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DRAFT REPORT

on the environment, security and foreign policy: strategies for using military resources for environmental purposes

Committee on Foreign Affairs, Security and Defence Policy

Rapporteur: Mrs Maj Britt Theorin

CONTENTS

	<u>Page</u>
Procedural page	3
A. MOTION FOR A RESOLUTION	4
B. EXPLANATORY STATEMENT	11

At the sitting of ... the President of Parliament announced that the Committee on Foreign Affairs, Security and Defence Policy ...

At its meeting of ... the Committee on Foreign Affairs, Security and Defence Policy appointed Maj Britt Theorin rapporteur.

The committee considered the draft report at its meetings of

At the latter/last meeting the committee adopted the motion for a resolution

The following took part in the vote:

The report was tabled on

The deadline for tabling amendments will be indicated in the draft agenda for the relevant part-session.

A
MOTION FOR A RESOLUTION

Resolution on the environment, security and foreign policy: strategies for using military resources for environmental purposes

The European Parliament,

-

having regard to the UN study 'Charting potential uses of resources allocated to military activities for civilian endeavours to protect the environment', UN (A46/364, 17 September 1991),

-

having regard to its resolution of 17 July 1995 on anti-personnel landmines; a murderous impediment to development (A4-0149/95),

-

having regard to its previous resolutions on non-proliferation and the testing of nuclear weapons and the Canberra Commission report of August 1996 on the abolition of nuclear weapons,

-

having regard to the International Court's unanimous ruling on the obligation of the nuclear weapon states to negotiate for a ban on nuclear weapons (Advisory Opinion No. 96/22 of 8 July 1996),,

-

having regard to its resolution of 19 April 1996 on the proposal for a Council Decision establishing a Community action programme in the field of civil protection (A4-0100/96),

-

having regard to its past resolutions on chemical weapons,

-

having regard to the outcome of the UN Conferences in Kyoto in 1997 and Rio de Janeiro in 1992,

-

having regard to the report of Committee on Foreign Affairs, Security and Defence Policy (A4-0000/98),

A

whereas the end of the Cold War has radically changed the security situation in the world and that the relaxation of military tension has resulted in comprehensive disarmament in the military field in general and in nuclear weapons in particular, releasing substantial military resources,

B

whereas threats to the environment, the flow of refugees, ethnic tension, terrorism and international crime are new and serious threats to security and that the ability to deal with various forms of conflict is increasing in importance as the security scene changes; whereas as some of the threats to security are non-military it is important that resources allocated to military activities are also used for non-military purposes,

C

whereas the world's resources are being exploited as if they were inexhaustible, which has led to increasingly frequent natural and environmental disasters; whereas such local and regional ecological problems may have considerable impact on international relations; regretting that this has not been more clearly reflected in national foreign, security and defence policies,

D

whereas there is an urgent need to mobilize adequate resources to meet the environmental challenge and whereas very limited resources are available for environmental protection, for which reason a reappraisal of the use of existing resources is called for,

E

whereas as military resources have been released the armed forces have had a unique opportunity and ample capacity to support the civilian efforts to cope with the increasing environmental problems,

F

whereas military-related resources are by their nature national assets while the environmental challenge is global; whereas ways must therefore be found for international cooperation in the transfer and use of military resources for environmental protection,

G

whereas the short-term costs of environmental protection have to be seen in the light of the long-term cost of doing nothing in this field, and whereas there is an increasing need for a cost benefit analysis of various environmental strategies which should cover possible transfers, reorientation and redeployment of military-related resources,

H

whereas the common goal of restoring the world's damaged ecosystems cannot be achieved in isolation from the question of the fair exploitation of global resources and whereas there is a need to facilitate international technical cooperation and encourage the transfer of appropriate military-related technology,

I

whereas the general disquiet over ecological decline and environmental crises requires the setting of priorities in the national decision-making process and that the individual countries must pool their efforts in response to environmental disasters,

Use of military resources for environmental purposes

1

Considers that the resources available to reverse or stem damage to the environment are inadequate to meet the global challenge; recommends therefore that the Member States seek to utilize military-related resources for environmental protection by:

(a)

introducing training for environmental defence troops with a view to establishing a coordinated European environmental protection brigade;

(b)

listing their environmental needs and the military resources available for environmental purposes and using those resources in their national environmental planning;

(c)

considering which of its military resources it can make available to the United Nations or the European Union on a temporary, long-term or stand-by basis as an instrument for international cooperation in environmental disasters or crises;

(d)

drawing up plans for creating national and European protection teams using military personnel, equipment and facilities made available under the Partnership for Peace for use in environmental emergencies;

(e)

incorporating objectives for environmental protection and sustainable development in its concepts of security;

(f)

ensuring that its armed forces comply with specific environmental rules and that damage caused by them to the environment in the past is made good;

(g)

including environmental considerations in its military research and development programmes;

2

Urges the governments of the Member States, since practical experience in the field is limited, to:

(a)

establish centres for the exchange of information on current national experience in environmental applications for military resources;

(b)

facilitating the global dissemination of environmental data including such data obtained by the use of military satellites and other information-gathering platforms;

3

Calls on the governments of the Member States to ensure that all environmental requirements and legislation applying to civilians also apply to all military activities and that the costs of cleaning up after environmental damage caused by the armed forces should be borne by the defence budget;

4

Calls on the governments of the Member States to ensure that their armed forces lay down environmental objectives and proposals for action to help reduce environmental impact and submit reports identifying aspects of military activity with environmental implications, and to require environmental impact assessments before new projects are begun and when purchasing equipment for both civilian and defence purposes;

5

Calls on the governments of the Member States progressively to improve the protection of the environment by the armed forces by means of training and technical development and by giving all regular and conscript personnel basic training in environmental matters;

6

Calls on the European Union to unite around a new environmental strategy using military resources for the joint protection of the environment;

7

Considers that environmental strategies should be able to include monitoring the world environment, assessing the data thus collected, coordinating scientific work and disseminating information, exploiting relevant data from national observation and monitoring systems to give a continuous and comprehensive picture of the state of the environment;

8

Stresses the importance of stepping up preventive environmental work with a view to combating environmental and natural disasters;

9

Calls on the Commission to conduct a detailed study of security-related threats to the environment in Europe and to draw up a Green Paper on military activities affecting the environment;

10.

Believes that the EU should do more to help the victims of landmines and to support the development of mine clearance techniques, and that the development of mine clearance methods should be accelerated;

11.

Believes that the secrecy of military research must be resisted and the right to openness and democratic scrutiny of military research projects be encouraged;

12.

Calls on the Member States to develop environmentally-sound technology for the destruction of weapons;

13.

Calls on the Council to play an active part in the implementation of the proposals of the Canberra Commission and Article 6 of the Nuclear Non-Proliferation Treaty on nuclear disarmament;

Legal aspects of military activities

14.

Calls on the European Union to seek to have the new 'non-lethal' weapons technology and the development of new arms strategies also covered and regulated by international conventions;

15.

Considers HAARP (High Frequency Active Auroral Research Project) by virtue of its far-reaching impact on the environment to be a global concern and calls for its legal, ecological and ethical implications to be examined by an international independent body before any further research and testing;

16.

Calls on the European Union and its Member States to work for the establishment of international treaties to protect the environment from unnecessary destruction in the event of war;

17.

Calls on the European Union and its Member States to work towards the establishment of international standards for the environmental impact of peacetime military activities;

18.

Instructs its President to forward this resolution to the Council, the Commission, the Member States of the European Union and to the United Nations.

B

EXPLANATORY STATEMENT

A defence against environmental threats

The security scenario has undergone considerable change in a relatively short period of time. It is less than 10 years since the Iron Curtain divided a nuclear Europe in half. Europe is now uniting as the European Union enlarges to include former Warsaw Pact countries. The Cold War has ended and a major war in Europe would now seem impossible. At the same time new threats are emerging. Massive displacement of refugees, ethnic conflicts, terrorism and international crime are just some examples of current threats to security. Another serious threat is posed by natural disasters and environmental problems caused by nature itself and the human race's methods of exploiting the earth's resources.

A number of environmental catastrophes have brought the human race new problems, the latest of these being the dam disaster in Spain. The landslides in Italy, the devastation wrought by El Niño and the Chernobyl nuclear accident are other contemporary examples of the devastating consequences of natural and environmental disasters. In certain parts of the world, drought can wipe out several years' harvests bringing starvation, and in many cases death, to much of the population. Mankind's defences against these disasters look very fragile at the present time.

Environmental and natural disasters have tragic consequences for individuals and may have catastrophic repercussions for societies and entire nations. The cost of this type of disaster is huge both in terms of the lives they claim and the cost of repairing the material damage. When such disasters occur, it is obvious that there have not been sufficient resources to detect and/prevent them. The efforts that are made are often far too late. Preventive work must therefore be strengthened. The investment required for this is enormous but the available resources are very limited. A new approach is required to exploit the available resources, while new resources are developed at the same time. It is obvious that a nation alone cannot protect itself against environmental disasters; environmental problems call for international cooperation. The threatening scenarios are global and international cooperation is fundamental.

Local and regional ecological problems can have considerable implications for international relations. Radioactive fallout, floods and drought are not held in check by national frontiers. Environmental refugees cross national boundaries to equally poor or even poorer nations. These new causes of instability and insecurity must be reflected in the content and form of how nations create and maintain peace and security. Since environmental and ecological problems constitute serious threats to peace and security, this fact must also be reflected in foreign, defence and security policy. There is a need to analyse how military resources can be used against this growing threat to security and to eliminate these new

sources of instability and unrest. There is an urgent need to mobilise resources to meet the environmental challenge.

The change in the security situation has resulted in military détente, disarmament and confidence-building measures between the former enemies, the USA and Russia. This has led to intensive scaling down of military forces, units have been disbanded and military equipment has, therefore, become superfluous. Russia and the USA, above all, have radically reduced their armed forces though military expenditure has also fallen in Europe (2).

The freeing-up of military resources has given the armed forces a unique opportunity and plenty of capacity to deal with the increasing number of environmental problems. The armed forces have a highly efficient organisation and extensive technical resources which can be used for environment enhancement at no great cost by redeploying or rechanneling resources. The European Union can unite around a new environmental strategy in which military resources are used for joint protection of the environment. The European Union can play an important role in furthering a joint global assumption of responsibility for the environment and at the same time promote peace and confidence-building measures.

The Member States of the European Union have both the technical and economic wherewithal to take wide-ranging responsibility for the environment. They are also aware of the implications of ignoring the environmental challenge. The destruction of the environment affects the underlying conditions determining growth and economic development but despite that, military expenditure worldwide is three to five times greater than spending on the environment. (3)

The armed forces themselves caused enormous damage to the environment and should, therefore, also take considerably more responsibility for the environment.

Modern security threats

There is a growing international awareness of the extent of environmental problems. This is illustrated in particular by the UN follow-up conferences on water (Mar del Plata), desertification (Nairobi), the environment and development (Rio de Janeiro) and climate change (Kyoto). Environmental problems can lead to such serious difficulties that they endanger the security of both individuals and countries. Environmental problems may also have repercussions in terms of a country's international relations. Air and water know no national boundaries. Specific examples of potential or already-existing environmental threats are:

Limited water resources

As the world's population increases, so does demand for clean water. Fresh water is a very unevenly distributed natural resource, fewer than 10 countries possess 60% of the total fresh water resources on earth (4) and several countries in Europe are dependent on imports of water. In future conflicts, attacks on sources of fresh water may not only be an objective per se but may also be the cause of conflict. Conflicts over water rights may result in increased international tension and local and/or international conflicts. For example, disputes over the river Indus could trigger an armed conflict in the tense relations between India and Pakistan. There is a long list of potential conflicts over fresh water. An estimated 300 rivers, lakes and sources of ground water are located in international border areas. (5) In the Middle East, nine of 14 countries have a shortage of water resources and there is a great risk that the others will also be affected. (6) In 1995, a fifth of the earth's population had no access to clean water and it is estimated that the figure will rise to two thirds by the year 2025. (7)

Climate change

Through an increase in carbon dioxide (8) and other emissions, the average temperature on earth has risen by five degrees this century. The heat has also become more intense. Research has found that humidity has risen by 10% over the last 20 years. The increase in humidity can cause stronger and more frequent storms in certain regions at the same time as others are stricken by drought. Up to two decades of intensive research into global climate change may be needed before more detailed decisions can be taken as to which measures should be adopted.

The Intergovernmental Panel on Climate Change (IPCC), an international organisation comprising 2000 of the world's most eminent researchers, predicts that the earth's temperature will rise by 1.5 - 4.5 degrees and that sea level will have risen by 50 cm by the year 2100 if carbon dioxide emissions continue at present levels. It is estimated that up to 1/3 of the world's population and over 1/3 of its infrastructure are located in coastal areas. A rise in sea level would submerge large areas of land and several million people would be affected by famine owing to the loss of extensive areas of agriculture.

These and other environmental threats may give rise to an exodus of refugees. Environmental refugees are increasingly attracting international attention. An estimated 25 million people are refugees from drought, soil erosion, and other environmental problems, which may be compared with approximately 22 million 'traditional' refugees. Experts claim that environmental refugees may cause 'one of the worst humanitarian crises of our time'. (9)

They suffer from social, political and economic problems that may result in conflicts and violence. Environmental refugees must be given official recognition. There is a need for

greater international cooperation to curtail these problems and more aid to the countries affected and their inhabitants.

Military impact on the environment in war and peace

Military activity is responsible for widespread environmental destruction in society. Military activities have a wide-ranging negative impact on the environment, in peace and in war, both intentionally and as an unintentional consequence. Destroying the environment has been an established method of waging war since ancient times. War is also far and away the most serious threat to the environment. A topical example is the devastating consequences of the Gulf War with hundreds of oil wells on fire and large quantities of toxic substances rising uncontrolled into the atmosphere. It will take a long time for the environment to recover. Some damage may be irreparable.

The military are developing ever more powerful weapons which inflict widespread and devastating damage on the environment. A modern war entails greater environmental destruction than any other environment-destructive activity. Below is a description of some weapons systems which also have seriously damaging effects on the environment in peace time.

Mines

Mines are enormously damaging to the environment. According to the UNEP (United Nations Environment Programme), landmines are one of the most widespread items of material war debris and may affect the ecological balance. Mine-laying destroys large areas, often agricultural, which are rendered unusable far into the future. Mines are the greatest obstacle to development in many of the poorest regions of the world. 80-110 million mines are deployed in 65 countries throughout the world. They can detonate several decades after being laid and the majority of those who fall victim to them are civilians, above all children. Mine clearance is a very dangerous, time-consuming and costly process. The development of new mine-clearance methods is progressing far too slowly and must be stepped up.

One positive achievement is that the 1997 Oslo Conference agreed that all antipersonnel mines should be banned without exception, that stocks of mines should be destroyed within four years and that countries affected by mines should be given more aid. A large number of countries signed the 1997 Ottawa Convention but several countries, including the USA, Russia, India and China have not done so. The European Union must work to persuade these countries to become parties to the agreement immediately. The EU should do more to assist the victims of mines and to support the development of mine-clearance techniques.

'Non-lethal' weapons (10)

So-called 'non-lethal' weapons are not a new type of weapon but have existed for many years in such forms as water cannons, rubber bullets and tear gas. However, at the present time, more and more advanced weapon techniques have been developed which are labelled non-lethal despite the fact that they can cause extensive damage and even result in invalidity or death.

Both material and antipersonnel technologies have been developed. One example is acoustic weapons which are capable of confusing and disorientating and thereby neutralising an enemy by producing a low level of sound, known as infra-sound. Other examples are adhesive foam and blinding lasers. Chemicals which discolour water can affect both agriculture and the population. With the aid of electromagnetic beams it is possible to knock out the enemy's computer, navigation and communication systems. Non-lethal weapons can also be used against a country's infrastructure and authorities, bring the railway system to a standstill or cause chaos in a country's financial world. What these weapons have in common is that they are intended to delay, obstruct and overcome a potential enemy at 'strategic level'. (11)

The fact that these different types of weapon are all categorised as non-lethal is seriously misleading and deluding. The term 'non-lethal' is intended to portray these weapons as more humane than conventional weapons - but there are no humane weapons. The use of any type of weapon involves a risk of injury or death, which is of course the purpose of weapons. 'Non-lethal' weapons tend to be used at an early stage of a conflict and may actually serve as a catalyst for the conflict. The use of violence by soldiers and police may increase because the weapons appear to be less dangerous. The inherent risk is that these weapons reduce the threshold for the use of violence to settle conflicts.

The aim is to neutralise the enemy without sustained suffering and without fatalities. But how and against whom 'non-lethal' weapons are used is an important consideration in terms of the implications of these weapons. A weapon that can render a soldier harmless, may injure or even kill a child or an elderly person. The distance from which they are fired and in what quantity are other factors with a bearing on the effects of the weapon. By way of comparison, conventional weapons result in 'only' 25% mortality. (12)

Non-lethal weapons are used as an effective aid in modern warfare, either independently or in conjunction with conventional weapons. For example, the USA used radiofrequent weapons in the Gulf War to knock out Iraq's energy system (13), despite not knowing the antipersonnel effects of RF weapons. Non-lethal weapons should, therefore, not be regarded as separate from a lethal system but rather as a component thereof. The development of non-lethal weapons increases both their options. The result is therefore greater use of force rather than the opposite. 'Non-lethal' weapons do not result in non-lethal conflicts.

As a wider range of non-lethal weapons are developed, the military, police and politicians become more and more interested in testing how they work. Non-lethal weapons must not be used as an instrument of political interference and dominance of the northern over the southern countries.

There is no effective legislation governing non-lethal weapons. Only a small number of non-lethal weapons and techniques can be banned through the interpretation of various arms control regulations, e.g. adhesive foam (which was used in Somalia and Bosnia). Certain types of laser (which blind people) have also been restricted in the Convention on Certain Conventional Weapons. Biological toxins (e.g. salmonella and other bacteria) are banned by the Biological Weapons Convention. Several of these weapons may have serious environmental implications. International law must therefore be strengthened to regulate the new weapons which are under constant development.

The International Red Cross Committee's Cyrus project could be used in the absence of other reliable international standards for non-lethal weapons. The Cyrus project has classified and established criteria for conventional weapons in relation to mortality, invalidity, necessary treatment, blood supply, etc. The European Union should pursue a policy to extend international conventions to cover new weapons technologies and the development of new arms strategies.

Chemical weapons

The United Nations' commitment to destroying chemical weapons and other weapons of mass destruction in Iraq has resulted in serious concern about the environmental impact of military activities and has strengthened the need to seek out ecologically sound methods of disarming weapons. The Chemical Weapons Convention (CWC) entered into force in April 1997. Under the terms of Article 1, the states which have ratified the Convention undertake never and under no circumstances to develop, produce or export chemical weapons. They also undertake never to use chemical weapons and to destroy already existing chemical weapons. Under Article 3, states shall, no later than 30 days after the Convention enters into force, notify whether they possess chemical weapons and their location and submit a plan for destruction of those weapons. Destruction should begin with the oldest stocks. 165 states have signed the Convention and 110 have ratified it. 26 states have not signed the CWC, including some important countries in the Middle East.

The destruction of chemical weapons is a cause for serious concern over the environment - they include tens of thousands of tonnes of mustard gas, nerve gas and other chemical substances. Chemical weapons can be destroyed by incineration but very few countries have suitable facilities to do this. To disarm chemical weapons is expensive, three to ten times more expensive than to produce them. If Russia, which has very large stocks, is to be able to do so, it needs financial aid from other countries. In Kambarka, a town in Russia, there are 6000 tonnes of chemical weapons stored in wooden sheds 2 km from a

densely populated area. Handling the considerable quantities of hazardous substances calls for a substantial input of resources and they will take a considerable number of years to destroy. There is a clear risk of accidents and of weapons falling into the wrong hands.

It has been confirmed that approximately 150 000 tonnes of bombs, artillery shells and mines filled with chemical weapons, chiefly mustard gas, phosgene, tabun and arsenic-based weapons were dumped in the Skagerack at the end of the Second World War. The corresponding figure for the Baltic is 40 000 tonnes. Many of the containers have rusted through and the chemical weapons are in direct contact with the sea water. It has nevertheless been decided that they should remain on the seabed for the time being as the risk of extensive leakage during salvage is considered to be appreciably greater.

Nuclear weapons

The environmental impact of a nuclear war would be enormous. It is likely that the combined effects of radioactive fall-out over large areas, the depletion of the ozone layer through nitrogen oxides, from nuclear explosions and climate change caused by widespread and sustained fires would cause large-scale environmental disasters over large areas of the globe.

Test explosions also have manifestly destructive effects on the environment. The total quantity of radioactive fall-out emitted into the atmosphere by atmospheric tests is estimated to be between 100 and 1000 times greater than that discharged by the Chernobyl disaster. ⁽¹⁴⁾ The 1963 partial test ban treaty between the USA, the USSR and the UK bans nuclear testing in the atmosphere, outer space and under water, i.e. in all environments except under ground.

France has carried out more than 180 nuclear test explosions at the Mururoa atoll in the Pacific Ocean since 1966 with significant impact on the environment. ⁽¹⁵⁾ Several kilos of hazardous plutonium have been recovered from the sediment at the bottom of the lagoons at the Mururoa and Fangataufa atolls. Plutonium particles have also been spread across the land on three islands in the vicinity of Mururoa. ⁽¹⁶⁾ India and Pakistan have also recently carried out test explosions. ⁽¹⁷⁾ Their technical development is not considered to be sufficiently controlled, which means that these nuclear tests may have an impact on the environment far beyond the region itself. An independent international investigation into the environmental impact at the test locations and their surroundings should be carried out immediately.

Plutonium is the absolutely most hazardous substance known to man. Many countries possess large quantities of military plutonium and nuclear weapons can be produced relatively simply from 'civilian' plutonium. Facilities which at present have a civilian

function can be converted within a short space of time to produce weapons. When plutonium is manufactured, a large quantity of highly radioactive liquid waste is produced. The handling of nuclear waste causes immense problems. The large-scale production of weapons of mass destruction which has taken place during recent decades has produced large quantities of waste. There is no known serviceable method of storing radioactive waste. It is usually stored in tanks, but large quantities have been discharged directly into the environment. This radioactive waste is extremely flammable and may explode if it is not ventilated or cooled. In 1957 an accident occurred at the Chelyabinsk-65 nuclear plant close by the town of Kystym in the Ural mountains, a radioactive tank exploded and radioactive waste dispersed over an area of 1000 square kilometres. 10 000 people had to be evacuated. At Lake Karachai near Chelyabinsk-65, it is still possible, merely by standing at the edge of the lake, to absorb so much radioactive radiation as to die on the spot. ⁽¹⁸⁾ In the Baltic states there are large areas which are polluted by previous Soviet military activities. In Estonia, Lake Sillanmä, also known as the 'atomic lake', contains radioactive military waste equivalent to thousands of atomic weapons. Sillanmä is 100 metres from the Baltic Sea. Any leak into the Baltic would have devastating repercussions for the environment in the entire Baltic Sea region.

At the end of the 1980s, Russia had more nuclear submarines than all other countries in the world together. The Kola Peninsula and Sevrodvinsk in Russia currently have the largest concentration of nuclear reactors in the world (240 units). ⁽¹⁹⁾ Large quantities of radioactive waste and nuclear-powered submarines have been stored at the shipyards on the Kola Peninsula. Russia and the Russian fleet are in an impossible position to deal with the scrapped reactors. They have no financial resources to pay for safe decommissioning. Low wages have resulted in highly qualified staff leaving the shipyards, which has led to a severe shortage of skills.

Even in central Moscow, 1200 sources of radioactive poisoning have been found, including in sandpits, air-raid shelters, private flats, garages and sports facilities. ⁽²⁰⁾ The possibility of coming across nuclear weapons, chemical and biological weapons from military stores and substances from research institutions or industry in Russia must not be underestimated.

It is of serious concern that there is no adequate equipment to dispose of the waste in an environmentally safe manner. Both from an economic and an environmental point of view, any accident that may occur would have devastating repercussions. With every year that passes without sufficient measures being taken, the risk and scale of a serious accident increase.

A practical and realistic proposal for a method of phasing out the world's nuclear weapons does, in fact, exist. The proposal was presented in August 1996 by the independent group of experts making up the Canberra Commission. ⁽²¹⁾ In July 1996, the International Court

at The Hague delivered a unanimous opinion to the effect that Article 6 of the Non-Proliferation Treaty commits nuclear states to initiate negotiations on nuclear disarmament. The Court also ruled that the threat or use of nuclear weapons was not consistent with international law. The European Union should actively work towards the implementation of the Canberra Commission's proposal and Article 6 of the Non-Proliferation Treaty.

HAARP - a weapons system which disrupts the climate

On 5 February 1998 Parliament's Subcommittee on Security and Disarmament held a hearing the subject of which included HAARP. NATO and the US had been invited to send representatives, but chose not to do so. The Committee regrets the failure of the USA to send a representative to answer questions, or to use the opportunity to comment on the material submitted. ⁽²²⁾

HAARP (High Frequency Active Auroral Research Project) is run jointly by the US Air Force and Navy, in conjunction with the Geophysical Institute of the University of Alaska, Fairbanks. Similar experiments are also being conducted in Norway, probably in the Antarctic, as well as in the former Soviet Union. ⁽²³⁾ HAARP is a research project using a ground based apparatus, an array of antennae each powered by its own transmitter, to heat up portions of ionosphere with powerful radio beams. ⁽²⁴⁾ The energy generated heats up parts of the ionosphere; this results in holes in the ionosphere and produces artificial 'lenses'.

HAARP can be used for many purposes. Enormous quantities of energy can be controlled by manipulating the electrical characteristics of the atmosphere. If used as a military weapon this can have a devastating impact on an enemy. HAARP can deliver millions of times more energy to a given area than any other conventional transmitter. The energy can also be aimed at a moving target which should constitute a potential anti-missile system.

The project would also allow better communications with submarines and manipulation of global weather patterns, but it is also possible to do the reverse, to disrupt communications. By manipulating the ionosphere one could block global communications while transmitting one's own. Another application is earth-penetrating, tomography, x-raying the earth several kilometres deep, to detect oil and gas fields, or underground military facilities. Over-the-horizon radar is another application, looking round the curvature of the earth for in-coming objects.

From the 1950s the USA conducted explosions of nuclear material in the Van Allen Belts ⁽²⁵⁾ to investigate the effect of the electro-magnetic pulse generated by nuclear weapon explosions at these heights on radio communications and the operation of radar. This created new magnetic radiation belts which covered nearly the whole earth. The electrons

travelled along magnetic lines of force and created an artificial Aurora Borealis above the North Pole. These military tests are liable to disrupt the Van Allen belt for a long period. The earth's magnetic field could be disrupted over large areas, which would obstruct radio communications. According to US scientists it could take hundreds of years for the Van Allen belt to return to normal. HAARP could result in changes in weather patterns. It could also influence whole ecosystems, especially in the sensitive Antarctic regions.

Another damaging consequence of HAARP is the occurrence of holes in the ionosphere caused by the powerful radio beams. The ionosphere protects us from incoming cosmic radiation. The hope is that the holes will fill again, but our experience of change in the ozone layer points in the other direction. This means substantial holes in the ionosphere that protects us.

With its far-reaching impact on the environment HAARP is a matter of global concern and we have to ask whether its advantages really outweigh the risks. The environmental impact and the ethical aspect must be closely examined before any further research and testing takes place. HAARP is a project of which the public is almost completely unaware, and this needs to be remedied.

HAARP has links with 50 years of intensive space research for military purposes, including the Star Wars project, to control the upper atmosphere and communications. This kind of research has to be regarded as a serious threat to the environment, with an incalculable impact on human life. Even now nobody knows what impact HAARP may have. We have to beat down the wall of secrecy around military research, and set up the right to openness and democratic scrutiny of military research projects, and parliamentary control.

A series of international treaties and conventions (the Convention on the prohibition of military or any other hostile use of environmental modification techniques, the Antarctic Treaty, the Treaty on principles governing the activities of states in the exploration and use of outer space including the moon and other celestial bodies, and the UN Convention on the Law of the Sea) casts considerable doubt on HAARP on legal as well as humanitarian and political grounds. The Antarctic Treaty lays down that the Antarctic may be used exclusively for peaceful purposes. ⁽²⁶⁾ This would mean that HAARP is a breach of international law. All the implications of the new weapons systems should be examined by independent international bodies. Further international agreements should be sought to protect the environment from unnecessary destruction in war.

Impact of military activities on the environment

Not only military weapons systems but, by and large, all military activities, including peacetime exercises, have some form of environmental impact. However, when environmental

destruction has been discussed, the role of the military has not in general been touched upon, only the impact of civilian society on the environment has been criticised. There are at least two explanations for this. ⁽²⁷⁾ Owing to its secrecy, military activity is more difficult to discuss and it is difficult to set the nation's top priority - its security and defence - against the environment. At the present time, however, when environmental and natural disasters constitute a serious threat to security, these arguments are more dubious. The armed forces endeavour to prepare themselves in peace time for operations in war in as realistic conditions as possible. They therefore carry out their exercises under warlike conditions, which involves subjecting the environment to great stress. This is illustrated, for instance, by the withdrawal of Soviet troops and the abandoned military bases in Eastern and Central Europe which have left deep scars on the local environment. Military exercises entail widespread damage to the landscape and animal life. Troop exercises subject large tracts of land to extensive environmental destruction. Test sites for artillery and tactical missiles tend to require larger surfaces for military purposes. Likewise, production of munitions and the industry that manufactures military equipment cause widespread environmental problems.

The military is responsible for emissions of several gases affecting the climate, primarily carbon dioxide, but also incineration of fossil fuels and emissions of freons, which results in the depletion of the ozone layer. ⁽²⁸⁾ Consumption of aviation fuel is a major source of emissions of acidifying substances such as nitrogen oxides and sulphur oxide. The armed forces account for much of all consumption of aviation fuel and are responsible for a very large proportion of all aviation emissions. ⁽²⁹⁾ High-flying planes and rockets have a particularly damaging impact on the environment, both in the form of noise and fuel emissions. All rockets using solid fuel emit large quantities of hydrochloric acid in their exhaust emissions and every flight of a space shuttle injects around 75 tonnes of ozone-destroying chlorine. Likewise, noise from military exercises using heavy calibre ammunition may bring about environmental disruption.

Metal pollution is dispersed into the environment through shooting practice; often large quantities of small calibre ammunition containing lead is used and large quantities of lead are dispersed into the environment. Unfortunately, there is no comprehensive information about consumption of metals.

Consequences in the form of environmental problems caused by disarmament is only a recently observed phenomenon. Every year, large quantities of explosive substances are destroyed, mostly through industrial processes. Some ammunition cannot be destroyed in this way for various reasons but must be detonated. Obviously, scaling down is a necessary and positive process but it must be carried out in environmentally acceptable ways. Environmentally sound technology must be developed for the purpose of destroying weapons.

Several nations have already begun to exploit the opportunities for using military-related

resources to restore the environment destroyed by the armed forces. All other sectors in society have to take responsibility for the environment and the military sector should also do so. As in other sectors of society, environmental issues must form an integral part of the armed forces' activities and be incorporated in the decision-making and budgetary processes.

In May 1993, the United Nations Environment Programme (UNEP) took a decision - 'application of environmental norms to military establishments' - to encourage national governments to enact national laws for the military sector. Finland, for example, has drawn up a green paper to regulate the impact of military activities on the environment. Sweden has followed suit. ⁽³⁰⁾ In June 1996 Sweden, in conjunction with the USA, also drew up environmental guidelines for military activities. ⁽³¹⁾ The military should establish environmental targets and proposals for measures to help reduce the impact on the environment in accordance with Agenda 21 and the Rio Declaration. ⁽³²⁾ They should also submit reports identifying factors affecting the environment within the armed forces. Environmental impact assessments must be drawn up before new projects commence and when procuring material for civilian and military use.

Every government should take stock of its environmental requirements and identify the military resources which are available for environmental purposes, draw up national environment plans and report their experience to an appropriate body within the European Union and the United Nations.

All military personnel, including conscripts, should receive basic training in environmental matters. The US armed forces are considered to be quite advanced in this respect, particularly in terms of equipment, but also in regard to training. The European Union should cooperate and exchange experience in this sector with the USA to a greater extent.

Strategies for using military resources for environment-enhancing purposes

Prevention of environmental crises requires infrastructure, organisation and increased resources. These are available in the armed forces. Many resources within the military sector could be used to protect, improve and restore the environment. Essentially, this would be based on two stages: a stocktaking stage to assess the suitability of the military resources and a political action plan to guarantee their availability.

Obviously, military-related resources vary a great deal from one country to another but they comprise skilled personnel, engineers, sophisticated hi-tech equipment, organisational ability and military research and development. In many ways, the military sector is in a unique position to strengthen international civilian capacity to implement environmental strategies. Military personnel are well-equipped to intervene in the event of disasters. As distinct from civilian forces, the military are trained to carry out missions under extreme

conditions. They can also be called out in the event of environmental accidents and to clear up and destroy high-grade toxic, radioactive and other hazardous substances.

The armed forces also possess a great quantity of information which can help in detecting changes in the atmosphere, the sea and in the earth's surface and thereby provide an early warning and forestall environmental disasters. Military satellites, aeroplanes, surface vessels and submarines are capable of collecting further information on climate changes and on currents and temperature changes in the sea. Radar, which was developed for military purposes, can be used for environmental objectives. Infrared radar can detect temperature changes in the earth's surface. For example, American military satellites have been used to establish the number of whales, classify them and save them.

Environmental problems are global in nature and international cooperation is therefore crucial to prevent future environmental disasters. Joint international work can also serve a 'dual' purpose; it can build confidence for the very reason that it is carried out jointly - countries assist each other. It can also enable countries to shoulder a reasonable amount of responsibility for the environment in proportion to their strength. ⁽³³⁾ Some important areas for joint undertakings might be technology transfer, joint training and education.

Environmental strategies might comprise monitoring the earth's environment, evaluating the data collected, coordinating scientific work and disseminating information. As a special form of international aid, national resources should be made available to the EU and the UN so that they may be used on request by a country stricken by an environmental disaster. Environmental strategies must also include a global stocktaking of resources suitable for environmental protection.

A disaster force composed of both civilian and military personnel could be set up for deployment in emergency situations. Taking part in international peace-keeping and humanitarian missions is already an important task for the military. However, a distinction must be made between such missions within national boundaries and within another state's jurisdiction. Lessons can be learned from UN experiences in this respect and, clearly, exercises or deployment on the territory of another nation must take place in accordance with international laws. We should consider which resources can be made available to the UN or the European Union, temporarily, long-term or on a standby basis as instruments for joint cooperation in the event of environmental disasters and environmental crises.

Military bilateral and multilateral cooperation has increased tremendously. Within NATO, a Danish-German-Polish force is being developed which it will also be possible to use for civilian disaster aid, in addition to having traditional tasks. It is expected to be operational by spring 1999.

Technological resources within the military establishment

The military sectors of the EU Member States tend to be research and development-intensive. In the case of the major military powers, technological capacity is not only extensive but has also largely remained unaffected by budget cutbacks in comparison with conventional weapons. The process of developing new sophisticated weapons is ongoing. The military sector will probably be a leading consumer of advanced technology in the immediate future.

Most modern technologies are double-edged, i.e. they can be used both for military and civilian purposes. This means that military-related technologies can be transferred to the civilian sector without expensive modifications. However, it must be borne in mind that the highly complicated military systems which are based on advanced technologies are not designed for environmental purposes but require certain adjustments.

The technological capacity of military organisations in most developing countries is not a match for the environmental problems they face. The CIS and African countries have tremendous shortages of technology and environmental know-how. In an international perspective, therefore, transfer of technology and know-how is an extremely important task for the military.

Collection of environmental data and observations can be facilitated by the use of vessels, aeroplanes and spacecraft to identify and trace environmental abuse such as the dumping of waste and oil or natural hazards such as forest fires.

Another possible application of military-related resources is to use military capacity to monitor activities which are potentially damaging to the environment. Military resources can also be used to monitor agriculture, drought, afforestation and other forms of land conservation. Other areas of application might be as aid in developing countries, e.g. in the form of transport and disaster work, liming of lakes and forest with the aid of military aircraft and vessels but also combating of oil discharges and research and development resources for global environment work.

Military personnel on environment duty - an example

The Swedish Parliament decided on 13 December 1996 to make environmental protection a special part of its defence policy and, in the long-term, to train 10 000 conscripts per year within the civil defence. ⁽³⁴⁾ The decision has not yet been implemented but formed the basis for a proposal put forward by a group of officers. ⁽³⁵⁾ The proposal was presented to a hearing of the European Parliament's Subcommittee on Security and Disarmament on 19 May 1998 and is summarised in brief below. ⁽³⁶⁾

It is entirely possible during compulsory military training to train soldiers in environmental protection and it is also necessary in order to have the resources and capacity to deal with environmental problems. Introducing military training in environment duty makes use of society's existing resources and creates a new resource for international environment work.

Training of 'environment soldiers' can take place in cooperation with the various authorities responsible for overall defence, local authorities, county councils, universities and colleges but also environmental organisations, industry (e.g. the petro-chemical industry, the power industry, the mining industry and other processing industry) and international bodies.

Conscripts on environmental service should primarily be trained to deal with the greater environmental threat existing in war but also be used as a rescue and relief force in peace time and war. Under the proposal, the training would, in its final phase, comprise six companies per environmental brigade in two batches, i.e. a total of 12 companies per brigade per year. Training would be led by an instructor, an officer in charge of reconnaissance and information and a commandant. Under the overall command, there would be six environmental companies comprising a company commander, an environmental engineer, company engineers, an adjutant and 12 instructors. The environmental engineer would also be in close contact with the emergency and rescue services and with researchers. As backup, they would have a unit for finance, personnel, a material division, catering and conscripts on environment and defence duty. At the initial stage, the group commanders are given training in leadership and some basic training in environmental protection work.

In the introductory phase of training, soldiers should be given basic training in soldiering and environmental protection with the emphasis on military training and physical fitness. This is followed by environmental training and training in the use of equipment relating to the soldiers' respective duties. The final phase of training will be used for predetermined environmental projects. During basic training, environment conscripts may also be used in serious environmental disasters - apart from the planned environmental projects - to assist in the event of forest fires, snowstorms, landslides etc.

Had environmental brigades been operating, they could have intervened swiftly and effectively during the floods in Poland, the Czech Republic and Germany in 1997 and during the dam disaster in Spain and the landslides in Italy in 1998.

Following basic training in peace time and under war conditions, and for five years afterwards, trainees should be called up for 24 to 48 hours in the event of environmental disasters or any other emergency situation. This could be mandatory or on a voluntary basis.

In an operational context, the environmental protection company is a mobile unit whose main duty is to respond, within and beyond the nation's borders, to requests from Swedish

local authorities or other nations for relief operations. (In Sweden alone there are 10 000 'environmental bombs' of various kinds in need of 'defusing'.) The company is to carry out its duties independently or in cooperation with other companies and units from the emergency and rescue services under the command of those services and/or the local authority requesting their intervention. Using its own transport resources the company should be able to perform various missions within the country for a duration of 72 hours.

In the same way as UN soldiers perform peacekeeping missions, environment soldiers may also undertake international duties, like their UN counterparts, on a voluntary basis.

Footnotes

- (2) SIPRI Yearbook 1997, Appendix 6A. Tables of military expenditure and 6B. Tables of NATO military expenditure.
- (3) Charting potential uses of resources allocated to military activities for civilian endeavours to protect the environment, UN: A46/364 1991, § 74.
- (4) (Brazil, Russia, China, Canada, Indonesia, the USA, India, Columbia and Congo) International Freshwater Conflict: Issues and prevention Strategies, Green Cross International 1997, p. 4.
- (5) Ibid, p. 1.
- (6) Ibid, p.3.
- (7) Time Special Issue November 1997, p. 18.
- (8) 25 billion tonnes of carbon dioxide are discharged into our atmosphere everyday.
- (9) Climate Institute in Washington "Environmental Exodus: An Emergent Crisis in the Global Arena".
- (10) On 5 February 1998, Parliament's Subcommittee on Security and Disarmament arranged a public hearing on HAARP and so-called non-lethal weapons. This section is based on that hearing.
- (11) They are produced in e.g. the USA, China, the UK, France, Russia and Israel.
- (12) Dr Robin Coupland, International Red Cross.
- (13) Nonlethal technology and airpower, 1993, Air Command and Staff College research project.
- (14) Charting potential uses of resources allocated to military activities for civilian endeavours to protect the environment, UN: A46/364 1991 § 26.
- (15) The impact of nuclear testing at Mururoa and Fangataufa, 1995.
- (16) New Scientist 1998
- (17) Between 11-13 May 1998, India carried out five nuclear tests. Pakistan carried out six tests between 28-30 May 1998.
- (18) Plutonium, Deadly Gold of the Nuclear Age, IPPNW and IEER 1995, p. 65.
- (19) 18% of the world's nuclear reactors are located there, Bellona report Volume 2: 1996 The Russian Northern Fleet p. 10
- (20) Atom declassified, 2nd ed. IPPNW, Moscow 1996, p. 83
- (21) The proposal is available on the Internet at www.dfat.gov.au/dfat/cc/cchome.html
- (22) This section is based on information from the hearing.
- (23) Dr Nick Begich, speaker at the hearing.
- (24) The ionosphere contains vast protective magnetic fields know as the Van Allen belts which intercept charged particles (protons, electrons and alpha particles).
- (25) In 1958 the US Navy exploded 3 devices containing nuclear material 480 km above the South Atlantic. Designed by the US Department of Defence and the Atomic Energy Commission under the code name Project Argus. Source: Dr Rosalie Bertell.
- (26) Article 1, the Antarctic Treaty.
- (27) Swedish Government official reports SOU 1992: 104, p. 54
- (28) Military defence and the environment, FM sector report 1995, p. 8
- (29) The Swedish armed forces alone discharged 866 199 tonnes of carbon dioxide emissions in one year; *ibid* p. 60
- (30) Handbok miljö för Försvarsmakten (Environment Manual for the Armed Forces)..
- (31) Environmental Guidelines for the Military Sector supported by the NATO Committee on the Challenges of Modern Society.
- (32) Agenda 21 and the Rio Declaration are practical results of the UN Conference on the Environment and Development held in Rio de Janeiro in 1992
- (33) Charting potential uses of resources allocated to military activities for civilian endeavours to protect the environment, UN: A46/364 1991.
- (34) Bill 1995/96: 12. Total defence renewal
- (35) 'Training of civilian conscripts for environmental duty' and 'Training of environmental conscripts', the Borås Environmental Brigade.
- (36) The training proposal is based on the regiment in Borås but may also be applied to other units.