EUR-OPA MAJOR HAZARDS AGREEMENT
ACCORD EUR-OPA RISQUES MAJEURS

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

EUROPEAN AND MEDITERRANEEN MAJOR HAZARDS AGREEMENT (EUR-OPA)

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

BILAN DES ACTIVITES DE BASE POUR 2006

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

SUMMARY OF BASIC ACTIVITIES FOR 2006

2007 YEARS/ANS

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ALGERIA / ALGÉRIE

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

I. ACTIVITES ORGANISEES PAR LE CENTRE

1. ***Audit du centre et élaboration des stratégies de recherche en Zones Arides par un comité d'experts de compétence Nationale et Internationale (Biskra, 28-30 Mars)***

En liaison et en cohérence avec les changements observés en agriculture et en avancée du désert (impact direct des changements climatiques subits jusqu'alors)

2. ***Journées internationales sur la Désertification et le développement durable (Biskra, 10-12 Juin)***

Trois ateliers ont été menés en parallèle :

- l'écosystème steppique et sa protection.
- Optimisation de l'exploitation des ressources hydriques
- Agriculture en milieu aride pour un aménagement durable.

Ces journées ont regroupé environ 150 participants et ont eu un certain retentissement.

A l'issue de ces journées, le processus d'aridification et de désertification doit être considéré comme risque majeur et pris en compte dans l'ensemble, des programmes de prévention contre les risques développés aux niveaux régional et international.

Les recommandations mises en avant à l'occasion de ces journées ont été transmise dans leur intégralité à Monsieur H. Arba DIALLO (Secrétaire exécutif de l'UNCCD) par Madame Linda ROLLIN (Accord EUR-OPA Risques Majeurs dont le centre est membre).

3. ***Cours intensif à l'usage de tous les chercheurs du centre sur les Systèmes d'Information Géographiques (Biskra, 9-16 septembre)***

Les SIGs sont des outils incontournables pour l'élaboration des bases de données. Il est à noter que dans le cadre de son rôle d'animation locale sur l'environnement et les risques ; le CRSTRA a fait profiter de cette formation tous les organismes et administrations publique, utilisateurs potentiels de cet outil : l'environnement, l'Hydraulique, la Planification et l'Aménagement du Territoire, la Protection civile, la Gendarmerie, les Forets, l'Agriculture, la Police etc. . ..

4. ***Organisation de la journée d'étude et manifestations scientifiques relatives à la fête annuelle de la datte (30 Novembre)***

A la demande des autorités locales de la wilaya de Biskra (comité d'organisation de la fête), outre l'organisation et l'animation scientifique, le CRSTRA a saisi l'occasion pour transmettre un message sur le rôle de la phoeniciculture dans la stabilité des populations sahariennes et sur l'économie dattière en Algérie.

II. PARTICIPATION A DES ACTIVITES NATIONALES ET INTERNATIONALES

1. **Atelier International sur la Prévention des risques majeurs sur le Bâti ancien et Monuments historiques, (Athènes, 16-17 Février)**

Entretien avec M. Jean Pierre Massue et préparation du dossier relatif à l'inscription de la sécheresse et la désertification comme risque majeur au niveau de l'Accord EUR-OPA Risques Majeurs.

2. **Journée d'études Internationale sur le Tourisme saharien dans le cadre du 2ème salon international du tourisme saharien à Biskra le 27 Mars 2006.**

Deux communications orales ont été présentées, avec l'élaboration d'un CD sur 52 sites touristiques dans la wilaya de Biskra ainsi qu'un poster:

- agriculture oasienne et écotourisme (orale)
- utilisation de la Télédétection dans la valorisation des potentialités touristiques dans la région des Ziban (orale)
- Le tourisme en Algérie, secteur à valoriser (poster)

3. **Outil spatial au service du développement 16 et 17 Avril 2006 à Biskra**

Deux communications orales ont été présentées:

- Apport des SIG à la gestion urbaine de la ville de Biskra
- Utilisation de la télédétection et des SIG pour la réalisation d'une spatio- carte des sites touristiques.

4. **Atelier International sur la désertification à Ghardaïa le 1 et 2 juin 2006 organisé par le MATE**

La communication orale présentée a abordé le thème suivant :

- la problématique de la recherche en région aride.

D'autres thèmes ont été également abordés sous forme de posters :

- Les impacts socio-économiques de la désertification en Algérie,
- L'homme, la ville et les conséquences structurelles sur le milieu naturel

5- Séminaire sur l'écotourisme organisé par la ligue arabe le 06 Novembre 2006

Une communication a été présentée sous l'intitulé « Oasis, lieu de vie, lieu de bien être ».

6- Atelier International à sur la gestion des risques : « cultures locales des risques : ressources précieuses, ressources à risque » (Ravello, Italie, 24-25 Novembre 2006)

Deux communications du CRSTRA ont été présentées à savoir :

- Le rôle du CRSTRA dans la prévention des risques liés à la sécheresse et à la désertification.
- Gestion des eaux et aléas climatiques dans la région Maghrébine - techniques et savoir-faire en hydraulique.

7- Séminaire International sur l'Aridoculture et les Cultures Oasiennes (Djerba, Tunisie, 26-28 Décembre)

Les thèmes abordés par les trois posters présentés ont été :

- Présentation du CRSTRA, ses missions, ses perspectives et ses éditions (documentations et CD)
- Les menaces de la salinité des sols : un constats dans le régions des Ziban Algérie
- Les principes de production d'un bio- fertilisant à partir des sous produits du palmier dattier avec exposition du produit obtenu

Le CRSTRA a été désigné comme rapporteur général de ces journées.

8- Participation à l'ensemble des ateliers relatifs au SNAT 2025 organisés par le MATE

1. débat national sur « le schéma national d'aménagement du territoire » et suivi intersectoriel du schéma national d'aménagement du territoire (SNAT) 2025 (Ghardaïa, 25-26 Avril).
2. élaboration du schéma national d'aménagement du territoire (SNAT) 2025/phase de concertations sectorielles, (siège de l'agence nationale de l'aménagement du territoire, Kouba, 28 mai)

III. PUBLICATIONS / EDITIONS DU CENTRE

1. ***Publications***
2. ***Proceedings***

- Journal Algérien des Régions Arides : Numéro spécial Colloque International « Terre et Eau » Annaba, 21-23 novembre 2006.
- Journal Algérien des Régions Arides : revue internationale annuelle ; spécialisée dans le développement global en Régions Arides, N° 05/2006.
- « CRSTRA News » : publication périodique d'informations, traitant différents thèmes.

3. ***Mise à jour du site Web du CRSTRA***

- Journées Internationales sur la désertification et le Développement Durable (Biskra, 10-12 juin):
    - Résumés
    - Actes intégrales + CD

IV. ELABORATION DES CAHIERS DE CHARGES ET DE FICHES TECHNIQUES

- Elaboration des cahiers de charges relatifs à l'équipement scientifique du laboratoire central (Sol-Eau végétal)
- Elaboration des fiches techniques pour les stations expérimentales (station d'El Outaya, de Touggourt et de Boughzoul).
- Elaboration des cahiers de charges pour l'équipement en mobilier, bureautique, informatique, climatisation. . . .etc. et de base de vie du nouveau siège.

ARMENIA / ARMENIE

ECTR - European Interregional Educational Centre for Training Rescuers / Centre Européen de Formation Inter-Régionale pour les Sauveteurs (Yerevan)

ACTIVITY N°1: TRAINING IN FIRST AID SKILLS WITH ASSISTANCE OF THE ARMENIAN RESCUERS-INSTRUCTORS TRAINED

1. In 2006 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 centers.

The European Center for training rescuers together with the "Armenian Caritas" International Organization during 10-23 April 2006 organized a first aid course for the mountain, remote Vardenis town in the Gegharkunic region in Armenia for 15 people. 12 of them were awarded Certificates of first aid and 5 trainees from those who showed the best grades were trained at the monitor courses (the second grade instructors) and were awarded the Certificates of instructors in first aid.

After that, from 24 April 2006 to 7 May 2006 a first aid course was organized for the mountain, remote Chambarak town in the Gegharkunic region in Armenia. 5 trainees from 12 (those who showed the best grades) were trained at the monitor courses (the second grade instructors) and 4 of them were awarded the Certificates of the second grade instructors in first aid.

2. In 2006 within the framework of the present Project, the training courses in first aid skills in emergencies and in other extreme situations, including every day life, as well as the training courses in rescue operations elements for 24 military men of peacekeeping battalion subdivisions of the Republic of Armenia, leaving for Irak on January 2007 (doctors, drivers and sappers).

Within the framework of cooperation with the peacekeeping battalion on December 2006 (20-27) the ECTR carried out the training of personnel of the above mentioned subdivisions in:

- first aid skills and basis of rescue operation basing on the European methodic resulting in awarding the European Certificate of life saving aptitude;
- first aid skills administered by the use of improvised means; in case of applying of dressings, transportation of victims, convulsions and shock.

In December 24, trainees of the peacekeeping battalion attended the first aid course and all of them passed the final exam resulting in awarding the European Certificate of life saving aptitude.

ACTIVITY N°2: ENABLING THE COORDINATION OF ACTIVITIES IN A DISASTER RISK REDUCTION AREA IN THE REPUBLIC OF ARMENIA.

1. In 2006 the ECTR activities in the above direction mainly addressed the preparation work for the 11-th Ministerial Session of the European and Mediterranean Major Hazards Agreement.

All the papers connected to the organization and holding the Ministerial Session together with the draft documents to be adopted at the Session were delivered to the Ministry of Territorial Administration, the Ministry of Foreign Affaires and the Rescue Service of Armenia.

In particular, the texts submitted to adoption at the 11th Ministerial Session were translated and delivered and building on them, we developed and submitted to the mentioned ministries and departments the below documents:

- About the 11-th Ministerial Session of the European and Mediterranean Major Hazards Agreement
- About political resolutions and recommendations to be adopted in the 11-th Ministerial Session.

The developed documents quote the basic principals and key priorities underlying the EUR-OPA Major Hazards Agreement's planned activities in the nearest future as well as local, national and regional (international) objectives to be resolved by the state-members of the Agreement in disaster reduction area coming out of the documents to be adopted in the Ministerial Session.

Similarly, we enabled active participation in the development of the presentation of the Head of the Armenian delegation at the 11-th Ministerial Session containing the constructive comprehensive analyses responding to the Agreement priorities and intervening the translation of objectives and proposals of Armenia addressed to the meeting of these priorities. In particular, the enhancing of regional cooperation in the Southern Caucasus aiming to a reduction of trans boundary disaster risks.

2. The coordination by the ECTR of the assessments carried out in Armenia within the RIMAWA Project framework entitled: "Reducing environmental risk through strengthening of management of hazardous waste from industrial activities in the wider Europe" was the second important activity of the ECTR activities in 2006 in the above direction.

Launched in Paris in spring 2006, the Project has a high level of significance for our countries and to set up the Consortium of centers from Western, Central and Eastern European countries to implement joint

Projects on disaster risk reduction. It was a first pilot joint Project aiming to establishing and continuing the successful functioning of the Consortium. The value of the Consortium lies in that :

- it contributes to the consolidation of efforts and ensures exchange of experience between states of "broader" Europe through promoting more effective movement mechanisms in disaster risk reduction,
- through consolidation of relevant research bodies of countries in particular regions (such as Southern Caucasus, Baltic Sea countries and Balkan region) within joint projects frameworks, it ensures liaison building and strengths the trust among nations of neighboring countries.

To launch the Project in Armenia, leading specialists and scientific researches from the Ministry of Nature Protection, the Yerevan state University, relevant National Academy of Sciences Institutions and from other governmental and nongovernmental organizations were engaged to fulfill the Project objectives.
They submitted to the Project Coordinators the materials not only planned for April-May but also for June (WP2, WP3, WP4).

ACTIVITY N°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

In 2005 within a framework of the National Program of harmonization of the legislations of the European Union and the Republic of Armenia, the European Interregional Center for training rescuers analyzed the secondary Legislation of the European Union in the fields of Civil Protection and Sustainable Development and the relevant Legislation of the Republic of Armenia.
The summarized outcomes of Legislation analyzes in the field of civil protection are quoted within the frame work of assessment of activities fulfilled by the European Center in 2005.
In 2006 due to some suspension in launching the development of the concrete legislative Acts of the Republic of Armenia in the civil protection and sustainable development areas we concentrated on making better and more analyses and on improving the comparative characterizes of the secondary legislation of the European Union and the Republic of Armenia performed 2005 in the above areas.
In particular, those basic principals that underlie the legislation of the European Union in the civil protection and sustainable development areas were put to more and better analyses. Besides, one can especially notice the preciseness of their wording, a composite way of their submitting in the appropriate legislative Acts of the European Union and the existence of mechanisms enabling their steadily exercising
.
The improved legislation comparative analyses were performed building on the priorities of "The Framework for Action 2005-2015: building on the resilience of nations and communities to disasters" ("Hyogo Framework for action") alongside with building on the priorities approved in October 2006 by the 11-th Ministerial Session of the EUR-OPA Major Hazards Agreement.
The outcomes of analyses and the developed proposals have been summarized in the paper entitled : "Harmonization of legislation of the Republic of Armenia and the European Union in the civil protection and sustainable development areas" (within the framework of the National Program of realization of the Partnership and Cooperation Agreement). The paper is panned to be published commencing 2007 within the context of the book entitled :"About some most significant windows towards ensuring safety in the Republic of Armenia".
The European Center basing on the outcomes of analyzes in 2005 and 2006 elaborated also the summarized proposals aiming to improve and amend in 2007-2009 the existing Laws of the Republic of Armenia in the given area, along with the proposals for developing innovative Acts.

ACTIVITY N°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

1. The "Project related proposed activities" Section has quoted that the developing Manual has planned to include eight sections . Earlier it has been mentioned that the ECTR has developed a rich material in a form of brochures distributed per each relevant Section .
In 2006 the ECTR has developed another different 26 chapters included into the above eight Manual Sections , in particular:

- Methodology of teaching safe life activity basis
- Experimental psychology
- Incidents and technological accidents
- An extreme situation and its assessment; the possible ways out
- School without drugs
- A car accident.

The ECTR also developed three information Manuals for the use of the municipals at special risk:

- Draft Guide for the populations of the Republic of Armenia on how to proceed if a nuclear threat in the Armenia nuclear power Plant seems imminent or is real
- Draft Guide on the rules of behavior if a threat of a flooding risk seems imminent or is real
- Draft Guide on the rules of behavior for the populations located in a close proximity to the chemical pollution zone (the priority action to be undertaken by the populations).
- After these materials are discussed, deepened and polished they intend to be included into the relevant chapters of the project Manual.

2. Similarly, the ECTR specialists continue, drawn on the new materials being earlier developed as well as listed above, to give lectures in the Refresher Training Faculty of the Crisis Management Academy, including to the staff and heads of education administration members, school principals, heads of the civil protection and emergency Chairs of the higher education establishments in the Republic of Armenia.

ACTIVITY N°5: DEVELOPING AND IMPLEMENTING SPECIAL TESTS FOR SCHOOLS TO ASSESS THEIR ACTUAL SECURITY LEVEL, THEIR RISKS PREVENTIVE MEASURES AND RESPONSE MECHANISMS TO NATURAL AND MAN-MADE DISASTER

1. In 2006 the ECTR has developed that Program who underlines the significance of prevention planning strategies for education institutions to respond to emergency situations and emphasizes the role played by school administration, teachers and students' parents in ensuring preparation and operative response.
The preliminary tests developed to assess the level of preparedness, safety and readiness to adopt preventive measures provided outcomes that led to recommendations to increase their preparedness. Relevant normative draft papers to deliver such tests and recommendations to all educational institutions will be prepared : administrations of chosen experimental schools (with methodological support by the ECTR and the State Crisis Management Academy) are expected to adapt them to each school specific conditions and adopt appropriate instructions on how to prepare and respond to such situations.
The tests have been grouped into 20 dimensions in ensuring safety strategies, of whom we can outline:
1) availability of security Plans (evacuation, training exercises, ...) and their timely updating
2) availability of local weather forecast to identify possible threats and plans to implement if imminent
3) availability of the training Plan and a Plan to assess the level to which the school staff is prepared
4) receiving training for students on administering self-aid and for the 7-10 form students - first aid
5) availability of a centralized warning and informarion system for students on adequate procedures
6) evaluation of food, beverage stock if students and staff have to remain at the school for a period
7) assessment of health and medical preparedness (number of emergency kits and medical supplies, ...)
8) check emergency communication service, premises and instructions for the person on duty
9) procedures for assessment of persons candidating to work at schools
10) securing in case of crisis school's mental health providers and supplementary district ones

2. The education manual - brochure: "Earthquake" has been published by the State Crisis Management Academy and the National Seismic Protection Service, with support of IFRC and Norwegian Red Cross.
This manual is targeted to increase the knowledge of populations on counteractions to earthquakes and can also be disseminated in schools: in the beginning and end of the manual, a multiple choice questionnaire to assess the readers' knowledge before and after studying the manual is proposed : it includes 12 key questions addressing theoretical knowledge and practical skills in terms of behavior to apply before, during and after the earthquake. Comparing answers before and after studying the manual allows to specify the extent to which the schoolchildren are prepared to undertake the adequate actions.

ACTIVITY N°6 : PREPARATION OF TRAINING COURSES AND TRAINING OF PEACEKEEPING TROUPS ON ELEMENTS OF ADEQUATE BEHAVIOR AND FIRST AID SKILLS FOR CIVILIAN POPULATION IN ARMED CONFLICT ZONES

In 2006, the following material (after its appropriate polishing and improvement) intends to be instituted into relevant training course Sections:

Section 1:"Accidents and technological disasters"
1.1. Car accident
1.2. Air Crash .
Section 2 :"An extreme situation, its assessment and the possible ways out.
2.1. Evaluation of physical and psychic data and an emotional state of an individual planning to organize an attack
2.2 Behavior pattern of an individual being under alcohol or narcotic impact
2.3. The ways to identify human mental disorders.
Section 3. Providing safety and security in armed conflict zones
3.1. Signs manifesting the beginning of a conflict
3.2. Priority for action undertaken under threatening circumstances
3.3. Survival in the armed conflict zone
3.4. Establishing reciprocity with local population and recognizing human settlements
4. Best ways to adapt to climate conditions in different geographical locations
5. General rules to successfully adapt to local climate conditions

AZERBAIJAN /AZERBAÏDJAN

ECMHT - European Centre on Training and Information of Local and Regional Authorities and Population in the Field of Natural and Technological Disasters / Centre Européen de Formation des Autorités Locales et Régionales dans le Domaine des Catastrophes Naturelles et Technologiques (Baku)

International conference "Use of water reserves and integrational management during the processes of globalization"

The symposium on "Scientific-theoretical and legal provision of protection of ground and underground water resources of the republic" planned to be held in September 2006 according to the the activity plan for the year of 2006, has been held together with the international seminar on "Use of water reserves and integrational management during the processes of globalization" which was organized in accordance with proposal of the Scientific Council of the Center and on the initiative of "FOVGAL" association non-governmental organization.

Reason:

Closeness of the subjects, participation of the same local organizations at the both measures, wideness of the scope of the international conference held with the participation of scientists and experts from several neighbour countries.

Participating organizations:

- "FOVGAL" association non-governmental organization of the specialists on the Problems of Emergency Situations and Life Activity Security,
- Azerbaijan State Construction University,
- European Training-Information Center in Baku,
- Global Water Cooperation Organization in the countries of Central Asia and the Caucasus,
- Azerbaijan Melioration and Water Economy Open joint-stock company,
- Turkish University named after Suleyman Demirel,
- Agriculture Ministry of Azerbaijan Republic,
- Experts from appropriate international organizations functioning in Baku city.

The international conference visually showed great significance of the discussed problems for region countries and particularly for Azerbaijan. It was pointed out, that on average Azerbaijan uses 10-12 cubic kilometers of water per year, from which 75-80% goes on needs of agriculture and industry, and the rest part is used like drinking water. Certainly, it is not enough, taking into account expenditure of drinking water per a person, as well as the primary aspect causing anxiety is a poor quality of water.

The irregular distribution of rivers inside the territory of the republic also increases the known problems in Azerbaijan, where water reserves are limited. Speaking about the activities on prevention of lack of water in various regions of the republic, conference participants especially stressed (emphasized) the construction of regulating installations in the rivers inside the country and the importance of redistribution of the same rivers stream over the territory.

The conference participants discussed the reports of professor H.O.Odjaqov –president of "FOVGAL" organization of the specialists on the Problems of Emergency Situations and Life Activity Security, Mr. M.Y.Asadov – expert of Global Water Cooperation Organization in the countries of Central Asia and the Caucasus and Mr. A.S.Kangarli – professor of Azerbaijan State Construction University, concerning their opinions and proposals on situation of water reserves in Azerbaijan, existing problems and ways of their solution.

Wide exchange of opinions over the quality of drinking water being given to the population was conducted at the conference. It was marked, that there are rivers like Kura, which is the main water artery, Araz, Alazan (Qanigh) and other 21 boundary rivers in the Southern Caucasus and Azerbaijan as well. The waters from the countries (especially from Armenia, Georgia, Russia) which are situated on the upper stream of these rivers come to Azerbaijan territory in extremely polluted condition. Even Okhudjuchay river which comes through Armenia is called "dead" river because it is critically polluted. The waters from these rivers do not respond to sanitary-hygienic requirements and 75% of Azerbaijan people use these waters for drinking needs. So, a lot of expenditures are required to clean them and to supply the population with clean waters.

The report, represented at the conference by Mrs. Y.Sakhvayeva – head specialists of Kirqizistan Republic Water Economy Department concerning experience of regulation of disputed matters on using water and protecting transboundary water resources in the republics of Central Asia, has brought definite clarity to the organization of dialogue between countries in order to study and solve this problem which is painful for all region countries. Azerbaijan and Georgian specialists: M.Y.Asadov, T.E.Osmanov, N.Q.Aslanov, O.S.Nanitashvili, N.S.Tevzadza spoke about the role of Kura river in water economy of both countries, the

level and reasons of water pollution, and the importance of dialogues between countries to eliminate these problems. They made some useful suggestions as well.
The reports on “Perspectives and problems of transboundary waters management”, “Studying of danger of underground waters pollution with great oil wastes”, “Monitoring of water sources and objects”, “The opportunities of use of local natural materials (sorbents) for cleansing of radioactive polluted waters”, “The impact of climate changes on the changes of water regime in the Great Caucasus” have caused the special interest at the conference.
In general, the conference lasted 2 days (6-7 June, 2006). At the plenary meeting consisting of 5 sections 90 reports were listened, and 27 of them were the reports of the specialists from foreign countries (especially Turkey and Georgia).
The texts of the reports presented at the conference had been published in a special bulletin and distributed between conference participants beforehand.
The recommendations covering such important spheres like ecological cleaning and protection of water sources, the basic principles of integrational management of water reserves, importance of organization of dialogue between basin countries concerning application of coordinated control against pollution of transboundary rivers and etc. were given (adopted) at the last plenary meeting of the conference.

The preparation and publication of the instruction book on: “Reduction and neutralization of wastes and principles of the organization of the population safety” was not completed in 2006 because of the lack of financial means. It is planned to be implemented in the next years.

BELGIUM /BELGIQUE

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

L'ISPU a poursuivi son travail d'analyse de la gestion interministérielle des risques majeurs qui part du constat qu'il existe bien souvent un manque de coordination et d'approche intégrée entre les différentes composantes de la gestion des risques: le défi pour les Etats consiste donc à trouver une structure de coordination au niveau national visant une politique globale de gestion des risques majeurs.

Séminaire international sur la gestion interministérielle des risques majeurs (28 Juin 2006, Paris, France)

Organisé en collaboration avec le Secrétariat exécutif de l'Accord Eur-Opa, son objectif était de dégager des pistes de réflexion visant à améliorer, au besoin, les mécanismes de coordination interministérielle existant dans les pays membres.
Cette démarche s'inscrivait dans le suivi de « l'Analyse comparative de la gestion interministérielle des Risques Majeurs : Belgique, France, Russie, Bulgarie »[1] qui constatait qu' « *il existe souvent un manque de coordination et d'approche intégrée entre les différentes composantes de la gestion des risques (identification, prévention, préparation, gestion de crise, rétablissement et intégration des enseignements) : tant les ministères au niveau national dans les pays centralisés que les ministères fédéraux et régionaux dans les pays décentralisés sont restés cloisonnés dans une vision verticale de la gestion des risques, où chaque autorité responsable gère ses compétences propres dans son domaine »,* que *« cette situation complique le travail des autorités locales qui sont concernées par toutes les composantes de la gestion du risque et doivent appliquer l'ensemble des réglementations adoptées en amont. »* et que « *confrontées à leur manque de cohérence, il n'est pas aisé pour elles de parvenir à une vision globale de la gestion du risque*».
L'analyse de la gestion interministérielle a été conçue dès l'origine comme un document de travail. Son esprit était d'inviter les Etat membres à l'Accord à échanger leur expériences et bonnes pratiques en la matière. Le canevas proposé décrivait les mécanismes représentatifs des systèmes identifiés précédemment[2] : la Belgique et la France pour la gestion interministérielle, responsabilité de facto et de lege, la Russie pour l'existence d'EMERCOM, ministère spécifique qui réunit toutes les compétences nécessaires pour la gestion des risques et la Bulgarie pour son Agence est ses Comités Permanents qui se voient déléguer la gestion des risques majeurs par le gouvernement.

Préparation du séminaire
Le document de travail[3] a été soumis à des experts nationaux, aux Correspondants permanents ainsi qu'aux Directeurs des Centres spécialisés de l'Accord. Leurs remarques ont été intégrées aux recommandations proposées par l'auteur[4]. A la lumière de ces compléments d'information et des dernières grandes catastrophes, tous les participants au séminaire ont été invités à préciser comment leur pays envisage leur stratégie de gestion des risques majeurs.

Déroulement du séminaire
Matin: Présentations PowerPoint
Des orateurs belge[5], bulgare[6], français[7] et russe[8] ont exposé le système de gestion interministérielle existant dans leur pays. La Correspondante permanente du Maroc[9], Madame Chafil, a ensuite été invitée à partager le retour d'expérience du séisme d'Al Hoceima et les enseignements que son pays en a tiré.

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1 Commanditée par l'Institut Supérieur de Planification d'Urgence et réalisée par Kathleen Van Heuverswyn, expert juriste. Doc. AP/CAT(2005)30. Ce document peut être téléchargé à l'adresse suivante : http://crisis.ibz.be/apcat.htm , avec le mot de passe "erisk2005" pour ouvrir le zip-file

2 Etude comparative des législations en matière de gestion des risques majeurs dans les 26 pays membres de l'Accord du Conseil de l'Europe Eur-Opa Risques Majeurs, K. VAN HEUVERSWIJN., ISPU, Strasbourg 2003;

3 Doc. AP/CAT(2005)30, *op.cit*

4 Kathleen Van Heuverswyn, expert juriste

5 Madame Monique BERNAERTS, Conseiller, Service Public Fédéral Intérieur , Direction Générale Centre de Crise, Institut Supérieur de Planification d'Urgence; Madame Alexandra SONCK, Attaché, Service Public Fédéral Intérieur, Direction Générale Centre de Crise, Institut Supérieur de Planification d'Urgence.

6 Mr. Kolio KOLEV, Director, European Centre for Risk Prevention (CSLT), 4, Vitosha Blvd., SOFIA

7 Monsieur René FEUNTEUN , Secrétaire du COPRNM, Ministère de l'Ecologie et du Développement Durable, Direction de la Prévention des Pollutions et des Risques

Après-midi : Table ronde

La table ronde a permis d'identifier les points suivants :

A. S'il est difficile de recommander un modèle de gestion interministérielle, vu l'organisation propre à chaque pays, il serait intéressant de réaliser une description fonctionnelle de la gestion de chaque phase du risque afin de permettre aux Etats de voir s'ils l'ont prévu et de l'adapter à leurs structures.

B. Il faudrait impliquer les autorités locales dans les structures de gestion interministérielle.

Les autorités locales doivent être conscientes des mesures à prendre. Elles ne doivent pas seulement intervenir au stade de la gestion de crise mais aussi participer aux systèmes nationaux de prévention et de préparation.

C. Il est essentiel d'examiner le potentiel des programmes de développement à diminuer ou accroître la vulnérabilité face aux catastrophes.

Dans les zones les plus vulnérables, l'aléa peut devenir facilement une catastrophe. Celle-ci aura un impact considérable sur le développement, anéantissant les progrès réalisés et faisant régresser les populations à des niveaux de pauvretés antérieurs. Elle détournera en outre les fonds dédiés au développement pour les affecter vers l'aide d'urgence et la réhabilitation. Paradoxalement, le développement peut encore accroître cette vulnérabilité. Il existe en l'occurrence de nombreux exemples en matière d'environnement, d'aménagement du territoire et de développement urbain. Il faut donc veiller à ce que les projets de développement soient conçus de façon à contribuer à atténuer la vulnérabilité et non pas à l'accroître, en améliorant les conditions socio-économiques des populations et intégrant des mesures appropriées de réduction des risques. Cette réflexion exige la collaboration des institutions gouvernementales responsables de l'aménagement du territoire, de la planification du développement, de la planification agricole et environnementale ainsi que celle des responsables de la gestion des risques.

D. L'échange de bonnes pratiques doit être encouragé même si elles ne peuvent être considérées comme des modèles directement transposables dans un autre système mais comme des cadres de références.

E. Il serait utile de procéder à un recensement des activités nationales, régionales et internationales de recherche en matière de gestion des risques et d'encourager une coopération et une coordination entre elles. Il existe en effet une multitude de groupes abordant les mêmes thèmes. Les universités ont souvent connaissance des projets en cours et pourraient servir de canaux de liaisons entre les différents centres de recherches.

F. Les efforts en matière de prévention et de préparation réduisent la vulnérabilité et donc le coût des systèmes de gestion.

G. L'éducation et l'information visent à responsabiliser la population et donc réduire la vulnérabilité.

Un des éléments clef de la réduction des risques de catastrophe est la communication précoce d'informations exactes et opportunes à la population. Non seulement, elle incite les individus à diminuer leur exposition face aux risques mais elle permet également d'éviter que la réponse soit retardée par des réactions de masse ingérables.

H. L'efficacité de l'alerte implique la circulation rapide des informations, or les informations disponibles sont souvent dispersées entre différents organismes ou institutions et ne sont parfois partagées qu'avec la plus grande réticence.

Les autorités doivent coopérer entre elles et avec les services de secours et d'intervention ; Elles doivent échanger toutes les informations qui leur parviennent de manière à pouvoir donner rapidement l'alerte par des mesures appropriées.

I. Il faudrait encourager les Etats à prendre des mesures législatives et administratives efficaces, ainsi que des mesures de surveillance et de mise en oeuvre.

La législation est un élément déterminant pour garantir une planification et une coordination efficace ainsi que la participation locale et la mise en œuvre d'une politique efficace. Elle définit les compétences des acteurs clefs et les responsabilités correspondantes. Mais elle ne peut inciter seule les acteurs à suivre ces règles. Des mesures de surveillance et de mise en œuvre sont nécessaires.

J. Il faudrait encourager la coopération entre les pays exposés aux mêmes risques et intégrer les aspects de coopération internationale dans les plans d'urgence.

Conclusions du séminaire

Le défi pour les Etats est de réaliser progressivement une approche plus globale de la gestion des risques incluant l'élaboration d'une stratégie, la prévention des risques, la préparation, la gestion des situations d'urgence et la réhabilitation. Il s'agit pour eux de parvenir à établir des liens entre les autorités qui ont des expertises complémentaires et de les faire participer à un projet commun.

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[8] Mr. Valery LESNYKH, Director of the Center "Risk management and sustainable development" Doctor of technical sciences, professor.

9 Madame Rajae CHAFIL, Directeur de la Surveillance et de la Prévention des Risques, Ministère de l'Aménagement du Territoire, de l'Eau et de l'Environnement

Nous avons examiné les mécanismes de coordination existant dans quatre pays : la Belgique, la France, la Russie et la Bulgarie. Ces différents mécanismes sont le résultat d'une longue évolution propre à chaque Etat et ne sont pas comme tels transposables dans d'autres. On ne peut donc pas parler de modèles ou d'exemples car un système qui a fait ses preuves dans un pays pourrait être totalement inefficace dans un autre. On constate néanmoins que si les approches sont différentes, tous les Etats poursuivent les mêmes objectifs. Il serait donc intéressant de partager nos connaissances en réalisant une description fonctionnelle de la gestion des phases du risque afin de permettre aux Etats d'y adapter leur structure.

BULGARIA / BULGARIE

CSLT - European Centre for Risk Prevention training at school level / Centre européen sur la formation scolaire à la Prévention des Risques (Sofia)

I. PRIORITES IN 2006

The efforts of the Center concentrated on the accomplishment of :
- The Conclusions of the Ministerial Sessions of the European and Mediterranean Major Hazards Agreement EUR-OPA;
- The follow up to the Kobe Conference-United Nations Action Plan 2005-2015;
- The Programs of the Agreement EUR-OPA;
- Medium Term Plans of the Agreement EUR-OPA ;
- Participation in the projects in connection with Training and Risk Management.

II. RESULTS FROM THE ACTIVITY OF THE CENTER IN 2006

Be-Safe-Net
As a result of the center activity is the development of the joint project (Cyprus, Sofia, Ravello) 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 meeting was hold in 2006 in Strasburg.
All joint partners have obligations and soon we will have possibility to receive and add in WEB Site and big information from other Centers.

University education
Continue cooperation of European center with New Bulgarian University (Sofia) in relief Crisis Public Relation, Crisis communications and Risk Management.
Masters Programs:
- Baca laver Department - Center for study of risks and security;
- Department – Crisis Public Relation and Crisis Communications.

Analysis of the regulations of the member states of the EUR-OPA
In continuation of the comparative analysis of the regulations of the member states of the EUR-OPA Major Hazard Agreement ,European Center in Sofia toke participation in new study to examine the need and the added value of an Inter-ministerial approach or major risk management of floods and chemical accidents. This study as about inter-ministerial coordination and this mainly authorities at national level are concerned.

Project " Danube a river for all, a care for everybody" (DRACE)
In relief DRACE Project European Centre organized and held on May Work meeting in Bulgarian National Radio (BNR). During of this meeting was define the possibilities to use already existing programs of the three national channels on the theme Risk Culture by using all the radio forms and genres in its magazine programs of the type "talk show" and "current affairs & music". The project include and fife regional program-channels.
In contrast to the existing practice of announcing the news of disasters (on the territory of Bulgaria, the region and the world), the future practice will insist on the obligatory adding of the so-called "background information" to each piece of news concerning a disaster (no matter where it has happened).
The BNR intends to organize and coordinate an international initiative, related to the flood and environmental protection of the river Danube and the flood control and prevention along the river valley. BNR plans that this should be a special 5-10 min. program called "Danube a river for all, a care for everybody".
The problem for improve of results are in this that without international agreements among countries in Danube valley not possibility for legal Radio translations. Of course may be in near future for countries who are Membarstate of EU this not will be problem but in ours situation Serbia is not Membarstate and since one month only this country is Membarstate of Wien convention for River Danube.
We are ready with Radio programs but we have possibility to start its implementation in Bulgaria only.
In 2006 the levels of Danube water were the highest at the Bulgarian cost in the whole history of measuring. The lost were considerable despite the good organization of crisis management and the cooperation between Ministries of environment and waters of Bulgaria and Romania. The basic problem of Bulgaria management was the lack or the delay of information from Serbia about the waters passing

through hydro equipment of Iron door. Sometimes the water was loosed volley for which we were not informed and the situation was changing rapidly which is not typical for floods of this kind.
Of course the need of system for early warning of different dangers along Danube river is obvious. It will happen in near future but till then it is necessary to revise the attitude towards the river in each country through which it is passing from one side and on the other side to improve the cooperation in the field of crisis management and information at least between neighbor countries.
Waters polluted mainly with oil and diesel come constantly to the river. Such pollutions cause big lost not only to fishing but also to the agriculture and tourism. In ssuch cases these pollutions can also endanger the cooling systems of the Nuclear power stations situated along the river. Of course at such kind of danger there is always lack of
This situation was our base to continue and to straightening ours aims and to organize in relief DRACE project on 5 December 2006 Seminar of team **"Prevention against the water harmful influence and information of the population along the Danube river valley"**
Parliamentary commission for environment and water in Bulgarian Parliament invited European Centre to organize this seminar with idea to continue to work in this area next 2-3 years and create new situation in flood and pollution crisis management among Bulgaria, Romania and Bulgaria.
Our proposal is the project DRACE to continue during the next two years through implementation of international seminars with the participation mainly of Bulgaria, Romania and Serbia. The aim of the seminars shall be to find the way to overcome the existing problems on the basis of the national peculiarities, overcoming of the isolation, understanding that river interests are above the national and corporative ones.
One of the most important aims of the seminars is to become better acquainted with specialists and leaders in this field. That will be the starting base of the change. The positive change will be done easier when these people know each other personally.
There is an international contract for assistance at disaster between Bulgaria and Romania but one between Bulgaria and Serbia does not exist.
(see AP/CAT (2007) 3 for the conclusions of the seminar)

Other projects
The Center was partner in Consortium candidate for two Pharr and one UNDP projects.

CYPRUS/CHYPRE

BeSafeNet - European Centre for Disaster Awareness with the use of Internet / Centre Européen pour la sensibilisation aux désastres par l'usage du Net (Nicosia)

The European Center for Disaster Awareness with the use of the internet "Be safe net" (Nicosia), 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 Geomorphogical 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 prepardness, immediate reaction and rehabilitation.
With the use of Internet, games, cartoons, animations, 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.
During 2003 the Center, carried out activities relating to the preparation of the specification of the Website and the administrative arrangements for the various functions of the Center.
For the development of the Website ``Be Safe Net``, Public Tenders were proclaimed in July 2003 by the Civil Defence Headquarters and were examined by the Civil Defence Tender Board. The specification of the Site, responds to a state to art portal Internet Site.
In 2005 the training of the Administrators of all the collaborating centres was held in Nicosia, Cyprus, 30 May–1 June 2005. After the completion of the training, the representatives of all the collaborating Centres, met in Nicosia, Cyprus, 2-3 June 2005, in order to examine the current version of the website, evaluate the progress made and agree on the future activities of the program.
Futhermore the Cyprus Centre has purchased two web games for children to be included in the website. The task of first game is for kids to identify the various hazards and the purpose of the second game is to aware the children on earthquakes.
The future activities of the center will be focused on the conclusions of the last meeting taken place in Strasburg on 21st and 22nd of June in which it was decided that the material of natural disasters will be transformed in order to be an educational tool in the hands of teachers of the secondary schools.
A pilot program started on landslides by a number of specialised centers. This project will be evaluated and tested by a group of teachers and finalised.
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.

FRANCE

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

1. RESEARCH ACTIVITIES

1.1 Programme - Study of geomorphological hazard in the main productive areas of the mountain basin of the River Panaro (Italy): 2006, 2007 & 2008

This new research, which started in 2006, takes into account the study of geomorphological hazards (i.e. mass wasting, erosional processes and floods) in the mountain basin's areas of the River Panaro which host productive activities. The twofold goal of the study is: a) implementation of detailed maps (1:5,000/1:10,000 scale) showing the main productive areas subject to geomorphological hazard; b) suggesting remedial measures in order to solve or at least mitigate processes resulting from geomorphological hazard which might hinder or disrupt productive activities.

The study area of the research, is located in the mid-upper basin of the River Panaro which collects the waters from the central section of the Northern Apennines (catchment basin of 1,784 km$^{2)}$, flows into the River Po after running across the Apennines for 63 km and the Po Plain for some 85 km. From the hydraulic viewpoint, the mid-upper basin of the R. Panaro – which covers an area of about 800 km^2 – is managed by the Land Reclamation Syndicate of Burana-Leo-Scoltenna-Panaro which cooperates with this research programme.

The implementation of geomorphological hazard maps will make reference to the method recently applied by Panizza *et al.* (2004) and Corsini *et al.* (2005) for the Bolzano Autonomous Province in the South Tyrol, which complies with the Italian law (DM180/98, L267/98, DPCM 29/9/98). This method is based on a classification of the intensity and frequency of the events for each category of disarray processes. This is achieved by means of univocal matrix combinations which allow the definition of various levels of geomorphological hazard.

In the year 2006 the first phase (Phase 1) of the research has been carried out and the second phase (Phase 2) started.

The first phase (Phase 1) dealt with the identification of areas where significant productive activities subject to geomorphological instability are present. The methodology used to identify those areas is described as follows: a) acquisition of the Town-Planning Scheme (TPS) of all municipalities laying within the study area and of the Instability Inventory Map (IIM), both in digital *shape file* format for ArcGis, from the Cartographic Office of the Modena Province (Provincia di Modena, 2002; 2006); b) cartographic overlay (in GIS) of productive areas (existing or planned) by TPS and instability areas by IIM ; c) removal of productive areas that do not lay within instability areas ; d) selection of production areas that do lasy within instability areas; e) field check of all potential study areas. In this phase some productive areas have been found affected by relevant hydrogeological instabilities which were neglected or underestimated in extent by the IIM (Provincia di Modena, 2006): therefore they have been selected as study areas.

In this way, 16 productive areas have been selected for further instability analyses.

The second phase (Phase 2), is the acquisition of all available information and documents regarding the 16 productive areas and their surroundings subject to geomorphological instability. This is carrying out by: a) the analysis of thematic maps in order to identify areas affected by instabilities; b) the historical and bibliographical research of past instability events; c) the study of past instability events through interpretation of aerial photographs, satellite images and maps of different scales and time periods; d) field survey accompanied by enquyries among local inhabitants about past instability events.

Some considerations will follow regarding some important aspects that came out during the research phases 1 and 2 (the last one just at the beginning).

The effects of geomorphological hazard are essentially traceable back to geomorphological dynamics processes and their deriving forms and deposits, distinguished also according to their state of activity. Therefore a first important aspect has regarded the concept of "state of activity" and its application.

It is well known that many definitions of "state of activity" exist for geomorphological processes and their deriving forms and deposits because that is an extremely interesting applicative matter.

In this research, the criterion used by Provincia di Modena (2006) to define the state of activity of geomorphological and instability processes will be adopted. The criterion is: "Areas affected by active landslides": landslides which are currently active or that have been reactivated since the last 30 years; "Areas affected by dormant landslides": landslides that have not showed signs of activity since the last 30 years and that could be reactivated by their original causes. This because the Instability Inventory Map of Provincia di Modena (2006) is a reference document for the territorial planning of the Modena Province

and because the methodology to be applied for the hazard assessment (Panizza et al., 2004; Corsini et al., 2005) considers two return-period classes: < 30 years, and from 30 to 100 years.
Another important aspect regards the relative "old" age of the topographical base maps used (Regional Technical Map, RTM, at the scale 1:5.000): on that base it was quite difficult to map instability processes, particularly their location and current extent.
In fact, the map used (the most recent one) is the second edition of the RTM (built from 1985 to 1986), which is a planimetric update of just the structures and the infrastructures of the first-edition RTM (built through aerophotogrammetry in the 1973-79). Therefore, the general representation of morphology, of hydrography and of vegetation in the second-edition RTM corresponds to the 1973-79 situation. Therefore, in order to map the current geomorphological instability scenario, Quick-Bird's satellite ortho-images (furnished by the Cartographic Office of the Modena Province), coupled with GIS, will be of great help; although dated to 2003, those images are the most updated document available.

1.2 Programme - Debris flow modelling: 2006

* ***Flow analysis: experiments and numerical modelling***

A database of experimental triggering of landslides within the flume available at Utrecht University has started to be build. The flume, with one transparent side, is 400 cm long, 80 cm wide and 70 cm high. The flume angle is made changeable for different test requirements; especially two slope angles can be defined in order to create lower slope angles at the base allowing the development of compression zones. Several micro-pore pressure sensors for the monitoring of soil pressure can also be placed directly within the soil mass at several depths. The deformation pattern of the moving mass is also monitored by a video camera system (lateral deformation and front deformation) and the disposition of regular markers within the soil mass. Above the flume, spray switches are placed in order to infiltrate a constant quantity of water.
Several experiments have been performed with two types of sand (fine and coarse) of which geotechnical characteristics have also been identified. Controlled shallow retrogressive slump failures were generated showing liquefaction in sandy silt material (Fig. 1). Before and during failure, pore pressure in 12 points, strain deformation and velocities were monitored continuously. Figure below gives an indication on the type of landslides that can be triggered according to the boundary and initial conditions of the experiments. The test data will be used to verify different concepts of liquefaction developed by Iverson 2005 and van Asch et al. (2006).
Moreover, we finished the development of a theoretical model describing the effect of landslide geometry and kinematics on the generation of excess pore pressure and possible liquefaction of sliding blocks (Van Asch et al., 2006). A simple analytical model of landslide liquefaction was proposed on the basis of classic soil mechanics theory. The model describes differential movement, which leads to differential strain which is transferred to excess pore pressure. Investigation with the model on the liquefaction potential in relation to the geometry of curved slip surfaces reveals that the liquefied volume increases with steeper slopes and more curved slip surfaces. The model was applied to observed generation of debris flows on the Super-Sauze mudslide (French Alps)

* ***Debris flow runout modelling***

A two dimensional finite differences code Mass-Mov 2D (Begueria, submitted) for simulating the kinematics of mud and debris flows over complex terrain has been developed. It can be used to simulate the run-out and deposition of an unconfined landslide mass along a slope, or the propagation of a slurry wave along a torrent until the overflowing of the channel (Fig. 2) and spreading of the mass on an alluvial fan. A first attempt was made to simulate a huge debris avalanche on Mars. Performance of the model will be further tested against several event data from catchments located in the Alps (France, Austria, Italy), Indonesia, Canada, Cuba and India.

1.3 Programme - Implementation of didactic materials on geomorphological hazards: 2006

The implementation of didactic materials on geomorphological hazards (Power Points presentations, Thematic maps, Images, etc……), started in 2006. This didactic material has been used within the framework of the training activities carried out in 2006 and of the BeSafeNet action of the APO agreement (see specific points).
In particular, as concern the CERG members of the Modena and Reggio Emilia University, the didactic materials has been used for the following activities:

- For seminars on "River hazards in the Po Plain" given by D. Castaldini at the Faculty of Geography of the Babes-Bolyai University of Cluj Napoca (Romania).
- For seminars on "Geomorphological Risk" given by M. Soldati within the Master on "Gestione dell'emergenza nazionale ed internazionale" at the Faculty of Sciences of the of the Modena and Reggio Emilia University (Italy).
- For seminar on "Natural risks and hazards in territorial planning" given by M. Panizza at the Administration of the Modena Province.

1.4 Support to preparation 7th FP Working Programme

A specific budget was allocated in 2006 to work on the implementation of the EC FP7 Working Programme on "Sustainable Development and Global Change, Natural Hazard". Several members of CERG have been involved in national or international working groups in charge of proposing suggestions to the EC about "multi risk and monitoring of hazardous processes".
Moreover, the budget 2006 was used to negotiate with the EC the final implementation of a Marie Curie Research and Training Network on 'Mountain Risks: from prediction to management and governance) granted by the EC on the period 2007-2010. Several active CERG members are participating to this European Project aiming at developing an advanced understanding of how mountain hydro-geomorphological processes behave and to apply this understanding to living with the hazards in the long-term.

1.5. Programme - State of the art in multiple natural hazard and risk studies: 2006

The need of a changed perspective – i.e. from process focussed approaches to site specific approaches – is widely discussed internationally. In how far is this change of focus been conducted in natural hazards research and practice? What are the implementations of this multi-hazard and risk approach? These questions are to be answered by an extended literature and project review, and then summarized as a basis for future CERG-research in this area. The publication of results is planned for Spring 2007.

2. TRAINING ACTIVITIES

Those activities were part of the coordinated programme of the network of APO Specialized Centres in collaboration with other centres: their main results are summarized in document AP/CAT(2006)3.

2.1. Multi-RISK – Concepts to approach multi-hazards (Bonn)

CERG has organized in Bonn (Germany) from 24 to 30 September 2006, a Post-Graduate training school at the Department of Geography, University of Bonn.

2.2. Participation to the implementation of the Be-Safe-Net webportal

A collaborative work of the CERG members in 2006 has been the preparation of attractive, up-to-date and education-oriented materials for hydro-geomorphological hazard and risk section of Be-Safe-Net website.

3. OTHER ACTIVITIES

CERG members have participated in the Committee of several International Scientific Meetings, organize international workshops or convene specific sessions in meetings:

- within the IAMG (International Association of Mathematical Geology) held in Liège, Belgium (September 2006)
- within the International Symposium of Risk Analysis in Malta (June 2006)
- organization of a specific session on the "Time Dimension of Landslide Hazard" held at the EGU General Assembly (April 2006, Vienna), and convened by active member of Cerg (Th.W.J. van Asch, J.L. Zezere) as well as by F. Catani. In addition, Thomas Glade convened the sessions "Human impacts, vulnerability assessments and multidisciplinary approaches in natural hazards and risk assessments" and "Challenges in geomorphological methods and techniques" and co-convened the sessions "Societal Decisions and Economic Aspects for Reducing Natural Hazards Risk" and "Prediction and real-time mapping for natural hazards and environmental monitoring".
- organization of a Workshop on 'Landslide Hazard and Risk Zoning' held in Barcelona with the support of the JTC-1 (September 2006) and organized by active member J. Corominas.

Cerg members have participated to the Programme Leonardo Da Vinci (Community Vocational Training Action Programme): "Debris: Development of innovative forms of learning and teaching oriented towards Building a family of new curricula in the field of natural Risks". Second Phase: 2000-2006. In addition, Cerg members participate in the EU Asia-Link programme CASITA II (Sustainable Capacity Building on Urban Disaster Mitigation in Asia using IT & Learning Tools) 2004-2006.
Furthermore, Cerg members are members of Editorial Advisory Boards of several international journals:

- Landslides (Thomas Glade, Luciano Picarelli, Theo van Asch, Jordi Corominas; Olivier Maquaire as Associate Editor);
- Georisk (Thomas Glade)
- Natural Hazards and Earth System Sciences (Thomas Glade)
- Engineering Geology (Theo van Asch)

EMSC operates a web-based **Real Time Earthquake Information (RTEI)** service which aims at providing rapid and reliable information for the Euro-Med earthquakes and for large global ones. This service is based on parametric data made available by 58 seismic networks which is merged and processed at EMSC. The three basic products are reported, automatic and manually reviewed locations. In 2006, **11,460 events** have been published on the RTEI page. This service is also available in Imode, WAP and RSS format (since December 2006).

The locations published on the RTEI page are either locations provided by a single agency when judged reliable (they constitute the reported locations) or locations reviewed by EMSC by merging the data of the different network either manually or automatically. Consequently, a location can be updated several times on the RTEI especially in the first hours following the event occurrence as data keeps coming in. For each event published on the RTEI page additional information is made available through the web site.
A macroseismic questionnaire is proposed to those who wish to report their experience after an earthquake. The questionnaire is available in several languages like English, Spanish, Albanian, Romanian, Portuguese, Arabic, Polish, French and Turkish. The procedures to compute intensities will be developed in 2007 in collaboration with the BGS (British Geological Survey, Edinburgh, UK) and the ETHZ (Eidgenössische Technische Hochschule, Zürich, Switzerland).

For potentially damaging earthquakes as well as for events which raise a particular interest, EMSC operates an **Earthquake Notification Service (ENS)** which is operational 24/7. It consists in disseminating by fax (only for operational organisations), email or SMS, quickly after the event occurrence, a message which contains the source parameters of the event, to the end-users who subscribed to this service. The determination of the source parameters and the dissemination to the endusers are done manually by the seismologist on call.

More than 6,920 end-users have subscribed to this service which has been customized (since 11/01/2006) in order to give the possibility to receive earthquake information for a specific geographic area and for a minimum magnitude. Four different formats are also available. The dissemination to the end-users is done in different time frames depending on the characteristics of the event. For potentially damaging Euro-Med earthquakes and large global ones, that is performed within 60 minutes – and generally 30-40 minutes for Euro-Med events – of the event's occurrence following what we call the **Alert procedure**. Moreover, since 01/01/2006, EMSC performs a manual review of the location of each event that is reported by several network whatever its location and magnitude. In total, 4,911 events (including those processed in the framework of the ENS) have been manually reviewed by EMSC in 2006.

The Earthquake Notification Service is operated in collaboration with the LDG (EMSC host institute since 1992) and the IGN (Madrid) which runs back-up procedures and can take over the duty whenever it is required (e.g. during maintenance activities at EMSC). When the IGN is on duty, the ENS is operated in a degraded mode in which each earthquake notification is sent to all end-users. The ENS has remained operational 100% of the time in 2006 thanks to the IGN which has been on duty for a total of 141 hours. In 84% of the time (118 hours), the IGN has been on duty because of maintenance activities or technical problems outside EMSC (internet provider, electric backbone, etc.). Moreover, EMSC has been effectively off line during 76 hours.

In terms of performances of the ENS, the median dissemination time (i.e. the time elapsed between the event occurrence and the dissemination of the first manually reviewed location) for the Euro-Med earthquakes which triggered the alert, is 33 minutes (36 min in 2005, 40 min in 2004). This improvement reflects the work carried out by the network operators that lead to quicker data contributions to EMSC. It also reflects the serious work performed by the seismologists on call at EMSC. An assessment of the quality of the location disseminated by the ENS for Euro-Med events has been performed showing a median accuracy of 12 km.

Finally, EMSC would like to thank the IGN and the LDG for their constant support with a special thank to the personal on duty for they serious work. We also want to remind the readers that the real time earthquake information service only exists by the real time data contributions kindly provided by the network operators. We take this opportunity to express our thanks.

GEORGIA /GEORGIE

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

GREECE / GRECE

ECPFE - European Centre On Prevention and Forecasting of Earthquakes / Centre Europeen pour la Prévention et la Prévision des Tremblements de Terre (Athènes)

Activity n°1: Two Preparatory Meetings of the Workshop on Early Warning Systems
In the framework of this activity, two preparatory meetings took place in Athens on November 6th and December 2nd, during 2006, concerning the Workshop on Early Warning Systems, which will be held on June 2007.
The Greek Partners of the EU Program Safer (Seismic Early Warning for Europe) as well as representatives of EPPO and ECPFE in the capacity of end users, participated in the above mentioned meetings, which were held in Athens, in the EPPO's offices.
One of the Work Packages of the Program Safer, is the Development of Early Warning Systems (E.W.S.), which we participate as end users and could give several seconds to several tens of seconds warning before the strong motion from a large earthquake arrives to protected facilities. Two main philosophies related with E.W.S.:

1. The network based philosophy that increase alarming information confidence level at the expense of lead time and the station based philosophy that could degrease lead time, loosing thus parameter determination accuracy. In the network based philosophy, raw data from all seismological stations are transmitted in real-time to a central station where the data acquisition and network based real-time analysis take place in order to issue an alarm at specific sites before seismic waves arrive there.
2. In the station based philosophy, the seismological station closest to the epicenter of a particular earthquake should be a expert station. Single station raw data real-time analysis should be performed there and would transmit alarm data to a central processing center, which would broadcast an area-wide alarm in advance o the spreading elastic wave energy from the earthquake.

E.W.S. addresses three main levels:

- early warning (response of some seconds) and
- rapid determination of focal parameters (response of some minutes)
- damage assessment estimation through the development of the "shakemap" product.

As a result the shut down procedures can be initiated in due time and therefore the infrastructure and lifelines can stay in a safe mode at the moment the quake strikes.
The total budget of those two preparatory meetings was 2350€.
More analytically the first meeting cost 1150€ and the second 1200€. This amount included the cost of accommodation and meals.

Activity n°2: International Conference on Early Warning Systems
The E.C.P.F.E. (organisation which is under the supervision of E.P.P.O.) with the cooperation of NKUA/SL represented by Professor Mr. **K. Makropoulos**, President of E.P.P.O. participated in the Third International Conference on Early Warning (EWC III) held in Bonn, Germany, on 27 – 29 March.
The title of the submitted project is « Earthquake Early Warning System for Greece » and its final score was 4 out of maximum 5. The expected impact of the project with respect to addressing the identified needs and risks in the target region/population and quantification of the desired results of the project.

Activity n° 3: Creation of a Digital Database for the assessment of permanent consequences of historical earthquakes on monuments.
The aim of this project is the establishment of a digital database which will be a useful tool for easy and quick search of historical monument regarding earthquakes as well as other technological or physical hazards which caused great damages or any other changes on its original status. This will help to classify the monuments according their architectural type, time of construction or other criteria but manly to physical hazard that have suffered through the years. By this means, we could have a historical and structural information about the monuments so as to be easier for scientist or anyone interested to draw conclusions about the current status of the monuments as well as to discover the way in which one can intervene in order to strengthen against future hazards or even rehabilitate them. During the face of analysis attention will be paid on creating an open Digital Database. This means that its use will not be restricted only to Greek monuments and earthquakes, it will be constructed in an open way in order to be adjusted or extended by any other Partner or for any other Technological of Physical Hazard. Therefore, the completion of this project will be an extremely valuable and useful tool which will be the scientific focal point for any further intervention on the European cultural heritage.

Activity n°4 : Edition of a Book /ATLAS "Historic Structural Systems and Earthquakes"
Target:

Promoting the seismic safety of historic buildings

This project aims at the composition of a Book/Atlas containing historic building systems in Greece focused on their structural system and their seismic response.

Project Content:

The project deals with the following topics:

a. Identifying the most important and/or representative historical structural systems in the Hellenic region and developing a catalogue of typical structural systems.

b.An analysis of the structure of typical historic structural systems and more specifically of the building as a whole, the structural elements, the construction material, the connection details, any additions, etc.

c. Recording the pathology of typical historic structural systems, identification of the main causes of damage and assessment of their seismic vulnerability.

d. Assessment of the seismic response of typical structural systems.

e. Edition of technical guidelines for the restorations of each typical structural system

f. Compilation of relative data and formulating an ATLAS of the historic structural systems.

Co-operation with National and International Institutions:

Earthquake Planning and Protection Organization of Greece

National Technical University of Athens / Faculty of Architecture

In the framework of this activity proofs of the book / Atlas “Historic Structural Systems and Earthquakes” was presented by Professor Touliatos and is currently under its final revision.

ECFF - European Centre On Forest Fires / Centre Europeen Sur Les Feux De Forets (Athènes)

During 2006, the European Center for Forest fires has focused on the air-quality monitoring in forest fire incidents and the exposure limits for forest fire smoke hazardous compounds, such as particles. For that reasons, state-of-the art methods and techniques have been proposed for measuring ffs components concentrations in the field and also specialized methods for monitoring exposure have been evaluated. Generally, in a forest fire incident peak concentrations of respirable particles and other hazardous ffs components are usually observed that can be harmful for the exposed population and especially for the fire-fighters. It should be noted that field sampling for air-quality monitoring in a forest fire has special characteristics; due to heavy and hostile environment (soot, tars, high temperatures and humidity) occasionally needs fast moving, quick detection of components at ultra-low concentrations, high-speed separation of complex mixtures, such as the forest fire smoke (FFS), as well as real-time data processing. FFS monitoring could provide with necessary data for risk assessment and support decision making against ffs impacts on the possible receptors, such as communities, critical infrastructures and the environment. In addition, measurement of exposure could provide with exposure limits to FFS components and support FFS health impacts assessment.
According to the above, ECFF has emphasized on the FFS field monitoring and the FFS risk assessment. More specifically, it has participated and supported the activities in the following:

- It has published **FFNet volume 4**, a special issue with the proceedings of the workshop entitled "Air quality monitoring and personal protective equipment during a big forest fire incident: a state of the art and beyond" that took place within the framework of the EUR-OPA Major Hazards Agreement of the Council of Europe and was organized by the European Center for Forest Fires on December 2005.
- It has participated in the following relevant scientific works:

1) "Complexity and origin of the smoke components as measured near the flame-front of a real forest fire incident: A case study" by M. Statheropoulos and S. Karma, in press of the ELSEVIER "Journal of Analytical and Applied Pyrolysis", 2006.
2) "Integration of field chemical data in initial risk assessment of forest fire smoke", by I. Dokas, M. Statheropoulos and S.Karma, accepted for publication in the ELSEVIER journal "Science of the Total Environment", 2006.

Activities	**May**	**July**	**September**	**October**	**November**	**December**
Publication 1 on FFS field monitoring		x				
Publication 2, on FFS risk assessment						x
Edition of the 4th volume of FFNet, a special issue of the proceedings of the workshop				x		

LUXEMBURG / LUXEMBOURG

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

1. PERSPECTIVES GÉNÉRALES

L'événement marquant de 2006 fut l'attribution du Prix Lions à l'Ing. J. Flick, président honoraire de l'ECGS, pour son rôle catalyseur en faveur de la recherche dans les domaines des sciences de la terre, pérennisé par les activités scientifiques du Centre Européen de Géodynamique et de Séismologie: lors de la remise du prix, une séance académique fut organisée le 1er juin au Centre Culturel Prince Henri à Walferdange.
Du 12 au 14 juin 2006, le professeur Vigneaux a visité le centre dans le cadre d'un audit de l'Accord. Son rapport très élogieux confirme la très grande qualité des activités du centre durant ces 6 dernières années.
La structure de l'ECGS a subi de grandes modifications dans le courant de l'année 2006 : suite à la démission du Dr. A. Ehmke, M. Goerens a été élu président de l'ECGS jusqu'à la fin du mandat du conseil d'administration dans deux ans. E. Buttini a été désigné nouveau secrétaire de l'ECGS en remplacement de O. Francis qui a quitté ses fonctions de directeur et du secrétariat des conseils scientifique et administratif au 31 décembre 2006.
Fin septembre 2006, P. Codran qui assurait le secrétariat et la trésorerie a démissionné suite à la mutation de son mari à l'étranger. Par ailleurs, le Dr. T. van Dam a quitté l'ECGS à la mi-juin pour occuper un poste de professeur à l'Université du Luxembourg.
Sur le plan éducatif, les Journées Luxembourgeoises de Géodynamique ont été organisées au mois de mars. De plus en plus de jeunes chercheurs participent à ces réunions.
Le Dr. Ph. Rosset a séjourné à l'ECGS pour mener à bien une étude complémentaire sur les effets de site au Grand-Duché dans le cadre d'un projet subventionné par l'Accord EUR-APO Risques Majeurs.
Les chercheurs de l'ECGS ont participé à de nombreuses manifestations scientifiques en y présentant les résultats de leurs recherches. Ils assument bon nombre de postes à responsabilité dans des organismes internationaux où ils sont fréquemment appelés à effectuer des "reviews" de projets de recherche.
Le nombre de publications scientifiques dans des revues internationales avec comité de lecture est encore très appréciable en 2006: 8 articles dont 7 dans des journaux internationaux avec comité de lecture.

2. L'ÉQUIPE

Les affaires courantes sont gérées par le bureau composé de:
- Directeur Olivier Francis (jusqu'au 31 décembre 2006)
- Trésorier Patricia Codran (jusqu'au 30 septembre 2006)

L'équipe des chercheurs comprend :
- Dr. Olivier Francis, géophysicien, Professeur à l'Université du Luxembourg (50%)
- Dr. Tonie van Dam, géophysicienne, employée de l'ECGS (jusqu'au 15 juin 2006)
- Patricia Codran, secrétaire, employée de l'ECGS (jusqu'au 30 septembre 2006)
- Gilles Celli, ingénieur industriel, employé du Musée National d'Histoire Naturelle (70%)

3. ACTIVITÉS D'ÉDUCATION

Les membres de l'ECGS ont organisé les Journées Luxembourgeoises de Géodynamique. Le Laboratoire Souterrain de Géodynamique de Walferdange a cette année encore ouvert ses portes à un très large public.

3.1 Réunions Scientifiques

O. Francis et T. van Dam ont organisé et participé activement aux 93ème Journées Luxembourgeoises de Géodynamique, 13-15 mars 2006, EuroHotel, Gonderange (30 participants)

3.2 Visites du Laboratoire souterrain de géodynamique

Les visites du Laboratoire souterrain de géodynamique de Walferdange ont encore connu une affluence exceptionnelle cette année. Nous avons accueilli plus de 400 visiteurs (dont Madame l'Ambassadrice des Etats-Unis, des élèves et enseignants de lycées techniques et du primaire, des membres des administrations luxembourgeoises et de sociétés privées, ...).

4. ACTIVITÉS DE RECHERCHE DES SCIENTIFIQUES DE L'ECGS

Les scientifiques de l'ECGS sont impliqués dans plusieurs projets de recherche internationaux. Le financement de ces projets provient en partie de la dotation du Gouvernement luxembourgeois et pour le

reste de fonds extérieurs. Les subsides de l'Accord Partiel Ouvert EUR-APO Risques Majeurs permettent de subventionner des recherches menées par des groupes extérieurs à l'ECGS.

4.1 Projets de recherche en cours

Gravimétrie

- Campagne de mesures absolues de la pesanteur à Turin (Italie), aux Pays- Bas à Trappes (France)
- Comparaison du gravimètre absolu de l'ECGS avec celui de l'Observatoire royal de Belgique (O. Francis et M. Van Camp)

Gravimétrie et GPS

- Détermination des variations de la masse de la calotte glacière dans la partie sud du Groenland à partir de mesures GPS et de gravimétrie absolue (en collaboration avec l'Université du Colorado, USA) (T. van Dam et O. Francis)
- Comparaison des déformations crustales à partir de données GPS et du satellite gravimétrique GRACE (T. van Dam)
- Maintenance de la station GPS permanente à Walferdange et incorporation dans le réseau géodésique du Luxembourg (T. van Dam et B.Reisch)

Séismologie

- Etude complémentaire des effets de site au Grand-Duché de Luxembourg (Ph. Rosset)

Informatique

- Mise à jour des programmes des systèmes d'acquisition du gravimètre à supraconductivité (G. Celli et O. Francis)

4.2 Observations

Nous reprenons ci-dessous les observations de type "observatoire" effectuées par l'ECGS :

- Mesures continues de la pesanteur avec le gravimètre à supraconductivité dans le Laboratoire Souterrain de Géodynamique de Walferdange (O. Francis)
- Mesures continues de la pluviomètrie à Walferdange (O. Francis et G. Celli)
- Mesures inclinométriques en continu dans la salle du gravimètre à supraconductivité (O. Francis)
- Station de marées gravimétriques avec le gravimètre à ressort Scintrex à Nuuk (Groenland), Walferdange et Luxembourg(O. Francis)
- Mesures absolues mensuelles de la pesanteur dans le laboratoire souterrain de géodynamique à Walferdange (O. Francis)
- Observations des déformations crustales par GPS au Groenland (2 stations) et à Walferdange (T. van Dam)
- Maintenance des stations sismiques de Kalborn, Vianden et Walferdange (G. Celli)

4.3 Missions

La liste des missions, effectuées par les deux scientifiques de l'ECGS, est donnée ci-dessous.

Groupe de travail, Commissions, Workshops

O. Francis a participé:

- à la réunion des directeurs des Centres Euro-mediterrannéens spécialisés de l'Accord EUR-OPA Risques Majeurs, 1-3 février 2006, Paris,France
- à la réunion du CCM-Working Group on Gravity (WGG), 6-7 juin 2006, Berne, Suisse

T. van Dam a participé :

- au workshop « Scientific challenges for ESA's Living Planet Programme Strategy », 13-16 février 2006, Frascati, Italie
- au workshop « Terrafirma », 17-18 mai 2006, Frascati, Italie
- à une réunion de travail au Danish Space Center, 12 juin 2006, Copenhagen, Danemark

Assemblées générales, Symposia, Colloques, Conférences

O. Francis a participé :

- au 1st International Symposium of the International Gravity Field Service, 28 août-1 septembre 2006, Istanbul, Turquie

T. van Dam a participé :

- à l'assemblée générale de l'EGU, 2-7 avril 2006, Vienne, Autriche

4.4 Responsabilités assumées au sein de Commissions internationales

Olivier Francis est :

- Secrétaire des Conseils Scientifique et Administratif du Centre Européen de Géodynamique et de Séismologie (Luxembourg) (2001-2006)
- Secrétaire scientifique du Réseau Européen de Géodynamique (1994)
- Secrétaire de la Commission des Marées Terrestres (Commission V de l'Association Internationale de Géodésie) (1995)
- Correspondant National auprès de l'International Association for the Physical Sciences of the Oceans (IAPSO) de l'Union Internationale de Géodésie et de Géophysique (2002)

- Représentant du FNR pour le Comité Life, environmental and earth science (LESC) de l'European Science Foundation (2007-2009)
- Membre effectif de l'Académie Grand-Ducale, section des Sciences (2003) et du Comité de rédaction des Archives de l'Institut Grand-Ducal des Sciences (2005)
- Membre du Conseil Scientifique du Programme National "Télédection Spatiale"de l'Institut National des Sciences de l'Univers (INSU-CNRS), France (2002-2005)
- Membre des Groupes de travail "Gravimetry" du "Consultative Committee for Mass and Related Quantities" de l'International Committee of Weights and Measures et "European Combined Geodetic Network" de l'Association Internationale de Géodésie (2002)
- Membre de l'American Geophysical Union (1991) et Membre Associé du Comité National Belge de Géodésie et de Géophysique (1994)

Tonie van Dam est :

- Présidente de la section de géodésie de l'European Geoscience Union (2003)
- Directrice du Global Geophysical Fluids Center de l'International Earth Rotation Service (2004)
- Membre des Directing Boards de l'International Earth Rotation Service et du Wegener Project (2004)
- Program Chair de la session Geodesie à la conférence EGU 2005 à Vienne
- Co-Chair du Special Bureau for Loading de l'International Earth Rotation Service
- Secrétaire du Comité National de l'Union Internationale de Géodésie et de Géophysique
- Secrétaire scientifique du Réseau Européen de Géodynamique (2003)
- Secrétaire de la Section XIV, Crustal Deformation (1999)
- Membre correspondant de l'Académie Grand-Ducale, section des Sciences (2003), de l'Association International de Géodésie (1994) et de l'European Geophysical Society (1997)
- Membre de la Section V Working Group, Effects of Non-tidal Oceanic Processes (1999)
- Membre du Nominating Committee for Geophysical Research Letters Editors et du Advisory Board de la commission "Earth Rotation and Geodynamics" de l'International Association of Geodesy:

4.5 Publications

Le nombre de publications dans des revues internationales de haut niveau reste extrêmement élevé considérant les deux scientifiques travaillant à l'ECGS.

4.5.1 Revues internationales

- Francis, O. and T. van Dam, Analysis of results of the International Comparison of Absolute Gravimeters in Walferdange (Luxembourg) of November 2003, Cahiers du Centre Européen de Géodynamique et de Séismologie, vol.26, 1-23, 2006.
- Lavallé, David A., T. van Dam, G. Blewitt, P.J. Clarke, Geocenter motions from GPS: A unified observation model, Journal of Geophysical Research., Vol. 111, No. B5, doi:10.1029/2005JB003784, 2006.
- Lyard F., F. Lefevre, T. Letellier and O. Francis, Modelling the global ocean tides: modern insights from FES2004, Ocean Dynamics, DOI 10.1007/s10236-006-0086-x, 2006.
- Sato T, J.P. Boy, Y. Tamura, L. Matsumoto, K. Asari, H.-P. Plag and O. Francis, Gravity Tide and seasonal gravity variation at Ny-Alesund, Svalbarg in Artic, Journal of Geodynamics, 41, 234-241, 2006.
- Sato, T., J. Okuno, J. Hinderer, D. S. MacMillan, H.-P. Plag, O. Francis, R. Falk, Y. Fukuda, A geophysical interpretation of the secular displacement and gravity rates observed at Ny-Alesund, Svalbard in the Arctic - Effects of the post-glacial rebound and present-day ice melting, Geophysical International Journal, 165 (3),729-743, 2006.
- Schmerge D. and O. Francis, Set standard deviation, repeatability and offset of absolute gravimeter A10-008, Metrologia, 43, 414-418, 2006.
- Van Camp M. and O. Francis, Is the instrumental drift of superconducting gravimeters a linear or exponential function of time?, Journal of Geodesy, 10.1007/s00190-006-0110-4, 2006.
- van Dam, T., J. Wahr, and D. Lavallee, A comparison of annual vertical crustal displacements from GPS and GRACE, In press, Journal of Geophysical Research, vol. 111, B05405, doi:10.1029/2005JB003784, 2006.

4.5.2 Rapports

- Francis O., Absolute and relative gravity measurements in Nuuk (Greenland) in July 2005, Final Report, 14 pages, 2006.
- Francis O., Absolute gravity measurements in The Netherlands 2006, Final Report, 42 pages, 2006.
- Francis O., Absolute and Relative Gravity Measurements at the Istituto Nazionale di Ricerca Metroligica of Turin (Italy) in June 2006, Final Report, 30 pages, 2006.
- D'Agostino G., S. Desogus ,A. Germak, C. Origlia, D. Quagliotti, G. Celli and O. Francis, Measurements of the Acceleration due to Gravity at the Gravity Laboratory of the National Institute of Metrological Research, Turin, Italy, Technical Report 33, 20 pages, 2006.

4.5.3 Publications de l'ECGS

Deux ouvrages furent publiés sous l'égide de l'ECGS

- Volume 25 des Cahiers du Centre Européen de Géodynamique et de Séismologie, Proceedings of the workshop: "GOCINA: Improving modelling of ocean transport and climate prediction in the North Atlantic region using GOCE gravimetry".
- Volume 26 des cahiers du Centre Européen de Géodynamique et de Séismologie, Proceedings of the "International Comparison of the Absolute Gravimeters in Walferdange, November 2003"

5. VISITEURS

La liste complète des visiteurs étrangers pour l'année 2006 est :

- Dr. Michel Van Ruymbeke (Observatoire Royal de Belgique)
- Dr. Bernd Richter (Federal Agency for cartography and Geodesy, Allemagne)
- Prof. Susanna Zerbini (Université de Bologne, Italie)
- Dr. Daniel Mc Laughlin et Mr. Ray Edun (POL, UK)
- David Schmerge (USGC, USA)
- Dr. Joelle Nicolas (Laboratoire de Géodésie et Géomatique , Mans, France)
- Dr. Philippe Rosset (France)
- Prof. Michel Vigneaux (auditeur pour le Conseil de l'Europe)
- Délégation chinoise de l'Institute of Seismology of Wuhan : Cai Weixin, Shen Chongyang, Liu Shaoming, Wang Xiaoquan, Wang Peiyuan
- Dr. Richard Gross (Jet Propulsion Laboratory, Pasadena, USA)

Par ailleurs, l'ECGS dispose dans la maison Welter non seulement de bureaux, d'une bibliothèque et de laboratoires mais aussi d'un appartement pour loger les scientifiques étrangers en mission ou en séjour de travail. L'appartement a hébergé en 2006:

- Dr. M. van Camp, Observatoire Royal de Belgique, 17-20 janvier
- Dr. J. Nicolas, Laboratoire de Géodésie et Géomatique, Mans, France, 30 janvier-16 février
- Dr. B. Faria, Institut de météorologie et de géophysique, Cap Vert, 6-18 mars
- Dr. Ph. Rosset, 21 -23 juin
- Ing. René Reudink, Université de Delft, 12-15 décembre

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)

The principal 2006 ECILS' activities (realized in close cooperation with IZIIS) have focused on:
• Ongoing research projects, supporting implementation of European Commission 6FP PROHITECH and RIMAWA as well as NATO SfP 980857 projects in FYROM;
• Preparing the ground for new national and international R&D projects meeting ECILS objectives and EUR-OPA 2002-06 Medium Term Plan and 2006 Directors Meeting conclusions;
• Strengthening cooperative links with other EUR-OPA Centers through participation in their educational/training activities and launching cooperative projects and activities;
• Continuation of promoting and strengthening national and international links.

1. EDUCATION ACTIVITIES

Based on Contribution Agreement between the Council of Europe Development Bank (CEB) and the Institute of Earthquake Engineering and Engineering Seismology (IZIIS), University "St. Cyril and Methodius", Skopje for Building Regional Capacity for Disaster prevention in South Eastern Europe, IZIIS-Skopje and ECILS-Skopje in the period September-November 2006, organized 11 weeks training in "Aseismic Design and Construction (CADAC)" for 11 engineers :

	Country	# of Participants	# of exams taken
1.	Albania	2	4
2.	Bosnia & Herzegovina	2	2
3.	Croatia	1	7
4.	UNP Kosovo	2	6
5.	FYROM	2	-
6.	Serbia - Montenegro	2	13
	Total	**11**	**32**

Selected participants, graduated civil or architectural engineers - structural division, in their countries have primarily been engaged in design, construction and inspection of structural design and construction as well as working on design, inspection of construction and development of construction technologies. Besides the training that CADAC participants received in technical subjects, they have also been trained to become missionaries of building a culture of disaster prevention and resilience for protection of human lives and economic goods in their countries.
In essence, considering that the Balkan region is one of the seismically most active in Europe, the knowledge acquired by CEB sponsored candidates will contribute to the increase of the seismic safety and welfare of their countries as well as strengthen the capacity building in SEE. The success of participants on CADAC course has been remarkable : they passed the 32 exams.

2. RESEARCH ACTIVITIES

Research activities of ECILS in 2006 have been oriented to complete ongoing research projects and initiate promoting new ones, in particular cooperative international projects that match the interest of several OPA Centers, are in conformity with the Agreement's Medium Term Plan 2007-2011 and the final document of the World Conference on Disaster Reduction (Kobe 2005).
Research activities carried out in 2006 are:
Activity 1: "Seismic Monitoring of Lifeline Systems and Industrial Facilities Components"
Activity 2: Earthquake Protection of Historical Buildings by Reversible Mixed Technologies
Activity 3: Application of High Tech Strengthening Methodology on Historical Monuments
Activity 4: Site Amplification and Seismic Vulnerability of Buildings in FYROM, Croatia and Slovenia
Activity 5: Cost-Benefit Analysis of Base Isolated Vital Structures
Activity 6: Reducing Environmental Risk Through Strengthening of Management of Hazardous Waste from Industrial, Agricultural and Military Activities in the Wider Europe
Activity No. 1 is a permanent activity of the Institute of Earthquake Engineering and Engineering Seismology (IZIIS), which results are diffused through ECILS for a wider exchange with other EUR-OPA Centers and international organizations, institutions and associations.

Activities No. 2, No. 3 and No. 6 are dominantly carried out under 6FP contracts with European Commission, while the Activity No. 4 is mainly carried out under NATO contract. Activity No. 5 is partially carried out with contribution from the FYROM Ministry for Education and Science.

2.1 Earthquake Protection of Historical Buildings by Reversible Mixed Technologies The principle objectives of this project are to develop suitable methodologies for the use of reversible mixed technologies in the seismic protection of existing constructions, with particular emphasis to buildings of historical and artistic interest. The main subject of the research is relevant buildings erected from the ancient age to the first half of the 20th century, who cover a wide range of structural categories (masonry, reinforced concrete, steel, ...), needing to be fitted with adequate aseismic provisions. As the project is mostly focused on the use of innovative technologies, namely those relying upon mixed systems, an urgent necessity for a more advanced understanding of both material and device behavior, as well as for a deeper insight into the seismic response of constructions is necessary. Additional target activities are lead by one of listed institutions with extensive participation of others being either capable of providing essential inputs, or interested in transfer of results and achievements.
The specific objectives of the Project are being performed in 4 phases, i.e.:
• Development of suitable methodologies for use of reversible mixed technologies in the seismic protection of existing constructions, with particular emphasis to historical and artistic buildings.
• Drawing the attention of industry, research centers, engineers and competent authorities of European and Mediterranean Countries on the problem of safeguard of construction heritage from seismic risk, in particular for historical buildings;
• Advancing the state-of-the-art in the field of seismic protection of constructions by: (1) Improving the average knowledge of practicing engineers about innovative systems of seismic protection; (2) Promoting wide scale use easily removable and modifiable seismic protection systems for existing constructions; (3) adding new information on structures behavior fitted with special systems and/or using advanced materials or devices to improve the seismic performance;
• Developing guidelines for practical application of innovative materials and technologies in the field of seismic restoration and rehabilitation.
Part of the activities, in particular those related to development of suitable methodologies for use of reversible mixed technologies in the seismic protection of existing constructions, are performed under 2006 ECILS *Activity No. 3 "Application of High Tech Strengthening Methodology on Historical Monuments"*
Universities of Naples (Italy – Principal Coordinator), Liege (Belgium), Skopje (FYROM), Athens (Greece), Basilicata (Italy), Lisbon (Portugal), Timisoara and Bucharest (Romania), Ljubljana (Slovenia) and Boğaziçi (Turkey) as well as Technion Israel Institute of Technology at Haifa (Israel), Jordan University of Science and Technology (Jordan), Moroccan National Scientific and Technical Research Center CEPRIS (Morocco), IZIIS-Skopje and two EUR-OPA MHA Centers, namely INCERC and AECRIS in Bucharest and ECILS in Skopje, participate to the project.
The main part of the project focuses on dynamic testing activities of models representing characteristic cultural heritage of: (1) Islamic (Mosque); (2) Gothic (Cathedral Church); (3) Byzantine (Orthodox Church); and, (4) Greek (Temple) cultural origin. First three models are to be constructed and tested in the Dynamic Testing Laboratory of IZIIS-Skopje, whereas the fourth on at National Technical University of Athens (NTUA).
In 2006 the activities have been focused on construction and shaking table testing of Mustapha Pasha Mosque located in Skopje, Macedonia, i.e.:
• Design and construction of the Mosque model in scale 1/6;
• Testing of mechanical characteristics of construction materials;
• Testing of mechanical characteristics of the wall samples
• Construction of 1/6 model in IZIIS-Skopje Dynamic Testing Laboratory;
• Ambient vibration testing of predominant dynamic characteristics of the constructed model;
• Shaking table testing of the constructed model;
• Repair and strengthening of damaged model by crack injection FRP and carbon fiber bars;
• Ambient vibration testing of predominant dynamic characteristics of the repaired and strengthened model;
• Shaking table testing of the repaired and strengthened model.
Technical results will be published and disseminated as soon as the analysis and synthesis of experiments performed is completed.
Dynamic testing of other models: (1) Gothic (Cathedral Church); (2) Byzantine (Orthodox Church); and, (3) Greek (Temple) is scheduled for 2007.

2.2 Site Amplification and Seismic Vulnerability of Buildings in Macedonia,Croatia and Slovenia
The primary objective of this project is to identify sites where a local amplification of seismic shaking can generate unacceptable seismic performance of buildings and facilities, on which basis a selective

reinforcement can be planned and executed. The project in itself promotes massive application of a new experimental tool capable to achieve both the above identifications, providing the effective safety from earthquake damage in the highly seismic regions of Macedonia, Croatia and Slovenia at an economically affordable cost. The objectives of the project are in full compliance with the priorities of Medium Term Plan 2002-2006 [AP/CAT (02) 38 rev.3], sections B.1 and B.2, item III, as well as Medium Term Plan 2007-2011 [AP/CAT (06) 47], sections III.2 and III.3.
The Project is being executed in 4 specific phases (1 and 2 were completed in early 2006):
Phase 1: Procurement of measurement instruments, provision of technical background relevant for the project, definition of operational protocol and dissemination between the participants
Phase 2: Identification of pilot sites and study / re-evaluation of the relevant geological data
Phase 3: Systematic surveying in each country by local teams and at each site providing the local geological data for the first order knowledge basis for planning the surveys (Underway);
Phase 4: Collection and rationalization of results from the different countries. Final results for each country will be summarized and a document conveyed to national Authorities (Underway).
The institutions involved in the Project are:
• ECILS-Skopje in cooperation with RDM/IZIIS, University "St. Cyril and Methodius", Skopje;
• Environmental Agency of the Republic of Slovenia, Seismology Office, Ljubljana;
• Department of Geophysics, Faculty of Science, University of Zagreb, Croatia;
• Department of Earth Sciences, University of Siena, Italy;
• Department of Structures, Soil Dynamics and Applied Geology, University della Basilicata, Italy.
Final users of all the results achieved will be:
• Ministry of Defense, FYROM;
• Ministry of Environment, Spatial Planning and Energy, Slovenia;
• Ministry of Science, Education and Sports and of Environmental Protection, Physical Planning and Construction, Croatia;
Over April-October 2006, the ECILS/IZIIS team focused on detailed measurements of large structures and facilities, as well as building and free-field ambient vibration/microtremor measurements.
Most measurements were performed on facilities of the Water-resource system on St- Laurent River, Canada, operated by Hydro-Québec and located near Montréal. It consists of three power generating facilities and measurements have been performed on the Beauharnois and the Des Cèdres Power sites. The 1,658 MW Beauharnois Station was completed in 1961, at the time the most powerful station in Canada and today one of the largest run-of-river plants in the world. Beauharnois harnesses the powerful flow of the St. Laurent River to drive 38 generating units spread over nearly one kilometer. This generating station has been constructed to take into account also the needs and interests of neighboring communities, the St. Laurent Seaway and the Port of Montreal.
It was built in three phases, starting in 1929. The Art Deco style of the powerhouse gives it an unusually elegant appearance, and this character has been carefully preserved, even after major renovations in the 1990s : the station has been classified as a national historic monument.
In total, 216 recordings, TROMINO tests excluded, were performed, out of which 161 in facilities (Machine hall, Control Center and Dam body) of Beauharnois power generating site, 45 at Transformer Station of Des Cèdres power generating site, and 10 free-field measures in vicinity.

2.3 Reducing Environmental Risk Through Strengthening of Management of Hazardous Waste from Industrial, Agricultural and Military Activities in the Wider Europe – RIMAWA

The principle objective of the Project is to reduce environmental risks through the provision of a sound base for reinforcing legal mechanisms and instruments on international, national, regional and local levels for environmental risk management of hazardous waste resulting from industrial, agricultural and military activities in three sub-regional areas in the Wider Europe: EU and Candidate Members, Balkan countries, Russia and NIS, including development of national focal point network for dissemination and adequate follow up as an effective platform for future establishment of regional observatories on this domain.
The Project has foreseen the following activities:
• Compilation of the databases on national legislation and standards in the field of management of hazardous waste focused on mitigation, preparedness, response and rehabilitation;
• Evaluation of sub-regional database characteristics;
• Comparative analysis of national documents at a sub-regional level with EU Regulations and identification of domains for harmonisation and strengthening;
• Proposal for reinforcement of mechanisms and instruments for environmental risk management at international, national, regional and local levels;
• Assurance of multilateral, transversal and integrated coordination supported by a national focal points network for dissemination and effective promotion of sustainable development.

Coordinated administratively by CIVIPOL Conseil (Paris, France), the following EUR-OPA MHA Centers and institutions participate in the project implementation: EMORI, Montpellier, France; Center for Environment Policy, Vilnius, Lithuania; ICoD, Valetta, Malta; ECILS-Skopje, FYROM; Faculty for Technical Sciences, University of Novi Sad, Serbia and Montenegro; ECTR, Yerevan, Armenia; ECMHT, Baku, Azerbaijan; ECMNR, Chisinau, Moldova; TESEC, Kiev, Ukraine; and ECNTRM, Moscow, Russia.
The kick-off meeting held in Paris (16-17 February 2006) presented in all details the scope of the activities planned and defined the roadmap for its realization. Based on the obligations undertaken, ECILS-Skopje procured a server and designed the WEB page for RIMAWA Intranet. Later the scientific coordinator withdrew from the Contract, without prior notice, stating he was unable to manage it. This placed Consortium in a delicate situation vis-à-vis European Commission, Directorate General Research SDME 0/33 : presently the Project is hibernated, but the Consortium wishes to revitalize is with a new Scientific Coordinator.

3. INTERNATIONAL COOPERATION

In cooperation with IZIIS-Skopje, other EUR-OPA Centers and the EUR-OPA MHA Secretariat ECILS managed to assure participation of candidates from FYROM at:
• DPPI Meeting, Marshal Center Workshop, Dubrovnik, Croatia, 16-18 February 2006
• OECD/ECO International Workshop on Protection of Schools, 1-2 June 2006, Istanbul, Turkey
• International Disaster Reduction Conference, 28August-1 September 2006, Davos, Switzerland
• First European Conference on Earthquake Engineering and Seismology (1ECEES), 2-8 September 2006, Geneva, Switzerland
• International Workshop "Eurocodes: Building the Future in the Euro-Mediterranean Area", 27-29 November 2006, Ispra, Italy

4. OTHER ACTIVITIES

At 1 ECEES (First European Conference on Earthquake Engineering and Seismology) the proposal of Macedonian Association of Earthquake Engineering (MAEE), in cooperation with IZIIS and ECILS, to host the 14-th European Conference on Earthquake Engineering in Skopje in 2010 was approved by the decision of delegates of national associations of the European Association of Earthquake Engineering. That event could host a special session on issues related to disaster mitigation strategies and to creation of risk prevention culture in EUR-OPA region.

MALTA / MALTE

ICoD - Euro-Mediterranean Centre on Insular Coastal Dynamics / Centre Européen de la Dynamique Côtière Insulaire (La Valette)

Programmes supported by the EUR-OPA Major Hazards Agreement

Production of interactive educational media to teach 6-11 year olds about the Euro-Mediterranean coastal environment.
In continuance with the project initiated in 2005, this project will involve the development of age-appropriate interactive modules/media products on aspects of the Mediterranean coastal environment, including geology, pollution, safety, geography and the habitats commonly encountered there. The modules will span across the age group comprising six- to eleven- year olds (primary and middle years) and develop the subject in an incremental fashion in order to further engage the interest of the students over time. The modules will each comprise media packages such as little booklets, pictures and photos of the coast, charts, teaching notes, research project ideas, games, puzzles and other age appropriate activities and associated teaching tools such as field trip guidance notes and others. Collaborators on the project should include both persons who are knowledgeable on the respective fields of coastal geology, pollution, safety, geography and habitats as well as education experts for the age groups of interest who will be able to ensure the relevance of the teaching method to the particular audience.
Further to pilot project on Sammy Sand Grain in 2005 (produced in both French and English), it is proposed to expand the project through printing and translation into further languages (Spanish, Maltese and Turkish) during 2006. During this year, a second booklet in the series will be developed concerning the introduction of issues concerning among other, potentially dangerous currents and hazardous litter encountered with the beach / coastal environment.

Second International Conference on the Management of Coast-Related Recreational Activities (Malta, 25th – 27th October, 2006)
The objective of this conference series is to focus on selected aspects of coastal management, namely those related to the recreational amenities represented by beaches, yacht marinas and ecotourism amongst others. The Conference aims to bring together researchers as well as practitioners and policy makers to highlight and discuss issues of concern while also showcasing appropriate solutions through the exchange of experiences, best-practice scenarios and innovative management concepts. In this manner, the Conference provides an opportunity to consider issues of concern to both tourism and the environmental sector, and to address sustainable management practice in these fields by exploring the dependency of tourism on a well-managed environment and conversely, the negative impact of insensitive tourism on environmental quality.

The Conference targets tourism professionals, researchers in the natural and social sciences, project managers, and staff from the private sector and government agencies whose work involves aspects of research into integrated coastal area management practices as well as the development and management of coast-related recreational amenities. The conference series is also of interest to managers of natural resources and environmental agencies; urban and coastal planners; non-governmental organisations (NGOs); environmental economists; coastal municipalities.

Other programmes

MFSTEP-NAS - Mediterranean Ocean Forecasting System Project
(In cooperation with European Union – Fifth Framework Programme (FP5) and other institutions – a consortium of European partners co-ordinated by the University of Bologna, Italy. Completion date: March 2006)
The major objective of ICoD's task within project MFSTEP was the study of sea-air interactions in order to improve operational marine forecasts. The programme includes implementation, running and testing of a high resolution atmospheric model in which surface fluxes of moisture, heat and momentum are used for driving shelf ocean models in the Mediterranean. The main target of this project is to improve operational marine forecasting facilities in the Mediterranean.

Beach Management Plans for the Maltese Islands – James Madison University Students Group - 10th May – 10th June 2006
The objectives of this cooperation is to develop a framework for extensive beach management plans for the Island of Gozo. This is a study programme for students from James Madison University, USA,

working on beach management under the supervision of the Euro-Mediterranean Centre on Insular Coastal Dynamics (ICoD). It is envisaged that further to lectures on beach / coastal management aspects, with particular emphasis on innovative beach management techniques, students will be involved in the production of a master plan for beach management on the island of Gozo.

3rd Commonwealth Training Course on the Management of Coastal Recreational Tourism 2nd – 12th May 2006.
(In collaboration Ministry of Foreign Affairs, Government of Malta and the Governance and Institutional Development Division of the Commonwealth Secretariat, London, UK)
This two-week training course will disseminate specialised knowledge and provide training on the management of coastal leisure and recreational tourism. The course programme will consist mainly of lectures and case studies on different aspects of the main theme of coastal tourism and also include on-site fieldwork, field trips to relevant touristic locations around the Maltese Islands and well as intensive discussions on the situations and techniques encountered in the real-life management of coastal recreation amenities. Course faculty will include ICoD staff members together with local lecturers from a number of relevant ministries, authorities and the University of Malta, and two eminent overseas lecturers in the field of coastal recreational tourism management.
Course participants will be targeted from professionals from Commonwealth countries holding senior/middle management positions with direct responsibility for planning, management and execution of tourism projects concerned with coastal recreation and leisure. All participants will be required to present a brief but well-informed paper describing their countries' management of coastal recreational amenities for tourism, which serve as case studies for discussion of opportunities and constraints in the participating countries. Through the presentation of case studies and the sharing of participants' experience, the course serves to achieve a significant level of skill transfer among the management personnel attending.

Sustainable Management of Beach Resources in Sicily and Malta –2006 - 2007
(Funded by the European Union through the INTERREG IIIA Programme)
This project aims to address the sustainable management of beach resources through the application of the state-of-the-art BARE technique for beach management to selected project sites in Sicily (Provincia di Ragusa) and Malta.
Assessment of beach quality will be performed for each site through a sequence of registration and evaluation, giving particular attention to five beach-related issues: safety, water quality, facilities, scenery and litter.
The immediate project results will be the development of a beach management strategy and model for the regions studied. The long-term result expected from this project is enhanced tourism in both regions through the improved management of the regions' beaches.

Mediterranean Master's Programme in Human Rights and Democratisation - 2005 / 2006
This one year multi-disciplinary programme is coordinated by the Foundation for International Studies and the Faculty of Laws at the University of Malta on behalf of a partnership of Universities and Human Rights institutions from around the Mediterranean. It is one of four regional Master's programmes enjoying the financial support of the European Commission. The programme is inter-disciplinary in nature and welcomes graduates from most disciplines. The aim of the course is to train a number of young persons from Southern Mediterranean countries who, through their multiplier effect, will have an influence in their home countries in the building up of a human rights culture. The academic programme is managed by the Faculty of Laws of the University of Malta. The administrative and logistical aspects are handled by the Foundation for International Studies of the University of Malta.
Antonella Vassallo at ICoD is the Project Focal point at the Foundation for International Studies and works in liaison with the Project Manager and the Finance Office at the Foundation for International Studies as well as the Academic Staff at the University of Malta. She is responsible for the coordination of the logistical aspects of the scholarship students on the Masters Degree during the first and second semester as well as for the European Tour, Graduation Ceremony, visits by overseas faculty and Partner's Meetings.

DEDEL SDEC project: Développement équilibré et développement local : application du SDEC - INTERREG IIIC Zone Sud.
(Project partners include the Province de Catania, Université de Catania - Centre Braudel, Italy ; Univesité de Roskilde, Province de Roskilde, Université Populaire de Roskilde, Denmark ; Foundation for International Studies of Malta ; Université de Barcelone)
As the project's focal point, ICoD staff are involved with the administration and coordination of visiting faculty who are invited by the academic staff, coordination of scholarship students, graduation ceremony, organization of a European tour and partner meeting.

Preparation of a Masters Degree on Marine Science
The Euro-Mediterranean Centre on Insular Coastal Dynamics is in the process of launching a Master of Science Degree Course in Coastal and Marine Management. The major area of study will cover the following topics: an Overview of Coastal and Marine Environments, International Environmental and Maritime Law, Geographic Information Systems and Remote Sensing, Integrated Coastal Area Management, Fisheries Management and Coastal Aquaculture Activities, and Shoreline Processes and Development. This Masters is intended primarily for Maltese and foreign graduates holding first degrees in a variety of disciplines who wish to obtain expertise in the management of important coastal issues. The course duration is two years of part-time study, and the degree will be awarded by the University of Malta. The first student intake is tentatively scheduled for October 2006.

Development of Beach Management Guidelines
(sponsored by the Mediterranean Action Plan UNEP Priority Actions Programme / Regional Activity Centre)
A project, to develop and publish a manual on effective beach management guidelines based on best practice experience in the Euro-Mediterranean region.

Project RIMAWA: Reducing Environmental Risk through Management of Hazardous Waste from Industrial, Agricultural and Military activities in the wider Europe
(Project Co-ordinator: Prof. A. Pavia)
The main goal of the project is to reduce environmental risk through the provision of a sound base for reinforcing legal mechanisms and instruments on international, national, regional and local levels for environmental risk management of hazardous industrial, agricultural and military waste, and the establishment of a national focal point network for assuring adequate follow up. The proposed Network would also provide an effective platform for future establishment of regional observatories on this domain. This project is intended as a concerted effort of existing network representatives in France, Belgium, Malta, Former Yugoslav Republic of Macedonia (FYROM), Armenia, Moldavia, Georgia, Azerbaijan, Ukraine, and Russia to create a common basis towards a harmonised policy in the domain of environmental risk management of waste (analysis, mitigation, response and rehabilitation) as well as the creation of a network structure for assuring effective national efforts in this field.

MOLDOVA

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

The efforts of the European Center for Mitigation of Natural Risks (ECMNR), the successor of the former European Center For Problems of Inundations, were concentrated on the implementation of the tasks marked at the meeting of directors of the centers of EUR-OPA Major Hazards Agreement on February 2-3, 2006 in Paris, and of drafts deadline around 2002-2006 a special attention was paid to the implementation of Culture risks, Euro-Mediterranean cooperation, initiatives of the risk prevention and recommendation regarding the international strategy for the mitigation of negative results of natural hazards.

The main domain of Center studies is the reduction of risk as the element of durable and stable development, development of the legislative and scientific base regarding the prevention, corresponding correct reactions and the accordance of help services.
The Center activity was directed towards the implementation of practical tasks connected with the Program (EDRIM) for the mitigation of natural disasters and with European Program (FORM-OSE) for the education in the domain of risk studies at the preschool, school and university levels and towards the implementation of tasks regarding mobilization of scientific community aiming to improve the risk management.

The center fights for the promotion and formation of the base of cooperation aiming to implement the policy for the risk prevention through the transition from the protection against dangers to the control of risks, through integration of risk mitigation in a continuous development which bounds scientific knowledge, evaluation of vulnerability and authorities from all levels, including civil society, private sector as well as insurance companies, experts, and academicians.
Through knowledge of inundations and their prevention the Center made an important contribution to the decision-making at the level of risk management in accordance with the Agreement priorities, defined in plan for medium-term 2002-2006, which incorporates the following aspects: prevention, crisis, rehabilitation.

In order to provide basic knowledge without risk for any child, the Center organized and held supplementary traditional drawing contest of all school children under the motto “Protection in case of natural disasters in children’s view”. At the contest participated pupils of 1-12 grades who showed a great interest to this problem. After the instruction that was given at schools by the Center personnel, children remained captivated of the slightly familiar notions of natural risks and rules of behavior in case of natural disasters with major risks. Instructions of such kind were at first time organized by the Center in 2002 and were held also in 2005 as an answer to the request of didactic staff of school system and of interests manifested by children, the main purpose was to find a method of preparation in domain of risk mitigation in order that this term could be understood at all school levels. The achieved results contributed to the elaboration and development of didactic technologies successfully applied in the context of instruction.

Referring to the activity nr. 1 “The analyze of national legislation in domain of administration of natural risks”, the Centre continued the activity of elaboration of new legislation in domain of risk management, the Center was occupied with the coordination of research work of a given national legislation regarding the legal aspects of prevention of natural risks and of legislation concerning risk management of water sources and its coordination with the European standards. The main pursued object consists in the necessity to demonstrate the importance of juridical regulation regarding administration and reduction of natural risks on the whole and inundations in particular.
The study presents an investigation that should contribute to organization and efficient functioning of administrative system and risk mitigation.

It was determined that to the legislative level of the risks administration system must be submitted the whole infrastructure of resources and it should also dispose the institutionalized influence on their management as well as the risk reduction of the negative action of the natural hazards. In this context the notion “ control of natural risks” was definite as a complex of functions concerning planning, evidence, monitoring, information about prevention of risk and control over legislation execution. In view of this aspect the work presents a scientific interest but will serve as a concrete support for executive bodies, at central and local level, because the reduction of natural hazards and control of risk are basic elements of

government policy, capable to protect human fundamental rights, life and health through mechanisms and efficient instruments established by the state, associated and harmonized with EU standards.
Dispersion of these functions among diverse public authorities obliges state to intervene in every single case for regulation reciprocal relations.

In this view the Center made a contribution to the cooperation and interaction between the authorities of central and local public administration, nongovernmental organizations and other organizations involved in the solution of problems related to the management of natural risks, transition from protection to the risks prevention as an efficient contemporary form of guarantee and protection of population. It is motivated the necessity of improvement and harmonization of the regulations of national legislation with the legislation of Euro-Mediterranean countries and instructions of European Community regarding management — prevention, crisis management, rehabilitation.
Center continued the study of another risks. These supreme activities cannot be postponed and will be prolonged in the program of actions for 2007.
A special attention was paid to the problems regarding the measures of strengthening risks management capability for industrial, military and agricultural wastes:
- analysis of legislation and comparison with EU regulations
- enhancing cooperation on international, national, regional and local level.

Starting from the point of view that conditions of protection and health are a part of definition of risk prevention, the Center prepared and held a round table under the motto “The management of wastes: problems and solutions”. This round table was organized with the purpose of discussing and proposing solutions of concept optimization regarding the management of wastes, strengthening risks management capability for industrial, military and agricultural wastes.
In the context of the round table there were generalized the achieved results as a result of analyzing of the information regarding the actual national systems of management of toxic waste products, reduction of the impact and risk prevention.

All participants noticed that protection of people against technological disasters and accidents is a common goal of international community. Different technological development strategies and accompanied policies and legislation led to diversity of legal frameworks for risk management of agricultural, industrial and military and wastes in European, Mediterranean, West Balkan, and Russia and NIS countries. Taking into consideration the enlarging European space and heavy environmental impact of potential transborder effects of industrial, military and agricultural wastes requires common legislation and other mechanisms for assuring an integrated and common risk management.
A special attention was paid to the generalization of advanced experience of European Union states on this issue.
This round table was organized having the aim to present first of all the suggestions regarding the creation of a common basis towards a harmonized policy in the domain of risk management (analysis, mitigation, response and rehabilitation) of agricultural, industrial and military wastes, as well as the creation of a network structure for assuring effective national efforts.

In the program FORM-OSE, the activity nr.4 was dedicated to elaboration of conceptual issues concerning the strategy of education in the domain of protection against natural disasters.
Continuing its activity in this direction, at May 26, 2006, the Center organized scientific-practical seminar “The prevention and attenuation of the natural hazards”.
The seminar mobilized a constructive and effective dialog in which participated both scientific society and administrative personnel of profile institutions.

The cooperation between the Centers continued during the year 2006 and the result of adoption the project RIMAWA by the European Commission proved to be right.
The project is intended as a concerted effort of France, Portugal, Belgium, Malta, Cyprus, Bulgaria, Macedonia, Romania, Armenia, Moldova, Georgia, Azerbaijan, Ukraine and Russia.

PORTUGAL

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

The activities performed were concentrated in the analysis of the December 2005 catastrophic event in the Indian Ocean and the participation in different Meetings related to that event.

The preparation of papers related to tsunami events, concerning equipments and structures for monitoring the euromediterranean exposed areas, was implemented in order to assure the participation of the CERU for the best policy clarification and awareness on this matter.

The presentation of papers in specific workshops, seminars or meetings were developed as follows:

- Risques géologiques et géologiques- Bordeaux, les 18 et 19 Mai 2006
- Journées d'études organisées par l'Académie National des Sciences, Belles Lettres et Arts de Bordeaux (en association avec la Fédération Européenne des Réseaux de Coopération Scientifique et Technique)
- WG Early Warning EUR-OPA – Paris, 7-8Jun 2006
- Society and Seismic Risk, Geneva, 3-8 September 2006, ECEES (First European Conference on Earthquake Engineering and Seismology)
- "Geo-traverse at a Passive Continental Margin: The Tagus Abyssal Plain, West Iberia", American Geophysical Union Fall Meeting, San Francisco, 11-15 December 2006.
- Riscos Naturais, Lagos, 8 March 2006
- Riscos Sísmicos, Portimão, 25 September 2006

PUBLICATIONS:

Book:" Risco Sísmico no Centro Histórico de Lagos", CERU, Lisboa, 128pp.
A Geophysical Study of the S. Marcos – Quarteira Fault, Portugal, Journal of Applied Geophysics 60 (2006) 153-164
Geophysical Methods Applied to Fault Characterization and Potential and Earthquake Assessment in the Lower Valley, Portugal, Tectonophysics (2006)
Azores Hotspot Signature in the Upper Mantle, Journal of Volcanology and Geothermal Research (2006)
Sistemas de Gestão de Situações de Emergência (Risco Sísmico no Centro Histórico de Lagos, Mestrado em Ciências e Engenharia da Terra, Faculdade de Ciências da Universidade de Lisboa.
Caracterização do Edificado e Cenários Sísmicos (Risco Sísmico no Centro Histórico de Lagos), Mestrado em Ciências e Engenharia da Terra, Faculdade de Ciências da Universidade de Lisboa.

OTHER ACTIVITIES:

The CERU has been assuring the preparation of the innovative Master Proposal – "CIVIL PROTECTION – NATURAL AND TECHNOLOGICAL RISKS" by the INSTITTUO SUPERIOR DE ENGENHARIA DE LISBOA".
For the Academic Year 2005-2006, the Course was completed by 15 students.
This Course was attended by students with different engineering and scientific backgrounds in the first year of lectures. The lectures have covered the following areas:
Natural Risks, Technological Risk, Risk Analysis and evaluation Technologies, Public Health and Safety at Work, Risk Management and Emergency and Case Studies Seminars.

The Ocean-Continent Transition at the SW Iberia Margin: Potential Potential Field Results.
5th Symposium on the Iberian Atlantic Margin, Aveiro, Portugal, 2-4 November 2006

Origem das Forças que Actuam nas Falhas Sísmicas, Lisboa, FLAD (2006)

O Ano Polar Internacional 2007-08
Um Marco na Investigação Científica Internacional, III Workshop, Portugal e a Antárctida, 29 Nov, 2006

Note: The plans that were submitted to be performed in 2006 have been partially delayed because the financial sponsors were not able to provide the essential facilities to support the courses and seminars.

ROMANIA / ROUMANIE

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

Activity no. 1, Earthquake Disaster Management System in Japan and Romania. Legal system and disaster management planning.

This activity focused on the present situation of Disaster Management in Japan versus Disaster Management in Romania and other earthquake-prone countries from the region i.e:

- Disaster preparedness;
- Disaster emergency response;
- Disaster recovery and reconstruction;
- Information and telecomunication system;
- Earthquake disaster countermeasures and
- International cooperation on disaster management.

The disaster management organizations and their administtative function, the structure of disaster management plan, the buget for disaster management as well as the research and development policy should be analysed and commented for improvement of disaster prevention facilities in the Balkan region. Disaster preparedness and prevention manuals and guides for citizens and schools should be written.

Activity no. 2, Shake maps for parameters characterizing the intensity and frequency content of recorded ground motions in Romania

The mapping of ground motion values, such as peak ground acceleration and peak ground velocity is one of the most frequently used methods for obtaining information about a seismic event. Maps of linear elastic spectral accelerations at specified periods are also generated, together with maps of instrumental intensity. The above-mentioned maps are considered fundamental for the evaluation of ground motion severity and of basic seismic demands on building structures. They belong to the common set of near-real time shake maps generated and posted on the Internet after an earthquake. The mapping of inelastic spectral ordinates, including damage spectrum ordinates, is presently considered a promising approach.
There is an extensive study performed on Vrancea earthquakes having moment magnitude Mw 6.0, recorded in Romania in the last 30 years. In the first part of the study, maps were generated for peak ground acceleration (PGA), peak ground velocity (PGV), effective peak ground acceleration (EPA), effective peak ground velocity (EPV) and control (corner) period of response spectra (T_C). The second part of the study focused on the development of maps for linear elastic acceleration and displacement spectra.
The following Vrancea events were considered: August 30, 1986 (moment magnitude Mw = 7.1, focal depth h = 133 km), May 30, 1990 (Mw = 6.9, h = 91 km), May 31, 1990 (Mw = 6.4, h = 79 km) and October 27, 2004 (Mw = 6.0, h = 96 km). For each event, seismic data was mapped, for the whole territory of Romania and for the area of the capital city, Bucharest. Based on map ordinates, interpolation surfaces and contours of constant values were computed and plotted, by using specialised GIS software. No attempt was made, in this phase of the study, to fill the gaps in the station distribution. However, the sets of maps presented below are intended to serve as a reference for future study.

Activity no. 3. Creation of Regional Capacity and Task Force for Post-disaster Damage Assessment

Cooperation with IZIIS, European Center on Vulnerability of Industrial and Lifeline Systems, ECILS-Skopje, FYR of Macedonia. Proposal for 2006 Coordinated Programmes.
In 2006, the representative of ECBR, Eng, Constantin Praun attended the meeting of Skopje, June 14-15, 2006 and delivered a presentation on „Damage assessment procedres in Romania" by D. Lungu and C. Praun.

Activity 4. Contribution to the Editing/Publishing of the Proceedings of the 3rd National Conference on Earthquake Engineering, Bucharest, Romania, Dec. 9, 2005

There were 2 volumes of Proceedings with 45 papers and over 520 pages and ECBR contribuition to the editing and publishing of Proceedings of the 3-rd National Conference on Earthquake Engineering, was important for the development of science and national strategies in seismic risk reduction in Romania.

RUSSIAN FEDERATION / FEDERATION DE RUSSIE

ECNTRM- European Center for new technologies in management risks (Moscow)

I. Techniques of estimation of systems of security and life-support on potentially dangerous objects, buildings and constructions

Introduction

It intents to estimate safety systems, life-support systems and systems of monitoring and management of engineering systems (SMES) of potentially dangerous objects (PDO), buildings and constructions on the basis of complex analysis and to test separate subsystems of safety and life-support by developed techniques and normative documents. It defines:

1. a sequence of creation of a complex of systems of safety, life support and the structured SMES of PDO, buildings and constructions;
2. rules of assistance of SMES with services of rescue;
3. ways of analysis of diagnostic information from SMES for estimation of technical conditions of safety systems and life-support systems of operated objects.

SMES are build on software-technical means monitoring technological processes and processes of functioning maintenance directly on objects and providing transfer of the information on condition of these objects by connection channels to duty-dispatching services (DDS) for the subsequent processing with the purpose of estimation, prediction and liquidation of consequences of destabilizing factors in real time, and to transfer information to rescue services on forecast and occurrence of emergency situations.

Purpose

Objects of the control (and in some cases of management) should be subsystems of life-support and safety: heat supply; ventilation and air-conditioning; water supply and drain; electric and gas supply; engineering-technical complex of fire safety of the object; lift equipment; system of notification; security signal system and video observation; radiation level detection systems; emergency chemically-dangerous substances, biologically-dangerous substances, concentrations of toxic and explosive air-gas mixes, ...

SMES should provide control of the following basic destabilizing factors: fire occurrence; heating system failures; hot and cold water submissions caused by engineering equipment failure in central thermal items, boiler and accidents on pipelines and heating devices; failures in electric power supply; gas supply failures; lift equipment failure; non authorized penetration into office accommodations; increased level of radiation; permissible concentration of dangerous chemical and biological substances; explosive concentration of air-gas mixes; floodings of premises; outflow of gas; deviations from normative parameters in production processes leading to emergency situations; condition changes in engineering-technical constructions of objects.

SMES should provide: forecasting and the prevention of emergencies by the control over parameters of processes of functioning maintance of objects and exposure of deviations of their current values from normative; a continuity of gathering, transfer and processing of the information on values of parameters of processes of maintenance of functioning of objects; formation and transfer of the formalized operative information on condition of technological systems and change of condition of engineering-technical constructions in DDS;formation and transfer of the formalized message about emergency situations on objects to the service of rescue, including acts of terrorism; the automated or compulsory start of system of population notification about the occured emergency situation and necessary actions on evacuation; the automated or compulsory notification of the corresponding experts who are responsible for safety of objects; the automated or compulsory start of systems of the prevention or liquidation of emergency situations on the certain algorithms for concrete object and concrete kind of emergency situation, which should be approved by the established order (a discontinuance of delivery of gas, water, engaging of fire extinguishing means, etc.). Algorithms should provide to the complex, interconnected work all necessary systems of safety and life-support with the purpose to prevent and liquidate the emergency situations.

For each kind of emergency situation, including caused by acts of terrorism, the algorithms of the prevention and liquidation of emergency situation should be developed; documenting and registration of emergencies, and also actions of DDS of objects.

Structure

It should include: a complex of measuring means, means of automation and executive mechanisms; multipurpose cable system; a network of transfer of information; an automated system of dispatching management of engineering systems of objects; administrative resources. Among measuring means should enter: analog and (or) digital sensors of control of technological parameters; water, gas and electric meters; sensors of failures with discrete signals; sensors of the control of change of condition of engineering load-carrying structures; sensors of detection of the raised level of radiation, the emergency chemically-dangerous substances, biologically-dangerous substances, significant concentration of toxic

and explosive concentration of air-gas mixes.
The programmed logic controllers which provide remote transfer of the information and remote control of executive mechanisms should enter into a complex of means of automation. As executive mechanisms, means providing remote control (valves, latches, electric drives, pumps, etc.) should be used.
Multipurpose cable system include: electric and low-current cables; switching devices (cross-countries, electric cases).
Into the automated system of dispatching management of engineering systems of a building enter: a network of gathering of the information from local systems of automatics; servers of input-output; local and (or) global computer networks; workstations of dispatchers; program complex.
Administrative resources are the organizational structures providing operation of objects; the operation-technical and administrative documentation; the documentation which regulates interaction with UDDS.
The resque services regarding the decision of problems of safety of objects should solve the following primary goals: reception from SMES information on the forecast or occurrence of an emergency situation, including caused by act of terrorism; the analysis and an estimation of reliability of the acted information about emergency situation, its lead up to DDS which competence includes reaction to the accepted message; processing and the analysis of data about emergency situation, generalization, an estimation and the control of data of conditions, the accepted measures on liquidation of an extreme situation.
SMES should meet following basic requirements: to provide the automated control and management necessary for the prevention and liquidation of emergency situations (including caused by acts of terrorism) engineering systems; to have modular structure and to be "opened", to provide if necessary an opportunity of scheduling and management of again established equipment of engineering systems; to give an opportunity of integration with other information systems of monitoring and management.
In SMES should be stipulated automatic/manual and remote/local operating modes. SMES should have an open architecture to allow subsequent expansion, both on number of automated objects and on number of functions, and to be ready for integration with other systems of monitoring and management.
Acceptance of SMES carry out specially created commission during acceptance of the whole object.

II. Development of a technique to identify forest fires from spatial observation

Prospective users are EMERCOM Russia, Ministry for Environment Protection and Natural Resources of Russia and Administration of subjects of the Russian Federation. Developers of the technique are a collective of the Center of reception and processing of aerospace information. The technique was examined by the MVK NC. Initial data for carrying out the work were the scientific and technical reports ВНИИ ГОЧС, devoted to questions of space monitoring, for the period 1998–2006.

Background

Real scales of conflagrations woods of Russia and sizes damaged by fire are not established till now. Regular supervision of forest fires is conducted only in zones of active protection of forests covering 2/3 of total forest areas. In northern areas of Siberia and the Far East (1/3 of the stock), active struggle against fire and accounting of fires is almost absent. In an active forest protection zone, 10 up to 30 thousand forest fires are annually registered, covering an area of 0,5 up to 2,1 million hectares. It is supposed that the burnt area on the whole Russia is nearly 2,0 million hectares per year. The specified circumstances and the existence of big unprotected territories explain that rather low level of forest fire prevention.
Space observation, who allows to register fires both on protected and unprotected territories in operative mode, has rather low cost in comparison with air photography. Data about large forests conditions, received from space information, has higher reliability than imcomplete ground data.
In absence of "dry thunder-storms" phenomena, nearly 100 % of the sources of ignitions are uncontrollable agricultural палы, non-observance of fire-prevention safety rules at cultivation of fires, burning of dust and old grass and also premeditated arsons of a forest.
Traditional methods of gathering information on the size of forest areas burned do not meet modern requirements : the information based only on ground data is frequently biased and its gathering requires weeks, even months. Data obtained from space observation allows to receive the interesting information within 1-3 days and can provide operative reception of the necessary information only. The estimation of losses on a given observed area is provided with a bigger territorial scope, including all affected sites. The purpose is thus to adquire operative data about fire conditions in a specific region of Russia.
To achieve that purpose, it is necessary to solve following problems:

- To identify the centers of forest fires on space images;
- To determine a site of the centers of fires (a coordinate binding);
- To determine the nearest objects of an infrastructure, which can suffer (or have suffered) of a fire.

A technique to identify forest fires based on space observation

The proposed technique is new as it is based on the use of space images and their digital processing while existing techniques have either other purposes or are outdated (photographic materials is generally used instead). A new interpretation method of images containing forest fires, based on the analysis of radiating ability of black bodies with temperature 800 - 1000 K, is proposed. The geographical limits of burning centers is calculated automatically on orbital data of corresponding satellites of Earth remote sensing. The

new approach to represent results of that recognition, consisting in displaying the fires centers directly on a vector GIS-map (who can be replaced raster topographical), is suggested.
The Technique is based on researches in spectral and power properties of large forest fires and uses:

- Space data from artificial satellite NOAA from AVHRR equipment;
- Vector GIS -maps in scale 1 : 1000000 and topographical maps in scale 1 : 200000.
- Reception stations "СканЭкс ";
- A PC (Pentium-166 at least) within a local network.
- Fire Detection (2.3), developped by ВНИИ ГОЧС
- "Arcview" (3.0) and "Scanview" (3.1)

It can be used to identify forest fires centers at regional and federal levels. Results can be used for forest conservation decision, for the choice of an optimum quantity of fires liquidation means, etc.

The accepted restrictions and assumptions

The proposed technique requires the following assumptions and restrictions:

- Forest fires are localized only in free territory from overcast (as overcast is opaque for IR-radiation);
- Revealed fires during the observation should be in an steady burning stage or generate burning heat;
- Due to deterioration of spatial sanction at edges in space images, part of the initial image which is not further than 2/3 from the central line is used only;
- Thresholds in spectral channels emerge from analysis of reflective and radiating ability of various natural objects in Central part of Russia, the North of the European territory of Russia and Greece and Bulgaria: thresholds proposed work well for those territories;
- Initial space information should be digital and have a DUF2 format.

Initial data for calculations

Initial data for calculations is space images with a spatial resolution up to 1,1 km which provide revealing fires centers of their geographical coordinates. For that, the space information should:

- Have the spatial sanction 1,1 km are not worse;
- Have a set of spectral channels: 0.58-0.68, 0.725-1.1, 3.55-3.93, 10.3-11.3 microns;
- Have a geographical binding of each point of the image;
- The radiometric sanction should be not worse than 10 bats;
- The temporary resolution should not exceed 1 day.

Data from the following satellites is used:

1. Satellite NOAA, equipment AVHRR (multichannel radiometer) Equipment

Limitations: measurement of temperature of a land and a sea surface, supervision of a cloudy, snow and ice cover, the control over deposits, humidity of surface, measurement of a vegetative index, supervision over eruptions of volcanos, revealing and delimitation of sites of the sea surface captured by oil emissions.
Probably also use of the information from equipment MODIS of satellite EOS (TERRA). Thus should be are carried out additional researches at an optimum choice of spectral channels and corresponding threshold values in these channels.

2. MODIS Equipment

Limitations: measurement of temperature of a land and a sea surface, supervision of cloudy, snow and ice covers, revealing of fires and thermal anomalies, measurement of humidity of a surface, supervision over oceanic currents and color of a sea surface, revealing of changes of a vegetative cover, also in global scale, measurement of concentration and properties of sprays in an atmosphere.

Integrated algorithm (block diagram) of the technique

The algorithm to identify forest fires centers consists of the following stages:

- Reception and calibration of the initial polyzonal space image;
- Choice of a fragment of the initial image with the minimal contents of overcast;
- Revealing of all TA on the chosen fragment of the initial image;
- Elimination of false alarms caused by reflection of electromagnetic energy by edges of clouds, water (under certain conditions supervision), overheat rocks and sand;
- Definitions of geographical coordinates of fires centers on space data;
- Import in GIS of localized fires centers to define the nearest objects to that fire center.

Reception of the initial polyzonal space image is provided with universal hardware-software complexes of reception of space information «Scan Eks » (Скан Экс). The given complexes allow to accept the information from domestic Satellites (Resource-O, Ocean) and foreign satellites (NOAA, TERRA). Calibration accepted with NOAA images is carried out by the browser and preliminary processing ScanViewer (version 3.1 and above) and consists in comparison accepted with values to corresponding physical sizes. So, for 1-st and 2-nd channel of equipment AVHRR the accepted values will be transformed to sizes albedo, and values of 3-rd, 4-th and 5-th channels - in sizes equivalent brightness temperature.

6. The order for carrying out of calculations

The choice of a fragment of the initial polyzonal space image is also carried out in the browser and preliminary processing ScanViewer (version 3.1 and above). For the choice of a fragment of image, it is necessary to remember that overcast is the opaque environment for thermal radiation. Therefore to reveal

fires centers which are under overcast, it is not possible. In this connection by means of thermal channels : to process the accepted space image with the purpose of revealing THAT it is necessary to choose a fragment of image with minimal content of overcast. In general, it is possible to refuse absolutely a choice of a fragment and to process the accepted image entirely, but time of processing will hightly increase.
The following three steps of algorithm of a technique are realized in the program Fire Detection:

- *Revealing all TA on the chosen fragment of the initial image*

Its based on the law of radiation of a black body as forest fires and others TA with burning temperature of 800-1000 K are similar to black bodies and laws of a black body can be applied. According to Planck's formula for spectral density of radiant energy of a black body (1), maximum of radiation of objects heated up to 800-1000 K is necessary on an electromagnetic range with waves lengths of 2,9-3,6 microns:

$$u_\lambda = \frac{C_1 \lambda^{-5}}{\exp\left(C_2 / \lambda T\right) - 1} \qquad (1)$$

where $C_1 = 3{,}741832 * 10^{-16}$ Wm^2 , $C_2 = 1{,}438786 * 10^{-2}$ mK
As the basic attribute for allocation TA, it is possible to use data of the 3rd channel of AVHRR equipment. It is necessary to also note that on satellites NOAA-15, 16, etc., that third channel is switched depending on light exposure of removed territory, i.e. above the light side of the Earth the channel 3A in a range 1,58-1,64 microns works, and above dark side - the channel 3B in a range 3,55-3,93 microns works. Therefore only the information received during dark time of day is suitable.
For allocation of fires centers of are basically used threshold and contextual algorithms: the first one possess greater speed but smaller accuracy.
The best known threshold algorithms of fires centers allocation are (where Ti is the brightness temperature in i-th channel of AVHRR):

1. Kaufman's Algorithm: if T3>316, T3-T4>10 and T3>250, it concerns to a class of fires if it does not satisfy even to one of these conditions data pikes concerns to a background.
2. France's algorithm: T3>320, T3-T4>15, 0<T4-T5<5, A1 <9 %, where A1 - value albedo in 1st channel.
3. Kannedy's Algorithm: T3> 320, T3-T4> 15, A2 <16 %, where A2 - value albedo in 2nd channel.

All those algorithms are focused on the fires centers enough the big area and intensity, that for the decision of problems of revealing of fire conditions is unacceptable as important to find out fires in an initial degree of development in order to minimize material inputs on liquidation of the ignition center.
Threshold Kaufman's algorithm with the reduced value of a threshold in the 3rd channel is accepted for TA automatic allocation in program Fire Detection. At strong reduction of the given (up to values close to background) the quantity of false alarms considerably increases. For various natural zones, threshold value in the 3rd channel will be therefore generally a miscellaneous and for its revealing it is required to do additional work. For example, for territory of Western Siberia, threshold value in the 3rd channel equals 310 and yields good enough results with minimal losses and false alarms; for Greece and Bulgaria during the summer fire-dangerous period, threshold value equals 315.
Allocation of all TA on the chosen fragment of the initial image happens when suspicious points on a fire satisfy to the following conditions:

$$T_3 > 310,\ T_3 - T_4 > 10 \text{ and } T_4 > 284 \qquad (2)$$

Those threshold values were experimentally fixed on basis of supervision of fire conditions development in Western Siberia territory and central areas of Russia from 1997 to 2001.

- *Elimination of the false alarms caused by reflection of electromagnetic energy by edges of clouds, water (under certain conditions supervision), overheat rocks and sand.*

Elimination is made by analysing thereflective ability of objects in the 1st and 2nd channels of AVHRR equipment. So for an edge of overcast and water, if condition (2) holds and albedo values verify A1>A2, the given point corresponds to a false alarm. A similar condition takes place for overheat sand and rocks: if the condition (2) holds and albedo values satisfy A1>A1por, the given point is also a false alarm. Except for it the condition and on overcast is imposed: if the condition (2) and albedo values satisfy A2>A2por, the given point is also a false alarm.

- *Definition of geographical coordinates of the centers of fires on space data.*

For reception of TA geographical coordinates, it is necessary to execute a geographical binding of the image. Such binding is carried out on the basis of given orbital parameters of satellite NOAA written down in a file at the moment of reception of the information by ground station. Among the formats of record of such parameters, the so-called Two Line Element format (developed by the NASA and also named Keplerian Elements) has received a wider circulation. Keplerian elements are used as entrance parameters of calculation algorithm of a site of satellite SGP8. Localized fires centers are then imported in ArcView (version 3.0 and above) whose standard means determine objects of an infrastructure nearest to each fire center (corresponding distances are calculated).

7. Target data

Target data are geographical coordinates of forest fires centers and their distance to objects of an infrastructure, data who is generally as a table .
Accuracy of fires centers location depends on a site of the fireman picsel in the initial image. On the edge of the image, spatial sanction decreases and therefore fine fires are not located because physical size value

in the 3rd channel becomes less than the threshold. At reduction of threshold value as mentioned above, the probability of false alarm considerably increases. Reception of exact results requires to use fragments of the initial image not further than in 2/3 from central line of the initial image. Fires having geometrical sizes on district greater than 25m x25m are accurately located.
The calculation mistake of fires coordinates based on orbital parameters can be of 1-8 km on district due to position of "fireman" picsel in initial image directly received. So the spatial sanction of AVHRR equipment to districts in nadir are 1,1 km, and on edge of a picture, more than 3 km : there are mistakes in a geographical binding of the image. Mistakes can be reduced to a minimum (up to 1 km) if, before processing the image in Fire Detection and calculating coordinates in ScanViewer, a geographical correction is visually executed.

III. "Safety of ability to live" (SAL) Manual for University level

A manual "Safety of ability to live" (SAL) assigned for bachelors of all university specialties of Russia (but also useful for leaders of all enterprises and fields of economy, state and non-state structures, operators of technical systems and engineers) has been developped. Its aim is to give the reader necessary knowledge and skills to identify danger in all spheres of their ability to live and provide security in emergency situations in technosphere. The textbook is based on summarized scientific and practical achievements in that relatively new field, SAL in technosphere, whose successful developments are published by "High school" publisher. Scientific and practical knowledge of the textbook is aimed at creating skills while:

- forming secure conditions of all types of activities
- developing technologies

In order to learn SAL, a student should have knowledge in physics, chemistry, basic knowledge of SAL and basic introduction to his future speciality: the most adequate period for that is when a student knows such subjects as Electrical engineering, Constructional material and others (i.e. fourth year of education).
As a result of studying SAL, student is obliged:

- to understand the importance of problems of safety of technosphere;
- to know bases of SAL theory: anatomic-physiological human reaction to negative factors influence; methods to decrease danger sources impact; protection ways (efficiency and scope) against dangers; protection systems in extreme situations, state control system of SAL in Russia; economic and branch SAL problems;
- to carry out parameters control of negative consequences and to estimate their level in conformity with normative requirements, to plan and carry actions to increase safety and stability of production and objects;
- to have danger identification skills, to apply protection methods of against them and to participate in urgent works on protection against dangers.

The textbook consists of the following sections:
Introduction : basic approaches to health preservation is presented, the vigorous activity and long life of the world's population and Russia, there are specified basic approaches to solving this problem in Russia. The contents of professional SAL discipline studied in Russia high school is formulated.
Section I "Theoretical bases of Safety of ability to live" presents theoretical bases: basic terms and definitions of SAL science are given, systems of safety are described, concepts about criteria used in SAL are introduced and mainstream scientific and practical activities in Russia in the field are shown.
Section II "Dangers of technosphere" is devoted to study the evolution of society and human being environment, analysis of stages of development of system "a human being – inhabitancy sphere" down to XXI century stressing the negative phenomena occurring in components of this system. Conditions of occurrence, development and modern conditions of technospere are considered and negative influences on human being are described (such as increasing diseases and death rate of population).
Section III "Human being and dangers of technosphere" gives a classification of human being activity basic forms, describing physiological influence of conditions of activity on human being's organism and his serviceability; kinds and norms of influence of negative factors and their influence on human being are shown; hygienically permitted levels of negative influence are given.
Section IV "Protection of a human being against dangers" includes description, methods of calculation and ways of practical use of modern means of personal and collective protection of people from natural, technogenic and anthropogenesis dangers arising in daily and extreme situations; measures of increasing stability of objects of economy in peace and wartime are considered and acquaintance of the reader with the ways of liquidation of ES consequences is underlined.
Section V "Management, monitoring and economic aspects of SAL" gives the reader information about Russian safety legislation and state environmental management; it illustrates the view of economic damage and expenses and contains methods of calculation of economic indicators.
Section VI "Contemporary level and prospects of development of SAL" gives information about the state of the art in SAL within separate fields of economy and prospective decisions in the field of protection of a human being against dangers in the nearest future.

SAN MARINO / SAINT-MARIN

CEMEC - European Centre for Disaster Medicine / Centre Européen pour la Médecine des Catastrophes (San Marino)

Cours et coordonnateurs	Date	ECM crédits
Cours PBLS-Pediatric Basic Life Support pour entraineurs *Coordonnateur: Dr. G. Muratori – Rep. S. Marino*	*25 Février*	*6 crédits*
Cours de qualification en médecine légale *Coordonnateur: Dr. Emilio Chiodo-Torino*	*9/10 Mai*	*10 crédits pour médecins* *11 crédits pour infirmières*
Cours Psychologie de l'Urgence et désastres *Coordonnateur:Dr. Emilio Chiodo – Torino*	*10/11 Mai*	*7 crédits pour médecins* *8 crédits pour psychologues* *9 crédits pour infirmières*
Cours T.B.S.T. – Toxicological Basic Support Therapy *Coordonnateur: Dr. Alessandro Barelli – Roma*	*18/20 Octobre*	*21 crédits pour médecins* *22 crédits pour infirmières*
Cours T.B.S.T. – Toxicological Basic Support Therapy *Coordonnateur: Dr. Alessandro Barelli – Roma*	*15/17 Novembre*	*21 crédits pour médecins* *22 crédits pour infirmières*
Cours PBLS-Pediatric Basic Life Support *Coordonnateur: Dr. G. Muratori Rep. San Marino*	*21 Octobre*	*6 crédits*
Cours d'organisation sanitaire en médecine d'urgence *Coordonnateur:Dr. Danilo Bono et Dr. Emilio Chiodo –Torino*	*12/13 Novembre*	*9 crédits pour infirmières* *8 crédits pour médecins*
Cours géstion des urgences NBCR (risqué nucleaire, biologique, chimique, radiologique) *Coordonnateur: Dr. Danilo Bonoet Dr. Emilio Chiodo - Torino*	*18/19 Novembre*	*En valutation*
Cours PBLS – Pediatric Basic Life Support- *Coordonnateur: Dr. G. Muratori Rep. S. Marino*	*25 Novembre*	*6 crédits*

UKRAINE

TESEC - European Centre of Technological Safety / Centre Européen de Sécurité Technologique (Kiev)

1. Annual international training course on post-accident radiomonitoring

The Chernobyl Nuclear Power Plant accident on 26 of April 1986 has largest radiological consequence: approximately $11*10^{18}$ Bq of radionuclides were released into environment after Chernobyl accident. Among them noble gases ($^{85,85m,87,88}Kr$, $^{133,133m,135m,138}Xe$), iodine isotopes ($^{131,132,133,134,135}I$), isotopes of $^{134,137}Cs$ and less volatile radionuclides (^{95}Zr, ^{99}Mo, $^{89,90}Sr$, $^{103,106}Ru$, $^{141,144}Ce$, $^{154,155}Eu$, $^{238-241}Pu$ etc.).
The territory 4300 sq. km. around Chernobyl NPP was founded most contaminated. Population was evacuated from this territory at first days after accident and now it's Exclusion Zone. The territory of Zone somewhere has a radioactive contamination density from 1to1000 Cu/km^2 and dose rate 0.02- 20 mR/h. due to Cs-137. The density of contamination has a pronounced plume structure (hot spots) with a size 100-5000 m. Nowadays, as a result of radionuclides transformations, Am-241 is present in the contamination. It is emitter of low-energy gamma-radiation (59.6 KeV), which is unique simulator of radiological situation after nuclear bomb test.
Chernobyl Exclusion Zone (ChEZ) is unique laboratory for exercise and training of a specialists on different methods of radiomonitoring in real radionuclides contamination, which is a key parameter of the controlling of the nuclear bomb test. Moreover the Exclusion Zone is uninhabited area, under Ukrainian State authority governing, where population was evacuated in 1986. This is simplifying to carrying out of full-scale exercise and using of aircraft, helicopters and other machinery.
Since 1987 TESEC organizing and carrying out training courses on Post-accident Radiomonitoring technique. In 2006 the programme of training course have been updating and testing.
It contained two new courses: Emergency preparedness and response and Radiochemical analysis in emergency with appropriate drills and exercise. This new programme providing more deep knowledge for emergency staff.

LECTURES

- *Module M 1:* Emergency preparedness and response
- *Module M 2:* Emergency monitoring overview
- *Module M 3:* Field radiation and contamination monitoring
- *Module M 4:* Field sampling
- *Module M 5:* Gamma spectrometry
- *Module M 6:* Gross alpha and beta measurements
- *Module M 7:* Radiochemical analysis in emergency
- *Module M 8:* Radiation protection of monitoring teams
- *Module M 9:* Basic data evaluation

DEMONSTRATIONS AND DRILLS

- *Session 1:* Radiation instruments and QC checks
- *Session 2:* Sampling equipment and techniques
- *Session 3:* Gamma spectrometer calibration
- *Session 4:* Gross alpha and beta measurements
- *Session 5:* Radiochemical analysis and instruments
- *Session 6:* Personal and equipment contamination check
- *Session 7:* Evaluation session
- *Session 8:* Team member dose assessment

FIELD AND LABORATORY EXERCISES

- *Exercise No.1:* Field and contamination monitoring
  Objectives: Exercising the tasks of Environmental Survey Team
- *Exercise No.2*: Sampling
  Objectives: Exercising the tasks of sampling teams
- *Exercise No.3:* In-situ gamma spectrometry
  Objectives: Exercising the tasks of In-situ Gamma Spectrometry Team
- *Exercise No.4:* Laboratory measurements
  Objectives: Exercising the tasks of Isotopic Analysis Team

Results from field measurements are reported back to the simulated 'Emergency Centre' by radio communications. After each exercise contamination control of teams and equipment is performed (tasks

of Personal Monitoring and Decontamination Team) as a drill however official control will be provided at the checkpoint at entrance to the Exclusion Zone.

2. TESEC Web Site operation

The TESEC Web Site has been developed and deployed at address www.tesec-int.org
It provides information about future and past TESEC activities. It gives the possibility of direct contact with persons, who interested collaboration with TESEC.
The web site has following structure:

- General information
- TESEC main activities
  - Summer School
  - Photo Gallery
  - Training Course
- Planning activities
  - Training Course
  - International Project proposal

In 2006, the web site have been updated.

3. Organisation of the International Conference "Twenty years after Chernobyl Accident. Future Outlook"

April 26, 2006 is the 20th anniversary of the Chernobyl accident. The International Conference "Twenty Years after Chernobyl accident. Future Outlook" held 24-26 April 2006 in Kiev with the purpose of reviewing and better utilization of the experience gained from the accident enabling the world to be better prepared for any future accident of this magnitude.
The Chernobyl accident resulted in many changes, not only in Ukraine, Belarus and Russia, but around the whole world. International standards on radiation protection, national strategies on the development of nuclear power, strengthening of nuclear safety and radioactive waste management have been revised. Twenty years after the accident is a good time for the international community to review and discuss these issues.
This conference presented the conclusions of the Chernobyl Forum held 6-7 September 2005, Vienna, Austria and the International Chernobyl Conference "International Conference on the Occasion of the 20th Anniversary of the Catastrophe at the Chernobyl Nuclear Power Plant" held in Minsk and Gomel, Belarus, April 19-21, 2006.
This conference promotes an effective implementation of the accumulated international experience in the following areas:

- Radiation protection of the population and emergency workers, and the environmental consequences of Chernobyl accident,
- Medical and public health response to radiation emergencies
- Strengthening radiological emergency management of radiation accidents,
- Economic and legal aspects of radioactive waste management and nuclear power plants decommissioning
- Radioactive waste management: Chernobyl experience
- Nuclear power plant decommissioning: Chernobyl NPP
- Transformation of the Chernobyl Sarcophagus into an ecologically safe system.

Conference have been organized by the Ministry of Ukraine of Emergencies and Affairs of Population Protection from the Consequences of Chernobyl Catastrophe in co-operation with Belarus, Russia, UNDP, IAEA, UNESCO, WHO, European Commission, Council of Europe, European Centre of Technological Safety, IRSN (France), GRS (Germany).
In the Conference activity took part the President of Ukraine V.Yushenko, other well-known politics, scientists and experts from 25 countries of the world:
Australia, Austria, Armenia, Belarus, Belgium, Bulgaria, Brazil, China, Cuba, Great Britain, Hungary, Germany, Greece, Italy, Kazakhstan, Korea, Norway, Poland, Russia, USA, France, Switzerland, Sweden, Japan
and known international organizations:
European Commission, International Atomic Energy Agency, World Health Organisation, UN Development Program, and Council of Europe.
In whole in the conference have taken part more than 900 politics, scientists and experts. It is more than 200 journalists from leading information agencies of the world lighting the conference.
The Conference started from the statements of Conference co-organisers:

- Statement from Ukraine, Belarus, Russia;
- Statement from UNDP, UN Coordinator of International Cooperation on Chernobyl

- Statement from EU, Mr.Josef Pröll, Federal Minister of Agriculture, Forestry, Environment and Water Management, Austria;
- Statement from EC;
- Statement from UNESCO, Mr. Koïchiro Matsuura, Director-General of UNESCO;
- Statement from IAEA Mr.Tomihiro Taniguchi, Deputy General Director, IAEA;
- Statement from WHO, Mrs Susanne Weber-Mosdorf, Assistant Director General for the Sustainable Development and Healthy Environments Cluster, World Health Organization;
- Statement from Council of Europe, Mr. Eladio Fernandez-Galliano, Executive Secretary EUR-OPA Major Hazards Agreement, Council of Europe.

The following keynote speeches by high level representatives of the Governments and International organisations:

- Mr. Kenzo Kiikuni, Chairman of Sasakawa Memorial Health Foundation
- Mr. Fabrizio Saccomani ,Vice President EBRD
- Mr. Zenon Matkiwsky, D.O., President & Chairman of The Board, Children of Chornobyl Relief and Development Fund
- Mr. Hiroshi Nakajima, Director-General Emeritus, World Health Organization
- Conclusions of the Chernobyl Forum and Conference "Looking Back to Go Forwards" (Vienna, September 2005) - M. Balonov, IAEA
- Conclusions of an International Chernobyl Conference (Minsk/Gomel, April 2006)

The invited reports have been presented by:

- Improvement of Nuclear Safety and Radiation Protection Initiated by the Chernobyl Accident, T.Taniguchi, IAEA
- Strengthening of Emergency Response to Radiation accidents, R.Martinchich
- M. Repacholi, WHO
- Chernobyl NPP Decommissioning, Transformation of 'Shelter' into an Ecologically Safe System. V.Novak, EBRD
- Efficiency of Measures on Minimization of the Consequences of Chernobyl Accident, International Experience B.Prister, Ukraine, Belarus, Russia, UNDP
- Chernobyl Radioactive Waste Management- Experience and Future Outlook V.Shestopalov, Ukraine
- Chernobyl and New Knowledge L.Bolshov, Russia

The other reports on conference have been presented in 4 sections:

T1. Consequences of Chernobyl accident for human, medical and social aspects.
T2 Chernobyl and environment, contaminated area rehabilitation
T3. Technological aspects of nuclear and radiation safety, Chernobyl experience
T4. Medical and Biological Consequences of Radiation Accidents (joint with REMPAN)

Conclusions and Recommendations of the International Conference "Twenty Years after the Chernobyl Accident: Future Outlook " have been developed.

TURKEY / TURQUIE

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

SEMİNARS

1. Seminar "Regulation on Buildings Going to Built on Earthquake Areas And Evaluation and Strengthening of Existing Buildings" (11 May 2006)
128 civil engineers and administrators from provinces (including Directors of Branches and Directors of Provinces) participated to the seminar. The regulation presented is the latest about building on earthquake prone areas and was prepared by different specialists (among them lecturers of this seminar).
Conclusions of the Seminar
This regulation serving an important need was presented to the Civil Engineers of the Ministry during the seminar. In the near future, extended training programs will be prepared about this regulation and application of this program in computer media is being planned.
In Turkey, different regions have different earthquake risks so technical and legal forms differ from one region to another and the resentation to the engineers of Minister's regional offices of this regulation which aims to overcome the deficiencies of past regulations was important as "*Training Trainers*".
Answers given to poll at the end of the seminar indicated the need for this seminar. It appeared that they need to learn the regulation changes because they are first degree appliers of this regulation: participants from 81 provinces could ask questions and discuss with the specialists who prepared the regulation.

2. Seminar "Avalanche Studies in Turkey, France and Canada" (20-21 June 2006)
Specialists from Turkey, France and Canada were present in the seminar promoted by AFEM and Avalanche Research-Development Reconnaissance & Prevention Branch of General Directorate of Disaster Affairs. A total of 71 participants from 11 organizations related with avalanche studies and organizations whose study areas are affected from avalanches were invited.
Two preparatory meetings between AFEM of General Directorate of Technical Research and Implementation and ÇAGEM of General Directorate of Disaster Affairs were organized in order to inform the foreign guests about avalanche studies conducted by these organizations.
An interview was also organized with Véronique PLACE (administrator of documentation division at the National Snow and Avalanche Organization, Grenoble, France) on the AFEM presentation in "Snow and Avalanches" periodical.
Conclusions of the Seminar
Establishment, goals, functions and needs for co-operation of AFEM with other organizations was presented. Information was given about how the projects about disaster mitigation can be supported by AFEM within the frame of Council of Europe EUR–OPA Agreement. It appeared that AFEM is a very important center to realize such kind of seminars and an important support was gained to realize new projects which can give opportunities for such training programs.
Furthermore, Turkish specialists in avalanches had a chance to meet very experienced French and Canadian specialists on the topic. Specialist found opportunities to exchange information through direct communication and different country experiences were exchanged. Finally, common study fields on the subject were discussed and direct communication opportunities were provided.

MEETINGS

To define co-operation fields and plan activities, AFEM had meetings in 2006 with:

- **Ministry of Public Works an Settlement – Department of Earthquake**: During the meeting "what can be done coordinately" was discussed and below results were reached;
  - A seminar on the new regulation "Building on Earthquake Areas" and "Strengthening Existing Buildings" for directors of provinces and branches and technical staff,
  - A workshop to train earthquake related staff and workmen of those provinces
  - Training of staff responsible from damage determining about damaged buildings.

  These training activities will be an important contribution of AFEM.
- **Ministry of Culture and Tourism**: books (Avalanches, Snow, ARVA) which are planned to be published by AFEM will be disseminated to staff and tourists of ski resorts.
- **General Directorate of Civil Defense:** project subjects were discussed and authority limits of authorized staff were tried to determine. AFEM subscribed to a periodical of General Directorate of Civil Defense and past issues were obtained.

- **General Directorate of State Hydraulic Works (DSI)**: their opinions on the planned seminar on "Torrent Problem in Eastern Black Sea Region" are the following:
  - Best time for holding it is April–May or November–December as heavy rainfalls torrent problem come then into agenda and these kinds of meetings are more attractive.
  - Best place for this kind of meeting is Trabzon. Usage of DSI's guest house will be encouraged.
  - Agro-Hydrology Institute located in İzmir – Menemen is suitable for international meetings and will provide an important contribution.
  - All document and photograph archive of DSI will be avalaible.
- **Ministry of Environment and Forest** : During the meeting with Vice General Directors, Head of Departments, Branch Directors and engineers of its different general directorates, AFEM's aims and information cooperation fields were presented. In addition, cooperation offers of Center Directors from Greece and Algeria were forwarded and cooperation possibilities were discussed.
  Main conclusions of these meetings are:
  - Cooperation offers of Greece and Algeria were welcomed but problems for their implementation were outlined: in a first step, meetings on education programs should be realized in order to begin cooperation with these countries.
  - It is difficult to share equipment with countries with similar climate conditions : as forest fires happen at the same time, increased equipment needs could deter cooperation.
  - Joining a training program should be a priority in forest fires cooperation with other countries: during this program, countries will be able to understand their capacities.
  - There are some problems while intervening to forest fires, such as locating the existing teams is static and to activate them, emergency intervention capacity should be increased.
  - Opportunities of usage of military helicopters and planes should be investigated and implementation methods in other countries should be searched.
  - Increasing emergency response opportunities decreases the number of forest fires so early warning systems importance should be understood and systems must be developed.
  - Satellite images is very important for determination and intervention on forest fires so importance should be given to satellite images for monitoring events before and after the fire.
  - A training center, both useful for training and international meetings, should be established for forest fires in Antalya.
  - Organizing and repeating an international conference will be beneficial in context of AFEM and General Directorate of Forest cooperation.
  - Results of meetings with the General Directorate of Forest about training of villagers, young people and children should be extended for training of public.
  - Common training program subjects were identified:
    - Training seminars aiming prevention for increasing public awareness about forest fires
    - Training seminars for local administrators and villagers
    - Training seminar for 100 students for 5 days in Antalya on June-July 2007.
    - International seminar "Early Warning and Prevention for Forest Fires" for 5 days in Antalya on November 2007.
    - Training of scouts in 2008, training of villagers in 2009, training of civil society organizations in 2010.
  - Best suitable dates for seminars will be May and November when there is lower fire risk.
  - Publishing of brochures about forest fires (English – Turkish) and periodical called "squirrel" (published by Ministry of Environment and Forest) by AFEM in Turkish and English.
- **Administrators of Universities, Civil Society Organizations** : their opinions on different disasters and their support have been taken. Support possibilities are being investigated by meeting with Japan International Cooperating Agency (JICA) and UN General Secretary.
- **Turkish Red Crescent :** cooperation and support possibilities were discussed. After this kick-off meeting it was noticed that important projects can be realized in cooperation:
  - Common training fields and cooperation possibilities will be investigated.
  - Turkish Red Crescent has a great experience on preparing publications and websites for children. Sharing experiences and developing new methods of cooperation was decided.
  - A cartoon about earthquake and a book about disasters will be published and disseminated by AFEM (financial and quality aspects were also discussed).
- **Turkish State Meteorological Service** (DMI) : it was decided to organize seminars on "Regional Climate Model" in October and on "Drought and Desertification" in November.
  Other decisions taken were:
  - To invite Algerian and Moroccan Centers to a seminar on "Drought and Desertification"
  - Mid-Term Plan of cooperation with DMI is the following:
    1. Seminar on "Early Warning Systems about Forest Fires" with General Directorate of Forest.
    2. Seminar/conference "Flood forecasting and prevention project" with DSI and General Directorate of Electrical Power Resources Survey and Development Administration.

3. Seminar on "Forecasting of avalanches" with General Directorate of Disaster Affairs, Ministry of Environment and Forest, General Directorate of Highways
4. Seminar on landslides, with University of Hacettepe
5. Activity on tornados and forecasting of tsunamis
6. Extended international conference on "Determining the Disaster Management Policy of Country" with interested organizations and universities.
7. Publications (journals, booklets, brochures, CD) on meteorology related disasters

- The results of the kick-off meeting organized in FYROM Ss. Cyril and Methodius University on 14-15 June 2006 were forwarded to General Directorate of Disaster Affairs and "*National Damage Determination Report*" was prepared and presented to ECILS.

PUBLICATIONS

- New AFEM WEB site's text part is completed in Turkish and test studies had started. After completing Turkish part, English and French versions will be completed soon.
- New books are added to existing books ready for publication and are planned to be published in 2007 or later depending on the budget.
- AFEM is planning to publish an "**international natural and technological disasters**" periodical. Editorial Board constituted after consultation with international and national academicians and technicians. Legal procedures are going to be completed.
- In addition, projects for different target groups are developed. These are:
  - **Training Seminars**
    - Teachers
    - Students
    - Staff responsible of damage estimation
    - Local administrators
    - Search-Rescue stuff
  - **Publications**
    - Journals for children
    - Books for children