HDR 2023, Nr. 1–2, 86–99.

Ita Bonner – Elton Qendro

CLIMATE CHANGE AS A THREAT MULTIPLIER FOR EXTREME NATURAL EVENTS: A COMPARATIVE ANALYSIS OF THE ALBANIAN ARMED FORCES' PREPAREDNESS FOR SECURITY RISKS LINKED WITH CLIMATE CHANGE

DOI: 10.35926/HDR.2023.1-2.5

ABSTRACT: *Climate change will have far-reaching consequences as floods, droughts, storms and heavy rainfalls become more intense and possibly more frequent. In the last years, Albania experienced a higher frequency of natural events requiring the response of the Albanian Armed Forces, either for the evacuation of civilians, search and rescue missions, or support to emergency services. The focus of this article is to analyse how climate change serves as a threat multiplier of extreme natural events, particularly within Albania, and its effect on the response by the Albanian Armed Forces. A comparative case study approach has been used to analyse the connection between climate change, three extreme natural events, and the Albanian Armed Forces' response during the phases of immediate reaction and immediate response. The findings of this paper support the argument that the increased frequency of natural events, multiplied by climate change, will result in an increased demand for the intervention by the military personnel. Additionally, this paper will provide evidence that there is a need to adapt the military's strategy, resources, as well as operational and tactical preparedness to the effects of climate change and consequently to be able to better respond to extreme natural events.*

KEYWORDS: *Climate change, Albanian Armed Forces (AAF), extreme natural events, NATO, preparedness*

ABOUT THE AUTHORS:

- *Ita Bonner is a climate security researcher. She is currently pursuing her second Master's degree at the Helmut-Schmidt-Universität/University of the Federal Armed Forces Hamburg, conducting research in the effects of climate change in the defence sector. She also works as an Adjunct Professor at the AUT in Albania where she continues her research in desertification and food insecurity in the Mediterranean region. Ms Bonner has previously worked as an expert in evaluating various public programs, and has published several research articles and contributed to evaluation reports.*
- *Elton Qendro has a PhD in energy security studies from the Academy of Armed Forces of Albania with a regional specialisation in Western Balkans and Albania. Dr. Qendro is a senior researcher in energy related policies, such as renewable energies, green energies, climate change and security, leadership and conflict resolution, governance issues linked with energy and environmental policies. He has over 17 years' experience in environmental policy, and local governance within an international environment. Dr. Qendro has published two books, more than 25 papers, research reports and various presentations.*

INTRODUCTION

The "World Risk Report 2021" calculates the disaster risk index for 180 countries based on risk, hazard/exposure, vulnerability, susceptibility, coping, and adaptation.[1] In the 2021 report, Albania ranks in the first three countries with the highest exposure and among the top five countries with the highest vulnerability.[2] Furthermore, according to the World Bank report of 2014, the maximum potential probable losses in Albania from a disaster with a 250-year mean return period (MRP) are estimated at US$2.3 billion for earthquakes and US$1.3 billion for floods.[3]

The latest climate change scenarios for the Balkan region in general, and Albania within it, show more intense and longer heatwaves, more extended periods of drought, heavier rainfalls in a shorter time[4], etc. All these cause fires, floods, and other extreme natural events and situations that require the intervention of the Albanian Armed Forces. In addition, these extreme events can lead to the loss of human lives and property, affecting the overall national security situation.

In the 2022 "Climate Change and Security Impact Assessment" (CCSIA), NATO accepts that climate change is a "threat multiplier" that has significant security implications for the Alliance at the tactical, operational, and strategic levels[5]. The CSSIA describes the effects of various climatic hazards: (1) on NATO's strategic environment; (2) on NATO's assets and installations; (3) on NATO's missions and multidomain operations; (4) on NATO's resilience and civil preparedness. These effects were further reiterated at the 2022 NATO Summit in Madrid, where the Secretary General launched a High-Level Dialogue on Climate Change and Security. In January 2023, during the Symposium on Climate Change and Capabilities, NATO, as part of its agenda, began incorporating climate change considerations in the Alliance's work on capability development[6].

The authors' contribution to this discussion involves analysing how climate change serves as a threat multiplier of extreme natural events, particularly within Albania, and its effect on the response by the Albanian Armed Forces. The focus is on investigating the connection between three climate change-induced extreme natural events, and the Albanian Armed Forces' engagement during the phases of immediate reaction and immediate response. In addition, this article describes how the increased frequency of natural events, multiplied by climate change, can result in an increased demand for intervention by military personnel. Further, the authors explore the need to adapt the Defence Strategy, resources, and operational and tactical preparedness to the effects of climate change, consequently being able to better respond to extreme natural events.

---

1 Aleksandrova, M. et al. "*World Risk Report"*. BEH-IFHV. 2021. https://weltrisikobericht.de/wp-content/uploads/2021/09/WorldRiskReport_2021_Online.pdf, Accessed on 25 June 2023.

2 Aleksandrova. "World Risk Report."

3 "Albania – Disaster Risk Mitigation and Adaptation Project (English)." World Bank Group. 2014. http://documents.worldbank.org/curated/en/313781468193510916/Albania-Disaster-Risk-Mitigation-and-Adaptation-Project Accessed on 25 June 2023.

4 Ciardini, V. et al. "Global and Mediterranean climate change: a short summary." *Annali dell'Istituto superiore di sanita,* 52. (2016). 325–337.

5 "The Secretary General's Report. Climate Change & Security Impact Assessment." NATO Web. 28 June 2022. https://www.nato.int/nato_static_fl2014/assets/pdf/2022/6/pdf/280622-climate-impact-assessment.pdf Accessed on 25 June 2023.

6 "NATO Hosts Symposium on Climate Change and Military Capabilities." NATO Web. 23 January 2023. https://www.nato.int/cps/en/natohq/news_211018.htm?selectedLocale=en Accessed on 25 June 2023.

This article begins by analysing the country's climate change background and effects, followed by the legal framework under which the response is coordinated. After this, the authors will provide the research methodology, including the main research question and the discussions arising from the hypothesis obtained from answering it. Following this, we will analyze three extreme natural events in three consecutive years in three different locations within Albania, focusing on the first two phases of immediate reaction and immediate response, presenting and discussing the results, and providing our conclusions related to the findings.

BACKGROUND

As a result of a changing climate, in recent years, Albania has experienced higher temperatures, an increased number of heatwaves, droughts, fires, and heavier rainfalls, both in frequency and duration. These have caused life- and property- threatening events, which have caused losses in agriculture and physical infrastructure, leading to food insecurity, threats to critical infrastructure (national parks, cultural sites, and military bases), etc.

The Albanian Strategy of Defence[7], approved in 2019, considers climate change a threat to national security, with its effects having multiple ramifications leading to natural events/disasters, migration, displacement, health risks, natural resources reduction, etc. Likewise, the 2014 National Security Strategy of the Republic of Albania[8] considers climate change as an unconventional external threat to national security.

Regulating natural events preparedness and management in Albania is done by the highest-level law 45/2019[9], "On Civil Protection." This law sets out the operational side of the civil protection system, defining the responsibilities of the institutions and elements of this structure, international cooperation, the rights and obligations of citizens and private entities, education, training, and inspection. One of the main achievements of this law was setting a framework that resulted in the creation of the Civil Protection Agency in 2019, which is the highest authority responsible for emergency preparedness and response, and is an entity under the Albanian Ministry of Defence.

The management of extreme natural events is shared between three hierarchical levels, from the highest level down:

National level. The Ministry of Defence, and within it, the National Civil Protection Agency is responsible for creating conditions for a society capable of reducing risks of disasters, preventing, preparing, and coping with disasters, as well as intervening during the phase of recovery through an integrated and efficient civil protection system. The Ministry of Defence coordinates work when and if needed with other central government institutions or agencies.

---

7 "Decision no. 628, dated 25. 9. 2019 for the Approval of the Strategy Review Document of Defence of the Republic of Albania". Albanian Ministry of Defence Web. 25 September 2019. https://www.mod.gov.al/images/PDF/2020/rishikimi-strat-mbrojtjes-2019.pdf, Accessed on 25 June 2023.

8 "The National Security Strategy of the Republic of Albania." Albanian Ministry of Defence Web. July 2014. https://www.mod.gov.al/images/PDF/strategjia_sigurise_kombetare_republikes_se_shqiperise.pdf Accessed on 25 June 2023.

9 "Law 45/2019, On Civil Protection." Albanian Ministry of Defence Web. 30 July 2019. https://www.mod.gov.al/images/akteligjore/mbrojtja-civile/Ligji-45-2019-Per%20Mbrojtjen-Civile.pdf Accessed on 25 June 2023.

Regional level. At County level, the County Prefect office has a primary role in disaster risk reduction and civil protection. This office coordinates work with local government units, drafts, approves, and updates the Plan for Civil Emergencies in the County, gathers data, etc.

Local level. In cases of emergencies, it is the local government that has the responsibility to intervene first. If their capacities are limited, they can call for assistance from the neighbouring municipalities, state police, and the Armed Forces.

We already know that natural disasters, extreme events, and civil emergencies do not know country borders. They can happen within the territory of a country, originate in one and expand in another, or happen simultaneously across borders. Albania officially joined the EU Civil Protection Mechanism in November 2022.

For the purpose of this study, we will carry out our analysis in the first two stages (out of five) of dealing with natural disasters[10], which we will also apply to explain extreme natural events:

- Preparation. In this stage, plans and programs are written, and responders are trained.
- The immediate reaction. It happens up to twenty-four hours from the time the disaster occurs.
- Primary response. Lasts from several days, up to one week after the event.
- Supplementary response. It begins one week after the event and lasts several weeks.
- The rehabilitation stage. This can last for years and is concluded when life returns to normal.

Because of their crucial importance in providing a better understanding of the deployment of the Albanian Armed Forces on one side and providing security, safety, and saving human lives on the other, the authors will try to analyse the second and third stages.

RESEARCH METHODOLOGY

The research methodology used in this article is a comparative case study approach. Comparative case studies cover two or more cases in a way that produces more generalizable knowledge by utilizing both qualitative and quantitative methods. This method involves analysing and synthesising the similarities, differences, and patterns across two or more cases with a common focus or goal. This approach is beneficial for understanding and explaining how context influences the success of an intervention and how to better tailor the intervention to a specific context to achieve the intended outcomes[11].

As individual case studies, the authors have examined three extreme natural events during three consequent years – the 2020 fires in Elbasan, the 2021 floods in Lezha, and the 2022 fires in the Sazani Island. For this study, the individual case studies analysed have been selected to present differences in time, terrain, and location. However, they provide a good understanding of the similarities of the fast-onset consequences of climate change

[10] Vach, G. "The supplementary response to an earthquake. In light of the Israeli mission's activity in Albania". Paper presented at the Extreme Natural Events and Security Issues 6th International Conference, Security Academy of Albania, Tirana, Albania, 31 May 2021.

[11] Goodrick, D. "Comparative Case Studies, Methodological Briefs: Impact Evaluation 9, UNICEF Office of Research". UNICEF Web. 2014. https://www.unicef-irc.org/publications/pdf/brief_9_comparativecasestudies_eng.pdf Accessed on 25 June 2023.

and the effects on the engagement and deployment of the Albanian Armed Forces in their management.

This article focuses on one main research question and two hypotheses, which were designed based on the information and findings provided during the analysis of these three case studies. The main research question of this article is: *How does climate change serve as a threat multiplier of extreme natural events, particularly within Albania, and what is its effect on the response by the Albanian Armed Forces?*

Although the Armed Forces are the last responders, we have witnessed more frequent deployments to respond to and manage natural events in recent years. Upon request from local and regional authorities, the Albanian Ministry of Defence evaluates the scale of the event, the type, and the resources needed, both in equipment and personnel. Variables such as the frequency and need for intervention by the Armed Forces, timing, and resources engaged are essential to understand the trend of such events in the future, adapt the military's strategy, resources, as well as operational and tactical preparedness to be better positioned in the response phase. Under this optic, the hypotheses we explore are:

H1: The increased frequency of natural events, multiplied by climate change, results in an increased demand for intervention by military personnel. As the climate change effects' scale and intensity are projected to increase in the following decades[12], there will be an increase in the demand for intervention and deployment of military personnel. Furthermore, overlapping natural events will put even more pressure on allocating assets, both in terms of human resources and equipment.

H2: Implementation of the Albanian Defence Strategy's measures targeting climate change will increase operational and tactical preparedness. The 2014 National Security Strategy and the 2019 Defence Strategy of the Republic of Albania consider climate change and natural disasters as threats to national security, and accept that assessing and taking steps to cope with these threats will positively impact the management of the security situation in the country.

DESCRIPTION

For this analysis, the authors have selected three natural events located in three different areas of Albania during three consecutive years, starting with the most recent, namely the 2022 fires on Sazani Island, the 2021 floods in Lezha, and the 2020 fires in Elbasan.

2022 fires on Sazani Island

Sazani is the largest island in Albania, part of the Marine National Park[13], strategically positioned in the Mediterranean Sea, between the Adriatic and Ionian seas. During the Cold War, Sazani Island was used as a submarine base by the Soviet Union. In 1997 some motorboats and Italian Navy ships were positioned on the island, which assisted in combatting illegal trafficking. In 2012, after twelve years of staying on the island and a successful

[12] "Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change". Intergovernmental Panel on Climate Change Web. 2021. https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf Accessed on 25 June 2023.

[13] Tomàs-Vives, P. "Management Plan for Sazani Island". National Coastal Agency Web. January 2015. http://www.bregdeti.gov.al/doc%20pdf/Sazani%20island%20management%20plan%20130115.pdf Accessed on 25 June 2023.

war against illegal trafficking, the Italian forces left the island[14]. Sazani is a former military ward, where, although there has been ongoing work by the Armed Forces in clearing it[15], there is still unexploded ammunition.

On 5 June 2022, due to extremely high temperatures, a massive fire was reported in Sazani Island. Not only did this pose a risk to the area's rich biodiversity, but there was an extremely high danger due to unexploded ammunition.

How was the immediate reaction managed? Because of the proximity to the island and legal obligations, the first on the ground were firefighters from Vlora County and the Agency for Protected Areas staff, who were engaged in controlling the flames on the island[16]. Although it is the last responder, sixty-one Albanian Armed Forces troops, from Navy and Army were present from the very early hours of the event[17] demonstrating the severe danger this event posed. As media reports cited[18], the Albanian Ministry of Defence declared that *"the terrain and dense vegetation have made it extremely difficult for troops to intervene, while as a former military ward, unexploded ammunition also poses a danger. The troops on the ground continue their efforts even during the late hours while measures have been taken for their replacement and reinforcement."*

What happened during the immediate response? After forty-eight hours, the Albanian Ministry of Defence declared that the fire had been controlled and a perimeter had been set. However, the intervention from air was deemed necessary[19]. On the third day, one hundred more troops of the AAF were deployed on-site, while three Navy ships were put on alert[20]. At that time, a "Canadair CL 415" aircraft became operational as part of the EU Civil Protection Mechanism (Emergency Response Coordination Centre – ERCC). This aircraft was provided by Greece following the official request from the Albanian Agency for Civil Protection[21]. After the air intervention, the work was still ongoing on the ground to create a deforestation belt, which was considered crucial for the insulation and containment of the fire.

[14] Shkurti, F. "National Marine Park Karaburun – Sazan and today's trends for tourism development". *International Journal of Geoheritage and Parks,* 7/1. 2019. 1–14.

[15] "Albanian Armed Forces Clean Sazani from Dangerous Ammunition." Albanian Ministry of Defence. 10 July 2020. Video, https://www.mod.gov.al/aktualitet-video/4438-fa-pastrojne-sazanin-nga-municionet-e-rrezikshme Accessed on 25 June 2023.

[16] "Fire on the Sazani Island, the Navy, and Army Forces Have Been Fighting the Flames for Hours." *Tirana Post Web.* 5 June 2022. https://www.tiranapost.al/aktualitet/zjarr-ne-ishulli-i-sazanit-forca-detare-dhe-toke-sore-prej-oresh-lufto-i515465 Accessed on 25 June 2023.

[17] "Ministry of Defence: Flames in Sazani, Danger of Ammunition Explosion." Tirana Post Web. 5 June 2022. Video. https://www.tiranapost.al/aktualitet/zjarri-ne-ishullin-e-sazanit-ministra-e-mbrojtjes-rrezik-per-shperthi-i515467 Accessed on 25 June 2023.

[18] "Ministry of Defence: Flames in Sazani."

[19] "Fire in Sazan, Albania supported by the EU Civil Protection Mechanism". *The Military Newspaper,* 10 June 2022. Official. 2.

[20] "Fires in Sazan/Greece comes to Albania's aid, brings the Canader fire-fighting aircraft". Zjarr TV. 7 June 2022. Video. https://www.youtube.com/watch?app=desktop&v=9R9MrivUpZA Accessed on 26 June 2023.

[21] "Fire in Sazan, Albania supported by the EU Civil Protection Mechanism."

2021 floods in Lezha

Lezha is a municipality in Central Albania, with a territory of mainly plain fields and hills. Lezha County is situated close to the longest river in Albania, the Drini River, and the Adriatic Sea on its western side, making it highly exposed to both the rise of the river and sea level. Its geographical position, urbanization, and historical interventions in the terrain during the communist period are only some of the causes of extensive floods, which have occurred more than once a year in recent years. Due to the urgency posed by these repeated events, the Municipality of Lezha has developed a Civil Emergency Plan[22], a comprehensive document that clearly specifies the names and contact information of people responsible for specific steps, the functions, and the management of the emergency operations centre within the municipality, the volunteer force, etc.

The rainfall of 7-9 January 2021 caused significant damage, including 3,500 ha of flooded lands, of which large agricultural lands[23], landslides in inhabited areas, damage to infrastructure (the bridge that takes residents to the main motorway), severe problems with secondary roads[24], etc.

How was the immediate reaction managed? Data show that during the first twenty-four hours the emergency unit at municipality level intervened to help evacuate the affected families[25]. As planned in the local Civil Emergency Plan, families that did not have alternative accommodations were taken to accommodation structures such as hotels, motels, etc. In addition, local engineers and civil emergency staff undertook some physical interventions on the bridge embankments that allowed the water level and amount of water flow to temporarily decrease. The available information shows that these were the main steps the local government took, and the mayor declared to the media[26] that they were expecting more specialized help from the central government, the Ministry of Defence, and Civil Protection Agency. This can also be confirmed with data from the Ministry of Defence, which states that its troops were put on high alert[27] and about to move into Lezha Municipality.

What happened during the immediate response? After the immediate response, the media reported that military personnel had arrived there by the end of the day on 8 January 2021[28]. This demonstrates that the event was so extensive that the local resources (human or equipment) had to be increased to cope with the situation. Due to the influx of water from

[22] "Disaster Risk Reduction Plan for the Municipality of Lezha". Co-PLAN Institute for Habitat Development UNDP Web. December 2020. https://www.undp.org/albania/publications/plani-i-emergjencave-civile-lezhe Accessed on 26 June 2020.

[23] "The floods in Lezha, the mayor told "ABC": The water is receding." ABC News Web. 11 January 2021. Video. https://abcnews.al/permbytjet-ne-lezhe-kryebashkiaku-per-abc-uji-po-terhiqet/ Accessed on 26 June 2023.

[24] "Flooding in Lezhë, the bridge in the village of Kalivaç collapses, residents are isolated". Shqiptaja.com Web. 9 January 2021. Video https://shqiptarja.com/lajm/permbytjet-ne-lezhe-shembet-ura-ne-fshatin-kalivac-izolohen-banoret?r=read_more Accessed on 26 June 2023.

[25] "Mayor Ndreu: The situation due to the rainfalls in Lezha is dangerous, we have evacuated some residents." Exit News. 8 January 2021. https://exit.al/kryebashkiaku-ndreu-situata-nga-shirat-ne-lezhe-e-rrezikshme-kemi-evakuuar-disa-banore/ Accessed on 25 June 2023.

[26] "Mayor Ndreu: The situation due to the rainfalls in Lezha is dangerous."

[27] "Floods in the country, the AF doubles the capacities in favor of the residents". The Albanian Ministry of Defence Web. 8 January 2021. https://www.mod.gov.al/newsroom-2/4675-permbytjet-ne-vend-fa-dyfishon-kapacitetet-ne-ndihme-te-banoreve Accessed on 25 June 2023.

[28] "Floods in Lezha, the military has landed! The water level in the Drin river falls." *Shqiptarja.com.* 8 January 2021. Video. https://shqiptarja.com/lajm/permbytjet-ne-lezhe-zbarkon-ushtria-bie-niveli-i-ujit-ne-lumin-drin Accessed on 25 June 2023.

the river, one of the main bridges was destroyed, leaving more than 1,500 civilians, as well as students and schoolteachers isolated. The Support Command Engineers were on site, working on refitting the bridge to allow access to and from the isolated area[29]. According to the Minister of Defence declarations[30], on 9 January 2021, the Armed Forces carried out three evacuation measures, one in urban and two in rural areas.

Some reports show that on 10 January the Head of Civil Emergency Protection and the Commander-in-Chief of the Armed Forces were on-site[31], monitoring the situation. Also, the Armed Forces Engineers' work to reconstruct the main bridge was ongoing[32]. As for equipment, military trucks and rescue boats were utilized during this phase. This critical situation was managed within 4-5 days. No loss of lives was reported, but the infrastructure was heavily damaged.

2020 fires in Elbasan

Amid the COVID-19 pandemic, Albania was widely affected by a high number of fires. According to official data from the Albanian Ministry of Defence, during the first seven months of 2020, there were 329 fires, while only during July, there were 168 fire instances[33], burning on 598 hectares. These events requested the intervention of local, regional and national emergency services and military troops.

Elbasan County is located in central Albania, affected by a typical Mediterranean climate with hot summers. Its terrain is rich in hills and mountains, with Mediterranean shrubs and pine forest vegetation. In July 2020, several fires were reported within the Municipality of Elbasan. Such natural events often break out in one area, and spread into others. Our analysis will focus on the intervention during the fire at Guri i Zi village, Administrative Unit Labinot Mal, Municipality of Elbasan.

The fire is believed to have been initiated in Funari, a tourist site close to Guri i Zi. Due to the wind, on 22 July 2020[34], the fire was reported to have spread to Guri i Zi.

How was the immediate reaction managed? On-site, the fire was reported on 22 July 2020, and it was moving faster than expected due to the wind. The media reports that

[29] "Destroyed by the Floods, the Armed Forces Immediately Start Work on the Construction of the Kalivaç Bridge in Lezha." The Albanian Ministry of Defence Web. 10 January 2021. Video. https://www.mod.gov.al/newsroom-2/4681-u-shkaterrua-nga-permbytjet-fa-nisin-menjehere-punen-per-ndertimin-e-ures-se-kalivacit-ne-lezhe Accessed on 25 June 2023.

[30] "The Minister of Defence Inspects the Flooded Areas: We Have Increased Readiness, the Situation Is under Control." The Albanian Ministry of Defence Web. 9 January 2021. Video. https://www.mod.gov.al/newsroom-2/4677-ministri-i-mbrojtjes-inspekton-zonat-e-permbytura-kemi-rritur-gatishmerine-situata-ne-kontroll Accessed on 25 June 2023.

[31] "The Armed Forces engaged on the ground to deal with floods." The Albanian Ministry of Defence Web. 10 January 2021. https://www.mod.gov.al/newsroom-2/4680-forcat-e-armatosura-angazhohen-ne-terren-per-perballimin-e-permbytjeve Accessed on 25 June 2023.

[32] "It was destroyed by the floods, work begins for the reconstruction of the Kalivaçi bridge in Lezha." *Report TV,* 10 January 2021. https://www.report-tv.al/lajm/u-shkaterrua-nga-permbytjet-nis-puna-per-ndertimin-e-ures-se-kalivacit-ne-lezhe Accessed on 25 June 2023.

[33] "Armed Forces Engaged against Fires in Forests and Pastures." *The Defence Newspaper No.08/2020.* August 2020. 23.

[34] "The tourist site of Funari and Guri i Zi in Elbasan is in flames". Ora News Web. 22 July 2020. https://www.oranews.tv/pika-turistike-e-funarit-dhe-gurit-te-zi-ne-elbasan-perfshihet-nga-flaket, Accessed on 26 June 2023.

firefighters were moving into the area on the same day to try and control the fire[35]. The terrain was challenging and inaccessible by the firefighter vehicles. The emergency services, helped by local volunteers and residents, were trying to contain the fire using improvised means. These efforts did not succeed, and the fire was getting closer to the inhabited area, threatening its residents' lives and property. Within the first day of the event, it was clear that the fire could not be contained by the local or regional resources, and the Mayor of Elbasan Municipality called for an air intervention[36].

What happened during the immediate response? In response to the local authorities' request, help from the Albanian Armed Forces came soon enough. On 23 July 2023, a helicopter of the Air Force intervened. Resources from the emergency services and the intervention from the Armed Forces resources via air extinguished the fire within the same day.

Although the last resort, the intervention from the Ministry of Defence came within the first 48 hours of the event because the threat to lives and property was extremely high. The alarming natural events at national level, combined with the high engagement of resources from both local and national levels, was a topic of concern for the Head of the Civil Emergency Protection Agency[37], which also granted recognition to the Minister of Defence for the tireless efforts of the Armed Forces.

ANALYSIS AND DISCUSSIONS

The effects of climate change result in increased temperatures, longer heatwaves, more severe rainfalls, flash floods, landslides, etc. The threat multiplier effect can impact both the local and national levels. At local level, these events affect the already most vulnerable communities, while at national level they can halt economic development and increase inequality.

Albania has witnessed an increased number and frequency of natural events, often overlapping, requiring the intervention of the Armed Forces from sea, air, and land. During three consecutive years – 2020, 2021, and 2022 – we have described three extreme events spread across Albania. However, if we consider the bigger picture, there have been multiple natural events of different types in the same county requiring the intervention of emergency services and the Armed Forces. For instance, in 2021, Lezha County suffered from fires and floods, putting at risk critical infrastructure and endangering civilian lives and property.

The three events described took place in different locations in different years. Although different in type, nature, and size, they all have similarities regarding the need for intervention of the Armed Forces. According to official reports from the Albanian Ministry of Defence, in July 2020 alone, the number of Armed Forces' engagement in fire emergencies was 200[38], whereas in 2021, there were 4,960 troops and 152 vehicles deployed[39]. Accord-

[35] "The tourist site of Funari and Guri i Zi in Elbasan is in flames".

[36] "Massive fire on Labinot Mal, difficult terrain for firefighters, intervened from the air". BalkanWeb. 23 July 2020. Video. https://www.balkanweb.com/video-zjarr-masiv-ne-labinot-mal-terreni-i-veshtire-per-zjarrfikeset-nderhyhet-nga-ajri/ Accessed on 26 June 2023.

[37] "Fires in the country – NCPA letter to Municipalities and Police." *The Defence Newspaper No.09/2020.* 20.

[38] "Armed Forces Engaged against Fires in Forests and Pastures."

[39] "Management of fires in the entire territory of the country. Rama and Peleshi appreciate the work of engaged forces and Civil Defence." *The Defence Newspaper No.09/2021.* 20.

ing to the Albanian Strategy for Defence of 2019, the number of active personnel would be 8,500. It is a significant indicator considering that the number of troops engaged during the 2021 fires was more than half of the AAF active personnel. This demonstrates the severity of these extreme natural events and the risk to human lives, property, and national security.

Further, various projections show an increased frequency of natural events. According to the 2021 World Bank Group's assessment for the Climate Risk Profile in Albania, the temperatures are projected to continue to increase across South Eastern Europe, and Albania's summers are expected to experience the greatest degrees of warming, with an increase of 2.4°C to 3.1°C during June to August.[40] Higher temperatures and more frequent heatwaves are often associated with draughts, which can cause more fires both in frequency and severity. Scholars have also argued that there will be an increase in the sea level in the Mediterranean[41]. To further exacerbate this situation, rainfall scenarios reveal a likely decrease in annual precipitation leading to less available water, and more frequent heavy rainfalls with longer duration, causing flooding and economic damage[42].

Considering the historical data in the context of Albania, there is a link between climate change-induced natural events and the consequent need for engagement of the Armed Forces. When further analysing climate change models and their effects, there is scientific evidence that supports the hypothesis of an increased frequency of extreme natural events. An increase in such natural events will result in an increased demand for the intervention by Albanian military personnel at the national level. Using these models can help predict the need for intervention, its frequency, and its scale, which can better position the Armed Forces in the planning phase.

As of 2022, NATO has called climate change a "threat multiplier" and an unavoidable factor that will measurably increase the risks to the security of its citizens[43]. The threats posed by climate change within the Alliance and outside of its border have been jointly agreed upon to such a point that Canada, together with the NATO Allies, is currently working toward the establishment of the NATO Climate Change and Security Centre of Excellence[44]. In its Agenda on Climate Change and Security, NATO has set out four goals to be tackled across the Alliance: (1) Increase Allied awareness; (2) Adapt to climate change; (3) Contribute to the mitigation of climate change; (4) Enhance outreach.

The 2019 Albanian Defence Strategy and the 2014 National Security Strategy accept climate change as a risk to national security. The National Security Strategy also confirms that the civil protection system does not have sufficient resources to face the increasing number of emergencies and the swift rehabilitation of situations caused by them.

---

40 "Climate Risk Profile: Albania". The World Bank Group Web. 2021. https://climateknowledgeportal.worldbank.org/sites/default/files/2021-06/15812-Albania%20Country%20Profile-WEB.pdf, Accessed on 25 June 2023.

41 Ciardini. "Global and Mediterranean climate change: A short summary". 325–337.

42 "Third National Communication of the Republic of Albania under the United Nations Framework Convention on Climate Change". The Albanian Ministry of Environment. June 2016. https://unfccc.int/sites/default/files/resource/Albania%20NC3_13%20October%202016.pdf, Accessed on 25 June 2023.

43 "The Secretary General's Report. Climate Change & Security Impact Assessment."

44 "NATO Climate Change and Security Centre of Excellence". The official website of the Government of Canada. Canada.ca. 6 March 2023. https://www.international.gc.ca/world-monde/international_relations-relations_internationales/nato-otan/centre-excellence.aspx?lang=eng, Accessed on 26 June 2023.

Albania's accession to NATO took place in 2009. As part of the Alliance, in both strategic documents mentioned above, Albania complies, supports, and operates within the context and directions of NATO.

In the national context, historical and scientific predictive data support a potential increase in climate change-related extreme events. Climate change as a threat has been accepted by the national strategy, which sets out the framework for the operational and tactical levels within the Armed Forces. However, while this threat has been accepted, there is a lack of agreed measures to be taken into this account. On the other hand, aiming at increasing preparedness, NATO emphasizes that the Alliance should continue strengthening national and international resilience, considering the impacts of climate change.

While Albania's approach towards climate change as a threat multiplier for extreme natural events goes in the same direction as NATO, there is a need for clear, national-scale measures. Targeting climate change and its consequences at strategic level will demand an increase in operational and tactical preparedness, providing better and more efficient allocation of human and financial resources within the Albanian Armed Forces.

CONCLUSIONS

The 2021 "Annual World Risk Report" that calculates the disaster risk index for 180 countries ranked Albania in the first three countries with the highest exposure and among the top five countries with the highest vulnerability[45]. According to the World Bank Group's 2021 assessment for the Climate Risk Profile in Albania, the summers in the country are expected to experience the greatest degrees of warming, with an increase of 2.4°C to 3.1°C.[46] Higher temperatures and more frequent heatwaves are often associated with draughts, which can cause more fires both in frequency and severity. Scholars have also argued that there will be an increase in the sea level in the Mediterranean[47]. To further exacerbate this situation, rainfall scenarios reveal a likely decrease in annual precipitation, more frequent heavy rainfalls with longer duration, causing flooding and economic damage[48].

According to official reports from the Albanian Ministry of Defence, during July 2020 alone, 200 men and women of the Armed Forces were deployed in fire control operations in Albania[49]. During the following year, 2021, the total number of engaged resources of the AAF was 4,960 troops and 152 vehicles[50]. This is a significant indicator considering that the number of engaged personnel during the 2021 fires was more than half of the AAF active personnel, as planned in the 2019 Albanian Defence Strategy. This demonstrates how severe these extreme natural events are and the risk posed to human lives, property, and national security. This situation is also supported by the three case studies described in this article: the 2022 fires in Sazani Island, the 2021 floods in Lezha, and the 2020 fires in Elbasan.

In the 2022 "Climate Change and Security Impact Assessment" (CCSIA), NATO accepts that climate change is a "threat multiplier" that has significant security implications for

[45] Aleksandrova. "World Risk Report".
[46] "Climate Risk Profile: Albania."
[47] Ciardini. "Global and Mediterranean climate change: A short summary".
[48] "Third National Communication of the Republic of Albania under the United Nations Framework Convention on Climate Change".
[49] "Armed Forces Engaged against Fires in Forests and Pastures."
[50] "Management of fires in the entire territory of the country."

the Alliance at the tactical, operational, and strategic levels[51]. The 2019 Albanian Defence Strategy and the 2014 National Security Strategy accept climate change as a risk to national security. The National Security Strategy also confirms that the civil protection system does not have sufficient resources to face the increasing number of emergencies and the swift rehabilitation of situations caused by them.

Considering the historical data in the context of Albania, there is a link between climate change-induced natural events and the consequent need for the engagement of the Armed Forces. When further analysing climate change models and their effects, scientific evidence supports the hypothesis of an increased frequency of natural events, resulting in an increased demand for intervention by Albanian military personnel at national level. Using these models can help predict the need for intervention, its frequency and scale, which can better position the Armed Forces in the planning phase and resource allocation.

While Albania's approach towards climate change as a threat multiplier for extreme natural events goes in the same direction as that of NATO, there is a need for clear, national-scale measures. Targeting climate change and its consequences at strategic level will increase operational and tactical preparedness, providing a better and more efficient future allocation of human and financial resources within the Albanian Armed Forces.

BIBLIOGRAPHY

- "Albania – Disaster Risk Mitigation and Adaptation Project (English)." World Bank Group. 2014. http://documents.worldbank.org/curated/en/313781468193510916/Albania-Disaster-Risk-Mitigation-and-Adaptation-Project
- "Albanian Armed Forces Clean Sazani from Dangerous Ammunition." Albanian Ministry of Defence. 10 July 2020. Video. https://www.mod.gov.al/aktualitet-video/4438-fa-pastrojne-sazanin-nga-municionet-e-rrezikshme
- Aleksandrova, M. Sascha, B. Kaltenborn, M. Malerba, D. Peter, Mucke P. Neuschäfer, O. Radtke, K. Prütz, R. Strupat, C. Weller, D. Wiebe, N. *"World Risk Report".* BEH-IFHV. 2021. https://weltrisikobericht.de/wp-content/uploads/2021/09/WorldRiskReport_2021_Online.pdf
- "Armed Forces Engaged against Fires in Forests and Pastures." *The Defence Newspaper No.08/2020.* August 2020. 23.
- Ciardini, V. Contessa, G. M., Falsaperla, R., Gómez-Amo, J., Meloni, D., Monteleone, F., Pace, G., Piacentino, S., Sferlazzo, D., Di Sarra, A., "Global and Mediterranean climate change: a short summary." *Annali dell'Istituto superiore di sanita,* 52. (2016). 325–337.
- "Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change". Intergovernmental Panel on Climate Change Web. 2021. https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf
- "Climate Risk Profile: Albania". The World Bank Group Web. 2021. https://climateknowledgeportal.worldbank.org/sites/default/files/2021-06/15812-Albania%20Country%20Profile-WEB.pdf
- "Decision no. 628, dated 25.9.2019. for the Approval of the Strategy Review Document of Defence of the Republic of Albania". Albanian Ministry of Defence Web. 25 September 2019. https://www.mod.gov.al/images/PDF/2020/rishikimi-strat-mbrojtjes-2019.pdf

[51] "The Secretary General's Report. Climate Change & Security Impact Assessment."

- "Destroyed by the Floods, the Armed Forces Immediately Start Work on the Construction of the Kalivaç Bridge in Lezha." The Albanian Ministry of Defence Web. 10 January 2021. Video. https://www.mod.gov.al/newsroom-2/4681-u-shkaterrua-nga-permbytjet-fa-nisin-menjehere-punen-per-ndertimin-e-ures-se-kalivacit-ne-lezhe
- "Disaster Risk Reduction Plan for the Municipality of Lezha". Co-PLAN Institute for Habitat Development UNDP Web. December 2020. https://www.undp.org/albania/publications/plani-i-emergjencave-civile-lezhe Accessed on 26 June 2020.
- "Fire in Sazan, Albania supported by the EU Civil Protection Mechanism". *The Military Newspaper*, 10 June 2022. Official. 2.
- "Fire on the Sazani Island, the Navy, and Army Forces Have Been Fighting the Flames for Hours." *Tirana Post Web*, 5 June 2022. https://www.tiranapost.al/aktualitet/zjarr-ne-ishulli-i-sazanit-forca-detare-dhe-tokesore-prej-oresh-lufto-i515465
- "Fires in Sazan/ Greece comes to Albania's aid, brings the Canader fire-fighting aircraft". Zjarr TV. 7 June 2022. Video. https://www.youtube.com/watch?app=desktop&v=9R9MrivUpZA
- "Fires in the country – NCPA letter to Municipalities and Police." *The Defence Newspaper No.09/2020*. 20.
- "Flooding in Lezhë, the bridge in the village of Kalivaç collapses, residents are isolated". Shqiptaja.com Web. 9 January 2021. Video. https://shqiptarja.com/lajm/permbytjet-ne-lezhe-shembet-ura-ne-fshatin-kalivac-izolohen-banoret?r=read_more
- "Floods in Lezha, the military has landed! The water level in the Drin river falles." *Shqiptarja.com*. 8 January 2021. Video. https://shqiptarja.com/lajm/permbytjet-ne-lezhe-zbarkon-ushtria-bie-niveli-i-ujit-ne-lumin-drin
- "Floods in the country, the AF doubles the capacities in favor of the residents". The Albanian Ministry of Defence Web. 8 January 2021. https://www.mod.gov.al/newsroom-2/4675-permbytjet-ne-vend-fa-dyfishon-kapacitetet-ne-ndihme-te-banoreve
- Goodrick, D. "Comparative Case Studies, Methodological Briefs: Impact Evaluation 9, UNICEF Office of Research". UNICEF Web. 2014. https://www.unicef-irc.org/publications/pdf/brief_9_comparativecasestudies_eng.pdf
- "It was destroyed by the floods, work begins for the reconstruction of the Kalivaçi bridge in Lezha." *Report TV,* 10 January 2021. https://www.report-tv.al/lajm/u-shkaterrua-nga-permbytjet-nis-puna-per-ndertimin-e-ures-se-kalivacit-ne-lezhe
- "Law 45/2019, On Civil Protection." Albanian Ministry of Defence Web. 30 July 2019. https://www.mod.gov.al/images/akteligjore/mbrojtja-civile/Ligji-45-2019-Per%20Mbrojtjen-Civile.pdf
- "Massive fire on Labinot Mal, difficult terrain for firefighters, intervened from the air". BalkanWeb. 23 July 2020. Video. https://www.balkanweb.com/video-zjarr-masiv-ne-labinot-mal-terreni-i-veshtire-per-zjarrfikeset-nderhyhet-nga-ajri/
- "Management of fires in the entire territory of the country. Rama and Peleshi appreciate the work of engaged forces and Civil Defence." *The Defence Newspaper No.09/2021*. 20.
- "Mayor Ndreu: The situation due to the rainfalls in Lezha is dangerous, we have evacuated some residents." Exit News. 8 January 2021. https://exit.al/kryebashkiaku-ndreu-situata-nga-shirat-ne-lezhe-e-rrezikshme-kemi-evakuuar-disa-banore/
- "Ministry of Defence: Flames in Sazani, Danger of Ammunition Explosion." Tirana Post Web. 5 June 2022. Video. https://www.tiranapost.al/aktualitet/zjarri-ne-ishullin-e-sazanit-ministra-e-mbrojtjes-rrezik-per-shperthi-i515467

- "NATO Climate Change and Security Centre of Excellence". The official website of the Government of Canada. Canada.ca. 6 March 2023. https://www.international.gc.ca/world-monde/international_relations-relations_internationales/nato-otan/centre-excellence.aspx?lang=eng
- "NATO Hosts Symposium on Climate Change and Military Capabilities." NATO Web. 23 January 2023. https://www.nato.int/cps/en/natohq/news_211018.htm?selectedLocale=en
- Shkurti, F. "National Marine Park Karaburun – Sazan and today's trends for tourism development". *International Journal of Geoheritage and Parks,* 7/1. 2019. 1–14.
- "The Armed Forces engaged on the ground to deal with floods." The Albanian Ministry of Defence Web. 10 January 2021. https://www.mod.gov.al/newsroom-2/4680-forcat-e-armatosura-angazhohen-ne-terren-per-perballimin-e-permbytjeve
- "The Minister of Defence Inspects the Flooded Areas: We Have Increased Readiness, the Situation Is under Control." The Albanian Ministry of Defence Web. 9 January 2021. Video. https://www.mod.gov.al/newsroom-2/4677-ministri-i-mbrojtjes-inspekton-zonat-e-permbytura-kemi-rritur-gatishmerine-situata-ne-kontroll
- "The National Security Strategy of the Republic of Albania." Albanian Ministry of Defence Web. July 2014. https://www.mod.gov.al/images/PDF/strategjia_sigurise_kombetare_republikes_se_shqiperise.pdf
- "The floods in Lezha, the mayor told "ABC": The water is receding." ABC News Web. 11 January 2021. Video. https://abcnews.al/permbytjet-ne-lezhe-kryebashkiaku-per-abc-uji-po-terhiqet/
- "The Secretary General's Report. Climate Change & Security Impact Assessment." NATO Web. 28 June 2022. https://www.nato.int/nato_static_fl2014/assets/pdf/2022/6/pdf/280622-climate-impact-assessment.pdf
- "The tourist site of Funari and Guri i Zi in Elbasan is in flames". Ora News Web. 22 July 2020. https://www.oranews.tv/pika-turistike-e-funarit-dhe-gurit-te-zi-ne-elbasan-perfshihet-nga-flaket
- "Third National Communication of the Republic of Albania under the United Nations Framework Convention on Climate Change". The Albanian Ministry of Environment. June 2016. https://unfccc.int/sites/default/files/resource/Albania%20NC3_13%20October%202016.pdf
- Tomàs-Vives, P. "Management Plan for Sazani Island". National Coastal Agency Web. January 2015. http://www.bregdeti.gov.al/doc%20pdf/Sazani%20island%20management%20plan%20130115.pdf
- Vach, G. "The supplementary response to an earthquake. In light of the Israeli mission's activity in Albania". Paper presented at the Extreme Natural Events and Security Issues 6th International Conference, Security Academy of Albania, Tirana, Albania, 31 May 2021.