

Strasbourg, 17 February 2010

AP/CAT (2010) 1 Bil.prov.

**ACCORD EUROPEEN ET MEDITERRANEEN
SUR LES RISQUES MAJEURS
(EUR-OPA)**

**EUROPEAN AND MEDITERRANEAN
MAJOR HAZARDS AGREEMENT
(EUR-OPA)**

*RESEAU DES CENTRES EURO-MEDITERRANEENS SPECIALISES DE
L'ACCORD EUR-OPA RISQUES MAJEURS*

**ACTIVITES ORGANISEES EN 2009 DANS LE CADRE DE LA
SUBVENTION ANNUELLE**

*NETWORK OF SPECIALISED EURO-MEDITERRANEAN CENTRES OF THE EUR-OPA MAJOR
HAZARDS AGREEMENT*

**ACTIVITIES CARRIED OUT IN 2009 WITHIN THE ANNUAL GRANT
FRAMEWORK**

Tables des matières/ Table of Contents

ALGERIA / ALGÉRIE	4
<i>CRSTRA - CENTRE EURO-MEDITERRANEEN DE RECHERCHE SCIENTIFIQUE ET TECHNIQUE REGIONS ARIDES/ EURO-MEDITERRANEAN CENTER ON SCIENTIFIC AND TECHNICAL RESEARCH IN ARID ZONES (BISKRA)</i>	4
ARMENIA / ARMENIE	6
<i>ECRM- EUROPEAN INTERREGIONAL SCIENTIFIC AND EDUCATION CENTRE ON MAJOR RISKS MANAGEMENT / CENTRE EUROPEEN INTERREGIONAL DE FORMATION SUR LA GESTION DES RISQUES (YEREVAN)</i>	6
AZERBAIJAN / AZERBAÏDJAN	13
<i>ECMHT - EUROPEAN TRAINING INFORMATION CENTRE / CENTRE EUROPEEN DE FORMATION ET D'INFORMATIONS (BAKU)</i>	13
BELGIUM / BELGIQUE	18
<i>ISPU - HIGHER INSTITUTE OF EMERGENCY PLANNING / INSTITUT SUPERIEUR DE PLANIFICATION D'URGENCE (FLORIVAL)</i>	18
BULGARIA / BULGARIE	19
<i>CSLT - EUROPEAN CENTRE FOR RISK PREVENTION / CENTRE EUROPEEN A LA PREVENTION DES RISQUES (SOFIA)</i>	19
CYPRUS / CHYPRE	21
<i>BE-SAFE-NET – EUROPEAN CENTER FOR DISASTER AWARENESS THROUGH INTERNET / CENTRE EUROPEEN POUR LA SENSIBILISATION AUX DESASTRES A TRAVERS INTERNET (NICOSIA)</i>	21
FRANCE	23
<i>CSEM – CENTRE SISMOLOGIQUE EURO-MÉDITERRANÉEN / EUROPEAN MEDITERRANEAN SEISMOLOGICAL CENTRE, (BRUYÈRES-LE-CHATEL)</i>	23
<i>CERG - EUROPEAN CENTRE FOR SEISMIC AND GEOMORPHOLOGICAL HAZARDS / CENTRE EUROPEEN SUR LES RISQUES GEOMORPHOLOGIQUES (STRASBOURG)</i>	24
GEORGIA / GEORGIE	28
<i>GHHB - EUROPEAN CENTRE ON GEODYNAMICAL RISKS OF HIGH DAMS / CENTRE EUROPEEN SUR LES RISQUES GEODYNAMIQUES LIES AUX GRANDS BARRAGES (TBILISI)</i>	28
GREECE / GRECE	32
<i>ECPFE - EUROPEAN CENTRE ON PREVENTION AND FORECASTING OF EARTHQUAKES / CENTRE EUROPEEN SUR LA PREVENTION ET LA PREVISION DES TREMBLEMENTS DE TERRE (ATHENS)</i>	32
<i>ECFF - EUROPEAN CENTRE ON FOREST FIRES / CENTRE EUROPEEN SUR LES FEUX DE FORETS (ATHENES)</i>	33
LUXEMBURG / LUXEMBOURG	34
<i>ECGS - EUROPEAN CENTRE FOR GEODYNAMICS AND SEISMOLOGY / CENTRE EUROPEEN DE GEODYNAMIQUE ET DE SISMOLOGIE (WALFERDANGE)</i>	34
FORMER YUGOSLAV REPUBLIC OF MACEDONIA/ EX-REPUBLIQUE YOUGOSLAVE DE MACEDOINE	37
<i>ECILS - EUROPEAN CENTRE ON THE VULNERABILITY OF INDUSTRIAL AND LIFELINE SYSTEMS / CENTRE EUROPEEN SUR LA VULNERABILITE DES SYSTEMES ET RESEAUX INDUSTRIELS (SKOPJE)</i>	37
MALTA / MALTE	38
<i>ICOD - EURO-MEDITERRANEAN CENTRE ON INSULAR COASTAL DYNAMICS / CENTRE EUROPEEN DE LA DYNAMIQUE COTIERE INSULAIRE (LA VALETTA)</i>	38
MOLDOVA	39
<i>ECMNR - EUROPEAN CENTER FOR MITIGATION OF NATURAL RISKS / CENTRE POUR LA REDUCTION DES RISQUES NATURELS (CHISINAU)</i>	39
MORROCO / MAROC	40

<i>CEPRIS – EURO-MEDITERRANEAN CENTER FOR EVALUATION AND PREVENTION OF SEISMIC RISK / CENTRE EURO-MEDITERRANEEN SUR L’EVALUATION ET LA PREVENTION DU RISQUE SISMIQUE (RABAT)..</i>	<i>40</i>
PORTUGAL.....	42
<i>CERU - EUROPEAN CENTER ON URBAN RISKS / CENTRE EUROPEEN SUR LES RISQUES URBAINS (LISBON)</i>	<i>42</i>
ROMANIA / ROUMANIE	43
<i>ECBR - EUROPEAN CENTRE FOR REHABILITATION OF BUILDINGS / CENTRE EUROPEEN POUR LA REHABILITATION DES BATIMENTS, (BUCHAREST).....</i>	<i>43</i>
RUSSIAN FEDERATION / FEDERATION DE RUSSIE	45
<i>ECNTRM- EUROPEAN CENTER FOR NEW TECHNOLOGIES IN RISK MANAGEMENT / CENTRE EUROPEEN DES NOUVELLES TECHNOLOGIES POUR LA GESTION DES RISQUES (MOSCOW).....</i>	<i>45</i>
SAN MARINO / SAINT MARIN	50
<i>CEMEC- EUROPEAN CENTER FOR DISASTER MEDICINE/ CENTRE EUROPÉEN POUR LA MÉDECINE DE CATASTROPHE (SAN MARINO)</i>	<i>50</i>
TURKEY / TURQUIE.....	52
<i>AFEM - EUROPEAN NATURAL DISASTERS TRAINING CENTRE / CENTRE EUROPEEN DE FORMATION SUR LES RISQUES NATURELS (ANKARA).....</i>	<i>52</i>
UKRAINE	57
<i>TESEC - EUROPEAN CENTRE OF TECHNOLOGICAL SAFETY / CENTRE EUROPEEN DE SECURITE TECHNOLOGIQUE (KIEV)</i>	<i>57</i>

ALGERIA / ALGÉRIE

CRSTRA - Centre Euro-Méditerranéen de recherche scientifique et technique régions arides/ Euro-Mediterranean Center on scientific and technical research in arid zones (Biskra)

- I. Participation à la réunion des directeurs des centres spécialisés organisée par l'Accord à Paris le 2 et 3 Février 2009.
- II. Participation au groupe de travail sur le rôle des autorités locales et régionales dans la prévention et la gestion des risques :
 1. Compte tenu des recommandations de la réunion des directeurs, de la réunion du groupe (décembre 2008) et de l'intérêt que nous accordons à ce genre d'initiatives, nous avons poursuivi le travail sur le document issu des différentes contributions des réunions du groupe pour enrichir les parties concernant l'Algérie et transmettre une dernière version à la coordinatrice du groupe (ISPU) en juillet.
 2. A ce titre, nous avons participé à la réunion du groupe tenue le 11 et 12 Juin 2009 (Paris). Au cours de laquelle nous avons présenté un exposé intitulé : « *Mieux connaître les Risques c'est Mieux les Prévenir* »
- III. Participation au groupe de travail sur l'éducation/Sensibilisation aux risques ayant pour objectif l'élaboration du Site « Be Safe Net » domicilié à Chypre.

A ce titre, nous avons pris part à la réunion de Paphos (28 et 29 Avril 2009 Chypre) au cours de laquelle ont été discutés :

- Le contenu scientifique,
- L'identification des différents risques y compris ceux peu connus tels que l'ensablement,
- Les aspects techniques relatifs au fonctionnement du site
- La terminologie (glossaire)
- La gestion des langues pour donner plus d'accessibilité au site.

Et enfin, le partage des tâches pour la tenue de la 1^{ère} page présentant les risques et l'approvisionnement du site en données et illustrations diverses y compris des films documentaires. Dans ce cadre, nous avons procédé à l'illustration et à la traduction en 2 autres langues (Arabe et Anglais) notre première contribution au questionnaire relatif à la sécheresse, la désertification et aux changements climatiques, nous avons également préparé une page illustrée concernant les inondations.

Par ailleurs, l'ouvrage relatif à l'expérience pilote sur les risques liés aux changements climatiques a eu une large diffusion au cours de l'année 2009 en régions arides et semi arides à travers les autorités locales (22 wilayate) et à raison de 200 exemplaires par wilaya destinés aux bibliothèques des écoles, des APC (mairie), de l'environnement, de la culture . . .

Toujours dans le cadre de nos activités d'éducation, sensibilisation aux risques, nous avons traduit l'ouvrage (en question en anglais le CD en 03 langues (anglais, arabes et français) a été distribué lors de la réunion de Paphos. Il peut être aussi mis sur le site du Be Safe Net.

Ce document est également diffusé lors de rencontres scientifiques organisées par le centre, et aussi lors de visites pédagogiques au profit du groupe d'élèves (Clubs Verts) que le centre accueille annuellement avec beaucoup d'intérêt afin de les informer de les sensibiliser et de véhiculer à travers eux une culture des risques environnementaux.

A la fin décembre 2009, le centre a reçu un groupe de 25 élèves du lycée Draria d'Alger pour deux journées, une au niveau des structures du centre et notamment à la station bioressources d'El Outaya, l'autre en milieu agricole encadrée par des chercheurs de la station Bioressources.

- IV. Au cours du mois de mars, le centre a reçu deux experts de l'accord chargés de l'Audit du centre pour la période 2005-2008.

- V. Lors des séances de travail tenues avec les experts nous avons présenté un exposé concernant les missions, les stratégies de recherche mise en place, les programmes à court, moyen et long terme ainsi que l'organisation scientifique et administratives du Centre.

Par ailleurs, nous avons participé à la rencontre de Murcia le 26 et 27 Octobre 2009 sur les changements climatiques avec une conférence intitulée « *Desertification: a threat to both shores of the Mediterranean* »

- VI. L'année 2009 a été clôturée par un atelier international de formation sur les risques majeurs et les catastrophes naturelles. La rencontre a regroupé des partenaires de différents horizons (les autorités locales, des scientifiques, des gestionnaires, des hommes de terrain notamment la protection civile, le croissant rouge, l'éducation. . .) impliqués dans les risques et a été animée par des personnes ressources sur les différents risques naturels d'origine géomorphologiques et météorologiques avec des études de cas (ci-joint le bilan de l'atelier en question).

ARMENIA / ARMENIE

ECRM- European Interregional Scientific and Education Centre on major risks management / Centre européen interrégional de formation sur la gestion des risques (Yerevan)

1. TRAINING IN FIRST AID SKILLS WITH ASSISTANCE OF THE ARMENIAN RESCUERS-INSTRUCTORS TRAINED WITHIN THE FRAMEWORK OF THE ARMENIAN–FRENCH JOINT PROJECT WITH INVOLVEMENT OF THE ECTR AND API.

Global objectives

- Training population in first aid skills and elements of rescue operations according to the European methodic.
- Organization of training courses for training first aid specialists as well as for training monitors (second grade instructors) for outmost, isolated, mountainous, not easily accessible regions of the Republic of Armenia, that in winter time and also in emergencies are often found to be isolated from the relevant Republic regional centres.
- Organization of training courses for training first aid specialists as well as for training monitors (second grade instructors) and the first grade instructors for training the monitors from the students – members of the Alpine Club of Yerevan State Medical University.

The trained monitors (second grade instructors) and first grade instructors are assigned first of all to organize wide scale training of the students of State Medical University in practical skills of first aid and basis of rescue operations.

In this way we will manage to resolve two significant tasks:

- To have in the Republic a great number of specialists in administering first aid and moreover possessing the basis of rescue operations who can be involved at major large scale emergencies as well as who can show qualified first aid to victims at possible emergencies bearing everyday nature.
- They by mustering skills in first aid and being the first year students of State Medical University have an opportunity while studying at the University both to: strengthen their practical knowledge through acquisition of the practical ones in the disaster medicine area and extend and improve them at the course of being able to apply this knowledge on practice. More over those students who will show the best grades will be trained to the rang of monitors and first grade instructors, and already thereby will be included into a large scale process of training the various segments of population in the Republic in skills of administering first aid.
- Training in first aid and elements of rescue operations of the corresponding regular subdivisions of peacekeeping battalion of the Republic of Armenia.
- Organization training in first aid skills basing on the European methodic for the rescuers of special rescue detachments and the members of rescue associations of students and volunteers in close cooperation with the specialists of the Rescue Service of Armenia preparing monitors, first and second grade instructors.

Results obtained

1. In recent years within the framework of the present Program, special attention was focused on the organization of training courses for training first aid specialists as well as for training monitors (second grade instructors) for outmost, isolated, mountainous, not easily accessible regions of the Republic, that in winter time and also in emergency situations are often found to be isolated from the relevant Republic regional centres.

If in 2006 special attention was focused on the organization of training courses in outmost, isolated, mountainous, not easily accessible regions of the Republic, in 2007 the European Interregional Educational Centre for training rescuers concentrated its attention on organizing training in first aid skills basing on the European methodic for the rescuers of special rescue detachment, the members of rescue association of students and telephone operators, in particular:

2. In 2008 the training first aid courses as well as theoretical and practical training courses on rescue operations basis were also organized for the below other two civil groups.

The first trainees' group composed 18 members from the YMCA public organization (Union of young Christians, aimed at educational support to children) for ages 15-25, seven people from which had a university degree. The teaching course was organized from 16 June to 12 July.

The course participates who showed good results at exams were awarded the European certificates with the right to administer first aid; the 6 best among them later will be trained for monitors (the second grade instructors with the right to train first aid to other people).

The children from the children Home “Nadejzda”, the Gumry city composed the second group. The training was provided to 16 students for ages 14-18 (grades 8, 9 and 10). The 11 students who successfully passed the exams were awarded the European certificates with the right to administer first aid. The teaching course was organized from 21 July to 16 August.

3. In 2009 the training first aid courses were also organized for the group of 8 students, which had a university degree. The teaching course was organized in Shirak region of Armenia by the financial support of the « KAZA » foundation.

2. ENABLING THE COORDINATION OF ACTIVITIES IN A DISASTER RISK REDUCTION AREA IN THE REPUBLIC OF ARMENIA.

Global objectives

- Acknowledging top officials, specialists and wide public in the Republic of Armenia with key priorities and most important documents available in the field of disaster risk reduction, civil protection and sustainable development being established and adopted by relevant international organizations in the most significant Conferences and Seminars.
- Acknowledging top officials and specialists from relevant Ministries and Departments of Armenia, regional governments and local self-governmental bodies, along side with the school community officials and other educational, scientific, economical and cultural community leaders with basic documents and key priorities adopted in the EUR-OPA Major Hazards Agreement’s Ministerial Meetings
- Preparing proposals on meeting strategic goals and choosing priority directions to act for the Government of the Republic of Armenia and Emergency Management Ministry in the field of disaster risk reduction and sustainable development (within a common policy pursued by international communities in the above area),
- Participating in the organization and holding in the Republic of Armenia of international and national, regional and local Conferences, Workshops, Round Tables, teaching and practical courses, in particular those held at a community level.

Results obtained

1. The draft variant of the proposals on meeting strategic goals and choosing priority directions to act for the Government of the Republic of Armenia and Emergency Management Administration in the field of disaster risk reduction and sustainable development for the next ten years within the policy pursued in the above area by the International Community (including preparing the proposals on establishing a National Platform on disaster risk reduction) have been prepared.

In particular, there was analyzed the text of “The Standard Rules of the equalization of opportunities for people with disabilities” (adopted by the UN’s General Assembly) in Appendix to Resolution 48/96 of 20 December 1993 and there were given some suggestions to supplement the texts of the Standard Rules addressing the above direction.

The analyses outcomes and some suggestions were included in the texts of the ECRM presentation :” Disaster risk reduction and the protection of vulnerable people: preparedness and preventive measures” made during the Workshop “Human rights in disasters: search and rescue operations in disasters, especially for vulnerable people” (5-6 November 2009, Athens, Greece), organized in cooperation with the EUR-OPA, and were shortly reflected in the “Activity Report 2009” for the Project under consideration : “National and Municipal Campaigns” (Activity 4, Results Obtained in 2009. Introduction).

2. The Recommendation 1829 (2008) on “Trans-frontier cooperation” of the Council of Europe’s Parliamentary Assembly has been translated into Armenian.

3. The director of ECRM as a representative of the Emergency Management Ministry was included into the group of experts of the Security Council under the President of the Republic of Armenia for building Technical safety concept.

4. The director of ECRM has participated in Task Force Group Meeting “To foster better radiological protection and information for populations living in areas that might be affected in the case of a nuclear or radiation accident” (2-4 September, 2009, Kiev, Ukraine) and Meeting of the Working Group “Role of local and regional authorities in Major Hazard Management” (11-12 June, Paris).

3. HARMONIZATION of the legislations of the European Union (THE SECONDARY LEGISLATION), member – states of the European Union and the Republic of Armenia in the area of civil protection, prevention of emergencies and their response.

Global objectives

- Harmonization (rapprochement) of the legislations of the European union (the secondary legislation), member – states of the European union and the Republic of Armenia in the area of civil protection, prevention of emergencies and their response.
- Evaluation of the extent which the legislation of the Republic of Armenia in the above area conforms to the legislation of the European Union:
- Development of proposals referring to the harmonization of the legislations of the Republic of Armenia and the European Union in the area of Civil Protection under consideration through alleging the legislative Acts that is subject to alterations and additions and those that have to be newly adopted.
- Acknowledgement with legal tools and the best practices to apply effectively the provisions of relevant international documents in the field of awareness raising of the local communities about disaster risks, transparency and democracy in the decision making.

Results obtained

1. The updated variant of the “Constitution and safety”, targeted for the government and the relevant authorities, has been completed, developed, edited and submitted for publication.
2. The Recommendation 1829 (2008) on “Trans-frontier Co-operation” of the Parliamentary Assembly of the Council of Europe in accordance with the Decision of the Committee of Permanent Correspondents (AP/CAT (2008) 12) of the EUR-OPA Major Hazards Agreement regards the above document has been translated into Armenian and presented to the Emergency Management Ministry:
3. The preliminary variant of Comparative analyses of the existence of provisions on responsibilities by local authorities for adequate informing the communities about disaster risks, for responding to disasters, and for communicating the operators of the installations at risk (on the pattern of France, Spain, Sweden, Belgium, Ukraine) has been fulfilled.
4. The director of ECRM has participated in the Meeting of the Working Group “Role of local and regional authorities in Major Hazard Management” (11-12 June, Paris).
5. There was analyzed the text of “The Standard Rules of the equalization of opportunities for people with disabilities” (adopted by the UN’s General Assembly) in Appendix to Resolution 48/96 of 20 December 1993 and there were given some suggestions to supplement the texts of the Standard Rules addressing the above direction.

The analyses outcomes and some suggestions were included in the texts of the ECRM presentation :” Disaster risk reduction and the protection of vulnerable people: preparedness and preventive measures” made during the Workshop “Human rights in disasters: search and rescue operations in disasters, especially for vulnerable people” (5-6 November 2009, Athens, Greece), organized in cooperation with the EUR-OPA, and were shortly reflected in the “Activity Report 2009” for the Project under consideration : “National and Municipal Campaigns” (Activity 4, Results Obtained in 2009. Introduction).

4. DEVELOPING AND INSTITUTING THE “SAFE LIFE ACTIVITIES BASIS IN EXTREME SITUATIONS” MANUAL FOR EXPERIMENTAL TEACHING IN THE SCHOOLS AND OTHER EDUCATIONAL ESTABLISHMENTS OF THE REPUBLIC OF ARMENIA

Global objectives

The developing, deepening and final creating a Manual: “Safe life activities basis” that will underlie the forming in students a reasoned and responsible attitude to their personal safety and safety of other people, to their ability to possess skills enabling to safe their lives and health under unfavorable, threatening circumstances and to provide assistance to the others. An ancient saying goes:” Be able to save yourself and the thousands around you will be saved”; in case you have failed to save yourself - try at least to improve the protection.

Forming a person, who is, first of all, safe for himself, surrounding people, the environment and who is oriented towards kindness, creation and development and able to protect himself, a social community and the environment against external threats.

Results obtained

In 2009 the preliminary variant of the Methodology for teaching the course « Safe life activities basis» for secondary school teachers has been created.

At present, the draft variants of the English translation of the following information materials for municipalities at special risk have been prepared:

- A manual for the population on how to act when *r a d i a t i o n p o l l u t i o n* is real or seems imminent (the priorities for action to be undertaken by the population)
- A manual for the population on how to act when *a f l o o d* is real or seems imminent (the priorities for action to be undertaken by the population)

- A manual for the population on how to act when *chemical pollution* is real or seems imminent (the priorities for action to be undertaken by the population)
- A manual for the population on how to act when *an earthquake* is real or seems imminent (the priorities for action to be undertaken by the population)

These materials intend to be included into the relevant chapters of the project Manual.

5. PROGRAM OF DEVELOPING AND INSTITUTING SPECIAL TESTS FOR SCHOOL ADMINISTRATION, TEACHERS AND STUDENTS' PARENTS TO ASSESS SAFETY OF SCHOOLS AND OTHER EDUCATIONAL ESTABLISHMENTS.

Global objectives

Developing and implementing special tests for school administration, teachers and parents to assess the extent, to which their school is secure, to undertake preventive measures to reduce risks as well as to respond adequately to an imminent natural and a man-made disaster or to a terrorist attack or to a threat of such an attack.

Results obtained

1. Created in *2006-2007* "The Program of developing and instituting special tests for school administration, teachers and students' parents to assess safety of schools and of other educational establishments" *has been profoundly reworked out and updated in 2008.*

The special Tests designed by us for school administration and teachers and tests and recommendations designed by us for parents are suggested as one of the effective mechanisms in ensuring preparedness of schools and other educational institutions for disaster risk reduction and awareness raising enabling the school staff, teachers, students and their parents to provide adequate response to any locally experienced emergency.

The Tests for school administration and teachers are targeted to identify the level to which their education establishment is ready to eliminate natural, man-made and other disaster risks and to respond adequately to them and also if it is threatened by a possible terrorist attack.

The Tests for parents enable them to highlight levels of a culture of safety, as well as of parents' preparedness to recognize a hazard and undertake preventive measures aiming to reduce risk of involving children into extreme situations and also to act rationally if an emergency incident occurred in their school.

Tests outcomes can serve a basis for designing recommendations on reducing vulnerability of schools, for improving preparedness of the school staff to act adequately in particular disaster and reviewing and updating the disaster preparedness Plans.

The translation of the paper into English has been completed. The work outcomes have been presented by the ECTR representative at the Euro-Mediterranean Workshop: "Disaster reduction at school-Building safer school communities" held on 29-30 October, 2007 in Paphos, Cyprus.

2. In the first semi year of **2008** the ECTR has reviewed and polished the basic tests and general recommendation for assessing and increasing safety for school administration and parents developed in 2006-2007. In the second semi year of **2008** the final version of the basic tests and general recommendations with the involvement of the Crisis Management Academy has been discussed, agreed upon and approved; pilot schools are to be chosen, the material has to be duplicated and disseminated to these schools.

3. In **2009** the ECRM has reviewed and polished the basic tests and general recommendations for accessing and increasing safety for school administration and parents, developed in 2006-2008. The final version of basic tests and general recommendations with the involvement of the State Academy of Crisis Management has discussed, agreed upon and approved.

6. TRAINING COMMUNITY COUNSELLORS (LOCAL PSYCHOLOGISTS) IN PROVIDING PSYCHOLOGICAL FIRST AID AND LONG TERM PSYCHOLOGICAL ASSISTANCE TO DISASTER VICTIMS, PARTICULARLY CHILDREN

Global objectives

The draft Program's contents include:

1. principles of psychological intervention immediately following the disaster
2. common needs and reactions immediately following the disaster and after disaster
3. children's reaction to disasters and their needs in being assisted psychologically immediately after the disaster
4. psychological first aid
 - creating the Manual on providing by local psychologists' psychological first aid immediately following the disaster and psychological assistance to disaster victims,

- developing the Methodology on training local psychologists in providing psychological first aid and long term psychological assistance
- 5. counseling: the guidelines for community counselors (local psychologists)
- 6. age specific symptoms of psychological trauma in children due to disasters- appropriate responses by the community counselors through providing psychological assistance to the most vulnerable groups of population, particularly, children
- 7. setting up national network of specialists to train local psychologists in providing psychological first aid and in long term psychological assistance to disaster victims.

As the outcomes of the Program there will be:

- created a first psychological aid **Manual** to train the community counselors
- developed a psychological first aid **Pocket-Book** for door-to-door distribution
- integrated psychological support **into national Laws and Regulations** to ensure that such support be part of emergency Plans.

Results obtained

1. Propounding of actuality and the need to develop a program ;
2. Description of short- and long-term objectives of the program (global objectives of the program and specific objectives for 2010);
3. Description of the short content and outcomes of the program;
4. Analysis of the existing materials concerning the program;
5. Presentation of the project as proposal for 2010 Coordinated Program.

7. “EXTREME PSYCHOLOGY”

Global objectives

Psychological impact of hazardous events manifests itself in different people differently; in some people a sense of danger can transform into a sense of doom, making him/her feel helpless, distressful and disable to act purposefully, including in ensuring one’s active protection ; whilst in others an endangering situation can generate overall elevation of spiritual and physical forces, increasing thereby his /her coping capacities.

It is evident that human safety under extreme circumstances in many respects will depend on his/her ability to maintain self-control.

This work is challenged to:

- create a universal teaching Manual in Armenian to teach methods of emotional-will- self - regulation
- serve as a Manual to teach rescuers, peace keepers, other specialists operating in extreme circumstances as well vast lays of the population, including school - and higher institution students
- form and develop in people (be it a rescuer, an adult or a young man) an ability to maintain his/her self-control
- teach to assess correctly of what is going around and be able to make adequate decisions which is provided only if this condition (maintaining one’ s self-control) is met.

Teaching the « Extreme psychology » is aimed at building a system that will impart special knowledge, skills and capacity needed for quick adjustment of oneself with new situation as well as for developing his/her inner readiness to deal with potentially most dangerous life activities.

Results obtained

In 2006-2007 a preliminary variant of brochure: “Extreme psychology” was created.

In 2008 some sections of the brochure were expanded, the work was updated and enriched.

The brochure’s brief contents:

Psychological basis (some recommendations):

2. Psychology of human conduct in times of crisis.
3. Some recommendations on how to maintain one’s self -control in a threatening situation.
4. Basic conduct rules for hostages
5. A list of some books on self -defense aspects .

In 2009 the preliminary variant of brochure « Extreme psychology » has been completed and sent for testing to the Rescue Training Chair of the State Crisis Management Academy and to some other educational institutions of the Republic of Armenia.

8. A PROGRAM OF CREATING A MEMORANDUM FIRST AID POCKET BOOK.

Global objectives

A *Memorandum first aid pocket book* is called to prevent the similar situations and to assist rescuers and volunteers if a need may arise to recollect the acquired knowledge. It is also likely to serve a guide for all those who having this manual at hand can be found into a role of helpers in different emergency situations ranging from natural disasters to other types of accidents and life traumas.

For achievement of the above mentioned the following objectives are to be realized :

- creating a *Memorandum first aid pocket book* that could be helpful in:
- recurrent repetition of the gained knowledge and the reinforcement of acquired skills
- specification of correct actions required if necessary to be fulfilled in a stress situation
- likely administration of first aid to a casualty even by a non trained/ nonprofessional witness .

For the sake of convenience and for making showing first aid easier it is necessary to create and institute a *Memorandum first aid pocket book* whose challenge is to serve:

- a normative document that will attach self confidence to act properly while rendering first aid through the precise identification of a human mandate, potentials, rights and duties, priority for action and consistency in decision making
- a teaching manual as a brief summery of lectures convenient for usage at any free time
- a “crab” containing elements enabling immediate search for urgent information.

Results obtained

The preliminary variant of «*Memorandum first aid pocket book*» has been completed and sent for testing to the Rescuers Training Chair of the State Crisis Management Academy and non-governmental rescue organizations.

“The *Memorandum first aid pocket book*” intends to incorporate all the situations where if first aid is lacking a human life might be at real risk .

The administering of first aid should be preceded by operative decision making. This first step will predetermine the achievement of success in preserving one’s life.

It is here where accompanied by all necessary details one will find recommended the basis of effective actions undertaken by a witness, technology of assessment of a situation and a state of a casualty and his/her severity score scheme imparting three successive stages:

- initial assessment of a state of an injured and a level of safety in a vicinity area (**no** more than 10 seconds)
- identification of signs putting a disaster victim’s life at higher risk that may cause his/her rapid death should first aid is not provided in due time
- revealing wounds and . signs of bone and joint injures (the length of this stage is not restricted ; what crucial - is to avoid causing pain to an injured).

While administering first aid, a hand-book’s structure and form will enable a direct and rapid shifting from one theme to another, screening one situation after another even in that especially difficult situation where one has to assist a disaster victim failing to acquire basic fist aid skills and attend first aid classes , but having this memorial hand-book available at hand.

9. A PROGRAM OF CREATING, IMPROVING AND EDITING THE “FIRST AID MANUAL” UNDERLYING THE ORGANIZATION OF TRAINING ON IT.

Global objectives

1. Speeding up a spread of knowledge and training practices to muster first aid skills in Armenia through teaching first aid basis and disseminating memorial hand-books:

- creating a **Universal teaching manual** in Armenia **to teach first aid skills**
- serving a Manual to train rescuers and other first aid providers as well as the vast majority of population, including school students and residents of distant hard- to reach alpine regions of Armenia .

The goal of teaching first aid through this Manual is to do the utmost to prevent a death of an injured on the scene as well as to reduce the number of lethal outcomes before the professional helpers arrive.

Prior the witness must be taught not only how to avoid panic in an established emergency situation, but also how to mobilize all his/her potential to make most rational decisions in times of a crisis.

For achievement of the above mentioned the following objectives are to be realized:

- scrutiny of all available European, Russian “Atlases on administering first aid”, manuals, text -books and brochures.
- making some comparison underlying the development and completing the improvement of the Manual itself through including into it all the positive that could be derived from other Atlases
- organizing workshops and running training courses for the rescue service and for other organizations to teach first aid

- training specialists to teach first aid , especially to residents of remote hard-to reach mountain regions of Armenia
- training first- and second grade instructors
- carrying out necessary training exercises to reinforce the acquired first aid skills
- testing of a Manual at the Chair of the State Crisis Management Academy of the Rescue Service of Armenia of the Emergency Management Ministry.

Results obtained

The preliminary variant of « First aid manual » has been completed and sent for testing to the Rescue Training Chair of the State Crisis Management Academy.

As it has already been mentioned in Report 2007, the Manual consists of 26 chapters and includes all likely situations being not compatible with life(this incorporates clinical death, a coma, an unconsciousness state, a traumatic shock, wounds, fractures, burns ect.) the way out of which is directly linked to those in the surrounding who can administer first aid.

No less important is that this Manual includes only those first aid practices preventing the death of an injured before an ambulance brigade arrives, that actually can be made applicable by any citizen.

The most effective might be a training complex comprising:

- text-books for self-instruction , instructions, leaflets, posters and tables
- robot-training, computer programs and video films
- standard first aid kits.

The aim of this training complex is to

- run successfully classes for audience targets varying in age, education background and perception ability as well as to involve also non professionals into a training process .

The teachers mustering first aid skills to perfection are excel in this respect.

An accident witness must learn for sure, that it is better to undertake the least measures to save someone's life than not to do anything at all.

Apart from life threatening situations listed above, the Manual provides some anatomical orientations required for the carrying out cardio-pulmonary resuscitation; identifies the traumas that may result in traumatic shock; states in what cases one is to call for an ambulance brigade; gives a scheme of rapid identification of burns area ect.

AZERBAIJAN /AZERBAÏDJAN

ECMHT - European Training Information Centre / Centre Européen de Formation et d'informations (Baku)

1. Round table "Organization of psychological service for the population in disaster medicine and emergency situations"

The organisations who participated were: Ministry of Emergency Situations, Azerbaijan State Medical University, Representation of Azerbaijan Red Crescent Society, Representation of International Society of Red Cross and Red Crescent

Forty persons participated at the "Round table" : representatives from appropriate ministries, well-known scientists, psychiatrists psychologists in the sphere of psychiatry and psychology; specialists on civil defense and emergency situations and experts. The reports, concerning the subject were listened and the relevant matters considered.

Presentations :

Prof. A.T.Bakhshaliyev (doctor of psychological science) : "About some distinctive and common features of psychiatry and psychology service in emergency situations";

Prof. K.A.Karimov (doctor of psychological science) : "Organization of psychological service for the population in extreme cases";

I.E.Mammadov (psychiatrist, chief doctor of 34-Nº hospital) : "Level of psychological assistance in emergency situations depends on organization level of psychological preparedness of the population";

V.N.Vakilov (candidate of medical sciences) : "The influence of earthquakes on psychological-emotional state of victims";

S. B. AKHUNDOVA (candidate of geological-mineralogy) : "People should know that they live in seismoactive zone...?";

S.S.GOZALOV (candidate of chemical sciences, senior lecturer) : "The role of psychological service in the activity of personnel during emergency situations";

A.T. QASIMOVA, (Scientific-research and education centre on labour and social problems) : "Orphans are always in emergency situations.;"

During the discussions, a wide analysis was given to the protection against emergency situations, human factor during risk management – psychological aspects, social-psychological side of the assistance to the population in ES, as well as appropriate recommendation were taken.

Based on the "Round table" materials, the book titled "*Organization of psychological service for the population in disaster medicine and emergency situations*" was prepared under the general leadership of prof. Habib Ojaqov, as well as Y.A.Qaramammadli (PhD candidate, senior lecturer, expert on ethics and aesthetic and social-psychology of the Center, I.E.Mammadov – psychiatrist, chief doctor of 34-Nº hospital) and as head advisors prof. A.T.Bakhshaliyev (doc. of psy.sns) and G.A.Babayev (international expert on emergency situations). Moreover, in compiling the book we used the information on psychological service to people subject to psychological shock during emergency situation taken place at different times and at different regions in the country. Official documents of the appropriate government bodies concerning struggle against epidemic at centres of accidents and populated areas, mass media. At the same time electronic information means and the information taken from meetings with foreign guests participating at the international symposiums and conferences are used too.

The book was printed in Azerbaijani and translated into English and is planned to be presented to readers in 2010, in particular all bodies engaged in struggle against emergency situations, especially medical organisations in regions, local executive authorities and municipalities.

2. International Scientific-practical conference "Rules on organization of civil defence and struggle against emergency situations in the rural areas – duties of municipalities and local executive authorities", 20-21 October 2009

The organisations who participated were: Ministry of Emergency Situations, Ministry of Ecology and Natural Resources, Ministry of Agriculture, Municipalities Work Centre, Ministry of Justice, Rural and Urban Municipalities Association of the Republic, Republic Farmers Union, Representatives of Local Executive Authorities, UN Azerbaijan Representation, Representation of International Society of Red Cross and Red Crescent, Representation of Azerbaijan Red Crescent Society, Azerbaijan Representation of Oxfam Humanitarian Organisation.

The representatives of emergency situations organizations of Russia Federation, Turkey and Iran took part at the scientific-practical conference. However though the travel expenses were covered, the invited representatives of the European Centers could not participate for the financial reason.

During the preparation to the scientific-practical conference – from July – to September, the working group consisting of Center’s employees and experts, in order to study the real situation in villages referring to the subject of the conference, were sent on an official journey to Ismailly, Khachmaz and Qusar districts located at foothills and mountainous areas. The working groups held surveys at municipalities and local executive authorities with the help of specific “Questionnaire” composed beforehand (3 pages enc.), they studied the real condition concerning organization of protection against emergency situations, met with public representatives and asked for their opinions and requirements.

Basic topics discussed at the scientific-practical conference:

Taking preventive measures against emergency situations, classification of natural disasters such as earthquake, landslide, flood intensifying in Azerbaijan territory, mainly in rural areas, according to the global climate change, organization of all rescue measures, roles of municipalities and local executive authorities in this sphere.

Real situation in the districts where the surveys were held, improvement of organization of struggle against emergency situations, report of the working groups concerning requests and proposals of the public from that districts (regions) in the field of organization of normal working conditions to municipalities and local executive authorities.

Organization of trainings for representatives of municipalities and local executive authorities on taking preventive measures against emergency situations, organization of rescue actions, informing the population, warning systems, preparation of instruction literature, role of the appropriate ministries, local executive authorities and nongovernmental organisations in it.

Prevention of emergency situations, reduction of harm, giving extra law to municipalities for organization of rescue in case of emergency, role of state bodies, Association of Rural Municipalities, Republic Farmers Union, as well as non-governmental organizations in the field of rendering technical and financial assistance.

Working out the recommendations – the final document of the conference on the basis of the suggestions made by participants of the scientific-practical conference (enc. 3 pages)

*Survey is held by European Training-Information Center in Baku
and "FOVQAL" Association non-governmental organization*

I n f o r m a t i o n
about natural-technological and social disasters occurred in _____ region for the last decade

№/№	Disaster type	Time of occurring (day, month, year)	Where (village, region)	Destructions and injuries		Damage	Losses	Preventive measures taken against emergency situations
				Schools, kindergartens, hospitals	Other spheres			
1	2	3	4	a	b	6	7	8
1	Earthquakes							
2	Flows							
3	Heavy rain							
4	Flood							
5	Hail							
6	Storm, strong Khazry							
7	Landslides							
8	Snowfalls							
9	Fire (forests, fields etc.)							
10	Radiation/chemical danger							
11	Social disasters (destruction of buildings, gas explosion etc.)							
12	Epidemics, as well as among animals and agriculture plants							

Addition:

Addition № 1 Members of Civil Defense (CD) headquarters

Addition № 2 CD plan of the district

Addition № 3 General number of population in rural areas

Addition № 4 The map on emergency situations of regions (or geographical map of the region)

1	2	3	4	5		6	7	8
				a	b			

Date of completion of the table :

Head of the District Civil Defense Headquarters

SURVEY
village (settlement) municipality

№	Q u e s t i o n s	A n s w e r s
1.	Number of the population and employment of the efficient population? (agriculture, industry and other spheres (by percentage))	
2.	Number of farming. What is the rate of the efficient population in this sphere?	
3.	Number of working people (plants, factories, constructions etc.)– in comparison with efficient population (by percentage).	
4.	What is the number of elective municipal active members?	
5 .	Annual budget – including the basis and assistance (2008-2009)?	
6.	What are the characteristic natural disasters in your village (settlement)?	
7.	Occurring for the last 5 years natural-technological disasters, destructions (to note separately destructions in schools and hospitals), harm and loss among population.	
8.	Does the municipality, you lead, take part at struggle against emergency situations? • If yes – How? • If partially – How? • If not– Why?	
9.	Describe your actions in protection population and economy at areas seriously subjected to disaster measures.	
10.	Describe your opinion on mutual cooperation with neighbor municipalities with the purpose to struggle against ES and liquidate the consequences.	
11.	Is there any commission of civil defense and emergency situations attached to municipalities, which is related with protection of population and economy?	

Date of the table filling:
Head of Municipality
Director of the Centre H.Ojaqov

BELGIUM /BELGIQUE

***ISPU - Higher Institute of Emergency Planning / Institut Supérieur de Planification
d'Urgence (Florival)***

BULGARIA / BULGARIE

CSLT - European Centre for Risk Prevention / Centre européen à la Prévention des Risques (Sofia)

DRACE Project: “The Danube-River of All, Care of Everyone”

In 2007 the Center started the project “Danube river for everyone, care of everybody”, taking into account that the European directive for floods was issued in 2009. Our goal is training with information technologies – radio, internet, not only for the floods but also in the field of prevention of cultural heritage, environment and others. The idea is that during the working process other European centers to take part to the project.

In 2009 the project got the support of the Parliament commission for protection of the environment and waters and is accomplished under the aegis of its Chairman.

Regarding climate change impact on the Danube Summit, participants stressed that:

- climate change will lead to increasingly serious situation and increase the risk of devastating floods. Floods are the result of natural weather patterns are part of the water cycle. The most serious damage were recorded, where human intervention increases the risk by improper land use in hazardous areas or significant modification of natural processes;
- the Danube River, considered "the European line of life is second on the list of most endangered rivers due to damage from traffic through it and that adaptation to the impacts of climate change on freshwater swimming pools (including the Danube) may contribute to immediate benefits for the livelihoods of people and protecting ecosystems, and should be a priority for governments and donors;
- climate change is expected to increase the frequency of floods and droughts in the basin of the Danube - the second longest river in Europe, with 2780 kilometers falling (along with its tributaries) in the territories of 19 European countries, with 801 000 km² 81 million people. Four of the European capitals are located on the Danube. 23 million people draw drinking water from the Danube, others are engaged in fishing or tourism;
- the construction of canals and construction of dams over the past 200 years have led to the loss of more than 80 percent of the original floodplain area along the Danube and its main tributaries;
- the natural recovery of environmental sustainability by improving infrastructure can enhance the natural ability to prevent floods. Moreover, the replacement of vulnerable monocultures with a variety of livelihoods based on natural ecosystems (in this case tourism, fishing, grazing and fiber) can enhance local economies. International agreements on better water management and river are a powerful engine of change in the Danube;
- the protection of major cities and other settlements, industrial sites, communication and transport networks, valuable farmland, which determines the objective is creating a robust system of protection structures against the harmful effects of floods. More than 7% of the Danube river basin is a flood zone. Only a minor part of it is in its natural state. Distribution of floods is limited by various modifications of the riverbed. Levees and strengthening the banks are designed to withstand extreme flooding. Protection of more than 60 000 km. is designed to withstand 100-year wave. This territory would be flooded regularly without such protective equipment. The total length of protective systems exceeds 13 000 km. 6% of the population living in the Danube basin in areas of flood level;
- governments should consider water resources as a matter of national security, drinking water should be used sparingly and wisely, to limit its use in heavy industry for a possible crisis due to shortage of fresh water;
- it is more than necessary Danube to be included in the National Plan for river basin management because of the four regions for water management in Bulgaria is the largest Danube river basin, which covers 45 percent of the territory. The following definitions and terminology of the WFD, the Danube River from Iron Gate to Silistra administratively designated as "cross-border water body. Assessment and program measures for it are developed. In international management plan for the river prepared by the International Commission for the Protection of the Danube, the Bulgarian coast is a white spot;
- Danube now faces new challenges. Projects have been prepared for the European Union to improve the navigation of the river, which are in the process of public consultation and preparation of environmental assessments. Some measures proposed in these projects, closing the side channels, construction of incite to shift the tide and dredging may irreversibly destroy river.

The information and the knowledge should be easy accessible to everyone who is managing the risk, in an interactive format and with dynamic contents, and for the purpose we should use modern ports, specialized social nets and social Medias. These innovations allowed listing of the participants at the training, watching their activity, preparation and getting of adequate knowledge.

Besides this, experts have the possibility to update immediately the information, to file data, to exchange knowledge in an interactive WIKI format. It should be pointed out that the software for the social media has an open code which is easy accessible and at comparatively low prices. This kind of media so called WEB 2.0 is attractive all over the world and also to the people who passes any kind of e-training.

Web address: <http://www.drace-project.org>

The structure is an open, social one. The outside users have the possibility after registration to publish different materials. There are 4 groups of users with different level of access: administrator; contributor; editor; users.

The website supports two languages : English and Bulgarian. There are full English and short Bulgarian versions. There are 6 main menus : interactive maps, knowledge, library, terminology, media. The information is accessible through an interactive simulative map on the first page of the website. There is scheme of all the resources and their structure.

Besides the command menus, the website presents briefly the European center, Sofia and provides opportunity to contact the specialists who are responsible of the website. Upon request the user could receive detailed information.

The Library includes information and links to all the important organizations, Web pages in Europe, state institutions which are dealing with the Danube river problems. There are links to the web page describing the risks in Europe; to the social media page of drace.workpad.com; international commission for protection of Danube river in Vein. Many maps of Danube are included. In the Media part will be published many media broadcasts in mp3 form of BNR and other institutions related to floods of Danube. At the moments we have published our first three pilot broad casts in Bulgarian language. In the future it will become one of the main departments of the aims of the project.

School Education.

Be-Safe-Net

As a result of the center activity is the development of the joint project (Cyprus, Sofia, Ravello, Strasburg, Malta, Kiev) for creation of WEB Side in relief of Risk prevention training at school level (Be-Safe-Net) of all languages of member state of the Agreement. The work meetings were hold in 2009 in Malta.

University education

Continue cooperation of European center with New Bulgarian University (Sofia) in relief Crisis Public Relation, Crisis communications and Risk Management.

Programs: Center for study of risks and security;
 Crisis Public Relation and Crisis Communications Department

CYPRUS /CHYPRE

BE-SAFE-NET – European Center for Disaster Awareness through Internet / Centre Européen pour la Sensibilisation aux désastres à travers Internet (Nicosia)

DEVELOPMENT OF A WEBSITE FOR DISASTER AWARENESS WITH THE USE OF THE INTERNET ‘‘BE SAFE NET’’

The European Center for Disaster Awareness with the use of the internet ‘‘Be safe net’’ in close collaboration with the European Center for Risk Prevention (ECRP) in Sofia, the European University Center for the Cultural Heritage (CUEBC) in Ravello and the European Center for Seismic and Geomorphological Hazards (CERG) in Stasbourg has launched in 2004 the WebSite www.besafenet.org.

The aim of the website is to become an educational tool in the hands of teachers, focusing at risk prevention preparedness, immediate reaction and rehabilitation.

With the use of Internet, discussion groups and parallel education, the Network will provide a friendly and interactive environment in order to attract interest and introduce school children to prevention, awareness and action in the cases of natural and made disasters.

Our ambition is that the Website will become a useful tool for all schools of all the member countries of the Europa Major Hazards Agreement and also become a platform for cooperation and exchange of information, by the use of its various state of the art functions which are able to support group discussions and other interactive tools.

All the Specialised Centers of the Agreement are presented in the website and separate links are provided for each Center.

A pilot program started on landslides by a number of specialized centers. This project will be evaluated and tested by a group of teachers and finalized. During 2008 two meetings (Ravello and Lisbon) were held to finalize the structure and content of the Landslides. During the Ravello meeting a decision was made to increase the number of questions to be answered for each disaster from 4 to 12. Furthermore, 4 other disasters were given to various centers to be prepared. Analytically,

Coastal risks: [ICoD](#) - Euro-Mediterranean Centre on Insular Coastal Dynamics (Valletta, Malta)

Volcanoes: [CUEBC](#) - European University for the Cultural Heritage (Ravello, Italy)

Earthquakes: [CUEBC](#) - European University for the Cultural Heritage (Ravello, Italy)

Floods: [ECRP](#) - European Centre for Risk Prevention (Sofia, Bulgaria)

Radiological risk: [TESEC](#) - European Centre of Technological Safety (Kiev, Ukraine)

Droughts: [CRSTRA](#) - Scientific and Technical Research Centre on Arid Regions (Biskra, Algeria)

While other possible partner is: Forest Fires: [ECFF](#) - European Centre on Forest Fires (Athens, Greece)

Having in mind the above objectives, our center has already been prepared to accept any innovation or changes as regards either the pilot project of landslides or the rest nine natural disasters which are included within the website. During 2009, two meeting were held.

The first meeting took place at Paphos Cyprus between 12th – 13th of April and during that meeting the collaborating centers decided to redefine the aim of the ‘‘BE-SAFE-NET’’ as a network among European countries in order to provide e-learning material on natural hazards and risks primarily for schools (secondary school teachers), but also for the public in general. On the webpage, teachers, pupils and the interested public should find information on disaster prevention, preparation, immediate reaction and rehabilitation.

The new structure of the website was decided to include five main sections:

1. About the initiative;
2. Definition of common concepts (e.g. hazard (natural and manmade), vulnerability, risk, disaster);
3. Pedagogical material (e.g. case studies, photos, learning exercises);

4. Protect yourself;
5. Discussion forum.

Based on the experience gained in preparing the landslide pedagogical documents, a clear guidelines for preparing material related to other risks (seismic, floods, snow avalanches, etc, ...) will be helpful for the ultimate goal of the website that is to provide information and material for secondary school teachers in order to prepare associated curricula (and consequently avoiding University grade documents). The proposed scheme for the X specific risk (X is an example of threat) is:

1. What is X?
2. What are the types of X?
3. Why do X occur?
4. Where do X occur, and what were the largest X in the World and in Europe?
5. What could be the consequences of X in terms of human, socio-economic and environmental loss?
6. Can the causes of X be influenced by human behaviour?
7. Can the consequences of X be influenced by human behavior?
8. Can X be predicted?
9. Is there any option to prevent X?
10. Is there any option to mitigate the consequences of X?
11. What to do in case of X?
12. What type of maps on X exists? What is their use? Does the public have access to these maps and from where?

For the 12 questions, the contributors were requested to propose a maximum of 20 lines on the main page (so called “first level”) and links to specific page (so called “second level”) with additional and more detailed information. They were also required to provide for every question additional available material, such as the description of pedagogic case studies, examples of lessons learnt, learning exercises, relevant images, videos and web links).

The website is still in progress for further natural and man-made hazards. The landslide pilot section was nearly complete. The first evaluation of five more hazards, already given to different centers to be prepared, was made. Finally, the centers decided to buy a new domain (<http://www.besafenet.net>) and use it for the new template of the BESAFENET website that was prepared by SPIDERNET. The old website will remain online until the new is completely finished.

During the second meeting held in Malta, between the 18th-19th of November, the material of Dam failure, Chemical and Radiological Emergencies were presented and implemented on the website. It was decided that for each hazard an additional page will be created as an introduction to the hazard. Furthermore, the collaborating centers decided to proceed with the translation of the template of the website in several languages. Finally it was decided that the next meeting will be held in Modena during June 2010 to examine the progress of BESAFENET before the Ministerial meeting at St Petersburg on the 27th of September 2010.

FRANCE

CSEM – Centre Sismologique Euro-Méditerranéen / European Mediterranean Seismological Centre, (Bruyères-le-Chatel)

The European Mediterranean Seismological Centre (<http://www.emsc-csem.org>) has been providing rapid earthquake information services since October 2004. These services aim to provide fast and reliable information on the seismicity of the Euro-Mediterranean region and on significant earthquakes worldwide. They are based on parametric data rapidly provided by 65 seismological networks automatically merged and processed at the EMSC.

In 2009, the Euro-Mediterranean region was struck by the L'Aquila, Italy earthquake (Mv 6.3 on 06/04/2009). During the weeks following the occurrence of this destructive earthquake, the traffic on the EMSC website has continued to increase -with 16,800 daily unique visitors (i.e. half a million unique visitors per month on average in 2009).

To complement its services, the EMSC has developed a methodology to estimate a qualitative impact of an earthquake at level 0 based on the empirical relationships of Samardjeva and Badal (2002). Despite uncertainties in the final result, this method has proven to give consistent loss estimations in testing against a dataset of 712 earthquakes with know numbers of casualties.

The new web site is under development. The Real Time part is finalised and opened for comments. This web site will provide several features that will allow to collect more questionnaires and pictures. New tools will help the users to correctly identify the event they have just felt such as a temporary moving banner for felt earthquakes when no seismic data is yet available or another tool to display the latest earthquakes in the vicinity of the web user's location.

EMSC assess the evolution of the real time services since 2004 in terms of the quantity of data received, of the number of earthquake published and relocated by the EMSC and in terms of the accuracy of the information published and disseminated.

The number of users registered to the Earthquake Notification Service has been steadily increasing since 2004 with a total of 7,541 users on 01/01/2010. In 2009, nine of the notifications disseminated by the Earthquake Notification Service were EUR-OPA alerts. They concern one earthquake in Italy (L'Aquila), one in Crete, one in Georgia and six in far Eastern Russia (Kuril Islands, Kamchatka peninsula ..).

To measure the traffic on the EMSC web site, we have been using a software named *StatCounter* since 2004. From this, we have seen that the average daily traffic in terms of unique IP's has tripled between 2005 and 2009.

Since 2004, the number of questionnaires completed by web users has clearly increased. The change is correlated with the increase in web traffic on the EMSC web site and its visibility on the internet and among search engines. The macroseismic maps are automatically updated as new questionnaires are collected and made available on the web site.

**CERG - European Centre for Seismic and Geomorphological Hazards / Centre
Européen sur les Risques Géomorphologiques (Strasbourg)**

1.1. Landslide susceptibility mapping at the European scale (2009-2010)

Local coordinator: Dr Jean-Philippe Malet, Researcher, IPGS, School and Observatory of Earth Sciences, Strasbourg (CERG Co-Executive Secretary) with Dr Javier Hervàs, JRC, Ispra (and possible others).

Global objectives

In the framework of the European Soil Thematic Strategy, a project to map landslide susceptibility at the scale of Europe (i.e. 1:1 Million) was suggested in 2007 by the Soil Information Working Group (SIWG) of the European Soil Bureau Network (ESBN). The methodology consists to identify the potential areas subject to generic landslide types by expert knowledge using available thematic and environmental data. The choice of the 1:1 M scale allows the use of harmonized data sets for all Member States as input to the susceptibility model. Since a coherent landslide inventory map or geographical database does not exist at the European level, a pan-European landslide susceptibility map can only be prepared without inventory data, e.g. through heuristic modelling using European level landslide conditioning- and (optionally) triggering- data.

For the susceptibility model, a minimum set of landslide conditioning factors has been selected and consists in: (1) lithology and soil/parent material derived from geographical databases of the Geological Surveys; (2) slope angle (derived mainly from NASA SRTM DEM) and (3) landcover available from the Corine Land Cover dataset. A grid based mapping unit of 90 m has been selected for the calculation. The susceptibility model is heuristic and based on expert weighting (index-based evaluation) of the three types of input data.

Results obtained in 2009

First attempts to create a landslide susceptibility map over France have been performed in 2009. The objective of this map is mainly to highlight the areas prone to future landslide occurrence or reactivation.

The quality of the map has been evaluated over six departments known for their numerous slope instabilities. The national landslide database BDMVT from BRGM is used in order to validate the results.

The methodology has consisted in dividing each thematic data into classes, to which a relative weight has been given. The weights have been calibrated according to an inventory of landslides occurrences available for France at the municipality level. A heuristic qualitative spatial multi-criteria model is then applied on a grid mapping unit of 90m. As a first step, susceptibility maps in two classes (possibility of landslide occurrence / no possibility of landslide occurrence) are created for four landslide types over 6 French departments.

One of the main outputs of this research is that different weights for the conditioning factor classes should be used for differentiating the landslides types, and differentiating the landslides in plain and mountain areas. Attribution of the weight is a crucial point in this approach, and should be evaluated by expert organizations

This work is a first methodological attempt to model landslide susceptibility at 1:1M scale (Tier 1) for France, in the context of the future creation of a European-wide and harmonized landslide susceptibility map for generic landslide types. The method is based on the selection of a minimum set of landslide conditioning factors freely available at the European scale in order for all Member States to use common data sets.

1.2. Identification of thresholds for landslide crises, and implications for operative Early Warning Systems (2009-2010)

Local coordinator: Prof. Theo van Asch (CERG executive member), Department of Physical Geography, Faculty of Geosciences, Utrecht University with Dr Sandro Silvano (CERG executive member), Consiglio Nazionale delle Ricerche, Padova (and possible others).

Global objectives

The global objective of this activity is to propose landslide thresholds and early warnings criteria through experimental modelling and analysis of landslide field data, for the operative forecasting of landslide acceleration or even fluidization.

The focus will essentially be on landslides developed in fine grained sediments (La Valette, Super-Sauze, Apennines landslides, Tessina, Villerville). It is anticipated to use laboratory flume experiments, field data analysis and numerical modelling, to:

1. analyze the acceleration or fluidization of fine-grained landslides;
2. identify concepts and factors controlling these crises;
3. development simple and more complex mechanistic models of landslide crises, and test their performance on experimental and field data;
4. define critical thresholds through scenario modeling for establishing early warning systems for periods of crisis,
5. propose macroscopic indicators qualifying the susceptibility of a given slope to produce various landslide types, in particular landslides susceptible to degenerate in mud/debris flows.

Specific objectives for 2009

Specific objectives for the first year of the project are to focus the research on the three first points:

1. analyze the acceleration or fluidization of fine-grained landslides;
2. identify concepts and factors controlling these crises;
3. development simple and more complex mechanistic models of landslide crises, and test their performance on experimental and field data;

Results in 2009

The main purpose of our research on slow moving landslides is to forecast, whether the movement remains slow and persistent, whether it will stop or whether it leads to catastrophic accelerations. An identification of these thresholds for landslide crises forms the basis for the design of operative Early Warning Systems. In order to interpret the observations from the field, to understand the mechanisms controlling the movement and possibly to predict future slope changes, the main focus in 2009 was on the numerical simulation of the run-out of these slow-moving landslides.

The 1D and 2.5 D models, which were further developed and tested this year, treat landslide materials as one-phase homogeneous material with rheological properties. The model assumes constant equilibrium between the resisting (friction) and driving forces and due to the slow movement convective and local acceleration terms can be neglected. Another boundary condition is the assumptions of a rigid plug in the velocity profile and of low shear rates. Besides bedrock geometry main mechanisms that control the velocity of the model are pore pressure ratio and viscosity.

The main assumptions of the model are:

driving forces and resisting forces are not in equilibrium

viscosity in the shear zone

calculation of excess pore water pressure using virtual strains

virtual compression, which leads to an increase in pore water pressure accelerating movements and virtual extension which leads to hydrostatic pore water conditions

a decrease of pore water pressure retarding continuous movement

The numerical models were tested on the the Valoria landslide, in the northern Apennines of Italy the Super Sauze mudslide in the Ubaye valley (French Alps) and on slump failures in Terres Noires material in a Flume at the Utrecht University (The Netherlands). In 2009 two workshops were organized respectively in Utrecht and Padua attended by researchers of the Faculty of Geosciences, Utrecht University, Institute of Geophysics, School and Observatory of Earth Sciences (EOST), Strasbourg University, Aula Dei Experimental Station, Spanish National Research Council (CSIC), Zaragoza, Spain, CNR-IRPI Padua, and the Earth Science Department, University of Modena and Reggio Emilia, to discuss the different model concepts and the progress of the project. New results will be presented i.e. in the upcoming EGU conference in Vienna, May 2010.

As concern the Tessina Landslide both numerical and physical models have been carried out in order to forecast possible future development of the landslide.

The effects of possible new detachments on the mudflow have been investigated by using a model based on the SPH (Smoothed particle hydro-dynamics) integration method. The model reproduced the fluxing mass like a viscous or frictional material and a comprehensive laboratory investigation has been undertaken in order to define the soil rheological properties. To do so some tests with the FANN V-G rheometer were performed on the fine fraction (passing to n.40 sieve). In accordance with the facilities of this equipment, the strength was recorded at two speeds – i.e. at 300 and 600 r/min. From these two readings the Bingham viscosity and the yield strength were determined. The measurements

were repeated with a solid concentration varying from 20 to 45%. In order to simulate the 1992 event and calibrate model parameters, the flow-like movements of slide were reproduced assuming a topographic mesh of 17464 nodes provided by a 15 x 15 m digital terrain model (DTM). After the reproduction of the 1992 event, future hazard scenarios based on the potential mobilisation of a further slope portion have been analyzed.

In particular the stability conditions of “Pian de Cice” that is crucial for the entire slope have been analyzed. In this case a numerical simulation using FLAC 2D code based on finite difference method has been carried out. Elasto-visco-plastic model has been used to describe the material behaviour. Visco-elastic part is represented by Burger’s model whereas plasticity is described by Coulomb-Mohr law. Thanks to the large-strain Lagrangian formulation it was possible to observe the changes of the slope shape during simulation process. It was assumed that the sudden failure of the slope can occur during the period of extremely unfavourable atmospheric conditions (e.g. heavy rainfall and melting of thick snow cover), causing the rapid raising of the ground water table. Such situation is expressed in the numerical model by substantial worsening of the viscosity and elasticity properties.

On the basis of this positive results of these models, possible future events, of a magnitude comparable or higher than the previous ones, are simulated, hypothesizing that physical characteristics of the landslide don’t change significantly over time. The results obtained show a situation of real risk affecting the hamlets involved in the landslide and underline the need to take adequate countermeasures.

2. Education activities in 2009

2.1 International Conference on “Landslide Processes: from Geomorphologic Mapping to Dynamic Modelling” (5-6 February 2009)

Local coordinator: Dr Jean-Philippe Malet, Researcher, IPGS, School and Observatory of Earth Sciences, Strasbourg, CERG Co-Executive Secretary, with Dr T.A. Boggard, Technical University of Delft, Delft, The Netherlands.

Specific objectives for 2009

The Conference is devoted to the understanding and the modelling of land degradation processes and associated soil threats affecting the earth. Important forms of land degradation are mass movement (e.g. landslides, debris flows) and soil erosion that lead to the degradation of natural vegetation and land use potential, as well as to an increase in risk to natural hazards. The common denominators in these processes are changes in hydrology in response to changes in land use and climate.

The Conference will explore these issues from a quantitative geomorphological viewpoint, associating several approaches: understanding past and present processes, field observation and mapping, statistical and process based modelling using GIS.

The Conference is organised to pay tribute to Prof. Dr. Theo van Asch, whose work resembles the significant 40 years development in the field of quantitative land degradation process research.

Results obtained in 2009

The Conference has been organized in Strasbourg on 6-7 February 2009, with 115 participants, from Europe and overseas, met in Strasbourg to pay tribute to Prof. Theo van Asch. The object being to explore and debate the most recent advances on a topic to which Prof. Theo van Asch has made major developments in terms of quantitative analysis over the past 40 years.

A book with the Proceedings of the International Conference ‘Landslide Processes’ has been published through the CERG Editions (ISBN: ISBN: 2-9518317-1-4).

The book encompasses 57 contributions, representing a total of 356 pages. All manuscripts and oral/poster presentations are also available on-line at:

http://eost.u-strasbg.fr/omiv/Conference_Landslide_Processes.html

2.2. BE-SAFE-NET” Project

Several CERG members continue to contribute to the BE-SAFE-NET” Project which is a web-portal on Disaster Awareness <http://besafenet.net> with the use of the internet, developed in the framework of the FORM-OSE programme (European Training Programme for South, East and West) of the EUR-OPA Major Hazards Agreement.

For the ‘landslides’ section, we have reorganized the material yet prepared in order to fulfil the new skeleton proposed by the Besafenet scientific committee. The proposed scheme for the X specific risk (X is an example of threat) is:

1. What is X?;
2. What are the types of X?;
3. Why do X occur?;
4. Where do X occur, and what were the largest X in the World and in Europe?;

5. What could be the consequences of X?;
6. Can the causes of X be influenced by human behaviour?;
7. Can the consequences of X be influenced by human behaviour?;
8. Can X be predicted?;
9. Is there any option to prevent X?;
10. Is there any option to mitigate the consequences of X?;
11. What to do in case of X?;
12. What type of maps on X exists? What is their use? Does the public have access to these maps and from where?

The landslide section is now active: <http://www.besafenet.net/> The pages contain many drawings and images which can be directly downloaded and used by the teachers for class works. Dorian Castaldini has participated to the BE-SAFE-NET meetings, held in PAPHOS, CYPRUS, 28-29 April 2009 and Malta on 18-19 November 2009.

3. Other activities in 2009

CERG members have participated in the working groups or committee of several international projects and meetings, organize international workshops or convene specific sessions in meetings. For example: Organisation of sessions at EGU 2009, Vienna, 19-24 April 2009.

New CERG website: <http://eost.u-strasbg.fr/omiv/CERG.html>

Transferred in 2010 to <http://cerg-coe.eu>

GEORGIA /GEORGIE

GHHD - European Centre on Geodynamical Risks of High Dams / Centre Européen sur les Risques Géodynamiques liés aux Grands Barrages (Tbilisi)

1.1. Geodynamical monitoring at Engouri Dam International Test Area (EDITA)

(V. Abashidze, T. Chelidze)

During 2009 permanent observations in the Enguri HPS dam foundation and in its body were continued by two-coordinate platform tiltmeters (model 701-2A), quartz strainmeter and hydrostatic tiltmeters. At present there are 7 functional stations on the three different horizons of the 12th, 18th and 26th sections: 360, 402 and 475 m. It should be noted that on the 360 m horizon of the 26th section a new tiltmeter station started working only from July 2009, when there was installed a new tiltmeter purchased in 2009 thanks to European Centre "Geodynamical Hazard of High Dams" (7th station in the dam body). There are 3 tiltmetric, 1 strainmeter and 1 hydrostatic stations continuing working in the dam's foundation.

Firstly let's note that no anomalous tilts and deformations dangerous for dam's stability were observed during the reporting period.

1.2. Monitoring of Operation of Enguri HPP Arch Dam (Dr. M. Kalabegishvili)

Estimation of the experimental values of deformation module and Poisson coefficient of dam concrete* has been run at Georgian scientific and research institute of power structures and in dam site. Comparative analysis showed satisfactory coincidence of all these researches. The most accurate of all the are the values of deformation module of dam run at the above institute, have been received as a result of testing large size samples within the very structure taking into consideration real preparation environment, transportation, laying, vibrating and hardening of the concrete. Poisson coefficient value of the mentioned concrete may be assumed to be 0.18.

2. Compilation of monitoring database at Engouri Dam International Test Area (EDITA)

We compiled the database on basis of observations carried out by all tiltmeter and strainmeter stations in 2009.

3. Seismic monitoring at Ingouri Dam International Test Area (EDITA)

(Z.Javakhishvili)

3.1. Seismic network of Enguri Dam.

The configuration of local seismic network around Enguri reservoir remains the same as was in 2008. Network consists of 4 short period seismic stations: Becho, Khaishi, Chale, Chqvaleri .

The year was seismically very quiet for the dam area. Strong earthquake M=6 occurred in Racha region, at the distance 115 km from the dam site, on September 7, 2009. The earthquake was followed by sequence of aftershocks. More than 30 aftershocks have magnitude M>3. The similar situation was observed in 1991, when after the strong M=7 Racha earthquake of 1991, all seismic activity was concentrated in the epicentral area of the earthquake and there was seismic quiescence in neighborhood areas. There is the only interesting event M=3.0 in the south western direction at a distance of about 20 km from the dam. This earthquake occurred in the area of low seismicity.

3.2. Strong Motion Network of Enguri Arc Dam

During the 2009 maintenance of Enguri strong motion network, composed of 10 stations, has During 2009 regular inspections of the network were done. During this time, some failure in functioning appeared in 6 stations. Triggered events (records of seismic noise) at sites were taken for farther processing to identify the dam's natural frequency. There was now earthquake which can trigger accelerometers during the year.

4. Methodical aspects of risk assessment (nonlinear analysis of time series, GIS, physical properties of foundation rocks, flood modeling etc)

4.1. Influence of Enguri high dam building and reservoir filling on regional seismic activity (T. Matcharashvili)

As far as our previous research was focused on the study of dynamical properties of earth crust tilts at Enguri hydro power station [Matcharashvili, T., Chelidze, T., Abashidze, V., *Nonlinear analysis of earth crust tilts dynamics of Inguri high dam international test site, in Proc. of Int. Seminar "Geodynamical risks of High Dams", "Bakur Sulakauri" Publishing House, Tbilisi, 2002, 44 –51; Мачарашвили, Т. Н., Челидзе, Т. Л., Абашидзе, В. Г., Исследование наклонов земной коры в районе высотной арокной плотины Ингури ГЭС, Геофизический журнал 3, 25, 153-158, 2003] we have proceed from additional analysis of tiltmeters hourly data sequences. Namely, multivariate time series containing 1000 data from each available tiltmeters for time periods immediately before and after beginning of filling (22.12.1977), after second (15.04.1978), third (19.09.1978) and fourth stage of filling. As it follows from our analysis anthropogenic influence, connected with construction of Enguri high dam and filling of reservoir leads to the clear quantitative changes in dynamics of tilt generation and is followed by relaxation during two-three years after filling beginning. Thus, our results reported earlier were additionally confirmed based on Recurrence Plot Quantitative Analysis techniques.*

After, in order to test a possible influence of Enguri high dam reservoir on seismicity of surrounding territory we have investigated data sets of daily water level variation and appropriate seismic catalogue. In the frame of criticality concepts we have carried out analysis of cumulative sums both number of earthquakes and reflected energy. Cumulation steps 1 year and 0.5 year were selected based on spectral analysis of water level in reservoir for time period when periodicity is clearly visible, 1983-1995. After we have calculated cumulative probability distribution $P(t)$ of reflected daily seismic energy for different time periods. Calculated cumulative probability distribution is defined as:

$$P(t) = \sum_{i=1} p_i(n), \text{ where } p(n) \text{ is the probability density function of reflected daily seismic energy}$$

above selected threshold value in some consecutive $0 < n < t$ time intervals. Main assumption is that influence of reservoir may increase the probability of increase of seismic energy above mean background value.

As it follows from analysis cumulative probability increases about twice for time period of reservoir filling (1978 – 1990) and decreases to the below background value when reservoir filling – discharge process become periodic (1990-1995). It is interesting also to mention that cumulative probability increases mostly linearly for first and last stages of observation. In other words for time period of reservoir filling cumulative probability increase more in power law manner (faster) in opposite to other periods. Additionally can be said that cumulative probability increase may be modelled by saturated function in stage three, when filling – discharge process become periodic, while for time periods before filling and during filling it is modelled by relatively faster increased functions.

Thus it can be said that at the beginning of reservoir filling seismic activity around Enguri high dam was increased. This increased activity came back when reservoir filling was accomplished and decreased when reservoir filling-discharge process became periodic.

It is possible to assume that this external small periodic influence (filling-discharge process) may lead to some synchronization of regional seismic activity (number of earthquakes and released energy decrease), though meanwhile we are not able to find clear phase synchronization between values of daily reflected seismic energy and water level variation.

4.2. Dam-damage-induced flood process modelling principles and scenarios (T. Tsamalashvili).

Flooding processes in nature are causing huge economic and emotional damage. Understanding the processes causing flooding and the development of simulation models to evaluate countermeasures to control that damage are important issues. Flood risk results from the interaction of flood water with

human activities. This makes flood risk assessment a multi-disciplinary endeavor: on one hand it requires good understanding of fluvial processes and flood behavior; on the other hand a methodology is needed to quantify its impact on the socio-economic environment. Two-dimensional flood models are the appropriate tools for simulating flow of water to assess the consequences of terrain modifications on the flood characteristics. This is useful when flood consideration need to be included in the decision-making process and Environmental Impact Assessment studies.

This work is the first step for Flood risk assessment in Georgia for Enguri High Dam, located on the Enguri River in western Georgia near the point at which the river leaves the Caucasus Mountains on its way to the Black Sea. Enguri high dam was built at the beginning of 70-tees Built by Georgian Company "Hydromsheni". This is a huge tall double-curvature arch dam with a crest length of 680 m, its height is equal to 271.5 meters. 750 meters wide, 4 Millions mc of concrete, reservoir could be filled normally to 1,093,000,000 m³. 5 generators units Francis type in underground.

To quantify the flow of water as function of the topography, physically based hydrodynamic or hydraulic models are needed. Such models are based on the principle of conservation of mass, momentum and energy, Even though the theory was developed in the 17th to 19th century by Isaac Newton, Claude Louis Navier, Adhémar Jean Claude Barré De Saint Venant and George Gabriel Stokes, the flow of water over initially dry areas is still extremely complicated, not in the least because no analytical solutions have been found yet for the full 3D unsteady Navier-Stokes non-linear partial differential equations. This set of equations relate the motion of fluids and gasses to viscosity, pressure, gravity and other internal and external forces. The equations are rather generic as they apply to all kinds of fluid-like substances that can range from the flow of air to the motion of stars in a galaxy. For applications in flood studies certain assumptions can be made to derive a new set of equations that are specifically applicable to the flow of nonviscid water, like shallow depth of the flow compared to its width and that the bottom slope is relatively small. In these cases flood modelling can be done using the 3D shallow water flow equations of De Saint Venant (1871). Furthermore, for flood applications it is often not needed to have information on the vertical velocity profile and on water flow in the vertical direction. This simplification allows the omission of the vertical (z-) component from the equations. For flow modelling one may then further reduce the number of dimensions by assuming that there is no flow perpendicular to the main direction of the river, so that flow is calculated in only one direction.

For the modeling of flooding in case of Enguri Dam breaking has been used an important tool for simulating flood events in complex terrain a 2D flood propagation modeling program "Sobek". "Sobek" offers possibilities to quantify the dynamics of a flood event and to run different scenarios to evaluate the consequences of certain actions.

Using SOBEK it has been done the calculation of water depths and velocities, max water deep etc in case of a dam break. The animation shows the simulation results of a dam break. The results may be used for dam breaking analysis, disaster management, evacuation planning, flood damage assessment, risk analysis and landscape, infrastructure, and urban planning.

SOBEK - 1D and 2D instrument for flood forecasting, like another flood modeling programs is based on the the Navier-Stokes equations. The Navier–Stokes equations, describe the motion of viscous fluid substances such as liquids and gases. They are one of the most useful sets of equations because they describe the physics of a large number of phenomena.

These equations arise from the assumption that the stress is the sum of a dissipative viscous term (proportional to the gradient of velocity), plus a pressure term and may be used to model water flow.

In practice, these equations are too difficult, to solve analytically. Therefore simplifications were made to the equation set until they had a group of equations that could be solved.

There are four independent variables in the problem, the x, y, and z spatial coordinates of some domain, and the time t. And six dependent variables; the pressure p, density - ρ , and temperature - T (which is contained in the energy equation through the total energy Et) and the three components of the velocity vector; (u in x direction, v in y direction and w in z direction. All of the dependent variables are functions of all four independent variables. ILWIS (Integrated Land and Water Information System) a GIS / Remote sensing software has been used for modeling Enguri Dam break and flood scenario.

Several flood scenarios for different models of dam damage have been calculated using real DEM model for Enguri region. In all cases the flooded area turn to be smaller than in previous 1D calculation for simplified topography.

5. Activities of GHHD, related to EUR-OPA Major Disasters Agreement

One of main activities of GHHD and other institutions related to DRR problems in 2009 was organization of Georgian National Committee on Disaster Risk Reduction and Sustainable Environment (GNCDRR). The Committee is registered as the NGO. It is in close contact with Georgian branch of

UNDP. Two projects have been prepared by the Committee: i. STUDY OF BIODIVERSION RESULTS IN BORJOMI AND R. TANA GORGE, DEVELOPMENT OF REHABILITATION MEASURES AND IMPLEMENTATION OF RESTORATION WORKS

5.1. In 2009 the staff of the centre participated in following international projects:

- i. Triggering and synchronization of seismic/acoustic events by weak external forcing as a sign of approaching the critical point. 2006-2009, INTAS, INTAS 05-1000008-7889
- ii. Applying Isotope Techniques for the Assessment of Water Resources In Georgia, 2006-2009, IAEA, IAEA GEO80003
- iii. Open network of scientific Centers for mitigation risk of natural hazards in the Southern Caucasus and Central Asia, 2006-2009, ISTC
- iv. Assessment of radon-hazard potential, residential exposure, lung cancer and COPD in West Georgia, 2006-2009, ISTU
- v. Seismic hazard and risk assessment for Southern Caucasus-Eastern Turkey energy corridor. 2009-2011. NATO – SFP 983038
Earthquake Model of the Middle East Region: Hazard, Risk Assessment, economics and Mitigation (EMME),

5.2. The staff of GHHD took part in many International Conferences:

- Earthquake Model of the Middle East Region: Hazard, Risk Assessment, economics and Mitigation (EMME), 26-28 May, Istanbul
- Global Earthquake Model. Outreach Meeting 8-10 June, 2009, Munich
- Regional Workshop “Site Selection and Evaluation for NPPs”, 24-28 November 2008, Vienna, IAEA.
- Planet Earth Event 2009, 19.-22 November 2009, Lisbon
- Earthquake Model of the Middle East Region: Hazard, Risk Assessment, economics and Mitigation (EMME), 5-7 December, Istanbul

Publications

V. Abashidze, T. Tsaguria, T. Kobakhidze, L. Davitashvili. Research of Displacements and Deformations of the Enguri HPS Arch Dam. Scientific report for 2009, Tbilisi. P.17.

V. Abashidze, T. Chelidze, T. Tsaguria, T. Kobakhidze. Assessments of Stability of High Building on the I. Chavchavadze Av., Tbilisi, by Tilmetric Observations. Proc. of M. Nodia Institute of Geophysics, v.LXI, 2009, Tbilisi. P.T. MATCHARASHVILIa T. CHELIDZEa, Z. JAVAKHISHVILIf Dynamics, Predictability and Risk Assessment of Natural Hazards; In “Building Safer Communities. Risk Governance, Spatial Planning and Responses to Natural Hazards”, Ed. Urbano Fra Paleo. Pp.148-161. IOS Press. Amsterdam, 2009.

T. Chelidze, O. Lursmanashvili, T. Matcharashvili, N. Varamashvili, N. Zhukova, E. Mepharidze. High order synchronization of stick-slip process: experiments on spring-slider system. Nonlinear Dynamics, DOI 10.1007/s11071-009-9536-6, 2009.

Chichagua P, Kalabegishvili M. Analysis of results of long-term research of values of deformation module and Poisson coefficient of Engure dam concrete. (52)-1, 2009, p.11-13.

GREECE / GRECE

***ECPFE - European Centre On Prevention and Forecasting of Earthquakes / Centre
Europeen Sur la Prévention et la Préviation des Tremblements de Terre (Athens)***

**ECFF - European Centre on Forest Fires / Centre Européen sur les Feux de Forêts
(Athènes)**

1) Workshop on “Human rights and Natural Disasters”

ECFF, in collaboration with the Council of Europe (EUR-OPA), the National Technical University of Athens (NTUA) and the EU FP7 project “Second Generation Locator for Urban Search and Rescue operations” (SGL for USaR) have joint effort and organized a workshop entitled: **Human rights in disasters: Search and rescue operations in disasters especially for vulnerable people** that took place on the 5th and 6th of November 2009 in Athens, Greece. The goal was to improve technology for search and rescue operations of people with disabilities and vulnerable groups of population.

In general, human rights are at “risk” in case of a disaster. This is especially true for people with any kind of disability, such as mobility problems, sight or hearing difficulties and broadly for vulnerable groups, such as the elderly and children. However, the issue of human rights is missing in most of activities and discussions for coping with disasters.

In this workshop, different rescue teams have participated by a number of European Countries (Cyprus, France, Greece, Italy, Spain, Sweden, UK). In addition, other representatives were from the Council of Europe, the UN/ISDR, the WADEM, as well as from Specialized Centres like the ECRM and ECPFE. Also, experts from Organizations and Services that focus on coping with disasters and human ethics were invited from Belgium, Greece, Luxemburg and Ukraine. Priority has been given on addressing hand-on and immediate based issues; operational issues and capabilities of available technologies. During the different sessions, human rights in disasters were overviewed, as well as experiences and lessons-learned have been presented. The last session of the workshop was devoted to building a catalogue of ideas for further elaboration and can be considered as a proposal to relevant organizations. All presentations of the workshop are available online at: <http://www.sgl-eu.org/>

In general, this joint effort aimed at mobilizing interested communities, pushing forward the issue to the related organizations and bodies and also establishing a working group on these issues.

2) Update and upgrade of the ECFF Website

During 2009, update and upgrade of the Website of the ECFF took place. Dissemination of knowledge related to forest fire smoke impacts on the environment and health, as well as networking with other organizations that has been achieved by the Center the last five years has been included in the site. It is hosted by website of the General Secretariat of the Civil Protection of Greece (www.gscp.gr), at the url:

<http://www.gscp.gr/ggpp/site/home/independent/ECFF.csp>

3) Contribution to the seminar “Wildfires and Human Security -Fire Management on Terrain Contaminated by Radioactivity, Unexploded Ordnance (UXO) and Land Mines”

In the framework of ECFF networking activities, knowledge and state-of-the art work regarding vegetation fire smoke impacts on human health were presented at the seminar entitled, “Wildfires and Human Security -Fire Management on Terrain Contaminated by Radioactivity, Unexploded Ordnance (UXO) and Land Mines”, that took place in Kyiv / Chernobyl, Ukraine, on 6-8 October 2009. This seminar was Conducted by the Global Fire Monitoring Center (GFMC) in the frame of the activities of the Council of Europe (CoE) and the joint project “Enhancing National Capacity on fire Management and Risk Reduction in the South Caucasus” (Environment and Security Initiative [ENVSEC], the UNISDR Regional Southeast Europe / Caucasus and Central Asia Wildland Fire, Networks and the UNECE / FAO Team of Specialists on Forest Fire.

LUXEMBURG / LUXEMBOURG

ECGS - European Centre for Geodynamics and Seismology / Centre Européen de Géodynamique et de Sismologie (Walferdange)

L'année 2009 a été une année de consolidation des activités de l'ECGS. Adrien Oth, docteur en sismologie, travaille sur des projets de recherche en sismologie et a organisé la 95^{ème} session des « Journées luxembourgeoises de Géodynamique JLG » auxquelles ont participé une quarante cinq scientifiques du monde entier. Les JLG ont eu lieu du 9 au 11 novembre 2009. Par ailleurs, l'ECGS a signé 4 conventions avec des instituts pour la collaboration dans des projets de recherche pluriannuels dans différents domaines de géophysiques. Les détails se trouvent dans ce rapport.

1. ACTIVITES D'EDUCATION

Réunions Scientifiques

Sous la responsabilité d'Adrien Oth, l'ECGS a organisé la 95^{ème} édition des Journées Luxembourgeoises de Géodynamique JLG du 9 au 11 novembre 2009 au Centre Culturel Trifolion à Echternach.

Cette édition marque le renouveau des JLG avec un énorme succès et 45 participants de 11 pays différents. Trois sessions ont été programmées avec une session ouverte (dédiée essentiellement à la gravimétrie et la géodésie spatiale), une session dédiée au rifting continental et une session traitant de l'évaluation du risque sismique. Le soir de la deuxième journée des JLG, fût organisée une conférence grand-public « Naturrisiken im globalen Wandel: das Beispiel Erdbeben », présentée par le Prof. Dr. Jochen Zschau du GFZ German Research Centre for Geosciences, Potsdam. Une vingtaine de personnes y ont participé.

Visites du Laboratoire souterrain de géodynamique

Comme chaque année, nous avons reçu beaucoup de demandes de groupes voulant visiter le Laboratoire Souterrain de Géodynamique de Walferdange.

En 2009, onze groupes ont visité notre laboratoire, avec un total d'environ 250 personnes. Gilles Celli, Nicolas d'Oreye (MNHN), Olivier Francis et Adrien Oth ont assuré les visites et ont ainsi permis au gens de s'informer sur le fonctionnement des différents instruments scientifiques et les différents types de recherche effectués à l'aide de ces instruments.

2. ACTIVITES DE RECHERCHE DES SCIENTIFIQUES DE L'ECGS

Les scientifiques de l'ECGS sont impliqués dans plusieurs projets de recherche internationaux. Parallèlement, l'ECGS supporte financièrement des projets scientifiques externes soumis et ayant reçu l'accord du Conseil Scientifique de l'ECGS. Le financement de tous les projets provient en majeure partie de la dotation du Gouvernement luxembourgeois et pour le reste de fonds extérieurs et des subsides de l'Accord Partiel Ouvert EUR-APO Risques Majeurs.

Projets de recherche en cours

Séismologie (A. Oth)

❖ Seismic network optimization for earthquake early warning systems.

This work, originally started within the framework of the EU FP6 project SAFER (Seismic eArly For EuRope), was finalized. In collaboration with the Seismological Laboratory of the California Institute of Technology (Caltech) and the Geophysical Institute of the Karlsruhe Institute of Technology (KIT), we investigated the performance and optimization potential of the Istanbul earthquake early warning system.

As a result of this work, we present for the first time a full approach for both performance evaluation of existing seismic networks for earthquake early warning as well as for optimizing the layout and settings of such a system. This methodology can also be applied to other cases, and we are currently thinking about the possibility to apply our technique to the case of the planned extension of the Californian early warning system. With our approach, we demonstrate what is the performance of the current Istanbul early warning system and show what the optimization potential and limitations of this system are. A manuscript with these results has recently been submitted.

❖ **K- and KiK-net strong motion databases in Japan.**

This work started in 2008 and involves the usage of the (freely accessible) vast strong motion databases K-net and KiK-net in Japan. In collaboration with the GFZ Potsdam, these databases were processed to make an automatic selection of well-constrained events and stations to perform further seismological analyzes. This fundamental processing, which involved several steps ranging from the automatic determination of onset times of seismic phases to location and Fourier spectra calculation, led to a final dataset of more than 2200 earthquakes that can be considered. Our first results were presented at the Journées Luxembourgeoises de Géodynamique in November.

The work with this extraordinary dataset opens many possibilities for investigating a large range of seismological problems, and with our work, we already raised a lot of interest in the community (we have already been solicited by several other groups interested in collaborations). Next steps that we are working upon include the determination of Green's functions between borehole and surface sensors of KiK-net, separation of source radiation, seismic attenuation and site amplification effects using the generalized inversion technique (GIT), source scaling studies, analyzes of ground motion parameters for engineering seismology applications etc.

❖ **Development of tools to determine earthquake source parameters (GFZ Potsdam & ECGS).**

The purpose of this project is the development of tools for rapid determination of energy magnitude and earthquake source parameters from teleseismic data (using the GEOFON network of the GFZ Potsdam, where the station Walferdange WLF is part of). Together with the study of source parameters from local data using the GIT, which is a matter of ongoing research at ECGS, one of the final goals of this project is to link the teleseismically estimated source parameters to the damage potential (which is usually investigated using local or regional networks), thus making it possible for disaster management organizations to use this information in areas with a lack of strong-motion instrumentation.

This project is financed by ECGS and offers the perfect framework for using the results of the work with the K- and KiK-net databases, which contain regional earthquake recordings, to perform the comparison between teleseismically estimated source parameters and regionally estimated ones for more than 25 large earthquakes that occurred in Japan. Our current status is that we have to sort out a few remaining problems regarding K- and KiK-net sensor orientations to achieve the best possible data selection for the final calculation of regional source parameter estimates.

In the framework of this project and the collaboration on the Japanese dataset mentioned above, I have been invited as visiting scientist at GFZ Potsdam in September 2009. We also used this opportunity to work with Dr. Luciana Cantore on determining site amplification effects for the Irpinia Seismic Network in southern Italy, which is used for earthquake early warning in that region. Furthermore, Domenico Di Giacomo from GFZ Potsdam visited ECGS for several stays of 1-2 weeks.

❖ **Other scientific initiatives (under planning)**

- At ECGS, we are currently discussing with several partners how to best approach the problem of reasonable seismic hazard assessment for Luxembourg. In this framework, we are developing plans with GFZ Potsdam and the Service Géologique des Ponts et Chaussées to perform seismic monitoring of civil infrastructure in Luxembourg. At the GFZ Potsdam, special low cost sensors have been developed that can be used for seismic early warning as well as for monitoring of critical infrastructure. Such a monitoring involves for instance the recording of seismic background noise at several locations on the structure and the determination of resonance frequencies of the structure. A continuous monitoring could for instance provide information on how these parameters change with time and provide information on the health status of the structure. As a first test case, the Pont Adolphe in Luxembourg City is currently under discussion.

Observations et mesures

Observations et mesures de type "observatoire" réalisées par Olivier Francis:

- Mesures continues de la pesanteur avec le gravimètre à supraconductivité dans le Laboratoire Souterrain de Géodynamique de Walferdange
- Mesures continues de la pluviométrie à Walferdange
- Mesures inclinométriques en continu dans la salle du gravimètre à supraconductivité
- Station de marées gravimétriques avec le gravimètre à ressort Scintrex Walferdange
- Mesures absolues mensuelles de la pesanteur dans le laboratoire souterrain de géodynamique à Walferdange

Publications

- Lampitelli C. and O. Francis, Hydrological effects on gravity and correlations between gravitational variations and level of the Alzette River at the station of Walferdange, Luxembourg, *Journal of Geodynamics*, doi: 0.1016/j.jog.2009.08.003, 2009.
- Oth, A., M. Böse, F. Wenzel, N. Köhler and M. Erdik (2009). Optimizing seismic networks for earthquake early warning – the case of Istanbul (Turkey). Submitted to *Science*.
- Oth, A. (edt.) (2009). Proceedings of the workshop “Seismicity patterns in the Euro-Med region”, *Cahiers du Centre Européen de Géodynamique et de Séismologie*, Vol. 28, 183 pp., in press.
- Oth, A., S. Parolai, D. Bindi and F. Wenzel (2009). Source spectra and site response from S waves of intermediate-depth Vrancea, Romania, earthquakes. *Bull. Seismol. Soc. Am.*, 99(1), 235-254, doi: 10.1785/0120080059.
- Dr. Gottfried Grünthal (edt.), GFZ German research Centre for Geosciences, Spanish edition of the “European Macroseismic Scale 1998 (EMS 1998)”, Volume 27, *Cahier du Centre Européen de Géodynamique et de Séismologie (Cahiers Blues)*

**FORMER YUGOSLAV REPUBLIC OF MACEDONIA/ EX-REPUBLIQUE YOUGOSLAVE
DE MACEDOINE**

***ECILS - European Centre on the Vulnerability of Industrial and Lifeline Systems /
Centre Européen sur la Vulnérabilité des Systèmes et Réseaux Industriels (Skopje)***

MALTA / MALTE***IcoD - Euro-Mediterranean Centre on Insular Coastal Dynamics / Centre Européen de la Dynamique Côtière Insulaire (La Valetta)*****Launching of a university post-graduate teaching module on coastal hazards**

There is a growing awareness of climate change and its impact on the frequency and severity of a number of natural and technological hazards (e.g. sea-level rise, erosion, hurricanes and associated storm surges, oil and chemical spill pollution incidents associated with adverse storm weather conditions etc). Despite this, many university training courses related to environmental management and planning pay scant attention to this subject, despite the close interrelationship between for example, urban planning and population vulnerability to a variety of environmental hazards.

As a consequence, a university post-graduate teaching module entitled '*Managing Environmental Hazards & Risk*' (study unit IEN 5017) was developed and launched by the Euro-Mediterranean Centre on Insular Coastal Dynamics (ICoD) as part of the *Master degree on Environmental Management and Planning* (MEMP) being offered by the International Environment Institute at the University of Malta (*for further information see <http://www.um.edu.mt/iei/>*).

Students attending the study unit on Managing Environmental Hazards & Risk were exposed to a 35 hour lecture series covering risk assessment, chemical hazards, industrial and urban risks, and coastal hazards. During 2010, the students will also be carrying out coastal field work on this and course related modules as part of their Masters programme.

MOLDOVA

ECMNR - European Center for Mitigation of Natural Risks / Centre pour la Réduction des risques naturels (Chisinau)

1. Educational activities

- School level
We have identified new efficient educational forms in prevention of natural risks at school level.
- University level
At a scientific-practical conference with the participation of the educational staff and policy-makers on the local and central levels, there have been gathered new forms and methods of anti-risk training.
- Risk and communication
At a scientific seminar with the participation of the policy-makers from the local and central public administration, of educational institutions, NGO etc., there have been analysed and offered new and efficient forms of training pupils, students and the population in whole to be ready to provide an efficient psychological assistance to the victims of natural disasters, as well as the training of eventual victims and diminution of “unexpectedness” syndrome.

2. Management

During the research regarding The impact of dangerous waste on health and environment (Mechanisms and instruments in assuring an efficient management of the common risk) there have been identified and analysed the instruments and mechanisms of the national systems of waste management, the refinement of the management, mitigation of the impact and prevention of risks. We have analysed the legislation as an efficient instrument in order to identify and offer opinions regarding the elaboration of a network structure for assuring efficient national efforts in the management of waste risks at the local, regional and central levels. We also have taken into consideration the extension of the European Union space, the neighbourhood policy with the Republic of Moldova and the obligations undertaken by the Republic of Moldova for assuring and efficient management of the common risk.

The main achievements of the Centre

1. Mobilization and consolidation of the scientific potential of the Republic of Moldova for the collaboration with the neighbouring states in the development of an applied list of complex measures in risk situations.
2. The performed research offered us the possibility to assure a constructive cooperation and interaction of central and local public authorities, NGO, other organisations and companies implied in assuring the implementation of all the measures provided in the National Program of waste recovery, to identify the right solutions of waste recovery and reduction, guaranteeing and assuring the human right to a healthy environment. We have shown that the impact of dangerous waste on the health and the environment is a common target as of the national so of the international communities. We consider it necessary to adopt a unified legislation and mechanisms of the European space in order to assure an efficient management of common risks.
3. Gathering and supplying with basic anti-risk knowledge obtained at the conference entitled: Training in natural risks mitigation at school and university levels, contains the three main aspects such as: prevention, crisis, rehabilitation, that have to be achieved at school and university levels in accordance with the general objectives:
 - Cognitive and comprehensive level
 - Level of risk valuation and application of knowledge
 - Integration and cooperation level.
4. During the scientific seminar with the participation of the specialists in the domain, we have identified different efficient forms and national abilities in psychological training of the population, as at the central, so at the local levels. The correct understanding of the Culture of risks and the assurance of a qualified psychological assistance to the victims of natural hazards can be performed by a correct modern reaction and protection against natural risks.

All these performances are just a modest contribution of the Centre directed to reduce the risk as an element of a durable development and stability, to the development of the legal and scientific basis concerning risk prevention, professional modern reaction and rendering first aid.

MORROCO / MAROC

CEPRIS – Euro-Mediterranean Center for Evaluation and Prevention of Seismic Risk / Centre Euro-Méditerranéen sur l'Evaluation et la Prévention du Risque Sismique (Rabat)

Evénements sismiques enregistrés

Durant l'année 2009, le réseau national de surveillance et d'alerte sismique a enregistré 1883 événements sismiques. Ces événements se répartissent en 4 catégories : 244 séismes déterminés enregistrés au moins par 3 stations sismiques ; 326 séismes indéterminés enregistrés uniquement par une ou deux stations sismiques ; 299 événements lointains et environ 1014 événements dus aux activités minières et de carrières à travers le territoire national.

Le réseau national a enregistré 244 événements en 2009 parmi lesquels 136 événements sismiques ont une magnitude inférieure à 3.0., 91 séismes ont des magnitudes comprises entre 3.0 et 4.0 ; 16 événements ont des magnitudes comprises entre 4.0 et 5.0 et un événement ressenti a une magnitude comprise entre 5.0 et 6.0.

Le réseau national de surveillance sismique a enregistré trente deux séismes dans l'Océan Atlantique, treize séismes en Mer d'Alboran, douze séismes en Algérie, six séismes au Portugal et deux séismes en Espagne.

A travers les régions du Maroc, le réseau national de surveillance sismique a permis l'enregistrement de vingt secousses dans la région d'Al Hoceima, dix sept secousses dans chacune des régions de Béni Mellal et Taza et treize secousses sismiques dans chacune des régions d'Azilal et Sidi Kacem. Durant le mois de décembre 2009, le réseau national de surveillance sismique a enregistré sept secousses sismiques dans l'Océan Atlantique de magnitudes allant du 3.3 au 5.4. Le séisme de magnitude 5.4 s'est produit le 17 décembre 2009 à 01H 37Mn 50.58Sec ; il a été ressenti notamment dans plusieurs régions côtières : Casablanca, Rabat, Mohammedia, Tanger, Marrakech.

Répartition de la sismicité à travers le territoire national pour l'année 2009

Durant l'année 2009, le réseau national marocain a enregistré des événements plus ou moins importants, les épencentres de ces événements sont localisés sur la partie nord du territoire et les dans les pays voisins. A l'Ouest du Maroc, de nombreuses secousses sismiques dans l'Océan Atlantique sont enregistrées, les magnitudes de ces séismes sont comprises entre 3.0 et 5.0. L'un des séismes atlantiques a été ressenti dans certaines villes du Maroc. En Mer d'Alboran, les événements enregistrés ont des magnitudes comprises entre 2.0 et 4.0. Au Nord du Maroc, la majorité des séismes ont de magnitudes comprises entre 3.0 et 4.0. A l'Est du Maroc, les quelques séismes enregistrés ont des magnitudes comprises entre 4.0 et 5.0. Dans le Rif du Maroc, plusieurs secousses sismiques ont été enregistrées avec des magnitudes inférieures à 4.0 sur l'échelle de Richter. Dans le Haut Atlas, le Moyen et le Sud atlasique, des événements importants ont été enregistrés avec des magnitudes comprises entre 2.0 et 4.0.

Durant la période du 14 juillet au 31 décembre 2003 au 31 décembre 2008, le Réseau National de surveillance et d'Alerte sismique, installée et exploitée par l'Institut National de Géophysique, du CNRST a enregistré durant une période de plus de 15 années, depuis la mise en place d'une permanence sismique 24H/24, 5531 secousses sismiques. Ces secousses sont réparties sur quatre domaines distincts : le territoire national, le large des côtes atlantiques marocaines, le large des côtes méditerranéennes marocaines et les pays limitrophes (Algérie, la péninsule Ibérique et les Iles Canaries).

Durant cette période, le territoire national a connu le maximum de secousses enregistrées 3587 dont 1645 ont été localisés seulement dans la région d'Al Hoceima. La plus forte secousse, avait une magnitude de 6.3 sur l'échelle de Richter, survenue le 24 Février 2004 à 02 H 27 Min.

Au large des côtes méditerranéennes marocaines, 1101 séismes ont été enregistrés, la plus forte secousse a été enregistrée le 2 décembre 2004 à 01 H 50 Min, avec une magnitude de 4,9 sur l'échelle de Richter. Au large des côtes atlantiques marocaines, 350 séismes ont été enregistrés. Le plus fort avait une magnitude de 5,4 survenu le 4 décembre 2009 à 10 H 35 Min. Une partie de l'activité sismique des pays limitrophes (Algérie, Espagne, Iles des Canaries), a été enregistrée et déterminée par le réseau National de surveillance d'alerte sismique.

Nouveau Réseau d'alerte sismique au Maroc

Le CEPRIS a poursuivi sa participation dans la mise en place du nouveau réseau sismique qui repose sur l'utilisation de la transmission satellitaire, au moyen de deux satellites couvrant le Maroc.

Un nouveau réseau sismique au Maroc : une dynamisation de la surveillance sismique dans la Méditerranée occidentale.

Dès l'installation des premières nouvelles stations sismiques au Maroc, un échange en temps réel des signaux sismiques entre le réseau portugais et espagnol a été mis en place, et incessamment avec l'Algérie. Les signaux de stations sismiques BB marocaines sont reçus au Portugal et en Espagne actuellement, des stations portugaises et espagnoles sont utilisées dans la surveillance sismique au Maroc.

Observation sismique de l'Espace Euro-Méditerranéen (Réseau Mednet)

Cette année, le Maroc a poursuivi sa participation à l'observation sismique de l'espace euro-méditerranéen à travers sa coopération au sein du réseau méditerranéen *Mednet*. La maintenance de la station VBB de Rabat a permis aux différents partenaires la réception des données sismiques de haute qualité à travers une liaison internet.

Participation aux projets de la Commission Européenne :

PROJET PROHITECH : Protection des bâtiments historiques par des Technologies mixtes réversibles.

Ce projet est organisé par un consortium de 16 équipes scientifiques appartenant à des pays européens et méditerranéens, et est coordonné par le "Department of Structural Analysis and Design" de l'Université de Naples "Federico II". La contribution marocaine est assurée par un réseau d'experts de l'ING, de la Faculté des Sciences de Rabat et de celle de Kénitra. Le PROHITECH est organisé autour de 14 workpackages thématiques.

PROJET NEAREST : Observations des sources tsunamigènes proches aux larges des côtes : vers un système de détection précoce

Le Maroc participe avec une dizaine d'institution européennes à ce projet.

Pour assurer une contribution efficace du Maroc à ce projet important, l'équipe marocaine chargée de la réalisation de ce projet est composée de Sept (07) Professeurs d'Université programmés pour couvrir les travaux prévus dans les 7 thèmes (WP1 à WP 8). Ce groupe de chercheurs compte pour le moment des experts du CNRST et des experts de la Faculté des Sciences de Kénitra.

Co-Organisation de Manifestation Scientifique

Le CEPRIS a coorganisé cette année une Rencontre Euro-méditerranéenne pour le groupe de recherche et d'utilisateurs des systèmes Quatterra et Antilope à Marrakech en mars 2009 : *Euro-Mediterranean Quatterra & Antelope Users Group Meeting, Marrakech, March 11 - 13, 2009.*

PUBLICATIONS

Iben brahim, A., A. El Mouraouah, M. Kasmi, A. Birouk, A. El Hammoumi, K. Gueraoui, M. Kerroum and E. Toto (2009), Strategies of preservation and prevention of Historical Medinas in Morocco, *Proceedings of the International Conference on Protection of Historical Buildings, PROHITECH 09*, Ed. F. M. Mazzolani, Rome, Italy, 21-24 June 2009, V. 1, p. 25-32.

El Hammoumi, A., K. Gueraoui, M. Cherraj A., M., A. Iben brahim, A. El Mouraouah, M. Kasmi, A. Birouk, M. Kerroum, E. Toto and M. Hafid (2009), *Seismic vulnerability analysis, simulation and modeling of a foundouq in the Medina of Salé*, *Proceedings of the International Conference on Protection of Historical Buildings, PROHITECH 09*, Ed. F. M. Mazzolani, Rome, Italy, 21-24 June 2009, V. 1, p. 787-792.

Stoian, V., S. C. Floruț, A. El Hammoumi and A. Iben brahim (2009), Structural rehabilitation of the Foundouq Boualam masonry building by strengthening the infrastructure, *Proceedings of the International Conference on the Protection Of Historical Buildings By Reversible Mixed Technologies*, Ed. F. M. Mazzolani, 21-24 June 2009 Rome, Italy, 799-803.

Kaabouben, F., Baptista M. A. , Iben Brahim A., El Mouraouah A. and Toto E. A. (2009), On the Morocco tsunami catalogue, *Nat. Hazards Earth Syst. Sci.*, 9, 1227-1236, 2009. www.nat-hazards-earth-syst-sci.net/9/1227/2009/

EL Hammoumi, A., A. Iben brahim, A. Birouk, E. A. Toto, A. El Mouraouah, M. Kerroum, K. Gueraoui, M. Kasmi (2009), Assessment of Seismic Vulnerability of Urban Buildings in Morocco, *Int. Rev. of Phys. (IREPHY)*,

A. El Hammoumi, A. Iben brahim, A. El Mouraouah, E. Toto, M. Kerroum, K. Gueraoui, M. Cherraj, M. Kasmi, A. Birouk, M. Hafid and K. El Harrouni (2009), Seismic Protection of Ancient Medinas in Morocco; a Study Case of Foundouk Bouâlam, *International Review of Mechanical Engineering (IREME)*, 252-257.

Iben brahim, A., A. El Mouraouah, A. Birouk and M. Kasmi (2009), Towards the Establishment of a National Tsunami Warning Center in Morocco, *EMSC-Newsletter*, N°23/April 2009, 17-19.

PORTUGAL***CERU - European Center on Urban Risks / Centre Européen sur les Risques Urbains
(Lisbon)***

1. The CERU has organized the “Second International Seminar on Prediction of Earthquakes”. (A copy of the Final Report in Annex I).
2. The CERU was involved in the assessment of the Seismic Hazard, maintenance and rehabilitation of the heritage in the City of Silves (Algarve-Portugal). A copy of a Report is presented in the Annex II.
3. Participation, Publications and Communications presented in the following Meetings:
 - Câmara Municipal de Lagos, 11 Dez “Vulnerability of Low Elevation Coastal Zones” (Annex III)
 - Book dedicated Professor Ferreira Soares, University of Coimbra.(Annex IV)
 - 6º Simpósio sobre Margem Ibérico Atlântico, 1-5 Dezembro, Oviedo, Espanha (Annex V)
 - EUG Meeting in Viena (Annex VI)
 - Final MATESPRO Team Report (Annex VII)
 - Participation in the 18 December Meeting (See Annex VIII)
 - Academic IP Tomar (Annex X.1, X.2 and X.3)
 - Síntese Histórica e de Património (Annex XI)

ROMANIA / ROUMANIE

ECBR - European Centre for Rehabilitation of Buildings / Centre Européen pour la Réhabilitation des Bâtiments, (Bucharest)

1. Activities in support of the enforcement of the strategic Programs for building rehabilitation coordinated by the Romanian Government and concerned ministries

TARGET COUNTRIES

- Romania and countries that can be affected by the shaking of Vrancea intermediate depth earthquakes (R. Moldova, Bulgaria, Ukraine, Greece, Turkey, Serbia, etc) may have access to the materials on such activities
- Other interested countries, member of the EUROPA Agreement.

OTHER PARTICIPANTS

- *National Authorities:*
 - Ministry of Regional Development and Housing / National Center for Seismic Risk Reduction
 - *Associations:* Association of Structural Design Engineers of Romania - AICPS

OBJECTIVE OF THE PROJECT

Global objectives:

- Facilitation of the application of the new codes and standards by the community of structural design engineers in Romania, taking into account the objectives of the EUROPA Major Hazards Agreement for the period 2009-2011.
- Fostering research, regulations and development programs for thermal and energy rehabilitation of buildings, according to EPBD-European Performance of Building Directive.

Specific achievements in 2009:

- issues related to enforcement of the new Romanian Code for the seismic rehabilitation of existing buildings, correlated with the enforcement, starting with 2010, of Part 3 of Eurocode 8
- presentation of a paper on Seismic Zonation of Romania in the Context of European Standards, National Conference of Romanian Association of Structural Design Engineers – AICPS, May 2009

RESULTS OBTAINED PREVIOUSLY

Knowledge transfer concerning the impact of past earthquakes and the need to rehabilitate buildings

ASSOCIATED ACTIVITIES IN 2009

This activity is correlated within the national framework of earthquake protection and adoption of EU codes and standards, as well as with other research programs of INCERC.

RESULTS IN 2009

An easier transition process to the effective application of the new codes and standards.

2. Dissemination activities using earthquake education materials, seminars and demonstrations, concerning earthquake protection (before, during and after an earthquake) by innovative tools (Website INFORISX, Japanese earthquake simulators etc)

TARGET COUNTRIES

- Countries that can be affected by the shaking of Vrancea intermediate depth earthquakes (R. Moldova, Bulgaria, Ukraine, Greece, Turkey, Serbia, etc), other interested seismic countries, member of the EUROPA Agreement may have access to the materials on such activities

OTHER PARTICIPANTS

National Authorities:

- Ministry of Regional Development and Housing / National Center for Seismic Risk Reduction

OBJECTIVE OF THE PROJECT

Global objectives:

- Developing the national and regional capability of Romania within EUR-OPA Agreement on prevention, preparedness and response;
- Co-operation with other institutions;

RESULTS IN 2009:

- a broader dissemination, including target audience of foreigners that are living in seismic zones of Romania;
- Seminars for providing knowledge and informing people, States, Institutions about the means and ways of earthquake preparedness and disaster prevention held in 2 Universities, C. I. Parhon Medical Research Institute in Bucharest and The High School Emil Racovita, Bucharest
- Participation of ECBR with Association of Building Developers - PSC Romania in the UEPC-European Union of Developers and House Builders PROGRAMME ON SEISMIC RISK MANAGEMENT, aimed at the formation of a strategy and a coordinated programme of actions to reduce earthquake risk in Europe, PSC, Bucharest, Romania, introducing an educational tool on PSC INTERNET Site - English section with topics as:
 - “Seismicity of Romania and past earthquake effects”
 - “Lessons on seismic damage in past earthquakes”,
 - “Typical defects in design and /or construction practices and wrong structural or architectural modifications that can be a trigger of disasters”,
 - “Earthquake Protection Rules on Construction Sites, Office and at Home”.
- Thus, the foreign contractors and staff working in Romania, design architects, engineers, engineers, foremen, skilled workers and craftsmen of building sites will be informed by PSC about this initiative.

RESULTS OBTAINED PREVIOUSLY

- The Romanian version of INFORISX Website is already hosted by INCERC Website;
- Seminars for school students have been held

ASSOCIATED ACTIVITIES IN 2009

The activity will be correlated with other dissemination programs of INCERC and NCSRR

3. Participation of ECBR members in worksops, seminars, conferences and university courses

TARGET COUNTRIES

- Countries that can be affected by the shaking of Vrancea intermediate depth earthquakes (R. Moldova, Bulgaria, Ukraine, Greece, Turkey, Serbia, etc), other interested seismic countries, member of the EUROPA Agreement may have access to the materials on such activities

OTHER PARTICIPANTS

National Authorities:

- Ministry of Regional Development and Housing

OBJECTIVE OF THE PROJECT

Global objectives:

- Enhancing knowledge transfer for seismic disaster prevention
- Increasing the visibility of ECBR activities

Achievements in 2009:

- Presentation on Sichuan-Wenchuan Earthquake, China 2008. Lessons on public strategies for disaster management, February 25, 2009, Workshop of General Inspectorate for Emergency Situations, at Snagov, Romania
- Presentation on Post-Earthquake Buildings Investigation Needs in view of Requirements and Trends of the European Union, Workshop for Day of Civil Protection, February 26 2009, Inspectorate for Emergency Situations, Bucharest, Romania
- Presentation on Post-earthquake fires in high-rise buildings of bucharest at the Conference Fire Safety in High-Rise Buildings - FSHB 2008 Bucharest, May 7-9, 2008

ASSOCIATED ACTIVITIES IN 2009

This activity will be correlated with other activities of INCERC and professional associations, in Romania and EU, with activities of UNO agencies as UNESCO, OCHA, ISDR etc.

RUSSIAN FEDERATION / FEDERATION DE RUSSIE

ECNTRM- European Center for new technologies in risk management / Centre européen des nouvelles technologies pour la gestion des risques (Moscow)

Extremum programme

During the period from 01.11.08 to 01.11.09 seismic events results analyses and their consequences in the world were sent to twenty three European and Mediterranean Major Hazards Agreement (EUR-OPA) addresses connected with forecasting, prevention and mitigation of emergency situations of natural and technological origin.

For this period about 100 statements on the consequences of strong earthquakes were analyzed in the European Centre of New Technologies for the Management of Natural and Technological Major Hazards, (ECNTRM) and sent to the consignees.

Based on this data on estimation of seismic events consequences EUR-OPA states-members planned and carried our humanitarian aid and assistance in conducting rescue works in the states suffered from the earthquake.

Using data of earthquake short-term and long-term forecasting as well as up-to-date information concerning earthquake parameters allows accomplishing forecasts of possible losses that provide rational planning of preventive and rescuing works.

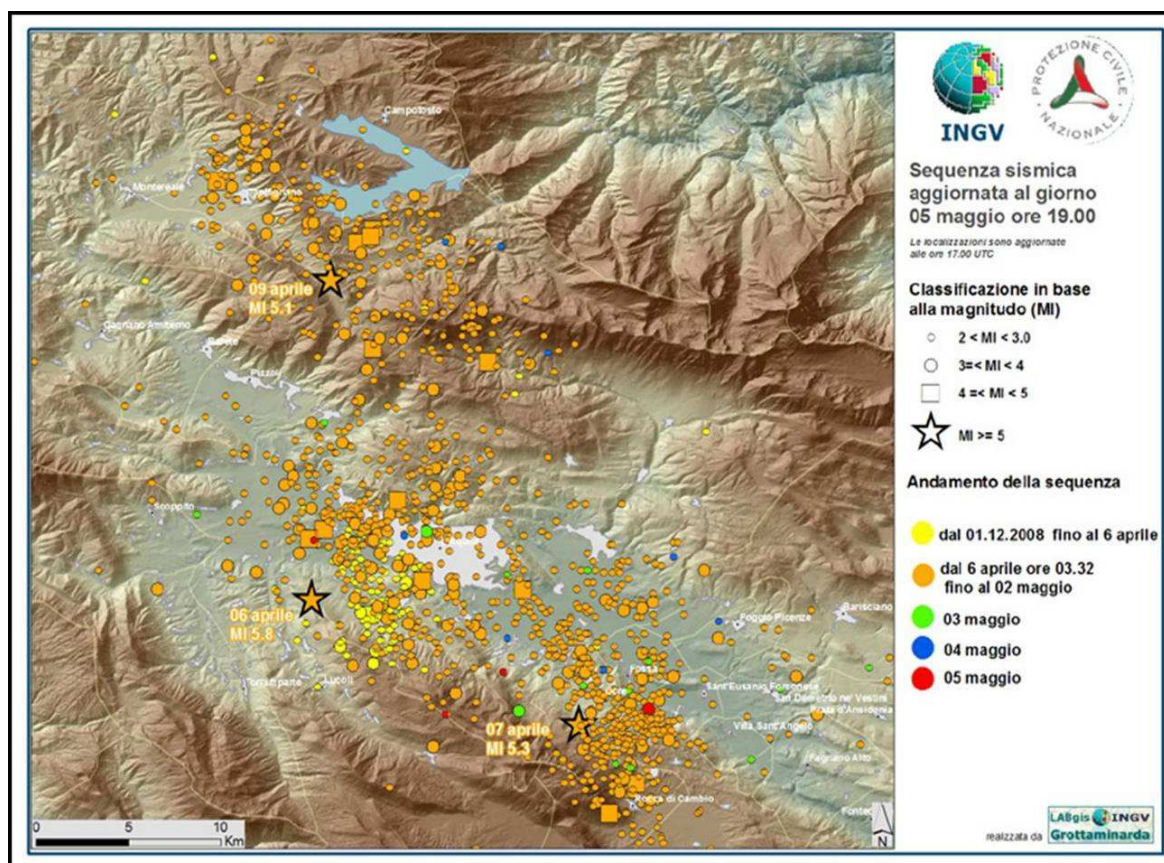
For improving estimation of strong earthquake consequences algorithm, development of effective response scenario and increasing estimation accuracy constant renewal of information on buildings and territory is needed.

The GIS Extremum system provides possibility of estimation possible Consequences of earthquake. Calculation of the earthquake consequences is done within the period 0,5-2 hours. Data received allows making estimation of individual risk for the people and the territory.

The most catastrophic earthquakes of the year 2008-2009 were: China – 69 000 victims, Kyrgyzstan – 75 victims, Iran – 7 victims, Chechen Republic – 13 victims, Pakistan – 1000 victims, central Italy – 305 victims, Indonesia, south Sumatra – 1100 victims.

Earthquake in Italy

Earthquake happened on April 6, 2009 in Abruzzo province. Coordinates of earthquake epicenter: 42,40N – north latitude, 13,32 east longitude, depth H=10 km, strength – Ms=6.3



List of settlement in earthquake zone

Name	Name 2	Intensity	Losses	Injured	Degree of destruction					Rel. fin
					1	2	3	4	5	
Akkumoli		6.30	0	0	0.24	0.10	0.02	0.00	0.00	0.03
Alvi		6.80	0 - 1	1	0.32	0.21	0.09	0.02	0.00	0.10
Amatrice		6.68	0 - 1	0 - 7	0.24	0.13	0.05	0.01	0.00	0.05
Ariskya		8.39	50 - 104	106 - 216	0.06	0.17	0.24	0.25	0.27	0.65
Asserji		7.40	1 - 3	4 - 8	0.21	0.30	0.26	0.14	0.04	0.35
Barishano		6.97	1 - 3	3 - 11	0.27	0.19	0.10	0.02	0.00	0.11
Borbona		7.30	1 - 3	4 - 5	0.24	0.31	0.24	0.11	0.02	0.30
Borgokollefegato		6.63	0 - 1	0 - 7	0.24	0.13	0.05	0.01	0.00	0.05
Villa-Grande		7.55	2 - 3	4 - 8	0.17	0.29	0.28	0.16	0.06	0.39
Vilyano		7.84	3 - 7	6 - 14	0.08	0.23	0.30	0.24	0.14	0.54
Gavelli		6.08	0	0	0.15	0.04	0.01	0.00	0.00	0.01
Izola-del-Gran-Sasso-d' Itali		6.31	0	0 - 1	0.17	0.07	0.01	0.00	0.00	0.02
Kanetra		6.88	0 - 1	0 - 4	0.32	0.24	0.11	0.02	0.00	0.12
Capestrano		6.28	0	0 - 1	0.15	0.05	0.01	0.00	0.00	0.02
Kapitinyano		7.54	2 - 5	3 - 15	0.23	0.26	0.22	0.12	0.04	0.30
Kasamajna		7.36	1 - 3	4 - 5	0.24	0.31	0.24	0.11	0.02	0.30
Kastelvekkio-Subekuo		6.14	0	0 - 1	0.13	0.04	0.01	0.00	0.00	0.01
Kasha		6.17	0	0 - 1	0.13	0.04	0.01	0.00	0.00	0.01
Kolle		6.04	0	0	0.15	0.04	0.01	0.00	0.00	0.01
Kopite		8.31	50 - 104	106 - 216	0.06	0.17	0.24	0.25	0.27	0.65
Korvaro		6.79	0 - 1	1 - 5	0.25	0.15	0.06	0.01	0.00	0.07
Korno		7.59	2 - 3	4 - 8	0.17	0.29	0.28	0.16	0.06	0.39

L Akuila		8.02	27 - 59	57 - 142	0.12	0.23	0.26	0.22	0.15	0.52
Leonessa		6.53	0 - 1	0 - 4	0.22	0.11	0.03	0.00	0.00	0.04
Malyano-di-Marsi		6.22	0	0 - 1	0.15	0.05	0.01	0.00	0.00	0.02
Marchetelli		6.22	0	0	0.21	0.07	0.02	0.00	0.00	0.02
Mashoni		7.34	4 - 9	7 - 32	0.26	0.25	0.18	0.07	0.02	0.22
Molino-Aterno		6.18	0	0	0.18	0.05	0.01	0.00	0.00	0.02
Monteleone-di-Spoleto		6.30	0	0 - 1	0.15	0.05	0.01	0.00	0.00	0.02
Montorio-Al-Vomano		6.07	0	0	0.02	0.00	0.00	0.00	0.00	0.00
Navelli		6.38	0	0 - 1	0.17	0.07	0.01	0.00	0.00	0.02
Nerito		6.82	0 - 1	0 - 4	0.32	0.24	0.11	0.02	0.00	0.12
Nommishi		6.90	0 - 1	0 - 4	0.32	0.26	0.14	0.04	0.00	0.15
Norcia		7.26	3 - 6	6 - 26	0.27	0.24	0.16	0.06	0.01	0.19
Ovindoli		6.45	0 - 1	0 - 4	0.20	0.08	0.02	0.00	0.00	0.03
Ofena		6.34	0	0 - 1	0.17	0.07	0.01	0.00	0.00	0.02
Paganika		7.69	16 - 42	41 - 181	0.31	0.30	0.17	0.05	0.01	0.19
Peskorokkyano		6.46	0	0	0.27	0.12	0.04	0.00	0.00	0.05
Petrella-Salto		6.67	0	1	0.31	0.18	0.07	0.01	0.00	0.08
Pesha		6.38	0	0	0.24	0.10	0.02	0.00	0.00	0.03
Piccoli		8.32	7 - 13	13 - 23	0.01	0.09	0.22	0.30	0.38	0.77
Pojo-Kanchelli		7.09	2 - 3	3 - 16	0.27	0.21	0.12	0.03	0.00	0.13
Pojo-Pichence		7.20	3 - 6	6 - 26	0.27	0.24	0.16	0.06	0.01	0.19
Polino		6.18	0	0	0.18	0.05	0.01	0.00	0.00	0.02
Pyanecca		6.62	0	1	0.31	0.18	0.07	0.01	0.00	0.08
Rivodutri		6.25	0	0	0.21	0.07	0.02	0.00	0.00	0.02
Rieti		6.20	0	0	0.05	0.01	0.00	0.00	0.00	0.00
Rojo-Pyano		7.94	4 - 7	7 - 15	0.06	0.20	0.29	0.26	0.18	0.59
Rokka-di-Mecco		6.79	0 - 1	1 - 5	0.25	0.15	0.06	0.01	0.00	0.07
Savelli		6.18	0	0	0.18	0.05	0.01	0.00	0.00	0.02
San-Demetrio		7.05	2 - 3	3 - 16	0.27	0.21	0.12	0.03	0.00	0.13
San-Jovanni-Reatino		6.04	0	0	0.15	0.04	0.01	0.00	0.00	0.01
San-Jorjo		6.32	0	0	0.24	0.10	0.02	0.00	0.00	0.03
San-Pelino		8.02	27 - 59	57 - 142	0.12	0.23	0.26	0.22	0.15	0.52
San-Petro		6.35	0	0	0.24	0.10	0.02	0.00	0.00	0.03
Sante-Marie		6.03	0	0	0.10	0.03	0.00	0.00	0.00	0.01
Sette		7.78	2 - 5	5 - 14	0.11	0.26	0.30	0.22	0.10	0.49
Skurkola-Marsikana		6.04	0	0	0.10	0.03	0.00	0.00	0.00	0.01
Torro-di-Talo		6.79	0 - 1	1	0.32	0.21	0.09	0.02	0.00	0.10
Fossa		7.32	1 - 3	2 - 10	0.26	0.25	0.18	0.07	0.02	0.22
Chelano		6.22	0	0 - 1	0.05	0.01	0.00	0.00	0.00	0.00
Cherko		6.11	0	0 - 1	0.13	0.04	0.01	0.00	0.00	0.01
Chittadukale		6.53	0 - 1	0 - 4	0.22	0.11	0.03	0.00	0.00	0.04
Chittareale		6.79	0 - 1	1	0.25	0.15	0.06	0.01	0.00	0.07
Elche		6.05	0	0	0.15	0.04	0.01	0.00	0.00	0.01

Earthquake consequences forecast for damages, incidents and calculation of necessary assets

Parameters	Values
Medical situation	
Population in stricken area, persons	362970
Total losses, persons	669 - 1678
Fatalities	211 - 466
Injured	458 - 1212
including extremely heavily injured	65 - 304
heavily injured	76 - 318
slightly injured	317 - 590

Engineering situation	
Portion of damaged buildings	0
including - slight damage (1)	0.14
moderate damage (2)	0.10
heavy damage (3)	0.06
partially destroyed (4)	0.03
total collapse (5)	0.02
Number of fires	2 - 4
Number of accidents at Lifeline Systems	11 - 23
Length of blocked up passages (m)	8 - 18

Relative economic losses	0.09
--------------------------	------

Average state of building damage	0.71
----------------------------------	------

Item	Number
Rescue Operations	
Rescue mechanized groups till 23 persons	53 - 163
Groups of hand-operated debris disassembling till 7 persons	176 - 544
Sanitary teams	23 - 61
Medical teams till 24 persons	16 - 55
Teams of the medical treatment	5 - 17
including medical doctors	12 - 24

Urgent Operations	
Firemen	21 - 47
Crash crew	22 - 65
Maintaining the rule of law	330 - 990

The whole number of personel	7 - 21
------------------------------	--------

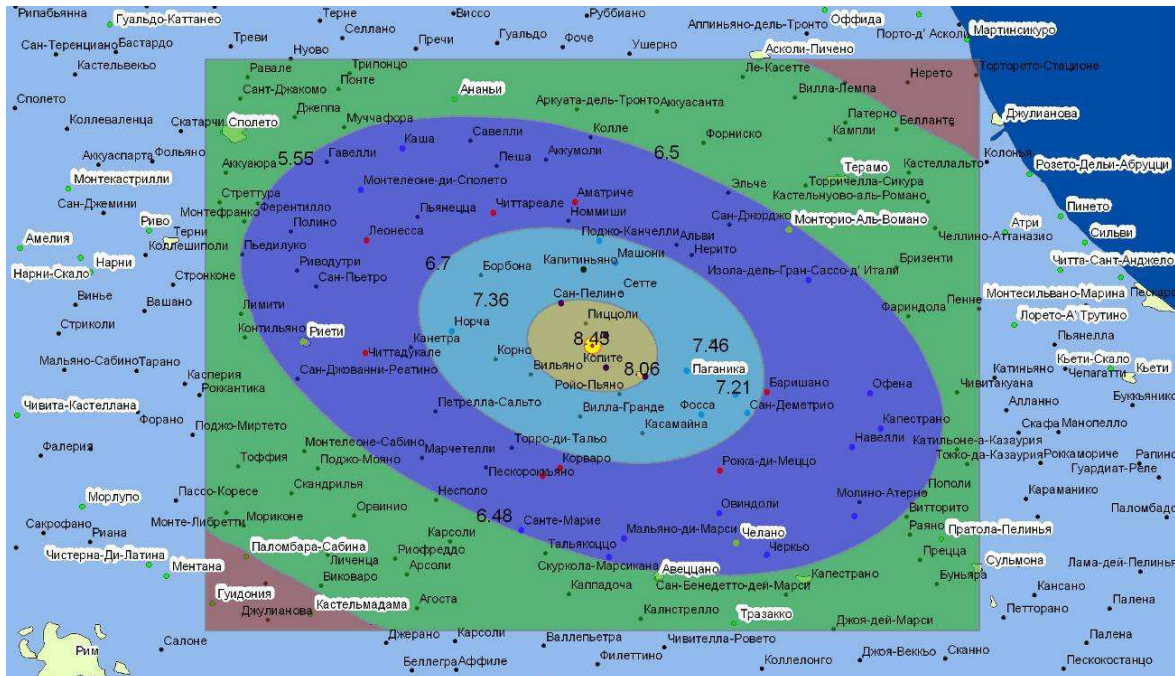
Item	Number
Engineering Devices	
Heavy engineering devices (bulldozers, excavators, cranes)	5 - 14
Tip-up lorry	2 - 4
Fire automobiles	2 - 7
Compressor stations	3 - 8
Mobile power stations	12 - 38
Sets of small size equipment	12 - 38

Life-Support	
Item	Number
Initial Data For Life-Support	
Number of homeless	37254 - 37509
Number of people to be evacuated urgently	106 - 467

Number of inhabitants needed the temporal shelter	36787 - 37403
---------------------------------------------------	---------------

Kinds of life-support	Values
Providing Temporal Shelter	
During summer time:	
Tents YCB-56	552 - 561
Camp soldier tents	5150 - 5236
During winter time:	
Tents YCT-56	1577 - 1603
Winter field tents	8584 - 8727
Heating devices	10161 - 10330
Field kitchens	298 - 300

Kinds of life-support	Values
Supply with water during 1 day (cub m)	745 - 750
including drinking water (cub m)	186 - 187
Supply with bread during 1 day (kg)	21979 - 22130
Supply with Food-Staffs during of 10 days	
Flour (kg)	111762 - 112527
Groats (kg)	20489 - 20629
Meat (kg)	22352 - 22505
Fat (kg)	10058 - 10127
Milk (kg)	91644 - 92272
Potatoes (kg)	96860 - 97523
Sugar (kg)	13411 - 13503
Fish (kg)	5588 - 5626
Salt (kg)	7450 - 7501
Tea (kg)	372 - 375



Comparison of calculated and actual data on L'Aquila earthquake shows:

- 1) macro seismic field calculated with GIS "Extremum" lies in the valley, located between the mountains and oriented from south-east to north-west.
- 2) losses forecast made by GIS "Extremum" was exactly the same as got from mass media
- 3) GIS "Extremum" data base requires development because many locations are missing.

SAN MARINO / SAINT MARIN***CEMEC- European Center for Disaster Medicine/ Centre européen pour la médecine de catastrophe (San Marino)***

The CEMEC has run the following courses :

1. Cours Advanced Life Support (October 12/13/14)

Objectives: To give knowledge and practical skill on advanced heart circulatory system resuscitation

Subjects:

heart failure
pericardial heart failure situations
early defibrillation
survival sequence

2. Course PBLs-D Pediatric Basic Life Support – Defibrillation (October 17)

Objectives: To give knowledges and practical skill on cardiopulmonary resuscitation with early defibrillation in tender age (following ILCOR ERC 2005 guideline)

Subjects:

Cardiopulmonary failure causes in tender age
Patency of breathing systems
Thoracic external pressures
Semi automatic defibrillation
PBLs sequence

3. Course N.B.C.R.e (Nuclear, Biological, Chemical, Radiological, and explosion) (October 27/28)

Objectives: To give knowledges on non-conventional emergencies with explosives; to train health staff to use decontamination systems and personal protection bolts

Subjects:

International and national risk framing
Biological risk
Chemical risk
Explosion damages
Radiological risks
Civil defence plans
Personal protection bolts
Self protection knowledges
Decontamination
Survey implement

4. Courses Emergency and Disaster Psychology (October 29/30)

Objectives: To give knowledge to manage people involved psychologically on emergencies, mainly the rescuers.

Subjects:

Emergencies: psychological impact on aiders and security education
Aiders support plans
Psychological impact on victims, psychiatric triage
Victims support plans

5. Course Legal Medicine Qualification, health regulation and 118 organisation (October 31/31)

Objectives: To give knowledges on aiders during emergencies regarding legal and psychological responsibilities, in particular referring to new laws establishing a common framework

Subjects:

Certification and legal qualification of doctors
Omission and professional secrecy
TSO and public force intervention
Consent and state of emergency
Delegated medical acts and registry
Legal problems in maxiemergencies
Responsibility after avoidance “nursing subdivision of functions”
Death legislation
Legal aspects of nursing international triage
Patient health acts
Negotiation

General Director responsibilities

6. Cours Advanced Management of Disaster (November 10-11-12)

Objectives:

- To give knowledge and skills to manage intra and extra hospital maxiemergencies and disasters:
- Plans for intervention and help
- Alarm activation
- Coordination
- Rolls and roles

Subjects: Conventional and non conventional maxiemergencies

Civil defence plans
Protection and population aspects
Alarming situation
Institutions Rolls
Clinical syndromes and emergency treatments
Pediatric aspects
Psychological, legal, ethical and religious aspects

7. Course TBST Toxicological Basic Support Therapy (December 1-2-3)

Objectives: To give knowledges and skill to manage a poisoned patient

Subjects:

kinetics and dynamic of poisons
Decontamination and purification
Antidotes
Drug and home products intoxications
Industrial and pollution poisons
Bio terrorism
Caustics
Food stuff and mushrooms poisoning
Animal bites and prick

Projects: TOX.IT PROJECT directed by Prof. Alessandro Brelli
Data bank of toxicological substances

8. Course Veterinarian Emergencies (November 19)

Objectives: To give knowledges to face veterinarian maxi emergencies.

Subjects: Veterinarian public health
Food contamination
Environment contamination
Waste digesting
Arthropods

9. Course A.H.L.S. – Advanced Hazmat Life Support (November 16/17)

Objectives: To give knowledges to face Toxicological emergencies.(Care of patients intoxicated or exposed to dangerous substances

Subjects: Self protection knowledges
Decontamination
Caustic-corrosive
Hydrocarbon
Chimical terrorism
Cholinergic terrorism
Irritating Gas and poisons

10. Course PTC – Prehospital Trauma Care ADVANCED (November 25/26/27)

Objectives: To give knowledges to face the traumatized patients

Subjects: Primary and secondary survey
Triage
Trauma epidemiology
Immobilization and mobilization of traumatized patients

TURKEY / TURQUIE***AFEM - European Natural Disasters Training Centre / Centre Européen de Formation sur les Risques Naturels (Ankara)***

National and international activities of AFEM in 2009 :

Seminar	Institutions and Experts	Date
<i>The Sahara Powder and Relationship with Flood, Ankara</i>	Prof. Dr. A. Cemal SAYDAM Dept. of Environmental Engineering, Hacettepe University	25 February 2009
<i>Medical Geology and Risk Management - Ankara</i>	Dr. Eşref ATABEY General Directorate of Mineral Research & Exploration	18 March 2009
<i>The place of non-governmental organizations at the disaster management -Ankara</i>	Dr. Elvan CANTEKİN Neighborhood Disaster Volunteers	16 April 2009
<i>Natural Disasters Training Seminar, Koçtaş A.Ş. - Konya</i>	AFEM-General Directorate of Disaster Affairs	22 April 2009
<i>Natural Disasters Training Seminar - Ankara</i>	Dr. Victor POYARKOV TESEC, Ukraine	12 May 2009
<i>Nukleer and Radiological Risks, Trabzon</i>	Dr. Victor POYARKOV TESEC, Ukraine	14 May 2009
<i>General Directorate of Electrical Power Resources Survey and Development Administration</i>	General Directorate of Disaster Affairs	21 May 2009
<i>Education and Practise of Remote sensing at the natural disasters, METU (Middle East Technical University)- Ankara</i>	Doç. Dr. Mehmet Lütfi SÜZEN Dept. of Geological Engineering, METU	15 -19 June 2009
<i>The concept of Disaster reduction day – 14 October; “Climate change and Flood”</i>	-Prof. Dr. Tuncer GÜVENÇ (Consultant of MTA) -Dr. Abdullah CEYLAN (Turkish State Meteorological Service) -Ahmet ŞEREN (General Directorate of State Hydraulic Works)	14 October 2009
<i>“Learning the natural disasters” in the primary schools</i>	AFEM	October 2008- June 2009 Ankara 02-06 March 2009-Denizli, 28 February-06 March 2009- Bartın)
<i>The measures must be taken pre disaster and psocess must be do during disaster and post disaster to Paletsine Technical Delegation</i>	General Directorate of Disaster Affairs	20-23 October 2009

<i>International Education / Training Workshop</i>	AFEM	23-24 November 2009
----------------------------------------------------	------	---------------------

NATIONAL ACTIVITIES

Seminars were organized by AFEM with the aim of information and to make staff conscious about disasters.

The Sahara Powder and Relationship with Flood

Seminar was presented by Prof. Dr. A. Cemal Saydam associate of Department of Environmental Engineering, Hacettepe University. Mr. Saydam informed how the Sahara powder migrate to Turkey. Also, he showed the photographs and satellite images related with effects of Sahara powder.

Medical Geology and Risk Management

Seminar was presented by Dr. Eşref Atabey associated of General Directorate of Mineral Research and Exploration. Mr. Atabey was informed about the carcinogenic effects of some minerals in specific regions of Turkey.

The place of non-governmental organizations at the disaster management

Seminar was presented by Elvan Cantekin, director of Neighbourhood Disaster Volunteers (MAG). In this seminar, the importance and necessary of partnership of private sector and public sectors at disaster studies were highlighted.

Natural Disasters Training Seminar (Koçtaş A.Ş. – Konya)

Seminar was presented by AFEM in order to inform staff of Koçtaş private sector about disaster preparedness. In this seminar, the information is given about strengthen and arrangement of buildings, behaviour of the staff during and post disasters.

Nuclear and Radiological Risks

Two seminars were organized by AFEM as initial meeting supported by UN projects titled “Nuclear Safety of Europe and Preparedness Emergency” respectively in Ankara and Trabzon. Mr. Victor Poyarkov (Director of TESEC) was invited from Ukraine in order to inform about radiological and nuclear threats. The representatives of different instructions and universities were took part the seminar. The importance of measures of radiological risks and disaster preparedness and instructions and community partnership.

General Directorate of Electrical Power Resources Survey and Development Administration

Seminar was presented by AFEM in order to inform staff of General Directorate of Electrical Power Resources Survey and Development Administration about disaster preparedness.

Education and Practice of Remote sensing at the natural disasters (METU)

Different courses were organized by AFEM in order to inform staff of General Directorate of Disaster Affairs. In this course, 20 staff get informed about determine of disaster damages by using remote sensing techniques.

The concept of Disaster reduction day – 14 October

In this context, three seminars were organized by AFEM respectively, Climate Changes during the Earth History (Prof. Dr. Tuncer Güvenç-General Directorate of Mineral Research and Exploration), Climate Change, Disasters and Turkey (Dr. Abdullah Ceylan- Turkish State Meteorological Service) and the studies of Flood Management (Ahmet ŞEREN- General Directorate of State Hydraulic Works).

Education Activities of AFEM

Aiming of awarenesses of community and disaster reduction, AFEM, firstly begin to educate in the primary schools. Within this context, acquaint students with natural disasters as earthquake, fires, flood, landslide, rock fall and global warming which affect Turkey and measures must be taken predisaster, during disaster and post disaster.

Also, AFEM introduction brochures, bloknotes, posters related with climate change and earthquake and other disasters, and book titled “Learning Safety Life” repressed with Turkish Red Crescent

partnership have been distributed. Approximately 865 students in 7 schools in Ankara, 3134 students in 22 schools in Denizli and 924 students in 12 schools in Bartın informed about natural disasters.

INTERNATIONAL ACTIVITIES

The measures must be taken pre disaster and process must be done during disaster and post disaster

Disaster Training Seminar has been given to delegation composed of 20 staff from Palestine in four days.

Disaster of TURKEY: 10th Anniversary Commemoration Week

Earthquakes that occurred on August 17, 1999 in Kocaeli and November 12, 1999 in Düzce were the most devastating disasters which deeply affected whole Marmara Region from both economical and social point of view. These earthquakes affected more than 20 million people in the Marmara Region, causing more than 18,000 people lose their lives and billions of dollars of economic loss in the Turkish economy.

The year of 2009 is the decennial commemoration of the said earthquakes. In that sense, Kocaeli University, Turkish Red Crescent and General Directorate of Disaster Affairs (AFEM-European Natural Disaster Training Center) have unified their experience and power in order to organize the “Disaster of TURKEY: 10th Anniversary Commemoration Week”. Kocaeli University, Turkish Red Crescent and General Directorate of Disaster Affairs (AFEM-European Natural Disaster Training Center) have decided to share their knowledge for organizing the symposium and the decennial commemoration events together, since they have learned a lot of lessons from the earthquakes of 1999 and others.

The goal of the Symposium has provided an international forum and panels for scientists and researchers all around the world to present their latest works and to commemorate the 1999 Earthquakes on their 10th Anniversary. The Symposium has focused on a broad range of disciplines, techniques, and methods which include earth, engineering, architectural and environmental, social, and medical sciences to review what has been learnt from these earthquakes, what has been done over the past 10 years and what can be done for further preparedness.

The main philosophy of biennial earthquake symposium organized by Kocaeli University of Earth and Space Sciences Research Center (YUBAM) was to create and provide such an atmosphere in which all scientists around the world come together and share their knowledge about their subjects that were related to earthquakes such as geophysics, geology, geodesy, civil, earthquake, chemistry, industry, mechanic, electronics, environmental engineering, architecture, medicine, psychology, law, economics, communications, philosophy, sociology and other related branches. In addition, one of the aims of the symposium was to bring, local authorities, government officials, civil defense, fire department, rescue teams, media and NGOs together at various panels and sessions to discuss, learn and share their ideas, research, and opinions about earthquakes.

The representatives of USA, England, Germany, Japan, Persian, Mongolia, Greece, Kazakhstan, France, Kyrgyzstan, Algeria, Macedonia and Sudan took part in the workshop. During the symposium totally 134 oral presentation and 159 poster presentation have been made.

International Disaster Training / Education Workshop

The workshop on “International Disaster Training / Education” was held Antalya, Turkey, on 23-24 November. The workshop was organized by the European Natural Disasters Training Center (AFEM). Workshop was consisted of three section titled Disaster education on schools, Disaster Education for vulnerability targets and Disaster education for experts and adults. The detailed information is given hereinafter.

The representatives of Turkish Red Crescent, Sivil Defense College, Gülhane Military Medicine Academy (GATA), İstanbul Metropolitan Municipality, Risk Red, Marmara University, Kocaeli University, Muğla University, Fırat University, Directorate of Yalova Province Disaster and Emergence, Neighborhood Disaster Volunteer Foundation, Support to Life, Governership of İzmir, Ministry of Health, European Interregional Centre for Training Rescuers (Armenia), Geographical Institute AM SRC (Slovenia), Azerbaijan University of Architecture and Construction (Azerbaijan) took part in the workshop.

Session I : Disaster Education In Schools

In our country, as a result of geographical, geological, meteorological and strategic position earthquakes frequently happens; this situation causes considerable loss in property and human lives. Rapid rise of population and irregular urbanization causes more hazardous natural disasters. All the layers of the society is influenced from these natural disasters though they are all not effected equally. Education of the society, to take part effectively in reducing the hazards of the natural disasters, is getting more and more important. It is very well known that to raise the awareness of everybody on the streets is very hard. It can not be denied that many associations make efforts in different times to carry out this mission. On the other hand, it will be understood easily that the hardness of maintainability of these associations when we consider the needed cost and man power. For this reason, to give such a extensive, systematical, lasting and sustainable education, formal education at schools is considered more reasonable.

At primary schools, in 'life studies' and 'social studies' and 'science and technology' programs, the acquisitions about disaster training are pleasing. But their sufficiency is controversial. Acquisitions are realized considering the school administrator's and teacher's education on this subject. Another process in this subject is adding disaster training to the nursery school's program and educating the nursery school teachers. Moreover, in a short time disaster training courses should be added to the programmes of education faculties which bring up teachers and for the teachers who is still working an in-service training program should be arranged. Planning the disaster training activities by their experts, may provide an effective and easy application.

In this session, the participants were issued concepts and recommendations on the preparation of disaster plans in the schools, training of teachers, and curriculum programmes. As a result of concepts of the participants following issues agreed upon;

- Improvement of curriculum and application by one hand,
- To eliminate the concept confusion be found in the books,
- Add the subjects concerned with structural awareness,
- Implementation of measurement and assessments on achievement of gains,
- Report to Ministry of National Education in relation to effectiveness of this studies and the subject of disaster issue required more content of lessons,
- Improvement of responsibility and questioning awareness of students as well as adding the issues related with disasters as lessons to curriculum,
- Requirement to train of teachers related to disasters more conscious.

Session II: Disaster Training For Vulnerable Groups

Comprehensive disaster risk reduction can be achieved through education and awareness-raising activities. The Hyogo Framework for Action (HFA) is a global blueprint for Disaster Risk Reduction. The Framework offers guiding principles, priorities for action, and practical means for achieving disaster resilience for vulnerable communities. 3rd priorities for action is use knowledge, innovation and education to build a culture of safety and resilience at all levels. We know that, disasters risks can be substantially reduced if people are well informed and motivated towards a culture of disaster prevention and resilience.

One of the general considerations of HFA is "A gender perspective should be integrated into all disaster risk management policies, plans and decision-making processes and education." and "Ensure equal access to appropriate training and educational opportunities for women and vulnerable constituencies.

It is fact that, women and children are the most affected by disasters. Although women's social, economic and cultural position in many societies makes them more vulnerable to natural hazards, however, they can be considered as important agents for change and development.

Objectives of the session are :

- Do we have supply gender-sensitive disaster training ?
- How we can evaluate gender sensitivity of disaster education ?
- How can we rise the awareness of women and children through education?
- How should we prepare effective and efficient educational materials ?
- How to promote and advance activities in the areas of disaster risk reduction in school communities and safe schools initiatives;
- What types of education are the most suitable for women?
- How can we use media for disaster training?

In this session, the participants were issued concepts and recommendations on the vulnerability concept, disaster education on gender sensitivity, how will be actualize the education to target groups

and the place of and importance of non-governmental organizations on this education. As a result of concepts of the participants following issues agreed upon;

- Vulnerability could vary from region to region, from country to country and from nation to nation. In this case, quite importance the local specialization,
- Define the target groups and to give the training according to necessity,
- Giving the trainings in two groups as preparatory training and strengthen training to target groups,
- To make disaster employees conscious of how to cope with stress, how to work with a nation affected of disasters and requirement to inform related to psychosocial support and trauma,
- To make the media conscious of the training to vulnerable groups, such as, to determine the codes of conduct and lead the media,
- The importance of collaborate of institutions and organizations in terms of integrity of educational struggle,
- The importance of preparation of fragility maps

Session III: Disaster Training For Experts And Adults

Training of community members as well as experts/professionals is essential for building disaster resilient communities. After 1999 Kocaeli and Duzce Earthquakes, the contents and results of these training programs are discussed in several research projects, seminars, meetings and workshops. The goal of this session in the Workshop is to discuss the techniques, follow-up and evaluation processes and problems of the trainings of experts and adults, and to define “Basic Principles” for the trainings.

In this session, the participants were issued concepts and recommendations on institutions and organizations which can give disaster training, improve training projects for senior to response in a short time at the disaster, to establish national education model about disasters, training or education is in the forefront on adult training, how can do effectiveness assessment, sufficiency of experienced staff and material on expert training, the problem between institutions and organizations are given disaster training, how can be training material content. As a result of concepts of the participants following issues agreed upon;

- All disaster trainings in the country, must be given compatible with each other and appropriate to determined standards,
- Training must be in the forefront than education on adult training,
- Consider the cultural and religious variety on training according to zones,
- Primarily determine the necessity evaluation and after, determine the target groups,
- Evaluation of learning methods and tools,
- The public previously must have awareness about risks of own zone,
- The psychosocial first aid must be given to experts and adults,
- To add lessons related to disasters in the higher education programs.

UKRAINE**TESEC - European Centre of Technological Safety / Centre Européen de Sécurité Technologique (Kiev)****1. Training course on radiological monitoring in Chernobyl Exclusion Zone**

The Chernobyl accident has provided a unique opportunity for research and training on radiological emergency response and post-accidental radiation monitoring. It is one of only a few places in the world where effective training and experience in internal and external dose assessment, radioactive sample collection and preparation, contamination mapping and decision making can be provided in real contaminated area. It is important to expand such experience for upgrading of post-accident radiation monitoring techniques and decision making in a case of nuclear or radiological accident.

The TESEC has the laboratory facilities and faculty needed to provide advanced international seminars and group training. There are laboratories and equipment for sampling and sample preparation, portable dose and dose rate meters, alpha and gamma spectroscopy and beta particle detection, In-Situ measurement technique, etc.

The curriculum of the course consists of classroom instruction, practical field exercises and data analysis at the TESEC training facility, and exercises in contaminated areas of the Chernobyl Exclusion Zone.

The main purpose is to give opportunity for the participants, who are interested in providing of measurements, to apply their knowledge in “real” conditions and to be trained as emergency monitoring team. The purpose of the course is also to give opportunity for the participants to realize what action should be done during different phases of the accident, to participate in real measurement with the aim of emergency monitoring and to apply their knowledge in decision making using real results of measurements.

A distinguishing feature of the Training Course is practical aspects. The international group of participants is dividing into teams to perform gamma and beta surveys, In-Situ gamma spectrometry, vegetation and soil sampling in contaminated field and forest locations, data acquisition and assessment.

The schedules for lectures and laboratory exercises are developed by an international panel of experts. It is based on current international standards and methodologies. The training materials of IAEA train-the-trainers course “Regional Train-the-Trainers Course on Monitoring Strategies, Procedures, Reporting and Transmission of Data” are used during the Training Course development.

<i>Organizers:</i>	European Centre of Technological Safety (TESEC), Kyiv, Ukraine; Atom Komplex Prylad, Kyiv, Ukraine; Radioenvironmental Scientific Centre, Kyiv, Ukraine; Thermo Fisher Scientific, Environmental Instruments Division, Radiation Measurement & Security, USA
<i>Host Institute:</i>	European Centre of Technological Safety (TESEC)
<i>Executive organization</i>	RPE Atom Komplex Prylad, Kyiv, Ukraine
<i>Workshop director:</i>	Dr. Victor Poyarkov, Director of TESEC
<i>Workshop executive director:</i>	Ms. Galyna Kazymyrova, General Director Deputy, Research and Production Enterprise “Atom Komplex Prylad” 1, st. Murmanska, Kyiv-94, 02660, Ukraine
<i>Dates:</i>	2009, 31/05 – 06/06/2009
<i>Language:</i>	English
<i>Location:</i>	TESEC training facility in Lutej, Kyiv Region, about 35 km from Kyiv
<i>Field Exercise:</i>	Exclusion Zone of Chornobyl NPP

WORKSHOP PROGRAM

June 1: Monday		Responsible person
09 ⁰⁰ – 09 ³⁰	Introduction to Course	V. Poyarkov
09 ⁴⁰ – 11 ⁰⁰	Module 1, Emergency monitoring overview, Lecture	V. Poyarkov
11 ¹⁵ – 13 ⁰⁰	Module 2, Field radiation and contamination monitoring, Lecture	S. Ievliev
14 ³⁰ – 15 ³⁰	Module 3, Field sampling, Lecture	V. Poyarkov
15 ⁴⁵ – 17 ³⁰	Module 5, Radiation protection of monitoring team	S. Ievliev
September 18: Tuesday		
09 ⁰⁰ – 10 ³⁰	Module 5, Spectroscopy – Beta-spectroscopy of native samples	G. Kazymyrova
10 ⁴⁵ – 11 ⁴⁵	Module 4 Spectroscopy - Part 1 - Laboratory gamma spectrometry	S. Ievliev
12 ⁰⁰ – 13 ⁰⁰	Module 4 Spectroscopy - Part 2 - in suite gamma spectrometry	S. Ievliev
14 ³⁰ – 15 ⁴⁵	Module 5, Radiation protection of monitoring team, Lecture	S. Ievliev
16 ⁰⁰ – 18 ⁰⁰	<i>Session 3:</i> Laboratory gamma spectrometer calibration <ul style="list-style-type: none"> – Demonstration of NaI spectrometers – Demonstration of energy and efficiency calibration of spectrometer – Demonstration of measurements and spectra evaluation – Drill on data reporting 	S. Ievliev S. Gryshyn
18 ¹⁵ – 19 ⁰⁰	<i>Session 4:</i> In-Situ gamma spectrometer calibration Demonstration of NaI spectrometers Demonstration of energy and efficiency calibration of spectrometer Demonstration of measurements and spectra evaluation Drill on data reporting	S. Ievliev S. Gryshyn
September 19, Wednesday		
09 ⁰⁰ – 10 ³⁰	<i>Session 2:</i> Sampling equipment and techniques <ul style="list-style-type: none"> – Demonstration of sampling equipment and techniques – Drill on sampling techniques – Drill on data reporting 	D. Hordynsky
10 ⁴⁵ – 11 ⁴⁵	<i>Session 1:</i> Radiation instruments <ul style="list-style-type: none"> – Demonstration of survey and contamination monitors – Drill with survey and contamination monitors – Drill on pre-operational and QC checks – Drill on data reporting 	D. Hordynsky D. Peters
12 ⁰⁰ – 13 ⁰⁰	<i>Continue of Session 1 and 2</i>	
14 ³⁰ – 16 ⁰⁰	<i>Session 5:</i> Personal and equipment contamination check <ul style="list-style-type: none"> – Demonstration of contamination control instruments – Demonstration of electronic dosimeter; drill on using it – Demonstration of contamination control techniques – Drill on personal contamination control techniques – Drill on equipment and vehicle contamination 	D. Hordynsky D. Peters

	control techniques – Drill on data reporting	
16 ¹⁵ – 17 ¹⁵	<i>Special lecture</i> Chernobyl accident and lessons learned	V. Shestopalov
17 ¹⁵ – 19 ⁰⁰	<p><i>Exercise No.1, 2, 3, 5</i> <i>Exercise No.1:</i> Field and contamination monitoring Objectives: Exercising the tasks of Environmental Survey Team</p> <ul style="list-style-type: none"> – Briefing on personal protective guides during exercise – Briefing on Exercise No.1 – Collection of equipment using appropriate Equipment Checklists – QC checks of equipment – Ground deposition survey – Personal and equipment contamination control – Preliminary evaluation of results <p>Exercise No.2: Sampling (task for sampling team) Objectives: Exercising the tasks of sampling teams</p> <ul style="list-style-type: none"> – Briefing on personal protective guides during exercise – Briefing on Exercise No.2 – Collection of equipment using appropriate Equipment Checklists – QC checks of equipment – Surface contamination survey – Soil sampling – Pasture sampling – Personal and equipment contamination control <p>Exercise No.3: In-situ gamma spectrometry (task for in-situ gamma spectrometry team) Objectives: Exercising the tasks of In-situ Gamma Spectrometry Team</p> <ul style="list-style-type: none"> – Briefing on personal protective guides during exercise – Briefing on Exercise No.3 – Collecting equipment using appropriate Equipment Checklists – QC checks of equipment – Measurements with NaI detector in-situ spectrometer – Personal and equipment contamination control – Evaluation of results <p>Exercise No.5: Personal and equipment contamination check</p> <ul style="list-style-type: none"> – Briefing on personal protective guides during exercise – Briefing on Exercise No. 5 – Personal contamination check – Equipment and vehicle contamination check – Data reporting 	D. Hordynsky D. Peters
September 20, Thursday		
07 ⁴⁵ – 08 ¹⁵	Collection of equipment, QC checks	D. Hordynsky D. Peters
08 ¹⁵ – 10 ⁰⁰	Departure and travel to the Exclusion Zone; exercise briefing; changing to personal protective clothing	O. Kazymyrov S. Iievliev
10 ⁰⁰ – 15 ⁰⁰	Exercise 1, 2, 3 in site of Chornobyl Zone	
15 ⁰⁰ – 16 ⁰⁰	Visit to Sarcophagus and Prypyat, Changing personal	

	protective clothing , Lanch	
16 ⁰⁰ – 18 ⁰⁰	Return to TESEC Training Centre	
18 ⁰⁰ – 19 ⁰⁰	Exercise 5 Personal and equipment contamination check	D. Hordynsky D. Peters
September 21, Friday		
09 ⁰⁰ – 11 ⁰⁰	<i>Exercise No.4:</i> Laboratory measurements (all teams) – Briefing on Exercise No.4 – Sample preparation of collected samples – Beta measurements – Gamma spectrometry measurements – Evaluation of results	S. Ievliev S. Gryshyn
11 ¹⁵ – 13 ¹⁵	Treatment of In-situ spectra	S. Ievliev S. Gryshyn
14 ³⁰ – 16 ³⁰	Session 6, Evaluation session – Evaluation of dose rate and contamination survey – Data Mapping – Operational intervention levels and dose assessment – Preparation of Team Leader report	V. Poyarkov Team members
16 ⁴⁵ – 19 ⁰⁰	Report presentation, discussion, School closing	V. Poyarkov Team members

OBJECTIVES OF THE TRAINING COURSE

To provide the students with the latest guidance on environmental, source, personal and equipment monitoring in case of a nuclear or radiological emergency;

To practice and learn the monitoring procedures under "real" conditions (Chornobyl Exclusion Zone);

To practice teamwork - students will be grouped into teams and they drill and exercise as a team.

PLACE OF MEASUREMENT

The field exercises on radiation monitoring at the area nearby Chornobyl NPP in 30-km Exclusion zone.

RADIATION SAFETY

The risks for teams working within the Exclusion Zone are low yet all the necessary worker protective actions and guides have to be exercised. Estimated effective dose per participant per duration of the workshop will most likely not exceed 100 µSv.

LECTURES

Module M 1: Emergency monitoring overview

- Objectives of emergency monitoring
- Generic monitoring organization
- Emergency monitoring strategy
- Small and large scale accidents
- Instrumentation
- Basic survey methods
- Quality assurance and quality control objectives

Module M 2: Field radiation and contamination monitoring

- Objectives
- Basic methods and techniques:
- Plume survey
- Ground deposition survey
- Environmental dosimetry
- Source monitoring
- Surface contamination survey
- Aerial survey

Module M 3:

- Field sampling*
- Sampling objectives and strategy
- Sampling methods and techniques:
- Air sampling
- Soil sampling
- Water sampling
- Milk sampling

- Human food sampling
- Pasture sampling
- Sediment sampling
- Module M 4: Gamma spectrometry*
- Introduction to gamma spectrometry techniques and equipment
- Laboratory gamma spectrometry
- Equipment
- Energy calibration
- Efficiency calibration
- Spectrometer QC checks
- Sample preparation
- Measurement and analysis, uncertainties
- In-situ gamma spectrometry
- Equipment
- Spectrometer calibration for in-situ measurements
- Measurement techniques, analysis and uncertainties
- Module M 5: Radiation protection of monitoring teams*
- Radiation protection objectives
- Personal protection guides
- Personal monitoring:
- Personal dosimetry
- Thyroid monitoring
- Personal contamination monitoring
- Simple decontamination techniques
- Module M 6: Basic data evaluation*
- Basic evaluation methods
- Field monitoring data evaluation
- Radionuclide concentration data evaluation
- Mapping
- Link to the operational intervention levels

Special lecture

Chernobyl accident and lessons learned

DISCUSSIONS

At the end of each exercise results of the measurements are compared and discussed.

VISIT

To Sarcophagus object of Chernobyl NPP and Prypyat' city

Lecturers

Dr.Victor POYARKOV, European Centre of Technological Safety

Prof. V.Shestopalov, Radioenvironmental Scientific Centre,

Mr. Sergii Iievliev, AKP Research and Production Enterprise

Mrs.Galyna Kazymyrova, AKP Research and Production Enterprise

Instructors

Mr. Alexandr Kazymyrov, AKP Research and Production Enterprise

Mr. Dmytro Hordynsky, NPP Operation support Institute

Mr.Sergei Gryshyn,AKP Research and Production Enterprise

2. Updating of TESEC web site

European Centre of Technological Safety (TESEC) is an international research and educational organization created in according to the decision of Founders (the Ministry of Ukraine of Emergencies and Affairs of Population Protection from the Consequences of Chernobyl Catastrophe from Ukraine and Open Partial Agreement from Council of Europe, protocol # 1 of 24.05.97).

TESEC acts in according to its Statute, in its activity it is guided by international regulations, decisions of Supreme Soviet of Ukraine, decrees of the President of Ukraine, decisions and orders of Cabinet of Ministers of Ukraine, decisions of Council of Founders of the Centre.

The main research area of TESEC is environment protection, emergency prevention, response and relief. TESEC has web site linked with main web site of EUR-OPA major Hazard Agreement. It containing information about TESEC activities and annually updating.

3. Participation in EUR-OPA joint projects and activities. Involvement in activities of Ukrainian Ministry of Emergency Management.

April 26, 2011 marks 25 anniversary of the Chernobyl accident. In many countries nuclear technology is seen as one of the increasingly important solutions for meeting rising energy demands, reducing greenhouse gas emissions, mitigating climate change, counterbalancing fluctuating prices of fossil energy sources. At the same time lessons learned from the Chernobyl accident should be carefully taken into account.

How to use Chernobyl lessons for the safety of nuclear power and other hazardous technologies to protect people and the environment from emergency - this is the main objective of the international conference "Twenty-five Years after Chernobyl Accident. Safety for the Future ", Kiev, April 2011.

The conference will address the following key issues:

- nuclear and radiological risks - cooperation of governments and communities;
- strategy for radioactive waste, spent nuclear fuel management;
- development of prevention and response to nuclear and other man-made disasters, emergency planning, public awareness and involvement population in the emergency planning, post-accident radiation monitoring, modelling of radioactive contamination;
- effects of nuclear and radiological accidents to human health and the environment, the experience of Chernobyl;
- social and economic development of Chernobyl-affected areas: successful models of development, overcoming of stereotypes and enhancing investment attractiveness of regions;
- scientific achievements and new technologies for the safety of the future.

Ministry of Emergency Management of Ukraine is key organizer of conference with participation of TESEC.