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Legal and Organizational Framework for the Use of Search and Rescue Dogs in Disasters: A Comparative Analysis between Serbia, Croatia, and Slovenia

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Abstract: This study critically explores the legislative frameworks and national regulations of Serbia, Croatia, and Slovenia concerning the engagement, training, and responsibilities of search and rescue dogs and their handlers.. The goal is to offer a thorough understanding of how these dogs and their handlers are engaged, trained, and managed in each country. By carefully analyzing the legal foundations, the study aims to clarify the rights, duties, and responsibilities of all parties involved, ensuring that search and rescue dog deployments are conducted within a structured and lawful framework. Such an understanding is crucial for improving disaster management and ensuring a coordinated response to various emergencies. The findings reveal that although each country has strong legal provisions for deploying search and rescue dogs, there are significant differences in the detail and scope of these regulations. Slovenia is notable for its detailed guidelines, regular evaluations, and licensing processes, setting a high standard. Croatia benefits from strong institutional support and active international collaboration, which greatly enhances its disaster response capabilities. On the other hand, Serbia, despite having a solid foundational framework, could improve by better coordinating with non-governmental organizations and aligning more closely with international standards. Key areas for improvement include harmonizing standards, enhancing training programs, increasing public awareness, better resource allocation, and adopting new technologies. By addressing these issues, Serbia, Croatia, and Slovenia can further strengthen their legal and institutional frameworks, ensuring their search and rescue teams are better prepared for disasters. This study emphasizes the need for continuous improvement through collaboration, standardization, and innovation to maximize the effectiveness of search and rescue operations involving dogs.

Keywords: search and rescue dogs; disasters; disaster response; survivor; legal framework; organizational framework; Serbia; Croatia; Slovenia

1. Introduction

Disasters are extreme events that have a severe negative impact on people, property, and the environment (Cvetković, 2020, 2022; Cvetković, Romanić, & Beriša, 2023; Cvetković, 2023; El-Mougher, Abu Sharekh, Abu Ali, & Zuhud, 2023; Rajani, Tuhin, & Rina, 2023; Starosta, 2023; Ulal & Karmakar, 2023). They can be natural, such as earthquakes, floods, hurricanes, volcanic eruptions, and droughts, or they can be caused by human actions, such as industrial accidents, nuclear incidents, war conflicts, and terrorist attacks (Cvetković & Šišović, 2024). During these disasters, people face loss of life, injuries, psychological trauma, and loss of property (Baruh, Dey, & Dutta, 2023; Chakma, 2023; Cvetković & Jelena Planić, 2022; Dukiya & Adelete, 2022; El-Mougher et al., 2023; Faicel, 2022; Hossen, Nawaz, & Kabir, 2022; Mohammed & Maysaa, 2022; Ulal & Karmakar, 2023). Such situations



often lead to population displacement, food and water shortages, disruptions of communication and energy networks, and serious economic consequences (Al-Ramlawi, El-Mougher, & Al-Agha, 2020; Chakma, Hossain, Islam, Hasnat, & Kabir, 2020; Cvetkovic & Martinović, 2020; Cvetkovic, 2019; Hussaini, 2020; Kaur, 2020; Olawuni, Olowoporoku, & Daramola, 2020; Thennavan, Ganapathy, Chandrasekaran, & Rajawat, 2020). Damage to infrastructure further complicates rescue and recovery efforts.

Protection and rescue tactics in the event of disasters encompass a range of activities aimed at risk reduction, rapid response, and long-term recovery (Cvetković, Nikolić, & Lukić, 2024; Cvetković & Šišović, 2024; Cvetković, 2024; Grozdanić, Cvetković, Lukić, & Ivanov, 2024; Sudar, Cvetković, & Ivanov, 2024). Prevention and preparedness include activities focused on reducing disaster risk through urban planning, building more resilient structures, educating the population, establishing early warning systems, and conducting emergency drills (Cvetković, Čvorović, & Beriša, 2023; Cvetković & Grbić, 2021; Cvetković & Jelena Planić, 2022; Cvetković, Tanasić, Ocal, et al., 2023; Cvetković & Šišović, 2023; Nikolić, Cvetković, & Ivanov, 2023; Oral, Yenel, Oral, Aydin, & Tuncay, 2015; Yang et al., 2015). The response involves the rapid mobilization of rescue teams, providing emergency medical assistance, evacuating endangered residents, securing temporary shelters, and distributing essential supplies such as food and water. Effective response requires well-coordinated efforts from various services and organizations.

Recovery involves long-term activities focused on rebuilding infrastructure, providing psychological assistance to survivors, revitalizing the economy, and strengthening social resilience (Cvetković, Tanasić, Živković-Šulović, & Milojević, 2023; Cvetković et al., 2021; Tanasić & Cvetković, 2024). The recovery process often takes years and requires significant investment and international aid. The goal of mitigation is to reduce the impact of future disasters by developing and implementing policies that will decrease community vulnerability. This includes improving building standards, enhancing natural barriers, and promoting sustainable practices.

Effective disaster protection and rescue requires a comprehensive approach that includes preparation, rapid response, adequate recovery, and continuous efforts to reduce risk. International cooperation, the exchange of knowledge and resources, as well as continuous education and training, are key to enhancing disaster response capacities and protecting lives and property (Tanasić & Cvetković, 2024).

Search and rescue dogs are invaluable assets in disaster response scenarios due to their specialized training and innate abilities (Cvetković & Miljković, 2024). These dogs are uniquely skilled at finding survivors in difficult conditions such as rubble, wilderness, and other disaster-affected areas. Their extraordinary sense of smell, agility, speed, and endurance make them indispensable during emergencies. Historically, they have shown unwavering loyalty and courage, often risking their lives to save humans (Gerbec, 2010). Training for search and rescue dogs starts when they are young, focusing initially on basic obedience and fundamental skills. As they mature, their training becomes more complex, incorporating real-life scenario simulations to prepare them for actual disasters. This rigorous training enables them to detect human scents beneath layers of concrete, earth, and other materials, making them crucial members of rescue teams (Otto et al., 2019).

Furthermore, the psychological readiness of these dogs is crucial. They need to remain calm and focused amid chaos and stress, achieved through continuous training and positive reinforcement. The selection process is stringent, starting with prenatal selection of breeding pairs with ideal genetics and followed by early-age assessments to identify dogs with the right characteristics and instincts (Otto et al., 2019). However, search and rescue dogs and their handlers face significant challenges. Working conditions can be extremely tough, such as navigating through earthquake debris, flooded areas, or avalanche-prone mountainous regions. These conditions expose the dogs to physical injuries, stress, and fatigue, requiring careful attention and support from their handlers and veterinary teams to maintain their health and effectiveness (Jones et al., 2004).

After extensive deliberations and discussions, all nations associated with the International Canine Federation (FCI) and all members of the International Rescue Dog Organization (IRO) adopted the FCI-IRO International Standards for Testing Rescue Dogs. Following the establishment

of international standards for search and rescue dog testing known as "IPO-R" (Internationale Prüfungsordnung für Rettungshunde-Prüfungen) in 1993, we now have globally recognized and official exams for search and rescue dogs (FCI & IRO, 2019). The name IPO-R, derived from the German term "Internationale Prüfungsordnung für Rettungshunde-Prüfungen," translates to "International Regulations for Testing Rescue Dogs" (FCI & IRO, 2012). These standards enable handlers to collaborate using uniform testing programs, facilitating comparisons of training methodologies across different countries. This harmonization aims to elevate the training quality of search and rescue dogs to an optimal international level (FCI & IRO, 2012). Developed collaboratively by the "FCI/IRO" Commission, these standards received approval from both the "FCI" Executive Committee and the "IRO" General Assembly (FCI & IRO, 2019).

These internationally recognized standards serve as a foundational framework for organizations dedicated to the training and deployment of search and rescue dogs. The readiness tests for these dogs are governed by national and international organizations responsible for their deployment, and they aim to qualify individual dogs for further specialized training. Successfully passing these tests validates the dog's training and readiness to achieve search and rescue dog status in specific disciplines (FCI & IRO, 2019). The readiness and suitability of a dog for specific rescue missions are assessed and certified exclusively by the deploying organization. In such cases, additional criteria may be imposed, including regular re-evaluation through specific tests, completion of alpine training courses, adherence to age restrictions, endurance assessments, equipment regulations, and other relevant requirements (FCI & IRO, 2012).

Testing can be conducted year-round, except under circumstances where the safety and health of participants and animals cannot be assured. For major events, such as national and world championships or large-scale tests, there are technical limitations regarding the number of participants and the scheduling of exams (FCI & IRO, 2019). Rescue dog tests can be performed in individual phases, such as conducting tracking tests separately from obedience tests across all disciplines and levels. In such cases, only one phase is evaluated at a time. Results from these singlephase tests are recorded in the results book with corresponding scores and remarks, indicating that only one phase has been completed. Full evaluation and certification are granted only after successful completion of all required phases, such as both tracking and obedience (FCI & IRO, 2019). There are also specific IRO conditions that both the handler and the dog must meet to be eligible for testing (FCI & IRO, 2019): the handler must apply for the exam within the specified timeframe; the handler must be adequately equipped and properly trained for the specific exam discipline; the handler must report to the responsible judge before the first exercise and after the last one; each handler is required to complete all phases of the test, even if the minimum points for passing a particular phase have not been achieved; in cases of illness, injury, or other justified reasons, the handler must inform the test coordinator if they need to withdraw from the test; failure to do so will result in disqualification; all participants must adhere to regulations concerning animal welfare, safety, and environmental protection as stipulated by the host country; any use of force is strictly prohibited throughout the event. any form of rough or excessive force against the dog will be subject to sanctions.

The conditions that the dog must meet to take the exam (FCI & IRO, 2019) include: minimum age for testing: level "V" - preliminary testing - 15 months, level "A" - test - 18 months, level "B" - test - 20 months; a dog that cannot be identified with a microchip will not be allowed to participate in the exam; dogs of all sizes, breeds, and pedigrees are eligible to participate in search and rescue dog exams; a dog is permitted to participate in no more than two exams during a single event; a dog that fails an exam may retake it after a mandatory waiting period of 5 days; a dog may be disqualified for inappropriate behavior, such as aggression towards strangers or other dogs, or abandoning its handler or working area; the judge will allow the handler up to three opportunities to recall their dog and bring it under control. Failure to do so will result in exclusion from the exam.

Given the vital role of search and rescue dogs, examining the legal and organizational frameworks that govern their deployment and training is essential. This study focuses on the legislative frameworks and national regulations in Serbia, Croatia, and Slovenia. By comparing these countries, we aim to understand how search and rescue dogs are integrated into national disaster

response systems. The goal is to identify strengths and areas for improvement in each country's approach, ensuring these canine units operate within a structured and lawful framework, thereby enhancing their effectiveness in disaster management operations. This analysis is crucial for policymakers, trainers, and rescue teams, as it offers insights into best practices and legal standards that can be adopted or adapted to improve the deployment of search and rescue dogs in emergencies.

2. Comprehensive Legal Framework for the Deployment of Search and Rescue Dogs in Serbia, Slovenia, and Croatia

The legal framework governing the use of search and rescue dogs is crucial for ensuring a coordinated and effective response during emergencies and disasters. This section provides an indepth analysis of the legal provisions regulating the deployment and utilization of search and rescue dogs in Serbia, Croatia, and Slovenia. Understanding these legal frameworks is essential to facilitate a harmonized and efficient response to various disasters. Additionally, identifying potential weaknesses in these regulations is key to making informed recommendations and implementing improvements to enhance future disaster response efforts. Furthermore, this section underscores the importance of well-defined legal guidelines governing the operations of search and rescue dogs. Such guidelines ensure that the dogs are deployed appropriately and ethically and provide a clear outline of the handlers' roles and responsibilities. By examining these aspects in detail, we can identify areas where the legal framework may need strengthening or updating.

Through this detailed exploration, we aim to generate valuable insights for policymakers and practitioners regarding best practices and legal standards for optimizing the use of search and rescue dogs in disaster scenarios. This knowledge base will be instrumental in formulating constructive recommendations and identifying potential areas for legislative improvement, thereby enhancing the overall capacity and readiness of disaster response systems. Ultimately, by comprehensively understanding and improving the legal frameworks surrounding the use of search and rescue dogs, we can significantly contribute to more effective and efficient disaster response strategies, ensuring that these invaluable animals are utilized to their fullest potential in times of crisis.

2.1. Comprehensive Legal Framework for Deploying Search and Rescue Dogs in the Republic of Serbia

The Constitution of the Republic of Serbia ("Official Gazette of RS", No. 98/2006 and 115/2021), as the nation's supreme legal document, states in Article 25 that "human life is inviolable" (Constitution of the Republic of Serbia, 2021). This fundamental principle means that every person whose life is in danger has an essential right to be rescued and protected. The National Security Strategy of the Republic of Serbia ("Official Gazette of RS", No. 94/2019) identifies natural disasters and technical-technological accidents as significant risks and threats to national security. When such events occur, rescue teams are mobilized to address the consequences and safeguard human lives through coordinated and effective response efforts (National Security Strategy, 2019).

The Law on Disaster Risk Reduction and Emergency Management ("Official Gazette of RS", No. 87/2018) in Article 11 explains that disaster risk reduction includes various measures like "mitigating harmful consequences... enhancing readiness for response and ensuring an efficient reaction" (LDRREM, 2018). Furthermore, Article 13 of this law specifies the components of the disaster risk reduction and emergency management system, which includes fire and rescue services, police, the Serbian Army, Mountain Rescue Service, citizens, citizen associations, and other organizations crucial to the system's development and functionality. This article also emphasizes that service/search and rescue dogs are an integral part of the disaster risk reduction and emergency management framework (LDRREM, 2018). Article 33 of this law recognizes the Red Cross of Serbia, the Mountain Rescue Service, and the Firefighting Association of Serbia as entities of special significance. These organizations support competent state authorities in their duties. When members of humanitarian organizations and associations participate in protection and rescue operations, they are granted civil protection member status (LDRREM, 2018).

Regarding the care of endangered and affected individuals, including searching for missing persons, Article 62 states that the responsible emergency management headquarters oversees care

until the conditions are met for the competent state authority to assume responsibility. The Red Cross of Serbia, associations, and citizens collaborate in these care tasks, enabling the engagement of rescue teams or individuals with specially trained dogs for locating missing persons (LDRREM, 2018). Besides that, article 69 lists the rescue of individuals buried in the rubble as one of the critical actions for saving people from collapsed structures (LDRREM, 2018). Article 70 addresses protection and rescue from floods and accidents on water and underwater, while Article 71 regulates the organization and implementation of rescue operations in inaccessible terrains, such as mountain rescues, snow avalanche rescues, cave rescues, and similar scenarios. The Mountain Rescue Service, including a dog-assisted rescue team, participates in these operations upon the request of the competent service (LDRREM, 2018).

The Animal Welfare Law ("Official Gazette of RS", No. 41/2009) defines a service animal as an animal trained and used for duties by certain state authorities, including service dogs and horses. Articles 10 and 11 elaborate on all aspects of animal training (Animal Welfare Law, 2009).

The Law on Police of the Republic of Serbia ("Official Gazette of RS", No. 6/2016, 24/2018, and 87/2018), Article 116, specifies the conditions under which a service dog can be deployed as a means of coercion. This law states that a service dog may be used when conditions for the use of physical force, a service baton, or firearms are met, and when necessary to restore disrupted public order and peace. The use of a service dog involves releasing the dog onto a person or using it to block passages, with or without a protective muzzle, and on or off the leash (Law on Police, 2018).

The Regulation on Special and Specific Police Units ("Official Gazette of RS", No. 47/2018, and others) in Article 16 mentions the inclusion of service dogs as part of the special equipment within the Special Anti-Terrorist Unit (SAJ). Article 31 lists the special equipment of the Gendarmerie, which includes equipment for police dogs and their handlers. Chapter 7, Article 55, states that the police brigade has a specialized unit responsible for the reproduction, breeding, selection, preliminary training, and training of service dogs, as well as the training of handlers and trainers of service dogs (Regulation, 2024).

2.1. Comprehensive Legal Framework for Deploying Search and Rescue Dogs in Slovenia

The Constitution of the Republic of Slovenia ("Official Gazette of RS", No. 33/91-I, 42/97 – UZS68, 66/00 – UZ80, 24/03 – UZ3a, 47, 68, 69/04 – UZ14, 69/04 – UZ43, 69/04 – UZ50, 68/06 – UZ121,140,143, 47/13 – UZ148, 47/13 – UZ90,97,99, 75/16 – UZ70a in 92/21 – UZ62a), explicitly states in Article 17 that "human life is inviolable." Additionally, Article 35 guarantees the inviolability of an individual's physical and mental integrity, underlining the nation's commitment to protecting its citizens (Constitution of the Republic of Slovenia, 2021).

Complementing these constitutional protections, the Police Tasks and Powers Act of the Republic of Slovenia ("Official Gazette of RS", No. 66/09 – official consolidated text, 22/10, 26/11 – Constitutional Court decision, 58/11 – ZDT-1, 40/12 – ZUJF, 96/12 – ZPIZ-2, 15/13 – ZNPPol and 15/13 – ZODPol), Article 86, regulates the use of police dogs by law enforcement officers. These dogs are trained to physically apprehend or bite individuals when the use of force is justified, ensuring law enforcement can maintain order and safety (ZPOL, 2013).

The Police Canine Training Section in Slovenia is tasked with several key responsibilities, ensuring that both dogs and their handlers are prepared for diverse operational needs (ZPOL, 2013): providing comprehensive training programs for police dog handlers and dogs for both general and special purposes; breeding and raising police dogs to maintain a robust and capable force; conducting field operations such as locating blood traces, other biological evidence, corpses, and determining the causes of fires; ensuring the well-being of the police dogs through proper care and medical attention; providing healthcare not only for police dogs but also for those belonging to the Ministry of Justice and the Tax Administration of Slovenia; adhering to the guidelines outlined in the Instructions on Training, Use, and Care of Police Dogs and the Regulations on the Acquisition and Management of Police Dogs.

General-purpose police dogs are employed for tracking, searching for individuals and objects, free searching, defence, building inspections, forest and natural terrain inspections, and working

without a muzzle, enhancing the police force's operational capabilities (ZPOL, 2013). Special-purpose dogs, on the other hand, are meticulously trained to detect illegal drugs, explosives, weapons, gunpowder traces, shells, blood, other biological traces, corpses, causes of fires, and tobacco products. They play a crucial role in inspecting terrain, vehicles, buildings, and luggage (ZPOL, 2013).

The Protection Against Natural and Other Disasters Act of the Republic of Slovenia, Article 21, acknowledges the importance of volunteer organizations, including kennel clubs, search and rescue dog handlers' associations, and the Mountain Rescue Service. These civil sector associations are integral to search and rescue operations, emphasizing community involvement in disaster response (ZPOL, 2012). Moreover, the Animal Protection Act (Zakon o zaščiti živali (ZZZIV), "Official Gazette of RS", No. 38/13 – official consolidated text, 21/18 – ZNOrg, 92/20, 159/21, and 109/23) addresses various issues related to dogs, including ownership, breeding and sale, transportation, mandatory training, and proper care. This comprehensive approach ensures that the welfare of dogs is maintained, whether they are pets or service animals.

Further elaborating on the organizational structure, the Regulation on the Organization, Equipment, and Training of Forces for Protection, Rescue, and Assistance ("Official Gazette of RS", No. 92/07, 54/09, 23/11, 27/16), Article 28, specifies that rescue teams with dogs are organized by the Kennel Club of Slovenia and the Association of Rescue Dog Handlers of Slovenia. These teams are strategically distributed across regions, ready to respond to emergencies. Their tasks include searching for missing persons, rescuing survivors in collapsed structures, and providing necessary assistance. Notably, the activities of these organizations are co-funded by the Administration of the Republic of Slovenia for Protection and Rescue, ensuring they have the necessary resources and equipment (Uredbo, 2016). Article 25 of this regulation outlines the responsibilities of the Mountain Rescue Service of Slovenia, including avalanche victim rescue using specially trained dogs. This specialized training is crucial for effective response in mountainous terrains (Uredbo, 2016). Additionally, the Regulation on the Implementation of Protection, Rescue, and Assistance with the Use of Aircraft, Articles 10 and 11, includes canine rescue teams in aerial rescue operations, highlighting the versatility and importance of search and rescue dogs in various scenarios (Uredbo o izvajanju zaščite, reševanja in pomoči z uporabo zrakoplovov, "Official Gazette of RS", No. 46/98, 42/05, 21/16).

Also, article 5 of the Rules on Record-Keeping, Allocation, and Summoning of Civil Defense Members and Other Protection, Rescue, and Assistance Forces mandates that the administration maintain detailed records of Civil Protection members, professionals, and volunteers by local jurisdiction. This includes the critical role of search and rescue dog handlers, ensuring that all personnel are accounted for and efficiently mobilized in emergencies (Pravilnik o evidenci, razporejanju in pozivanju pripadnikov Civilne zaščite ter drugih sil za zaščito, reševanje in pomoč, "Official Gazette of RS", No. 51/06 and 113/05).

Similarly, the Rules on Notification and Reporting in the Protection Against Natural and Other Disasters System, Article 11, require commanders to report on searches for missing persons or other police-led interventions. This includes operations involving various units, services, and operational formations, such as search and rescue dog handlers, ensuring comprehensive and coordinated reporting (Pravilnika o obveščanju in poročanju v sistemu varstva pred naravnimi in drugimi nesrečami obsega, "Official Gazette of RS", No. 42/12).

Lastly, the statute of the Sports Kennel Club "Logatec" highlights its commitment to protection, rescue, and assistance in natural and other disasters. The club focuses on training search and rescue dogs, organizing seminars, lectures, travel, and training events related to search and rescue dog training. It also maintains close relationships with the Administration for Protection and Rescue, the Ministry of Defense, the Mountain Rescue Service of Slovenia, internal affairs bodies, and other rescue organizations, both domestically and internationally. This network ensures a robust and well-coordinated response capability (Statut Športno kinološko društvo Logatec, 2015).

2.1. Comprehensive Legal Framework for Deploying Search and Rescue Dogs in Croatia

The Constitution of the Republic of Croatia (NN 56/90, 135/97, 08/98, 113/00, 124/00, 28/01, 41/01, 55/01, 76/10, 85/10, 05/14) guarantees the right to life for every individual in Article 21, underscoring the state's commitment to safeguarding its citizens. This assurance means that in the event of a disaster, a coordinated rescue mission will be launched to protect and preserve human lives (Ustav RH, 2014). Expanding on this commitment, the Law on the Civil Protection System (NN 82/15, 118/18, 31/20, 20/21, 114/22) explicitly recognizes "canine activities" as vital to the civil protection system. This highlights the importance of incorporating specialized canine units into disaster response strategies. Furthermore, Article 63 of this law outlines the participation of civil protection operational forces in international activities, which includes deploying rescue dogs as key components of rescue teams (Zakon o sustavu civilne zaštite, 2022).

Animal Protection Act, article 5 of the (NN 102/17, 32/19) addresses prohibited actions to ensure animal welfare, explicitly mentioning protections for sporting and service dogs. This legislation underscores the ethical treatment and protection of animals in service roles, ensuring they are not subjected to abuse or neglect (Zakon o zaštiti životinja, 2019). In Croatia, the Croatian Kennel Club's Committee for Rescue Dog Work has established comprehensive regulations for the operation of rescue dogs. These regulations initially issued in 2005 and most recently amended in late 2021, provide a structured approach to training and deploying rescue dogs.

The "Regulation on the Organization of Courses, Exams, and Competitions for the Work of Rescue Dogs and Exams for Rescue Dog Handlers" (Pravilnik o organizaciji tečajeva, ispita i natjecanja za rad spasilačkih pasa i ispita za vodiče spasilačkih pasa, 2016) details the methods and conditions for training, conducting exams, and attaining the status of an active rescue dog handler. It specifies the organization of classes, exams, and competitions, and provides thorough guidelines for evaluating the competencies of dogs and handlers (HKS, 2016). Additionally, the "Regulation on the Work of the Committee for Rescue Dog Work" (Pravilnik o radu Povjerenstva za rad spasilačkih pasa, 2016) governs the structure, jurisdiction, and operational procedures of the Croatian Kennel Club's Rescue Dog Work Department, ensuring systematic and efficient management of rescue dog activities (HKS, 2016).

The "Regulation on Professional Staff for Rescue Dog Work" (Pravilnik o stručnim kadrovima za rad spasilačkih pasa, 2016) addresses the qualifications and responsibilities of professional staff involved in rescue dog operations. This includes active handlers, instructors, and FCI/IRO judges, setting standards for their roles and training requirements (HKS, 2016). The International Canine Federation (FCI) Commission for Working Sports Dogs developed the "FCI Regulation for Conducting International Exams for Working Sports Dogs and International Exam for Tracking Dogs," adopted by the FCI in 2018 and effective from January 1, 2019. The Croatian Kennel Club's Sports Dog Working Department translated this document into Croatian, enhancing the development and improvement of working sports cynology in Croatia. This regulation aims to assess dogs' capabilities for specific tasks and enhance their health and working abilities, ensuring a high standard of performance and welfare (HKS, 2020).

The Statute of the Croatian Kennel Club addresses several issues related to rescue and working dogs, providing a comprehensive framework that supports their activities. Article 12 states that organizing work exams for rescue dogs is among the Club's activities. Article 23, item 2, highlights the establishment of specialized associations for dog training to develop and expand cynological culture and activities. Finally, Article 51 indicates that the Executive Board appoints a committee for rescue dogs as part of its expert committees, ensuring dedicated oversight and development of rescue dog activities (HKS, 2015). Furthermore, Article 15 of the Statute of the Croatian Mountain Rescue Service (HGSS) specifies that "associates" include HGSS members who, after completing the basic course, undergo specialist training of interest to HGSS. This includes dog handlers for search and rescue, emphasizing the critical role of specialized training in enhancing rescue operations (HGSS, 2018).

On December 8, 2023, the Firefighting Association of the Republic of Croatia, under Article 5 of the Firefighting Act (NN 125/19, 114/22, 125/19, 155/23), adopted the Program for Training and

Testing the Operational Capabilities of Firefighting Rescue Teams with Dogs. This program ensures the readiness of both professional and volunteer firefighters, along with search dogs, for interventions requiring search and rescue operations due to building collapses, landslides, and technical assistance in non-urban areas (HVZ, 2023).

The program outlines the conditions for enrollment, participant categories, duration, and implementation methods. It also specifies the personnel and technical requirements, final testing procedures, and competencies acquired upon completion, ensuring a comprehensive approach to training and operational readiness (HVZ, 2023).

6. Comparative Analysis of the Normative and Institutional Frameworks for Search and Rescue Dogs in Serbia, Slovenia, and Croatia

The analysis reveals that the normative and institutional frameworks for search and rescue dogs in Serbia, Slovenia, and Croatia share significant similarities while also displaying differences stemming from each country's unique approach to protection and rescue operations. Slovenia is noted for its comprehensive normative framework and high training standards, while Croatia benefits from robust institutional support and active international collaboration. Serbia, though it has a solid foundation, could enhance its capabilities by improving cooperation with the non-governmental sector and adopting international standards.

Comparing these systems offers valuable insights for all countries aiming to strengthen their rescue capacities: a) regulations and laws governing the work of search and rescue dogs are clearly defined in all three countries. However, the level of detail varies, with Slovenia having the most comprehensive framework that includes regular evaluations and licensing; b) central state institutions provide strong institutional support across all three nations. Croatia and Slovenia distinguish themselves with high training standards and regular exercises, whereas Serbia has potential for improvement through better engagement with the non-governmental sector; c) participation in international exercises and experience exchanges enhances the capabilities of search and rescue dog teams. Slovenia and Croatia are particularly active in this regard; d) standardization of equipment and operational protocols is highly developed in Slovenia and Croatia, ensuring consistency and efficiency. Serbia could benefit from aligning its standards with international norms; e) financial support is crucial for maintaining effective rescue teams. While Croatia and Slovenia have stable funding through state budgets and international funds, Serbia needs to enhance its financial resources by engaging more with the private sector and seeking international donations; f) training programs are well-established in all three countries, but they differ in approach and frequency. Croatia and Slovenia conduct regular national and international exercises, while Serbia could improve by increasing the number of specialized training sessions; g) Slovenia and Croatia have developed volunteer networks and include them in exercises and operations. Serbia could enhance volunteer engagement through better-organized programs and support; h) the adoption of new technologies, such as drones and advanced communication tools, can significantly improve rescue operations. Slovenia and Croatia have started implementing these technologies, while Serbia should intensify its efforts in this area; i) providing psychological support for rescuers, including dog handlers, is essential for maintaining their mental health and operational efficiency. Slovenia and Croatia include psychological support in their programs, and Serbia could further develop these services; j) regular evaluation and monitoring of rescue teams and their dogs are crucial for continuous improvement. Slovenia has detailed evaluation procedures, whereas Serbia and Croatia could benefit from introducing additional metrics and regular assessments; k) raising public awareness about the role of search and rescue dogs helps garner support and understanding for their work. Slovenia and Croatia conduct public awareness campaigns, and Serbia could enhance its efforts through media campaigns and educational programs; l) effective integration of search and rescue dogs into local communities boosts operational efficiency. Croatia and Slovenia have successful integration programs, while Serbia could improve by fostering stronger connections with local authorities and communities; m) ensuring legal protection for search and rescue dog handlers and the dogs themselves is vital for their safety and well-being. Slovenia and Croatia have established

legal frameworks for this purpose, and Serbia could enhance this aspect by enacting specific laws and regulations; n) flexibility in deploying search and rescue dogs across different scenarios, such as urban disasters, natural disasters, and searches for missing persons, increases their utility. Slovenia and Croatia have developed diverse training modules for various situations, while Serbia could broaden its training scope; o) regular exchange of best practices and lessons learned among countries can significantly enhance rescue team capacities. Slovenia and Croatia actively participate in regional and international forums for experience sharing, and Serbia could benefit from increasing its involvement in these activities to improve its practices and standards.

While each country has made significant strides in utilizing search and rescue dogs, continuous improvement through collaboration, standardization, and innovation is essential for maximizing their effectiveness in rescue operations.

6. Recommendations

Based on the comparative analysis of the normative and institutional frameworks for search and rescue dogs in Serbia, Slovenia, and Croatia, several recommendations can be made to enhance the legal regulation and effectiveness of these operations across all three countries. First, the harmonization of standards is crucial. Slovenia should continue to lead by example with its detailed normative frameworks and regular updates to maintain alignment with international standards. Croatia can improve by enhancing the specificity of its existing laws and regulations to match Slovenia's comprehensive evaluations and licensing processes. Serbia should prioritize aligning its national laws with international standards, such as the FCI-IRO International Standards for Testing Rescue Dogs, and implement regular evaluations to ensure high training standards.

Institutional support and coordination are also essential. Slovenia and Croatia should maintain strong institutional backing through central state institutions, emphasizing high training standards and regular exercises. Serbia can improve by fostering better cooperation with non-governmental organizations (NGOs) and enhancing coordination between state and local agencies involved in disaster response. International collaboration should be strengthened in all countries by participating in international exercises and exchange programs to enhance the capabilities of search and rescue dog teams. Active involvement in regional and international forums can facilitate the sharing of best practices and lessons learned.

Standardization of equipment and protocols is necessary for consistency and efficiency in rescue operations. Serbia should align its equipment standards and operational protocols with those of Slovenia and Croatia to improve interoperability during joint international missions. Financial support and resource allocation are crucial for maintaining effective rescue teams. Croatia and Slovenia should continue to secure stable funding through state budgets and international funds, ensuring sustained operational readiness. Serbia needs to increase its financial resources by engaging more with the private sector and seeking international donations, establishing dedicated funding channels for continuous training and equipment upgrades.

Training programs must be robust and current. Croatia and Slovenia should maintain regular national and international exercises, while Serbia should increase the frequency and specialization of its training sessions to enhance continuous education for handlers and dogs. Volunteer engagement is vital for effective operations. Serbia should develop structured volunteer programs, providing volunteers with regular training and including them in exercises and operations. The adoption of new technologies, such as drones and advanced communication tools, should be intensified across all countries, ensuring teams are trained in their use to maximize effectiveness.

Psychological support services for rescuers, including dog handlers, are essential for maintaining mental health and operational efficiency. Serbia should develop comprehensive psychological support services, learning from the models established by Slovenia and Croatia. Public awareness campaigns about the role of search and rescue dogs should be enhanced, particularly in Serbia, through media campaigns and educational programs to foster public support and understanding of their critical work. Community integration of search and rescue dogs should be

improved in Serbia by building stronger connections with local authorities and community groups,

increasing operational efficiency and community support.

Legal protection for search and rescue dog handlers and the dogs themselves is vital for their safety and well-being. Serbia should enact specific laws and regulations to protect their rights and ensure comprehensive coverage for all aspects of their work. Flexibility in deploying search and rescue dogs across various scenarios, such as urban disasters, natural disasters, and searches for missing persons, should be increased in Serbia by broadening training programs to cover a wider range of situations. Finally, a culture of continuous improvement should be fostered in all countries through regular reviews and updates of legal frameworks to incorporate best practices and new insights, enhancing collaboration, standardization, and innovation.

7. Conclusions

This comparative analysis of the normative and institutional frameworks for search and rescue dogs in Serbia, Slovenia, and Croatia reveals both common strengths and distinct national approaches. Slovenia is distinguished by its comprehensive legal framework and stringent training standards, ensuring a high level of preparedness and operational efficiency. Croatia benefits from strong institutional support and active international collaboration, which enhances its disaster response capabilities. Serbia, while having a solid foundational framework, stands to gain significantly from increased cooperation with non-governmental organizations and the adoption of international standards.

Key findings indicate that all three countries have well-defined regulations governing the use of search and rescue dogs, yet the specificity and comprehensiveness of these regulations vary. Slovenia leads in detailed normative guidelines, regular evaluations, and licensing processes, setting a benchmark for others to follow. Croatia's robust institutional framework supports continuous training and active international engagement, while Serbia could enhance its system through better resource allocation and standardized procedures. Financial support remains crucial for maintaining effective rescue operations. Stable funding sources in Croatia and Slovenia contrast with Serbia's need for improved financial strategies, including engaging the private sector and seeking international donations.

Additionally, the adoption of new technologies, such as drones and advanced communication tools, is essential for modernizing rescue operations across all three nations. The importance of psychological support for rescuers, public awareness campaigns, and effective community integration are emphasized as critical components of a successful search and rescue framework. Legal protections for handlers and dogs, flexibility in deployment scenarios, and regular exchange of best practices are also vital for enhancing the overall capacity and readiness of rescue teams.

While each country has made significant strides in utilizing search and rescue dogs, continuous improvement through collaboration, standardization, and innovation is essential. By adopting these recommendations, Serbia, Slovenia, and Croatia can further enhance their legal and institutional frameworks, ensuring their search and rescue teams are optimally prepared to respond to any disaster.

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