Preventing the Proliferation of Biological Weapons:
Situation Overview and Recommendations for Israel

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Introduction

The events of September 11 and the wave of anthrax-laced envelopes mailed in the US during 2001 – a case that still has not been fully solved[1] – together constituted a watershed in the perception of the non-conventional terror threat in general and of bioterrorism in particular. They served as a milestone in the recognition by Western countries, led by the US, of the immediacy of the threat and the need to fight it. These events heightened the potential link between international terrorism and Weapons of Mass Destruction (WMD), with biological weapons in particular looming as a new and dangerous threat[2] Several reports recently published in the US on the threat of biological terror conclude that the dramatic developments expected in the twenty-first century in the field of life sciences, along with the accessibility and widespread dissemination of information, will enable terrorist organizations to obtain and prepare biological means capable of causing enormous damage.[3]

At the same time that it has evinced a heightened awareness of the non-conventional terror threat, the international community has undergone certain political–strategic processes that have somewhat mitigated the inter-state WMD threat, particularly its biological and chemical manifestations. Significant here is the dissolution of the USSR and its decision to join in the process of signing disarmament agreements and cooperate with the US in dismantling and destroying non-conventional weapons stockpiles. Also noteworthy is the war in Iraq and the elimination of an Iraqi non-conventional threat.

The US war against terror includes the fight to prevent the possible use of non-conventional weapons by terror organizations and minimize or preempt the consequences should terror organizations resort to such weapons. The all-out war on terror, based on the four premises of *deterrence, prevention, defense, and consequence management*,[4] has commanded considerable US effort and resources. The US has made important organizational changes, primarily the establishment of the Department of Homeland Security (DHS), whose main task is specifically the fight against terror.[5] It has also toughened existing laws and enacted new legislation intended to fight against terror in general and against non-conventional terror in particular.[6] European nations, both independently and through the European Union, have declared formal support for the US approach, but in practical terms have acted with noted moderation and little resolve. The only exception is England, which generally is in agreement with the US on such matters.

This article addresses the issue of preventing/minimizing the proliferation of non-conventional weapons, equipment, materials, and technologies to hostile elements, particularly terrorist organizations. The article will focus on policy and legislative processes in the US and other Western countries designed to prevent the proliferation of non-conventional weapons, particularly biological weapons, and assess the situation in Israel in terms of regulations that exist and what remains to be done.

Arms Control and Counter-Proliferation

The Biological Weapons Convention (BWC), which entered into force in 1975, joins the Nuclear Non-Proliferation Treaty (NPT) and the Chemical

Weapons Convention (CWC) to constitute the principal conventions on arms control and nonproliferation of non-conventional weapons. The BWC is a convention that prohibits the development, production, and stockpiling of bacteriological (biological) and toxic weapons and binds the signatories to destroy those that exist. The main weakness of the convention is the lack of a built-in control mechanism for enforcement and guaranteeing compliance by the member states, which in effect renders it an ineffective instrument. In 1994 intensive discussions began to formulate a "compliance protocol," which would constitute an integral, binding part of the convention and allow enforcement of its clauses. In 2001 the talks were terminated at the insistence of the US and to the dismay of most of the European states. The Americans expressed a great deal of skepticism regarding the effectiveness and applicability of the compliance protocol, especially because of the characteristics of biological weapons and their related technologies, and anticipated biotechnological advances. Furthermore, since according to the Americans the principal threat stems from terror organizations, the compliance protocol represented a misplaced and futile effort.[7]

With its termination of the compliance protocol talks, however, the US launched processes involving national legislation, stringent export control regimes, and enforceable supplier regimes that it feels would be more effective and contribute more than the convention in preventing the proliferation of non-conventional weapons to terrorist organizations. And indeed, immediately after September 11 and the subsequent anthrax affair, the US began to enact laws and regulations and initiated export control regimes and supplier regimes. This activity, along with related US pressure, led to similar actions on the part of other countries and organizations, including the UN, the EU, and the G8 While it is still too early to assess the results of the intensive counter-proliferation activity by the US and international organizations in the past three years, there is no doubt that awareness has greatly increased and the issue commands an important place on the international agenda. The expectation is that this awareness will gradually produce a cultural norm that will lead to reduced trade and proliferation of dual-use materials and equipment to state supporters of terror as well as terror organizations.

Counter-Proliferation Policy and Legislation

The United States

In 2002, as a direct result of the anthrax envelopes, Congress enacted the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, whose purpose is "to improve the ability of the United States to prevent, prepare for, and respond to bioterrorism and other public health emergencies."[8] The law establishes mandatory measures to ensure that the US is fully prepared to deal with biological terror, and assigns the responsibility to the executive bodies – the Department of Health and Human Services (DHHS), includingthe Centers for Disease Control and Prevention,and the Department of Agriculture (USDA) – for all matters related to biological agents posing a threat to humans and animals. This involves organizational and practical measures, the development of self-defense means, and sizable budgets. The law also requires very stringent bio-security measures to prevent and/or minimize the leakage of dangerous biological agents and toxins, as well as the transfer of technology and information from labs and research institutes, including academic institutions, to hostile elements.

The law lists biological agents, bacteria, viruses, and toxins that pose a clear danger if converted into biological weapons. All the institutions, organizations, and people in possession of these biological agents must adopt tight security measures, including the submission of reports and records. The law also stipulates documentation, control, physical supervision, protection, monitoring, control management, and secure transfer procedures of species stockpiles, as well as reporting all the employees authorized to handle these agents. The administration is entitled to reject an employee according to criteria specified in the law, particularly association/suspicion of association with terror organizations.

Although the symbol of individual liberty and freedom of expression, the US in this case chose an extreme, aggressive security approach, giving priority to security and control over scientific and academic freedom.

Hence the case of Professor Steven Kurtz of the University of Buffalo, who intended to use certain hazardous biological substances for an art project, and Robert Ferrell, chairman of the University of Pittsburgh's Human Genetics department, who provided him with the substances without obtaining the proper legal approvals. Both have been charged with legal offenses and face prison sentences of up to twenty years if found guilty.[9]

Through the Department of Commerce and other government departments, the US has undertaken intensive, widespread activity in the area of supplier regimes and export control regimes. As part of this endeavor, Congress has enacted laws and stringent regulations were designed to prevent the trade and export of WMD and their components, as well as dual-use materials and equipment.

On the international front, the US is a member of the Australia Group (AG), headed by Australia and comprising thirty-eight member states. Since its founding in 1984, the AG has earned a key role in global supplier regimes, regarding the import and export of chemical and biological substances. It initiated and regularly updates its regime according to global strategic and scientific–technological developments, and has of late devoted much attention to the impact of the non-conventional terror threat on the existing regime. In 2002, in order to reinforce and tighten the regime, as well as the chances of implementation and enforcement, the group published a document entitled "Guidelines for Transfers of Sensitive Chemical or Biological Items".[10] It also added new, previously excluded biological agents to the list of banned substances, and recently expanded the list of equipment requiring control (e.g., aerial sprayers).[11] The group's activities have most likely led to a reduction in the trade of dual-use substances and equipment, and, in turn, to a reduction in their proliferation to countries that support terror as well as to terror organizations.

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As part of a comprehensive counter-proliferation effort, which consists of intelligence, diplomacy, law enforcement, and other means for preventing the transfer of WMD to dangerous elements, President Bush launched the Proliferation Security Initiative(PSI) in 2003.[12] This initiative is part of the national anti-WMD strategy announced by the president in December 2002. Designed to stop global shipments of WMD, their delivery systems, and related materials, it aims to produce a dynamic, creative, and proactive approach to the prevention of proliferation to or from nation states and non-state actors of proliferation concern. The principles of the initiative were published by eleven countries in September 2003, and since then have been endorsed by others. Because success of the initiative greatly depends on international cooperation, the founding countries have encouraged other countries to adopt its principles. As an outgrowth of the PSI, the US enacted new federal laws that went into effect beginning July 1, 2004. The laws, which relate to some 3,000 ports and terminals, attempt to combat the transfer of WMD, including biological substances, and demand that each container and sailing vessel bear freight authorization by the country of origin.

The United Nations

In April 2004, the UN Security Council published Resolution 1540, which addresses the non-proliferation of nuclear, chemical, and biological weapons and their delivery systems.[13] The resolution, recognizing the major threat to international security posed by the proliferation of non-conventional weapons and particularly the risk they entail if possessed by terrorists and non-state actors, lists certain mandatory actions to stem such proliferation. Particularly noteworthy is that Resolution 1540 represents the first UN Security Council comprehensive resolution that not only contains declarations, but also places operative demands on the member states to take clear, defined steps, including domestic legislation, to combat proliferation of non-conventional weapons.

The G8

At the 2004 G8 summit in Evian, France, the member countries formally recognized proliferation of WMD and delivery systems, along with international terrorism, as a genuine threat to world peace and security. Accordingly, a plan of action for the war on proliferation of WMD was launched in cooperation with other interested states. In line with this approach, the G8 countries announced their fervent support of UN Security Council Resolution 1540 and its demand that all countries institute effective export control regimes, enact effective counter-proliferation laws, enforce these laws, and take steps to prevent WMD from spreading and falling into the hands of terror organizations.[14]

The European Union

In June 2004 in Shannon, Ireland, the US and the EU declared that the proliferation of WMD constitutes a serious threat to world peace and security. Their declaration includes a list of matters that must be addressed in order to combat proliferation, including a call to all other countries to implement UN Resolution 1540. The joint US–EU resolution also urges other countries to adopt the principles of the G8 plan of action and sign the existing international treaties.[15]

Israel: What Is and What Should Be

As a rule, Israel supports the US policy of fighting international terrorism, particularly non-conventional terror. Israel itself has a longstanding tradition in the area of military and civilian self-defense against an attack involving the use of non-conventional weapons, and it cooperates with the US on related technological and operative matters.

Regarding proliferation prevention as part of a comprehensive policy of fighting non-conventional terror and as part of the US-led global policy,

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Israel has not done much except on the declarative level. Unlike the US, Israel has not enacted any primary legislation aimed directly at preventing or reducing the proliferation of non-conventional weapons and their components, such as dangerous biological agents. True, Israel has laws and regulations – some fairly old and others relatively new – that deal with environmental, occupational, and medical safety. These laws and regulations may indirectly make a very limited contribution to supervision and control of the transfer of hazardous materials and biological agents to hostile elements.

In terms of export control, however, Israel has recently undergone an important development in the publication of the Import and Export Order (Control of Chemical, Biological and Nuclear Exports 2004) signed by the Minister of Industry, Trade, and Labor.[16] The main objective of this order is to constitute "part of Israel's efforts to assist in keeping world peace and stability, and in preventing the proliferation of non-conventional weapons and non-conventional terrorism" by means of "the prohibition of exports from Israel of goods, technology, and services that may be used in the development and production of chemical, biological, and nuclear weapons." It should be noted that the lists of chemical and biological materials and equipment are based on the Australia Group's lists, and thus Israel has in effect adopted the AG and US positions. Yet in order not to limit bio-medical and basic scientific research and international academic cooperation, the order exempts institutions from applying for a license for the transfer to certain specified countries of chemical material or a biological agent for diagnostic purposes, medical or veterinary treatment, or medical or veterinary research, as well as the technology related to that exported material or agent. The order includes a catch-all provision that prohibits the export of materials and equipment designated for WMD programs, and stipulates regulations for controlling dual-use items in the biological, chemical, and nuclear domains according to the AG and Nuclear Suppliers Group (NSG) lists. The foreign minister recently publicized a

letter that was sent to the Australian foreign minister and other international figures. The letter cites adoption of the order as part of Israel's policy of participating in the global effort to curb WMD proliferation, especially to terrorists and countries that support them. This policy, according to the letter, also supports the AG principles, supplier regimes, and derivative legislation and regulations.

Because, however, Israel has not yet acted sufficiently aggressively to prevent the proliferation of non-conventional materials, particularly the transfer of biological agents and related technologies, to hostile elements, it is essential that it act intensively in both the domestic and international spheres.

At the Declarative Level. In every international forum, Israel should declare that it has a vested interest in, and is committed to, being a part of the global effort to prevent the proliferation of WMD and its delivery systems, particularly to terror organizations and countries that support terror, and therefore, it supports the AG, and the PSI. Similarly, Israel should declare its support for the relevant UN resolutions and in particular Resolution 1540, both in principle and in its intention to adopt the operative measures, i.e. appropriate legislation, supplier regimes, supervision regimes, and the enforcement of these measures.

At the Operative Level. Israel must assess the need for primary legislation such as what is cited in UN Resolution 1540 that prohibits non-governmental entities from manufacturing, purchasing, possessing, developing, transferring, transporting, and using nuclear, chemical, and biological weapons and their delivery systems, particularly for terror-related purposes.

- It must examine whether there is reason to enact a law similar to the US Bioterrorism Preparedness and Response Act, designed in part to prevent the spread of dangerous biological agents and sensitive technology to terror organizations. Israel has no legislation of this sort, and therefore must assess the value of such legislation and which ministries should bear responsibility for its implementation.
- The country must examine whether the existing laws, regulations, and orders dealing with public health, environmental safety, and work safety, which come under the responsibility of several ministries, should be updated from the point of view of bio-security so that they will also be applicable in preventing proliferation.
- New legislation or updated legislation will constitute a basis for determining internal arrangements, regulations, standards, and procedures at all the institutions and relevant industries in Israel that will have to comply with these laws and regulations.
- The Import and Export Order of 2004 is a step in the right direction and corresponds with international policy, including UN Security Council Resolution 1540. Now the authorities, headed by the Ministry of Industry, Trade, and Labor, must act intensively to implement and enforce the order so that there will be effective control of exports without consequent economic damage. The authorities must monitor implementation of the order, draw conclusions a year or two later, and update and revise the procedures accordingly. It is especially important to examine whether the relatively detached approach to the matter of bio-medical research, particularly the exemption for the transfer of chemical material and biological agents for research purposes, is a reasonable leniency. The procedures will also have to be updated in accordance with global strategic and scientific-technological developments.
- Israel must join international initiatives in the area of supplier regimes. Since Israel has announced that it accepts the AG policy, it must therefore continue to conduct talks with the group, coordinate positions and policy, exchange intelligence and technological information on new materials, and contribute information that would update AG guidelines as needed. Similarly, Israel should announce its adoption of the PSI principles formulated in Paris in 2003, conduct talks with the countries that have endorsed the initiative, and plan for the supervision and control of the transfer of banned items through land routes but especially through sea and air routes.
- Exchanges of ideas, talks, and other communications channels between relevant academic and industrial entities and administration agencies/government ministries on specific fields in the life sciences – e.g., biotechnology and genetic engineer-

ing – must be initiated. Academic institutions and industries are the first to anticipate and discern new scientific developments with the potential to be exploited by terrorist elements and can issue the required warnings. At the same time, academic and industrial labs use biological agents that through improper management could be transferred to hostile parties. Therefore, the aim of talks is to adopt understandings, agreements, procedures, and regulations, and also create control mechanisms to minimize the spread of biological agents or hazardous materials and related know-how to terrorist elements.[17] Some of the possible mechanisms for reducing the risk of illicit transfers are:

– have science and industry institutions join the initiatives, agreements, and codes of conduct to act according to safety and security criteria

– improve means for safeguarding and securing stockpiles of dangerous species

– maintain recording, supervision, and control procedures at institutions

– control and supervise research of biological agents and other sensitive areas, using the type of supervision that exists at research institutes engaged in genetic research and similar sensitive fields

– encourage the incipient efforts in the chemical and pharmaceutical industries to create an ISO-type standards framework that will also include security aspects, extending beyond environmental and occupational aspects.

Conclusion

Since September 11 and the anthrax affair there is increased awareness of the potential magnitude of the terrorist threat and its possible biological form. Rapid advances in life sciences and the anticipated developments in biotechnology, genetic engineering, and other advanced technologies not only have the potential to produce new drugs for serious diseases, but also pose tremendous security risks for fear that terror organizations may exploit the technology to cause diseases, epidemics, and other biologically related damage.

There are initial indications that the initiatives and regimes are effective in reducing the trade and transfer of non-conventional weapons and their components.

The most efficient way of combating the nonconventional terror threat is to carry out simultaneous action on several levels: deterrence (though in the case of terror, effectiveness is questionable), prevention, and preparations for responding to the fallout of an attack should one occur. The US is spearheading the global fight against proliferation of non-conventional weapons in general and biological weapons and their components in particular. Hence the adoption by the US and other countries of the laws, regimes, and initiatives designed to prevent the spread of hazardous materials to hostile elements. While it is still too early to assess the results of these activities, there are initial indications that the initiatives and regimes are effective in reducing the trade and transfer of non-conventional weapons and their components to terrorist elements. Nevertheless, there is no way of knowing at this point how much the absence of non-conventional terror of a serious magnitude is a direct function of the proliferation prevention regimes.

Israel shares a common interest with the US to combat the biological threat by means of proliferation prevention and the use of legislation and regulation, supplier regimes, and export control regimes. Therefore, the country should increase its efforts in this sphere in coordination with American and international policy, and give a serious push to adoption and enforcement of relevant initiatives. It should also act to increase awareness among the pharmaceutical and biotechnological industries and academia regarding the security risks posed by some research and development areas in the life sciences, and set up mechanisms for coordination and cooperation between these bodies and the appropriate government ministries.

Notes

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