Examining Long-term Severe Health Consequences of CBW Use Against Civilian Populations

Hundreds of thousands of people have been killed or maimed and countless thousands are still suffering from exposures to chemical, biological and nuclear weapons. These include exposures during the First and Second World Wars, the Iran-Iraq War, the Tokyo subway attack, the "Anfal" campaign in Iraqi Kurdistan, and possibly during the Gulf War. Hundreds of thousands of survivors continue to suffer without help, essentially abandoned to face severe effects of weapons which are either carcinogenic (cancer-causing), teratogenic (causing congenital malformations) or neurotoxic (leading to profound neurological or psychiatric problems).

Real Threats

Exposure to chemical, biological or nuclear agents, either from military use or accidents, result in profound damage to people and the environment. Toxic residues from such weapons contaminate food and water supplies, cause sterility in people and animals, and can cause genetic damage spanning generations. Secondary consequences may spread across international boundaries, endanger millions, have effects on children yet unborn and on the fertility and health of future generations. The long-term implications thus differ from those posed by conventional weapons and defy responses planned for conflicts, terrorist attacks and accidents.

The sarin attack on the Tokyo subway system demonstrated the potency of such weapons, the difficulties in preventing their use and the inadequacy of the response system. Serious long-term neurological effects are now being reported not just among survivors, but also in the medical and emergency staff who responded to the incident. Unlike conventional arms, chemical and biological weapons attacks have deadly and disabling effects on emergency services personnel and persist in the environment. Such agents cannot be counteracted through conventional infrastructure and emergency responses.

Governments around the world now acknowledge the real threat of such weapons and the nightmare prospect of war and terrorism that destroy people and not buildings. Increasingly frequent industrial mishaps, train derailments, air crashes and other accidents have also resulted in exposures to a variety of highly toxic substances, and local jurisdictions have found themselves ill-prepared to respond. Emergency exercises in major cities and at defence establishments have demonstrated the inadequacy of current responses to the emerging threats. In the event of an attack or accidental
exposure, governments must develop new strategies to care for and treat the victims. New understandings of how chemical and biological agents work and how to ameliorate their effects must be developed.

The Attack on Halabja and the Anfal Campaign in Iraqi Kurdistan

The populations of towns in Northern Iraq, especially the town of Halabja, are the largest civilian populations ever exposed to chemical and biological weapons. In 1988, the Kurdish inhabitants of Halabja were aerially bombarded with a cocktail of chemical and biological weapons, including mustard gas and the nerve agents sarin and tabun. The nerve agent VX and the biological toxin aflatoxin were also probably used. The people were drenched in these agents and their food and water were contaminated. About 5,000–7,000 people of the total population of 80,000 died as immediate casualties of the attack and a further 30,000–40,000 of the population were injured, many severely. No one has yet established exactly how many people died in the aftermath of the weapons attack, their ages or where or how they died. Nor is there any information about how many people now suffer long-term effects of the weapons or what the effect has been on the population structure as a result of infertility, foetal and infant deaths, and susceptibility to early mortality in vulnerable groups such as children, the elderly and pregnant women.

In addition to these victims in Halabja, there are further affected populations throughout Iraq attacked by Saddam Hussein from April 1987 to August 1988. Hundreds of tons of chemical weapons were used in attacks on Northern Iraq. It has been estimated that between 100,000–200,000 were involved in these attacks, but full medical and scientific studies of the weapons, the victims and the survivors have not been undertaken.

Cocktail of Weapons — Huge Range of Medical Consequences

We have as yet incomplete knowledge about the major long-term effects of chemical weapons, particularly when delivered in the potent and synergistic cocktail of the Halabja attack. What we do know is that chemical weapons have long-term effects. Genetic effects cause mutations in DNA and thus lead to cancers and congenital malformations, thereby giving rise to a new and continuing form of genocide. Mustard gas (although one of the first chemical weapons) is a very potent cancer-causing agent and is known to be toxic to embryos. Many pregnancies in Halabja are lost because of the heritage from these weapons and many women have suffered infertility as a consequence. In addition to the effects they have on stillbirths and childhood malformations and deaths, they continue to severely afflict the living. Mustard gas burns to the cornea have caused blindness; to the skin have caused skin cancers, pain and ulceration; and to the lungs have caused recurrent infections, asthma, bronchitis and pulmonary fibrosis so severe that lung transplants would be the only possible option for therapy. The nerve agents have caused severe neuropsychiatric disorders. There are as yet few effective treatments to oppose the destructive effects due to the advanced technologies of weapons of mass destruction and so it is imperative that advanced medical help is now provided for the victims.

Long-term medical consequences include: cancers; congenital malformations; infertility and infant deaths; respiratory, cardiac, eye and skin problems; and neuropsychiatric disorders.
Health Challenges

The effects of chemical and biological weapons, as well as nuclear exposure, differ from those of conventional weapons which have easily observable effects and for which there are effective treatments. In contrast chemical, biological and nuclear agents act silently, and many of the most severe effects are long term and strike without warning. Delayed effects such as the development of cancers following exposure may occur five to ten years later. Survivors of chemical, biological and nuclear attacks suffer devastating effects on all organ systems. They face a multitude of physical and neuropsychiatric problems. There are no known treatments, and conventional therapies may exacerbate their symptoms. Immediate responses by emergency services and national agencies may save lives, but do not address middle- or long-term problems. A major difficulty is how to treat rare cancers that are common in this population, such as those of the larynx and nasopharynx, which developed as a result of mega-dosages of carcinogenic and mutagenic mustard gas. Neither is there any information either about methods for treatment of the neuropsychiatric effects of the nerve gases sarin, tabun and VX or the long-term medical effects on cardiac, respiratory, dermatological and ophthalmological systems of these weapons.

Pregnant women, young children and the elderly are at greatest risk from exposure to chemical weapons. There is an urgent need to treat this population so as to determine the best possible way of alleviating their suffering. Simple measures should be tested, such as the provision of folic acid to prevent birth defects; or iodine tablets and uncontaminated milk and food to prevent cancers of the thyroid, breast, bone and leukaemia.

Medical Infrastructure Severely Deficient

The enormities of the health problems facing the population of Northern Iraq are magnified by an appalling lack of medical resources and infrastructure. Despite the fact that they were attacked eleven years ago, the survivors have received minimal, if any, humanitarian assistance. Regional doctors, trained mainly in the United Kingdom, are extremely frustrated by a severe lack of medicines, equipment and health support. Basic sciences laboratory facilities are inadequate and research capacities limited. The deans of regional medical colleges report a complete lack of up-to-date textbooks and journals. Communication between regional hospitals and with the outside world are difficult. There is even a shortage of pencils and paper for patient records.

Available drugs are often outdated or impure and there are major problems with equipment and supplies as basic as oxygen for surgery. Virtually no advanced treatment or diagnostic equipment exists in Northern Iraq. No transplants of any kind (kidney, corneal, liver, lung, heart) take place. Major medical infrastructure problems are exemplified for the care of those with cardiac failure (especially the young), where no cardiac drugs or analgesics are available, nor cardiac surgery. Renal failure leads to death as there is no dialysate available for the kidney dialysis machines. Patients with major medical conditions can be referred to Mosul or Baghdad, but even if they make the long, painful and expensive journey, they often die without treatment. Furthermore, many fear their lives will be at risk if they travel south into Iraqi controlled areas.

There is no plastic surgeon in the region to repair major mustard gas burns to the skin or congenital malformations such as cleft lip and palate. With no specialist paediatric surgeon or paediatric cardiology facilities, children with major chemical or biological weapons induced cardiac defects die through lack of treatment. While there are many doctors in Iraq, such as those presently working in general surgery, there is a need for specialist training, for instance in the area of plastic
surgery to heal extensive mustard gas burns.

The serious deficiencies in health and medical infrastructure in Halabja and the three northern Governorates are exacerbated by United Nations sanctions and problems in implementation of Security Council resolution 986, which allows the sale of Iraqi oil in exchange for food and medicine. Northern Iraq has received only a very small part of the promised 13% entitlement of total medical supplies under resolution 986. The Iraqi regime, which oversees distribution of 986 supplies, rarely allows delivery of useful medicines and equipment requested by health authorities in Northern Iraq. The “Oil for Food” programme thus fails to meet the basic health needs of the population, let alone the special needs of chemical victims. As many doctors point out, Iraqi Kurdistan suffers from a double embargo — one by United Nations sanctions, the other imposed by the Iraqi regime on Kurdish regions. This situation continues to ensure steady deterioration of medical and other infrastructures.

Healing Halabja — Helping the World

Since visiting Iraqi Kurdistan and the town of Halabja in January 1998, Dr. Christine Gosden and the Washington Kurdish Institute (WKI) have conducted extensive consultations with regional doctors, officials, international experts and humanitarian NGOs. The result has been a proposal to develop a post-graduate medical programme in Iraqi Kurdistan for treatment and research of chemical and biological weapon exposures. The proposed structure would ensure that the humanitarian/medical response sensitively and ethically lays the groundwork for a stringent scientific process needed to determine the long-term affects of chemical weapons.

The proposed programme will facilitate development of strategies for conflict situation epidemiology, effective interventions, prevention, treatment and humanitarian aid. The model will facilitate cooperation between regional political authorities and administrative structures, and energize segments of civil society throughout Northern Iraq. The structure would integrate long-term international research and immediate health response efforts. Treatment and research programmes are also envisioned throughout Europe at research hospitals in Kurdish immigrant communities, as significant numbers may have faced exposure. Programmes among more accessible immigrant populations will provide critical patient databases for comparative studies with regional and control groups.

Working with physicians in Iraqi Kurdistan and international experts, Dr. Gosden and WKI have prioritized six “cornerstone” pilot treatment/research programmes:

- Cardiopulmonary;
- Neuropsychiatric;
- Cancers in children and adults;
- Congenital malformations, infertility and infant death;
- Medical disorders (including ophthalmological and dermatological.); and
- Palliative care (treatment for the terminally ill).

Minimal international support and assistance from some local NGOs will help establish a rudimentary post-graduate structure at three university hospitals and a hospital in Halabja to undertake
an initial detailed medical/demographic survey. Yet without substantial international assistance, medical treatment and research will not be possible, and the population will continue to suffer.

Conclusions

While there are many responses to the question of why there has been no rush to aid these people, if we continue to fail them and act as if they are beyond help, then the threats posed by chemical and biological weapons become much greater for all of us.

Even if we find it difficult to countenance providing humanitarian help, at least self-interest and the crucial issue of domestic preparedness should alert us to the relevance of this community for the wider population. For example, during the Gulf War, some American service personnel may have been exposed to a chemical cocktail. Their multisystem illnesses remain unexplained and have defied diagnosis and effective treatment. Additionally, as we have seen in both Northern Iraq and Chernobyl, these problems have affected not only local populations with immediate death, ill health and subsequent increases in the rates of congenital malformations and cancers, but have also had wider effects on millions of people hundreds of miles from the initial contamination. The Chernobyl accident has left a legacy of cancers, childhood malformations and genetic mutations, not just in Ukraine, but in countries throughout Europe. The environmental effects will persist for hundreds of years and the genetic damage will be passed on for generations. Therefore, no chemical, biological or nuclear exposure can be considered as a local problem.

The potency of the effects, such as the increase in aggressive cancers in the young which kill terribly and painfully ten years after the attack or children born malformed as a result of toxic effects, argues for renewed efforts for complete chemical and biological disarmament and the development of novel techniques to help and treat victims. Even if effective, the tools of disarmament to prevent the use of chemical and biological weapons would have come too late for the Kurds and others victimized by the Iraqi regime. But it is not too late to ease their massive suffering, and perhaps in the process, learn valuable lessons about treating victims of chemical and biological weapons.

For more information about the efforts to bring help to the survivors of Halabja, please contact:

Washington Kurdish Institute
605 G Street, SW
Washington, DC, 20024
United States
Tel.: (1 202) 484 01 40
Fax: (1 202) 484 01 42
http://www.kurd.org/kurd

Christine Gosden, Mike Amitay, Derek Gardener and Bakhtiar Amin
Summing Up Disarmament and Conversion Events

The following text is the introduction to Yearbook Conversion Survey 1999 — Global Disarmament, Demilitarization and Demobilization, by the Bonn International Center for Conversion’s (BICC), which documents and analyzes world-wide disarmament and conversion efforts, including military expenditures, reorientation of military research and development, restructuring of defence industries, demobilization and reintegration of ex-combatants and disposal of surplus weapons. A topical study informs about efficient civilian use of military bases. ISBN 3-7890-6068-2, 180 pages.

The 1990s began with great hopes for a ‘peace dividend’: with the Cold War over, the world could harness resources freed from the military sector for peaceful development. This assumption has given way — at least in some parts of the world — to a more pessimistic point of view, namely that the expectations of deep cuts in the world’s military arsenals have stalled and that conversion has not succeeded.

These prevailing notions can be traced to two main factors: first, perceptions of the process of peace-making, disarmament and conversion. Despite many success stories in conflict prevention, disarmament and conversion, the celebrated failures have contributed to this overly pessimistic opinion and resulted in despairing, sometimes even fatalistic political reactions. The second factor is the reality of conflicts, disarmament and conversion. Violent conflicts are still occurring in many parts of the world; disarmament faces serious challenges, and conversion is far from being an easy and smooth process. The expectations in the early 1990s, both in the public at large as well as of experts, underestimated the newly emerging causes of violent conflict, the multifaceted real or perceived barriers to rapid disarmament, and the technical and financial cost involved in organizing the process of reallocating military resources to non-military purposes.

However, while a reversal of the disarmament and conversion process in some countries or regions cannot be excluded, it must be emphasized that behind the noisy headlines of the many conflicts, there exists a string of positive, often silent achievements. Clearly, in total, the 1990s balance sheet of disarmament and conversion is positive. Global disarmament continued even in 1997 and 1998, although at a slower pace, and so did conversion. Despite the difficulties of implementing disarmament, numerous practical conversion projects are underway or have already been completed. The achievements in disarmament become quite clear if we recall the size of the military sector (the input of financial, human and material resources) at the end of the 1980s compared to now. There has been a drastic reduction and — as has been experienced during the last decade — disarmament and conversion have at least partly developed their own internal dynamics. One disarmament round can provoke another and a general expectation of quantitative decline — for example in the number of nuclear warheads — can result in a drive for unilateral reductions going beyond the negotiated thresholds. This internal disarmament dynamic can continue to work in the future as well.

Achievements and Failures

Today’s international security environment is more complicated and complex than the antagonism that characterized the period of bipolarity. Clear-cut images of the enemy and the threat of all-out war and nuclear encounters have diminished and have instead been largely replaced by a concern over intra-state and regional conflict formations. The great optimism about the peace-
making capacities of international organizations such as the United Nations, the OSCE or other regional bodies has been tempered by such sobering failures as in Somalia or continuation of difficulties as in Angola, Bosnia and Kosovo. With the nuclear ‘sabre rattling’ of the superpowers coming to rest, the international community seems more inclined today to call for military intervention to prevent or stop wars. This tendency has motivated governments to transform armed forces and modernize their equipment, thereby enabling them to carry out such tasks. While the risks of threatening or using military force are more limited and predictable today, such actions are unfortunately often not the solution to the underlying problems of conflict. Nor is it easy to end military action in a given period of time; it is still easier to start than to end a military intervention.

New regional conflict formations, for instance in East and Central Africa, must be added to continuing older ones, such as in the Middle East, South Asia and South-East Asia. While the end of the Cold War ended the superpower domination over regional conflicts — and hence reduced tension — it has also laid open the complexity of the issue and the continuing existence of local and regional causes of conflict. Other international security worries of the 1990s are: weak (or collapsing) states, disintegrating armies and their factionalism and uncontrolled weapons, rather than clashes and combat between well-organized and heavily armed armies. Along with causing large-scale and horrific suffering, including death, injury, displacement, famine and so on, these processes jeopardize any development. As far as violent conflicts are concerned, international military clashes such as those between Iraq and the United States/United Kingdom at the end of 1998 are the exception rather than the rule. However, the most regressive disarmament and conversion ‘event of the year’ was probably the test of nuclear weapons by India and Pakistan in May 1998 since it will probably have long-term effects on the proliferation of weapons of mass destruction.

Conversion complications, disappointments about the pace of peace processes and disarmament, and continuation of old and the outbreak of new disputes and conflicts have contributed to the slowing down of the disarmament and conversion dynamism of the early 1990s. The situation at the end of 1998 was characterized by contradictory trends rather than unilinear developments. The results are mixed:

• Promising peace agreements and their implementation, as in Northern Ireland and Central America, are contrasted by the unsettled conflict about disarmament of weapons of mass destruction in Iraq, the outbreak of war in the Democratic Republic of Congo and the military engagement of several African states on either side of the conflict, the reversal of the peace process in Angola and Sierra Leone, and the violent conflict between Eritrea and Ethiopia with increased arms imports in the Horn of Africa.

• The majority of countries are continuing to reduce their financial input into military arsenals, thus reallocation to non-military purposes continues. However, at the same time, heavy investments into arms programmes are being made especially in regions of tension. Also, major powers, notably the United States but also China, are set for increased spending.

• Several encouraging initiatives at different international levels to control the availability of small arms and the conclusion of the ‘Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction’ are contrasted by still uncontrolled proliferation of small arms into many areas of conflict and by the slow progress and lack of funds for demining programmes.

• De facto nuclear disarmament through reductions of nuclear warheads is contrasted by the
lack of advance in negotiated nuclear arms control, nuclear ambitions in South Asia and mounting technical and security problems in safeguarding nuclear materials in the Russian Federation. The increasing number of nuclear-weapon states and the stockpiling of weapon-grade materials increases the dangers of the use of nuclear weapons.

- The number of conventional major weapon systems deployed by the armed forces has been cut substantially and continues to be reduced. This quantitative disarmament, however, does not always result in a reduction of military power. On the contrary, modernization of weapon systems through integration of high technology with increased military firepower continues unabated in the large industrial countries.

- Negotiations about reductions of major weapon systems in the OSCE region are bogged down in 'nitty-gritty' bargaining; the bold concept of adjusting force levels to the changed security landscape in Europe has largely been lost. At the same time, however, quantitative reductions of weapon systems and personnel levels continue below the levels being negotiated.

- Defence industry consolidation at the company level has made much progress; production capacities have been brought down and — where the conditions were right — conversion of defence industries has worked. While many of the streamlined defence companies are doing extremely well, recording record profits, the real losers of this consolidation have been the defence industry employees since almost every second job in defence production has been lost during the last decade. A large number, but not all of these employees, have found employment outside the defence industry.

- Military base closures are both a challenge and an opportunity. Often, heavy and long-term investments are required to redevelop former military bases for environmentally secure civilian use. This has led to a costly and time-consuming redevelopment process. While some countries face great difficulties — due to the sheer size and number of bases as well as lack of economic opportunities — for other countries, base redevelopment has created new economic potential, especially job opportunities.

To many, the end of the Cold War meant an automatic reduction in worrying about nuclear weapons, large-scale reallocation and conversion of vast resources, and harnessing of a ‘peace dividend’. However, this process — while, on balance, positive according to BICC findings — is complicated, costly and time-consuming. This does not mean that disarmament and conversion are not possible. On the contrary: they are a worthwhile investment in an ambitious political, social and economic process which requires creativity, stamina and resources.

BICC Findings

GLOBAL DISARMAMENT

Global disarmament towards the end of the 1990s is unabated. According to BICC’s Conversion, Disarmament, Demilitarization and Demobilization (BIC3D) Index the value for 1997 — the latest year of reporting — records disarmament of 3%, and a total of 29% for the period since the end of the Cold War. Of the four components of the BIC3D Index — military expenditures, weapons holdings, military personnel and employment in the defence industry — the largest contribution in 1997 came from the decreases in the number of weapon systems, clearly compensating for the slow process of disarmament in this category in previous years. In contrast, military expenditures were heavily reduced in previous years, but have recorded a stop in the reductions since 1997.
As analyzed in the 1996 Survey, two main factors are decisive for governments’ efforts to arm or disarm: wars, and the availability of economic resources. First, at the top of BICC’s disarmament ranking are countries which disarmed at the end of ‘hot’ wars in a number of areas in Africa and Latin America and at the end of the Cold War especially in Eastern and Western Europe. The other side of the coin is the fact that many countries at war or in regions of tension continue to strengthen their military arsenals, often despite extremely dire economic situations. Second, a number of countries ranking high on BICC’s disarmament and conversion list are driven by economic motives. When the security situation allowed for reductions, those countries decided to cut their resource allocation to the military. There are strong indications that this behaviour is presently confirmed by a number of Asian countries affected by the ‘Asian financial crisis’. Military programmes have been slowed down, postponed or cancelled in countries such as Indonesia, the Republic of Korea and Thailand. While a number of countries in East Asia invested heavily into arms modernization programmes when still booming economically, and the region as a whole disarmed on average by a meagre 5% in the period since the end of the Cold War, the process of expanding the armed forces seems to have slowed down now or even halted. It is likely that a process of gradual disarmament has commenced in this region.

**Military Expenditures and Their Reallocation**

Global military expenditure reductions, rapid in the first half of the 1990s, have come to a halt; even increases in spending seem possible in the near future. In absolute figures, military expenditures fell from a peak of more than US $1,030 billion in 1987 in an unbroken trend to US $683 billion in 1996 (in 1993 prices). BICC recorded a further slight decrease in 1997 to US $680 billion. Arms transfers were on the rise again in the second half of the 1990s. Various quite different developments are driving these trends. There are some countries and regions which were never much affected by the general disarmament trend in the late 1980s and early 1990s, such as South Asia and Northern Europe, and, at least until lately, East Asia. ASEAN countries reduced their military expenditures in 1997 for the first time while expenditures in West Asia (the Middle East) grew, although at a slow pace. But there are also some countries, such as the United States and a few countries in Eastern and Western Europe, where a reversal of the earlier trend to disarm is noticeable.

In some countries and regions, at the same time, military expenditures continue to decrease, for instance after the end of conflicts, opening up chances for local ‘peace dividends’. The most important reason for reductions, however, are financial difficulties, such as in East Asian countries. On the global scale the prospects for reallocating savings from military expenditures to other purposes are shrinking.

**Reorientation of Military R&D**

Judging from the scarce data, it seems that spending on research for, and development of, new weapons and other military goods has also started to increase again. The modernization of weapons technology remains a high priority in some key countries. Even if a number of such technological developments never go into production, the policy of priority setting in favour of military R&D is intended to keep abreast with modern technological developments. Judging by its spending on military R&D, the United States — by far the largest spender on military R&D worldwide — is on a course of rearmament. In the Russian Federation by contrast, both military and civilian R&D have had difficult times. Despite political declarations and even budget plans to the contrary, military
R&D have experienced serious cuts due to the general economic, budgetary and financial crisis in the Russian Federation.

**Conversion of the Defence Industry**

The partial return of demand for weapons is improving the economic prospects for arms-producing companies in some countries, such as the United States and in Western Europe. Defence companies in the United States have gone through an extensive period of restructuring and consolidation which is also likely to come to Western Europe. However, even with growing businesses, the companies are continuing to reduce employment.

At the same time, large overcapacities in arms production continue to exist, for instance in the Russian Federation and China. Further downsizing is highly probable, partly to be better able to support a more efficient core of defence producers. This will create considerable demand for conversion, that is, for the expansion of civilian business to compensate for losses of defence orders.

**Military Personnel and their Demobilization and Reintegration**

The trend of a reduction of military personnel has continued in recent years. After the Cold War peak of a total of 28.8 million, the number of military personnel was brought down to 22.0 million in 1997. Reductions were concentrated in countries which announced and began demobilization and force reductions in earlier years, such as China and several countries in Europe. Peace settlements continue to add new opportunities and challenges for large-scale demobilization and reintegration. Much experience has been gained about the possibilities and difficulties of support for demobilization and reintegration, a new aspect of development assistance in the 1990s. Still, post-conflict demobilization is far from routine, and backlashes, such as in Angola in 1998, can occur.

**Base Closures and Redevelopment**

The process of base closures lagged behind other reductions in military sectors. Although a ‘base closure gap’ has developed globally, base closures are a most promising economic road to successful conversion. There are some major exceptions to the general ‘base closure gap’, such as Germany, where a great number of bases have been closed. In Germany, as well as in other countries with extensive base closures such as in the United States, it has become clear that base redevelopment is a lengthy process which nevertheless offers interesting economic opportunities. Base redevelopment will remain an important issue for a long time, especially in those parts of the world where it has been delayed and where base redevelopment faces serious environmental tasks.

Some lessons can be learned by studying successful base redevelopment. However, the overarching importance of regional economic factors limits the direct applicability of methods used in major industrial countries.
SURPLUS WEAPONS AND THEIR DISPOSAL

The reduction of the various types of weapons is currently the most dynamic element of disarmament, both in quantitative terms, as well as in its political dimensions. However, here also, disarmament and conversion have slowed down compared to the early 1990s, for instance in the nuclear field.

While the Chemical Weapons Convention entered into force in 1997, one of the remaining problems of the convention is the inability or unwillingness of the majority of states to provide the Organisation for the Prohibition of Chemical Weapons with the mandatory data needed to execute treaty verification. This also applies to the United States which has the second largest stockpile of chemical weapons on its territory. While the United States is dismantling chemical weapons at a quick pace, the Russian Federation is making little progress due to the political and financial difficulties of the destruction programme.

Although reduced by over 5% in 1997, major conventional weapon systems are still deployed in large numbers in military arsenals. The present stock of major conventional weapon systems is estimated by BICC to be over 435,000 pieces (more than half of them — over 220,000 — deployed in the OSCE countries). On the other hand, there are some encouraging developments in fields where little movement was noted earlier, such as control and collection of small arms. Initiatives to stop the circulation or restrict the easy availability of small arms have been taken both at the international level and, in several countries, nationally.

Unfortunately, there is not much prospect for the conversion of weapons which have become surplus. Weapon systems hardly ever have a potential civilian application. Thus, disposal and destruction, with all their difficulties, are generally preferable. However, to save the cost of destruction or to earn income, the transfer of surplus weapons — both legal and illegal — from countries where weapons are surplus to others where they may be used in conflicts is often chosen instead of destruction or safe storage.

Conclusion: The Changing Face of Conversion

Disarmament at the end of the 1990s is different from disarmament ten years ago. Correspondingly, conversion challenges and tasks are changing. Slowly, the ‘disarmament shock’ of around the end of the Cold War is wearing off. The period of the early deep cuts seems to be over and has given way to a more gradual approach.

Some, though not all, of the core countries of the Cold War, which had the largest reductions in military resource use in the late 1980s and during the early 1990s, are slowly beginning to build up military sectors again, or, at least, to plan for more efficient armed forces on a stable level of financial effort. Military doctrines have been reformulated and the armed forces and their arsenals are being reformed, rationalized and modernized. Thus, investment and divestment in the military sectors are occurring in parallel. Reversion of earlier disarmament and conversion seems possible in some countries. Conversion in many countries is focusing on the long-term challenges, predominantly in...
the fields of base redevelopment, industrial downsizing, reform of the armed forces and disposal of weapons.

Some of the former antagonists of the Cold War, such as the Russian Federation and Ukraine, still have to master the difficult tasks of downsizing their armed forces and defence industry conglomerates in addition to redeveloping their military bases and decommissioning their stocks of surplus weapons. Civilian alternatives are not easy to find for personnel made redundant in the armed forces, the defence industry or the weapon labs in a transformation society struggling with many other economic and social adjustment problems.

The obstacles and difficulties to implementation of conversion are manifold and complex, particularly in both the transformation countries and the post-conflict societies. However, even if the military sector in the core states of the Cold War had reached a bottom level, disarmament and conversion demand would not stop but rather shift. The ending of conflicts and economic constraints continue to be major driving forces for reduced military resource use. Conversion usually needs investment, and the funds for such investment are scarce both after the end of conflict and in economic crises. Nonetheless, investing in conversion is, according to the experience of the last decade, a worthwhile investment promising a good return.

Instead of high hopes for easy ‘peace dividends’ as were raised at the end of the Cold War — there is much practical work already underway and still much to be done. Many conversion experiences, both positive and negative, have been made during the last decade. The lessons learned are a solid basis for the present and future disarmament and conversion challenges. The practical work — though not as spectacular as the juggling with hundreds of billions of dollars which would be piling up if military budgets were cut — is nonetheless providing benefits to the international community, national societies, local communities, companies and individuals. But at the same time, major challenges — and often the hardest cases — still lie ahead. However the experience of the past shows that those challenges can be mastered.

On-Site Inspection in the Emerging BTWC Protocol

The weakness of the Biological and Toxin Weapons Convention (BTWC), which entered into force in 1975, in the absence of any verification measures has long been recognized. Although in 1986 at the Second Review Conference, four confidence-building measures (CBMs) were agreed and then extended and developed in 1991 at the Third Review Conference, their implementation has been patchy and variable. In 1991 following the Iraqi invasion of Kuwait and the collapse of the Soviet Union, the Third Review Conference established an Ad Hoc Group of Governmental Experts (known as VEREX) to consider potential verification measures from a scientific and technical viewpoint. Nine of the twenty-one measures identified and evaluated by VEREX were on-site measures and the final report of VEREX said that “The most frequently identified on-site measures in combination were on-site inspections (interviewing, visual inspection, identification of key equipment, sampling and identification, auditing).”

The Special Conference in September 1994 which considered the final report of VEREX agreed to establish a further Ad Hoc Group (AHG) to “consider appropriate measures, including possible verification measures, and draft proposals to strengthen the Convention, to be included, as
appropriate, in a legally binding instrument”. The AHG first met in January 1995 and by May 1999 had met thirteen times. It successfully transitioned in July 1997 to consideration of a rolling text of a protocol. A ministerial meeting held at the United Nations in New York in September 1998, which was attended by ministers from thirty countries and supported by twenty-seven other states, underlined “the political and security imperatives of concluding, as a matter of priority, a protocol to the Convention .... The Ministers are determined to see this essential negotiation brought to a successful conclusion as soon as possible .... The Ministers call on all States Parties to accelerate the negotiations and to redouble their efforts within the Ad Hoc group to formulate an efficient, cost-effective and practical regime”. Thus there is a clear political will to complete negotiation of the protocol.

On-site inspection (OSI) is a key element of the emerging regime and has been extensively debated by the AHG. Although there is not yet complete consensus, it is evident that the regime will include OSI although its precise nature and extent have yet to be finalized. The central elements of the regime are seen as mandatory declarations of the most relevant facilities, a range of non-confrontational, non-accusatory yet infrequent unscheduled visits together with provisions for investigations on concerns about non-compliance with the BTWC. The AHG has been careful to utilize terminology that is different from that of the Chemical Weapons Convention (CWC) regime to avoid confusion as the two regimes are different.

Visits

These are seen as primarily addressing the efficient and effective implementation of the protocol — and are not concerned with addressing non-compliance with the BTWC. As of May 1999, the draft protocol contains provisions for randomly selected or transparency visits, declaration clarification procedures and voluntary visits.

Randomly Selected or Transparency Visits

Transparency visits to declared facilities would be infrequent and selected on a random basis. Their aim would be to check that declarations are consistent with the obligations of the protocol. As they would involve teams of no more than four, last no longer than two days and each state party would receive no more than two such visits a year, they would be a highly effective and efficient incentive for ensuring that declarations are both complete and accurate.

The activities to be carried out during such visits are detailed in the draft protocol and include provision for: a briefing of the scope and general activities of the facility, including details of the physical layout by means of a map or sketch; a visit to the areas relevant to the mandate of the visit; a review of the information in the facility’s declaration; interviews of individuals; examination of documentation; and observation of equipment. Sampling shall not be conducted unless offered by the visited State Party.

Declaration Clarification Procedures

In order to address any ambiguity, uncertainty, anomaly or omission in a declaration, a range
of procedures ranging from correspondence with the state party through consultations with national authorities to clarification visits are proposed. Such visits would involve teams of no more than five and last no longer than two days. Furthermore, should a state party judge that it has already taken all reasonable steps to address the ambiguity, it can decline to accept the proposed clarification visit. As there will undoubtedly be errors in declarations, it is clear that there must be a procedure to address such errors so as to ensure that declarations are indeed accurate.

The activities to be carried out during such visits are also detailed in the draft protocol. They are currently closely similar to those for randomly selected or transparency visits.

Voluntary Visits

These are seen as having a variety of purposes including:

- to help compile individual facility and national declarations;
- to further the assistance and cooperation provisions of the protocol;
- to resolve a specific concern related to declarations (such a voluntary visit would in effect be a shortcut to the declaration clarification procedures); and
- to resolve a specific concern about possible non-compliance with the BTWC.

The contribution made by voluntary visits to the protocol will vary and depend on the rigour with which the future BTWC organization can carry out such visits. Currently, the language in the draft protocol for voluntary visits is less well developed.

As declarations are the fundamental baseline element of the regime to strengthen compliance with the BTWC, it is vital that the regime contains measures that will efficiently and effectively ensure that declarations are both complete and accurate. Visits will achieve this in a highly efficient way. Various assessments of the likely size of the future BTWC Organization have concluded that the strength would be around 200 with an annual budget of some $30 million — less than half the size and budget of the Organisation for the Prohibition of Chemical Weapons (OPCW). These assessments show that the number of inspectors would be in the range of 50–70 and would be able to carry out about 100 visits a year, based on visiting teams of about four spending two days on-site for each visit.

It is thus realistic to consider a portfolio of about 100 visits and to examine what mix of visits might be expected in such a portfolio. As previously noted, there are basically three types of visits:

- Transparency visits/Randomly selected visits
- Declaration clarification visits
- Voluntary visits — which fall into several categories:
  — to assist in compiling individual facility and national declarations;
  — to resolve any ambiguities related to declarations;
— to further the cooperation and assistance provisions of the protocol;
— to resolve a particular concern.

The frequency of some visits will vary with time after entry into force of the protocol as states parties gain experience in compiling declarations and in achieving accurate and complete declarations. Thus the number of voluntary visits to provide assistance in compiling facility and national declarations will decrease and, over time, approach zero. Likewise, the number of declaration clarification visits will also decrease, as the ambiguities, omissions and uncertainties in declarations will decrease, and, over time, approach zero. The number of voluntary visits to resolve any ambiguities related to declarations will also decrease and, over time, approach zero.

There are two categories of visits that can be expected to increase over time. First, the number of transparency visits should increase, as the numbers of declaration clarification and declaration assistance visits decrease, up to the limit that the future BTWC Organization is capable of carrying out each year. Secondly, the voluntary visits to further the cooperation and assistance provisions of the protocol can also be expected to increase as the number of states parties to the protocol increases. The concept in the draft protocol that transparency visits might, at the request of the visited state party, be extended to address cooperation and assistance provisions is an effective and efficient way of enhancing the benefits to states parties. The OPCW has shown that substantial savings can be achieved by sequential inspections. 

The portfolio of visits totalling some 100 visits a year would comprise primarily transparency visits and cooperation and assistance visits. The balance of the portfolio would be made up of declaration clarification visits along with voluntary visits for declaration assistance and for resolving declaration ambiguities.

Such a portfolio and frequency of visits would be effective and efficient in ensuring that declarations — the central foundation of the strengthened regime — are both complete and accurate. Without such visits, there would be no basis for states parties having confidence that declarations are either complete or accurate and, indeed, there would be a real danger that over time states parties would become lax in making their annual declarations — thereby defeating the objective of the protocol of building increased confidence in compliance with the BTWC.

Investigations

As of May 1999, there is developed language in the protocol for both field investigations (investigations of alleged use or of releases) and facility investigations (investigations of concerns about non-compliance with the BTWC). There is general agreement for such investigations although the detailed initiation procedures — whether a green light procedure as with the CWC in which a majority have to vote to stop an investigation, or a red light procedure in which a majority have to vote for an investigation to take place — are still being negotiated.

Detailed provisions are elaborated for the information to be submitted with a request for an investigation, for pre-investigation activities, for conduct of the investigation including interviewing, visual observation, sampling and identification. For field investigations provision is included for disease/intoxination-related examination and for the collection of background information. For facility investigations, provision is included for identification of key equipment, auditing and for examination of medical records.

There is also outline provision, as yet undeveloped, for investigations into whether a transfer has taken place in violation of Article III of the BTWC — the obligation by states parties not to
transfer materials or technology for prohibited purposes.

Conclusions

The negotiations for the protocol to the BTWC have taken place against the background of the entry into force and implementation of the CWC — the first global regime which addresses dual-purpose materials and technology — and the experience of UNSCOM. Although this background has not been explicitly evident in the AHG negotiations, there has nevertheless been an implicit recognition that neither the CWC nor the UNSCOM regime is an appropriate model. Whilst the CWC regime is undoubtedly that of the closest relevance to the BTWC protocol, it is recognized that the BTWC regime needs to be tailored to address the particular challenges of increasing transparency and building confidence in compliance with the BTWC.

It is evident that OSI — in the form of non-confrontational visits and of investigations of non-compliance concerns — is an essential element of an effective BTWC protocol. Non-confrontational visits are needed to ensure that declarations are both complete and accurate. Investigations are essential to address any concerns of non-compliance with the BTWC.

Notes

6 Australia, Declaration of the Informal Ministerial Meeting on the Negotiation Towards Conclusion of the Protocol to Strengthen the Biological Weapons Convention, BW/C/AD HOC GROUP/WP. 324, 9 October 1998.

Graham S. Pearson and Malcolm R. Dando