

## THE EU ERASMUS+ CABARET PROJECT AND THE PARTICIPATION OF THE UNIVERSITY OF MINING AND GEOLOGY

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**ABSTRACT.** The CABARET (CApacity Building in Asia for Resilience EducaTion) Project is funded by the European Union under the Erasmus+ program, to foster regional cooperation for more effective multi-hazard early warnings and increased disaster resilience among coastal communities. The goal of the Project is to strengthen the evidence-base in support of the implementation of the new framework. It is created by the participants of a consortium of 14 European and Asian higher educational institutions from nine countries - four from Europe and five from Asia. The participants are divided into two large groups: "program countries" (the European) and "partner countries" (from Asia as the continent that is mostly threatened by complex disasters, like earthquakes, tsunamis, hurricanes, flooding, etc.) The Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO), the Asian Disaster Preparedness Center and the Federation of Sri Lankan Local Government Authorities are Associate Partners of the project, and will help to promote the benefits across Asia and beyond. The Project covers a three year period and intends for many meetings among participants for data and knowledge exchange, seminars, scientific conferences, and research work to be organized to facilitate the population through modern education. The MGU participation is active as co-chair of the WP7 - Learning and teaching tools methodologies and approaches to the multihazards early warning systems and sustainable development of the resilience education as well as most other working packages of the CABARET Project.

**Key words:** higher education, multihazards early warning systems (MHEW), Asia, Europe

### ЕВРОПЕЙСКИ ERASMUS+ ПРОЕКТ CABARET И УЧАСТИЕТО НА МИННО-ГЕОЛОЖКИ УНИВЕРСИТЕТ В НЕГО

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**РЕЗЮМЕ.** Проектът CABARET (CApacity Building in Asia for Resilience EducaTion) е финансиран от Европейската Комисия по програмата Erasmus +. Той има за основна цел да засили международното и междуконтинентално сътрудничество за по-ефективна устойчивост на обучението по една изключително важна тематика – създаване и използване на комплексни системи за ранно предупреждение от природни опасности. Създаден е консорциум от 14 европейски и азиатски институции от областта на висшето образование от 9 страни – 4 европейски и 5 азиатски. Те са разделени на две големи групи – „програмни“ (4 от европейските страни) и „партньорски“ (от Азия, като най застрашен континент от комплексни опасности – земетресения, цунами, тайфуни, наводнения и др.) страни. Проектът е планиран за 3 годишен период през който поредица от работни срещи, семинари, научни конференции и изследвания ще бъдат организирани за подпомагане на населението чрез модерно обучение. Участието на МГУ „Св.Иван Рилски“ има административен (съръководител на работна група 7 – създаване на методологии за ефективно обучение на кадри с висше образование) и изследователски ангажимент. Основната част от изследванията ще бъдат в създаването на програми и лекционни курсове чрез иновативни методи на обучение в областта на кинематичните модели и разпространението на информацията в комплексните системи за ранно предупреждение.

**Ключови думи:** образование, комплексни системи за ранно предупреждение, Азия, Европа

### Introduction

A new Erasmus+ project called CABARET explores the possibilities about sustainable education for the early warning systems covering multihazards events. Fourteen institutions from Bulgaria, Indonesia, Latvia, the Maldives, Malta, Myanmar, the Philippines, and Sri Lanka are included in the consortium along with the United Kingdom that hosts the University of Huddersfield's Global Disaster Resilience Centre, leading partner of the CABARET project (CABARET Project, 2016). The organization of the Project is constructed by two main groups of partners – so called "program countries" and so called "partner countries". There are also some associated partners – usually internationally recognized organizations - like ADPC, IOC (UNESCO), etc. The mutual cooperation is established to develop and use effectively the knowledge, experience and expertise, together with the education of the specialists, decision-makers, and population of the countries threatened by complex natural hazards, which has developed

(or intend to do so in near future) early warning systems. The exploitation of the world positive practices and examples will be broadly incorporated in the educational platform. The structure of the Project suggests initial collection of data, gaps and needs definition of the threatened countries. Then assessment, scientific approach to the gaps and needs formulation and sustainable solutions will be preformed. The partner countries collect initial information and data. The program countries assess the need and gaps and produce recommendations. Both types of partners participate in the educational platform development, fulfilling needs, providing sustainability and producing manuals and other educational materials. The regional innovation hub is intended to use modern technologies in case of multihazards early warnings. The final purpose is to integrate the local needs, educational materials and multihazard early warning systems to the global initiative for people and infrastructure protection by the developed educational platform. Another very important aim of the Project is to build capacity for international and regional

cooperation among Asian HEIs (Higher Education Institutions) and European ones. The coordination, quality assurance and dissemination activities to bring the results to the wider public and scientific community are also among the purposes of the Project (Capacity building..., 2016). [<http://ec.europa.eu/programmes/erasmus-plus/projects/>]

## **General objectives and tasks**

The General objective can be formulated in the following way:

- The capacity building for resilience education of some Asian countries related to the multihazards early warnings by use of world experience and European expertise
- Outlining of the gaps and needs for resilience education related to the complex early warnings
- Strengthening the cooperation among partner and program countries to provide highly reliable and effective resilience education of students in HEIs, between the decision makers and among the population
- Creation of an innovative hub for using the recent technologies ("smart sensors", satellite communications, smartphones, supercomputers, digital world and social networks) to provide resilient societies threatened by multihazards.
- Introduction of the innovative platforms for resilient education related to the multihazard early warning systems including on-line education at different levels, manuals, major on-line open courses, manuals, etc. to support the education and practical application to the coastal societies.

All these tasks will be executed by seminars, on site education, on-line surveys, networking and frameworking workshops, etc. The extended dissemination policy is intended to cover wide social groups and extended cooperation with economic and social partners.

## **Work Program**

The Work Program of the project is intended to be executed within a 3-year period. All works to be performed are organized in several working packages.

Work Package 1 – Title: Intra- and inter-regional capacity building framework. This is the main package. It has coverage of all aspects of the Project, focusing on the current status of the countries' preparation, MHEWS in action or intended, questionnaire distribution about needs and gaps, and preparation of the country report called "country position paper" for the partner countries. The role of the program countries is to assess the reliability and the regional monitoring framework, as well as the outlined needs and gaps.

Work Package 2 – Title: Project management. The package deals with the project management and coordination between coordinator and partners, as well as among the partners. The creation of a Steering committee as executive body during the time of the project is intended. The visits about meetings,

partners exchange and other actions as well as time schedules are also included.

Work Package 3 – Title: Quality assurance and monitoring. The package is targeted at the quality control and monitoring of all actions related to the Project activities. The data collected and assessment need to be done according the recent criteria of the scientific approach and to avoid negative influence of rumors and fake news.

Work Package 4 – Title: Regional innovation hub for multihazards early warning systems. The hub is one of the important issues of the Project because the fast development of the technologies, communications, and "smart sensors", as well as warning issues dissemination among the decision makers and population is a critical element to the effective functionality of any MHEW.

Work Package 5 – Title: Regional cooperation for multihazards early warning systems. This package is important from the point of view of the integration and unification of the local EWS on the regional and/or global level. The technologies transfer, warning issues, common protocols, unified data formats, etc. are important parts of the regional cooperation. It can serve as a pioneering work in this direction and to be a good example of the developed tools.

Work Package 6 – Title: Partnership with social and economic actors. Specific actions in this working package are very important because the partnership between social and economic partners and the educational communities can help the deeper understanding of the prevention and safety measures performed by the whole society.

Work Package 7 – Title: Learning and teaching tools methodologies and approaches. One of the most important packages targeted to all target groups. The created platform, MOOCs (Major On-line Open Courses), technical manuals and brochures, together with the use of the Internet abilities for distant education, are the modern tools for HEIs highly effective performance of the knowledge for real practical purposes.

Work Package 8 – Title: Dissemination and exploitation. The results obtained during the execution of the Project need to be largely distributed among specialists, scientific communities, HEIs (teaching staff and students), decision makers, and wide population about the MHEWS. All possible ways will be explored in these directions – workshops, meetings, conferences, newsletters, web-pages, social media, TV, newspapers and magazines, teaching programs and platforms, interviews, press-releases, etc. The dissemination topic is considered as one of the most important.

## **Achievements and deliverables**

The work program is focused to produce and promote deferent types of deliverables as main products of the investigations, scientific analysis and practical results for larger use and performance. Among others the most important are:

- A regional monitoring and assessment network report (WP1)
- Country positions papers (WP1)
- Regional position paper (WP1)
- Organizing events (WP2)
- Interim and Closure Reports (WP2)
- Steering committee establishment (WP2)
- Quality board meetings and minutes (WP3)
- Quality plan (WP3)
- Independent evaluation reports (WP3)
- Partners' and participants' evaluation surveys and statistical analysis (WP3)
- Annual self-evaluation (WP3)
- Creation of a regional innovation hub (WP4)
- Sandpit events organization (WP4)
- Short-term scientific missions for innovations seminars (WP4)
- Innovation training workshops and materials (WP4)
- Capacity building roadmap for regional gaps and priorities (WP5)
- Regional cooperation training program and materials (WP5)
- Regional cooperation training events (WP5)
- University - social and economic partnership and secondment plan. (WP6)
- Secondments (WP6)
- University - social and economic partnership training events (WP6)
- Functional and technical specifications (WP7)
- Online regional capacity building platform (WP7)
- Manual for regional capacity building platform (WP7)
- Major On-line Open Courses (WP7)
- Dissemination and exploitation plan (WP8)
- Project website (WP8)
- Promotional kit (brochures, articles, press-release, posters) (WP8)
- Sustainability plan (WP8)
- Briefings on the Project (WP8)
- Training materials (WP8)
- Conference journals and papers (WP8)

## Target groups

The target groups included in the project activities and achievements are divided into several groups:

- Teaching staff – an important group which must be educated in the best manner and should obtain maximum knowledge from the results of the project in order to be able to transfer this knowledge to others.
- Students – the main consumer of the knowledge and practices
- Technical staff – to learn the lessons and to apply the knowledge to the laboratories, maintaining staff and technical solutions.
- Trainees – important part of the educated components at all levels.
- Administrative staff – to have knowledge about correct solutions and effective management in any critical case and situation appearance.
- Librarians – for effective transfer of the knowledge to larger groups of people using literature.

Wide population is also a target group though not explicitly mentioned. The prevention could be effective if the whole population benefits from the project achievements.

## Participation of the University of Mining and Geology

The project management provides different roles to the different participants. As a program country, Bulgaria participates in all gaps and need assessment procedures of the survey. The partner countries position papers will be integrated to the regional positions paper with the intensive participation and expertise use of the program countries. As an operative ruling body, the Steering Committee includes representatives from all participating institutions. In such way, MGU has a membership participant in the Steering committee. MGU together with the University of Maldives are leading partners in the working package 7 - Learning and teaching tools methodologies and approaches. In this frame, the UM will develop a resilient education platform and all other activities will be executed simultaneously. MGU will play an important role in:

- Multihazard early warning systems education – development and shearing software and hardware experience for the complex geological and meteorological marine hazards and risk reduction (Rangelov, 2014; Parushev et al. 2015; Rangelov, 2011, etc.).
- The process of sharing knowledge and experience, especially kinematic models of MHEWS. Such kinematic models (Rangelov and Iliev, 2013) related to the earthquakes and tsunamis have been developed for Azerbaijan (Baku case) (Ivanov et al., 2016) and Italy (Venice case – Parushev and Rangelov, 2014). Several others have been produced during the execution of different projects – MARINGEOHAZARDS (Rangelov et al, 2011), DACEA (Rangelov, 2014), SCHEMA and SIMORA (Rangelov, 2010; Rangelov et al. 2011), etc.
- Education of any interested people at different levels – from the population to the higher educational institutions and decision makers (Rangelov, 2013).
- Input preparation of the related topics for the other partners
- Involvement in the research of some examples and case studies for other partner countries (Rangelov, 2011; Rangelov et al. 2011)

The importance of the CABARET Project for MGU is as follows:

- cooperation with specialists from different countries with different environment and threats to the population and infrastructure
- exchange of knowledge and educational experience at different levels and creation of new tools for education about Natural and anthropogenic hazards
- development of a larger platform for prevention and protection activities and increasing the knowledge of the

specialists and population in the field of Natural and Anthropogenic hazards and multiple hazards early warning systems (Ranguelov, 2011).

## CONCLUSIONS

The participants in the CABARET Project believe in its pioneering role. The Project development, execution and deliverables and achievements reached are clearly outlined due to the following factors:

- Innovative approach to the capacity building of the sustainable education, international framework and specialized HEIs programs about use and effectiveness of the Multihazrds early warning systems and their application in everyday practice.
- The creation of a hub about the use of innovative technologies, smart sensors, fast early warnings communications, and new technologies like electronics, robotics, distant methods and imaginary, space technologies, etc. is an new approach in this direction.
- Educational platform, specific tools and specialized manuals for the educational aims, large application of the MOOCs and other innovative tools about higher education related to the MHEWS are among the first developed methodologies and approaches which could be rather useful to any other country, local or regional framework, as well as for everyday educational practice for the Integrated Coastal Areas Management.

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