

Prevention of natural disasters in Bosnia and Herzegovina

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Bosnia and Herzegovina has suffered severe damages due to natural disasters in the recent years. The country has shortage any kind of a short or long term strategy that would clearly define the priorities and steps to be taken in upgrading the country's capacities to plan, assess, prevent or mitigate the effects produced by natural or other types of disasters. However Bosnia and Herzegovina has made great strides from a post-conflict to a pre-European Union accession country in a relatively short time and continuing the process to become a well functioning state.

The EU forces (EUFOR) took over the operations from the Stabilisation Force (SFOR) as of 1 January, 2005. From that time EUFOR has been providing for support to the Bosnia and Herzegovina authorities in the case of natural disasters, as disasters are a feature of the Balkans.

Introduction

The word “disaster” is derived from Latin; dis means against and astrum means stars. This clearly reflects the calamity's associations with nature. Yet, disaster can be simply defined as an unexpected natural or man made catastrophe of substantial extent causing significant loss of life, destruction of property and sometimes permanent change to the environment.

The war in Bosnia and Herzegovina (BiH) has left the deep traces to protect adequately population from consequences of natural and man-made disasters. The main reasons for this are lack of funds, civil defence, equipment, and low education level in general concerned the population from natural disasters. In the past, the civil protection in BiH has been included into the army structure. Nowadays, the civil defence has been organised as an independent system. It protects citizens and properties from consequences of accidents, which include managing hazardous materials, taking action in case of technological disasters and evacuation during floods. In addition it supervises and compliances complex prevention rules and regulations in the area of construction business, public security and environmental security. Further, the civil protection authorities have legal responsibility for coordination and preparation (planning, training and exercises) of the complete disaster management system.

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The country profile

BiH is located on the western part of the Balkan Peninsula, with a total area of 51,280 square kilometres. It has a common border with Croatia in the north, west and south; Serbia in the east; and Montenegro to the south. BiH has a coast line of 26 kilometres along the Adriatic Sea.

Bosnia occupies the northern areas of the country, roughly four-fifths of the nation, which is mountainous and covered with thick forests. Herzegovina occupies the southern part of the country, which is largely rugged and flat farmland.



Figure 1. Topographic map of BiH

http://maps.grida.no/go/graphic/topographic_map_of_bosnia_and_herzegovina 27-Feb-10

The Sava River is the largest river in the country, and makes a natural border between BiH and Croatia. About 87 percent of the land is above 200 metres in altitude, while 25 percent is above 1,000 metres. The territory of BiH is characterized by a complex geological structure and tectonic system. Topographic, geologic, climatic and

other conditions create a diverse hydrologic picture. These unique physiographic and hydrologic conditions, including the presence of seven rivers; the Una, Sava, Vrbas, Bosna, Drina, Spreca and Neretva (Fig. 1) draining the nation, significantly determine development as well as natural hazards in the country. BiH has a population of 3,77 million (2009) with a population density of 77 people per square kilometre. The country has recorded a negative population growth rate; its annual average is -0.06 . Agricultural land constitutes 42 percent of the geographical area and contributes 10 percent of the country's GDEⁱ Approximately 53 percent of GDPⁱⁱ is created in the service sector, 23 percent in industry, and 8 percent in agriculture (World Bank, 2009).

Determination of risk

Natural accidents and disasters that affect property and endanger human lives in BiH are: earthquakes, stormy weather with hail, severe winds with electricity discharge, snow storms, short heavy rains that cause raging floods, landslides, droughts, early and late frosts, and industrial and forest fire.

The major issue every year throughout BiH is heavy snow. However local authorities throughout BiH have managed to maintain snow clearance procedures. Lack of adequate equipment for snow clearance is one of the major obstacles and problems for local authorities.

In 2007 there were 13 cases of wild fires; in 2008 there were 3 cases. Armed Forces of Bosnia and Herzegovina (AFBiH) Infantry Brigades and Air Force/Air Defence Brigade were involved in fighting these fires. AFBiH have not been involved in any fire fighting in 2009 to date. In 2008 AFBiH fire-fighters made 71 flights and they dropped 810 tons of water (Teme magazine, 2008/X. p. 16).

Most of the floods in BiH occur in the Northern and central parts of the country. Heavy rains can cause river floods in e.g. the Vrbas, Bosna, Krivaja, Sana, Neretva or Sava rivers. Last year engineering works continued to improve the river beds in the Sarajevo area. Some other municipalities have also requested similar works in their areas to prevent floods.

BiH's territory represents one of the most active parts of the Balkan peninsula in terms of seismology, and it is a part of the Mediterranean-trans-Asian seismic belt. The last major earthquake in BiH was in Banja Luka in 1969. However, there have been two significant earthquakes in the greater Sarajevo environs so far in 2009.

ⁱ Gross Domestic Expense

ⁱⁱ Gross Domestic Product

The consequences of mentioned disasters have the adverse impact to overall social and economic development because readiness to provide an adequate response to disaster is still unsatisfactory. High awareness level on risks and readiness for protection from disasters in BiH is also unsatisfactory. The disaster consequences affect not only BiH territory, but rather reflect to a wider region.

Prevention

In Entities of BiH updating is ongoing along with adoption of relative defence and rescue plans, such as civil protection plans, which preventive measures are determined to be implemented in the course and after a natural disaster happens. In addition, there are operative flood protection plans in place, developed based on water utilities and flood protection legal regulations.

In the BiH Security Ministry, at State level, there is a Civil Protection Agency cell with tasks as follows:

- organization, preparation and functioning of civil protection and service for watching and alarming,
- monitoring of civil protection preparations with proposing and taking measures for improvement of organization and strengthening of civil protection;
- issuing orders for use of the units, services, headquarters and commissioners of civil protection in enforcing measures of protection and rescuing;
- organization and monitoring of implementation of training for citizen's self-protection;
- organization and coordination of implemented protection and rescuing measures;
- enactment of syllabus for training civil protection structures;
- proposing programmes for collective independent exercises and preparation of elaborates for implementation of the civil protection exercises;
- implementation of de-mining programmes and emergency interventions for removal of unexploded ordinances, rescuing of people injured in the mine fields, preparation of regulations in the field of civil protection, international cooperation in civil protection affairs;
- proposing plans and researching projects in the field of civil protection and monitoring their implementation;
- inspection supervisory activity in the field of civil protection.

(www.fbihvlada.gov.ba/english/uprave/federalan_uprav_civ_zas.php, 22-Feb-10)

This agency is “mirrored” at entity level and its task is to coordinate the entities and provide an assessment of what can occur in the future. When all civilian assets have been exhausted then the Security Ministry requests AFBiH assets.

Action in case of disasters

AFBiH Capability and Assets

The AFBiH has four brigades with specialized subunits which can be deployed in case of natural disaster. For example, the 4th and 5th Brigades have companies specifically trained in the fire-fighting role. The 6th Brigade is tasked with preparations for deployment in case of floods. The last exercise of the 6th Brigade was conducted on 27 January 2008 on the river Sava. Every brigade in the AFBiH is trained for search and rescue in the mountains. In case of disaster they can provide personnel and tents, but they have big problems with providing any other equipment. AFBiH has one Air Force Brigade equipped with twelve operational helicopters. Two of them have 24/7 readiness status; two others are held in reserve. Some AFBiH helicopters are equipped with bambi buckets with capacity ranging from 2,000 to 2,600 litres. AFBiH also have MEDEVACⁱⁱⁱ capacity. AFBiH are trained and capable of carrying out resupply of food, fuel and clothes when requested. They are also provided for fire-fighting and flood emergencies (EUFOR SOP 3721 CONPLAN NERO).

Capacity of BiH State Agencies

The Civil Protection Agency in Federation BiH controls all fire services. However, the standard of fire-fighting equipment available is inadequate when compared to modern standards. The Operational Communication Centre of BiH has been established within the Ministry of Security as the central response centre for all telephone calls to the 112 emergency number. The 112 number is an EU standard, established in 1991 and the opening of the Centre fulfils commitments made by BiH to the EU. There are a total of three (3) fire stations located in the greater Sarajevo area. They are as follows:

- Fire Station Sarajevo Centre: Strength of 20 fire-fighters.
- Fire Station Sarajevo Stup: Strength of 14 fire-fighters.
- Fire Station Sarajevo Alpasino Polje: Strength of 8 fire-fighters.

(EUFOR SOP 3721 CONPLAN NERO)

ⁱⁱⁱ Medical Evacuation

EUFOR assistance

EUFOR involvement must be capability dependent and gradual. In the event of a natural disaster such as forest fires there would be considerable pressure placed on EUFOR to provide some support.

EUFOR's most effective assets would be the AGSR,^{iv} CASEVAC,^v Air observation and CIS^{vi} expertise. Helicopter observation could also be provided. The AGSR can be deployed in all of the scenarios outlined in this point paper and was used extensively in 2008 to monitor and assist local authorities with major forest fires in south BiH. The AGSR continues to have a major capability to assist local authorities in the future in similar type natural disaster scenarios by close assessment, evaluation and coordination of employed resources. If however, the ASGR contract is not renewed this will reduce significantly EUFOR's capability to assist the BiH authorities in cases of natural disasters.

Other EUFOR capabilities include:

- Helicopter Observation Support.
- Deployable Organized HQ with Integrated Command & Control.
- MEDEVAC Helicopter Capability – limited support.
- Communications back-up to the Civilian Protection Agencies.
- Logistic Support, which would include trucks and buses
- Troops deployed – but this would require adequate equipment and training.

The MNBN^{vii} does not have any heavy engineering capability i.e. bulldozers, cranes and military bridges. MNBN were however used in 2007 in Trebinje when they were committed to fighting forest fires. The most difficult task for EUFOR would be to deploy troops on the ground because this requires training and equipment, particularly in the case of forest fires. EUFOR troops would not have local knowledge, trg or equipment to fight forest fires and in some cases national caveats prohibit the use of EUFOR soldiers as actual fire-fighters. However the MNBN could be used in extreme cases as part of a 'third echelon' support to the local authorities. It needs to be defined in advance, however, how they would be employed to avoid any misunderstanding when requests from the civil authorities are received. The IPU^{viii} has limited capability could be addressed to support local authorities and local police in all types of natural disaster including cordon and evacuation procedures.

^{iv} Airborne Ground Surveillance and Reconnaissance

^v Casual Evacuation

^{vi} Communication and Information System

^{vii} Multinational Maneuver Battalion

^{viii} Integrated Police Unit

EUFOR fire fighters have been called out in aid to the civil authorities a total of 15 occasions in the last 10 years – in almost all instances in response to forest fires or floods.

In addition to the EUFOR maneuver capability of the MNBN and the IPU, EUFOR could request TCN^{ix} resources as well.

Private sector, civil society, NGOs^x in disaster risks reduction efforts

The Entity laws, which address the disaster risk reduction issue, are binding also for the private sector the legal entities within it that might provide for their disaster risk reduction contribution, let that sense, private sector can establish general and specialised civil protection units, pursuant to their specific needs and estimations and mobilise their own human and material resources for implementation of the preventive and operational measures of protection and rescuing, based on their own estimations and requests from competent civil defence authorities.

A number of NGOs and federations are active in both Entities in monitoring, securing of liaisons, undertaking preventive measures, prevention, reduction or removal of disaster consequences. Cooperation between the civil society and NGOs s good also in respect to designing of programmes aimed at improvement of conditions and quality of life in general, which more or less directly influence the disaster risks reduction.

Summary

BiH aims to implement multiple disaster management activities but owing to the political and social situation in BiH the longer-term strategies of many governmental and non-governmental bodies are still unclear.

BiH carries out monitoring activities which are integrated programme components. The National Society intends to establish a NDRT^{xi} consisting of members from the cantonal and regional level who would be trained and equipped to take a lead when disaster strikes. Furthermore an aim is to support the establishment of municipal entities responsible for local disaster management. All Federation supported programmes currently being implemented in BiH are aligned with the Federation's Strategy 2010 and contribute to the Global Agenda, as well as the MDGs.^{xii}

In order to guide the National Society's work within disaster management and its implementation of relevant activities, there is a need to conduct a new nationwide

^{ix} Troop Contribution Nations

^x Non-Governmental Organizations

^{xi} National Disaster Response Team

^{xii} Millennium Development Goals

VCA.^{xiii} The new VCA will serve as the basis for the development of an overall disaster management plan involving AFBiH and EUFOR implementation as they did in the last years.

References

1. ADMAN IBRAHIMBEGOVIC, MUHAMED ZLATAR: *Damage Assessment and Reconstruction after Natural Disasters and Previous Military Activities*, Springer, 2008 ISBN 978-90-481-2386-1 p 357–381
2. EUFOR SOP 3721 CONPLAN NERO, 2009
3. EUFOR Teme Magazine 2008/X. ISSN 0040-781X p 16–18
4. *Regional Disaster Risk Reduction Project in South-East Europe*, United Nation Development Program, Sarajevo, 2009
5. *Report on readiness and prevention of all kinds of disasters in Bosnia and Herzegovina*, United Nation Development Program Sarajevo, 2004
6. <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/ECAEXT/BOSNIAHERZEXTN/0,,menuPK:362036~pagePK:141132~piPK:141107~theSitePK:362026,00.html> 22-Feb-10

^{xiii} Vulnerability and Capacity Assessment