Properties* (Official Gazette of the RS, 33/2012)

Establishes priorities among the obligations for developing a system for monitoring the effects of climate change on biodiversity and ecosystems: increasing the territory under protection, the establishment of a national ecological network and the preparations for adopting the protection program Natura 2000; promoting adaptive management and the introduction of principles of adaptive planning in the management plans of protected areas, biodiversity protection and sustainable use of biological resources  
Defines the conditions for the promotion of energy efficiency within activities related to energy and energy consumption; supports the use of renewable energy and promotes environmental protection

*Energy Development Strategy until 2025* (Official Gazette of the RS, 101/2015)

Respecting the issue of climate change, establishes the basis for a new policy in the field of agriculture, in line with the European framework and support for agriculture

## Table II.

Review of strategic framework of the importance of climate change issues

*Strategy for Agriculture and Rural Development of the Republic of Serbia for the period 2014-2024* (Official Gazette of the RS, 85/2014)

suppression, promotion of biodiversity values and promotion of the development of the monitoring system” (Crncevic, 2013, p. 80).

The national policy for protection from natural disasters is defined in the *Law on Emergency Situations* (Official Gazette of the RS, no. 111/09, 92/11, 93/12) and includes the requirement to establish protection conditions for the prevention of natural disasters (floods, droughts, torrents, storms, heavy rain, atmospheric discharges, hail or landslides, avalanches and snow layers, extreme air temperatures, ice accumulation on the watercourse) and their inclusion in planning documents. The Law introduces the requirements for risk assessment, which is prescribed in greater detail within a further set of laws and regulations[1]. Together with the *National Strategy for Protection and Rescue in Emergency Situations* (Official Gazette of the RS, no. 86/2011), this represents the main framework for implementing the Hyogo framework. The *Law on Emergency Situations* provides a solid base for an integrated approach regarding emergency management, but does not deal much with community resilience. One of the main weaknesses is that it puts greater emphasis on response than on prevention. This has been improved by the new *Law on Reducing the Risks from Natural and Other Disaster and Emergency Management* (in progress), together with the inclusion of the Sendai principles. The *Law on Planning and Construction* (Official Gazette of the RS, no. 79/09, 81/09-correction, 64/10, 24/11-US, 121/12, 42/13-US, 50/13-US, 98/13-US, 132/14 and 145/14) after *Regulations of the Content, Method and Procedures of Preparation of the Planning Documents* (Official Gazette of the RS, no. 31/10, 69/10 and 16/11) establishes the obligation within planning documents to display zones of vulnerability and activities on environmental protection, natural and cultural heritage and to organize the space of interest for national defense and protection against natural disasters within planning documents. The Water Act (Official Gazette of the RS, no. 30/2010, 93/2012, 101/2016), which defines the obligation to produce a general and an operational plan for flood protection, has been revised regarding the obligation for the production of erosion zones, for which the relevant ministry is now responsible, and not local authorities, as it was previously defined. It should also be emphasized that the legislative framework includes the following, in the planning of the DRR:

- Law on Meteorological and Hydrological Activities (Official Gazette of the RS, no. 88/2010) – regulates the hydrological and meteorological activities, including activities related to hydrological disasters and making weather forecasts for early warning and provides information for climate and weather risk assessment;
- Law on Fire Protection (Official Gazette of the RS, no. 111/2009, 20/2015) establishes the role of local governments in the prevention and formulation of plans for fire protection and establishes the obligations of all participants in fire protection and prevention of risks;
- Law on Local Government Act (Official Gazette of the RS, no. 129/2007, 83/2014) directly promotes reducing the risk from disaster in the sense that municipalities “[. . .] shall, through its units, in accordance with the Constitution and relevant laws, to organize protection from disasters and fire protection and create conditions for their prevention and mitigation”; further, the law (Article 20) also establishes the responsibility of local government to identify areas threatened by erosion; and
- Law on Insurance (Official Gazette of the RS, no. 139/2014) defines property insurance against fire and natural disasters.

In regard to public participation within the planning process, it should be stressed that the participation is limited to public hearings (Law on Planning and Construction,

articles 45a, 50, 51) and that the Law does “not oblige the developer of the Plan to cooperate with the local community and civil society” (Petovar and Jokic, 2011, p. 10). On the other hand, relevant authorities (organizations and public companies authorized to determine special conditions for the protection and regulation and construction of buildings, for protection of water courses, hydrometeorological and seismological institutions, etc.) are present throughout the entire process. As illustrated in the next chapter, the lack of participation of citizens is not only related to the lack of existing legal mechanisms but also to the unavailability of information, as well as to the lack of programs which would systematically develop their capacities to participate.

A direct response to the floods in May 2014 was the adoption of the *Law on Elimination of Consequences of Floods in the Republic of Serbia* (Official Gazette of RS, no. 75/14, 64/15), which aims to regulate the elimination of the consequences of floods, landslides and activate the areas affected by the floods. In 2016, to secure the implementation of risk reduction, the Office for the Management of Public Investments was established. The Office is tasked to coordinate actions to reduce risks and is in accordance with the Sendai Framework. Further, in 2016, in cooperation with and with financial assistance from the EU, the National Strategy to Combat Climate Change with an action plan was prepared throughout the period 2020-2050, as well as the assessment of emission reductions by 2070. In addition, work is being done toward creating an innovation planning base for the areas hit by floods. Currently, the procedure includes the “Spatial plan of exploitation of the Kolubara lignite basin, DRAFT” and risk assessment for Obrenovac, the *Assessment of Vulnerability to Natural Disasters and Other Accidents in the Obrenovac Municipality* (RS, City of Belgrade, Municipality Obrenovac, 2015), as well as a project directed toward defining needs and gaps within the current framework.

### *3.3 Gaps and needs to increase resilience to disasters in Serbia*

The dramatic effects of floods and landslides that hit Serbia and the region in 2014 contributed to the increased attention of international donors, regional and national decision-makers, as well as of the research community. A number of analyses have been supported by international organizations. Within the Environment and Security (ENVSEC) Initiative, which is a partnership of the Organization for Security and Co-operation in Europe (OSCE), UNDP, UNEP, United Nations Economic Commission for Europe (UNECE) and Regional Environmental Center for Central and Eastern Europe (REC), and with The North Atlantic Treaty Organization (NATO) as an associate partner, there were a number of studies and projects aimed at contributing to reduced environment and security risks in countries in Central Asia, Eastern Europe, Southeast Europe and the South Caucasus.

Under the auspices of this initiative, during the summer of 2014, an assessment of needs for public education for DRR was performed at the local level in Serbia. Besides a survey with experts from competent institutions and organizations, the assessment comprised interviews with representatives of the local government, headquarters for emergency management and nongovernmental organizations from four municipalities that had experienced floods and landslides in previous months. Qualitative analysis of the data shows that the key obstacles to effective emergency response as perceived by these communities were the lack of communication and a timely approach and access for all citizens, a lack of efficient coordination between local and national units in charge of emergency management, the lack of technical equipment and a lack of trained professionals and volunteers for rescue and response (Orlovic-Lovren, 2014).

Research findings from a study performed with the support of OSCE, on gender analysis of the impact of the 2014 floods in Serbia, offer quite a similar picture of existing

weaknesses. According to data collected through focus group discussions and interviews, community members (from four affected areas in Serbia) were not prepared for the emergency owing to the lack of information on the “course of action that should be taken in the event of emergency [...] they had no access to information about what was going on [...] and what they could expect”; only 9 out of 78 respondents report that they were informed about the threat and evacuation, and all of them obtained that information from informal networks (Bacanovic, 2014).

According to the findings of other studies, the lack of quality information on disaster risks and its timely and wide dissemination is obviously common to the majority of municipalities in Serbia. Weaknesses in sharing information on the local risk profile are related to the fact that there is a lack of local risk assessment, and again, to the fact that the national risk assessment has still not been completed for Serbia. As pointed out, “the current level of integration of climate change into sectoral and overall development strategy, the level of knowledge, institutional and individual capacities, available technology and financial resources at the national level and involvement of local governments, despite numerous activities and efforts are not sufficient for an effective and rapid response to the problem of climate change” [Republika Srbija (RE), 2017].

In regards to the planning system of DRR, the limitations are owing to the requirements of the Law on Water, under which flood zones are to be determined by the state through its public water companies, but that work is still in its beginning stages, and the question is when it will be completed [Republika Srbija (RE), 2017]. The requirement to develop risk maps, following the Law on Emergency Situations, which includes the risk of flooding, is impossible to fulfill without a predetermined flood zone [Republika Srbija (RE), 2017]. Weaknesses related to the planning policy are owing to the lack of conditions for the consistent application of regulations, as well as the lack of a comprehensive database on the spatial distribution of certain natural disasters and accidents, and the determination of potentially critical zones (landslide, torrential streams, pollutants) – cadastre of risk zones, inadequate organization and implementation of preventive measures, the unavailability of specialized cadastre and the absence of a comprehensive risk map (RS, 2010, Stefanovic and Gavrilovic, 2014).

Evidence from the recent analyses on disaster risk resilience in municipalities in Serbia clearly illustrates the relation between the lack of plans and other prevention measures and the vulnerability of communities: while 11 out of 13 municipalities that are included in the research have completed plans for protection from floods, two other municipalities where those plans are missing belong to the group with a high vulnerability to floods (Andjelkovic and Kovac, 2016). The same study indicates once again that coordination between the local headquarters with the national bodies in charge of emergency management and DRR is not satisfactory; while they rely strongly on support from the national level in case of emergencies, local resources, and in particular citizens who want to help and civil protection trustees who should be actively engaged, are not adequately trained for that in most communities (Andjelkovic and Kovac, 2016).

Weaknesses related to information and the capacities of DRR actors and citizens in prevention are naturally reflected in the emergency response. Placing our focus on the temporary displacement during the last huge disaster induced by climate factors in Serbia, we may find that the process of evacuation of citizens from their homes in flooded areas, according to available evidence, was also followed by the lack of accurate information, which increased the uncertainty and anxiety of temporarily displaced people. Their participation in the information and decision-making flow was also characterized by traditional gender patterns: both during the evacuation as well as during their life in

collective centers, men were typically more active and more informed than women, with the tendency to proactively seek information and the opportunity to go home and start working on cleaning and reconstruction (Bacanovic, 2014).

Uneven dissemination was characteristic not only for the process of information but also for the psychological support to displaced people: as noted, support was mainly provided for residents of collective centers in the capital city and not in other flooded areas (Bacanovic, 2014). In addition, the information and other forms of support provided in centers – mostly by volunteers – were not available equally to all, owing to illiteracy and language barriers, present first of all in ethnic minority groups, such as the Roma (Bacanovic, 2014).

As shown by this and other studies performed after the floods in 2014, volunteers and other participants from the civic sector play a significant role in emergency response; besides the activists from the Red Cross, the Mountain Rescue organization and civil protection trustees, who usually cooperate with the local headquarters for emergency management, other volunteers were perceived by respondents as valuable support, but groups which help would have been much more effective if they had been trained (Orlovic-Lovren, 2014; Andjelkovic and Kovac, 2016). While their activity is well recognized and intensive in times of response to disaster, they are much less engaged and involved in the prevention phases. In the response phase, there is also, as evidenced by studies, the strong influence of social capital to the coping and recovery capacities of communities; strong ties and trust in family, neighbors and friends seem to be one of the specific characteristics of importance for disaster resilience in Serbia (Andjelkovic and Kovac, 2016).

#### 4. Conclusions

As shown by the data and tendencies evidenced by various studies, some of the key weaknesses of the DRR and emergency management system in Serbia are the lack of information and coordination of actors from the local to the national level. As protection against natural disasters must be based on reliable data, the main weakness within planning is found to be that it is missing an appropriate information base of the cadastre of risk zones. While during emergency response there is an important role of non-state (civic or private sector) actors, in the “pre-disaster” period, there is a weak partnership and capacity development practice at the local level, as well as between the locally responsible bodies and the regional/national entities in charge of emergency management and DRR.

Lack of access to important information and to engagement in resilience development activities is particularly visible among socially vulnerable groups, such as the elderly, persons with disabilities and illiterate or semi-literate citizens. Traditional gender patterns contribute to the unequal status of women, in particular of single mothers and those with lower education and who are unemployed, in both prevention and response to disasters.

As revealed by several studies, the key factors contributing to the vulnerability of the population in Serbia to climate-induced disasters are a lack of a systematic approach to information and of participation of citizens in programs aimed at developing the capacities of all actors, and in particular in the training of volunteers and civic organizations.

Taking into account the gaps identified by the recent studies in Serbia, reviewed above, efforts need to be undertaken – or continued – to improve resilience to climate-induced disasters. Such efforts should include the following:

- *permanent outreach campaigns aimed at raising awareness of people* using global and national policy instruments and documents which are carefully “translated” into their “language” – taking into account their understanding and specific needs so that the communication might stimulate their awareness and activity; these

- efforts should include outreach in risk awareness and DRR for refugees from foreign countries and for minority communities, such as the Roma;
- *participatory data collection and planning* – systematic information about the public, based on national and local risk maps and disaster reduction and emergency response plans; using local sources and knowledge and implementing a gender-differentiated approach in collecting and disseminating information; involving citizens in the planning and decision-making process in this field;
  - *continuously tailored training/non-formal learning activities* – training of citizens at the community level in DRR and climate change adaptation/mitigation measures; training of civil protection trustees and members of the local emergency management teams, as well as of volunteers; training and partnerships with journalists and the media as an important precondition for developing community resilience in all its aspects;
  - *mainstreaming DRR in education curricula and institutional development at all levels* – both students and teachers as well as the staff of educational institutions need to be included in education and practical activities/campaigns within the education system and in cooperation with communities; and
  - *strengthening of partnerships* between research, experts and education institutions with DRR and emergency management units as well as with the nongovernmental and private sector in developing resilience at the local and national level.

Recognizing DRR methods and techniques as a part of the adaptive strategy in the planning process will be a step forward in achieving resilient development and reducing displacement. As has been stated, “moving away from the impacts of a disaster – or projected future disasters – is a rational and long-standing adaptation strategy” (IFRC, 2016, p. 22) that can be seen as a framework within future planning and the building of resilient living environments in Serbia. Achieving a “long-standing adaptation strategy” requires the continual improvement of the national planning policy framework that in Serbia, as has been stressed, is in a process of revision, with the EU and global framework presenting a valuable base. However, within related regulations covering climate change and DRR, the response is slightly slower and still needs coordination and harmonization, not only within the national framework (i.e. vertical coordination), but also within the legal framework (horizontal adjustments). The main precondition regarding the planning policy framework in Serbia for achieving resilient development and reducing displacement is a reliable information base that empowers the focus of the entire planning process and enables the implementation of all global, regional, national and local frameworks related to climate change and DRR, together with informed and involved professionals and citizens. In order to develop and build up planning as a process, strengthening monitoring towards continual improvement and innovation of the information base, standards, institutional and, as well, the capacities of professionals and citizens within the planning process will be a crucial task. Effective monitoring will provide not only an effective response and support to process development but also a permanent measure needed to protect vulnerable and risk zones from development and “move people away from marginal areas” to provide living conditions that are resilient. Finalizing the national risk assessment (expected next year) as a platform for developing local risk assessments and participatory planning processes at all the levels of governance, as well as further international support to national and local decision-makers and stakeholders, would be of great value for developing and modifying models of public participation which would lead toward strengthening resilience and adaptation to climate change in accordance with local needs and characteristics.

## Note

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