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PABSEC

LEGAL AND POLITICAL AFFAIRS COMMITTEE

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# REPORT

ON

COOPERATION IN ELIMINATING CONSEQUENCES OF NATURAL  
CALAMITIES AND TECHNICAL DISASTERS

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## **INTRODUCTION**

According to the decision made at the Fourth Meeting of the Legal and Political Affairs Committee held in Yerevan on 12-13 October 1994, upon the proposal made by the Moldovan PABSEC Delegation, "Cooperation in Eliminating Consequences of Natural Calamities and Technical Disasters" was put on the agenda of the Fifth Meeting in Baku on 27-28 April 1995 as the main item. This decision had been reiterated by the Committee at the General Assembly in Tirana on 11-13 December 1994 and supported by the second PABSEC President Mr. Olexander MOROZ, the Chairman of the Supreme Rada of Ukraine.

Among the PABSEC member delegations only Georgia, Moldova and Ukraine responded and provided relevant information. In addition, the Embassy of Armenia in Georgia have furnished the International Secretariat with information on the topic. The International Secretariat has drafted the Report based on the information received from the above mentioned sources.

The purpose of this report is to consider the spectrum of disasters which have occurred in the last decade in the PABSEC member countries analyze their bitter experience in order to investigate problems and to try to outline legislative mechanisms for further bilateral and multilateral interstate cooperation to deal with similar events in future to reduce to the minimum the casualties and consequences and to speed up the integrated efforts to ameliorate situation.

## **NATURAL CALAMITIES**

It is noteworthy to say that the present issue is a subject of worldwide concern, now seen as the increasingly important to the study. According to the latest scientific estimates disasters like floods, winds, draughts, fires, earthquakes, etc. acquire more regular character due to the drastic transformation of the global climate and changes in the earth's crust.

The consequences of calamities like destroyed cities, ruined infrastructure, homeless people and environmental problems create additional difficulties to the countries' socio-economic systems. The aftermath are much more devastating for the countries undergoing transitional period with fragile structures and little experience of guarding against calamities on their own.

Nevertheless, the results of the recent earthquake in Kobe, Japan and floods in the northern part of Europe proved that it makes no difference how advanced the scientific analysis is for predicting and forecasting various disasters or how developed an individual state is, humans are impotent against malignity of nature. The fact that even the highly organized society like Japanese was rendered external assistance shows that countries can deal with calamities by means of coordinated cooperation and material and moral support to one another.

Each medium or large-scale disaster brings enormous problems to the countries it inflicts, putting certain negative impact upon the process of a regional development. That is why the countries of the same area - the members of the same structures or communities have to work out a scheme or a model of interstate cooperation in emergency situations based on an adequate legal framework.

The concrete cases of the concrete disasters are discussed below, describing the consequences and measures undertaken by the authorities, emerging problems and proposals ensuing from their experience.

## **EARTHQUAKES**

One of the most devastating calamity because of its non-predictable nature is an earthquake. Thorough analyses of the changes in the core of the planet enabled seismologists to identify the locations most at risk.

According to such estimates the Caucasian region has chance of having been hit by a number of earthquakes by the end of the century. In spite of the fact that this particular region had always been listed among world's most complicated areas due to its inclination to various natural calamities, the disasters of the last decade have created serious difficulties to harmonious development of the states of the region.

The experience of the destructive **earthquake in the Republic of Armenia** was the first event with the gravest consequences among the PABSEC member countries serving as a sample for the other states to learn a lesson and to undertake necessary preparatory measures for such catastrophes in future.

The earthquake of magnitude of approximately 9 points on Richter scale took place in the city of Spitak, Armenia on 7 December 1988, taking away lives of thousands of people, reducing buildings to rubble, destroying large areas, damaging neighbouring towns and regions. The roads and the whole infrastructure had been ruined. People who escaped death were left homeless. As a result of the earthquake many inhabitants of the city suffered from psychological shock requiring long process of treatment.

The Armenian experience was followed by the sequence of strong **earthquakes in the Republic of Georgia** in 1987 - 1992 affecting the western provinces of Racha and Imereti and some eastern regions. The earthquakes completely destroyed number of towns and villages, injuring thousands and killing over 60 people. Repeated strokes of the earthquakes had made reinforcing works impossible. Almost all the architectural monuments (VII-XIcc.) in these regions were either ruined or seriously damaged.

The experience showed that these countries were not or ill-prepared for the earthquakes. Panic and chaos prevailing during those events prove that unpredictability of earthquakes along with non-awareness of population how to act in emergency situations caused serious complications for the rescue teams, who on their are not trained well enough to deal with the aftermath of the earthquake. Another problem

engraving the misery of the people suffering from the earthquakes deals with shortage of hospital beds, shelters, food and medication supplies.

It should be underlined that in both cases the damaged countries had been rendered aid from the international humanitarian organisations and representatives of the world community, but still these states are facing a number of socio-economic difficulties caused by those events. It will take years to eliminate consequences and restore the normal life in those affected areas.

## FLOODS

Almost regular occurrences of continuous heavy rains during the past decade are explained by the scientists as a result of fundamental changes of climate caused by global warming. The great amount of water evaporated due to the high temperature in certain parts cause downpours in the other parts most frequently turning into the worst deluges damaging agricultural and industrial units, forcing people to leave their homes threatened by the uncontrollable water. It is even worse when high winds come along with rains doubling damage and complicating the rescue works.

The causes of the floods are natural but sometimes man-made factors make disasters worse than it would otherwise have been. The initial beds of the rivers are narrowed and surrounding marshes are dried out in order to enlarge nearby agricultural fields or to create residential areas (e.g. the valley of the river Rioni in Western Georgia). These and other man created problems are making river systems less able to accommodate flood waters. So, as a result of a heavy rain or melting snow the river upstreams braking their banks flood territories around and threaten river side habitations.

Combination of heavy rain (40 ml/h) and strong wind (20 m/s) caused terrible **flood in the Republic of Moldova** on the night from 26 to 27 August 1994 causing 360 million lei worth of damage.

As a result of the downpour rivers 26 industrial and 46 agricultural enterprises, 46 schools, 5 health centers, 34270 ha of fruit orchards and vegetable fields, 160 km of motor ways, 81 bridges were damaged, 4320 homes were destroyed and flooded. The death toll was 47.

Much graver are the consequences when mountainous rivers burst overflowed by the water especially after continuous rains and melting snow. There were enormous **floods affected the Republic of Georgia** in 1987-1992 damaging 4321 territorial sections and killing over 300 people.

The uncontrollable speedy water streams, in the upper parts of the mountain rivers damage the river side rural settlements in mountainous regions of Adjara, Svaneti, Imereti, Aspýndza and Tsageri. At the same time the water-sodden mountainsides start to slide completely destroying electric and communication nets, collapsing roads and bridges, perishing houses, resulting in abandonment of river side mountainous villages. At present there are more than 30 000 families living in over 3000 settlements most at risk of floods and land-slides.

## WINDS

The northern part of the Republic of Moldova was inflicted by a hurricane on 11 August 1994. In Rishkan region the wind swept over the territory of 12 km width and 40 km long destroying nearly everything on its path. Only in this particular region 5 thousand houses and 40 farms were damaged. 250 electric posts perished, 15 km electric and 10 km telegraph wires were torn leaving 20 villages without electricity and 46 - without communication. The hurricane along with the heavy hail damaged 11 000 ha of the agricultural fields, killing 3 people.

## DRAUGHTS

There was no a single drop of rain during 4-5 months in the southern regions of the Republic of Moldova. The snowless winter, rainless spring and hot summer resulted in running out of water in reservoirs and drying off the wells, dying of crops, pastures, orchards, gardens and vineyards. The draught of 1994 have caused damage of 570 mln lei.

## SNOW

The sufficient changes in climate caused in Georgia enormous increase of snow fall in the mountains followed by rains and the sunshine, causing unexpected melted snow producing the enormous avalanches. In the Svaneti region (west Georgia) snow-slides completely consumed the number of villages in 1987-1988 taking lives of scores of people. The rescue works had been complicated due to the harsh climate factors.

Except of the earthquakes the most other calamities could be predicted by means of a systematic weather forecast. The countries can be properly prepared for the probable disasters (evacuating people, reinforcing embankments, mobilize rescue teams, etc.) to avoid consequences. Here again we will turn to the European experience where precise weather forecast enabled to guard against the floods and to escape serious casualties.

## TECHNICAL DISASTERS

The increased demand of industrialized world, evolution of the science and technological development creates more probabilities of occurrences of technical catastrophes. Although the researches and studies on nuclear energy enabled technicians to control its enormous power and use it with peaceful purposes, human beings still feel unsafe, especially after the **catastrophe in Ukraine**.

The accident at the Chernobyl Nuclear Power Station (CNPS) occurred on 26 April 1986 causing emission in the atmosphere of over 50 ml Ci strong nuclear fallout. This accident affected total territory of more than 40 000 sq. km, including 4.6mln ha of

fields (12% of the total) and 4.4 mln ha of forests (40% of the total) and 2291 residential areas with 3,76 mln people including 1,5 mln children.

Over 91 000 people from 76 towns and villages had been evacuated in 1986 followed by more 160 thousand people in the subsequent years. At present more than 2.5 ml people including 500 000 children are living in the polluted area.

The disaster brought about enormous social, medical, scientific-technical, economic and other problems rather compounding country's economic condition undergoing complex process of transition.

Most glaring problem for the Ukraine is a health condition of the population. More than 20 thousand people were registers as invalids because of their ill-health conditions. The comparative analyses showed that only in 1986, the number of cases of thyroid gland cancer in children grew 7-10 times and the number of endocrinous diseases among adults - 10-15 times. The growth of diseases caused by the radiation could be reproduced by the table showing percentage of healthy population of the country:

	1987-1988	1990-1993
Children	53%	31-27%
Adults	47%	32-28%

In addition shortage of medicaments and adequate medical equipment for diagnostic and treating purposes made almost impossible to provide a thorough medico-genetic monitoring among the affected population.

Financial difficulties hinder necessary measures for a socio-economic rehabilitation of the population left in the polluted areas. New ecologically safe water and food supplies as well as construction of natural gas pipelines and motor ways would relief to a certain extent alarming condition of the population.

Special attention is drawn to the nearby areas of the CNPS plant, as well as the upper basin of the river Pripiat where the radioactivity is higher due to sufficient amount of cesium-137, strontium-90 and plutonium. These environing factors threaten the ecological condition of the Dnieper river.

Ukraine had been assisted by the population of the planet, International organisations, different companies and private people providing the country with necessary medicaments, medical equipment and food supplies, sending children to different health resorts for recovery, financing the cover projects of the reactor to speed up the elimination of the consequences.

## CONCLUSIONS

The fact that interstate assistance in emergency situation has spontaneous character, as well as the limited capacity to guard against natural upheavals, new possibilities should be found for governmental sources to help countries in need to complete recovery works and fully normalize the situation in the disaster affected areas.

Risks can never be eradicated, but creation of the legal framework for effective assistance and further cooperation in predicting and eliminating consequences would reduce disaster hazard.

To this end the PABSEC national delegations proposed following measures aiming at successful cooperation in eliminating consequences of natural calamities and technical disasters:

- to consider a mechanism of providing immediate assistance to the affected countries as well as to provide searching works for survivors to reduce to the minimum the casualties.
- to establish a research center facilitating exchange of information about natural calamities and technical disasters in the PABSEC member countries as well as study of similar events in the other countries;
- to investigate the measures undertaken by the local authorities to remedy and completely eliminate existing difficulties and ameliorate countries' socio-economic situation;
- to set up an international commission which will merge and consider proposals and will plan and coordinate rescue activities;
- to create a PABSEC fund for natural calamities and technical disasters;
- to set up a center on the basis of the forces both the civil defense and the special-purpose military units and means they have for elimination of consequences of natural calamities and technical disasters;
- to establish a system of PABSEC collective technological security based on a charter or memorandum of all the member countries and to consider a proposal of the second President of the PABSEC Mr. O. MOROZ on the possibility of location of its headquarters in Ukraine due to the country's scientific facilities and civil defense capabilities;
- to create an information network securing timely circulation of information about big technical disasters warning of possible dangers to environment and population.
- to establish regional scientific periodical which will highlight spectrum of geo-ecological conditions in the PABSEC member countries and contribute to better understanding of one another's problems;