16th INTERNATIONAL EURODEFENSE CONFERENCE
(4-6 Nov. 2010)

EWG 13 – PROTECTION OF THE ENVIRONMENT AND INTERNATIONAL SECURITY

REPORT

November 15, 2010

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I. INTRODUCTION

a. Description of the new global world

The new global world is essentially characterised by the intensity and rapidity of the interaction of knowledge, communications and the influence between all international actors. This is principally a consequence of both the technological development and the exponential reduction of the cost of means of communication and transport.

Globalisation is an unavoidable reality favouring knowledge and understanding between different peoples and cultures and increased international trade, which brings about not only generalised benefits but also some significant disadvantages.

For some years now there have been major concern and a widespread debate regarding the consequences for international security by the climate change most probably caused by greenhouse gases emission. The current international situation is therefore characterised by three fundamental aspects:

- The sudden appearance of a combination of very negative factors;
- The rapidity with which the crisis arose, worsened and spread to all countries and regions, although with variable intensity;
- The complex nature of the interaction between the different factors in the "crisis", which leads to uncertainty regarding the effectiveness of the measures, which are being taken.

b. Risks and threats induced by climate change

All in all, we are confronted with a scenario that augments the risks and threats to international security, which can be summarised as follows:

- Increased poverty
- Conflicts regarding resources, especially energy, water and food
- Economic loss and damage and risks to coastal cities and critical infrastructures
- Loss of territory and border disputes
- Open to exploitation of territories under ice and snow (Arctic)
- Environmentally induced migration
- Circumstances of fragility and radicalization.
- Tension with regard to energy supply
- Pressure on international governance

II. PROTECTION OF THE ENVIRONMENT

a. Preservation of the environment

The parameters on planet Earth which permit and favour the evolution of life have changed considerably during the 3.2 to 3.5 thousand million years since the appearance of the first primitive life forms. However, these changes were mostly slow and progressive over time and permitted the appearance of new species, the adaptation of existing species, or their replacement by other more appropriate species.

At the scale of human life and over the centuries, the planetary ecosystem has remained very stable and has therefore permitted the adaptation of human beings to climatic conditions.

Nowadays it is generally accepted that, in the interaction of its telluric and biological components, the planet Earth behaves as a living organism, which can adapt to changes of environmental conditions, within certain limits. The problem arises when these limits are exceeded and the existence of some life forms may be placed as risk.

b. Climate change

At the beginning of the 19^{th} century the earth's atmosphere contained approximately 275 ppm of CO_2, which could be considered useful as without this concentration of carbon dioxide a major part of the World's surface would be frozen.

With the increased use of fossil fuels for energy production, the concentration of carbon dioxide in the atmosphere started to rise and is now more than 380 ppm and continues to rise at approximately 2 ppm p.a. This situation has been aggravated by an increase in other greenhouse gases, mainly methane and nitric oxide.

The currrent increase in the world's temperature is now undeniable could have resulted in a dilatation of ocean waters and in a melting of ice and snow mainly in polar and mountainous regions. This might contribute to the rising of sea levels and also to a reduction of the amount of fresh water available for human consumption.

c. Resource shortages

Population growth and the development of technologically developed societies, which are major consumers of resources and a major source of pollution, have shown that the earth's resources would be insufficient if all of the world's population equaled the developed countries standard of living.

The situation we have described is particularly aggravated by the combined effects of globalisation and the consequences of climate change, particularly with regard to energy, water and food.

Food shortages and increases in food prices have had more or less serious consequences in various parts of the world, such as demonstrations and riots, particularly in Africa, where the situation still has the worst consequences.

d. Energy resources

Energy is produced by a change in the state of matter and its elementary form is of nuclear origin (atomic fission of uranium or thorium and fusion of hydrogen). There are two basic possibilities for our planet: either solar energy, or energy from fission and fusion reactors.

All other forms of energy are derivatives of these two: thermal or photovoltaic energy, water energy, wind energy, wave and tidal energy, bio-energy, calorific energy and the energy stored in fossil fuels. We can use storage systems such as hydrogen, dams' reservoirs and electrical accumulators to store energy. We have fossil fuels, electricity and hydrogen for the distribution of energy.

Energy is indispensable for life and for the creation of environmental conditions, which permit the existence of life. There can be no life without energy.

e. Fossil fuels

Fossil fuels are formed as a consequence of the transformation of organic matter, in interaction with the environment, into complex hydrocarbons, which have accumulated in nature along two or three thousand millions of years.

Fossil fuel reserves are limited and new discoveries will soon be less than consumption. In less than two centuries we have consumed a resource, which took thousands of millions of years to mature.
It is self evident that this situation is a dead end.

f. Renewable energies

Renewable energies arise from the direct or indirect use of solar energy and can take the following forms:

- Thermal and photovoltaic solar energy
- Water energy
- Wind power
- Wave and tide energy
- Bio fuels

Renewable energies do however have various disadvantages:

- Their production costs remain, except for water energy, generally higher than fossil fuels;
- Wave and tide energy is still far from a technological maturity;
- Solar and wind energy cannot be used continuously;

- Despite the investment effort that is being made, the power installed is still too little.

g. Nuclear energy

It is necessary, within the prospect of energy shortage and its connection with climate change, to rapidly reduce the consumption of fossil fuels in order to reduce global warming. This could justify a further increase in the use of nuclear energy, from the uranium fission.

It is however necessary to overcome the current public opinion taboo regarding the use of nuclear energy and to resolve the problem of the treatment of nuclear waste.

Uranium nuclear technology has made major progress in terms of safety and efficiency and the 4^{th} generation power stations, associated with the production of hydrogen, anticipated for the near future are even more efficient and safe.

This option could however have international security implications. The major hope lies with the development of hydrogen fusion nuclear reactors, which are free of nuclear waste and have an unlimited energy production capacity.

h. Integrated energy networks

We must consider the use of all possible forms of energy, renewable or not, and assess the consequences of their use in the short, medium and long terms, in the context of everything from large-scale power stations to micro power generation.

Integrated operation of all forms of power generation requires networking in two senses. Firstly by favouring the forms of power generation, which have lower environmental costs and secondly having an international connection, which ensures greater safety and favours power circulation in the event of need or excesses.

In order to do this, networks must be as decentralised as possible and use the most advanced information and communications technologies (sensors and software).

i. Energy efficiency

Energy efficiency is the most important measure that could be taken in order to drastically reduce energy consumption, but involves a series of difficulties, which time will only resolve.

j. The importance of information and communications technology

As stated in the previous item it is utterly important to reduce energy consumption through rationalisation, energy efficiency or via any social organisation, likely to cosnume less energy.

The energy matrix must therefore be altered and there must be integrated energy management, which will require the intensive use of information and communications technologies (ICT) in order to be optimised

k. Scientific and technological research

There are a lot of ideas and possibilities, which are currently in a research and development phase.

As stated above, all types of energy must be considered and all research and development opportunities encouraged and evaluated. However, we consider, from a global point of view, that priority should be given to the direct capture of solar energy (thermal and photovoltaic)

There are however three unavoidable variables:

- Time;
- Planet Earth's resources;
- Population growth.

III. INTERNATIONAL ENVIRONMENTAL RELATED SECURITY

a. The human consequences of climate change

Although the consequences of climate change are seemingly just beginning, global warming is now unequivocal, as it was concluded by the IPCC in 2007 on the basis of the observation of the average global air and sea temperatures, the generalised retreat of the icecaps and glaciers and the rise of average sea levels.

The impact of these phenomena will undoubtedly intensify in the coming decades and aggravate existing environmental crises, such as droughts and floods, thus increasing soil erosion and intensifying potential conflicts regarding the use of water and arable land. The probable reduction of the availability of drinking water for millions of people, the probable shortage of food products and the likely resurgence and spread of malaria and other pandemics might be among the consequences of climate change.

The world population is growing fast, especially in deprived regions. Roughly, one third of the people live in poverty and the climate change could result, for many of them in the disappearance of their means of subsistence insofar as they depend on agriculture, or on fishing. This would increase their vulnerability to poverty and place security and human rights at risk as well as triggeror increasemigratory movements and intensify the existing instability in many societies and regions of the world.

All countries will be affected, but, as it has already been mentioned, the most vulnerable will be the more seriously affected. The poorest and least developed countries, will be the first to suffer and to suffer the most.

However it must be recognised that consequences of a global increase of temperature have to be thoroughly studied before asserting a similar increase of temperature at regional level.

The following are among consequences that climate change will have in various regions:

- In some African countries, which are already poor and dependent on agriculture, water shortages might be increasingly serious. Desertification might well increase and result in enormous losses of productive land, as is already occurring in Darfur and in neighbouring areas, where the humanitarian crisis is fundamentally linked to a shortage of arable land. Almost three quarters of the agricultural areas of Sub-Saharan Africa, in countries such as Ghana, Senegal and Nigeria, are very vulnerable to climate change. The agricultural areas of the Nile may be considerably reduced because of the rising of sea level and the increased salinity of ground. In the Horn of Africa, an extremely poor and very unstable region, reduction of rainfall and increase of temperature is likely to have a major impact. In Southern Africa drought might increase food insecurity in various areas inhabited by millions of people. As a consequence, migratory pressures will increase, above all in North Africa and towards Europe, which could also have impacts in terms of human

trafficking and drug trade, as it is in such activities that many may find the means they need in order to reach more prosperous regions;

- In Europe, the more arid Mediterranean zone might be subject to prolonged droughts and the more humid north will become more susceptible to floods caused by peaks of extreme rainfall. There will also be an uncontrollable increase in African emigration, as indicated above;

- In the Middle East, a region, which is already arid or semi-arid, rainfall levels will plummet, thus increasing tensions regarding the management of scarce water resources, e.g. on the Jordan Valley and in the Tigris and Euphrates Basin;

- In Asia, the impacts of climate change might be particularly severe, above all in India, Pakistan and Bangladesh. The increasing sea levels, the increasing frequency and intensity of cyclones, the alteration of the monsoon cycle and the possible reduction of water from the Himalayas, would affect the habitat and means of subsistence of millions of people. The loss of productivity in agriculture will increase the number of undernourished people in a population, which continues to grow, which will also be exposed to an increase of infectious diseases. In Central Asia, we are already witnessing increasing water shortages. This situation has worsened with the retreat of the glaciers in Tajikistan and Kyrgyzstan, which increases problems related to agriculture and electricity production in a region already marked by political and social tensions;

- In Latin America, the climatic alterations might increased the level of salinity and the desertification of agricultural land, above all in drier regions. The alteration of rainfall patterns and the retreat of the Andes glaciers might have a major impact on water resources for human consumption, agriculture and power production. The Caribbean, the coastal areas of which will be at risk from rising sea levels, would be increasingly affected by hurricanes of great intensity. The collapse of the Amazonian forest would have a radical effect on the natural environment in South America, with incalculable economic and social consequences. Water and food shortages throughout the region would certainly increase the migratory pressure on the borders of the United States;

- In the Arctic, the use of a new maritime route opening new accesses to large terrestrial areas containing about 25% of the reserves of fossil fuels and other mineral resources and to their exploitationis a matter of concern. In fact, several countries, Russia, Norway,Iceland Canada and the USA, have already made statements considering their historic rights over this large strategic area. In the meantime the United Nations has started discussions on how to consider these territories a common patrimony of the humanity. To avoid potential conflicts in the near future the sooner an agreement involving the international community is concluded, the better,.

In the light of this scenario it is essential to promote adaptation to climate change by adopting measures, which increase the ability of people to protect themselves and which

protect our societies and economies from the effects of climate change. It will also be essential to develop a preventive attitude and to prepare people to face environmental catastrophes, above all those population groups, which are more likely to be affected by such calamities.

A preventive attitude, planning and preparedness will be the best way to face the future. They must be a priority for all those involved in resolution of the questions related to climate change and resource shortages. In this context, States and institutions must attempt to predict the future but sometimes have to face serious situations which exist now.

b. Security of Supply

Advanced societies still depend on oil and gas and their economies are very sensitive to their related security of supply. This reveals a great lack of foresight and planning for the future, when we know that within 40 or 50 years time the model of society in which our descendants will live, will certainly not be oil-based.

With the exception of Norway and the United Kingdom, there is no oil in Europe and even in those countries oil is running out. Europe is totally dependent on Russia and OPEC and is therefore subject to pressures and blackmail, as recently happened in the case of the Ukrainian gas pipeline.

This situation cannot continue and, accordingly, it is a strategic priority for Europe to reduce and, if possible, abolish this dependence.

Faced with a cartel of producers, it would be in Europe's best interest to conduct negotiations jointly under the auspices of the EU. Even more serious is the fact that Europe does not have an energy policy, which jointly defines overall investment priorities and terminal locations, generation systems of the various forms of energy, refineries, distribution networks and storage facilities. As stated above, Europe needs an integrated energy network.

It is evident that every country has its own specific resources and requirements and that there is an existing extensive range of infrastructures, which must be taken into consideration. What still needs to be done, however, is to rationalise and valorise existing infrastructures and to create complementary ones. For example, it appears to be desirable to improve interconnections of the Northern European gas pipelines with the gas pipelines which link the Iberian Peninsula to North Africa, or to considerably increase the gas and liquid fuel storage capacity in underground storage facilities. It is also desirable to safeguard the interests of other European countries in negotiations between individual European countries and third parties for the construction of new gas pipelines.

However, the priority for Europe involves massive investment in renewable energies, principally in direct solar energy, because only those forms of energy, combined with nuclear fission and later with nuclear fusion, can ensure that Europe will be self-sufficient in energy terms.

Over the last two or three years a new discovery of huge reserves of non conventional gas and the associated technology to its extraction, introduced a strategic debate that should be taken into consideration.

The United States has suddenly appeared as the main gas producer in the world and new technology for its extraction opens the possibility of discovery of unknown reserves in Europe mainly off-shore.

c. Aid to poverty and underdevelopment

As we have mentioned, the consequences of climate change and resource shortages will more seriously affect the poorer and less developed countries, which are perhaps the countries, which have least responsibility for causing these problems.

As we have already said, the United Nations Millennium Development Objectives are a good starting point, but require an increased investment effort and greater determination in the more rapid implementation thereof, on the part of the richer countries.

d. Political co-ordination

As stated above, the world is faced to three factors, which are a threat to the future of Humanity: exponential population growth, which is not compatible with the resources existing on the planet; time available to take the appropriate measures; and to find solutions in order to prevent, or mitigate, the problems arising there from.

This situation is particularly aggravated by the threat of climate change and, more recently, by the international financial crisis, which has affected trade and the world economy and is evolving into an unprecedented social crisis.

This gigantic combination of negative factors could place the future of Humanity at risk and requires worldwide co-ordination in order to solve, or at least attenuate it. This implies:

- A very complex negotiation process between regions and countries with very different economic and social realities and which are at differing stages of development, with a view to the acceptance of measures, which are a burden to all, but which have to be differentiated and fair, just and balanced;

- An awareness that the common patrimony of Humanity is not only of artistic and cultural patrimony, which human societies have bequeathed to their descendents, but also the memory/witnessing of the telluric evolution of the planet and the mineral or biological resources that have been created by various life forms over almost five thousand million years of existence of the planet Earth. These resources do not only belong to the peoples, which have, over time, administered the territory where they are located, but are in fact the common heritage of all mankind;

- Some way in which at least a small percentage of the value of these resources could be transferred to a common fund of the United Nations, which could be used to help

the poorest and most disadvantaged, like the Tobin tax on international financial transactions that was suggested some time ago.

Unfortunately it was not possible to reach an agreement at the December 2009 meeting in Copenhagen, regarding the post-Kyoto measures.

We are unfortunately convinced that only the occurrence of major catastrophes with devastating consequences can change this situation.

It must however be acknowledged that generally speaking positive measures are being taken internally by each country, such as those listed below. However these measures are totally unable to resolve the global problem:

- Stimulation of the development of renewable energies;
- Improved energy efficiency of buildings;
- Integrated energy networks;
- Micro generation;
- Waste treatment and recycling;
- Less polluting transport.

We will also wait to see which post-Kyoto and Copenhagen summit measures will be taken.

e. The international financial crisis and its economic, social and political consequences

All these solutions become even more difficult in a period of financial and economic crisis in which we find ourselves today.

f. International security consequences

Climate change and resource shortages cannot easily be shown to be immediate causes of conflict, but can act as a multiplier of threats to the stability of some regions with latent conflicts and even in regions, which are currently stable, climate change will certainly aggravate existing tensions. To quote the UN secretary-General Ban Ki Moon, *"among the various other political and social causes, the Darfur conflict commenced as an ecological crisis caused, at least partly, by climate change".* This is an example of how the escalation potential of a conflict can increase significantly when competition for land use, aggravated by climate change, interacts with political, economic and social factors.

Poverty and migratory movements will increase and with this the probability of the occurrence of violent conflicts will also increase.

Tensions related to the distribution of resources will be aggravated by global warming and may increase destabilisation potential in fragile states, or in societies, which are in transition between authoritarian and democratic systems. Furthermore, in some countries and regions with high rates of population growth, which is frequently concentrated in extremely dense population nucleus of people who live well below the poverty threshold,

climate change will certainly aggravate the shortage of resources and increase the risk of conflict.

In the industrialised nations, the security challenges are posed above all in relation to the indirect consequences of climate change, i.e. the effects of violent conflicts in poor or developing countries. Even if the crisis zones are far distant, the conflicts, which occur there, can involve various threats to the internal security of the industrialised nations, i.e. via the drug trade, organised crime, smuggling, trafficking of people, illegal immigration, and the radicalisation of ethnic and religious groups, terrorism or pandemics. These threats will certainly increase if global warming causes the intensification and expansion of conflicts.

Climate change is therefore a threat to international security. The guarantee of institutional security and the improvement of governance capacities in weak states and the increasing of actions to consolidate peace and to stabilise regions in conflict is even more important in the context of climate change.

It is worth noting that for the EU to contribute to minimize the impact of climate change on international security the following points should be highlighted:

- The disappointment of the Copenhagen Summit and the EU's failure to take on a worldwide role commensurate with its political and economic strength leads us to conclude that there is a lack of both a common strategy agreed by its members and the leadership to represent it. In particular in the field of energy strategy the EU has neither a common policy nor shared resources and each country individually negotiates with suppliers. In the security and defence policy, despite the progress that has been made, there are no currently either common forces or a common European command. Any decision on outside intervention requires lengthy negotiations and agreements which are not consistent with the immediate joint response required in a disaster. Above all because there is no one voice that speaks for Europe. It is too early to assess how the Lisbon Treaty will cope with these challenges.

- In any case EU must increase its efforts and commitment for the summit in Cancun to reach an agreement to replace the Kyoto Protocol;

- Despite the financial crisis, which impinged upon the economic and social sectors, Europe must maintain and even increase its financial contribution for a less oil-dependent economy, to ensure its energy sovereignty and to help the developing countries to build a greener economy and to bear the consequences of climate change;

- Europe must prepare to minimize the effects of climate change, much better organize the means and resources allocated to crises and emergency planning and above all must act together in coordinating the scarce existing resources. In this context particular attention should be given to civil/military complimentarity, as the random and unpredictable nature of natural and technological disasters, and the increased impact that may take, requires an immediate response with the

involvement of all available means. In some cases only the military can meet the required needs, such as the US military hospital ship and a helicopter carrier used in disaster relief to Haiti;

- One of the most urgent and effective measures the EU should take is to strengthen the energy efficiency and to increase R & D on technologies that lead to improve the efficiency of renewable energy as well as all the energy management systems. To this end funds allocated to R & D should be increased in a new programme, in the next VIII Framework-Programme and in EDA programme.

f. The connection with the REACH Regulation

On 1 June 2007 Regulation (EC) Nº 1907/2006 of the European Parliament and of the Council on the "Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH)" entered into force.

Now there is a movement trying to widen the debate on environmental affairs in Europe to the Defence sector.

Indeed a series of conferences has taken place in France over the last three years with EU-wide attendance, debating environmental issues affecting the use of weapons in conflicts, training & manoeuvres of military forces in peacetime, environmental footprint of military installations, the cleaning-up of military and industrial sites, eco-design of weapons systems and end-of-life dismantling of ships, aircrafts & vehicles.

This debate has seen its importance grow and is now spilling over into the EU arena.

The tentative plan is for the next three EU presidencies to host a series of conferences starting with Brussels in the July this year and carrying forward into the Hungarian and Polish Presidencies. An international "programme committee" will be formed to oversee the preparation.

However, as the objective of this report is to oversee the consequences of the climate change in the international security, it seems for us important to point out the need to take measures to protect the environment against all the forms of military activity.

CONCLUSIONS REGARDING THE ENVIRONMENTAL RELATED SECURITY

a. Regarding the global situation

In summary we could conclude as follows:

- An awareness of the seriousness of the problem, which requires immediate measures, the effect of which will only be felt in the medium to long terms, but which, if not taken, could lead to irreversible consequences;

- Some forecasts regarding the consequences of global warming estimate that, if nothing is done, the average temperature will increase by between 2ºC and 5ºC and that the level of sea will increase by between 0,3 and 1 meter, with the consequent threat on some island states, the flooding of extensive coastal areas and a reduction of food production;

- Furthermore, we are already witnessing some increase in the frequency of extreme meteorological phenomena and of demonstrations and riots caused by soaring food prices;

- Complexity of the current situation, instability of prices and lack of confidence, demand the creation of a new international financial order, encompassing rules and regulations universally accepted, and associated with financial resources, thus insuring that global decisions may resolve global problems;

- The need for international agreements in which all must be involved and participate and also a global governance for following up execution of those agreements;

- It must be known that measures intended to prevent global warming and its consequences, might be effective but in the medium term so that the situation will continue to get worse before it gets better;

- This reality means that we must be prepared to get international forces in order to ensure security and humanitarian aid and civil defence organisations;

- We consider that the fundamental problem underlying this entire global crisis is the energy problem, and the problem of the use of various emission sources and their integrated management;

- Until now, the use of fossil fuels prevailed over the use of all other forms of energy because of their price tag, the ease of their transportation and the fact that their use can either be centralised or decentralised;

- The intensive use of renewable or emission-free energies is required in order not to affect economic and social development, given the stagnation or reduction of the

established reserves of fossil fuels and the need to reduce emissions of greenhouse gases;

- This alteration of the energy paradigm cannot be implemented in the short term and requires a parallel use of new and innovative technological solutions, the implementation of saving-based energy consumption restrictions, the change in social organisation along with the upgrading of energy efficiency;

- We must also prevent some situations, such as first generation bio fuels, which, by diverting food crops might well increase their price tags, and react heavily on other problems;

- In order to be effective, consumption restrictions have to voluntarily accepted by education and persuasion, but also require strong penalty measures in terms of the energy costs and carbon credits associated with greenhouse gas emissions;

- The optimisation of energy management and the networked interconnection of various fossil and renewable emission sources, ranging from macro to micro-generation, and the instantaneous adaptation of supply and demand requires the intensive use of information and communications technologies (ICT);

- ICTs also have an essential role to play in the reduction of energy consumption via the management of energy use in all electrical and electronic devices, production and transport systems, energy efficiency, territorial rezoning and social organisation;

- Despite the major participation of renewable energies in the energy bundle, the use of fossil fuels will still continue to be necessary for many years, although they will be associated with new carbon capture and greenhouse gas reduction technologies;

- This situation, combined with the limits of existing reserves, raises the problem of the cost and security of supply, particularly to Europe, via the diversification of energy sources and types;

- We are witnessing a soaring consumption pattern, mainly due to the development of emerging economies (particularly the BRIC countries), which has momentarily been attenuated by the global crisis, but which will continue to widen the gap between consumption and discovery of new confirmed reserves;

- Europe is therefore prone to dependence on and blackmail bythe main producers (OPEC and Russia), which could entail serious economic and social consequences in a crisis situation;

- This situation, highlighted by the crisis regarding the supply of gas from Russia, means that the EU must, at the same time, present a united front to the producers, and and try to diversify hersuppliers;

- The situation is global and has economic, financial, social, industrial, scientific, technological, strategic, but above all political, aspects, and therefore requires agreement and co-operation between countries in the defence of their interests;

- It is evident, in the case of Europe, that as the problem is global, the best way in which the European countries can defend their interests is to present themselves as an entity;

- As the world is divided into entities, Europe must seek to align itself with those, which are closest to it in terms of common interests, cultural and civilisation identity, i.e. North America, South America, Russia and Africa, in that order;

- When looked at from the point of view of threats to peace and security in Europe, it can be stated that the multiplier effect of natural disasters, degradation of the environment, resource shortages and increased competition for energy sources, will, particularly in circumstances of poverty and high population growth, inevitably lead to an increase of migratory flows and to disputes with security consequences.

b. Security measures to be taken

The first consideration to make is that the problems facing Humanity are of such a nature and size and are so interconnected that all of them have implications in terms of international security, when broadly understood.

It is necessary, at this point, to be more precise and to refer to security and defence, to the extent that there are some situations that can require the combined intervention of armed forces, security forces and other humanitarian organisations; hence, the boundary between security and defence and th e distinction between internal and external threats is blurred and involves some level of overlap.

We are witnessing a frenzy of measures at country, country bloc and international institutional organisation and non-governmental level in response to the various crises arising from climate change, resource shortages and the international financial crisis.

Naturally, given the seriousness and urgency of the problems, the measures being taken are primarily short-term financial, economic and social measures focused on current events. It is however also necessary to take future consequences into consideration and to take measures to prevent, forestall and respond to them, because failure to do so now will lead to more serious, and in some cases irreversible, consequences.

Security in today's world must be conceived globally and take into consideration the new threats arising from terrorism, the use of arms of mass destruction, drug and other types of trafficking, piracy, religious or ideological radicalism, migratory movements and regional conflicts. Moreover, these threats are naturally aggravated and leveraged by the consequences of climate change, resources shortages and the international crisis.

It is likewise necessary to include human security, food security, environmental security, energy security and economic security in the overall area of security.

The fact that the current global crisis combines the consequences of climate change, resource shortages and the international financial, economic and social crisis involves opportunities, which must be taken and combined. These crises can generate positive synergies.

We know from the outset that we have to preserve the environment, find new forms of greenhouse gas free energy production and we now understand that the security of the economy is a fundamental aspect if we are to have the resources to invest in the solution of these problems and to aid to those in most need.

We were used, in the Western world, to a constantly growing economy and are now therefore surprised by the sudden fracture of this paradigm and by the generalised decline of economic growth and the serious social consequences associated with them.

The way out of the crisis has to be based on the reactivation of the economy, but this cannot be achieved by random investment, i.e. by throwing money into the system, because it depends on a combination of factors, which affect and stimulate the economy, i.e.:

- Social stability and security;
- The confidence of the economic actors (capital and the market), which was deeply affected by the crisis of the financial system;
- A regulated, transparent and agile financial system, which supports economic activity;
- A permanent capacity to innovate and adapt to change.

Together, all these factors amount to the security of the economy. However it is also necessary to consider the major options and research and investment priorities strategically in order to ensure that crises such as the current crisis are not repeated in the future.

The new growth cycle, which will take hold after the systemic crisis of the world economy, will accentuate still further the dynamic of the knowledge-based economy and the creation of a new model of society based on the rational use of resources, energy efficiency and the massification of information and communications technologies. We are going to witness the increasing clusterisation of mature technologies and new technologies and the appearance of innovative and creative solutions in a broad range of areas of activity, in a constant search for new functionalities and products, mainly those linked to the energy-environment binomial.

It is precisely here that the opportunity arises to combine the need to develop the economy by orienting priorities to the solution of the major difficulties, which are posed with regard

to the new model of society, to the preservation of the environment and the development of clean energy sources.

We will in this way, build a virtuous triangle of a new model of society:

- Security of the economy;
- Preservation of the environment;
- Energy efficiency and clean energy sources.

In summary, the following priorities should be taken into consideration:

- The immediate creation of new nuclear fission power stations, as an intermediate measure, until such time as the increased production of solar energy and nuclear fusion energy kicks in;

- Maximum utilisation of the potential of all renewable indirect solar power (water, wind, wave and tide) and geothermic energy, because those technologies are generally more advanced, although the output from them is still far from sufficient to meet global needs;

- Increased stressing and prioritising of research and development of thermal and photovoltaic solar technologies because it is they that could resolve the global problem in the medium to long terms, without causing unwanted side effects;

- A determined pursuit of energy efficiency and the rationalisation of the use and management of energy networks;

- Take in consideration the new possibility to exploit in Europe non conventional gas opened by the technology developed in United States.

It is in the consideration and combination of all these factors that the security aspect is unavoidable because, if the forecasts of possible conflicts, crises and emergency situations are confirmed, there will be human and material costs, which far exceed the cost of the measures, which could now be taken to avoid them.

The reports on climate change submitted to the Council of Europe by the High Representative and the European Commission demonstrate very well what could occur, but are, in our view, flawed by a failure to propose measures, which could be taken in order to avoid or minimise and respond to what cannot be avoided and an analysis of its costs and benefits.

The conclusion regarding this global situation is that it cannot be disassociated from security. This means that the measures that are being, and will be, taken (whether they are financial, economic or social) must always take the security consequences into consideration.

c. A fundamental social change in order to prevent security threats

It is obvious that the model of society that will emerge over the next fifty years will have little to do with the society in which we are now living. It will have to be a much more environmentally friendly society. Its economy and its transport systems will not be fossil fuel based. We can also be certain that its communications and information systems will have a gigantic capacity when compared to the current systems (wireless, miniaturised, integrated with our physiological sensors, operating in real time, with huge individual information capacities, linked to robots, simulating any landscape or environmental scenario, or the physical presence of a distant interlocutor.

Without speculating further, it will be a society based on knowledge and information in which energy consumption requirements will certainly be much lower.

We are still a long way from such a society but there are already tools in existence, which make it possible to orient social organisation with a view to such a society.

However, if nothing is done, a fundamental problem, which is related to the reality of the world in which we live, and involves shocking social inequalities, which demand solidarity measures in line with the United Nations Millennium Objectives, will continue to exist alongside this rich and developed society. These measures will only be effective in the medium/long terms and should therefore focus on education and health, areas in which change can take generations.

As we have said, the consequences of climate change and resource shortages will have a more serious effect on the poorer and less developed countries, which perhaps have the least responsibility for the creation of this situation.

Water scarcity and food shortages will accentuate hunger, which combined with population growth will give rise to desperate situations and will compel uncontrolled migration, riots, revolts and a major increase in the numbers of homeless and refugees.

However much support and food aid is organised for these population groups, these situations will inevitably give rise to humanitarian crises and conflicts.

The only way to stabilise the situation is to act before the event, by the provision of development aid to these territories, education and sanitary conditions in order to improve the livings standards of these populations, which apparently requires more resources and an increased effort by the international community. However, if all the costs involved and the real contribution to international security are taken into consideration, the cost will be less.

It is no longer acceptable in a globalised world, where everything is known that circumstances of shocking inequality co-exist, when a small part of the GDP of the richest could abolish poverty from the face of the earth.

We consider that the situation is so serious that the humanitarian forces that are created to intervene in external theatres of operation, should use the organisational resources at their

disposal, so far as possible, to support local populations in the area of the economy, education and health, when there are no local organisations to do this.

d. Crisis management systems

Appropriate organisations such as Fire Brigades, Civil Defence, Civil and Medical Emergency Planning were created to respond to crisis situations, which also rely on the collaboration of the Security Forces, the Armed Forces and whole panoply of non-governmental organisations and civil society.

Each of these organisations was created to respond to a specific need, but there are frequently overlaps between them, or even situations in which two or more of these organisations have to act jointly. The existence of co-ordination rules, emergency plans and ever a high command, which avoids friction and optimises the response, is indispensable in crisis situations.

In the current critical situation of the international system it is essential that in any intervention in a crisis or conflict, in a humanitarian aid situation caused by extreme poverty, by migrations or by natural or technological disasters. The resources deployed should include security forces supported by organisations, which can act in the medium term to aid development, in education and healthcare.

The international community must therefore include other non-governmental internationally certified humanitarian aid organisations in the concept of multinational military and civil forces, in order to create a joint task force, which includes all the military and non-military means and resources with a view to a global humanitarian intervention with a medium/long term vision. In this context, the optimisation of existing resources and capacities and the strengthening of civil-military co-ordination mechanisms are fundamental.

Prevention and the preparation of those with the mission to intervene in the event of crisis, conflict or catastrophe, and international co-operation with similar organisations are essential and time is a key factor when dealing with crises. There is therefore a need to monitor the international situation and pre-crisis situations in order to prevent crisis break-out, which could even lead to preventive measures involving social and economic aid in order to ensure security.

The European Parliament Report on the implementation of the European Security Strategy and ESDP (15.5.2008) states:
"Invites the Council to study the options to the creation of a civil-military integrated *Intervention Force for Human Security,* to carry out human security operations composed of around 15.000 elements, of which at least a third will be civilian experts (police, human rights, development, humanitarian assistance and administrative personnel)";

We consider that this Force, based on the existing CSDP structures, could be composed of dedicated military troops and civilian capacities already made available by Member States (Military and Civilian Headline Goals, Battle groups and Civilian Response Teams), and could also include a *Voluntary Service for Human Security* which would associate a *Civil*

Corps for Peace, as it is provided for in the Lisbon Treaty (, Artº 214 nº5) for the *Voluntary European Corps for Humanitarian Aid.*