

Emergency and Disaster Reports

ISSN 2340-9932

Vol 9, Num 4, 2022



Monographic issue

The profile of disaster risk of Bosnia Herzegovina

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Letter from the editor

The Emergency and Disaster Reports is a journal edited by the Unit for Research in Emergency and Disaster of the Department of Medicine of the University of Oviedo aimed to introduce research papers, monographic reviews and technical reports related to the fields of Medicine and Public Health in the contexts of emergency and disaster. Both situations are events that can deeply affect the health, the economy, environment and the development of the affected populations.

The topics covered by the journal include a wide range of issues related to the different dimensions of the phenomena of emergency and disaster, ranging from the study of the risk factors, patterns of frequency and distribution, characteristics, impacts, prevention, preparedness, mitigation, response, humanitarian aid, standards of intervention, operative research, recovery, rehabilitation, resilience and policies, strategies and actions to address these phenomena from a risk reduction approach. In the last thirty years has been substantial progress in the above-mentioned areas in part thanks to a better scientific knowledge of the subject. The aim of the journal is to contribute to this progress facilitating the dissemination of the results of research in this field.

This monographic issue is about Bosnia and Herzegovina, a former state of Yugoslavia until achieving independence in 1992. The region has throughout history been ethnically diverse comprising of minority Orthodox Christian Bosnian Serbs, minority Catholic Bosnian Croats and Muslim Bosniaks. Though the land has for centuries been shared by different ethnic groups living together, harmony between groups has rarely been shared throughout the history of the country. The ethnic war which followed BIH's vote for independence and atrocities committed in the years between 1992 and 1995, are considered the most horrendous since the second world war. It has been 27 years since the end of the war in BIH, but the ethnic tensions and consequential loss of lives can still be felt in the country today. The devastating impact of the war not only lives on in the memories of divided communities, but physical hazards lay buried such as landmines planted in combat which still pose a current and real threat to the lives and safety of its citizens today. As well as this, the country is vulnerable to a number of Natural disasters including both geological and meteorological hazards such as earthquakes, flooding, landslides and drought.

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ORIGINAL RESEARCH



The profile of disaster risk of Bosnia Herzegovina

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Introduction

Bosnia and Herzegovina (BIH) is a south-east European country located in the Balkan Peninsula, the country was a former state of Yugoslavia until achieving independence in 1992. The region has throughout history been ethnically diverse comprising of minority Orthodox Christian Bosnian Serbs, minority Catholic Bosnian Croats and Muslim Bosniaks. Though the land has for centuries been shared by different ethnic groups living together, harmony between groups has rarely been shared throughout the history of the country.

The ethnic war which followed BIH's vote for independence and atrocities committed in the years between 1992 and 1995, are considered the most horrendous since the second world war. It has been 27 years since the end of the war in BIH, but the ethnic tensions and consequential loss of lives can still be felt in the country today. Though there has been peace in BIH for the past two and a half decades, the war and the agreement which brought it the conflict to an end influences the demographic make-up, system of government and the interactions between ethnic groups to this day.

It would not be possible to attempt to write about a modern BIH without discussing first on the details of the war and the years that followed the cease fire, as the past and the present of this country are still tightly intertwined. The way in which the country is divided and the structure of its government is amongst the most complex systems of government existing in the world today. The systems were created by the international community as a direct result of the Bosnian war in an attempt to bring and sustain peace in the country.

The devastating impact of the war not only lives on in the memories of divided communities, but physical hazards lay buried such as landmines planted in combat which still pose a current and real threat to the lives and safety of its citizens today. As well as this, the country is vulnerable to a number of Natural disasters including both geological and meteorological hazards such as earthquakes, flooding, landslides and drought. This report shall examine past and present projects, frameworks and strategies to build resilience against and respond to vulnerabilities and risks outlined.

Country profile

Bosnia and Herzegovina is a south-east European country located in the Balkan Peninsula. The landmass of the country extends 51.197km², bordering Croatia, Serbia and Montenegro. The terrain of the country is largely mountainous and is almost entirely landlocked with the exception of a narrow stretch of land along the Adriatic Sea to its south. The country itself is broken into two entities, the Federation of Bosnia and Herzegovina and Republic of Srpska, with a third smaller self-governing area to the north called Brcko. The country is has high forest coverage at 48.3% and enjoys among the richest biodiversity in Europe in the form of animal and plant life. BiH is vulnerable to a number of natural disasters, both rapid and slow onset, the most frequent of which include flooding, landslides, drought and earthquakes (32).

The current population size of BiH amounts to 3.281 million citizens, comprising of 48.1% male and 51.9% female. The breakdown of the population in accordance to age is as follows: 0-14 years make up 13.18% of the population, 10.83% are 15-24 years, 44.52% are 25-54 years, 15.24% are 55-64 years and 16.22% of citizens are 65 years and over. The population size of BiH has been decreasing steadily since the 1980's, the population growth rate for 2021 was estimated at -0.21%. The post war BiH had a population size of 4,369 million in 1991, by 1995 the population size of the country saw a drastic drop with 100,000 lives lost and 2.2 million persons internally and externally displaced as a result of the war.

The countries birth rate is estimated at 8.5 births per 1,000 population and death rate is estimated at 10.25 deaths per 1,000 population in 2021.. The country has historically been ethnically diverse with the current breakdown of 50.1% Bosniak Muslim, 30.8% Orthodox Serb, 15.4% Catholic Croat and 2.7% other. The country experiences high levels of urbanization, as of 2021 49.4% of the population live in urban areas (32).

Owing to its size and geographical diversity, BiH is comprised of a number of distinctive climates which vary depending on the geographical location within the country. The northern and central areas consist of a continental climate comprising of warm summers and cold winters, whereas the southwest is characterised by a Mediterranean climate comprising of warm summers and milder and wet winters compared to that of the rest of the country. However due to climate change, there has been a change in climatic patterns of the country in recent years. Pattern of rainfall throughout the country, which have historically been consistent, have in recent years changed becoming increasingly less predictable and varying in strength compared to previous trends. Between 1981 and 2010, the northern region of BiH has seen a decrease in rainfall by up to 20%. As well as changes in rainfall patterns, temperatures in the country have been rising.

It is predicted that droughts will become frequent in the area in coming years. This prediction is as a result of a number of factors, including an increase in intensity and duration of heatwaves, a decrease of the river runoff and a change in water consumption for economic development. On the contrast, the southern region of the country has seen an increase in frequency and intensity of rainfall. This change in rainfall patterns in the south has resulted in severe flooding and landslides, which have on numerous occasions in the past decade surpassed the response and recovery capacity of the country (23).

BiH is classified by the World Bank as an upper middle income country. High levels of unemployment pose a major macroeconomic problem to the country. A steady rate of economic expansion and job creation initiatives economic opportunities have not met the employment needs of the country. 2021 employment rates for citizens aged 15-64 lay at 40%, with an unemployment rate of 14%. The most concerning trends can be found in the high rate of youth unemployment, rated amongst the highest both in Europe and in the Balkan region, with 22% of young people not in employment, education or training. In terms of economic freedom, BiH is ranked 36th among 45 countries in the Europe region rating below the average for the region. The countries economic freedom score is ranked at 63.4, making its economy the 68th freest in the 2022 Index. A rapidly aging population and increased emigration, particularly amongst young people poses concerns about long term sustainability of social security systems. Despite the economic impact of the Covid-19 pandemic on the country, economic recovery has been steady with a growth of GDP from -3,2% in 2020 increasing to +4,5% in 2021 (32).

Non-communicable diseases have been identified as the main cause of deaths in BiH. The top five in order of highest mortality rates are as follows: ischemic heart disease, stroke, lung cancer, diabetes and colorectal cancer. According to statistics published by the World Bank, BiH has a child mortality rate of 5. The life expectancy at birth rate of the country is 77.74 years, 74.76 for males and 80.93 for females.

The countries Covid-19 response was largely supported by international agencies as the impact of the pandemic exceeded the countries national coping capacity. As was the case worldwide, the Covid-19 pandemic disproportionately impacted marginalized communities in BiH, including the Roma community and displaced persons. Aside from adverse impacts on the health of marginalised population, gained through compromised living conditions and limited access to healthcare, marginalised population suffered loss of income typically gained through informal work and schooling through lacked access to online education. As well as this, restrictions imposed as public health measures played a role in the increase of domestic violence and other forms of abuse (32.)

Mental health disorders are prevalent among the population of BiH. Post-traumatic stress disorder is among the most prevalent mental health disorders in BiH posing a significant challenge to the country. The disorder is brought on by the witnessing or experiencing of traumatic events. In 2011 the World Health Organisation estimated that 400,000, or 10% of the population of BiH had been diagnosed with post-traumatic stress disorder as a consequence of the war, but estimated that the exact number amounted to an estimated half of the population (12).

A 2010 research paper investigating mental disorder prevalence in post Balkan war countries, carried out through the interviewing a representative sample of between 637 and 727 participants who had lived through the war by trained psychologists, identified a prevalence rate of 22% for mood disorders and 35% for post-traumatic stress disorder in citizens 11 years following the end of the war. The 35% prevalence rate of PTSD reported in the research paper is closer to the WHO estimation of half of the population (14).

Historical Overview

In order to gain a comprehensive understanding of modern day BiH, it is important to understand the former Federation of Yugoslavia, of which Bosnia was a member state for the majority of the 20th century. The Balkans have throughout history been an ethnically diverse region, due to their geographic location the area has served as the border of the western, eastern and Islamic worlds for centuries, reflected in the populations which inhabit it.

The Kingdom of Yugoslavia was established following the end of the first world war, comprising of six neighbouring countries in the Balkan Peninsula which are nowadays; Serbia, Croatia, Slovenia, Macedonia, Montenegro and Bosnia Herzegovina. In 1945, following the second world war, Yugoslavia was re-established as the Socialist Federation of Yugoslavia. Tensions between ethnic groups were always present in the Federation, but for many years were kept under control. This was primarily due to the efforts of Josip Broz Tito who served as president of Yugoslavia between 1953 and 1980, achieved through the promotion of unity and brotherhood amongst citizens across ethnic lines. He was able to successfully suppress nationalism within the member countries for a number of years. Under the leadership of Tito, the Socialist Federation of Yugoslavia became industrially powerful and enjoyed a relatively well effective economy. However, this economic success was short lived, an oil crisis throughout Europe in 1973 led to an economic crash in the country, swiftly reversing the economic successes of the federation.

The economic collapse of the federation coincided with the death of Tito in 1980. The two events led to a rise in nationalism across member countries and tension between ethnic groups intensified. The death of the president Tito is often viewed as the beginning of the end of the Socialist Federation of Yugoslavia. The break-up of the Federation was achieved through four individual wars for independence, wars in Croatia, Slovenia, Bosnia and Herzegovina and Kosovo. In 1991, growing nationalism and the worldwide trend of falling communism led to member states, first Slovenia and then followed by Croatia, voting for independence from Yugoslavia. In both cases the vote for independence resulted in the eruption of military conflict primarily between ethnic groups within the given countries.

As is true for the majority of the Balkans, BiH has for centuries been a multi ethnic country. According to the 1991 census, 44% of people identified themselves as Bosniak Muslims, 32.5% Christian Orthodox Serbs, 17% Catholic Croats, with only 6% of the population identifying as Yugoslav. On the 3rd of March 1992, the people of Bosnia voted in a referendum which resulted in a declaration of independence. The referendum was denied by Bosnian Serbs, who were instead in favour of creating their own separate Serb republic with the backing of Serbia and the Serbian forces.

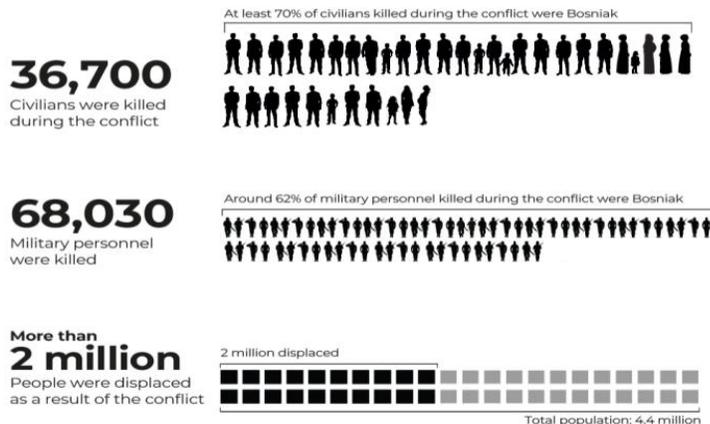
On the 1st of April 1992 one month following the declaration of independence in BiH, a Serbian paramilitary group attacked the city of Bijeljina marking the beginning of what would be a four year long conflict. As ethnic tensions rose and the struggle to establish separate territories progressed, erupting violence resulted in a power vacuum in which each ethnic group fought for land. Initially Bosnian Croats backed the Bosnian forces until October 1992 when they carried out attacks on Bosniak Muslims, joining the battle to obtain land for their own Bosnian Croat

population, this move by the Croat forces essentially led to a war inside a war. Though atrocities were committed on all sides of the conflict, it was the Bosniak Muslims who endured the most significant impact of the conflict (2). The United Nations and the international community attempted to intervene to bring an end to the war.

The United Nations Security Council established 46 resolutions on Bosnia and Herzegovina, however the resolutions failed to address the underlying causes of the conflict, instead placing focus on sustaining humanitarian operation and the creation of six United Nations safe areas. The United Nations Protection Force teams stationed in the safe areas lacked the mandate, equipment or resources to adequately defend civilians, resulting in attacks by Bosnian Serb forces in each area. In the summer of 1995, the declared United Nations safe area of Srebrenica was attacked by Bosnian Serb forces. Over a period of five days from the 6th of July 1995 a total of approximately 8,000 unarmed men and boys were separated from their families and systematically killed by Serb forces.

The area was under the protection by the Dutch battalion of United Nations Protection force positioned in the town with the aim of keeping the peace, however the battalion failed protect the citizens of the area from invading Bosnian Serb forces. On the 30th of August 1995, almost two months since the start of the attacks on Srebrenica, NATO intervenes by deploying over sixty aircrafts to launch airstrikes on Bosnia Serb forces. The attack lasted twenty one days and involved attacks on 338 targets. The Dayton Peace Agreement was formally signed in Paris on the 14th of December 1995, marking the official end of the war and outlining the General Framework Agreement for Peace in BiH. By the end of the war approximately 100,000 civilians and military personnel were killed, 50,000 women and girls systematically raped and two million persons, almost half of the country's pre-war population, displaced (2).

BOSNIA
The human impact of the Bosnian war
 More than 100,000 people were killed and two million became refugees as a result of the war in Bosnia.



The attacks on Srebrenica in the summer of 1995 by Bosnian Serb forces resulted in the systematic killing of approximately 8,000 unarmed men and boys. The International Criminal Tribunal for the former Yugoslavia concluded that the systematic killings of men and boys along with the death of civilians amounted to a genocide. This was the first conviction for genocide in Europe to be entered by an international criminal tribunal.

The killings at Srebrenica have been described as the worst systematic killings which took place in Europe since the second world war. Despite having been declared a United Nations safe zone, the failure of the United Nations Blue Helmets positioned in Srebrenica to protect the citizens of the area from invading Bosnian Serb forces and consequently the murder of 8,000 unarmed men and boys, the death of 20,000 civilians and rape of thousands of women came under scrutiny by the international community (19).

Over the years between 1992 and 1995 in which the war took place in BiH, an estimated 31,500 people were reported missing. According to the International Commission on Missing Persons, to date an estimated 70% of those reported missing during the war have been accounted for, leaving an estimated 30% still missing today. The majority of missing persons have been discovered in some of an estimated 3,000 mass graves uncovered from the end of the war to recent times. One of the largest mass graves in the world was discovered in 2003 on the mountain of Crni Vrh with a total of 629 bodies excavated. Additional mass graves and missing persons are being discovered each year, in 2021 alone 80 missing persons were discovered and excavated (5). Glogova mass grave, discovered by satellite imagery 13km from Srebrenica, was exhumed in 1999, 2000 and 2001, with the remains of 430 persons found.

According to the Missing Persons Institute of Bosnia and Herzegovina it is believed that the remains of an estimated 1,000 victims of the Srebrenica genocide remain buried in graves on the outskirts of the town. In attempts to cover up atrocities committed, bodies buried in mass graves throughout the country were dug up and moved to secondary, and in some cases third locations. It was determined in the Hague Tribunal that organised operations took place to cover up the extent of the crimes committed at Srebrenica through the exhuming of bodies from primary graves and reburial in secondary, and sometimes even third graves sites.

The efforts were believed by the tribunal to have been carried out primarily between August 1 and November 1, 1995. The use of machinery to excavate and rebury has resulted in the dismemberment of bodies and on a number of occasions in the remains of one victim being discovered in a number of different locations. An example of this can be seen at the mass grave of Glogova, bodies from which were relocated to at least 16 locations, some as far as fifty kilometres from the original grave. In some cases, substances such as lime and acid were poured over remains at burial to aid decomposition (13).

Throughout the entirety of the war a total of 677 camps and detention centres were established. Survivors reported conditions in the camps as horrendous with prisoners being subjected to cruel and inhumane treatment such as starvation, physical, and emotional torture. Access to the camps for the international bodies such as United Nations and Red Cross was denied by Serb forces. The most notorious of the 677 detention camps in BiH was Omarska camp, situated in the

town of Omarska. The camp was operational between the 25th of May and the 21st of August of 1992, in which time an estimated total of 6000 inmates had been detained. Of the 6000 inmates held at Omarska, 700 were killed through direct execution or as a result of the conditions which were endured. The majority of the persons at Omarska held were Bosniak Muslims, with a smaller of the population Croats and other ethnic minorities (2).

During the duration of the Bosnian war, an estimated 50,000 women and girls were raped, the majority of women were Bosniak Muslims. Mass rape was used as a weapon of war to terrorise and torture civilians, predominantly women and girls. The most disturbing example of systematic rape carried out during the war can be seen in the establishment of 'rape camps', camps in which women were held and repeatedly raped by soldiers. The most well know of such camps was hotel Vilina Vlas, in which more than 200 Bosniak women and girls were held. After enduring repeated rape, many of the girls and women were murdered, as many as 180 of their bodies were found discarded in the water downstream from the site of the camp. For the purpose of prosecuting war crimes perpetrated during the Yugoslavian wars, the United Nations Security Council established the International Criminal Tribunal for the former Yugoslavia in 1993. It was during these prosecutions that rape was recognised for the first time as a weapon of war and crime against humanity, however it would not be until 2008 that the United Nations Security Council passed Resolution 1820, which states "rape and other forms of sexual violence can constitute war crimes, crimes against humanity, or a constitutive act with respect to genocide (2).

The Bosnian war saw an estimated total of 2.6 million persons displaced, 1.3 million of whom were displaced internally following the signing of the Dayton Peace Accords. Approximately half of the externally displaced population fled to neighbouring countries of Montenegro, Serbia and Croatia, with the majority of the remaining half of the externally displaced population fleeing to five countries in western Europe: Germany, Austria, Denmark, the Netherlands and Sweden who took an estimated 50,4200 refugees granting them short term protection. Of the persons fleeing to western countries, the majority were Bosniak Muslims. In response, the United Nations High Commissioner for Refugees launched an emergency relief operation, which was at its time amongst the largest carried out by the UN agency.

A major cause of internal displacement following the Bosnian war, was due to destruction of houses and the re-division of the country across ethnic lines. Sixteen months following the signing of the Dayton Accords a further 80,000 persons were displaced from their homes, this displacement was largely due to the transfer of territory between the two Entities as outlined as part of the agreement. Though the Dayton Peace Accords brought an end to the conflict, ethnic tensions did not ease with the end of the war. Discrimination became a barrier to refugee return (2).

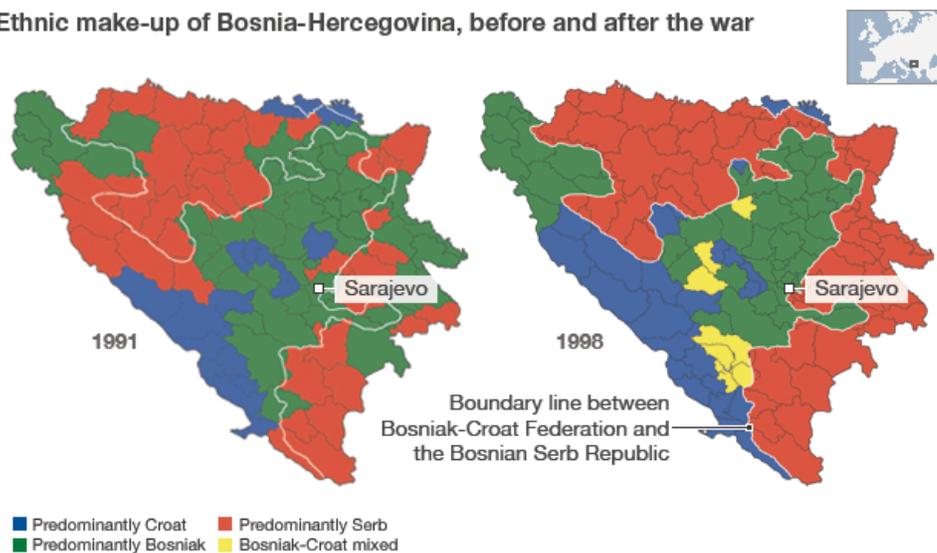
Peace talks commenced on the 1st of November 1995 through the peace conference which brought together the Serbian, Croatian and Bosnia and Herzegovina Presidents as well as international representatives from the United States, the European Union, Russia, the United Kingdom, Germany, Italy and France. The talks lasted for a duration of 21 days and signified the end of the war through the signing of the General Framework Agreement for Peace in Bosnia and Herzegovina. The Framework is more commonly known as the Dayton Peace Accords, after the city in the United States in which it was signed, Dayton Ohio (1). The Dayton Peace Accords was

formally signed in Paris on the 14th of December 1995, marking the official end of the war. The signing of the agreement was intended to bring an end to the war, as well as to establish a new system of government in the country which fairly represented the ethnic make-up of its population. Directly following the signing of the agreement, the office of the High Representative for Bosnia and Herzegovina was established, tasked with overseeing the implementation of the agreement.

The accords outlines agreements on regional stabilization, inter-entity boundary lines, elections, the country's constitution, arbitration, human rights, refugees and displaced persons, preservation of national monuments, public corporations, and the implementation and international of the police task force. Another focus of the Dayton Agreement was the economic and social development of the country for which reconciliation between ethnic groups was outlined as a main priority (4).

The international community created a constitution attempting to represent and satisfy each of the three main ethnic groups within the country. As part of the agreement Bosnia and Herzegovina was divided by ethnic lines into two self-governing administrative entities, the Republic of Srpska in which reside a majority of Serb orthodox Christians and the Federation of Bosnia in which reside a combination of Bosniak Muslims and catholic Croats. Each of the entities are autonomous and are divided further into smaller areas, these areas are called cantons in the Federation of Bosnia and Herzegovina and municipalities in the Republic of Srpska. The two regions are given wide autonomy but share three key institutions, the tax administration, judiciary system and the defence force. The land mass of the two regions are similar, the Federation of BiH covers an area of 26,000km² and the Republic of Srpska 25,000km². As well as the entities of the Republic of Srpska and the Federation of BiH, the international community created the Brčko District, a small self-governing and multi ethnic area located in the north of the country. Prior to the war communities had lived in separate areas, however, following the physical division of the country into the two entities, the physical division of the ethnic groups became more severe as can be seen depicted in diagram number 1 (4).

Ethnic make-up of Bosnia-Herzegovina, before and after the war



Source: Office of the High Representative (1)

The government structure formed by the international community following the war is to this day amongst the most complex systems of government existing in the world. The system comprises of three presidents, fourteen governments and one hundred and thirty six ministers. The political governing system was created with multiple layers divided into four levels comprising of the state, entities, cantons and municipalities.

The state is comprised of a bicameral parliament along with a Council of Ministers. The presidency in Bosnia comprises of a shared three member body intended to replace a single presidency. Each president representing one of the three main ethnic groups in the country, a Serb, Croat and Bosniak, candidates for presidency are only permitted to run for the role in line with their identified religion. The same is true for voters within the country which are equally divided down ethnic and religious lines, an individual is only permitted to vote for the candidate in their own religion. Every eight months the chair of the presidency rotates between the three to allow each ethnic group representation in the office. The main focus of the presidency are matters of foreign policy.

However, in order for a vote to be placed regarding foreign policy must come from consensus reached between the three presidents, because reaching such consensus is often hindered by the inability to come together and agree, the country instead often abstains from voting altogether at international institutions. Above all 4 levels of government sits the Office of the High Representative for BiH. The role of the High Representative is to oversee the civilian implementation of the Dayton Agreement. As well as this, a 1997 amendment to the Dayton Agreement granted power to the High Representative to remove any politician from office or veto laws within the country. The seat of the High Representative is occupied by an external and impartial individual who has to date been from a European Union member state (10).

Experts in the field of conflict resolution and peace building have identified reconciliation as a key factor in achieving and maintaining peace. The concept of reconciliation is in itself a relatively modern idea, originating from the realization that conflict causes extreme and long lasting fear and anger in a population who has both participated and been victim to the conflict. Reconciliation is especially vital in post conflict areas in which victims and perpetrators live within the same communities, as is the case of post war BiH.

A major focus of the Dayton Accords creators was to focus on developmental projects to promote the economic and social development of the country. In order to achieve such development reconciliation between ethnic groups was outlined as a main priority. The need for the citizens of BiH to gain closure and justice for the victims of the war must be balanced with the countries need to unify and move forward.

Having crimes formally recognised through the persecution of perpetrators and recorded within the judicial systems is a vital foundation on which to build post war reconciliation. In May 1993, the United Nations Security Council established the International Criminal Tribunal for the former Yugoslavia, for the purpose of prosecuting the most significant war crimes perpetrated during the Yugoslavian wars and as a means to participate in maintaining peace and establishing the facts of crimes and events. Crimes against humanity committed during the Bosnian war were brought to trial under this court. Throughout its 24 years of existence, the ICTY conducted trials over more than 10,800 days, issuing 161 indictments and hearing 4,600 witnesses. The trials and

prosecutions produced over 2.5 million pages of transcript open to the public domain, the significance of this documentation is the creating of historical records of crimes committed, aiding to combat denial. As well as this the ICTY played a role in the discovery of mass grave sites, this was achieved through reduced sentencing offered to a number of persons in exchange for a guilty plea and information on the whereabouts of mass grave locations. Of the 161 people indicted, 19 took a guilty plea deal (28).

The ICTY was the first international tribunal throughout history to try a case exclusively of rape. A millstone in international justice was seen as the ICTY became the first international criminal tribunal to enter convictions for rape as a form of torture, it was within this that rape was recognised for the first time as a weapon of war and crime against humanity. However it was not until 2008 that the United Nations Security Council passed Resolution 1820, which states “rape and other forms of sexual violence can constitute war crimes, crimes against humanity, or a constitutive act with respect to genocide.”

Since the end of the war judicial advancements have been made through the ICTY, 70 charges of crimes of sexual violence were made through the tribunal, though to date only approximately 30 perpetrators have been convicted. This response has been criticized by the international community and United Nations agencies, the Women’s International League for Peace and Freedom deemed the response inadequate to meeting the needs of women and girls impacted by wartime sexual violence. A limited number of reparations have been provided on a case-by-case basis, but little has been done to achieve adequate gender-sensitive reparations to the effected population or to address the underlying societal issues which led to sexual violence. In 2021, the United Nations Committee on the Elimination of Discrimination against Women criticised the support and compensation for victims of sexual violence stating that attempts have failed to meet the needs of victims (10).

Though the tribunal had met its goal to prosecute the main offenders of war crimes committed in former Yugoslavia, it failed to meet a number of expectations. One of such expectations was the suppression of nationalism through factualising of crimes committed. The making public of guilty pleas was intended to act as an alternative account to that of nationalist views, however until 2000, accounts and documentation was published in English and French, the tribunal failed to translate them into Serbo-Croat, making them inaccessible to the affected populations.

The tribunal was heavily criticised for this lack of translation and was accused on placing more importance on accessibility to western European countries than benefiting those affected and involved in the wars. Another major criticism of the ICTY is the speed at which cases have been processed and justice served. December 7th 2017 marked the closure of the ICTY, placing the sole responsibility for the prosecution of war crimes on domestic courts, however persecutions are to date moving at a slow rate, resulting in the deaths of the accused before sentences have been handed down and justice served. (30)

Post war memorialization can aid as a tool for reconciliation in affected areas and communities, the importance of which can be outlined through three major roles, by acting as a reminded or a historical event, to honour or mark the lives of persons lost in conflict, or to mark the injustice or discrimination which took place. The act of memorialization can take many forms such as the erection of physical installations like monuments, plaques and graves, or activities such as vigils,

public apologies, exhibits or marking of anniversary dates of events which took place . One of the most significant site erected in commemoration of victims of the Bosnian war is the Srebrenica–Potočari Memorial and Cemetery. In 2013 a memorial site was erected to honour the victims of the Genocide which took place in the town in 1995. The site is comprised of a visitors centre, a wall on which is written the name of the victims, as well as a cemetery in which the remains of many of the victims lay buried. The grave sites are marked by a total of 6,504 tomb stones which hold the names of 8,372 people who lost their lives during the genocide. The site is unique as it honours the lives lost during the fight of all sides and ethnicities. The wall of names hold the names of all who lost their lives though many bodies of those killed were never found and reburied, for many families who's loved ones were never found the site offers a place to morn and remember them. As well as being a place in which families remember their loved ones, the site is also one of collective mourning in which the community effected by the conflict gather each year to grieve and remember those lost (31).

Though a number of attempts have been made since the end of the war to aid reconciliation between ethnic groups in BiH, they have overall been unsuccessful. Research into reconciliation in BiH has highlighted a number of barriers and failures on the part of government and international actors including the exclusion of women in peace processes, the prioritization of ethnicity over country and institutional segregation amongst young people.

Research shows that gender inequalities and gender based violence is exacerbated by conflict. Despite being disproportionately affected by armed conflict, worldwide women have historically and today being excluded from, or have been grossly underrepresented in peace talks and negotiations. A report published by the United Nations Security Council on women's participation in peace processes showed that between the years of 1992 and 2019 worldwide, women have made up an average of thirteen percent of negotiators, six percent of mediators and six percent of signatories in major peace processes. As well as this, an estimated seven out of every ten peace processes worldwide did not include any women mediators or signatories. In the case of peace talks and negotiations for the Bosnian War women were entirely excluded. The peace talks and brokering of the Dayton Peace Accords did not include a single female negotiator, mediator or signatory (24).

A major focus of the Dayton Accords was the importance placed on reconciliation between ethnic groups to achieve sustained peace and development. Though peace brought on by the signing of the Dayton agreement still holds in Bosnia and Herzegovina today, despite this the ethnic tensions between the Serb, Bosnak and Croat populations inside the country are strongly felt 26 years after the end of the war. The population of the country tend to largely identify on the community based level through ethnic lines rather than on a country level as Bosnians. Research has identified a weak country identity and the inability of citizens to identify as Bosnian as a major barrier to reconciliation.

Geographic and institutional segregation further aid ed by strong division along ethnic lines and the inability to look past ethnic differences for a peaceful country. This shows that individuals prioritize their ethnic preferences over their national ones. Polarization is in itself written into the core of the political system in the country, a strong example of which can be seen in the decision making ability of the presidency. The three way presidency was established in an

attempt to fairly represent each of the ethnic groups within the country, however the tensions and the inability of the three parties to agree or compromise for the sake of the country as a whole leads to little development, particularly when it comes to policy change or actions which would benefit the country as a whole (3).

Children and young people born after the conflict are learning about the history of their country only from the perspective and experience of their given ethnic group, carrying on the pattern and belief from the previous generation. Prior to the Bosnian war, schools in BiH were mixed with children from all nationalities sharing the same classrooms and learning from the same curriculum. The end of the Bosnian war and the signing of the Dayton Accords saw a major reform in the education system in the country. Unlike the system prior to the war, schools became segregated down ethnic lines. Each district has its own education system and curriculum with learning outcomes differing from that of the other district.

As a consequence, to the segregation of systems, children and young people have low levels of contact between each other making the divide between groups wider. Intergroup contact has been shown to play a major role in creating an environment of understanding between groups who have faced tensions. As well as this, children and young adults learn about the historical events of their country differently than children of other ethnicities. Through such differences students tend only to learn about the historical events of their country through the narrative of their own ethnicity and not from the experiences of other groups who were involved. This means that the educational sector has been a barrier in achieving reconciliation. Because the classes are thought primarily by teachers who share the same ethnicity as the children, it significantly increases the chance of a single-story narrative shared with young people, creating less room for reconciliation and understanding of the experiences and narrative of the other groups (18).

Strategies

A number of international and national strategies, frameworks and recommendations have been developed to enhance reconciliation between ethnic groups and to address a number of barriers which were outlined in this section .

1325 National Action Plans on Women, Peace and Security:

Description and objectives: In 2000, the United Nations Security Council created solution 1325 on women's peace and security, addressing the impact of conflict on women and girls. The solution highlighted the need to protect against sexual violence during conflict as well as women's participation in conflict resolution, peace building and reconstruction and reconciliation post conflict.

Link to the strategy:

https://www.un.org/en/ga/search/view_doc.asp?symbol=S/RES/1820%282008%29

Bosnia and Herzegovina National Action Plan on Women, Peace and Security 2018-2022

Description and objectives: In response to the solution, the Women’s International League for Peace and Freedom launched 1325 National Action Plans on Women, Peace and Security, in which countries around the world commit to implementing solution 1325 in their countries. To date 98 United Nations member states have agreed to create and adopt national plans within their countries. In 2018 BiH adapted its most recent action plan to be implemented between 2018- 2022, following on from previous plans for 2010-2013 and 2014-2017.

Link to the strategy: <http://1325naps.peacewomen.org/>

National War Crimes Processing Strategy 2008 – 2015

To address the issue of delayed war crime prosecution BiH adopted the National War Crimes Processing Strategy 2008 – 2015. The strategy was adopted in 2008 with the aim of having all high priority cases prosecuted by 2015. However, the deadline was not met resulting in the need to develop and adapt a revised National war crimes processing strategy with a new deadline of completing prosecutions by 2023

Link to the strategy: <https://www.osce.org/files/f/documents/b/d/106868.pdf>

Intergroup contact in schooling

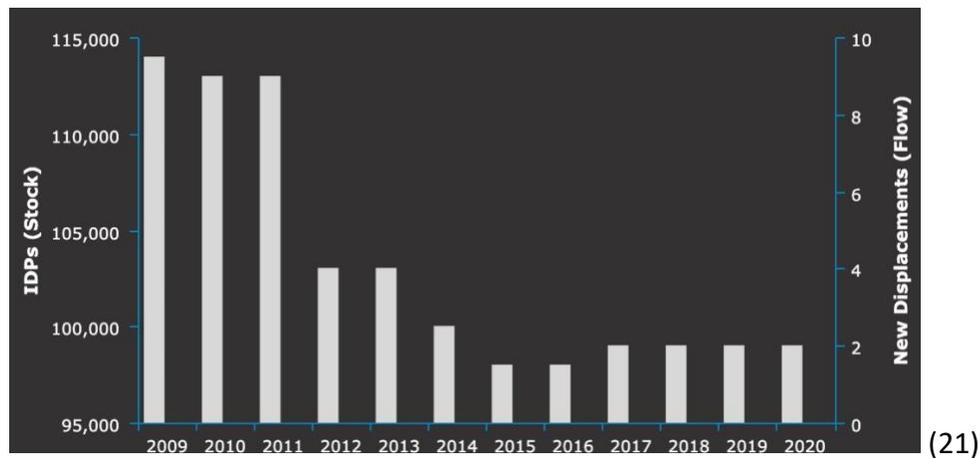
Intergroup contact has been shown to play a major role in creating an environment of understanding between groups who have faced tensions. Over the past 5 years a number of studies have taken place in ethnically mixed schools across BiH with the purpose of measuring behaviours and attitudes between ethnicities among students. One study found that the likelihood for children to believe in the possibility of reconciliation increased by an average of 7.2% for children and young people who attended ethnically diverse school. Another study found improved levels of inter-ethnic interaction and enabled re-negotiation of preconceived narratives around identity, ethnicity and history were found more frequently in integrated school settings. The segregation of children by ethnicity allows for assumptions and prejudice about the other to flourish. Increased intergroup contact makes for an environment of learning about the experiences and dialogue of the other, leading to greater understanding on all sides. (22)

Displaced populations

According to the Ministry for Human Rights and Refugees, of the 1.3 million persons internally displaced following the Bosnian War which ended in 1995, 96,421 remained internally displaced in 2019. To meet the shelter needs of the post war internally displaced population, the state created a number of collective centres in which an estimated 50,000 IDPs were housed. The centres were established with the intention of acting as short term housing solutions for internally displaced persons, however, in 2020 158 collective centres still exist, providing shelter for more than 8,000 of BiH’s internally displaced population (9).

The protection of IDPs was a major concern during the peace talks and agreements. Article VII of the Dayton Peace Accords outlined the protection of IDPs in line with their fundamental human rights as a crucial aspect of achieving and maintaining peace. However, 25 years since the end of

the war, thousands of internally displaced persons in BiH still lack access to their rights such as the right to adequate housing. Discrimination poses a major risk to IDPs ability to return and reintegrate into their post war communities. A 2010 report published by Amnesty international identified discrimination in employment as a major obstacles to the return of refugees and internally displaced people to their post-war homes (37).



(21)

Since 2018 the Balkans have become a key migration rout for refugees wishing to enter European Union member countrys. According to the European commission, over 87,000 migrants have arrived in BiH from the beginning of 2018 to April 2022, with 2,300 currently living in the country. Of the 2,300 persons, only 2,000 reside in official reception centres, with 300 residing in unsuitable conditions despite access to centres (27). Furthermore the invasion of Ukraine by Russian forces on the 24th of February 2022 and subsequent war which followed, has resulted in a major increase of Ukrainian refugees entering BiH and search of asylum. An operational report published by UNHCR, stated that in March 2022 alone 2660 Ukrainians arrived BiH fleeing the war, with 2,223 persons having exited on rout to other destinations. According to the United Nations Office for the Coordination of Humanitarian Affairs, as of May 2022 over 200 Ukrainian families have taken refuge in BiH. Though access to asylum processes are available to persons fleeing from Ukraine, the authorities in BiH have provided inadequate information to those entering the country, creating an information barrier to potential asylum seekers (11).

A report published by the United Nations General Assembly following a 2020 visit to BiH by the Special Rapporteur on the human rights of migrants outlines extensive welfare concerns regarding refugees entering and residing in the country (29). The United Nations High Commissioner for Refugees stated that a major barrier to accessing asylum procedures was the capacity of the country to register and process asylum claims in a timely manner. (24) As well as this, lack of housing for asylum seekers has resulted in a large number of persons sleeping rough without access to supports and services. A major consequence to persons living outside of official reception centres and accommodation is the inability for persons to register their claims without a registered place of residence. Following criticism of its treatment and sheltering of asylum seekers, in November 2021 BiH authorities established a new migrant camp. The facility has capacity for 1,500 persons, acting as a key reception centre. The camp was intended to replace

unofficial settlements and claims to provide basic needs of the population including access to health, food and shelter in line with the Sphere standards for humanitarian action.

A major welfare concern outlined by the United Nations is in relation to the welfare of unaccompanied minors. Lack of safe housing and child protection services poses a great threat to the safety and welfare of unaccompanied children entering BiH. Even for unaccompanied and separated children living inside official asylum centres, the centres lack the appropriate supports and services to meet the child protection needs of this growing population, further compromising the welfare of children.

With increased movement of refugees across the Balkan countries, UN agencies such as the United Nations High Commissioner for Refugees and non-government organisations have warned of the danger of landmines to refugees entering through land borders into the country. To educate refugees on the on landmines, the International Office for Migration has launched training initiatives in their reception centres in order to raise awareness to persons attempting further border crossings on the dangers on landmines (18).

Bosnia and Herzegovina Crisis Response Plan 2021

Description and objectives: The United Nations International Office for Migration launched their 2021 Crisis Response Plan for supporting displaced persons in BiH. The response plan provides assistance under three primary objectives:

1. Provision of humanitarian assistance to meet the basic needs of the population and improve protection. The meeting of basic needs is achieved through camp coordination and management in line with minimum standards regarding Food, Water, shelter Sanitation and Hygiene and the distribution of non-food items. Protection is achieved through the provision of humanitarian assistance to survivors of human rights violations.
2. To address the longer term impacts and drivers of crises and displacement. This is achieved through investment in recovery and crisis prevention through mental health and psychosocial support, social cohesion, peacebuilding and preservation and reparations.
3. By contributing to an efficient crisis response system such as displacement tracking

Link to the plan:

[file:///Users/verastojanovic/Downloads/2021_Bosnia_and_Herzegovina_Crisis_Response_Plan_2021%20\(1\).pdf](file:///Users/verastojanovic/Downloads/2021_Bosnia_and_Herzegovina_Crisis_Response_Plan_2021%20(1).pdf)

Strategy of supporting solutions for vulnerable internally displaced persons and returnees in BiH

Description and objectives: The strategy was signed in 2017 with the aim of supporting the relocation of internally displaced person. This is to be achieved through the involvement of all government bodies to develop a solution to replace collective centres housing internally displaced population in BiH.

Link to the strategy:

<https://reliefweb.int/report/bosnia-and-herzegovina/strategy-supporting-solutions-vulnerable-internally-displaced-persons>

Vulnerabilities

The government of BiH has been criticised for its political and institutional discrimination, as well as its lack of actions to address and mitigate inter community discrimination within ethnic groups of the population. A 2016 report published by the Ministry of Human Rights in BiH on the Occurrence of Discrimination found that discrimination was present in almost all aspects of life within the country, including on political, institutional and intercommunity levels.

Discriminatory provisions of the constitution written as part of the Dayton Peace Accords, prohibit ethnic Bosnian minorities from running for president elections, the ongoing failure to address and amend this article of the constitution has resulted in widespread criticism from the international community. In some instances, in BiH, the exclusion of ethnic minorities to partake in elections has resulted in a pause on elections altogether, in the case of Mostar the city had not held elections over a twelve-year period from 2008 to 2020, halting democracy in the town for over a decade. This twelve-year gap took place despite a 2010 ruling by the Bosnian Constitutional Court which declared the power sharing structure in Mostar as discriminatory and unconstitutional. In 2009, the European Court for Human Rights ruled the constitution of Bosnia and Herzegovina to be discriminatory. However, to make an amendment to the constitution in relation to government structural reform, the decision must be passed by a two thirds majority. Reaching consensus in a politically divide country proves a major challenge, making it unlikely that constitutional amendments will be made in the near future. It is for these reasons that in the 12 years following the European Court for Human Rights ruling there has been no change to the constitution (25).

The 2016 report published on the Occurrence of Discrimination in BiH highlighted the withholding of access to basic needs and services for marginalized populations as another major form of discrimination at state level. According to the United Nations Development Programmed in 2018, members of the Roma community residing in BiH face challenges accessing basic services to meet needs such as health care, education, housing, and employment. A major barrier to members of the Roma community accessing basic services is the lack of identification documents which are necessary to obtain access to services.

The Organisation for Security and Co-operation in Europe stated that the most visible example of discrimination within education in the country to be the two schools under one roof system. Two schools under one roof policy report refers to the practice of segregation of ethnic groups within the national school system. Each district has its own education system and curriculum with learning outcomes differing from that of the other district. As a consequence, to the segregation of systems, children and young people have low levels of contact between each other making the divide between groups wider. (25)

A barrier to social cohesion and reconciliation amongst communities is attributed to the presents and public display of genocide denial within BiH. Genocide denial refers to the act of outright denial or attempts to minimize the severity or scale of a genocide which took place. It can be argued that denial is an integral part of genocide itself, manifested through the use of propaganda and covering up of evidence, both of which were present throughout the Bosnian war. The International Criminal Tribunal for the former Yugoslavia concluded that killings by Serb forces in 1995, which took place in Srebrenica resulting in the deaths of approximately 7,000 men

and boys, amounted to a genocide. This was the first conviction for genocide in Europe to be entered by an international criminal tribunal. Despite this conclusion, many Bosnian Serb officials have publicly denounced the title of genocide for the killings at Srebrenica, the argument brought forward instead was that all sides suffered losses. Genocide denial has been outlined as a major barrier to achieved reconciliation and healing between ethnic groups within BiH. Since the end of the war in 1995, several laws banning the denial of genocide have been attempted to be passed in BiH, however each was blocked by Republic of Srpska representatives. In 2020, Dunja Mijatović the Council of Europe Human Rights Commissioner stated that genocide denial is prevalent amongst politicians posing a threat to peace within the country.

The act of genocide denial on the political level poses as a major obstacle to the country's progress and acts as a barrier to reconciliation between communities. Moreover the denial of genocide and the celebrating of war criminals increases the possibility of similar atrocities being repeated and therefore a threat to peace. In 2019 the government of Republic of Srpska established two commissions tasked with investigating the sufferings of all sides during conflict in Srebrenica and in Sarajevo during the period between 1992 to 1995. Reports on the conflict at each location were published by the commissions in July 2021, accusing the trials carried out through the ICTY to being politically bias and wrongly classifying the events at Srebrenica as genocide (3).

Genocide denial can also be carried out indirectly through actions such as the commemoration of war criminals. An example of this can be seen in 2017 when Ratko Mladic, a general in the Republic of Srpska army, was sentenced to life imprisonment for genocide and crimes against humanity. The sentence was passed by the of the International Residual Mechanism for Criminal Tribunals (IRMCT), set to carry out the remainder of the life in prison sentenced for genocide and crimes against humanity committed. Milorad Dodik, the Bosnian Serb president called the genocide at Srebrenica a myth. During the time of the trial and for a period thereafter, a number of towns in Republic of Srpska hung flags and banners and erected murals pronouncing Mladic as a war hero (3).

In November of 2008, the Council Framework Decision 2008/913/JHA was launched by the European Union. The framework outlines that member states of the European Union are obliged to by law criminalise and publicly condemn the denial of genocide, war crimes and crimes against humanity. In July 2021, the office of the High Representative for BiH launched an act which would criminalise the denial of genocide and the glorification of perpetrators. Those found breaching the act could be subject to facing jail time. This act received backlash for Republic of Srpska government representatives and president. In response on the 10th of December 2021, politicians of Republic of Srpska voted to withdraw from the army of Bosnia, the three major institutions, the tax administration, the judiciary system and the defence force. This vote was carried out despite concerns from the international community that such a move could destabilize the Balkans. In a report issued the United Nations Security Council, Christian Schmidt, the Chief International Representative of Bosnia stated that BiH is at risk of the breaking up or possible restarting of ethnic driven conflict.

Natural hazards

The Balkans are vulnerable to a number of slow and rapid onset natural disasters, including both geological and meteorological hazards. According to a 2020 comprehensive analysis of Disaster Risk Reduction and Management System for agriculture in BiH, carried out by the Food and Agriculture Organization of the United Nations, the most commonly occurring natural disasters within the country include flooding, landslides, drought and earthquakes. The increasing frequency of natural disasters predicted for BiH is expected to have adverse effects on the countries socioeconomic development. The country has little capacity and resources to respond to and prevent disasters, relying heavily on support from international agencies and actors in the event. The Internal Displacement Monitoring Centre estimated the risk of future displacement as a result of sudden onset disasters at 14,502 people per year, 771 of predicted to be due to earthquakes and 13,731 due to flooding across the country (20).

BiH, particularly its low lying areas, is extremely vulnerable to flooding, with 27 regions having been classified as high risk. The major rivers in the country prone to flooding are Vrbas, Sava, Sana and Bosna. Floods are categorised as rapid onset disasters, often emerging quickly and unexpectedly, having devastating effects on communities, the impacts of which are exacerbated if early warning systems are not in place. Given climate change predictions, experts believe that risk of flooding and associated disasters such as landslides will increase in the Balkans over the coming years increasing the vulnerability of countries to such events. As well as climate change, a number of man-made factors contribute to the increase in flooding risk in BiH such as change in land use, river diversion and urbanisation in flood risk areas such as river basins. Increased flooding will result in increasingly negative effects on the country GDP, as well as on the quality of life and livelihoods of affected populations.

The countries response capacity was tested in May 2014, when flooding in the Balkans resulted in catastrophic damage, displacement and loss of life in affected areas. Sustained heavy rains in late April and early May increased soil moisture in the region. On 13 May, a Yb-type cyclone named Yvette moved over the Mediterranean Sea to the Balkan Peninsula. The cyclone remained stationary and led to unprecedented levels of rainfall over a 4 day period. In the 120 years of observational data recorded, rainfall over the period of the 13th to the 16th of May was the highest level recorded to date. The highest amount recorded over the three day period amounted to three times the combined rain prediction for may in the region. As a result of the heavy rainfall, rivers in the region broke their banks and severe flooding across the Balkan countries pursued. The countries worst affected were Serbia and BiH.

In BiH alone, it was estimated that over one million of the populations 3.482 million people were directly affected and 25 persons lives were taken as a result of the disaster. Furthermore, the magnitude of rain which fell over the three-day period caused an estimated 3000 landslides to occur across the country. An estimated 75,000 homes were affected, of which 25,000 were severely damaged or destroyed. This resulted in the displacement of 89,981 people across the country who were evacuated from their homes. Extensive agricultural losses were suffered with the death of livestock, flooding of cropland and damage to machinery and equipment. Infrastructure damage in affected areas was severe with damage to roads, transportation systems and amenities such as electrical and water supplies. The cost of damages was significant.

A needs assessment carried out by the United Nations, World Bank and the European Climate Prediction system project, estimated that cost amounted to 1.7 billion US dollars in total. With destruction to housing estimated at 882.7 million, livelihoods at 822.7 million, the health sector at 11.3 million and sanitation at 10.6 million. According to situational reports by the World Health Organisation following the flooding, a number of health facilities suffered damage including four primary health facilities and fifteen field outposts. The destruction caused as a result of the disaster surpassed the coping capacity of both government agencies and rescue services in BiH. Support from the international community was employed to deal with response efforts (6).

Another major hazard threatening the post flood population were landmines left over from the war which had been dislodged and re-distributed by floods, posing a major hazard in affected areas. Following the 2014 floods, the force of the flooding uprooted long buried landmines and redistributed them across the country. Because of the high volume of mines buried in river banks and the buoyancy of the mines in their design, the distribution distance was extensive, with reports of some mines being distributed as far as fourteen kilometres from their original location. As well as this, the heavy floods resulted in some 3,000 landslides to occur across the country, causing further unearthing and redistribution of landmines. An estimated 35 of such landslides occurred directly within and around known landmine areas.

The redistribution of mines became a major barrier to relief efforts for both national and international actors, posing a threat to logistics and the safety of staff. As well as this, redistributed mines posed a serious threat on efforts to clear and dispose of debris in areas which previously were deemed safe may now be contaminated. Decade long mapping efforts lead by the BiH Mine Action Centre and carried out by national and international demining agencies were undone by the drastic redistribution caused by flood water. Another issue posed by the redistribution of mines is that areas which were declared mine free zones prior to the floods would thereafter needed to be reassessed before being declared safe once more, adding financial and work force strain to an already stretched department (35). As well as the movement of landmines, the floods unearthed a number of mass grave sites around the country dating back to the war two decades previously. The remains were excavated and sent for forensic testing to be identified from the list of BiH missing persons (25).

Another natural disaster to which BiH is vulnerable are earthquakes. The Balkan Peninsula is situated on the collision sight of three tectonic plates the Eurasian, the African and the Arabian plates, each of which is divided in smaller boundaries. Making the area, and the countries of which it comprises, the most vulnerable area for earthquakes in Central and Eastern Europe. Since the 18th century 17 earthquakes with magnitudes greater than 6.0 have been reported across the Balkans. On the 22nd of April 2022 at 23:07, an earthquake measuring 5.7 magnitude struck the southern region of BiH 42km from the city of Mostar. The earthquake was felt across the Balkans, its effects felt as far as 400km from the epicentre in neighbouring countries of Serbia, Montenegro and Croatia. One person was killed as a result of the earthquake, several injured and extensive damage caused to homes and infrastructure in affected areas (26).

As well as rapid onset disasters such as floods and earthquakes, BiH is also vulnerable to slow onset disasters such as drought. Drought is a natural disaster categorised by the lack of precipitation or ground water which results in a water shortage in a given area for a prolonged

period of time. The length of time the drought takes place is broken into three categories: permanent, seasonal and contingent, in the case of BiH drought is seasonal as it takes place predominantly in the summer months between June and September. Rainfall throughout the country, which have historically been consistent, have in recent years changed becoming increasingly less predictable and varying in strength compared to previous trends.

The northern and central areas of the country are particularly vulnerable to drought. Between 1981 and 2010, the northern region of BiH has seen a decrease in rainfall by up to 20%. As well as changes in rainfall patterns, temperatures in the country have been rising steadily over the past decades. It is predicted that droughts will become frequent in the area in coming years. This prediction is as a result of a number of factors, including an increase in intensity and duration of heatwaves, a decrease of the river runoff and a change in water consumption for economic development.

The adverse impacts of drought are felt most in the agricultural sector which makes up approximately 8 percent of gross domestic product as well as accounting for 20 percent of the overall employment of the country. Droughts occur predominantly in the months of June to September each year which coincides with the high season for farming, particularly crop growth. (17) As well as the agricultural sector, forestry is highly sensitive to drought. With forest coverage of 48.3%, BiH is among the most forested countries in Europe. Forests in BiH are known for their rich biodiversity and are home to thousands of animal and plant species.

Changes in weather patterns have caused increased risk to BiH's forestry, primarily through increased occurrence and severity of forest fires. A 2020 report published by the United Nations Environmental Program, it is estimated that 50-80% of rural communities rely on wood to burn as their primary source of energy, the destruction has adverse effects on this population. As well as increased risk and severity of fires, drought and changing weather patterns creates biotic changes impacting forest health through an increase of diseases and pests. An example of the devastating effects of drought and related forest fires were seen in 2007, severe drought over the summer months resulted in the destruction of as much as 40% of the country's agricultural production, in the same season forest fires caused damages to approximately 250 hectares (27).

Strategies

A number of international and national strategies and frameworks have been developed which address a range of natural disasters effecting BiH. This section shall introduce strategies, guidelines and projects which look at multiple natural disasters as well as single disaster such as flooding, earthquakes and drought. The recovery needs assessment carried out by the United Nations, World Bank, European Union and Bosnian government following the 2014 floods, recommended strengthened resilience at local level through disaster risk reduction and sustainable development as a major factor of future disaster preparedness and response. This is true not only on the case of flooding but for a multitude of disasters (Recovery needs assessment).

Frameworks & strategies

Sendai Framework for Disaster Risk Reduction
<p>Description and objectives: The international framework is a call to action to reduce the risk and impact of disasters across countries worldwide, reducing loss of life, health and livelihoods of impacted areas. It was adopted in 2015 by United Nations member states including BiH, and thereafter endorsed by the United Nations General Assembly. The framework outlines four major priorities, each of which is measurable through targets outlined in the framework. The priorities are as follows:</p> <ol style="list-style-type: none"> 1. Understanding the risk of disasters, ensuring that policies and prevention are based on clear understanding of disaster risks and vulnerabilities 2. Enhanced disaster risk governance through policy, strategies, institutions and adequate access to finances. 3. Public and private investment in disaster resilience 4. Enhanced preparedness and post disaster preparedness <p>Link to the strategy: https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030</p>
The Paris Agreement
<p>Description and objectives: The Paris Agreement refers to an international treaty on climate change signed by all United Nations member countries. The treaty is legally binding, the primary aim of which is to enhance the global response climate change, this is to be achieved by preventing the global temperatures to rise above 2 degrees Celsius above the pre-industrial levels. BiH signed the agreement on the 22 April 2016 and ratified the agreement one year later on the 16 March 2017. In 2021, BiH announced its renewed pledge to undertake climate actions in order to cut greenhouse gas emissions by 33.2 percent by 2030 compared to levels of the country in 1990</p> <p>Link to the strategy: https://www.undp.org/bosnia-herzegovina/news/bosnia-and-herzegovina-releases-new-climate-pledge-under-paris-agreement</p>
Reducing Disaster Risk for Sustainable Development in Bosnia and Herzegovina
<p>Description and objectives: The joint program, established and funded by the United Nations and Swiss government, Reducing Disaster Risk for Sustainable Development in Bosnia and Herzegovina", aims to support Bosnia in preparing for disaster risks throughout sectors of development. The program tackles a number of priorities in disaster risk reduction identified by local actors and agencies. The local based approach of the program aims to engage BiH's vulnerable groups as well as communities living in areas at high risk of disasters, making these groups more resilient to disasters. A major achievement of the program to date is the establishment of the Disaster Risk Analysis System. The platform which publishes a data on disaster hazards in geographical locations across the country, accessible to citizens across the country (7).</p> <p>Link to the strategy: https://bosniaherzegovina.un.org/en/150458-disaster-risk-reduction-sustainable-development-bosnia-and-herzegovina</p>
Making Cities Resilient 2030
Description and objectives:

With an increasing rate of urbanisation worldwide, the United Nations launched a cross stakeholder campaign to increase the resilience of cities to the impacts of natural and man-made hazards.

In March 2021 the Canton of the Federation of BiH joined the initiative. An aim of the initiative is for inter-city authorities and community groups to share experiences and learn about tools and mechanisms to help the region better address disaster risk. A three stage roadmap to urban resilience is provided for participant cities, which provides knowledge and tools for implementing, monitoring and reporting on urban resilience programs and strategies.

Link to the strategy: <https://mcr2030.undrr.org/>

Climate Change Adaptation and Low Emission Development Strategy for BiH

Description and objectives: The strategy sets out ways in which to achieve a green economy by 2025 through the introduction of a Low-Emission Development Strategy and Climate Change Adaptation by promoting and increasing the following:

- Enhanced energy efficiency
- Increased efficiency in the use of resources
- Improved energy and transport infrastructure and services
- Utilization of renewable energy

Link to strategy: <https://www.undp.org/bosnia-herzegovina/publications/climate-change-adaptation-and-low-emission-development-strategy-bih>

Drought risk management guidelines for the Western Balkan region

Description and objectives: The United Nations Food and Agricultural Organisation published a Drought risk management guidelines for the Western Balkan region. The aim of which is to strengthen and increase resilience of affected countries agricultural sector against the adverse effects of drought and other natural disasters. The guidelines were prepared as a result of recommendations from Enhancement of Disaster Risk Reduction and Management Capacities and Mainstreaming Climate Change Adaptation, a project organised by the UN Food and Agricultural Organisation.

The document aids the strengthening of drought risk management by providing guidelines in the following areas;

- Legal, policy and institutional protection
- Local level capacity building
- Implementation of early warning systems
- Prevention, preparedness and response measure and actions
- Post disaster recovery and long term development

Link to the guidelines: <https://www.fao.org/publications/card/en/c/I9148EN/>

Projects and systems

Technology Transfer for Climate Resilient Flood Management in the Vrbas River Basin 2015 – 2020
<p>Description and objectives: This project was established by the United Nations Development Project and funded by the Global Environmental Facility, focusing on flood prevention and monitoring on the Vrbas river basin. The river runs the length of 250km flowing through 14 municipalities in the western region of the country, its basin is home to over 300,000 residents, approximately 2,500 businesses and extensive agricultural land. Flooding of the river has therefore had significant impact on lives, livelihoods and economy of the country. Working in partnership with the BiH state as well as local governments and actors, the aim of the project is to allow for strategic management of flood risk in the Vrbas River Basin. This is achieved through a number of objectives including the following:</p> <ul style="list-style-type: none"> - Infostructure projects along the banks of the river to aid flood prevention - Replanting trees to mitigate increased flooding risks caused by deforestation - Installation of hydro-meteorological stations into the river basin - Develop and implement a flood risk management plan - Creation of a flood forecast platform to aid early flood detection and warning - Build resilience in effected communities through training and early warning systems (8) <p>Link to the strategy: https://www.adaptation-undp.org/projects/sccf-bosnia</p>
Comprehensive analysis of Disaster Risk Reduction and Management System for agriculture in Bosnia and Herzegovina
<p>Description and objectives: In 2020, the Food and Agriculture Organization of the United Nations carried out a comprehensive analysis of Disaster Risk Reduction and Management System for agriculture in Bosnia and Herzegovina. This report outlined the most frequent disaster risks to the agricultural sector of BiH including the strengths and weaknesses of the current institutional disaster risk reduction systems. The report included an analysis of existing legal, policy and institutional structure and analysed various components of the system. The document gives a comprehensive outline of the following in relation to the agricultural sector:</p> <ul style="list-style-type: none"> - Disaster risk management - Climate change adaptation - Early warning systems - Agricultural insurance - Sustainable agriculture - Investment - Legal frameworks. <p>Link to the strategy: https://www.fao.org/documents/card/en/c/ca7914en</p>
Bosnia and Herzegovina Flood Risk Management
<p>Description and objectives: The overall aim of the project is to reduce the risk of flooding in BiH and increasing the capacity of the government and national institutions to implement protective measures. The project supports local governments and communities in the Sava River valley to</p>

construct and implement protection measures, increasing their resilience against flooding. This was achieved through a number of initiatives including the following:

- Infrastructural and natural erosion protection
- Upgrading water systems along channels, riverbanks and river dykes,
- Upgrading pumping stations;
- Mapping of flood risk areas
- Providing technical assistance grants

Link to the strategy: <https://www.wbif.eu/preventing-disasters-flood-risk-management-bih>

Conflict related hazards

As is true for many aspects of modern day BiH, the impact of the war can be felt and still poses as a hazard to the safety of citizens today, an example of which can be seen in the presents of landmines across the country. It is estimated that during the time of the war between 1992 and 1995 two million landmines and unexploded munitions were planted across the country. A total of 1,3230.70km of the country was mined, amounting to a total of 2.4% of the overall country affected. BiH has had some of the most significant issues with landmines worldwide.

The ability to deal with the danger of the mines was beyond the capacity of the country and therefore relied heavily on the support for international agencies, both in the years following the war and today. A significant number of mines were planted along the borders of the country by all sides. *A report published by the International Committee of the Red Cross* stated that in 2017, over 80,000 mines and pieces of unexploded ordnance were buried in BiH, posing as a threat to half of a million people living across the country. Since 1995, at least 1,750 people have been reported to have been injured by mines and other unexploded objects planted during the war in the post-war period. Of the 1750 reported incidents, 614 resulted in death. The report stated that children make up 15% of victims (15).

As well as this, the livelihoods of Bosnians have been affected by landmines, farmers and owners of livestock have lost access to much of their land which was previously used for planting and grazing animals. Many forests which before the war were used for hunting and collecting fire wood have for the past 25 years been unsafe to enter because of the risk of landmines (16). As is the case with most aspects of life in BiH, the impacts of the war can almost always be felt, this is also the case during natural disasters.

Landmines pose additional risk to public safety during natural disasters, particularly during periods of flooding in which they are dislodged and re-distributed. This was felt in 2014 when flooding and consequential landslides uprooted and redistributed landmines across the country. Because of the high volume of mines buried in river banks and the buoyancy of the mines in their design, the distribution distance was extensive, with reports of some mines being distributed as far as fourteen kilometres from their original location. An estimated 35 landslides occurred directly within and around known landmine areas. Redistributed mines posed a serious threat on efforts to clear and dispose of debris are areas which previously were deemed safe. Decade long

mapping efforts carried out by the BiH Mine Action Centre were undone by the drastic redistribution caused by flood water. Areas which were previously declared mine free zones prior to the floods would thereafter needed to be reassessed before being declared safe once more, adding financial and work force strain in the disaster response and recovery phase (35).

Strategies

Landmines

Bosnia and Herzegovina Mine action centre

Description and objectives: Following the signing of the Dayton Agreement with the support of the United Nations, the United Nations Mine Action Center was established with the aim of identifying, excavating and destroying mines. A centralised database was established in order to identify and map existing mines across the country. In 1998 the Bosnia and Herzegovina Mine action centre was established. To date demining has largely been carried out by international agencies with the support of BiH government. In 2020 the task of demining was undertaken by five national government organisations, four commercial organisations and eight non-government organisations both international and national.

Bosnia and Herzegovina Mine Action Strategy 2009-2019 2019-2023

Description and objectives: The ultimate aim of the strategy is to rid BiH entirely of post war mine hazards through the implementation of a country wide mine action plan, which will enable the safe use of land for affected communities. The first of such strategies was launched in 2009 with the aim of achieving its objectives by 2019, however this was not met which resulted in the revision and reimplementation of the strategy for the years of 2019-2025. The programs aim to achieve this through the five strategic goals which are as follows:

1. Implementation of Procedures In relation to the collection, analysis and dissemination of relevant information.
2. To promote the program at national and international level to increase its visibility and awareness.=
3. Ensure land release to affected communities
4. Implementation of gender and diversity sensitive Mine Awareness measures which support safe and sustainable activities necessary to sustain the lives and livelihoods of affected community's.
5. Identify and meet the needs of mine victims to insure their equal participation in society.

Link to the strategy: <http://www.bhmac.org/wp-content/uploads/2019/03/BiH-Mine-Action-Strategy-2018-2025.pdf>

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