ESSAY

# UNDERSTANDING THE IMPLICATIONS OF UN SECURITY COUNCIL RESOLUTION 1540

BEN STEYN

The UN Security Council passed Resolution 1540 in 2004 so that states can pass laws that will assist in the prevention of access to weapons of mass destruction (WMD). Not everyone was pleased with the resolution as it is seen to be giving a false sense of security. This essay seeks to shed light on the resolution by outlining what the requirements as well as concerns are. It also discusses the implementation process of the resolution in detail, incorporating concerns raised by some states. One of the concerns is that the resolution is drafted in broad terms and contains many requirements that are vague and open to interpretation. Based on these broad terms, states are required to adopt and enforce appropriate effective laws which prohibit any non-state actor from manufacturing, acquiring, possessing, developing, transporting, transferring or using nuclear, chemical or biological weapons.

The events of 11 September 2001 and the anthrax letter incidents in the USA have had a major influence on current perceptions of weapons of mass destruction (WMD) and terrorism threats. Indeed, at present these perceptions of the threat of terrorism involving WMD dominate the international security environment.

As a result of these perceptions the UN Security Council adopted Resolution 1540 under chapter VII of the United Nations Charter on 28 April 2004. This requires all states to refrain from supporting, by any means, non-state actors that attempt to acquire, use or transfer nuclear, chemical or biological weapons and their delivery systems. That the resolution was taken under chapter VII of the UN Charter implies that it is legally binding on all states.

The resolution requires states to establish domestic controls to prevent the proliferation of such weapons and their means of delivery, in particular for terrorist purposes. This includes the establishment of appropriate controls over related materials, and adoption of legislative measures.

The resolution provides for the establishment of a committee that will report on its implementation for a period of no longer than two years. It requires states to present a first report to that committee, no later than six months from the adoption of the resolution, on steps they have taken or intended to take in its implementation.

**DR BEN STEYN** is a Specialist Anesthesiologist. He has been the Chemical and Biological Defence Advisor to the Surgeon General of the South African National Defence Force since 1993. He has also been the technical adviser for the South African Delegation to the Biological and Toxin Weapons Convention since 1992. The views expressed in this paper are those of the author and should not be interpreted as representing any positions or views of the South African government, any government agency or institution, or any other agency or institution related to the South African government.

The resolution states that none of the obligations set forth in it would be interpreted so that they conflict with or alter the rights and obligations of states parties to the Nuclear Non-Proliferation Treaty (NPT), the Chemical Weapons Convention (CWC) and the Biological and Toxin Weapons Convention (BTWC) or alter the responsibilities of the International Atomic Energy Agency (IAEA) or the Organization for the Prohibition of Chemical Weapons (OPCW).

Resolution 1540 may have serious implications for states in terms of their legal processes. Therefore it is necessary to evaluate its requirements and their implementation from a practical implementation point of view, focusing on operational elements.

## Requirements of Resolution 1540

According to Resolution 1540 states must not provide any support to non-state actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery. It requires states to adopt and enforce appropriate effective laws which prohibit any non-state actor from manufacturing, acquiring, possessing, developing, transporting, transferring or using such weapons. Attempts to engage in any of the foregoing activities, participate in them as an accomplice, and assist or finance them are also prohibited.

States will have to adopt or revise legislation and take other measures to establish domestic controls to prevent the proliferation of nuclear, chemical, or biological weapons and their means of delivery and related materials, particularly in terms of:

- the accounting of such items in production, use, storage and transport;
- the security of such items in production, use, storage and transport;
- developing and maintaining appropriate effective physical protection measures;
- controlling the export, import, transit, trans-shipment and re-export of such items;
- setting up controls on providing funds and services related to such export and trans-shipment;
- establishing end-user controls;
- enforcing appropriate criminal or civil penalties for violations of export control laws and regulations;
- establishing border control measures to detect, deter, prevent and combat the illicit trafficking in such items;
- setting up law enforcement efforts to detect, deter, prevent and combat the illicit trafficking and brokering in such items.

To be able to implement these requirements states will have to establish national lists of the agents (chemical, biological and nuclear), equipment and other items they will control.

The resolution requests states to develop appropriate ways of working with and informing industry and the public about their obligations under such laws, to promote dialogue and cooperation on non-proliferation so as to address the threat posed by proliferation of nuclear, chemical, or biological weapons, and their means of delivery.

## Concerns related to Resolution 1540

Resolution 1540 is drafted in broad terms and contains many requirements that are vague and open to interpretation. This has the potential consequence of providing the foundation for differences in implementation. To have some level of similarity in implementation, very clear guidelines will have to be provided by the UN Security Council, which has not yet happened.

The resolution requires all states 'to refrain from providing any form of support to non-state actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery' and 'in accordance with their national procedures, [to] adopt and enforce appropriate effective laws which prohibit any non-state actor to manufacture, acquire, possess, develop, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery, in particular for terrorist purposes, as well as attempts to engage in any of the foregoing activities, participate in them as an accomplice, assist or finance them'. In principle these requirements are necessary and reasonable. However, certain questions need to be answered:

- Will the Committee of the Security Council determine minimum acceptable standards for legislation and its enforcement?
- What will be the basis for such standards?
- When will such standards be made available?

At present no guidelines on requirements or standards have been provided by this committee.

It should also be noted in this context that even under the existing international machinery to prevent the proliferation of weapons of mass destruction, and of the capabilities to produce these weapons, it had never been anticipated that the existing international prohibitions would be restricted to states. The prohibition was understood to apply to 'any recipient', including states, non-state actors and any other ecipient.

The resolution requires states to develop appropriate ways to work with and inform industry and the public about their obligations under such laws, to promote dialogue and cooperation on non-proliferation in order to address the threat posed by proliferation of nuclear, chemical, or biological weapons, and their means of delivery . It also requires them to cooperate to prevent illicit trafficking in nuclear, chemical or biological weapons, their means of delivery, and related materials. In principle, there should be no problem in implementing this requirement.

Resolution 1540 refers to nuclear weapons, chemical weapons, biological weapons, their means of delivery, and related materials. Since these weapons, in particular chemical and biological weapons, are not clearly defined in legal terms and most of the agents (all biological agents) and related materials are dual-use in nature, lists to narrow down the scope of legislation are essential. It is, however, noteworthy that Resolution 1540 does not address radioactive materials at all. Considering that the primary thrust of the resolution is to counter terrorism, and taking into account the availability of radioactive materials, this omission could be seen as a major flaw in the Security Council's action.

While this article concentrates on biological aspects, the comments to some extent apply to chemical and nuclear weapons.

**Definitions provided in the resolution**

***Means of delivery:*** Missiles, rockets and other unmanned systems capable of delivering nuclear, chemical, or biological weapons that are specially designed for such use.

***Non-state actor:*** Individual or entity, not acting under the lawful authority of any state in conducting activities which come within the scope of this resolution.

***Related materials:*** Materials, equipment and technology covered by relevant multilateral treaties and arrangements, or included on national control lists, which could be used for the design, development, production or use of nuclear, chemical and biological weapons and their means of delivery.

The detailed requirements of the resolution are provided in operative paragraph 3, and these provisions will have the greatest influence on legislation and its enforcement.

## *Accounting and security*

Resolution 1540 requires states to develop and maintain appropriate effective measures to account for and secure the above items in production, use, storage or transport.

The specific measures to account for and secure such items and 'related materials' should be determined by each state and will to a large degree depend on the contents of the lists of items developed for this purpose. It is reasonable to assume that these measures will apply primarily to laboratories, production facilities and transport. The reference to 'use' could cover facilities that only conduct research, but it is open to interpretation whether academic research is included. All the facilities referred to would also 'store' agents. These measures do not, and cannot, accommodate the situations created by naturally occurring pathogens or other sources of pathogens such as hospitals, medical waste and diagnostic laboratories. As an example, Bacillus anthraces will automatically be included on any list developed for any control purposes, but anthrax is an endemic animal disease in many countries and sufficient spores to grow it for illegal purposes can easily be obtained from nature.

It seems reasonable and viable to require accounting and security measures to be applied

to Risk Group IV[1] (World Health Organisation, *Office International Des Epizooties*) and to some extent Risk Group III (WHO, OIE) pathogens in terms of humans and animals. However, accounting for and securing pathogens in lower-risk groups will be unmanageable, although studies of previous incidents involving biological agents indicate that in most cases Risk Group II and even Risk Group I agents were used.

The key in this operative paragraph lies in the word 'appropriate'. This word implies that each state will determine what is appropriate for that state, based on its perception of the threat against it and its capability to implement and sustain such measures.

The resolution does not provide for any minimum standards and if it is considered that standards will be developed in future, the question remains of who would determine such standards and how they would be determined.

The concern remains that in terms of non-state actors, accounting may help to prevent the theft and misuse of specific agents in specific facilities, but a large source of potential biological agents continue to be available and uncontrolled in nature and in facilities not covered by legislation and treaties.

With regard to 'measures to secure pathogens and toxins', the text of Resolution 1540 indicates that the measures required exclude standard biosafety measures. Therefore it can be assumed that this resolution only addresses security measures.

Globalisation of standards for security and accountability will be extremely difficult for several reasons:

While some states deem it necessary to conduct background checks on personnel working with listed agents, such checks are either constitutionally unacceptable or may be considered unnecessary in other states.

It is reasonable to expect that any Biosafety Level 4 laboratory must have access control to the complex, safety fences around the complex, and electronic monitoring of the laboratory. However, it is unworkable to expect these measures to be applied to facilities where patients suffering from haemorrhagic fevers are managed (hospitals and laboratories), even more so in states where these diseases are endemic and such facilities are not at all sophisticated.

Implementation of effective security measures during transport is easier said than done and the following questions come to mind:

- Would existing safety measures be sufficient or are more elaborate measures required?
- If more measures were required, what would be sufficient: specific authorised transport companies, special transport vehicles, armed guards?
- The moment physical security measures to protect a cargo are applied, that cargo automatically attracts attention and becomes a target not only for terrorists but also for common criminals.

The expense and the physical requirements to effectively secure biological agents during transport also render this requirement very difficult to undertake.

### *Physical protection measures*

The resolution requires states to 'develop and maintain appropriate effective physical protection measures'. It is unclear at what these 'physical protection measures' are aimed. If the purpose is the physical protection of biological agents and toxins and related materials, the question of how these measures would differ from the measures to secure these items as required in the preceding paragraph needs to be asked. Since physical protection is usually seen as a subset of security, it could be assumed that there is no difference. If physical protection does not relate to security, then what does it relate to that is relevant to this resolution?

### *Border controls and law enforcement*

The requirement to develop and maintain appropriate effective border controls and law enforcement efforts to detect, deter, prevent and combat the illicit trafficking and brokering in such items in accordance with national legal authorities and legislation and consistent with international law is reasonable and should be implemented by each state for counter-terrorism and non-proliferation purposes. The enactment of legislation should not, in principle, create any particular difficulties. The effectiveness of these measures will depend to a very large degree on the physical control measures and training of personnel. The lists of items to be controlled,

however, will be an important factor in the level of controls required and the effectiveness of their implementation.

The control of movement of biological agents over borders is extremely difficult to manage. As everyone who works in this field is aware, it is quite easy to carry cultures through border posts unnoticed, and infected persons or animals cross borders daily. It is well known that exotic diseases enter countries through the import of wild animals and a number of outbreaks of such diseases can be directly linked to such incidents. The international community has never been able to control such incidents effectively and the question is whether this situation can be changed.

### *Export and trans-shipment controls*

Resolution 1540 requires states to 'establish, develop, review and maintain appropriate effective national export and trans-shipment controls over such items'. It also requires legislation and regulations that control the 'export, transit, trans-shipment and re-export' of such items. In principle this requirement is totally acceptable and states should not experience difficulties in implementing such controls for non-proliferation purposes.

It is interesting, however, that the resolution requires control of exports, transit and trans-shipment, but not the control of imports of such items. The question of how transit and trans-shipment can be controlled effectively if imports are not controlled comes to mind.

## Lists

The development of lists of items is essential for the implementation of the resolution. The composition of the lists will have a direct influence on the measures that will be utilised, but it should be noted that the more comprehensive the list, the wider the effects of the measures, and the more difficult and expensive they will be to implement. Consequently the approach that states take to developing such lists will have a concomitant impact on the effectiveness of Resolution 1540.

If a more comprehensive list, such as the Australia Group list, is utilised, it will be extremely difficult and expensive to implement and maintain the legislation and measures required in the resolution. The Australia Group list includes pathogens ranging from Risk Group II (for example Vibrio cholera) to Risk Group IV, which may all be used for non-peaceful purposes (including terrorism). The requirements in terms of accounting for, securing and physically protecting these agents would affect all facilities down to Biosafety Level 2 (including ordinary diagnostic laboratories and hospitals), which is impractical and would be extremely difficult to implement. As stated above, the more comprehensive the lists, the more difficult it is to effectively implement the measures that have been identified. Conversely, the more targeted the list, the easier it is to implement the same measures.

The list used for the USA Select Agent Rule concentrates on Risk Group IV and III pathogens. Since this list is much shorter than the Australia Group list, it would be easier and more practical to implement. The difficulty, however, is that a range of potential weapons will not be covered, creating gaps and rendering Resolution 1540 less effective.

States will have to decide which route to follow – more comprehensive lists with less 'complete' measures or less complete lists with more 'complete' measures. The probability is high that states will follow the second route, but then it will need to be accepted that they will be leaving uncontrolled a large group of agents that could potentially be used for non-peaceful purposes. States may also apply more comprehensive lists for export control measures and less comprehensive lists for other measures, with the resultant effect that non-proliferation measures will cover a broader scope of agents than counter-terrorism measures.

A further consequence is that states that have already developed and implemented legislation and measures utilising more comprehensive lists may now find that that they are not completely fulfilling the resolution's requirements. The focus in compiling any such list should be on a threat analysis of each item listed and not the number of items included.

### *Assistance and cooperation*

Resolution 1540 recognises that some states may require assistance in implementing its provisions within their territories and invites states that are in a position to do so to offer

assistance as appropriate in response to specific requests to states that lack the legal and regulatory infrastructure, implementation experience and/or resources for fulfilling the above provisions. Most of the industrialised states have indicated that they are prepared to provide assistance to states parties to the conventions referred to in the resolution.

Resolution 1540 requires states to 'renew and fulfil their commitment to multilateral co-operation, in particular within the framework of the International Atomic Energy Agency, the Organization for the Prohibition of Chemical Weapons and the Biological and Toxin Weapons Convention, as important means of pursuing and achieving their common objectives in the area of non-proliferation and of promoting international co-operation for peaceful purposes'.

## Conclusions

Resolution 1540 and the Non-Proliferation Treaty, Chemical Weapons Convention and Biological and Toxin Weapons Convention could complement one another to encourage states to enact legislation for non-proliferation and anti-terrorism. However, a number of complicating factors will have a negative influence on their cost-effectiveness to prevent terrorism and, to a lesser degree, proliferation. Such factors include:

- the inherent room to interpret the provisions of Resolution 1540;
- the loopholes that are created by a lack of universal standards for the measures included in the resolution;
- the dual-use nature and availability of agents outside controlled facilities;
- the amount of effort and resources that will be required not only to implement the resolution, but also to sustain these measures and ensure that they are effective – a difficulty that will be confronted not only by developing countries, but also by the developed states.

In addition, many states may follow the route of least resistance and introduce measures that would technically meet the requirements set by the Security Council, but which may be less than fully effective.

Extremely strict controlling of only a small group of agents and non-universal controls could not only lead to the exploitation of loopholes by terrorists and criminals, but also provide them with free information to identify possible agents for the future and with an incentive to 'shop around' for loopholes.

A major concern with Resolution 1540 is that it may create a false sense of security while the threat remains.

The requirements of Resolution 1540 may not provide sufficient measures to prevent terrorism or criminal acts on its own. However, while it may need to be accepted that complete control to absolutely prevent the use of biological agents and toxins or chemical agents for non-peaceful purposes by states as well as non-state actors is impossible, a combination of the sensible implementation of this resolution and the relevant non-proliferation treaties as well as good intelligence and police efforts will to a large extent prevent such acts.

## Implementation of Resolution 1540

The concerns raised above provide information on some of the difficulties in the implementation of Resolution 1540 and do not imply that states should not make an effort to implement it.

### *Submitting reports*

The first action that all states that have not yet done so will have to take is to submit their report to the UN Security Council. In the compilation of the report all legislation that is or may be related to the resolution, such as health and safety legislation, import control of animal and plant products, road safety legislation as well as security legislation and non-proliferation legislation, should be identified and included. The more comprehensive these reports are, the greater the information that will be available on universal legislative processes to enable the UN Security Council Committee to make more universally acceptable proposals to the UN Security Council.

### *Acceding to arms control and disarmament treaties*

States that are not yet party to the NPT, CWC or BTWC should accede to the outstanding

treaty(ies). The pressure to do will increase in future since Resolution 1540 requires it, and support and assistance to states will be dependent on their membership of these treaties.

### *Conducting threat analysis*

An analysis of the threat to the state in terms of terrorism, criminality and/or proliferation is necessary to determine the level and types of measure that state would require. As long as no guidelines or standards are provided by the UN Security Council, each state should determine its own standards.

### *Determination of own capabilities for implementation*

The capability of the state to develop legislation and implement it properly as well as maintain such implementation should be determined at an early stage. This will provide indications of levels and types of measure as well as the contents of the lists to be utilised. The information would give a good indication of the assistance for implementation that would be required.

### *Interpretation of text where required*

It is necessary that states should interpret the requirements of Resolution 1540 that allow for interpretation. Requirements such as 'accounting for' and 'securing during transport' are open to interpretation and a state should decide exactly what these terms mean for that state and which measures to develop for them.

### *Determination of the control lists to be utilised in each field*

The key to the implementation of these measures rests with the contents of the lists of items that will be subject to the measures. It is important to concentrate on items that are relevant to the specific state. In terms of biological agents, the list should include human, animal and plant pathogens. Pathogens that are endemic in a state may be more difficult to control on high levels than pathogens that are less available.

### *Determination of gaps in legislation and development of plans to close such gaps*

When all the information discussed above is available, assessments can be made of gaps in legislation, requirements for changes in legislation and development of specific measures. The need for assistance may also be clearer at this stage.

## Notes

1 The Risk Groups of pathogens are defined in the WHO Laboratory Safety Manual as follows:
**Risk Group 1** (no or low individual and community risk): A microorganism that is unlikely to cause human or animal disease.
**Risk Group 2** (moderate individual risk, low community risk): A pathogen that can cause human or animal disease but is unlikely to be a serious hazard to laboratory workers, the community, livestock or the environment. Laboratory exposures may cause serious infection, but effective treatment and preventive measures are available and the risk of spread of infection is limited.
**Risk Group 3** (high individual risk, low community risk): A pathogen that usually causes serious human or animal disease but does not ordinarily spread from one infected individual to another. Effective treatment and preventive measures are available.
**Risk Group 4** (high individual and community risk): A pathogen that usually causes serious human or animal disease and that can be readily transmitted from one individual to another, directly or indirectly. Effective treatment and preventive measures are not usually available.
The international veterinary organisation, *Office International Des Epizooties*, which provide health standards for identified animal and zoonotic diseases, have standards for laboratories that are similar to those of the WHO.