

ROMANIA
MINISTRY OF ADMINISTRATION AND INTERIOR
Civil Protection Command



**NATIONAL REPORT REGARDING THE DISASTERS
PREVENTION IN ROMANIA**

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Information concerning the responsibilities in the development of “National report regarding the disaster prevention in Romania”:

A. Contact point:

Name and Surname: brigade general VIOREL LIVIU NEMEŞ

Function: commander of Civil Protection Command

Organization: Civil Protection Command

Address: Ceasornicului street no. 19, sector 1, Bucharest

State: Romania

Zip code: 715141

Country: Romania

Telephone: +40212329586

Fax: +40212322008

e-mail: ro-cpc@ppc.pims.org

Web Site: www.pims.org/Partners/Civil/Romania

www.ppc.pims.org/Partners/Civil/Romania

B. National institutions involved in the developing of “National report regarding the disaster prevention in Romania”:

Ministry of Administration and Interior

Ministry of Environment and Water Management

Ministry of Transportation, Building and Tourism

Health Ministry

Ministry of Economy and Commerce

Ministry of National Defence

Ministry of Education and Research

Ministry of Agriculture, Forests and Rural Development

National Commission for Nuclear Activity Control

Geographical Institute, Romanian Academy

National Institute for Building Research

National Institute for Earth Physics Research

National Institute for Research and Development in Industrial Ecology

National Institute for Research and Development in Informatics

Nuclear Physics and Engineering Institute “Horia Hulubei”, Magurele

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Chapter 1 Political arrangements and institutional aspects

1.1 Policies, strategies and relevant national legislation regarding disaster risk reduction

National policy in disaster risk reduction field is expressed through various legislative documents for the whole field and different risk types, administrative authorities, public institutions and specialized institutions with responsibilities in disaster prevention and response management.

The relevant laws regarding the national policy for disaster management are Government Ordinance (GO) no. 47/1994, regarding the defense against disasters, approved by Law no.124/15.12.1995, Law no.106/25.09.1996 – Civil Protection Law, modified by G.O. no. 21/15.04.2004 regarding the National System for Emergency Situations Management.

At national level the system for emergency situations management is under reorganization and redefinition of all responsibilities for national and local institutions with responsibilities in this field. According to the new laws which are in full process of development, new institutions and operational structures will be organized, which will ensure people protection, infrastructure and environmental protection during an emergency situation, in a coordinated and professional manner.

According to the Emergency Ordinance no.21/2004, the National System for Emergency Situations Management is composed by:

- a) Emergency Situations Committees;
- b) General Inspectorate for Emergency Situations;
- c) Professional Emergency Services;
- d) Operative centres for emergency situations;
- e) Action commander.

The committees for emergency situations will be organized on levels, as follows:

- a) National Committee for Emergency Situations;
- b) Ministerial committees and other central public institution's committees for emergency situations;
- c) Bucharest Municipal committee for emergency situations;
- d) County committees for emergency situations;
- e) Local committees for emergency situations.

The National Committee for Emergency Situations, organized under the Ministry of Administration and Interior, and the ministerial committees for emergency situations are responsible for application of the disaster risk reduction policy at national level.

The national strategy for civil protection drafted, discussed and approved by the Supreme Council for Country Defense through the Decision no. 92 from 15.04.2004, outlines the strategic direction in order to fulfil the fundamental objective established by the National security strategy and the Government's White Book.

The strategy includes the fundamental objectives and options regarding the accomplishment through protection forces specific ways and actions of the national security policy in the field of protection of people, materials goods, patrimonial values and environment in case of disaster, as well as in the field of preparedness and relief actions, in order to reduce the disaster consequences.

International conventions and other ratified accords and agreements are components of Romanian legislative system and are part of the national policy for disaster risk reduction management.

The main priorities concerning the risk reduction are the floods, earthquakes, dangerous meteorological phenomena and technological disasters.

The disaster risk reduction for floods, meteorological phenomena and hydro technical works accidents is part of the National policy and strategy for water management, which have been elaborated by the Ministry of Environment and Water Management.

The main action directions regarding this issue are:

- Hydrographical basins management;
- Construction of reservoir lakes, polders, dam works on rivers, water-course regularization correlated with conservation of biodiversity through maintaining of humid areas;
- Stream arrangements and versants forestation;
- Working on fighting against the soil erosion and draining up;
- Rising of civic responsibility regarding the improvement of water purity;
- Modernization of the informational system for public warning system.

The Water Management Strategy is taking into account the implementation of European policies, weather changes, public involvement in decision-making and growth of public authorities role in river rehabilitation.

In the regard of the strategy for earthquake and landslides risk reduction, the main directions are:

- Completion of legislative and organizational framework in order to reduce the consequences of earthquakes and to put in safe the building stock;
- Improvement of legal framework and technical tools (software, handbooks, guides, equipment) for technical expertise, development of projects and buildings consolidation works;
- Setting up the technical and organizational condition needed for the collection, stocking and automatic processing of information regarding the buildings with high seismic risk;
- Diversification of resources and financing condition to continue the design and execution activities for the consolidation of dwellings;
- Improvement of earthquakes insurance system for buildings;
- Improvement of disaster management, particularly in case of earthquake, taking into account the main aspects of prevention, protection and intervention, as well as the public education regarding the earthquakes.

In order to achieve the proposed objectives, some national programmes in cooperation with international institutions were set up and are on going, as follows:

- National annual programmes for designing and consolidation of high dwelling buildings, technical assessed and included in the first class seismological risk which represent a public danger;
- Safety Raising Program for hospitals in case of earthquakes;
- Safety Raising Program for school buildings in case of earthquakes;
- Program regarding the development and upgrading of seismological networks in Romania;
- Safety Raising Program for buildings from the first class importance, which must be completely functionally during and after an earthquake;
- The enlargement of international cooperation in prevention of earthquake filed;
- Programmes for surveillance of natural disaster which occur on Romanian territory, using Geographical Information Systems – GIS;
- Program regarding the earthquake prevention, protection and relief management;
- Action program regarding the built of emergency buildings to relocate the victims of a major earthquake
- Programmes to elaborate/update the territory management plans at county, regional and national level, taking into account the new legal regulations for building and transportation;
- Programmes for urgent completion of unfinished buildings, including those needed for temporary sheltering of the habitants from the buildings, which have to be consolidated.

The most important from all these programmes are the follows:

- Annual national programmes, for consolidation of the multi-flat buildings from the first

class of seismological risk and which represent a public danger. The Government finances these programmes.

- Romanian-Japanese project for reducing the seismological risk of buildings and other structures (installing and operating specialized equipments, technical expertise from Japanese experts for consolidation projects);
- Disaster Prevention and Management project, with World Bank co-financing;
- Schools rehabilitation program, with World Bank co-financing;
- National Program for Seismological Risk Management, approved by Government Decision in 2004.

A first priority field for the Romanian Government is the implementation of communitarian aquis, especially the chapters regarding the environment and civil protection. In this way, our country is passing now through a large process to fit in the national legislation with the European legal framework, in order to reduce the disasters risks. A part of European directives are already implemented through normative acts regarding the air quality, waste management, water quality, environmental protection etc.

After the “Earth Summit” from Rio 1992, Romania recognizes the urgent necessity to adopt the global strategy for the next century, named “Agenda 21”, which apply the principles of sustainable development. The Government constituted a work group which elaborate “the national strategy for sustainable development”, with the fundamental objective to growth of prosperity, by economical development without exceeding the natural capital and which will guarantee the live quality of next generations.

The main objectives of the National Strategy for Sustainable Development are:

- Reshape the socio-economical structure into a sustainable system;
- Establish the potential competitive sectors and directions as priority for sustainable development;
- Public health assurance;
- Stopping the natural capital deterioration process and initiate its reconstructions;
- Develop a coherent legislative and institutional system, according the European Union;
- Establish the human resources at international scientific, technological and informational level;
- Monitor and permanent evaluate the economical, social and environmental protection performances.

An important component of “National Strategy for Sustainable Development” is the Strategy for Environment Protection, which includes short-term objectives (until 2004), medium term objectives (until 2010) and long-term objectives (until 2020).

To implement the objectives of Environment Protection Strategy was elaborated the “Environment Protection National Action Plan”.

The annex no. 1 summarizes the normative acts, which establish the national policies regarding the disaster risk reduction management.

1.2 National body responsible for co-ordination and co-operation between different fields in disaster risk prevention and reduction field

Accordingly Emergency Ordinance 21/15.04.2004, the national authority responsible with the multi-sectorial co-ordination will be the National Committee for Emergency Situations through General Inspectorate for Emergency Situations (IGSU).

The minister of administration and interior under the prime minister co-ordination manages national Committee for Emergency Situations. The National Committee is an inter-ministerial body, comprising decision factor makers and specialized experts in emergency situations management.

According to the actions and terms from the Road Map for public administration

restructure, elaborated to fulfil the responsibilities under the complementary document of 24th Chapter - Justice and internal affairs, for the Romanian adhesion to EU, the General Inspectorate for Emergency Situations will be set up till the end of 2004, as a unified structure of the Civil Protection Command and the General Inspectorate of Military Fire-fighters from the Ministry of Administration and Interior.

The General Inspectorate for Emergency Situations will be the specialized body from the Ministry of administration and Interior, which will ensure the coordination of the prevention and the management of emergency situations. The General Inspectorate for Emergency Situations will include the prevention department, national operational centre and other adequate structures needed in emergency situation management.

The General Inspectorate for Emergency Situations, through the national operational centre, will ensure the Standing technical Secretariat of National Committee, being responsible for cooperation at national level in civil protection field, protection against fires and emergency situation management.

The main attributes of The General Inspectorate for Emergency Situations are as follows:

- Assess, evaluate and monitor the risks, make predictions regarding these risks in order to identify the potential emergency situations, and take decisions to prevent the extent of situation and to warn the public;
- Ensures the unitary co-ordination of prevention actions and management of emergency situations, which cover the whole territory of the country;
- Co-ordinates the national development programmes in the field of defense against disaster;
- Uses the media to inform the public regarding the imminence of emergency situations and the actions that must be taken to limit and reduce their effects;
- Ensures the technical and specialized co-ordination of operational and operative centres, maintains the permanent informational flow of them;
- Co-operates with the international bodies, as part of international conventions and agreements;
- Co-ordinates, at national level, the resources needed in emergency situation management and elaborates the plan with human, material and financial resources for these situations;
- Provides technical specialized assistance to local and central authorities in emergency situations management.

Until the General Inspectorate for Emergency Situations operational function, the Civil Protection Command fulfils the national level co-ordination and multi-sectorial co-operation.

1.3 Branch initiatives and plans which integrate risk reduction concepts

The actual government program is inscribed in the strategically coordinates approved by the Romanian Parliament for 2001-2004 and it was based beginning from the complex analysis of the economically and social situation existing in Romania, to fit on the transition period from a centralized economy to a viable economical market, as well as the international context in which this purposes must be attained. The prognostate actions and measurements have been accounted the economically difficulties which our country had to face in the transition period and which lead to economical production decrease, and increased the unemployment and poorness.

In the chapter regarding the environment is mentioned that through Law no.3/2001, has been ratified the Protocol from Kyoto regarding the United Nation frame-convention about the climatically changes, and through Law no. 22/2001 has been ratified the Convention of environment impact assessment with trans-boundary effects – adopted at Espoo; also the legislative framework has been fill in with Law of Danube Delta Biosphere Reservation, Law of atmospherically protection, Law of preservation the biologically diversity, Law of waste management, Law regarding the security of hydro technical works.

As part of the Action Plan of the actual government Program there is a Sectorial Plan for risk management, which is corroborate with concrete actions and measures for development in territorial profile, with a respect for durable development principles.

For reducing the floods risk, this plan contains the modernization of the hydro meteorological information system, execution of new works and rehabilitation of dams, adjustment of water flows, systems drain, disproof of the erosion earth and landslides.

Hereby, the assign funds from the state budget, which represented till 0,23% from GIP, together with the external credits obtained from the Development Bank of the Europe Council and European Bank of Investment, in advantageous conditions for Romanian state, allows the execution, in the period 2001-2003, of 376 km water-course regulations, 100 km defences works of the localities and reservoir lakes with a retention volume of 17 mil. mc, in the most exposed flood risks sectors.

In 2003 was finished the Meteorological Integrating National System (SIMIN), which allow more precisely knowing and prognoses of dangerous meteorological phenomena.

In the same year 2003 was started the Destructive Water Project (DESWAT), with the implementation period 2003-2007.

In this year was started, with the support of the International Development Agency and Commercial Development Agency of USA, the feasibility study of the Water Management Decision Support Software for Canal Systems (WATMAN), whose aim is to increase the capacity reaction of the public administration in case of floods and accidental pollutions. Also, there are on going projects for setting up modern systems for warning of population and actual objects in downstream of the biggest dams.

In the programmes regarding the retrenchment of seismic risks are included a lot of measures which aims the forewarning of earthquake disasters:

- a) seismic monitoring system development of the territory, as well as buildings and structures;
- b) urban infrastructure protection;
- c) continue the consolidation of the multi-flat buildings, technical assessed, included in the first class of seismological risk and which are public danger;
- d) attaining the „Hazard risk mitigation and emergency preparedness project”, *Component B* – Earthquake risk reduction for the public buildings with high importance, which have provided funds with a value of 71,20 mil.\$, 55,01 mil.\$ coming from World Bank;
- e) seismic education of the population from the education units, medical units and public places with agglomerations of people, living buildings.

At the development of the National Management Program for the Seismic Risk, approved in 2004 through Government Decision, have been involved disaster specialists from the ministries, central public authorities, research - development institutions and universities. The Program contains 40 measurements with responsibilities and terms for 2004-2006 period, distributed on areas and purposes. The main problem to implement this program is to ensure the necessary financial budget.

The new World Bank co-financed project “Hazard risk mitigation and emergency preparedness project”, will be unreled in 2004-2009, on 4 components: increasing the disasters capacity and management, reducing the seismic risk, reducing the floods and landslides risk and reducing the mining accidents risks in the Tisa Basin. Through this project the World Bank experts had offered assistance to the Romanian Government for reducing the economical, financial, environment and social vulnerability facing the natural disasters and accidental pollution caused by mining activity.

1.4 Integration of disaster risk reduction in the national implementation plans of UN Millennium Objectives, of the Strategic Document for Poverty Reduction, of the Plans to adjust the national actions, of the National Environmental Action Plans and of the Implementation plan for the decisions of World Summit on Durable Development.

National plans for the implementation of the decisions taken on the occasion of “Earth Summit”, held in Rio, in 1992 are developed by Romania, in regard with the application of durable development principles. Within the “National Strategy for Durable Development” there are incorporated measures and actions regarding risk reduction and environmental protection.

On 27-28 June 2001, the Regional Evaluation Conference of Rio Process was held for Central and East Europe countries, in the field of durable development, having the support of the United Nation Development Program (UNDP). The Conference represented an important milestone of the preparedness for Johannesburg World Summit on Durable Development as it imposed for the 16 participating countries to give an initial evaluation of their actions carried on for durable development.

Together with the acceptance, by Romania, of the principles of Rio Declaration as fundamental principles for durable development, the Ministry of Environment and Water Management accelerated its activity by signing or adhering to different framework or of reference conventions/agreements in the field of environmental protection or by establishing bilateral agreements. In this context, no longer than within the last ten years, at least 20 International Conventions and Additional protocols were signed and ratified, covering the areas of protection and preservation of nature, water management, civil protection, waste management and air quality and over 20 bilateral agreements of which the most relevant are established with Germany, Denmark, Republic of Bulgaria, Hungary, Ukraine etc., covering also the areas of environmental protection, water management and nuclear safety.

Adopting the “Declaration regarding cooperation on achieving the Green Passage on Lower Danube”, the Ministry of Environment and Water Management together with its counterparts from Republic of Moldova, Republic of Bulgaria and Ukraine, recognized the unique characteristics of lower Danube from the point of view of ecological, sight-seeing and scientific significance, establishing measures toward the alignment to the recommendation of international organizations.

“Convention on the cooperation for protection and durable use of Danube River”, adopted in Sofia and signed by Romania in 29 June 1994, ratified by the Romanian parliament by Law no. 14/ 24Feb.1995 and approved by the President of Romania through Decree no. 22/23Feb.1995, represents the main legal instrument aiming to ensure an intensified cooperation between countries along Danube river in the view of durable management of water and, also, a strengthen mechanism for national and international measures on prevention, control and significant reduction of trans-border impact of dangerous activities in Danube basin.

In order to implement the Convention for protection and durable use of Danube River, Law no. 14/1995 ratifying the Convention, Order no. 485/1995 approving the Organization and functioning regulation of the alarming system in case of accidental pollutions (SAPA-ROM) and Order no. 278/1997 regarding the approval of the methodology on developing the prevention and protection plans against the effects of accidental pollutions were developed and adopted.

Risk disaster reduction is integrated, also, in the implementation plans of the projects carried-on in the framework of Disaster Prevention Preparedness Initiative, Stability Pact for South-East Europe, III. The contact institution for this initiative is Civil Protection Command which is to function until the establishment of General Inspectorate for Emergency Situations.

Also, through cooperation between the Black Sea Basin countries, it has been envisaged the implementation of disaster prevention measures within the implementation plans of the „Agreement between the Governments of the Black-Sea Organization for Economic Cooperation participating Countries regarding the cooperation in the field of emergency assistance and response to natural and man-made disasters”.

In most of the cases, the institution providing the contact person for international initiatives related to the application of the resolutions of the World Summit for long-term development, of the UN Millennium Objectives etc. is the Ministry of Foreign Affairs (31, Alexandru Aleea St., Sector 1, Bucharest, Romania; tel. +(401) 230 20 71; 230 21 60; web site: www.mae.ro; e-mail: mae@mae.ro) and for those related to the environment is the Ministry of Environment and Water Management (12, Libertatii Blvd., Sector 5, Bucharest, Romania; tel. (401) 410 02 15; web site: www.mappm.ro).

1.5 Codes and regulation in the field of building practices and norms regarding earthquake risks

In Romania there are norms for designing the civilian, industrial, agricultural and animal-related buildings earthquake resistant, that have been applied since 1941. At present time, the requirements for earthquake resistance design are regulated through the following documents:

- a) Norms P100/91 for anti-earthquake design of residential, social, cultural, industrial, agricultural and animal-related buildings, chapters 11 and 12, republished in the Buildings Bulletin no. 11/1996; this year is to be introduced the new Code no. P-100-1/2004 harmonized with Eurocode 8;
- b) Law no. 10/1995 regarding the quality in constructions together with additional regulations, approved by Governmental Decision no. 766/1997, with subsequent modifications and enlargements.

The concern for earthquake resistant structures design was triggered mostly by the impact of the 1940 earthquake, that led to a first regulation of the Ministry of Public Works for earthquake resistant design (1943). After 1950, the check against lateral forces became systematic, but only in 1963 the seismic design code was endorsed. New editions of the seismic design code were endorsed in 1970, 1978, 1981, 1991, 1992.

The new seismic design codes P100/ 1991, revised 1992 and 1997, introduced in chapters 11 and 12 the obligation to evaluate and, if required, to rehabilitate the existing buildings according to a set of criteria, with some public financing. This policy led to important technical, social, legal and financial demands, whose consequences proved the difficulty of this necessary approach. In order to improve the legal backing on this issue, a Government Ordinance on Strengthening of Existing Buildings (Ordinance no. 20/ 1994) was adopted. The main legal gain of the Ordinance is the statement concerning the " national interest " represented by the activities related to the safety of the existing buildings stock, which led to a set of duties for the Ministry of Transport, Construction and Tourism and other departments as well as duties for public and private owners of constructions. Evaluation of residential buildings resistance was provided for free, while for design and strengthening works the owner may receive a bank credit at 5% interest up to 20 years; the apartment owners in buildings of first class of risk, with an income under the country average, may receive full subsidies. Some thousands of evaluation reports and preliminary strengthening projects were already drafted, but the works are costly and delayed because the owners are still reluctant to apply for loans under the clauses of mortgaging their property until the return of debts.

1.6 Annual budget for disaster risk reduction

According to Emergency Ordinance no.21/15.04.2004, the National Committee has as a main duty to examine and propose to Government for approval the National Plan for assurance of human, material and financial resources for emergency situation management, elaborated by General Inspectorate for Emergency Situations. Further, proposes to the Government inclusion of financial funds in annual state budget, necessary for emergency situation management.

In accordance with Public Financial Law no.500/2002, the state budget includes the Government's Intervention Fund, which is allocated, on Government decisions bases, for

financing emergency actions with the view of eliminate disaster effects and support for the individuals suffering from calamity.

Local and County Councils, with their own budgets, must assure the necessary funds for intervention and prevention of disasters with the view of limitation and mitigation of disaster's consequences.

In special cases, e.g. state of emergency, according to the law there is a possibility of making requisitions of technical means and materials necessary for intervention forces. Perishable and for only one use goods, can be requisite, according to the law, by paying a certain amount of money as a compensations.

The Ministry's of the Environment and Waters Management annual budget contains funds for new works for defence against floods, as well as for repair of the one's that were damaged by previous years flash floods.

In annual state budget, through the Ministry's of Transport, Constructions and Tourism budget, are allocated funds for multi-floor inhabited buildings strengthening, technically exanimate and framed in first class seismic risk who present a public danger. For example, between 2001 and 2003, for secure the inhabitant buildings vulnerable to earthquakes were allocated and spent 98.6 billions lei (near 2.4 millions €). This amount of money represents the money transferred from the state budget to local budgets for financing the technical expertise, as well as for the designing and execution of inhabited buildings strengthening. Further these actions, for the year 2004 were allocated 57.75 billion lei.

The Ministries and local and central public authorities are forced by law to provide funds for prevention and mitigation of disaster effects.

1.7 The involvement of private sector, civil society, non-governmental organizations, educational institutions and media in disaster risk reduction efforts

Providing assistance for endangered population, in case of natural or technological disaster is an humanitarian activity in which are involved many NGO's, universities, academies, schools, mass-media, private sector, trade unions, syndicates, and in general civil society, based on coordination of all these above mentioned by Civil Protection Command.

In Romania at the national level act a complex system of NGO's, which recognizes the necessity of coordination and collaboration with central and local structures from Romania in disaster management area.

The civil society and NGO's participate in different organized activities on risk disaster mitigation, like theoretical issues (seminars, scientific symposiums, exhibitions for presenting the intervention technical means) organized by the specialized research institutes, and also in practical issues (civil protection exercises and applications, alarming and evacuations exercises, demonstrative intervention activities, etc.) organized by the Civil Protection Command.

From all NGO's the most active is National Red Cross Society who was founded at 11th of June 1876, and from 1919 was affiliated to International Federation of Red Cross and Red Crescent Societies. The frequency and amplitude of the last decade disasters conducted to elaboration of the Romanian Red Cross Program regarding prevention, operative intervention and mitigation of disaster effects on the population. The Program objective is assistance of 10.000 people, possible victims of a disaster.

The Program has as human resources, intervention detachments formed by 250 specialists each who intervene and give first-aid in case of disaster, in which are involved approx. 4000 volunteers trained by:

- three months special organized courses for intervention and first aid in case of disaster;
- exercises and applications in collaboration with local committees for defence against disaster;
- one year courses for volunteer nurses from Red Cross for approx. 1900 persons.

In these detachments are comprised approx. 2000 graduated Red Cross volunteer nurse courses.

The Mountaineering, Mountain Rescuers and Marine Rescuers Associations are organized especially in the mountain and seaside areas and they are participating at the search-and-rescue actions in case of disasters.

The Radio amateur Associations was used at exercises, as well as in many real intervention actions in less developed economic areas.

The Dogs Associations from Bucharest, Craiova, Ploiesti, Sibiu and Cluj-Napoca have leaders and dogs very well trained for search-and-rescue operations, who participated at international contests and missions.

Medical Associations and Foundations have a diversified chemical and toxicological laboratory network, the personal is very well trained, the medical equipment and the technical means for intervention are moderns (SMURD – Emergency Medical and Extrication Service) and they are points of contact for abroad similar organizations (Medicine sans Frontier, Pharmaceutics sans Frontier, CARITAS INTERNATIONAL, etc.)

The Ecological Associations have a good endowment and training, and act especially for prevention and fighting against accidental pollution. Some of these associations were used to finalize more educational programmes (Baia Mare) for preventive control of environmental elements (Bucharest) or in international co-operative actions in disaster management area (Craiova, Pitesti and Targu Jiu).

The Charity Associations and Foundations were engaged in supporting victims of calamities in floods cases from the last years, as well as for fitting out camps for evacuated population suffering from disaster affected area.

The Romania Orthodox Church, Romanian Catholic Church and other church establishments contributed, under the co-ordination of Romanian Patriarchy or independently, to philanthropic and religious assistance actions for the population in a disaster case. Also, nongovernmental religious organizations with international support, participated at philanthropic actions. Romanian Civil Protection received an important support from The Ecumenical International Council in the field of disaster's management.

The Romanian Civil Federation of Fire Fighters is an well developed body, especially in traditionally areas from TRANSILVANIA and BANAT regions, and contributed to prevention and fighting against fires at forests in 2000.

Some associations bio-speo, especially from ARAD and BIHOR counties, have participated in cooperation with Civil Protection at rescue people's life on floods, snowing-up or avalanches.

Some Romanian association and foundations, have contacts or are supported by NGO's international networks as follows: The Technical Rescue Agency (THW) from Renania Nord Westfalia Land (Germany), The Malta Knights Association, The St. John Ambulance Association, Samaritans Workers Association.

Civil Protection Inspectorate Counties made the coordination between NGO's and governmental institutions, especially on local and regional area. The NGO's were involved in training and real intervention activities in case of disasters, with financial support provided by local administration authorities or from abroad, under the coordination on Civil Protection Inspectorate Counties.

Major difficulties are related to the financial and logistical support necessary for these NGO's in practical activities, as well as for setting up a data base and a national level coordination of all NGO's from disaster's risk reduction area, taking into account the large number of this.

Specialized universities (Technical University of Civil Engineering from Bucharest, Technical University from Timisoara, Technical University „Gh. Asachi” from Iasi, Town-Planning and Architecture University „Ion Mincu” from Bucharest, University „Babes Bolyai” from Cluj-Napoca, Polytechnic University from Bucharest) and specialized research and designing institutes (The Geographical Institute of Romanian Academy, The National Institute for Building Research – INCERC from Bucharest, The National Centre for Seismic Risk Reduction – CNRRS, The National Research and Development for Earth Physics Institute from

Bucharest, The Studies and Designing Institute for Land Improvement – ISPIF from Bucharest, The Regional Centre for Prevention and Industrial Accidents Management from Cluj-Napoca, The Environment Research and Engineering Institute, etc.) contribute to elaboration of studies, normative and guides related to “disaster risk reduction” area.

In IT area that sustain disaster risk reduction measures, The IT Research Institute together with specialists from Civil Protection Command and Romanian Academy – Geographical Institute, made up a professional collaboration protocol (no.564/25.03.2002) further applied in different unwinding projects.

For putting into practice the management water national policy and strategy, the leading part is taken by Basin Committee, who assures main factors participation (public administration, private sector, NGO’s) in taken decisions for achievement of draw-ups part, which are part of defence against floods and public information process regarding every aspect recommended for approval.

Mass Media from Romania takes part actively at training and real situations management activities for occurred risks and disasters, by informing the population about these facts, according to the Law no.544 regarding the access to the public information’s.

Unfortunately, many times, searching sensational, mass media gives imprudent information, sometimes untrue, from unauthorized sources, which could bring prejudice during standard procedures in emergency situations management. In equal measure, not always the victim’s privacy is respected, in newspapers being presented sides of the personal intimacy.

Essential contributions have the syndicates and trade unions, which had established as a major objective the guarantee of the employee’s protection measures, reduction of risks, and improvement of professional training with the view of assure a performing management for reduction of disasters risks.

Chapter 2 Risks identification

2.1 Hazards mapping and evaluation

In accordance with the Law which approved in 2001 the Plan for national territory arrangement, in our country are developed maps for the risks of floods, landslides and earthquake for every locality placed in the natural risk areas, which are containing information about the dangerous phenomena, existing objectives and population, as well the preventive measures applied. These maps will be included in the Plans for General Urbanism in order to implement the specific measures for building and terrain use, any interested particular or juridical person having free access at them.

The current law concerning the seismic issues, the Law no 575/2001, the Code for anti-seismic projecting P 100-92 and the standard S 11100/1-93, are including maps of the areas of seismic intensity, of recurrence periods as well classifications of urban localities in accordance with the areas of seismic intensity on MSK scale.

Seismic areas cover 65% of the Romania’s territory, including almost 75% of population and 75-80% of the economical capabilities. The most important seismic area is Vrancea, which represents the source of more than 95% of the seismic energy produced on an average in Romania. An initial seismic mapping of the national territory was realized in 1952. New maps of seismic zoning were developed in 1963, 1978 and 1991, after the earthquakes in 1977, 1986 and 1990-1991 occurred.

The new Code for anti-seismic projecting P100/1-2004 (harmonized with EUROCODE 8) is going to introduce a new map of seismic zoning for 100 years of recurrence period.

Also, the maps and tables attached to the Law no 575/2001 are providing information about the localities potential affected by floods caused by torrents draining or water courses overflowing and landslides. Maps of the biggest hydro technical dams were developed.

Various research institutes and private companies developed electronic maps of risk. The Geographic institute of the Romanian Academy developed the map of geomorphologic risks

(landslides, avalanches, erosion, etc) as well as numerous atlases referring to the natural and technological risks specific for national territory.

Detailed electronic maps of risks are developed for the administrative units, for all types of natural and technological hazards, in order to support the territory development and to be used in the frame of defense plans in case of disaster.

For the plans of general urbanism, which are realized at local public authorities' level, the development of risks maps is under way at scales between 1:5 000 and 1:500, depending on the locality dimension.

For the plans for disaster response are developed and used risks maps at scales between 1:15 000 and 1:50 000 for local level and for the national level at scales 1:1 000 000, 1:500 000 and 1:200 000. In this respect also were realized GIS ArcView electronic maps at scale 1:1000000 for major hydro technical dams, chemical accidents, pollutions with hydrocarbons, nuclear accident and explosions. The maps used for disaster defense plans are in GAUSS-Kruger format.

Risks maps are used for public information, in the activity of major energy producers and transportations, in constructions as well as in the activity of some private companies.

The access at these maps is allowed to any concerned person based on Law no 544/2001 regarding the public access at information of public interest.

2.2 Vulnerabilities and capabilities assessment

At the operational team of Disaster Prevention and Preparedness Initiative request, a National Report regarding Disaster Management in Romania was developed in 2001. Inside of this complex document, developed in collaboration by all relevant institutions were assessed the impact, intensity and evolution in time of the main types of hazards, vulnerabilities as well as the human, material and financial resources available for those hazards management. During the assessment there were taken into account the infrastructure elements (streets, bridges, buildings, etc) which could be affected by future disasters; the most vulnerable objectives; the elements leading to the weakness of those objectives; increasing/decreasing number of vulnerable communities; the preparedness level regarding the risk factors at community level; the interest of communities in this issue, etc. Further on were analysed the governmental and non-governmental structures involved in disaster management, international cooperation in disaster situations as well as the capacities and challenges in disaster, prevention and preparedness, the gaps, imperative needs and demands in disaster management, both at national and regional level.

The information provided by Romania through the National Report, which was transmitted to the South-East Europe Stability Pact, contributed to the "Gorizia" Regional Report development.

Based on studies and researches, specialized institutes established the vulnerability level of national territory in case of floods, taking into account the frequency of their occurrences, the existent hydrographical net, the relief configuration, and social, economic, cultural and environmental factors. Those studies were essential in the development of basic schemes for hydrographical basins arrangement.

In accordance with the Governmental Ordinance no 20/1994 regarding the constructions, over 3000 housings and 100 public buildings of vital importance were technically examined. Following the technical examination report it was established the vulnerability level and the seismic risk category of those buildings.

The National Institute for Building Research developed assessments of seismic vulnerabilities, which were included in earthquake scenarios, realized both at national and capital (municipality of Bucharest) level, the last one concentrating the highest seismic risk in the country.

In these scenarios were taken into account the risk elements, urban localities exposed to the seismic risk, elements of buildings vulnerability (height, age, technology and materials used), vulnerability of infrastructure elements and nets of public utility, population vulnerability

expressed in mortality and morbidity values registered after the 1977 earthquake, assessment of complementary disasters' potential etc.

The accomplished assessments revealed the different vulnerability of rural population comparative with the urban population, which vulnerability is higher. Thus, correlating the population and buildings vulnerabilities resulted three categories of vulnerability:

- Reduced vulnerability for lodgers of traditional, individual dwellings (excepting some located in the epicentre area);
- Low vulnerability for lodgers of buildings with rigid concrete structures, planned in accordance with the seismic code after 1963, with major improvements after 1977;
- High vulnerability for lodgers of concrete buildings, high, flexible or poor consolidated, particularly those ones built before 1940

The damages evaluation offered a model of damages with a high preponderance of economic losses produced at traditional buildings with bricklaying, estimated at 7.45-17 billion USD. According to the authors, the 2 billion USD damages registered after the earthquake produced in 1977 were underestimated, their real value being of 3.3-3.5 billion USD only for residential buildings.

The evaluation of human losses resulted in 2.855 victims and 5858 injuries in flats of urban areas and 350 victims and 2000 injuries in rural areas. The evaluation of simulated earthquake consequences revealed a major potential disaster, with a strong impact on the territory, economy and society.

Regarding the evaluation of environmental factors' vulnerability caused by the impact of economic and industrial activities, there are legal methodologies established by the Ministry of Environment and Waters Administration. On their basis are realized studies for the impact on environment and functioning authorizations are issued. These studies are compulsory for all economic agents and are developed by institutes and firms authorized and accepted by the Ministry of Environment and Waters Administration.

Regarding the evaluation of the industrial facilities' vulnerability, the methods applied are of two types: qualitative (HAZOP) and quantitative (HAZAN). On these evaluations basis is realized the framing of industrial facilities and objectives in categories of risks and further on are applied the measures for risks reducing in order to decrease the vulnerability.

Two of these methodologies of evaluation of risks and vulnerabilities for industrial objectives were finalized through projects of co-financing developed together with the Italian Ministry of Environment al Territory Arrangement, with the names of REHRA (referring to the part of impact on waters) and TEIAMM (under way and referring also to aspects of impact on air).

All these methods and studies are based on ISO quality and efficiency standards and are in accordance with the European norms.

Contact institutions in charged to detail the methods of risks, vulnerabilities and response capacities evaluation are as follows: National Institute of Research-Development for Environment Protection (ICIM) Bucharest, National Institute of Research-Development for Industrial Ecology (ECOIND), The National Institute for Building Research (INCERC), National Institute of Research-Development for Earth Physics (INCFDP), Institute of Nuclear Physics and Engineering "Horia Hulubei" (IFIN HH) Magurele, Institute of Geography form Romanian Academy, National Administration of Meteorology, National Institute of Hydrology (INH), Army Centre of Study and Research and Centre of Studies, Experiments and Specialization in prevention and fire fighting.

2.3 National mechanisms for risks monitoring and mapping

In the present the risks mapping responsibility is on specialized commissions on each type of disaster, commissions formed according the Government Order no.47/1994.

In Romania there are many seismic networks:

- a) The National Institute of Research-Development for Earth Physics (INCFDP)

network that contain 14 seismic stations with local registering and 17 telemetric stations with real time radio transmission and also 45 accelerometers in territory (19 located in Bucharest);

- b) 117 devices placed in free field and on buildings form the National Institute for Building Research (INCERC) seismic network, developed to obtain seismic recordings on structures and buildings in order to reevaluate the recorded data for anti seismic protection, the conservation and affected buildings consolidating methods. Among them 32 devices are placed in Bucharest and 85 in territory. The seismic network administrated by the National Centre for Seismic Risks Reduction placed in Bucharest through the Romanian-Japanese Project for Seismic Risks Reduction of structures and buildings have 6 recording devices placed in Bucharest and 8 in territory.
- c) The hydro technical buildings seismic network contains 18 devices that are recording the induced seismic activity in the major dams area and their reaction during an earthquake.

For dangerous meteorological phenomena and floods surveillance there is a hydrological observation, measurement and collecting system, on each watercourse and his main affluent, system that is studying the arising and propagation of the floods wave. Some of those hydrological stations have self-acting functioning and the others will be automated until 2007.

Also there is an automatic national meteorological system for observation and measurement; a Meteorological Forecast National Centre is centralizing data provided. This system was upgraded by a cooperation project with the U.S. Company Lockheed Martin, resulting the National Integrated Meteorological System, which contains last hour technology radars, and surface automatic observation stations for air/water and rain falls measurements.

Among the benefits of this new system are: continuum information and data flow regarding the hydrological and meteorological status; the compatibility and informational integration with other international meteorological networks; anticipation of the water quantities (rain and snow) that will fall in a certain area on a certain period of time; the anticipation of the floods produced by the rain falls, storms, tornados and torrents; the anticipation of the atmospheric pollution dispersion; the anticipation of the rain falls and ice storms (the areas were the aerial electric and phone wire network will be affected).

National floods defense constructions system is permanently overseen by the Water Services from the "Romanian Waters" National Administration, which developed coordinating exploitation procedures for every action in a hydrographical area, no matter of the owner.

The Ministry of Environment and Water Management organize environment Radioactivity Surveillance Network in cooperation with monitoring subsystems from the Ministry of Administration and Interior, Ministry of National Defense and the National Commission for Nuclear Activity Control.

The National Institute for Research and Development on Environment Protection (ICIM) Bucharest from the Ministry of Environment and Water Management is participating at environment quality surveillance in cooperation with specialized laboratories that belongs to the Territorial Agencies of Environment Protection, Ministry of Health, Ministry of Agriculture, Forests and Rural Development, Ministry of Economy and Commerce and Ministry of Transportation, Constructions and Tourism.

2.4 After disaster impact assessment system of the socio-economical and environmental damages

After each disaster a systematic analysis of socio-economic and environment losses and impact is conducted, along with reports that contain the disaster effects mitigation measures that were made and also the measures that will be made to prevent that kind of situations. Those reports are presented to the Government and mass media and can be consulted by every interested person or institution.

The physical preliminary evaluation and the value disaster effects evaluation are a permanent care of the Romanian institution for defense against disasters, aiming to realize some urgent operative measures and also medium and long term rehabilitation and reconstruction measures in order to normalize the social-economic activities and to promote the long lasting objectives.

At local level there are consequences evaluation commissions that use a specific methodology for estimation of the losses, to ensure compensations and provide necessary funds for situation normalization.

In case of disasters with major consequences, governmental commissions are responsible for assessment of the impact, sometimes involving cooperation with international experts.

Through the United Nations Development Program (UNDP) were developed studies and systematic analyses of some disaster, for example after the pollution with cyanide of the Lapus, Somes, Tisa and Danube rivers.

2.5 Early warning systems in case of disasters

Till now, according the Law no. 106, the responsibility of disaster and predictable phenomena warning is on civil protection system.

For early warning in case of floods and dangerous meteorological phenomena there is a permanent working hydro-meteorological informational national system. Hydro-meteorological warnings were made in March-April 2004 when major floods occurred because of ample rainfalls and the sudden brake of the existing snow layer. The institutions involved in this system are: National Hydrological Institute and Meteorological National Administration, "Romanian Waters" National Administration's water management county units, local and county commissions for defense against disasters, Civil Protection County Inspectorates.

Informational flow is made in order to ensure a permanent connection with the target objectives. For example the National Hydrological Institute is transmitting information, warnings, alerts to Civil Protection Command that will transmit that information to Civil Protection County Inspectorates, which have the obligation to inform the localities until the police station level. In the mean time those info arrive in the same place through another way (prefectures and public administration local authorities).

The good work of this system was proved by the substantial reduced material and human losses made by the last years floods.

For earthquakes there is a real time surveillance medium term warning system. This system is made in cooperation with partners from Russia and Italy and is functioning in real time since the year 2000, in a NATO SfP project (no. 972266) for the seismic area of Vrancea. In 2001 it was a fake alarm regarding an earthquake higher than 6.4 on Richter scale. In the present we analyse the possibility to implement such a system in a decisional level.

The early warning system in case of accidental pollution (SAPA-ROM) with dangerous substances or hydrocarbons on Danube River is responsible with the notification and warning of the Danube countries.

According with the Emergency ordinance no.21/2004 the alert status represent the fast application of the action plans and prevention, population warning, limitation and mitigation of the emergency situation consequences measures and is been declared by the National Comity for Emergency Situations with the Prime Minister approval.

Following their activation, the Operational Centres subordinated to the Emergency Committees will provide timing, efficient informational-decisional flow.

Generally, the population is aware and obedient to the specific rules of acting in case of early warning signals and messages reception. This fact was proved both during the public warning exercises, which are held periodically, and also during real disaster situations.

Also there were observed some gaps, especially in the isolated areas of the national territory, regarding the capacity to ensure the warning signals transmission as well as the individual behaviour of citizens in case of disaster.

Chapter 3 Knowledge management

3.1 Information management system for disaster risks at governmental and nongovernmental level

At civil protection central and local authorities levels there are developed and upgraded monographs for all kind of national potential disasters. Ministries, research institutions and universities have elaborated papers about the occurred disasters, conclusions and lessons learnt from development of response management. There are papers, which are analysing disasters occurred in last time, and necessary conclusions and lessons learnt, beneficiaries being participants in system for defense against disasters and at present will be those who attend the emergency situations management system.

At national level there is an integrated system for collecting information and transmitting the decisions based on Government Decision 635/1995. There are databases at the level of some central specialized authorities regarding specific risks, for which they are responsible (earthquake, landslides, floods, dangerous weather events and other technological disasters).

In order to prevent floods and accidents to hydro technical structures there is a national system for management of information, which are collected through permanent monitoring of rivers, hydro technical structures for defense against floods, as well as reservoir lakes. This information is spread to all national, county and local structures involved in operational actions for defense against floods. Civil Protection Command is involved in the development of a specialized software regarding some databases on disasters risks and their aftermaths, an information application called MANDEZ, achieved in collaboration with information research and risks management institutes. Daily, within central and local civil protection structures and local public administrative authorities form the Ministry of Administration and Interior, through operational personal is accomplished the collection, recording, transmission, analysis and automatically processing of information regarding disasters, is developed and sent reviews and reports up to the level of the Romanian Government, Presidency and Parliament.

In the activity of decision collecting and transmitting in case of disasters are also involved ministries managing specific risks.

Some disasters categories with transboundary effects are reported to international bodies, using provisions of international conventions and agreements as well as special networks (EURDEP, ECURIE etc.)

The National Integrated Meteorological System is able to automatically collect data necessary to prevent disasters caused by dangerous weather events, and send to the beneficiaries: Ministry of Environment and Waters Management, Ministry of Administration and Interior, Ministry of National Defense, air transportation, marine, road and railway authorities, facilities networks, communications networks, radio and TV, international bodies like EU, NATO and World Weather Organization, the neighbored state Republic of Moldova and other regional beneficiaries.

The Ministry of Transportation, Constructions and Tourism is managing its own database on seismic risk containing information regarding over 2600 buildings seismically assessed and 123 buildings in Bucharest included in first class of seismic risk.

At present, information about the Civil Protection Command and activities regarding the management of disasters can be found in www.ppc.pims.org/Partners/Civil/Romania and www.pims.org/Partners/Civil/Romania.

Civil Protection Command, Institute for Research and Development in Informatics and the Institute for Geography of the Romanian Academy are jointly working to do a public information web site portal for disasters, using a Oracle database which will contain all the information about risks and disasters, modules of on-line course based on support provided by civil protection experts for training the population in disasters field and public maps on disaster risk, necessary for people protection and emergency personnel too.

3.2 The collaboration between academic-research communities and national and local authorities involved in disaster prevention

There are many collaboration initiatives between the academic community and national and local research institutions involved in disasters prevention, this collaboration being represented through different scientific manifestations, seminars, conferences, congresses and other training forms as well as in collaboration to develop some jointly research programmes.

In order to establish and fulfil structural and non-structural measures for defense against floods there is a permanent collaboration between the Central Commission for Defense against Floods, Dangerous Weather Events and Dams Accidents and specialized institutes developing studies and research in this field. Mainly the National Institute for Hydrology and Geology, National Administration of Meteorology and AQUAPROIECT conduct such kind of studies and research. These institutes established defense characteristic measurements, develop hydrological studies, models for water waves propagation, risk maps, flowcharts for managing the hydrographical dams against floods.

In the field of mitigating seismically risk it can be mentioned the Project CRC 461 done by the international collaboration between the National Institute for Research & Development for Earth Physics, the National Institute for Building Research and Karlsruhe University of Germany.

Under the coordination of the Ministry for Transportation, Constructions and Tourism, have been developed studies, which contribute at the improvement of the normative base for designing, exercising, exploitation and surveillance of constructions. Also, the Central Commission for Preventing and Defense against Seismic effects and landslides, within the Project for Romanian-Japanese technical cooperation for mitigation of seismic risk of buildings and structures, the National Centre for Mitigation of seismic risk organized during 2003-2004, in Iasi and Bucharest, technical seminars on topic: „*Fast Inspection of reinforced concrete buildings damaged by earthquakes*”. These seminars were attended by experts form universities and specialized research & design institutes, as well as from central and local public administration, civil protection inspectorates and inspectorates for construction at central and territorial level.

A large and valuable experience on assessment, repair and strengthening of buildings and other structures was accumulated after the earthquakes of 1977, 1986, 1990. Besides the actions concerning individual structures, the systematic approaches devoted to reduce the seismic risk represent a target for education and training activities since 1977.

The professional associations for civil engineering and earthquake engineering (AICR, AICPS, ARIS, etc.) contribute with symposia, conferences and publications to these efforts.

The large number of highly experienced design institutes for civil engineering of specific industrial fields represented also schools for promoting new structural systems, which were carefully analysed, tested at large scale (models, joints, pilot-projects) and then used as standard projects (e.g. large panel buildings with 5-9 stories in seismic zones). There are numerous civil engineers having experience in strengthening works.

In order to improve technological disasters management, as well as other complementary or associated natural disasters, The Civil Protection Command has an efficient collaboration with the Polytechnic University of Bucharest and University Babes-Bolyai of Cluj-Napoca, based on some protocols of cooperation.

Among Civil Protection Command collaboration an important place has the Romanian Academy, which contributed especially in disasters management improving by its members contribution within the National Committee for Natural Hazards and of National Committee for Environmental Weather Changes.

For the atmospheric control pollution on mountainsides zones, Romanian Academy, Japanese National Committee of the International Geographical Union and Hosei, Nihon and Mie Universities from Japan develop an information exchange, information received from an environment surveillance system.

The Ministry of Education and Research is on going The R&D core program called “TESIS – Advanced Technologies and Systems for the Knowledge-based Information Society” financed by the Ministry of Education and Research includes, under objective “New technologies, platforms and services for e-Government”, the R&D project “System for public awareness and education concerning natural and technological disasters” (deadline: October 2005)

This project is developed by experts in software tools for education, economy and environment at the National Institute for R&D in Informatics (ICI) in co-operation with specialists from the Civil Protection Command and the Geography Institute, based on the Protocol and on contracts signed between the 3 institutions.

The institutes for science research of the Romanian Academy (Institute for Geography, Institute for Geology, Institute of Geodynamics) participate besides the specialized institutions in evaluating the Romanian territory special risks and identifying of the most efficient response procedures.

3.3 Educational programmes regarding the disaster risk reduction for public educational institutions

Generally, in Romania access the information is a constitutional right. The law of environmental protection no.137/1995, establishes the general strategy framework, provide a special right of accessing the information on environmental quality. The right to information and consulting of the projects of industrial objectives is stipulated in the Law for Evaluation of Environmental Impact. There are views on impact assessment results on environment to be available to the people.

According to Law regarding defense against disasters no 124/1995, people are informed through media about potential risks areas, imminence of occurring of a disaster, its effects and taken defense measures. Media is especially invited in conferences to every Commission where ministers are presented their activity.

According to the Governmental Ordinance no. 47/1994 approved by Law no. 124/1995, the Ministry of Education and Research has special tasks in organization and accomplishment of training children in schools by introducing analytical training programmes and special materials provided by specialized Commissions on every type of disaster. Efforts have been made that in schools and universities even teachers or experts specialized in civil protection to promote civil protection training courses.

Knowledge about environment is taught in gymnasium, first classes, together with the course about „man and society”, and then through programme for nature sciences. In second classes, ecological education is taught from interdisciplinary perspective, by intermediary disciplines (physics, chemistry, biology, geography) and in interdependency with programme of biology. Generally, the programme of civilian culture and proficiency training contains information regarding the ecologist aspect from specialized courses.

There are also organized within gymnasium and high school level, theoretical and practical activities regarding the behaviour in case of disasters, scholar competitions. The private training provides various and interesting forms for the achievement of a special training in mitigation and prevention of disasters field.

In universities (firemen, police, medical, environmental protection, constructions, architecture, urbanism, agriculture), and other kind of schools are organized and developed training courses in the field of mitigation of disasters risks field.

Within the higher education levels it is emphasized the importance of training the future teachers in management of some training sessions on behaviour in case of disasters.

Exercises, where people are included too, are used as educational tools. Large mass is informed through media, printed materials and also by including it into public debates about civil protection or different kind of exercises (warning, evacuation etc). The County Commission and the Commission for Defense against Disasters of Bucharest municipality coordinate the training

of the population in localities, institutions, economic entities and sectors regarding prevention, protection and intervention in case of disasters, using the experience won from lessons learnt, meetings, conferences, drills and demo.

The didactic base for organization and development of activities of training is in a permanent upgrading, updating and development.

Generally speaking, media is a good partner, but in some cases there were underlined only extreme aspects of some potential disasters.

The earthquake resistant design was not a general concern of engineering curricula until the 1940 earthquake. After 1950, the need of mass construction activity led to the need of providing protection using limited resources.

Besides the seismological courses for the geophysicists and seismologists, the engineering oriented university courses on structural dynamics and earthquake engineering were introduced after 1955, more specifically around the 1970's, and post-graduate courses were offered, especially after the 1977 event.

Concerning the earthquake engineering, the basic disciplines are included in typical curricula of a civil engineering faculty in Romania.

The concern for earthquake protection education within other engineering branches is rather reduced, but those working after graduation in design offices become aware of requirements and applicable codes when necessary. The trend towards small private design offices raises special problems of follow-up education quality.

3.4 Public educational programmes regarding the disaster risk reduction and prevention

The disaster prevention and protection is presently recognized as a component of the Government general policy to preserve the life safety and quality.

Training the population on prevention and mitigation of disasters aftermaths is one of the most important tasks of the Civil Protection Command.

According to the Prime Minister Decision no. 139/1999, training the population, decision makers and members of professional and voluntary civil protection formations are done through various and complex training forms (drills, exercises, meetings, briefings, symposiums, papers sessions, seminars, workshops, training).

At the local level, the County inspectorate for Civil Protection and the Fire Fighters County Group train the population according with the external emergency plans to familiarize with the possible actions undertaken in case of accident. The access of the media and public are made at request, and is free for the industrial sites, which are considered non-strategic.

There have been elaborated and implemented programs of anti-earthquake education or in case of radiological or nuclear emergencies, in case of floods, chemical accidents, epidemics, animal epidemics. For this purpose there were disseminated general info materials (books, posters, articles, etc), but also detailed documentation (guiding manuals, specialized courses, measures and regulations, documentary motion pictures, etc.).

The television, radio and press contributed substantially to the public information activity, no matter if we were talking about the public sector or the private one.

The "Civil Protection" magazine and other publications edited by the public authorities, and also the NGOs contributed to the appropriate and correct information of the population.

The educative attributions of the Civil Protection Command and Civil Protection Inspectorates materialized in field disaster response exercises, involving a large number of people, in order to make aware the population about the existent risks and the appropriate preparedness measures.

In medical field there are programmes of academic education for medicine students as well as post academic training programme for competency in „medical management of disasters” as in medical emergency training.

Regarding the counter seismic training of population, the Ministry of Transportation,

Constructions and Tourism organizes periodically meetings with media, representatives of local public administration, specialists and population for presenting: measures of yearly programmes for retrofitting of multilevel buildings and their state; protection and intervention measures in case of an earthquake (by presenting and spreading of „Practical Guide on prevention and mitigation of seismically effects”- see it on site www.mt.ro „prevention and mitigation of quakes effects”); measures on „Fast Inspection of earthquake damaged buildings ”.

In order to develop a education system in academic and post academic institutes, within the National Programme for management of seismic risk approved by G.D. no. 372/2004, during 2004-2006, under the coordination of the Ministry of Education and Research and of the Ministry of Administration and Interior are on going some handbooks on counter seismic education of the population at all levels.

3.5 Traditional local knowledge and practices integrated in risk disaster reduction training programmes

Within practices and training programmes regarding mitigation of disaster risks, used in our country, became traditionally competitions organized up to national level for training and increasing preparedness level of voluntary firemen and civil protection formations. Scholar competitions on topic „Firemen friends” or those called „I defend life with my own life” are approaching civil protection and protection in case of disasters topics addressed to pupils of gymnasium and high school.

For training pupils on these competitions are regularly organized, at sea side or mountains, training camps, practice competitions, as well participation at international manifestations in this field for pupils and students.

In some national regions is maintained the tradition preparing and developing competitions during annual fests with a special topic regarding prevention and reducing of risks.

3.6 National campaigns and programmes for public information regarding disaster risk reduction

Civil Protection Command preoccupation from the Ministry of Administration and Interior and of other ministries was materialized in the achievement of some actions of people awareness on disasters effects and presentation of measures and rules of behaviour in such kind of situations, in order to mitigate human being losses and material damages.

An important role had the national programmes of counter seismic training and in case of floods, accidental pollution, chemical and radiological accidents, fires and blasts. To this end there were edited materials for general information (handbooks, brochures, folders, posters), as well detailed documents (practical guides, guidelines, methodological norms, documentary movies).

Involved of some nongovernmental organizations, of churches and other religious communities in informing people was achieved through debates, symposiums, papers sessions, discussions with communities on various occasions, civil protection exercises and drill, exercises of disasters simulation etc.

Television, radio and press, from private or public sector, have significant contributed in public awareness activity. Also by using local TV channels were sent multiple messages with rules of behaviour for population in case of disasters, using teletext.

In the years 2002 and 2003 in Romania were prepared and developed under the coordination of NATO specialized bodies, 2 international exercises in Brasov and Pitesti on management the chemical emergency respectively the radiological emergency in case of a terrorist attack. Both activities were very much broadcasted in South Eastern of Europe and in other regions too.

After completion of all national population training projects and programmes for

disasters risks mitigation, some review and assessment sessions were conducted in order to identify the weak and strong points.

Immediately after the 1990 earthquakes, under a Government decision, the Ministry of Transports, Construction and Tourism and National Institute for Building Research elaborated a National Program for public earthquake education, preparedness and training, devised to avoid or to reduce, in case of earthquake, the life losses, excessive injuries, panic and disorganization of economic and social life, the emotional stress, the rumour effects, etc.

Since then, the program for public education was achieved through activities of general education, providing basic knowledge, experience, essential safety and behaviour rules for living in seismic zones, including coherent public information, activities for education, adequate for different age and socio-professional categories living in different environment and built conditions, in urban and rural zones.

The education is gradual, permanent and using reliable, officially backed sources. Since 1990, the following materials have been developed in Romania, printed and distributed by the Ministry of Transport, Constructions and Tourism together with Civil Protection Command:

- * posters and illustrated folders including essential safety rules and behaviour recommendations for the incidence of an earthquake;
- * booklets detailing the seismic effects which are likely to produce casualties in buildings, built environments and settlements, schools, etc.
- * earthquake preparedness manuals (practical guides), for people, children and school staff; special facilities, hospitals, public places with agglomerations of people etc.
- * short documentary films, available as video products, presenting the main earthquake safety and preparedness rules for citizens and schools.

Chapter 4 – Risk management applications and tools

4.1 Positive examples regarding the environmental and risk reduction management

There are programs for the management of hydrographical risks using water streams regularization of the internal rivers, hydrographical works on Danube River and also other programs for the forest regeneration and agricultural practices for fixing the unsafe soils.

To reduce the risks, in our country there is an afforestation program for mountainsides, arrangement of torrential basins and erosion soil control, which allow big annual improvement on these issues. Also, it was elaborated efficient agricultural practices Code in order to reduce the pollutions of stream with nitrates (resulted from the agricultural procedures).

To manage the seacoast, in 2003, was approved the Law of the seacoast. Based on this law was elaborated the National Plan for preparedness, response and cooperation in the emergency of accidental hydrocarbons marine pollution and it was constituted the Operational Marine De-Pollution Command.

There are ongoing projects for rehabilitation of wetlands. The new projects for defense against floods are based on the principle “more space for water”, as well as the preservation of biodiversity. The Romanian Government initiated in collaboration with Bulgarian, Moldavian and Ukrainian governments the set up of a „Green Corridor”, of natural wetlands on the lower Danube course. Being the largest international initiative, trans-boundary of restoration and protection of the wetlands from Europe, this green strip will include wetlands, lakes, temporary, flooded areas (with riversides coppice and meadows). The project „Green Corridor”, will improve the Danube natural capacity of pollution reduction, for water management in case of flash floods and nature preservation. The “Green Corridor” will be useful for both local population and the ecosystem of the Danube and Black Sea, do to the fact that allows the protection, restoration and management of lower Danube riversides.

There have been already initiated important projects for protection of wetlands within “The Green Passage of Danube”, which target the already protected zones, proposed for

protection or restoration, as is shown in Annex 2.

WWF Project “Partners for wetlands”, as well as other EU financed projects, will target the reduction of the impact on wetlands, restoration of the natural function and values of the jeopardized wetlands, everywhere is possible, and using the restoration activities like a base for the development of some durable economical development strategies.

The aim of another started project is the restoration of the wetlands and riversides forests along the Danube course and to demonstrate the socio-economical benefits of restoration, e.g. diminishing of pollution and better production of high quality wood.

At Environment International Day (5th June 2000), Romania, Bulgaria, Moldova Republic and Ukraine agreed about setting up a system of protected areas along the lower Danube course. Besides all these, those countries will set up an Action Plan to implement the proposed aims and will point out the additional areas for the “Green Corridor”. There will be also, proposed a monitoring system in order to facilitate the rapid information exchange.

The agreement of lower Danube countries about setting up the “Green Corridor” comply with the objectives of the Ramsar Convention, Danube River protection Convention and the Biodiversity Convention. WWF Project “Partners for wetlands” will continue to be a mediator between involved and interested parts, helping them to transform the dream of the Danube wetlands riversides restoration into a real fact.

The same importance is given to the project “Eco-regional initiative of Carpathians mountains”, which includes also the Romanian Danube Defile (Annex 3 and 4).

In order to ensure the preservation of environment and bio-diversity quality of Danube Delta was established the Administration of Danube’s Bio-Sphere Reservation.

Within the Financial Program of European Union- SAPARD- was developed and is on going a project to confute the extension of desertification phenomena in southern part of Oltenia.

Another initiative is the project named “Emergencies Preparedness and Risks Reduction”, which is co-financed by the World Bank. The period of managing this project is 2004-2009. Through this project, the World Bank assist the Romanian Government to reduce the economical, financial, environmental and social vulnerability in front of natural disasters and accidental pollutions caused by mining activities.

4.2 Financial tools for disaster impact reduction

After every major event, to reduce the disaster impact was used the Intervention Fund from the state budget. To rebuild the damaged infrastructure also, were used funds from the communitarian budgets.

In the same way, external funds are used, coordinated by the Ministry of Finances and through other different ministries responsible for every type of risk. These funds are received from PHARE programs, World Bank, European Bank for Reconstruction and Development or European Bank of Investment.

According the National Program for the Seismic Risk Management, approved through Gov. Decision 372/2004, for the assurance of financial resources is foreseen to be creating an integrated insurance-reinsurance system for seismic damages to buildings, taking into account the private capital and the development of buildings market.

Insurance was a State monopoly until 1990, while property insurance was compulsory in Romania until 1995. The contribution of insurance to the compensation of losses was relatively important after the 1977 earthquake; the paid losses reached 1.01 bln. Ro Lei, that means at overall scale, only 4.8% of reported losses of 2 bln. US\$; loss ratio was 250% ; compensations were quite reduced after the earthquakes of 1986, 1990 and 1991. Presently, the Romanian insurance market is private and under the new Insurance Law, after 1995, earthquake insurance is non-compulsory for building owners.

Based on Government Decision no. 20/1994, regarding the existing buildings strengthening, where provided the necessarily tools to insure the unpaid expertise of residential buildings resistance, and for buildings consolidation and designing, where accorded to the

owners facilities for receiving credits at interest 5%, for a period of 20 years; apartments owners from the first class of seismic risks building, with an income under the country media received subsidies which can covered the needed total amount.

To support the disasters consequences reducing programs, some financial means from the European Union where made available, like:

- SAPARD Program, a financial instrument offered by European Union for helping the nominee states (the countries that have set down the subscribe demand at the European Union, Romania is between others) in the pre-subscribed process in agriculture and rural development area;
- LIFE Program which support the development and the implementation of the European Union environment legislations and policies, with a special accent on the conscription of the environment policies in the other policies and on a durable development within the framework of European Union. European Commission finance up to 100% eligible costs, in an amount that can not exceed 100,000 EURO;
- PHARE RICOP Program through which the European Union offered 100 millions EURO for supporting the Romanian Govern in managing the economically development programs.

4.3 Examples of technical programmes and measures for risk reduction

In order to reduce the floods risk in our country there is a defense system comprising 9560 km dams on internal rivers, 8680 km water courses arrangements and 1924 reservoir (360 reservoir are very important having a total volume 13.06 billion cube meters), 3 billions cube meters for flash floods attenuation and protect 1298 localities with more than 5000 habitants; 2050 of localities are still exposed to floods.

In the same way, exist a very well organized warning hydro-meteorological informational-decisional system from the local to the national level and this system is under a modernization process.

Annually, exercises are developed, in order to train the public and the local public administration personnel for this type of risk.

Applying the Government Ordinance 20/1994, annually, the Ministry of Transport, Building and Tourism promote action programmes to reduce the seismic risk of the existing buildings.

Between 1992 and 2003 more than 3000 buildings in 26 counties and Bucharest have been technical assessed.

From the seismic vulnerability point of view, the Romanian capital, Bucharest, is the most exposed European capital, the biggest problem being provided by the old building stock.

From all evaluated buildings, 125 buildings multi-level, constructed before 1940, represent a public danger and are classified in the first class of seismic risk.

Between 1998 and 2004, in order to design and consolidate these buildings, it has been approved different action programmes (Government Decision no. 579/1998, Government Decision no. 791/2001, Government Decision no. 927/2002, Government Decision no. 483/2003, Government Decision no. 643/2004). The action programmes for design and consolidation works at these buildings are promote by the Ministry of Transport, Construction and Touring and are approved through Government Decisions. Through the Government Decision no.643/2004 a program was approved to consolidate, in a first stage, 29 buildings in Bucharest and another 5 from urban areas within the seismic areas.

The National Program for the Seismic Management Risk, approved through the Government Decision in 2004, comprise 40 actions and responsibilities for the 2004-2006 period, as follows: the improvement of legislative acts and operative documents, applicable research, tests and pilot project, resources management, seismological effects reduction, public education, cooperation with civil society and mass-media and international cooperation.

World Bank supports the Romanian Government to implement the “Prevention and Natural Disaster Risk Management Program” in order to reduce the social, financial, economical and environmental impact of natural disasters. The Ministry of Transport, Building and Tourism prepare and implement the component B of the program – The Seismic Risk Reduction of vital public buildings – and the Ministry of Administration and Interior prepare and implement the component A – organizational capacity strengthening.

The program comprises 84 very important buildings from the seismic zones A-D where the seismic intensity (in MSK degrees) is minimum VIII.

The Ministry of Transports, Building and Tourism and The International Cooperation Agency of Japan – JICA – sign, on 1st august 2002, the Romanian-Japanese Technical Cooperation Project for Buildings and Structures Seismic Risk Reduction, on duration of 5 years.

Chapter 5 Emergency situations preparedness and planning

5.1 Disaster response plans development and application

The responsibility for the elaboration of national plans for specific emergency systems is up to National Committee and Ministerial Committees for Emergency Situations, as well as county committees for emergency.

Planning activity for defense against disasters will be set up through following documents:

- At national level: - National strategy for defense against disasters adopted by National Committee for Emergency Situations;
- At ministries level – Operative plans for defense, elaborated by the Ministries Committees for Emergency Situations, for specific disasters;
- At county and local level - Plans for protection and intervention in case of specific disasters.

At economic agents level the on-site emergency plans are elaborated under coordination of the counties civil protection inspectorates. These plans cover natural and technological disasters which can happened and with relevance for economic agent and surrounding population.

The basic principle in these plans is to use for intervention actions, all possible human and material resources.

Academic, research, learning and nongovernmental organizations, volunteers and population are included with responsibilities in this plans at certain levels.

Applicability of the measures from operative plans is verified periodical through applications and exercises organized and conducted by Civil Protection Command. In the near future this roll will be take over by the General Inspectorate for Emergency Situations.

For defense against floods, meteorological phenomena and accidents to the dams are elaborated once per 4 years plans at county, city, locality and hydro graphic basin level which are revised whenever is necessary. These plans represent actually technical documentation with preventive and intervention measures, with information flow for warning the population and are activated when a danger appear. Responsibility for activation of this plans belong to the presidents of counties and local committees for emergency situations and territorial water management units. On this basis is built up the exploitation of the all working with defense against floods role and technical coordination of operative actions.

For disasters made by earthquake and landslides counties and local commissions for defense against disasters have defense plans (prevention, protection, operative intervention, restoration and rebuilding). These plans are revised yearly and/or after a disaster occur. Presidents of these commissions are responsible for elaboration and revise the plans.

5.2 Emergency funds for response to disasters, national and communitarian infrastructure for emergency material stocking

For disasters response financial resources are assign from special governmental intervention fond and from local budgets.

For operative actions against floods and water ice are constituted local commissions for defense against disasters to the principal holders of dams with big financial effort.

In Romania is functioning the National Administration for State Reserves, a central institution that is responsible for managing all materials and goods for supporting the affected population, on Governmental Decision basis.

Also at the counties civil protection inspectorates exist warehouse with protection, intervention and first necessity materials for displaced population, assured through counties budgets.

Five warehouses are in an on going process of modernization under General Inspectorate for Emergency Situations, in order to ensure an operative reaction in case of disasters.

In the same time the warehouses belonging to the National Society of Red Cross can assure shelter materials, clothes, footwear and foods.

5.3 Disaster response funds and national infrastructures for emergency relief item stocks

In the present the national coordinator for disasters response preparedness is National Committee for Emergency Situations through General Inspectorate for Emergency Situations, and for some specific disasters some Ministries Committees for Emergency Situations.

National Committee for Emergency Situations has a Permanent Technical Secretariat in which are included specialists from General Inspectorate for Emergency Situations. Also National Operational Centre for Emergency Situations will be constitute under General Inspectorate for Emergency Situations and will manage gathering of the disasters information and transmitting of the intervention decisions.

Ministries Committees elaborate regulations regarding specific emergency risk situation management for competence domains under ministries and other central public institutions with attribution in this field.

Civil Protection Command under Ministry of Administration and Interior functioning like specialty organisms for general coordination of whole civil protection activity at country level, at military and civil components until the General Inspectorate for Emergency Situations will be operational.

Civil Protection Command under Ministry of Administration and Interior trough planning, protection, intervention and logistic departments assure 50 – 60 military and civilian experts for all type of technological and natural disasters for an efficient management of these.

It can be said that human resources for disasters management are not sufficient, especially at permanent activity structures level.

The efforts are made for supplementing the financial resources necessary for all disasters management activities, but budgetary resources are many times insufficient. On the other hand it was succeed to attract funds from outside the country trough projects and programs with European Union and World Bank.

Chapter 6 Good practices identification regarding disaster risks management

6.1 In the field of mitigation of buildings seismic risk we can mention the Program for retrofitting schools, developed during the years 1997-2002, estimated at 130 mil. \$, co-financed by World Bank. Within this program, done by collaboration between the Ministry of Education and Research and the Ministry of Transportation, Constructions and Tourism were retrofitted 838 schools.

This project took into account: a) elimination of risks of scholar population and teachers from the damaged school buildings; b) improvement of training framework in these schools through a positive impact on pupils and teachers; c) improvement of training framework in rural area; d) reducing of costs through construction works efficiency; e) finding new funds, if necessary, for schools retrofitting.

Finally, the project contributed to the increase of the quality of the Romanian training process, leading to the development of qualified personnel, firstly for the training process, which is an essential condition for a sustained economic increasing.

6.2 The floods during 10-18.04.2004 of Cris river hydrographical basin – Bihor county, occurred as a follow of the large rainfalls meaning over 100 l/mp on the river Crișul Negru, with transboundary effects by overrunning of floods rates.

The permanent collaboration with the water management territorial authorities of County Inspectorates for Civil Protection led to an early warning localities and riverside objectives and the town halls have warned the population of natural risk area and therefore, preparing locations for their potential evacuation.

It was immediately established a permanent surveillance of defense dams, as well of the householders as local commissions for defense against disasters.

The units for intervention of Waters Management Network of Bihor County together with the citizens had done works for dams consolidation and overweight in critical areas, by using sand bags and expanded polyethylene sheet.

The Bihor Branch of the National Society “Lands Improvements” took measures for a good usage of the evacuation network and of inland waters. There were taken measures for avoiding floods in the Republic of Hungary according to the provisions of joint Regulation to close the gates on the border channels.

The Directorate for Waters Cris Rivers ordered the entrance in work of two no standing narrowed dams on the river Crisul Negru which gathered relevant water volumes, causing the mitigation of the flash flood wave.

The good cooperation between the County Commission for Defense against Disasters, local commissions, Civil Protection, units of waters management and land improvement as well through a good collaboration with similar bodies from the Republic of Hungary it was avoided flooding of over 500 householders and of over 10.000 ha agricultural land as of some roads and railways.

6.3 In 12TH august 2002, following to an atmospheric instability, a tornado affected Facaeni locality, Ialomita county and produced 2 death people, 15 injures, 420 houses affected (15 totally destroyed) and 4 ha forest devastated.

The tornado was seen initially 3 km east from Fetesti town on route DN 3 A, around 19.00 hour. In this area was affected some vehicles and one bus which conducted to injury of 10 persons and driver.

Around 19.30 hour, tornado was seen in south of Facaeni where affected power supply network and about 30 electrical sticks.

Also was destroyed 15 houses, 20 houses was severely affected, over 400 houses and 600 household annexes affected.

2 persons died and other 14 was injured. The material damages exceeded 120 ha of forest with approximately 25000 c.m. wood and electrical power supply network.

Immediately after the event the Local Commission for Defense Against Disaster decided to send intervention detachments, county civil protection inspectorate, county police inspectorate, fire-fighters units, and other intervention teams and until 21.30 hour was constituted County Commission for Defense Against Disasters in town hall of Facaeni.

The main measures taken by the civil protection for limitation of the effects was:

- Monitoring of phenomena;
- Warning of the authorities from the most exposed areas to risks;

- Alarming and evacuation of the population from such areas;
- First aid to affected people and transportation to the hospitals;
- Distribution of food, drinkable water, clothes and drugs for affected population;
- Unstop of routes and flowing of the traffic;
- Repairing of the electrical power supply and phone networks;
- Assurance of the security and order in the area and permitting of the access only to intervention team.

The action plan elaborated in the night between 12 and 13 August 2002, contained the following main activities:

- Assurance of a permanent first aid point
- Constitution of food distribution and clearance of the traffic
- Supporting of the specialized teams for restoring of the power supply
- Epidemiological control of the area
- Evaluating of the damages
- Measures for turn off and prevention of fire.

Other teams from road section units, National Society “Lands Improvements” – Ialomita subsidiary, military units and economical agents teams helped in the morning of the next day for clearance of routes, and households.

In 13.08.2002 a governmental commission established first rehabilitation measures hereby:

- Physic evaluation of the building status;
- Establishing of the places where will be build new houses;
- Mobilization of building firms under direct coordination of the National Agency for Dwelling house;
- Promotion of a project for houses destroyed or severely affected by the tornado.

The affected area was split in 7 sectors each with own evaluation commission. After 3 days the process was end and 43 billion ROL (almost 1,5 mil. EURO) damages were found.

In 15.08.2002, central commission for defense against floods, meteorological dangerous phenomena and dams accidents analysed the situation and elaborated a plan for prevention and rehabilitation measures and presented to prime minister. In this plan were established measures to release funds from state budget for rehabilitation and reconstruction.

On Governmental Decision no. 851 from 19.08.2002 basis, was allocated 2,5 billion lei for reconstruction and by the Ialomita Prefecture, 126 children from affected families was sent in Amara camp and other 14 in Balaton (Hungary) camp.

Many state institution and ONG’s started a campaign for fund rising to help displaced people.

At 26.09.2002, from a total of 428 houses damaged, were finished 423 (99%), and for 372 houses was finished repairing operations. From 33 houses that were rebuilt, all was finished included infrastructure.

Chapter 7 Priorities for the World Conference in January 2005

The natural and technological hazards have no boundaries, they generates complex environment disasters with major long term effects, involving in most of cases huge costs which overwhelm possibilities of one country to prevent and mitigate the cross border effects, with determine to promote a compact conception of local and international cooperation.

The exponential growth of hazardous materials, stored, used or transported by road, by train, by ship or by plane, lead to an increased number of serious accidents with major consequences over life which cause an intense cooperation of disaster national management system, upon those emergency situation, including the scientific local and international communities.

The terrorist attacks from all over the world, with biological, chemical, asymmetrical and

conventional means, lead to the conclusion that efforts must concentrate on preventing the causes of those actions, as well as reducing consequences by assuring of compact conception, by realistic and meticulous planning, by assuring an action force, trained and equipped capable of prompt reaction into emergency situation, as well as assuring a proper financial support.

The managerial measures and action taken have not limit only in resolving emergency situation but have to initiate and develop the activities of reconstruction, long term, rebuilding and rehabilitating according with the principle of sustainable development with local and international specialized organizations.

The international scientific community have to be more involved in organizational international or regional network for studying the knowledge about reducing and preventing disaster and, schools, academies and post academic courses have to involve in sustaining of training courses which have as main subject disaster management.

United Nation through specialized bodies has to initiate an international system for professional training, qualification and improvement of national experts in disaster management.

The development of data base about natural and technological disaster (date and location, the effects over population and environment, the resource capacities, aspects about international systems, the resources capabilities, the viability of defending programs system) involves the development of new specialized soft-ware to manage the operative intervention actions:

- Using “Model for early estimation of the disaster effects – earthquake, mudflow, flood – over the exposed elements”;
- Using “Decision support software for emergency situation management”;
- Issuing the identity cards for vulnerable building and infrastructure to the disaster;
- Standard Internet availability of geographic information about natural and technological hazard area, presented by national links with information accessible for people.

For analysing the concrete methods where Romania is involved to promote the proper measures to prevent and mitigate the specified national disaster, is necessary to cooperate with specialized NATO bodies EADRCC (Euro - Atlantic Disaster Response Coordination Centre), GOEWDS (Group of Experts for Early Warning and Detection System) and European Union (General Environment Directorate and Monitoring and Informing Centre) to coordinate the response, to resolve the disaster with cross border effects (fire forest from France, Portugal and Croatia, floods from Central Europe, earthquake from Turkey and Morocco) from the last five years.

The presence of local incentive for prevention and mitigate the disaster (Stability Pact for South-Eastern Europe, Working Table III, Disaster Prevention and Preparedness Initiative; Central European Initiative; EUR-OPA Major Risks Agreement) contributed significant to harmonize disaster preparedness management in Romania, by attracting donations from various fields as well as developing valuable financial project and programs.

NATIONAL LAWS ON REDUCTION AND PREVENTION OF DISASTERS

A) *GENERAL LAWS*

- Governmental Urgency Ordinance no. 21/15.04.2004 regarding National System of Emergency Management;
- Law of civil protection no. 106/25.09.1996;
- Law no. 124/1995 of approval Governmental Ordinance no. 47 from 12 August 1994, regarding defense against disasters;
- Governmental Decision no. 209 from 19.05. 1997 regarding approval of Organizational and Functioning Regulation of Governmental Commission for Defense Against Disasters;
- Governmental Decision no. 635 from 18.08.1995 regarding intelligence and decision transmitting of information for defense against disasters;
- Governmental Urgency Ordinance no. 179/26.10.2000 regarding passing of civil protection military units from MoD. to Ministry of Interior, and modification of civil protection law no. 106/1996, of Governmental Ordinance no. 47/1994 regarding defense against disasters and of Governmental Urgency Ordinance no. 14/2000 regarding constitution
- Law no. 448/18 July 2001 for approval of Governmental Urgency Ordinance no. 14 from 2000 regarding constitution of civil protection detachments for intervention in case of disasters;
- Governmental Urgency Ordinance no. 88/2001 regarding constitution, organization and functioning of the public communitarian services for emergencies, approved, by Law no. 363/2002;
- Governmental Decision no. 761/18.07.2002 regarding approval of the programs for application of Governmental Ordinance no. 88/2001 regarding constitution, organization and functioning of the public communitarian services for emergencies;
- Governmental Urgency Ordinance no. 291/29.12.2000 regarding establish of the measures referring to the organization and functioning of some ministries;
- Governmental Urgency Ordinance no. 63/2003 regarding organization and functioning of Ministry of Administration and Interior;
- Governmental Urgency Ordinance no. 64/2003 for establish of some measures regarding constitution, organization and reorganization or functioning of structures from government, ministries and other specialty organisms from central public administration and some public institution;
- Governmental Decision no. 725/2003 regarding organizational structure of Ministry of Administration and Interior;
- Decision 57 from 30.03.1998 Instructions regarding organization and logistics of civil protection inspectorates, commissions and detachments;
- Governmental Decision no. 371 from 1993 regarding giving of humanitarian relief to displaced population in case of emergencies;
- Governmental Decision no. 222 from 19.05.1997 regarding organization and conduct of evacuation of population;
- Law nr.82/92, republished in 1997 (M.O.- 354/97) regarding stat reserves;
- Law no. 132/1997, regarding commandeering of goods and services for public interest;
- Law of environmental protection no. 137/1995 – republished in 17.02 2000;
- Governmental Ordinance no. 59 from 22 August 2003 regarding some goods except from border taxes;
- Governmental Urgency Ordinance 1 from 21 January 1999 regarding siege and

- emergency status regime;
- Decree no. 224/11 May 1990 for ratification of the additional protocols I and II to the Geneva Conventions, from 12 August 1949;
- Law 14 from 24 februarie 1995 for ratification of the Convention regarding cooperation for protection and durable use of Danube river (Convention for protection of Danube river) signed to Sofia at 29 June 1994;
- Law 97 from 16.09.1992 for ratification of the Convention from Romanian Govern and Bulgaria Govern regarding collaboration in environmental protection field;
- Law 98 from 16.09.1992 for ratification of the Convention regarding protection of Black Sea against pollution;
- Decree 140 from 26.07.1993 ratification of the Convention from Vienna regarding protection of the ozone layer, adopted on 22.03.1985, of the Montreal Protocol from 16.09.1986 and of the Amendment to the Montreal Protocol – London 27-29.06.1990;
- Law 84 from 03.12.1993 regarding adhesion of Romania to the Convention from Vienna regarding protection of the ozone layer, adopted on 22.03.1985, of the Montreal Protocol from 16.09.1986 and of the Amendment to the Montreal Protocol – London 27-29.06.1990;
- Law 30 from 26.04.1995 regarding ratification of the Convention regarding protection and use of the trans-boundary flowing waters and international lakes, concluded to Helsinki la 17 Mars 1992;
- Law 22 from 22.02.2001 regarding ratification of the Espoo Convention from 25.02.1991- evaluation of the impact on environment in the trans-boundary context;
- Law 11 from 8 January 1998 for ratification of the Agreement between Romanian Govern and Bulgaria Govern regarding collaboration in civil protection, during peace, signed to Bucharest on 18 January 1996;
- Law 153 from 11 October 1999 regarding approval of the Governmental Ordinance no. 8/1999 for ratification of the Agreement between governs of the states participating to the Economical Cooperation of Black Sea for collaboration in intervention and emergency response in case of natural or man-made disasters, signed to Soci on 15 April 1998;
- Law 61 from 24 April 2000 Agreement between North Atlantic Treaty states and the other states participating to Partnership for Peace regarding status of their forces, signed to Bruxelles on 19 June 1995;

B) LAWS REGARDING NATURAL DISASTER

- Governmental Decision no. 447 from 10 April 2003 for approval of the methodological norms regarding elaboration mode and content of the floods and landslides risk maps;
- Law no. 381 from 13 June 2002 regarding giving of compensations in case of natural calamities in agriculture;
- Governmental Decision no. 1036 from 18 October 2001 for approval of the Protocol between Ministry of Interior from Romania and FEMA / USA regarding cooperation for prevention and intervention in natural or technological emergencies, signed at Bucharest on 22 January 2001;
- Law no. 575 from 22.10.2001 regarding approval of national territory arrange plan;
- Governmental Ordinance regarding reduction of the seismic risk of the existing buildings, no. 20/1994, last revue 1999 and Application Methodology;
- Governmental Decision no. 638 from 5 August 1999 regarding approval of the Regulation for defense against floods, dangerous meteorological phenomena and of the accidents to the dams and of the frame norm on endowment with materials and means for defense against floods and water ice;
- Common Order of the Govern General Secretary and Ministry of Public Works and Arrange of the Territory no. 770/26.09.1997 and no. 6173/NN/26.09.1997 regarding stocktaking of the existent building status;
- Governmental Decision no. 210 from 10 May 1997 regarding approval of the Regulation

on organization and functioning of the central commission for defense against floods, dangerous meteorological phenomena and of the accidents to the dams;

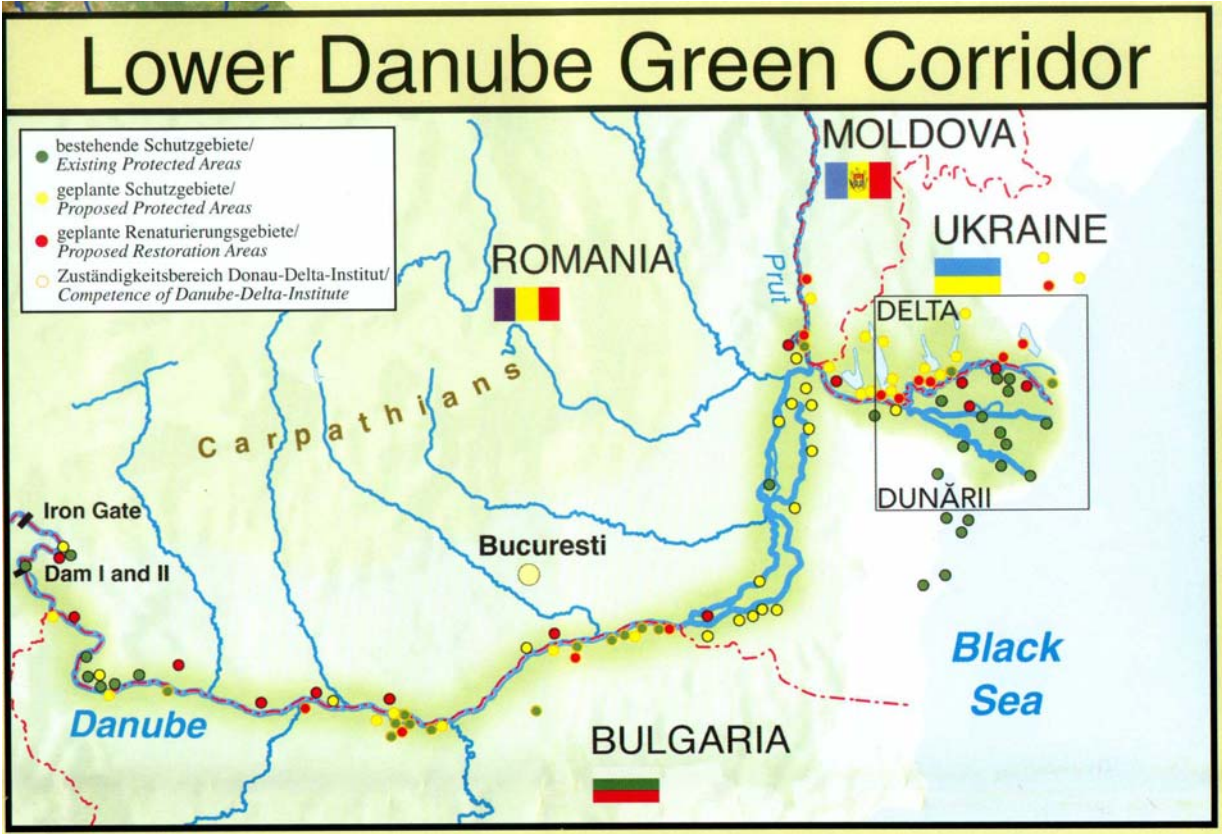
- Law no. 107/1996 - Law of waters;
- Governmental Decision no. 438/1996, regarding approval of the Regulation on organization and functioning of the central commission for prevention and defense against seismic effects and landslides;
- Law no. 10/1995 regarding quality in building;
- Governmental Decision no. 486/1993 regarding rising of the exploitation safety of the buildings and installations which represent a risk source;
- Law no. 75 from 14 December 1991 regarding sanitary - vet Law;
- Governmental Decision no. 1364/2001 for application of the Governmental Ordinance regarding reduction of the seismic risk of the existing buildings, no. 20/1994, last revue 1999;
- Governmental Decision no. 372/2004 for approval of the National Program for Seismic Risk Management;
- Governmental Decision no. 382/2003 for approval of the methodological norms regarding minimal demanding in content for territory arrange and urbanism documentation for natural risk areas;

C) LAWS REGARDING TECHNOLOGICAL DISASTERS

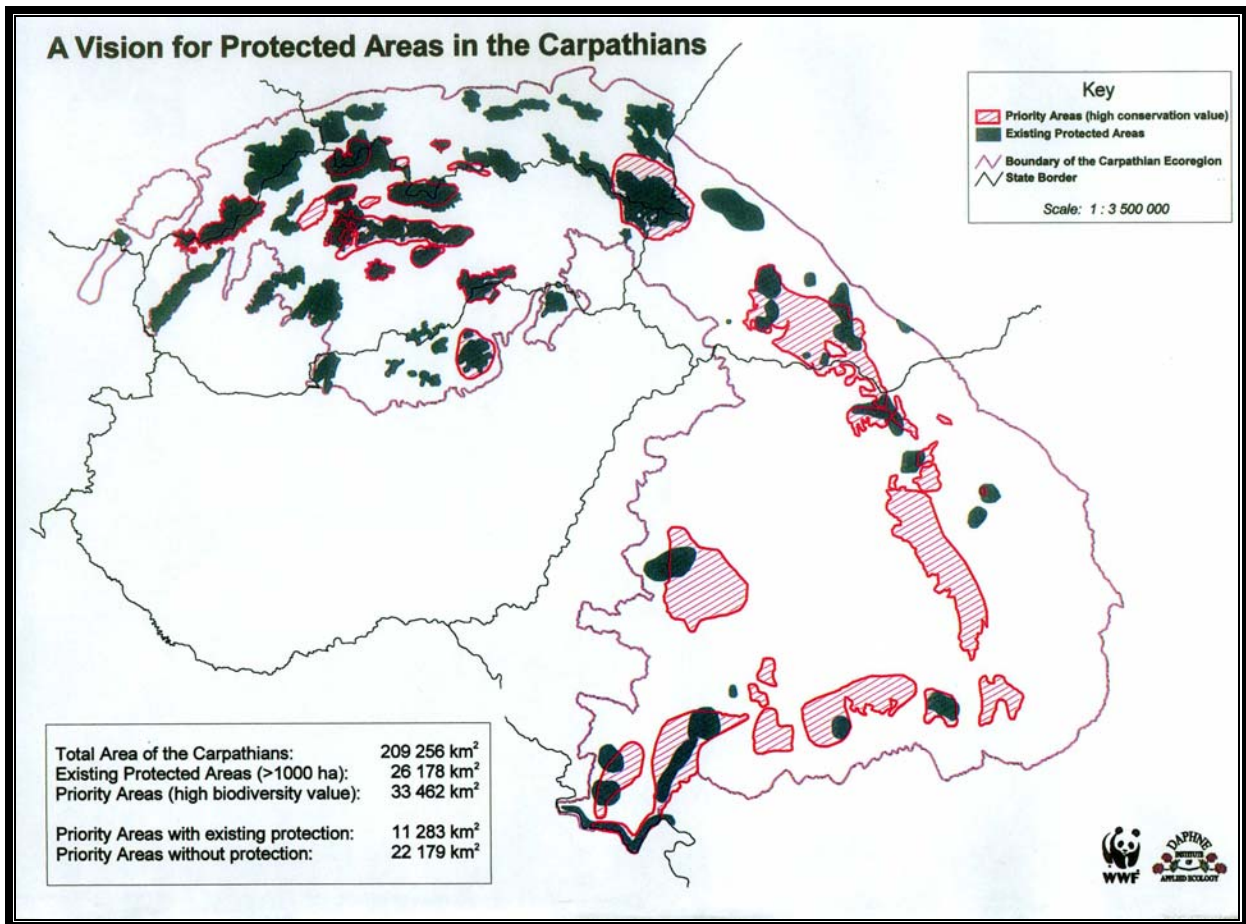
- Decree no. 253 from 6.07.1979 for ratification of the Convention regarding interdiction of improving, production and stocking of biological weapons and toxins and regarding its destruction open for signing to London, Moscow and Washington on 10 April 1972;
- Decree no. 466 from 28.12.1979 regarding toxic substances regime;
- Order no. 43 from 07.02.1980 regarding approval of the list containing toxic substances at the Decree no. 466;
- Departmental Instructions from 05.11.1986 for elaboration of the chemical alarm and intervention in case of danger and explosion plan;
- Law no. 6 from 25.01.1991 for acceding of Romania to the Basel Convention regarding control of the dangerous damp goods transport;
- Law no. 8 from 25.01.1991 regarding ratification of the Convention on trans-boundary atmospheric pollution on long distances, Geneva 13.11.1979
- Instructions no. 1420 from 03.08.1992 protection and intervention in case o chemical accident;
- Law no. 31 from 18.05.1994 for acceding of Romania to the European Agreement regarding international road transport of the dangerous merchandises (A.D.R.), signed to Geneva in 1957;
- Decree no. 96 from 09.06.1994 for ratification of the Convention regarding interdiction of chemical weapons signed to Paris on 13.01.1993;
- Governmental Ordinance no. 485 from 22.08.1995 regarding Regulation for organization and functioning of the warning system in case of accidental pollution of the waters in Romania;
- Law no. 126 from 27.12.1995 regarding explosive materials regime;
- Law no. 56 from 1997 for application of the Convention regarding interdiction of development, production, stocking and use of the chemical weapons and for its destruction;
- Governmental Decision no. 730 from 10.11.1997 regarding Norms on loading limits of the used waters with pollutants evacuees in water resources;
- Governmental Ordinance no. 6445/IO from 30.10.1997 Norms regarding evacuees conditions for used waters in localities drainage networks;
- Governmental Ordinance no. 278 from 11.04.1997 Elaboration of the plans for prevention and confuting of the accidental pollution to the potential polluting waters

uses;

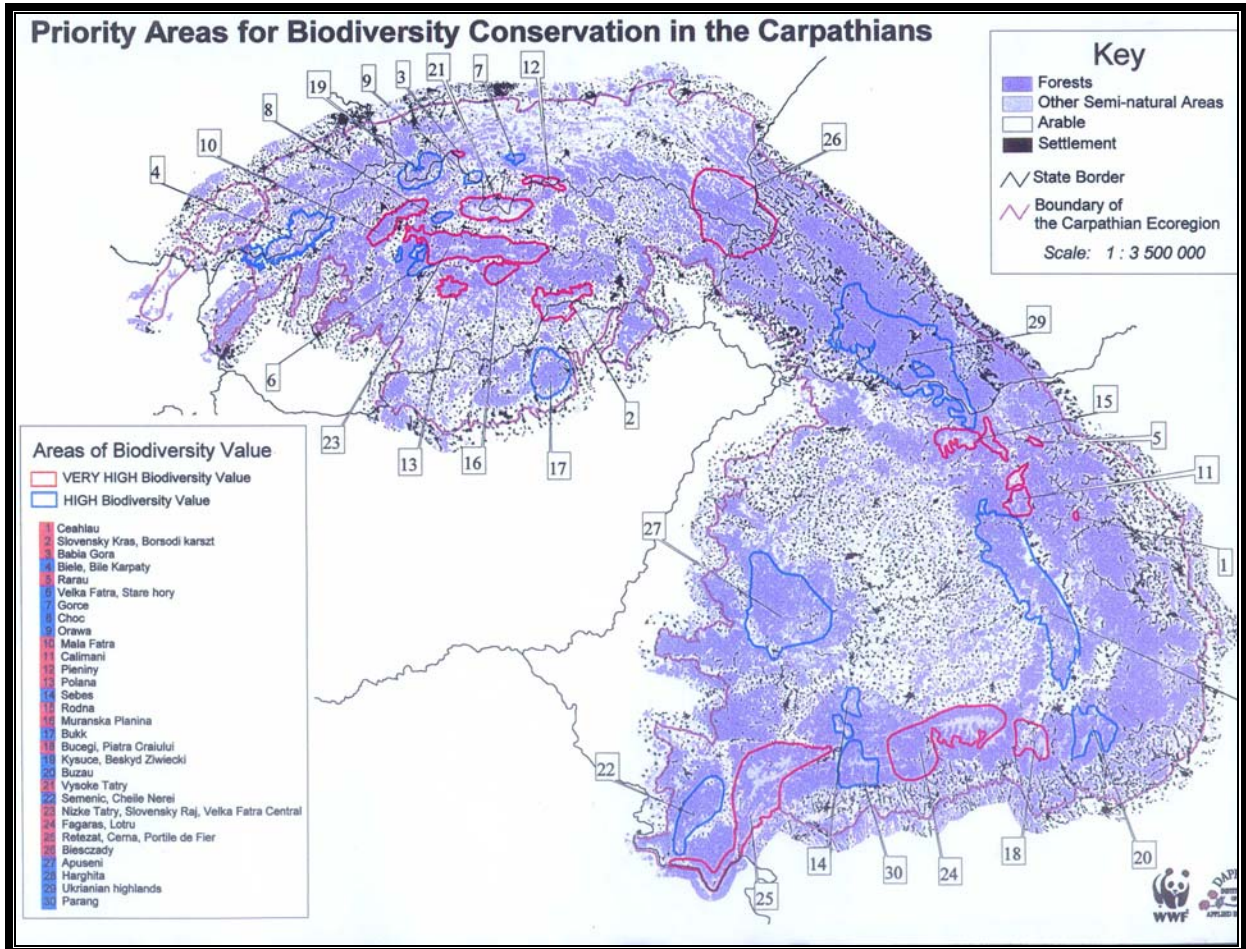
- Governmental Ordinance no. 756 from 30.11.1997 Regulation of the environment pollution evaluation;
- Governmental Ordinance no. 14 from 27.01.2000 for acceding of Romania to the international Convention regarding preparedness, response and cooperation in case of pollution with hydrocarbons, adopted to London 30 November 1990;
- Governmental Urgency Ordinance no. 34 from 21.03.2002 Integrate Pollution Prevention Control;
- Governmental Decision no. 674 from 03.07.2002 regarding approval of the Regulation of organization and functioning of the central commission for big explosion on and under ground, chemical accidents and large disables to highway urban pipeline networks.
- Order no. 860 from 26.09.2002 for approval of the evaluation procedure on environmental impact and for giving the environment agreement;
- Order no. 863 from 26.09.2002 regarding approval of the methodological guidance for the evaluation of the environmental impact;
- Governmental Decision no. 95 from 25.02.2003 regarding the control of the activities with major accidents danger involving dangerous substances;
- Law no. 92 from 18.03.2003 for acceding of Romania to the Convention regarding trans-boundary effects on long distances of the industrial accidents, adopted to Helsinki on 17 Mars 1992;
- Governmental Decision no. 541 from 17.05.2003 regarding establishing in the air of some pollutants coming from big burning installations;
- Governmental Decision no. 699 from 12.06.2003 regarding establishing of some measures for emission limiting volatile organic compounds coming from using of organic solvents in some activities and installations;



DANUBE GREEN PASSAGE



PROTECTED AREAS IN CARPATHIANS MOUNTAINS



PRIORITY AREAS FOR BIODIVERSITY CONSERVATION IN THE CARPATHIANS