

Chapter 15

Strategic Aspects of Countering Bioterrorism



Katarina Strbac and Branislav Milosavljevic

Abstract Article is devoted to phenomena of bioterrorism which is not new threat to security, technique and methods of combating this phenomena should be considered carefully in societies today. Authors in article emphasis that first step in combating bioterrorism are strategies which parts clearly explain what should be done. Legal frameworks, common understanding of challenges and threats, standardized rules of operation, improved exchange of information, increased capability to prevent biological attacks are procedures as an integral parts of strategies for combat weapon for mass destruction including bio weapon.

Article is consist of: basic terms which remind us what exactly biological weapon is and explaining that malevolent application of biological agents in terrorist acts to cause infectious diseases of civilians or military personnel, animals and plants, also international legal framework concerning biological terrorism, reasons for strategic approach for countering bioterrorism, as an example how control and prevent this phenomenon. In addition, the strategy can be seen as an expression of the evolution of the control of biological weapons focusing on the projection of future manifestations of bioterrorism, in order to take optimal measures in countering this phenomenon. Different international initiative are good tool for developing strategies as a first step in understanding and preventing use of biological weapon. In article are explained several regional initiatives and their action regarding bio weapon including national approaches to this security problem. Without contemporary thinking and acting, this issue cannot be solved in future years, threat of biological weapon will grow if humanity doesn't take serious measures in prevention and combating this phenomena.

K. Strbac (✉)
Ministry of Defence of the Republic of Serbia, Belgrade, Serbia

B. Milosavljevic
Strategic Research Institute, Ministry of Defence of the Republic of Serbia, Belgrade, Serbia

15.1 Introduction

In the contemporary world the issue is not whether, but when a bioterrorist attack is going to occur. What used to be a theoretic possibility during the Cold War became reality during the last decade of the twentieth and the beginning of the twenty-first century, in the wake of the attacks on Tokyo subway system in Japan (1995) and the American "Anthrax crises" (2001). The concerns over non-state actors obtaining capability to intentionally release biological pathogens have increased considerably, although the use of conventional instruments of terrorism has not diminished. The possibility that terrorists might apply biological weapons in the predictable future represents a great concern of governments, international organizations and public worldwide, having in mind a clear risk of multiplication which would potentially increase the effects of such terror-motivated acts. With regard to the aforementioned, several international organizations and a number of countries have decided to develop a comprehensive strategic approach, with the aim of preventing this type of threat to national, regional and global security. Harmonized strategies should lead us to complementary legal frameworks, common understanding of challenges and threats, standardized rules of operation, improved exchange of information and finally, increased capability to prevent biological attacks or limit their impact on the targeted territory.

The fact is that the twentieth century is filled with threats which prominent before, most notably terror attack. Even though there is a highly developed consciousness concerning terror attacks, countries must invest a lot of time and effort for their security, especially in the prevention of terror attacks. In this paper, the authors wish to inform the reader about the need to create a strategic framework to prevent the weapon of mass destruction proliferation, especially concerning countries of South-eastern Europe which are facing multiplied threats to their safety. The Republic of Serbia, as a part of South-eastern Europe, joins the total effort against mass weapon proliferation, including actions against bioterrorism. Creation and adoption of adequate strategies on a national level are a good starting point for the improvement of fighting capacities on a national, regional and global level against the usage of all weapons of mass destruction.

15.2 Background

The constant progress of science, linked with the fact that biological weapons possess features which (under certain circumstances) make them suitable for violent political purposes, has created conducive environment for abuse of biotechnologies by terrorist organizations.

Human history records numerous cases of biological agents being misused by armies in warfare. Such ambitions are probably as old as the mankind itself,¹

although practical capabilities of belligerents to defeat enemies using disease-producing materials used to vary in various epochs, in direct co-relation with available or lacking levels of knowledge. Notable examples of biological weapons application were described by ancient historians and chronologists, covering Persian, Greek and Roman campaigns. Hannibal in 190BC used clay pots filled with snake venom when targeting enemies.² Perhaps the most impressive example of biological weapons application was the intentional infecting of the harbor defenders of Crimea in 1346, when the Mongols catapulted plague-infected corpses over the fortress ramparts. Thus the disease, known in history as the "Black Death" had spread through Sicily, Corsica and Genoa, continued throughout Europe, eventually killing approximately 25 million people.

During World War I, the use of biological weapons was not recorded, as all the conflicting parties considered such attacks as worse than inhumane. Two decades later, in World War II, the Japanese used swarms of infected fleas, intending to infect Chinese soldiers with Bubonic plague. The exact figures cannot be determined, due to the fact that a number of the infected and sick people were already present in the war-torn area.

It is hard to predict a possible usage of biological weapon, as in the modern history of warfare there has not been enough evidence that they have been used intentionally. Therefore, numerous estimates have been based exclusively on natural outbreaks and experimental laboratory models. Development, production, storage and use of biological weapons are prohibited by Conventions and international law.³ Despite all efforts, the threat of possible deliberate use of biological agents has increased since the end of the Cold War to the present.⁴ During the half a century long confrontation of super powers, the primary global security concern was the nuclear war threat of. Bioterrorism was also perceived as a potential challenge, but with a limited impact on public imagination.⁵ It is very hard to determine the exact number of the state actors who own bio-weapons, as both the possession and research on biological weapons can often be justified by a necessity to keep them for defensive purposes, which neither prevents the production of offensive biological agents, nor negates the need to establish protective measures. In other words, a shift from defensive to offensive biological weapons programs can be performed easily and quickly. On the other hand, the research of biological agents has contributed to gaining new scientific knowledge in microbiology, pathology, genetics and other fields.

The development of science in the concerned fields, among other results, has enabled scientists to permanently change structures of pathogenic microorganisms, increasing their infectious capability and resistance. Unlike the nuclear and chemi-

²Foster T George, Focus on Bioterrorism, Nova science Publishers Inc., 2006.

³International Convention for the Suppression of the terrorist bombings (1997).

⁴International Convention for the Suppression of the financing of terrorism (1999) United Nations Security Council Resolution 1540 (2004).

⁵Clarke, S. C. (2002). Bioterrorism: An overview. *British Journal of Biomedical Science*, 59(4), 232-4.

cal weapons, it is difficult to detect a biological weapon in the early stage. The nuclear weapons are complex, expensive and require advanced transmission systems. Chemical weapons are easier and cheaper to manufacture, but difficult to deliver to target areas. Biological weapons are fundamentally different from other weapons of mass destruction. While nuclear and chemical weapons have instant effects, biological agents require hours to several days or even weeks of incubation before they can cause death. Biological weapons are relatively cheap and easy to manufacture, which makes them attractive for terrorist purposes. Another aggravating circumstance is that bio-weapons may be secretly produced, making the timely detection of their presence very difficult, which creates an additional risk to potentially affected countries. Also, possible targets of a biological attack do not have to be humans. They can be aimed at domestic animals, food or agricultural production. Bio-weapons can cause unpredictable psychological consequences for the defending forces and the civilian population, such as mass panic and loss of morale. Inability to provide adequate protection to citizens may be followed by additional psychological effects. Emergence of panic is especially dangerous, which gives particular importance to the existence and adequate training of biodefense units.

15.3 Biological Weapons: Basic Terms

Biological weapons include microbes and other biological agents, or toxins (whatever their origin or method of obtaining might be), kept in possession which is not intended for prophylactic, protective or other peaceful purposes. The term may also be applied to weapons, equipment and other means or methods of dissemination of the aforementioned agents, used with hostile intent or during the war.

15.3.1 Definition

According to WHO definitions:

- biological agent is a “micro-organism (or a toxin derived from it) which causes disease in personnel, plants, or animals or causes the deterioration of materiel”.
- biological warfare “is the use of biological agents to cause the loss of people and livestock, as well as damage to plants and materials”;
- biological defense “includes the established methods, plans and procedures and implemented measures of defense against biological attacks”.⁶

The terms biological weapons and biological warfare first appeared in official use after World War II, at the meeting of the UN General Assembly held in 1947,

⁶<http://www.who.int/csr/delibepidemics/chapter3.pdf>, Public health response to biological and chemical weapons. WHO evidence

when biological, nuclear and chemical weapons were included in the group of the weapons of mass destruction. The concept of weapons of mass destruction came into use at the end of the Cold War in the United States as a common term replacing previous formulations of nuclear, biological and chemical weapons. It was considered to be a more adequate approach, as all of these weapons significantly differ in their effects and the principles of their use for military purposes. In addition, each of these categories was regulated by different rules in terms of arms control and proliferation. Introduction of a common concept came in direct correlation with the new tasks of the Armed Forces of the United States, defined after the end of the Cold War. This was also the period during which, at the same time, proliferation ban for all the three named categories of weapons became one of primary tasks in foreign and security policy of many countries.⁷

The notion of the weapons of mass destruction was derived from the UN Recommendation (Committee on Conventional Armaments 1948). The term was used for weapons with the common feature of causing large destructive effects and huge human casualties or mass starvation. Since then, Biological Weapons have been perceived as a potentially most dangerous means of mass destruction which may be applied on humans, animals or plants with unforeseeable consequences. As defined by the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, commonly known as the Biological Weapons Convention (BWC) or Biological and Toxin Weapons Convention (BTWC), (1972–1975),⁸ biological agents are classified as living organisms that are naturally derived, or artificially produced, which can cause illness or death of people, animals and plants, depending on the effects and the ability of reproduction in the human, animal or plant.

Pathogenic microorganisms are bacteria, viruses, fungi and protozoa, natural or modified by genetic engineering or other biotechnological process, as well as their poisons, if their purpose is not peaceful, causing an epidemic (on humans) epizootic (on animals) or epiphytotic (on plants). According to the NATO definition, biological and toxin warfare agents⁹ are microorganisms and toxins derived from them with the purpose of causing disease in humans, animals and plants or degradation of environment.

The agents are derived from living micro-organisms or their products, and their incorporation into various types of weapons becomes a biological weapon. For a more complete understanding of the subject area, it is necessary to define the concept of proliferation, usually related to the weapons of mass destruction. The term

⁷Ostfield, M. L. (2004). Bioterrorism as a foreign policy issue. *The SAIS Review of International Affairs*, 24(1).

⁸<https://www.un.org/disarmament/geneva/bwcv/>. The Biological Weapons Convention.

⁹Chevrier, Marie Isabelle; Chomiczewski, Krzysztof; Garrigue, Henri, eds. (2004). *The Implementation of Legally Binding Measures to Strengthen the Biological and Toxin Weapons Convention: Proceedings of the NATO Advanced Study Institute, Held in Budapest, Hungary, 2001*. Volume 150 of NATO science series: Mathematics, physics, and chemistry. NATO Science Series: Mathematics, Physics, and Chemistry, 150. NATO Science Series: Mathematics, Physics, and Chemistry, 150. NATO Science Series: Mathematics, Physics, and Chemistry, 150. NATO Science Series: Mathematics, Physics, and Chemistry, 150.

comes from the French word *proliferation*, which denotes germination, sprouting, budding and in everyday speech, the expansion or the spread of such weapons, indicating that it is not used only for countries that initially acquire the weapons of mass destruction but it also indicates a qualitative improvement of the existing arsenal of a country. In the past, the notion of "horizontal proliferation" was used to denote the former and "vertical proliferation", to denote the latter. The opposite process of proliferation, non-proliferation is used to indicate the renunciation of the existing state arsenal of the weapons of mass destruction.

15.3.2 Biological Weapon Characteristics

Particular danger of biological weapons lies in a number of biological agents that are already found in nature and are potential biological weapons, making it difficult to distinguish between the situations in which a disease is deliberately spread, and the situations that occur naturally.

The indisputable fact that there are plenty of viruses and pathogenic organisms found in nature does not mean that they are all suitable for terrorist purposes. In the history of mankind, biological weapons have often been used as weapons of war or for achieving other goals, although their use has always been considered shameful. Therefore, the question is why, despite the universal public condemnation, some actors do not give up, but keep, produce, improve and apply them in a given situation.

The answer could be that there are numerous characteristics that make biological weapons attractive to use, the most significant being:

- (a) simple production, because certain biological agents are easy to produce in modestly equipped microbiological laboratories: all that is required for the reproduction of bacterial culture is a nutrient medium and an incubator thermostat;
- (b) low-cost production, related to the aforementioned; According to some calculations from a few decades ago, the cost of achieving a particular effect ("neutralizing manpower") on the surface of 1 km² by using various types of weapons are: conventional – \$2000, nuclear – \$800, chemical – \$600, biological only 1 dollar;
- (c) bioterrorism or biological aggression is very difficult to prove if there is no convincing epidemiological evidence or material; With the knowledge of epidemiological and ecological characteristics of an area, professional users of biological weapons can cause illness on a smaller or larger scale that cannot be distinguished from naturally occurring epidemics;
- (d) effective implementation, because a 1 kg of anthrax spores disseminated as an aerosol can cover an area of 100 km² and lead to the death of 50% of people;
- (e) specific effects on humans, animals or plants, without causing significant material damage, destruction and without significant environmental consequences;

- (f) causing mass morbidity – death; it depends, mainly, on the type of pathogen and the route of the dissemination of the biological agent; the most appropriate agents that can be disseminated by air (aerosol), and the ones with a possibility of subsequent inter-human transmission (small pox virus);
- (g) causing panic, political instability, disruption of health and other services, as well as disruption of normal activities with all the resulting consequences;
- (h) the problem of required fast detection and identification of the applied agents, in order to establish adequate measures to neutralize biological attack, and provide adequate treatment for the exposed patients, as well as pre-exposure prophylaxis.

Biological weapons can penetrate the body in three different ways: inhalation represents the most likely way; inhaling infectious organisms or toxins found in the air. Another way is through ingestion or swallowing, allowing the infection or intoxication of the digestive organs. Absorption through the mucous membrane exposure, through the skin or as a result of wounds or scratches is the third possibility. In addition, biological weapons can damage the material resources or render them unusable.

15.4 International Legal Framework

The first attempt to control the use of chemical and biological weapons in armed conflicts, perceived as a growing threat, incomparable to all previously known types of weaponry, came at the end of the nineteenth and the beginning of the twentieth century.

The Hague Conventions of 1899¹⁰ and 1907 came as a result of several international treaties and declarations negotiated at two international peace conferences, held in the Hague (the Netherlands). The first Hague Conference was held on the initiative of the Russian emperor Nicholas II Romanov "with the object of seeking the most effective means of ensuring to all peoples the benefits of a real and lasting peace, and, above all, of limiting the progressive development of existing armaments."¹¹ From May 18th to July 29th, representatives of 26 governments were trying to reach an agreement on limitation or reduction of armaments. The attempt was not completely successful, although three conventions, several other acts and the Final Protocol¹² were adopted. The Second Hague conference lasted from June 15th until October 18th 1907. The authoritative statements within the Final Act were signed by the delegates, but not ratified by the participating states. For that

¹⁰International Committee of the Red Cross web database: <https://ihl-databases.icrc.org/ihl/INTRO/150?OpenDocument>

¹¹<https://ihl-databases.icrc.org/ihl/INTRO/145?OpenDocument>

¹²The Final Protocol of the First Geneva Conference (1899): <https://ihl.databases.icrc.org/applic/ihl/ihl.nsf/Article.xsp?action=openDocument&documentId=8FCF14D950797012C12563C000515C0A>

reason, they never became binding. The third conference was planned for 1914/15, but was never held, due to the start of World War I.

Seven years after the end of the World War 1, there was another attempt. The Geneva Protocol (*Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare*) was a treaty that prohibited the use of chemical and biological weapons in international armed conflicts.¹³ It was signed under the framework of the League of Nations¹⁴ on June 17th 1925 and entered into force in 1928. This project, although well-intended, could not produce a long-lasting effect, due to the fact that the organization under which it was adopted and supposed to be implemented, gradually collapsed after 1933. Japan and Germany left the League of Nations first (1933), Italy followed their example in 1937 and only 2 years later, World War II started.

The third attempt came almost a half of century later, in the middle of the Cold War. The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction¹⁵ is often quoted as “The Biological Weapons Convention (BWC)”. It was the first multilateral disarmament treaty that banned the development, production and stockpiling of an entire category of the weapons of mass destruction. The document was signed on 10 April 1972 and entered into force in 1975. Followed by **six** review **conferences**, General Assembly Resolutions and statements of the Secretary General of the UN, the Convention remained the supreme global framework. By the end of 2016, it was signed by 173 states and ratified by 22.

15.5 Bioterrorism

The term bioterrorism has multiple meanings. It primarily covers malevolent application of biological agents in terrorist acts to cause infectious diseases of civilians or military personnel, animals and plants, being spread in the form of an epidemic or pandemic. Biological agents can be used to spread infection through the air, water or through food. From the perspective of a possible use of biological weapons for terrorist purposes, potential terrorist organizations have a full range of harmful agents available.

¹³ Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, 1925 Geneva Protocol. <https://www.un.org/disarmament/wmd/bio/1925-geneva-protocol>

¹⁴ Encyclopaedia Britannica, internet edition, League of Nations: <https://www.britannica.com/topic/League-of-Nations> (30/06/2017).

¹⁵ United Nations Office for Disarmament Affairs (UNODA) official web site: <https://www.un.org/>

15.5.1 Potential Agents of Bioterrorism in Contemporary World, According to Clarke (2002)¹⁶

Agent	Disease
Bacillus anthracis	Anthrax
Francisella tularensis	Tularaemia
Yersinia pestis	Plague
Variola virus	Smallpox
Hemorrhagic viruses	Viral hemorrhagic fever
Botulinum toxin	Botulism
Brucella spp.	Brucellosis
Vibrio cholerae	Cholera
Burkholderia pseudomallei	Glanders
Coxiella burnetii	Q fever

In addition to that, a special “mitigating circumstance” is their availability, especially in clinical and microbiological laboratories and other scientific institutions. They have a short incubation period, are very contagious and consistently act in small doses. With a very low cost, accessible equipment and widely available knowledge, the production of these agents is very easy.

The threat of terrorism is different from those of the past in the changed tactics, increased destructiveness, the introduction of professionally planned and coordinated attacks, as well as the transnational character of the operations. There are growing discussions on the terms *postmodern terrorism* or *super terrorism*. With the aim to draw attention to the use of weapons of mass destruction for the purpose of terrorist attacks. Today, there is a much greater danger of their use by various organizations, cults and individuals. In this sense, the term “bio-terrorism”, which is defined as the violent use of biological agents for political, religious, environmental or other ideological reasons, regardless of their moral or political justification. Some of these terms are different from the term “bio criminal act” and identify the use of biological agents for reasons not related to ideology.

Authors find it appropriate to recall two significant cases which included intentional biological threat to public safety and influenced later strategic reflection of global and national response to bio-terrorism. On March 20 1995, Aum Shinrikyo (an extreme Japanese religious cult which belongs to category of apocalyptic religious groups) performed a chemical terrorist attack on five subway trains in Tokyo, by releasing sarin, a deadly nerve gas.¹⁷ Eleven victims of the attack died, while up to five thousand were injured, some becoming chronically ill. Further

¹⁶ Clarke, S. C. (2002). Bioterrorism: An overview. *British Journal of Biomedical Science*, 59(4), 232–4. <https://search.proquest.com/docview/220149820?accountid=31553>

¹⁷ Robery Jay Lifton, *Destroying the World to Save It: Aum Shinrikyo, Apocalyptic Violence, and*

investigation found that the cult was also in possession of biological agents anthrax and botulinum toxin which it tried to apply in the attacks, but fortunately failed, due to the use of incorrect strains), The group also experimented with Q fever and attempted to acquire the Ebola virus.¹⁸

In second half of September 2001 (only a week after the famous terrorist attacks in New York and Washington), the “anthrax crisis” shook both the global and American public. Several letters containing anthrax spores were sent via U.S. mail to media offices and high-ranking politicians. The action caused the death of five people and infection of 17 others.¹⁹

These events were a kind of a crossroad, as before them the specter of bioterrorism could be perceived by many only as a subject of Cold-War fiction, but suddenly it became a terrifying reality, tangible to each individual.²⁰

The described cases strongly warned the world about the increased level of the security threat that the weapons of mass destruction (including the biological ones) in hands of non-state actors may represent, especially for communities in large urban areas with high population density.

The risk of the use of biological weapons for this purpose is growing due to:

- Simple production of certain biological agents,
- a wide availability of scientific information through publications and the Internet
- a large number of institutional and non-institutional laboratories (microbiology, molecular biology, genetic) without a complete insight into their operations.

The strongest effects can be caused by large, well-equipped, sometimes state-assisted organizations, able to use modern scientific knowledge, broad arsenal of bioweapons and sophisticated equipment and technology for their production and dissemination. Somewhat smaller effects can be caused by poorly equipped, smaller organizations, and the smallest effect can be caused by small groups or individuals, usually in attempts to assassinate certain persons or to incite panic.

Biological weapons can penetrate the body in three different ways: Inhalation represents the most likely way; inhaling infectious organisms or toxins found in the air. Another way is through ingestion or swallowing, allowing the infection or intoxication through the digestive tract. Absorption through the mucous membrane exposure, through the skin or as a result of wounds or scratches is the third possibility. In addition, biological weapons can damage the material resources or render them unusable.

Particular danger of biological weapons is in their diversity and in the difficulties in assessing the manner in which they would be used, which is the main problem in detecting and responding to such threats, especially when used in undercover and sudden attacks. In addition, bioterrorism can be a powerful factor of destabilization

¹⁸S. E., Meulenbelt, & M. S. Nieuwenhuizen (2015), 838.

¹⁹Web page of the University of California, Los Angeles (UCLA), American Anthrax Outbreak of 2001: http://www.ph.ucla.edu/epi/bioter/detect/antdetect_intro.html, retrieved 24/06/2017.

²⁰Fidler, D. P. (2002). Bioterrorism, public health, and international law. *Chicago Journal of International Law*, 3(1), 7–26.

of a country, especially if it aligns with great powers, as a necessity of most countries in the world that are uncompromising in the combat against terrorism that threatens their very existence. In fact, there is a possibility that in addition to the existing weapons used by terrorists, arsenals of weapons of mass destruction and dangerous materials may get out of control and the international community in such circumstances becomes significantly more susceptible to terrorism. The essential difference between conventional and biological terrorism is in the fact that the conventional means can be controlled in some way, while biological weapons, be they technological, natural or genetically modified agents, once they escape control, become virtually untouchable and unstoppable in their disastrous effects on a wider area or continent.

The need for cooperation between nations in eliminating the threat of biological terrorism in the twenty-first century is more pronounced than ever. The rapid development of science, technology and knowledge brings with it harmful consequences of unprecedented proportions if used, inter alia, for terrorist purposes.

The United Nations General Assembly passed in 2005 the Global strategy to combat terrorism. It emphasizes the importance of addressing the issues that contribute to the manifestation of terrorism, such as unresolved conflicts, discrimination, human rights violations etc. The Strategy established the Working Group on combating terrorism. The role of the working group is to strengthen the coordination and coherence of nations in the fight against terrorism. The key responsibility of the working group is to provide technical assistance to the States in the implementation of the Strategy and measures to prevent the spread of terrorism; measures for preventing and combating terrorism; capacity building for the prevention and fight against terrorism, and for strengthening the role of the UN, measures to ensure respect for human rights and the rule of law. Contemporary risks require a warning system which shall be applicable not only to technical and technological accidents, but also to natural disasters and threats by terrorist attacks. The warning system is very important in saving lives and property.²¹

15.6 Reasons for Strategic Reflection

In the past, the term “strategy” was primarily applied to the military, but in the modern era it has acquired much wider implementation. In the most general sense, strategy is a “long-term planning and political forecasting with a view to ensuring freedom of action, social freedoms, quality of life and order of the state on the basis of the Constitution in order to achieve common political concept”.

Considering the strategic approach to biological weapons, we can rightfully say that it is not a phenomenon of the modern era because it existed during the Cold War, where it frequently changed and adapted. In the middle of the last century,

²¹Colonel Katarina Strbac PhD, Emergencies-how to manage them? Institute for Strategic research and The OSCE Mission to Serbia, Belgrade 2009.

biological weapons gained strategic importance in waging modern wars. This paper attaches a special importance to the period at the end of the last century when biological weapons got new contours in the form of bioterrorism.

The strategy for countering bioterrorism is an example of modern approach to the control and prevention of this phenomenon. In addition, the strategy can be seen as an expression of the evolution of the control of biological weapons focusing on the projection of future manifestations of bioterrorism, in order to take optimal measures in countering this phenomenon. The danger of biological weapons is the dark side of globalization, so we often hear appeals for global implementation of prevention and accountability. Preventing the use of biological weapons creates a new chapter for the human race in the form of a long-term fight against the deadly mycobacteria. Bearing in mind the increasing threats of bioterrorism, it is necessary that all countries consider plans of preventive action to keep from possible bioterrorist attacks. All countries should seek to prevent the use of biological weapons, responsibility should therefore be shared, and because of the use of toxic substances aimed at the destruction and endangering people, animals and useful plants, the protocol on the prohibition of poisonous or other gases and bacteriological methods of warfare was signed in Geneva in 1925.

Faced with the possibility of using biological weapons for terrorist purposes, the governments have intensified efforts at the international and national levels aimed primarily at encouraging the introduction and use of a strategic approach in controlling biological weapons in particular in terms of possible misuse for terrorist purposes. The strategic concept is a general and systematic approach to the basic features of bioterrorism in order to make rational use of available resources and more efficient prevention of this phenomenon. In addition, the strategy of countering bioterrorism is linked to the achievement of the strategic objectives pursued by individual countries and the international community as a whole. As a factor that determines the strategic approach, it should be noted that a biological weapon has its advantages over conventional, nuclear or chemical weapons. Therefore, the threat of biological weapons requires a different paradigm than a defensive threat from conventional or other weapons of mass destruction.

Of course, that specific contribution to the strategic orientation is the fact that terrorism is basically is only one of the possible forms of its manifestation.

Bioterrorism as a relatively new phenomenon further adds to the complexity of the fight against terrorism and dealing with its consequences. In fact, this special type of weapons of mass destruction is an increasing and formidable addition to the terrorist arsenal. Its destructive potential is so great that it is now considered a strategic threat to many countries that can cause suffering on a large scale, but also significant political consequences.

The aforementioned indicates that focusing on preventive action in security planning and establishing a long-term strategy to maintain global security, emerge as imperatives. In addition, the phenomenon of terrorism, which will not disappear overnight no matter what measures were taken, demands long-term strategies. However, at the same time, terrorism is a continuous threat that requires constant vigilance, with appropriate and timely measures of detecting

and preventing terrorist attacks. Counter-terrorist strategy must involve both emergency and long-term measures and actions, where the basic prerequisite for efficiency of anti-terrorist strategy is a multidisciplinary approach.

15.7 Proliferation Security Initiative (PSI) as an Attempt of Global Approach

In December 2002, the United States of America adopted the National Strategy to Combat Weapons of Mass Destruction (including biological weapons).²² The timing of the action was closely linked to the dramatic events of the previous year that shook the world and the homeland public in the USA. The terrorist attacks in New York and Washington D.C., as well as the case of the intentional dissemination of Anthrax spores via the national mail system, and use of infected letters imposed new concerns for security and public safety, including public health management.²³ For better understanding of the context and the moment in which the Strategy was adopted, it is necessary to mention the intensive (and lasting) diplomatic campaign against the Iraqi president Saddam Hussein, who was accused of the development of a WMD program (mainly chemical, but potentially also nuclear). Only 4 months later, the military invasion of Iraq started in March 2003.

The National Strategy to Combat Weapons of Mass Destruction identified the need for more robust tools, capable of halting the proliferation of WMD around the world, and specifically identified **interdiction** as an area which requested a particular attention.²⁴ Soon after the adoption of the National strategy, a global effort of the U.S. diplomacy was launched in order to stop trafficking of weapons of mass destruction, their delivery systems, and related materials to and from the state and non-state actors of proliferation concern. *The Proliferation Security Initiative (PSI)*²⁵ was launched in Krakow (Poland) on May 31, 2003, under the leadership of the president George W. Bush and additionally supported by the next U.S. president Barack Obama in his Prague speech of April 2009.²⁶ By 2017, over 100 governments formally endorsed this voluntary initiative aimed at enhancing both the collective and individual capabilities of partner nations to perform timely and appropriate action in response to a fast-changing proliferation threat environment.

The basic idea of the PSI was to serve as a complement to existing counter proliferation efforts, by coordinating activities of participating states, in accordance with national legal frameworks and international law. The declared ambition was to

²²National Strategy to Combat Weapons of Mass Destruction of USA, published September 17, 2002, <https://www.armscontrol.org/print/1184>

²³Maddox, P. J. (2001). Bioterrorism: A renewed public health threat. *Dermatology Nursing*, 13(6), 437–41. Retrieved from <https://search.proquest.com/docview/224832248?accountid=31553>

²⁴<https://www.state.gov/t/isn/c10390.htm>

²⁵Official web page of the Proliferation Security Initiative: <http://www.psi-online.info>

²⁶<https://www.state.gov/t/isn/c10390.htm>

bring together all the states which perceived expansion of WMD as a significant security concern, regardless of their geographic location, size, or diplomatic impact, economic and military strength. The process is based on support to the Statement of Interdiction Principles²⁷ and readiness of each endorsing nation to cooperate with any state whose ships, flags, ports, territorial waters, airspace, or land might be used for proliferation purposes by states and non-state actors of proliferation concern. During 17 years of its existence, the PSI became an important tool in efforts of the USA to block illegal markets, detect and intercept transit of materials suitable for production of WMD, and use financial tools to harm this trade. It proved to be an innovative and proactive approach to preventing proliferation. The initiative depends on voluntary actions by states that are consistent with their national legal authorities and relevant international law and frameworks. Participants of the PSI use existing authorities (national and international), aiming at suppressing trafficking of material, technology and all the other resources related to WMD.

The goal of the United States is to strengthen and expand the PSI, keeping it as an effective mechanism to stop proliferation of WMD. The efforts of the PSI include the support of diplomatic, financial, military, customs, law enforcement, and other security experts and assets to interdiction exercises, by hosting international meetings, workshops, and exercises and by working with specific partner states to improve their capacity for combating the proliferation of WMD. One of the recent achievements is founding of the Counter WMD (C-WMD) Network, established in 2015 in cooperation with the RACVIAC Centre for Security Cooperation in South-Eastern Europe.

15.7.1 European Approach to Bioterrorism

Bioterrorism was neither a political priority of the European Union, nor a priority of the member-states, before the deliberate anthrax release in the United States of America (September and October 2001). The aforementioned incidents in combination with the terrorist attacks in New York and Washington D.C. completely changed the international perception of the risk of bioterrorism. The agencies responsible for civil protection of the European countries, as well as their security forces were kept in the increased state of preparedness. Many cases of suspicious mail items (containing powders and suspected of being contaminated with anthrax) emerged, which forced the medical institutions to examine them and apply emergency procedures. Although there was no true bioterrorist attack on the European soil, the pressure on national governments and the Union as whole was growing. An efficient response to the new type of threat was requested. Plans for preparedness, response and actions suddenly became a higher priority of the EU member states. Fear of bioterrorism

²⁷ Statement of Interdiction Principles, presented at the web-page of the U. S. Government: <https://www.eo.gov>

resulted in a debate on the need to reinforce existing public health structures responsible for monitoring and controlling diseases.

The European Commission initiated a number of coordinated actions across the areas of civil protection, healthcare, enterprise (pharmaceuticals), research, nuclear, transport and energy. The Health Security Committee (HSC) was established in 2001, joining representatives of the national Health Ministers, in order to promote cooperation in countering bioterrorism. On November 15th 2001, the Health Council of the EU issued Conclusions, calling on the Commission to develop an Action programme of cooperation on preparedness and response to biological and chemical agent threats.²⁸ On December 17th 2001, the Health Security Committee agreed on a program for cooperation on preparedness and response to biologic and chemical agent attacks (Health Security Programme). The main goal of the Programme was to improve cooperation between the member states (using assistance of the European Commission) and to facilitate collaboration between stakeholders (national authorities) responsible for preparedness of public health system for bioterrorism. In May 2002, The European Commission's Task Force on Bioterrorism²⁹ was established, involving nine national experts and six commission officials. The task force was available 24 hours a day, 7 days a week to facilitate the process.

In January 2003, five persons were arrested in the capital of the United Kingdom, on suspicion of conspiracy and the bio-terrorist attack in London underground ("the ricin plot"). The case was later found to be a false alarm (2 years later), but at the moment it was understood as an indicator of the necessity to increase efforts.

On June 2nd 2003, the European Commission issued a Communication to the Council and the European Parliament on cooperation in the European Union on preparedness and response to Biological and Chemical agent attacks (Health security).³⁰ On the peak of global concerns related to bioterrorism and clandestine programs of WMD in "rogue states", the European Union adopted its first *Strategy against Proliferation of Weapons of Mass destruction* on December 12th 2003.³¹ In addition, the European Union adopted the Action Plan on biological and toxin weapons (2006),³² which obliged the Member States to annually report to the UN on

²⁸ Eur-lex, access to European Union law, Communication from the Commission of 2 June 2003 to the Council and the European Parliament on cooperation in the European Union on preparedness and response to Biological and Chemical agent attacks (Health security) [COM(2003) 320,final, <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:c11576>

²⁹ US National Library of Medicine, National Institute of Health, The European Commission's Task Force on Bioterrorism. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3033083/>

³⁰ Eur-lex, access to European Union law, Communication from the Commission of 2 June 2003 to the Council and the European Parliament on cooperation in the European Union on preparedness and response to Biological and Chemical agent attacks (Health security) [COM(2003) 320,final, <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:c11576>

³¹ Legal web portal of the European Union, EURLEX: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3A133234>

³² EU Action Plan on biological and toxin weapons, complementary to the EU Joint Action in support of the BWC (2006) (2006/770/CFSP)

the results and confidence building measures. Also, the UN Secretary General is authorized to issue lists of relevant experts and laboratories which might be under investigation of alleged use of chemical or biological weapons. The Strategy *against Proliferation of Weapons of Mass destruction* was further reinforced in 2008 by the *New lines for Action*, aiming at better coordination activities on the level of the Union.³³

The European Union Non-Proliferation Consortium³⁴ (a European network of independent non-proliferation think tanks in support of the implementation of the EU strategy against Proliferation of Weapons of Mass Destruction) was established in June 2010. The consortium united the efforts of over 70 foreign policy institutions and research centres from across the EU to encourage political and security-related dialogue and the long-term discussion of measures to combat the proliferation of weapons of mass destruction (WMD) and their delivery systems. Issues of biological weapons and response to bioterrorism are among the main topics researched by the consortium members.³⁵

Awareness of the necessity to control biological and other weapons of mass destruction is evident in the EU Global Strategy on Foreign and Security Policy (2016). However, the WMD threat was given more attention in the previous European Security Strategy of 2003. A mitigating factor for that can only be found in the fact that in the meantime the EU *Strategy against Proliferation of WMD* was adopted, with a purpose to strengthen the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxic weapons and on their destruction.

The Stockholm International Peace Research Institute (SIPRI) estimates that in 2016 many other issues dominated the agenda, while non-proliferation and matters of arms control “were not given a prominent place among the priorities of the Global Strategy”.³⁶ The institute further suggests that “one or more new strategy documents are required and, in this context, the EU should also pursue WMD-related contingency planning to increase preparedness and prevent or counter crises”.

The importance of the problem of proliferation of weapons of mass destruction is furthered by the fact that the proliferation of WMD is closely connected with other global risks such as organized crime, international terrorism, regional conflicts and other global security challenges, which are conducive to the proliferation of WMDs.

³³ EU New Lines for Action, <http://register.consilium.europa.eu/doc/srv?l=EN&f=ST%2017172%202008%20INIT>

³⁴ EU non-proliferation consortium, The European Network of Independent Non-proliferation Think Tanks <https://www.nonproliferation.eu>

³⁵ EU non-proliferation consortium, The European Network of Independent Non-proliferation Think Tanks <https://www.nonproliferation.eu/thematics/biological-weapons>

³⁶ SIPRI, The European Union and weapons of mass destruction: A follow-on to the global strategy? <https://www.sipri.org/publications/2017/eu-non-proliferation-papers/european->

The current migration crisis also raises an issue of possibility of aggressive biological agents reaching parts of Europe in which they have not been present before. Cooperation on national and international levels of all agencies involved in the combat against organized crime must be stronger, accepting standards and procedures which will strengthen governments and EU abilities to confront one of the most visible asymmetric threats to security of the entire European continent.³⁷

Bearing in mind the dynamic nature of modern threats and that defence no longer exists in archaic terms, it is necessary to involve all Member States, the candidate countries, including the countries that have just started the process of accession, such as the Republic of Serbia³⁸ in establishment of common views and strategic approach to the problem of terrorism in Europe.

Analyzing the nature of the risks, threats and dangers to the European Security Strategy European security, it is faced with the following:

- proliferation of weapons of mass destruction, especially in combination with international terrorism,
- terrorism especially on a large scale (“super terrorism”, “hyper terrorism”, “mega terrorism”),

and

- regional conflicts that occur as sources of other threats such as terrorism, proliferation of WMD, organized crime and extremism.

Although majority of the EU member states are primarily focused on issues relevant to their own security, the concern over proliferation of weapons of mass destruction and international terrorism (which might obtain and apply nonconventional weaponry, including biological agents) remains in most of the national security strategies.

15.8 Bioterrorism in National Security Strategies

Because of existing risks as well as other characteristics that set it apart from other weapons, preventing the use of biological weapons for terrorist purposes is a top priority of preserving national security of modern states. Many of the strategies of the national security state pay special attention to this phenomenon. Very often, the biological weapons are viewed in the context of weapons of mass destruction and

³⁷ Strbac Katarina, Branislav Milosavljevic, Boban Radivojevic, Some Aspects of Illegal Migrations, Zbornik príspevkov6. medzinárodnej vedeckej konferencie, Bezpečné Slovensko A Európska Únia, Vysoká Škola Bezpečnostného Manažérstva V Košiciach, 2012.

³⁸ Strbac Katarina, The Perspective on Challenges and Complementarities of the Standpoints of the Republic of Serbia and the EU, Proceedings “Security and Defence aspects of the Republic of Serbia’s accession to the European union”, Strategic Research Institute and OSCE Mission to Serbia, Belgrade, 2010.

separately as it is the case in the US National Security Strategy. In the part relating to the prevention of the spread and use of weapons of mass destruction, in particular, it focuses on the ability of state and non-state actors to procure or develop inter alia, biological weapons, which of course requires adequate response from relevant state entities.

In addition to the current US strategy in the part related to health security, there is a special mention of biological weapons, where it is stressed that the spread of communicable diseases poses an increasing risk despite the scientific and technological advances in their prevention. In particular, in the statement regarding a lack of the capacity to prevent, detect and respond in the event of an outbreak of these diseases. As a world leader in the fight against the current pandemic, the US continues to strengthen the capacity for adequate response capacity and crisis management caused by infectious diseases, which among other things requires the expansion of cooperation through the Global Health program to achieve a safer world and less vulnerable to infectious diseases.

Bright examples are National Security Strategies of Austria and Bulgaria, which similarly assess the potential asymmetric threats and particularly terrorism and the proliferation of weapons of mass destruction. This is the case with the strategies of other countries with similar approach so we can give a general conclusion. In addition, countries pay special attention to the proliferation of weapons for mass destruction because they can be threatened with such weapons or their territory might be used for transit.

Faced with the threat of biological terrorism and its possible consequences, many states have tackled this problem with a lot of attention. Provisions given in national security strategies are implemented through a separate strategy as a general framework for action by all relevant government bodies. The relevant strategies are commonly referred to as strategies for prevention the proliferation of weapons of mass destruction that could be seen as guidelines for improving the coordination and activities at the national, but also at the international level. In addition, the strategy can be seen as a response to the commitments of the countries signatories to UN Security Council Resolution 1540, which was adopted in 2004, which calls all States, in accordance with their national legislation and international law, to undertake joint measures and activities to prevent the spread of weapons of mass destruction and respect international legal instruments.

Strategies are the basis for joint and coordinated action by the state authorities, as well as the continuous improvement and finding mechanisms for the control and prevention of proliferation of biological weapons. As a conclusion, strategies have indicated establishment of specialized authorities for efficient implementation. Adequately formulated strategies enable prevention as one of the key areas to counter the spread of weapons of mass destruction. In this regard, there is a need to strengthen the national capacity of all institutions responsible for the implementation of the Strategy.

15.9 Regional Initiative in South-Eastern Europe

South-Eastern Europe is located in the area intersected by land and maritime smuggling and human trafficking routes from Asia, Africa and Eastern Europe leading towards the Western Europe. Such position makes it particularly sensitive to possibility of becoming a transit area over which material, technologies and qualified or indoctrinated individuals may reach western capitals and commit terrorist attacks, including ones based on application of bio-agents.

The ongoing "European migrant crisis" which started in 2015 brought additional arguments for concern over possible import of disease causing pathogens. Infectious diseases might hit parts of European population, either as a result of inadequate health control of the migrating groups and individuals or due to the intention of terrorist networks to use aggressive micro-organisms as weaponry. Capabilities of individual states to manage such crises could be limited, especially if there is a lack of medicaments and vaccines on stocks for diseases which have been considered eradicated for many decades. The new scope of challenges imposes the need for an increased level of regional cooperation in all phases, including risk analysis, exchange of intelligence, joint planning, capability building, harmonization of strategic and legal frameworks and finally, joint operation.

Among the states of South-Eastern Europe, Croatia was the first to adopt a separate and comprehensive *National Strategy for the Non-Proliferation of Weapons of Mass Destruction* (with the Implementation Plan included),³⁹ in 2010, one year after achieving full NATO membership and 3 years before its accession to the European Union. That was a logical step, aiming to demonstrate adherence to the Euro-Atlantic perception of key security challenges, as well as a capability to share goals and values with main foreign partners. Previously, Croatia endorsed the Proliferation Security Initiative (PSI) in 2004 and within its framework signed the bilateral Ship Boarding Agreement with the USA.

Development and implementation of such comprehensive strategy which became an integral part of the national crisis management system, required a complex and permanent inter-agency cooperation, coordinated by the Ministry of Foreign and European Affairs, but also with a significant contribution of Ministry of Defense and many other relevant agencies.

As a result of the obtained experience and ambition of Croatia to be facilitator of further regional security integrations, the project "C-WMD Network" was established in 2015, and coordinated by RACVIAC – Centre for Security Cooperation.⁴⁰ The project has been supported by PSI, United States European Command (US EUCOM) and Defense Threat Reduction Agency (DTRA). It also enjoys expert

³⁹ Government of the Republic of Croatia, https://vlada.gov.hr/UserDocsImages//Sjednice/Arhiva/71.%20-%206.pdfhttps://www.google.rs/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwj5k7eMmNfUAhV10xoKHc_VDbsQFggkMAA&url=http%3A%2F%2Fwww.un.org%2Fen%2Fsc%2F1540%2Fdocuments%2FCroatia-action-plan.pdf&usg=AFQjCNFy5QbNjPBwhPx3QMSrIr9h3I2M8Q

⁴⁰ RACVIAC: www.racviac.org

support of the relevant European institutions – stakeholders in the process of WMD proliferation control.

As a result of the project, Montenegro was the second state of the region to adopt the Strategy for Non-Proliferation of Weapons of Mass Destruction (2016–2020), in September 2016. Most of the remaining countries of the region have made a political decision to develop similar strategy, based on the pattern provided by PSI experts and RACVIAC. By June 2017, the list of governments who declared the intention to adopt the strategy included Albania, Bulgaria, Macedonia, Romania and Moldova. Serbia was still seeking consensus over the issue whether the existing strategic framework should be considered as sufficient or an additional “roof document” should be added, in order to bind all strategies. Ukraine was participating in the process, without declared obligation to adopt the strategy, but willing to use the obtained information for improvement of its ongoing practice. Although Kosovo is considered by Serbia as its inseparable constitutional part, it participated in the regional process, under the terms of the Brussels Process and started working on development of the Strategy. In the end, all regional countries individually, but in cooperation with each other, should develop new security culture. Such security culture should minimize the influence of the past negative experiences, prejudices, and stereotypes, thus making the regional security one of the key factors in overall regional development.⁴¹

15.10 National Approach Case Serbia

Unlike Croatia and Montenegro, Republic of Serbia has not yet developed a Strategy for prevention of proliferation of weapons of mass destruction. On the other hand, Serbia has ratified many conventions, among others, the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxic Weapons and on their Destruction. As a UN member state the Republic of Serbia has ratified the UN Security Council Resolution 1540 concerning the proliferation of weapons of mass destruction and their transmission and thus defines the obligations assumed in accordance with the aforementioned resolution.

Within the negotiation process on Serbia’s accession to the European Union, the Negotiating Group for the Chapter 31 (Common Foreign Security and Defence Policy) came to the conclusion that a comprehensive Strategy on Non-Proliferation of WMD should be adopted. The Ministry of Foreign Affairs initiated the process in second half of 2016, by requesting opinion of all the relevant governmental agencies and suggesting that a positive approach would be useful. However, even a year later, the consensus has not been achieved yet. Some agencies consider that efforts to develop such strategy would be a double and redundant effort. Their argument is

⁴¹ Strbac Katarina, Miroslav Mitrovic, *Asymmetric threats-common response in Western Balkans*, Belgrade, 2011.

that most of the content that should be a part of such strategy already exists in other strategic documents covering issues of counter-terrorism and CBRN. In the moment when this paper is being submitted, it is not clear yet whether Serbia is going to adopt the Strategy or the existing framework will be considered sufficient.

Having in mind geographical position of the Republic of Serbia, the security of the country may be burdened by the crisis in the immediate neighborhood, but also in the wider region, especially in the area that includes the Middle East, the Caucasus, North Africa and Mediterranean. All the mentioned areas are unstable in the security area and have manifestations of transnational threats to security and their transfer to the European continent. Further, Serbia is on the transit route with intersecting smuggling routes from Asia, Africa and Eastern Europe to Western Europe, which makes it particularly exposed to the possibility of smuggling of biological weapons.

In addition, the possibility of proliferation of this weapon and delivery and obtaining them from non-state actors, especially terrorists, represent a serious threat because there is a real risk of the spread of technology and information for the use of biological weapons in actions that would lead to killing and destruction of large proportions. Such events would take place outside the existing control regime. There is also the danger that terrorist groups exploit the migrant routes for the proliferation of weapons and the perpetration of terrorist attacks. Based on these reasons, there are visible arguments why a special strategy is needed, to encompass this area and formulate three goals:

- Prevent possibility of individuals, groups or states to achieve illegal possession of weapons of mass destruction,
- Prevent the use of WMD by criminal and terrorist entities and
- Eliminate and reduce risks in case of possible use of weapons of mass destruction.

In order for these objectives to be achieved, it is necessary to create adequate security conditions and actively participate in the achievement of international cooperation in this field. Successful implementation of the Strategy implies the incorporation of the planned objectives and measures for its implementation to other strategic and planning documents and procedures for the adoption of national policies in the security sector. Strategic planning at the national level involves building up a comprehensive policy to prevent bioterrorism. The necessity of building a national strategy is particularly important because it is a specific form of endangering national security, which requires the involvement of a large number of actors both in the process of preventing and eliminating the consequences. For the process of creating national strategies, it is of crucial importance to conduct real consideration of the scope of the threat of biological terrorism both at the national and international levels.

An objective view of the substance of the existing and the possibility of future development and emergence of a form of biological terrorism constitutes a sufficient reason to follow appropriate actions of the state and of all relevant actors in its eradication.

In addition, strategy must have an action plan which should enable the initial work program for the practical implementation of the basic principles. The implementation of a non-proliferation of WMD strategy requires time and is therefore essential to have action plans containing urgent and long term measures. Measures for immediate action include implementation time required, political and legal instruments for the implementation, and the expected costs of implementation. However, there is not a political instrument, no “magic wand” that can solve the problem, but there is the need for integration of multi-functioning strategy and cooperation at the international level.

Finally, looking globally, the European and regional security environment mostly depends on capabilities to positively direct political and security processes in this area. It seems that in spite of all efforts made so far, Balkan countries have to do much more in the field of protection from asymmetric threats than they do today.⁴²

15.11 Conclusion

Biological terrorism as a phenomenon of modern times shows unpredictability, fanaticism and cruelty which might be considered as significant threats to humanity today. Bioterrorism can be a powerful factor in the destabilization of a country, therefore it needs to be considered very seriously. Despite the fact that the NBC terrorism was dominant throughout the twentieth century, it is certainly the main danger and a threat to humanity in the twenty-first century as well. Bioterrorism is a specific security threat because it is characterized by a combination of high mortality rates, relatively simple method of production and the possibility of covert use.

Simplicity of the misuse of biological weapons is perhaps best demonstrated by its definition as “the atomic bomb of the poor” because of the relatively low cost of production. From the standpoint of terrorist organizations and groups, the use of biological weapons brings more advantages over the conventional explosive materials. Biological weapons produce a high level of mortality of humans, animals and plants, very small amounts of pathogens can achieve a high degree of destruction and they are relatively easily and quickly activated (released). The possibility of permanent activation of the equipment that is necessary for production is inexpensive and easily available. The trend of increasing casualties in terrorist attacks in recent years suggests that terrorists are looking for new strategies, methods, weapons and funds to make the effects of their attacks as large as possible. Plenty of evidence suggest that the use of nuclear, radiological, and most of all biological and chemical weapons is likely and that we should be prepared for such scenarios. Biological “war” is quite possible, if not already our reality. The fact is that after the spread of the contaminated letters in the US a biological war had officially started. Those who meet it unprepared will face unforeseeable consequences. It is essential

⁴² Strbac Katarina, *Evolving Asymmetric Threats in the Balkans*, NATO Science for Peace and Security Series – C: Environmental Security, Springer, 2010.

that we undertake a number of measures, means and procedures in order to have, as much as possible, safe and bright future and reduce potential threats to the lowest possible level.⁴³

Literature

1. Chevrier MI, Chomiczewski K, Garrigue H (eds) (2004). The implementation of legally binding measures to strengthen the biological and toxin weapons convention: proceedings of the NATO Advanced Study Institute, Held in Budapest, Hungary, 2001. Volume 150 of NATO science series: Mathematics, physics, and chemistry, illustrated edn. Springer
2. Clarke SC (2002) Bioterrorism: an overview. *Br J Biomed Sci* 59(4):232–234
3. Strbac K (2009) Emergencies-how to manage them? Institute for Strategic research and The OSCE Mission to Serbia, Belgrade
4. Costa H, Baños J (2016) Bioterrorism in the literature of the nineteenth century: the case of wells and the stolen bacillus. *Cogent Arts & Humanit* 3(1):1224538
5. Encyclopaedia Britannica. League of nations. Internet edn
6. Meier E-C, Nelte K-M, Schaefer H-U (2006) *Woerterbuch zur Sicherheitspolitik-Deutschland in einem veraenderten internationalen Umfeld*. 6. vollstaendig ueberarbeitete Auflage. Verlag E.S. Mittler&Sohn, Hamburg
7. EU New Lines for Action. <http://register.consilium.europa.eu/doc/srv?l=EN&f=ST%2017172%202008%20INIT>
8. European security strategy 2008. <http://www.isac-fund.org/download/Evropska%20strategija%20bezbednosti.pdf>
9. Fidler DP (2002) Bioterrorism, public health, and international law. *Chicago J Int Law* 3(1):7–26
10. Foster T (2006) *George*, focus on bioterrorism. Nova Science Publishers, London
11. Gaćinović R (2005) *Terorizam*. Draslar, Beograd
12. Legal web portal of the European Union, EURLEX. <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3A133234>
13. EU Action Plan on biological and toxin weapons, complementary to the EU Joint Action in support of the BTWC (2006/C 57/01). http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3A0J.C_.2006.057.01.0001.01.ENG
14. EU non-proliferation consortium, The European Network of Independent Non-proliferation Think Tanks. <https://www.nonproliferation.eu>
15. EU non-proliferation consortium, The European Network of Independent Non-proliferation Think Tanks. <https://www.nonproliferation.eu/thematics/biological-weapons>
16. SIPRI, The European Union and weapons of mass destruction: A follow-on to the global strategy?
17. <https://ihldatabases.icrc.org/applic/ihl/ihl.nsf/Article.xsp?action=openDocument&documentId=8FCF14D950797012C12563CD00515C0A>
18. International Committee of the Red Cross. <https://ihl-databases.icrc.org/ihl/INTRO/145?OpenDocument>
19. <https://search.proquest.com/docview/220149820?accountid=31553>
20. <https://search.proquest.com/docview/237212498?accountid=31553>
21. Government of the Republic of Croatia. <https://vlada.gov.hr/UserDocsImages/Sjednice/Arhiva/71.%20-%206.pdfhttps://www.google.rs/url?sa=t&rct=j&q=&esrc=s&source=web&>

⁴³ Strbac Katarina, *Welcome address: Implications of Climate Change and Disasters on Military Activities NATO Science for Peace and Security Series – C: Environmental Security*, Springer, 2016.

- cd=1&cad=rja&uact=8&ved=0ahUKEwj5k7eMmNfUUhVI0xoKHC_VDbsQFggkMAA&url=http%3A%2F%2Fwww.un.org%2Fen%2Fsc%2F1540%2Fdocuments%2FCroatia-action-plan.pdf&usq=AFQjCNFy5QbNjPBwhPx3QMsrI9h312M8Q
22. Arms Control Association. <https://www.armscontrol.org/factsheets/cbwprolif>. Chemical and Biological weapon at glance
 23. Government of the Republic of Bulgaria. https://www.bbn.gov.pl/ftp/dok/07/BGR_National_Security_Strategy_Republic_Bulgaria_2011.pdf
 24. Government of the Republic of Austria. <https://www.bka.gv.at/DocView.axd?CobId=52251>
 25. <https://www.britannica.com/topic/League-of-Nations> (30/06/2017)
 26. US National Library of Medicine, National Institute of Health, The European Commission's Task Force on Bioterrorism. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3033083/https://www.peacepalacelibrary.nl/2016/04/preventing-bioterrorism-risk-and-legal-instruments/>
 27. US Department of State. Proliferation Security initiative. <https://www.state.gov/t/isn/c10390.htm>
 28. Organization of United Nations. The Biological weapon convention. <https://www.un.org/disarmament/geneva/bwc/>
 29. Organization of United Nations, 1925 Geneva Protocol. <https://www.un.org/disarmament/wmd/bio/1925-geneva-protocol>
 30. International Committee of the Red Cross web database. <https://ihl-databases.icrc.org/ihl/INTRO/150?OpenDocument>
 31. International Convention for the Suppression of the financing of terrorism (1999)
 32. International Convention for the Suppression of the terrorist bombings (1997)
 33. Jončić V (2010) Međunarodno humanitarno pravo. Pravni fakultet, Beograd
 34. Jović R, Savić A (2004) Bioterorizam, biološki rat. Institut za političke studije, Beograd
 35. Larsen MR (2010) Al Qaeda weapons of mass destruction threat: hype or reality. Belfer center for science and international affairs, Cambridge. <http://www.belfercenter.org/sites/default/files/files/publication/al-qaeda-wmd-threat.pdf>
 36. Legal web portal of the European Union, EURLEX
 37. Maddox PJ (2001) Bioterrorism: a renewed public health threat. *Dermatol Nurs* 13(6):437–441. <https://search.proquest.com/docview/224832248?accountid=31553>
 38. Mainuddin RG (2014) Prohibiting chemical and biological weapons: multilateral regimes and their evolution. *Choice* 51(12):2265–2266. <https://search.proquest.com/docview/1548715180?accountid=31553>
 39. Meulenbelt SE, Nieuwenhuizen MS (2015) Non-state actors' pursuit of CBRN weapons: from motivation to potential humanitarian consequences. *International Review*
 40. National Security Strategy USA. <http://nssarchive.us/national-security-strategy-2015/>
 41. NATO Glossary of terms and definitions (AAP-6). <http://www.dtic.mil/doctrine/doctrine/other/aap6.pdf>
 42. Meulenbelt ES, Nieuwenhuizen SM (2015) The human cost of nuclear weapons, Nonstate actors pursuit of CBRN weapons: From motivation to humanitarian consequences. *Int Rev Red Cross* 97(899):831–858
 43. Official web page of the Proliferation Security Initiative. <http://www.psi-online.info>
 44. Official web-site of the RACVIAC. www.racviac.org
 45. Ostfield ML (2004) Bioterrorism as a foreign policy issue. *SAIS Rev Int Aff* 24(1):131–146. <https://search.proquest.com/docview/231316387?accountid=31553>
 46. Paulun M (2003) Weapons of mass destruction, the first responder. Random, New York
 47. Lifton RJ (2000) Destroying the world to save it: Aum Shinrikyo, apocalyptic violence, and the new global terrorism. Picador, London
 48. Statement of Interdiction Principles. Presented at the web-page of the U. S. Government. <https://www.state.gov/t/isn/c27726.htm>
 49. Katarina S, Milosavljevic B, Radivojevic B (2012) Some Aspects of Illegal Migrations, Zbornik príspevkov 6. medzinárodnej vedeckej konferencie, Bezpečné Slovensko A Európska Únia, Vysoká škola Bezpečnostného Manažérstva V Košiciach

50. Strbac Katarina (2010) Evolving asymmetric threats in the Balkans. NATO Science for Peace and security series E: human and societal dynamics, vol 85. IOS Press, Amsterdam
51. Katarina S, Mitrovic M (2011) Asymmetric threats-common response in Western Balkans. The Review of International Affairs, Belgrade
52. Katarina S (2010) The perspective on challenges and complementarities of the standpoints of the Republic of Serbia and the EU. In: Proceedings "Security and Defence aspects of the Republic of Serbia's accession to the European union". Strategic Research Institute and OSCE Mission to Serbia, Belgrade
53. Katarina S (2016) Welcome address: implications of Climate Change and disasters on Military Activities. NATO Science for peace and security series – C: environmental security. Springer
54. The Final Protocol of the First Geneva Conference (1899)
55. United Nations Office for Disarmament Affairs (UNODA) official web site. <https://www.un.org/disarmament/wmd/bio>
56. United Nations Security Council Resolution 1540 (2004)
57. Web page of the University of California, Los Angeles (UCLA), American Anthrax Outbreak of 2001. http://www.ph.ucla.edu/epi/bioter/detect/antdetect_intro.html