

= Minefields in Croatia =

Minefields in Croatia cover 480 @. @ 77 square kilometres (185 @. @ 63 square miles) of territory . The minefields (usually known as " mine suspected areas ") are located in 69 cities and municipalities within 9 counties . These areas are thought to contain approximately 46 @, @ 317 land mines , in addition to unexploded ordnance left over from the Croatian War of Independence . Land mines were used extensively during the war by all sides in the conflict ; about 1 @. @ 5 million were deployed . They were intended to strengthen defensive positions lacking sufficient weapons or manpower , but played a limited role in the fighting .

After the war 13 @, @ 000 square kilometres (5 @, @ 000 square miles) of territory was initially suspected to contain mines , but this estimate was later reduced to 1 @, @ 174 square kilometres (453 square miles) after physical inspection . As of 2013 demining programmes were coordinated through governmental bodies such as the Croatian Mine Action Centre , which was hiring private demining companies employing 632 deminers . As of September 2015 , Croatia plans to clear all suspected minefields by 2019 . The areas are marked with 13 @, @ 274 warning signs .

As of 4 April 2013 , 509 people had been killed and 1 @, @ 466 injured by land mines in Croatia since the war ; with these figures including 60 deminers and seven Croatian Army engineers killed during demining operations . In the immediate aftermath of the war there were about 100 civilian mine casualties per year , but this gradually decreased to below ten per year through demining , mine @-@ awareness and education programmes . Croatia has spent approximately ? 450 million on demining since 1998 , when the process was taken over by private contractors coordinated by the Croatian Mine Action Centre . The cost to complete the demining is estimated at ? 500 million or more . Economic loss to Croatia (due to loss of land use within suspected minefields) is estimated at ? 47 @. @ 3 million per year .

= = Background = =

In 1990 , following the electoral defeat of the Communist regime in Croatia by the Croatian Democratic Union (HDZ) , ethnic tensions between Croats and Serbs worsened . After the elections , the Yugoslav People 's Army (JNA) confiscated Croatia 's Territorial Defence weapons to minimize potential resistance . On 17 August , tensions escalated to an open revolt by the Croatian Serbs . The JNA stepped in , preventing Croatian police from intervening . The revolt centred on the predominantly Serb @-@ populated areas of the Dalmatian hinterland around the city of Knin , parts of the Lika , Kordun and Banovina regions and eastern Croatian settlements with a significant Serb population . This contiguous area was subsequently named the Republic of Serbian Krajina (RSK) . The RSK declared its intention to join Serbia , and as a result came to be viewed by the Government of Croatia as a breakaway region . By March 1991 , the conflict had escalated into what became known as the Croatian War of Independence . In June , Croatia declared its independence as Yugoslavia disintegrated . By January 1992 , the RSK held 17 @, @ 028 square kilometres (6 @, @ 575 sq mi) of territory within borders claimed by Croatia . This territory ranged from 2 @. @ 5 to 63 @. @ 1 kilometres (1 @. @ 6 to 39 @. @ 2 miles) in depth , and had a 923 @-@ kilometre (574 mi) front line along Croatian @-@ controlled territory .

= = Wartime use = =

Land mines were first used by the JNA in early 1991 , before its withdrawal from Croatia , to protect military barracks and other facilities . Even JNA facilities located in urban centres were secured in this way , using mines such as the PROM @-@ 1 bounding mine and MRUD directional anti @-@ personnel mine . The Croatian Army (HV) and Croatian police began laying land mines in late 1991 , relying heavily on them to stop advances by the JNA and the Army of the RSK (ARSK) until early 1992 . These early minefields were laid with little documentation . In 1992 the ARSK increased its use of mines to secure the front line , largely due to its limited number of troops . Consequently , the ARSK constructed static defensive lines (consisting of trenches , bunkers and large numbers of

mines designed to protect thinly @-@ manned defences) to delay HV offensives . This approach was necessitated by the limited depth of RSK territory and the lack of reserves available with which to counterattack (or block) breaches of its defensive line , which meant that the ARSK was unable to employ defence in depth tactics . The combination of poor documentation of minefield locations and the lack of markings (or fencing) led to frequent injuries to military personnel caused by mines laid by friendly forces . It is estimated that a total of 1 @. @ 5 million land mines were laid during the war .

The HV successfully used anti @-@ tank mines as obstacles in combination with infantry anti @-@ tank weapons , destroying or disabling more than 300 JNA tanks (particularly during defensive operations in Slavonia) . Conversely , anti @-@ personnel mines deployed by the ARSK proved less effective against the HV during operations Flash and Storm in 1995 . During these operations , the HV crossed (or bypassed) many ARSK minefields based on information from land @-@ based and unmanned aerial vehicle reconnaissance of the movement of ARSK patrols , civilian populations and the activation of mines by wildlife . Out of the 224 HV personnel killed in operations Flash and Storm , only 15 fatalities were caused by land mines . Similarly , out of 966 wounded in the two offensives only 92 were injured by land mines .

= = Casualties = =

As of 4 April 2013 a total of 509 people had been killed and 1 @, @ 466 injured by land mines in 1 @, @ 352 incidents in Croatia . There were 557 civilian casualties from land mines between 1991 and 1995 , during the war and in its immediate aftermath . Between 1996 and 1998 there were approximately 100 civilian casualties from land mines per year in Croatia , but the number gradually decreased to less than ten per year by 2010 . During the war , 57 HV troops were killed or injured by mines in 1992 . In 1995 , 169 were killed or injured (most during operations Flash and Storm) out of 130 @, @ 000 HV troops involved . Seven HV engineers were killed and 18 injured by land mines during HV mine clearance operations between 1996 and 1998 . Civilian casualties include 60 deminers killed since 1998 .

Croatia has established an extensive framework to assist those injured by mines and the families of mine victims . This assistance includes emergency and ongoing medical care , physical rehabilitation , psychological and social support , employment and social @-@ integration assistance , public awareness and access to public services . Institutions and organizations supporting mine victims include a wide range of governmental bodies and non @-@ governmental organizations (NGOs) .

= = Existing minefields = =

As of 27 November 2015 , there were 487 @. @ 4 square kilometres (188 @. @ 2 square miles) of Croatian territory suspected to contain land mines . These areas are located in 9 counties and 70 cities and municipalities . They are thought to contain approximately 46 @, @ 317 land mines , as well as unexploded ordnance left over from the Croatian War of Independence . Areas suspected to contain land mines are marked with more than 12 @, @ 000 warning signs . Areas thought to contain unexploded ordnance (but no land mines) are marked with 409 warning signs . Suspected minefields are primarily located in forests (62 percent) ; the remainder are on agricultural land (26 percent) , karst and shrubland (12 percent) .

= = Social and economic impacts = =

Land mines are a safety issue for populations living near minefields . In 2008 , an estimated 920 @, @ 000 people in Croatia were endangered by their proximity to mined areas (20 @. @ 8 percent of the population) . Land mines are also a significant problem for development , because a substantial portion of the minefields in Croatia are on agricultural land and in forests . Some drainage channels are consequently inaccessible for maintenance , resulting in intermittent flooding

; this is particularly severe in areas bordering Hungary . Similar problems are caused by mines laid on the banks of the Drava , Kupa and Sava rivers . The presence of land mines adversely affected post @-@ war recovery in rural areas , reducing the amount of available agricultural land , impeding development and affecting the quality of life for people in mined areas . In addition to agriculture , the most significant economic problem caused by mines in Croatia is their impact on tourism (especially on forested areas and hunting in areas inland from the Adriatic Sea coast) . In 2012 , it was estimated that the economy of Croatia lost 355 million kuna (c . 47 @.@ 3 million euros) a year from the effects of mine @-@ suspected areas on the economy .

Because of the importance of tourism to the Croatian economy , areas frequented by tourists (or near major tourist routes) have been given priority for demining . Other safety @-@ related areas receiving demining priority are settlements , commercial and industrial facilities and all documented minefields . Agricultural land , infrastructure and forests are grouped in three priority categories depending on their economic significance . National parks in Croatia were also demined as top @-@ priority areas , along with areas significant for fire protection . Theft of minefield signs is a significant problem , and is particularly pronounced in areas with concerns among the local population that the signs harm tourism . The signs are regularly replaced , sometimes with concrete or masonry structures to display them instead of metal poles . Since the 1990s , only one tourist has been injured by a land mine in Croatia .

The Government of Croatia established several bodies to address the problem of land mines in Croatia ; foremost among them are the Office for Mine Action and the Croatian Mine Action Centre . The Office for Mine Action is a government agency tasked with providing expert analysis and advice on demining . The Croatian Mine Action Centre is a public @-@ sector body tasked with planning and conducting demining surveys , accepting cleared areas , marking mine @-@ suspected areas , quality assurance , demining research and development , and victim assistance . The work of the Croatian Mine Action Centre is supervised by the Office for Mine Action .

As refugees flee to Europe , from Syria and other Middle Eastern nations , some are migrating through Croatia due to Hungary 's recent closing of its borders . These immigrants trying to cross to Europe are seeking Croatia 's help in finding safe routes of passage .

= = = Mine awareness and education = = =

Croatia has implemented a mine @-@ awareness educational programme aimed at reducing the frequency of mine @-@ related accidents through an ongoing information campaign . The programme is conducted by the Croatian Red Cross , the Ministry of Science , Education and Sports and a number of NGOs in cooperation with the Croatian Mine Action Centre . The Croatian Mine Action Centre actively supports NGOs to develop as many programmes as possible and attract new NGOs to mine @-@ awareness and educational activities . It maintains an accessible online database with cartographic information on the location of mine @-@ suspected areas in Croatia .

One mine @-@ awareness campaign involving billboard advertising attracted criticism from the Ministry of Tourism and the Croatian National Tourist Board (CNTB) because the signs were placed in tourist areas , far from any mine @-@ suspected areas . The Ministry of Tourism and the CNTB welcomed the effort 's humanitarian aspect , but considered the signs a potential source of unwarranted negative reaction from tourists . Tourist guidebooks of Croatia include warnings about the danger posed by mines in the country , and provide general information about their location .

= = Demining = =

At the end of the Croatian War of Independence , approximately 13 @,@ 000 square kilometres (5 @,@ 000 square miles) of the country was suspected of containing land mines . During the war and in its immediate aftermath , demining was performed by HV engineers supported by police and civil defence personnel . Wartime demining was focused on clearance tasks in support of military operations and the safety of the civilian population . In 1996 the Parliament of Croatia enacted the Demining Act , tasking police with its organization and the government @-@ owned AKD Mungos

company with the demining itself . By April 1998 approximately 40 square kilometres (15 square miles) had been cleared of mines , and the initial estimate of minefield areas was reduced after inspection . By 2003 the entire territory of Croatia was reviewed , and the minefield area reduced to 1 @, @ 174 square kilometres (453 square miles) .

Since May 1998 the Croatian Mine Action Centre has been tasked with the development of demining plans , projects , technical inspections , cleared @-@ area handover , demining quality assurance , expert assistance and the coordination of mine @-@ clearance activities . The demining is performed by 35 licensed companies , employing 632 demining professionals and 58 auxiliary personnel . The companies do their work with 681 metal detectors , 55 mine rollers and mine flails , and 15 mine @-@ detection dogs . Mine @-@ clearing machines include locally designed models produced by DOK @-@ ING . Deminers typically earn ? .50 ? 1 @.@ 20 for each 1 square metre (11 square feet) cleared , or ? 800 ? 900 a month .

Since 1998 , demining has been funded through the government and by donations . From 1998 to 2011 , donations amounted to ? 75 @.@ 5 million (17 percent of the total of ? 450 million spent on demining during that period) . Most donations were from foreign contributors , including NGOs and foreign governments (among them Japan , Germany , Monaco , Luxembourg and the United States) . The European Union was also a significant contributor during that period , providing ? 20 @.@ 7 million . As of 2013 , the Croatian Mine Action Centre has been allocated approximately 400 million kuna (c . 53 million euros) a year for demining . An estimated further ? 500 million (or more) will be needed to remove all remaining land mines from Croatia by 2019 , the deadline for land @-@ mine clearance set by the Ottawa Treaty . The Croatian Mine Action Centre spends approximately 500 @, @ 000 kuna (c . 66 @, @ 600 euros) a year to maintain minefield warning signs (including the replacement of stolen signs) .